Appendix K
Prescribed Burn Plan

PRESIDIO OF MONTEREY FIRE DEPARTMENT

FORMER FORT ORD, MONTEREY, CALIFORNIA

FINAL

MRS-16
PRESCRIBED BURN PLAN

2006

MRS-16
PRESCRIBED BURN PLAN

Signature Page

for Final

JULY 2006

FINAL

SIGNATURES:

APPROVED BY:

Jack Riso
Chief, Fire and Emergency Services
Presidio of Monterey Fire Department

TECHNICAL REVIEW:

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PREPARED BY:

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REVIEWED BY:

Karen Fisbeck
Director
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This approved plan constitutes authority to use prescribed fire, actions taken by approved personnel, acting within the scope of their authority.

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ACRONYM LIST

ac	acre
AGL	Above Ground Level
ARB	Air Resources Board
BLM	Bureau of Land Management
BRAC	Base Realignment and Closure
CCR	California Code of Regulations
CDF	California Department of Forestry
ch/hr	Chains Per Hour
CHOMP	Community Hospital of the Monterey Peninsula
CMC	Central Maritime Chaparral
cu. ft.	Cubic Foot or Cubic Feet (as applicable)
EMT	Emergency Medical Technician
FAA	Federal Aviation Administration
FBA	Fire Behavior Analyst
ft	Foot and/or Feet (as applicable)
FO1	Fort Ord RAWS 1
FO2	Fort Ord RAWS 2
FRAP	Fire and Resource Assessment Program
GIS	Geographical Information System
HMP	Habitat Management Plan
IA	Interim Action
IA ROD	Interim Action Record of Decision
IC	Incident Commander
ICS	Incident Command System
ICP	Incident Command Post
JHA	Job Hazard Analysis
LCES	Lookouts, Communications, Escape Routes, Safety Zones
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MEC	Munitions and Explosives of Concern
mi	Mile or Miles (as applicable)
mph	Miles Per Hour
MRS	Munitions Response Site
MSDS	Material Safety Data Sheets
NE	Northeast
NFDRS	National Fire Danger Rating System
NPS	Naval Postgraduate School
NW	Northwest
NWCG	National Wildfire Coordinating Group
PI	Probability of Ignition
PIO	Public Information Officer
PM	Particulate Matter

ACRONYM LIST (cont.)

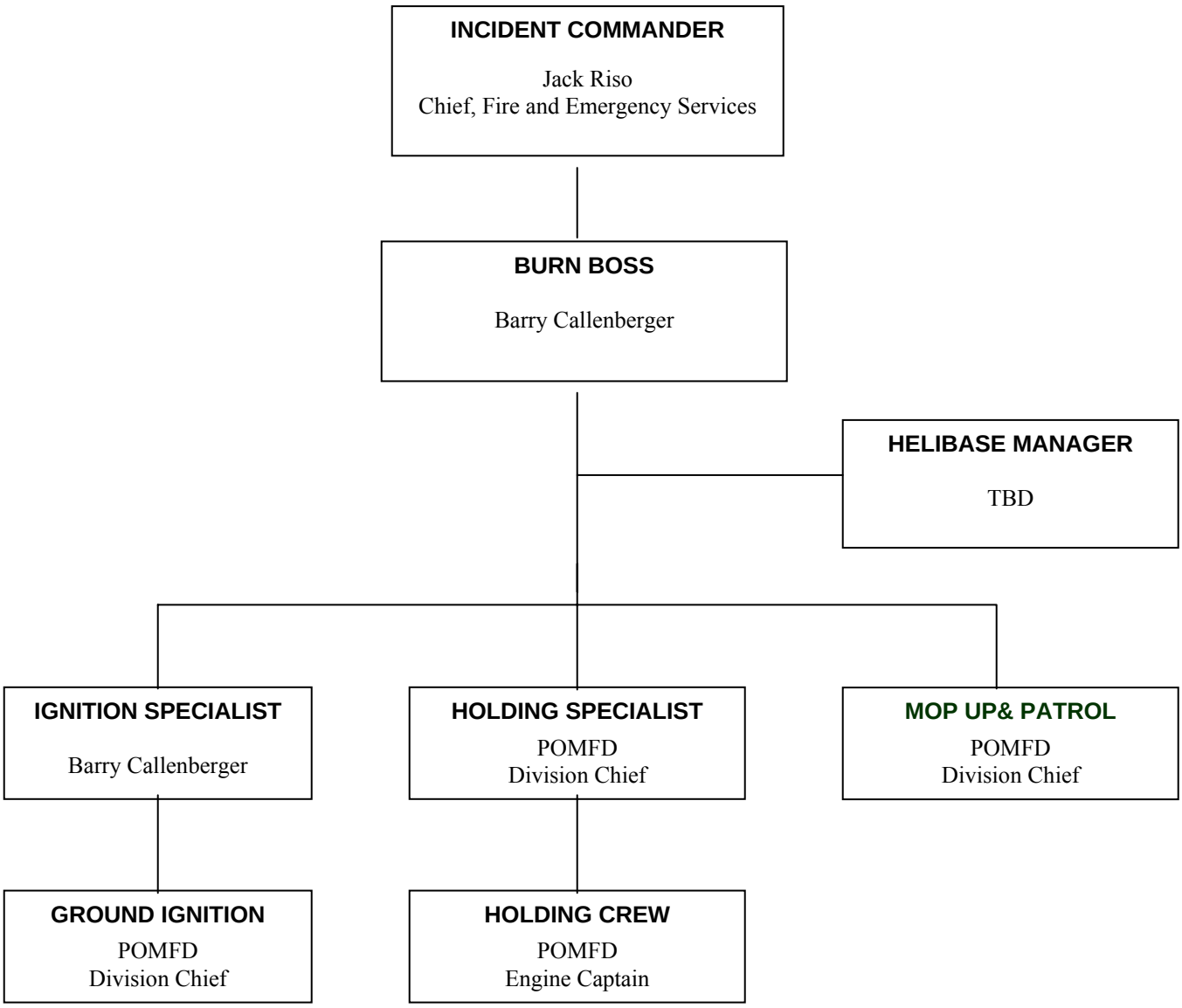
POM	Presidio of Monterey
POMFD	Presidio of Monterey Fire Department
PPE	Personnel Protection Equipment
RAWS	Remote Automated Weather Station
RXB1	Prescribe Burn Boss 1
RXI1	Prescribe Ignition 1
SE	Southeast
SMP	Smoke Management Plan
SPCA	Society for the Prevention of Cruelty to Animals
SSA	Smoke Sensitive Areas
SW	Southwest
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFS	United States Forest Service
UXO	Unexploded Ordnance
WFSA	Wildland Fire Situation Analysis

LIST OF FIGURES AND ATTACHMENTS

Figures:

Attachments:

1 BURN ORGANIZATION



2 PROJECT AREA & SITE DESCRIPTION

The prescribed burn will be conducted at the former Fort Ord on MRS-16 site. MRS-16 is bordered by Parker Flats Road to the north, Watkins Gate Road to the east and Eucalyptus Road to the south. The Army previously used this site for a variety of military training activities involving munitions and explosives. As a result of these training activities and vegetation having not been cleared from this site since the base was closed, MRS-16 contains unexploded munitions and explosives that are concealed by tall, dense central maritime chaparral (CMC). For the surface and subsurface munitions and explosives of concern (MEC) to be removed from this site, the surface must be cleared of vegetation so that workers can access it safely. A prescribed burn was selected by the Interim Action Record of Decision (IA ROD) as the vegetation clearance alternative for the MRS-16 site. (See Figure 1 for vicinity and project map location)

2.1 AREA SIZE:

LOCATION: Latitude: 36º 37' 30" N

Longitude: 121º 46' 35" W

BURN AREA SIZE: 56.6 ACRES

2.2 TOPOGRAPHIC FEATURES:

ELEVATION (FEET ABOVE MSL):

TOP: 488'

BOTTOM: 408'

SLOPE (%) 30 %

ASPECT: Northern and Southern

2.3 FUEL CHARACTERISTICS

VEGETATION TYPES:

The vegetation type is dominated by CMC species. Approximately 70 acres of MRS-16 are comprised of CMC, approximately 7 acres of coast live oak woodland, and approximately 2 acres contain grassland. Dominant species include: shaggy-bark manzanita, chamise, Monterey ceanothus, tooth-leaved ceanothus and sandmat manzanita.

FUEL MODEL (SPECIFY SYSTEM): According to Fuels Specialist David Sapsis from CDF's Fire and Resource Assessment Program (FRAP) although the vegetation type is chaparral, it

should be modeled as Fuel Model 7 (FBPS 1985) for fire behavior modeling. It is a Shrub 8 (Standard Fire Behavior Fuel Models 2005).

FUEL LOADING (TONS/ACRE):

The fuel loading for MRS-16 is categorized as mixed chaparral with approximately 10 -15 tons per acre.

FUEL DISTRIBUTION (TONS/ACRE BY SIZE CLASS):

Size Class	Time Lag Fuel Class	Tons/Acre
0" – ¼"	1hr	2
¼" – 1"	10hr	3.4
1" – 3"	100hr	0.85
Live Herb		4.35

FUEL ARRANGEMENT:

The fuel is typical compact coastal chaparral with an understory of grass in areas with openings in the vegetation during seasons with high rainfall. The majority of the burn site has fuels that are heavy and dense. The site is characterized predominately by CMC vegetation throughout the vast majority of the site with the only exceptions being the presence of coast live oak woodlands around the perimeter of the site. The average height of the CMC is 3–4 ft. Because of the vegetation's thickness, penetration by foot is difficult. There are a few open grassy/bare areas near the SW quadrant of the site where the entrance road intersects with the lower east-west road and in the SE quadrant corner of the site. CAUTION: There is a significant amount of poison oak located in the NW corner of the site (5 – 6 feet in height).

FUEL CONTINUITY:

The fuel continuity is uniform; however, due to former military training there are a few open, steeply sloped pits primarily covered with grass. There is a significant eroded ravine running through the central third of the site between the upper east-west road and lower east-west road.

SURFACE FUEL DEPTH: 1 – 4' (average – 3')

DUFF DEPTH: 0.1 - 2"

DESCRIBE VEGETATION UNDER 12' TALL (INCLUDE LIVE & DEAD %)

All chaparral in the burn area is less than 12 ft. The live-to-dead ratio is approximately 85% to live to 15% dead. The total fuel bed depth is approximately 4 ft.

DESCRIBE VEGETATION OVER 12' TALL:

MRS-16 has approximately 1,000 coast live oaks scattered and clustered around the perimeter of the site. There is also an individual conifer tree in the south central section of the site.

3 RESOURCE MANAGEMENT GOALS & OBJECTIVES

For the MRS-16 prescribed burn to be considered successful, the following goals and objectives must be achieved:

- **GOAL 1:** Complete prescribed burn operations with no injuries to fire personnel or the surrounding communities.

  OBJECTIVES:

  (1) Ensure fire personnel receive adequate safety briefs as well as personal protection equipment (PPE).

  (2) Provide adequate onsite resources to contain the prescribed burn.

  (3) Provide adequate site security to ensure that there is no unintentional entry by unauthorized personnel into the safety exclusion zone around the burn unit.

- **GOAL 2:** Hold the burn within the established primary containment lines located around the MRS-16 perimeter.

  OBJECTIVES:

  (1) Suppress spot fires immediately that may be caused by unexpected wind changes and/or incidental UXO detonations.

  (2) Ensure adequate onsite resources for immediate aerial suppression.

  (3) Treat perimeter of burn by masticating then black lining 150' primary containment line on southern, eastern and northern boundaries. The western boundary will be masticated 150' with no black lining.

- **GOAL 3:** Minimize smoke impacts.

  OBJECTIVES:

  (1) Follow burn prescription to avoid direct smoke plume contact with smoke-sensitive areas (SSAs).

- **GOAL 4:** Clear vegetation to facilitate a safe MEC remedial action for MRS-16.

  OBJECTIVE:

  (1) Reduce vegetation (ground cover) by 90% to allow an unobscured view of the ground for MEC remedial action workers.

- **GOAL 5:** Minimize damage to natural resources and to rare, threatened, and endangered species.

  OBJECTIVES:

  (1) Avoid areas containing plant and wildlife species identified by the Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord (HMP) and maritime chaparral during placement of all access roads, staging areas, and other associated facilities.

  (2) Use existing roads whenever possible and minimize use of vehicles off roads to the greatest extent practicable.

  (3) Minimize impacts to listed species by conducting prescribed burns between 1 July – 31 December.

  (4) To minimize potential impacts to California tiger salamanders, fire retardant will not be used within 300 feet of the adjacent vernal pool, unless required to prevent or suppress a breach.

4 RANGE OF ACCEPTABLE RESULTS EXPECTED

The primary goal of the MRS-16 prescribed burn is to clear the vegetation covering the site so that the MEC/UXO can be removed safely. To remove the ordnance safely, the foliage needs to be consumed to a degree that will allow the ground to be seen.

- Further criteria may be established or existing criteria modified by mutual agreement following the test burn. Any modification will be agreed to in writing by the Presidio of Monterey Fire Department prior to burning.
- Suppression of all spot fires outside the MRS-16 boundary should be initiated within 3 minutes of detection.

5 PROTECTION OF SENSITIVE RESOURCES

5.1 RARE, THREATENED, AND ENDANGERED SPECIES

The habitat in MRS-16 consists mainly of Central Maritime Chaparral (CMC). CMC contains numerous rare, threatened, and endangered species. The following table lists rare, threatened, and endangered species known or potentially occurring on MRS-16.

Species name		Listing Status
Monterey Spineflower	*Chorizanthe pungens var. pungens*	Federally Threatened
Seaside Bird's-beak	*Cordylanthus rigidus var. littoralis*	California Endangered
Sandmat Manzanita	*Arctostaphylos pumila*	Species of Concern
Monterey Ceanothus	*Ceanothus rigidus spp. Rigidus*	Species of Concern
Coast Wallflower	*Erysimum ammophilum*	Species of Concern
California Tiger Salamander	*Ambystoma californiense*	Federal Threatened
California Black Legless Lizard	*Anniella pulchra nigra*	Species of Concern

The HMP was developed in accordance with the Endangered Species Act to protect threatened and endangered plant and wildlife species during cleanup activities at the former Fort Ord. The following mitigation measures identified in the HMP will be implemented during the planning and execution of the prescribed burn:

- The prescribed burns will be conducted between 1 July – 31 December to minimize impacts to HMP species.
- Areas containing HMP-listed plant and wildlife species and areas of maritime chaparral will be avoided during placement of all access roads, staging areas, and other associated facilities.
- Existing roads will be used whenever possible and driving vehicles off existing roads will be minimized to the greatest extent practicable.

5.2 PRE-IGNITION PROCEDURES

- The Army will coordinate with the local SPCA so that, in the event that any wildlife requires aide, the SPCA Wildlife Rescue and Rehab center will be prepared.
- Perimeter fencing will be opened in various sections to allow wildlife the ability to escape and for firefighter safety. The sections of fencing that are not removed will be lifted 18" from the bottom to allow wildlife access under the fencing.
- Fire foam will not be used within 300 feet of the vernal pool, located adjacent to the NE corner of the burn area unless required to prevent a breach or is approved by the BRAC biologist.

6 PROJECT FINANCING:

SOURCE OF FUNDING: The MRS-16 prescribed burn will be financed by the U.S. Department of Army. The source of the funding is the Department of Army, Base Realignment and Closure Funding Military Munitions Response Program Budget.

7 PRESCRIBED FIRE PRESCRIPTION

The following prescription is built on the premise that the "Hot" side of the prescription is the limit for one side of the prescription matrix and the "Cold" side of the prescription is the other limit to the prescription matrix. These prescription parameters create a matrix within which the Burn Boss has latitude to perform the burn. Any combination of environmental factors within the environmental parameters of the prescription can be used to achieve the project objectives.

Any observed environmental variables outside of the prescription will mean the burn is out of prescription and ignition may be shut down depending on smoke behavior. The prescription is an interactive dynamic; and the variables are surrogates for smoke behavior therefore, if one element is out of prescription, action may or may not be taken depending on the other variables and observed smoke behavior and dispersion. Various instruments and methods will be utilized to monitor conditions both remotely and onsite. POMFD will be coordinating with the air district onsite as conditions are monitored in real time.

The following prescription elements were modeled using BEHAVE Plus a fire behavior modeling program to determine potential fire behavior from the environmental variables. POMFD and the Burn Boss have coordinated with Monterey Bay Unified Air Pollution Control District (MBUAPCD) and the project meteorologist to refine and establish the following burn criteria.

Surface Wind Speed:

Winds should be calm to light and variable light and variable so that the smoke column has the best chance possible to rise vertically off the surface with minimal ground contact.

Ideal: Calm to light and variable less than 5 mph.

Maximum: 8 mph – Gusts not to exceed 12 mph

Surface Wind Direction:

The wind direction becomes less important as long as the smoke rises. It may be possible to condition the wind direction parameter so that it does not apply as long as conditions remain light and variable and smoke impacts are not occurring. However, a light and variable wind situation is likely to be temporary at Fort Ord, therefore the following directions have the best potential for minimal smoke impact downwind:

Ideal or Preferred: Any wind direction, as long as winds light and variable and plume lofting vertically

Acceptable: East Southeast to South Southwest

West to North Northeast

East Northeast and East (as long as good smoke behavior is occurring)

Once the plume comes in contact with the ground, there is no ideal direction, since population resides in virtually all directions. It is also important to note that wind directions measured locally at the burn site typically don't represent wind directions in the downwind impact areas due to the effect of terrain, which causes the flow to change direction as it is transported downwind, especially as it enters the Salinas Valley. Straight-line trajectories do not exist in this environment; therefore, CALPUFF was used to help establish burn area (MRS-16) to receptor relationships to refine the range of preferred and acceptable directions.

Transport Wind Direction:

Similar to the surface wind direction, the wind direction aloft is less of a concern as long as the plume is rising intact and vertically. Overall, it seems preferable to have the plume move offshore rather than inland where it could end up stagnating in the Salinas Valley.

Ideal or Preferred: Any wind direction, as long as winds are light and variable and plume lofting vertically

Acceptable: East Southeast to South Southwest

West to North Northeast

East Northeast and East (as long as good smoke behavior is occurring

In order to prevent plume knockdown and smoke impacts by the lower part of the plume, wind speeds within the first 1,000' should not exceed a sustained 15 knots (17.25 mph).

Target Mixing Height Parameters:

To determine a Burn Go/No-Go decision for the ignition phase we will look for neutral to unstable conditions developing in the lower atmosphere. During the burn phase the target mixing height should reach 1,500’ or higher based on the forecasted surface temperature and smoke behavior.

It should be noted that the 1,500' mixing depth may not develop until after ignition since the calculated mixing depth is typically low in the morning. However, postponing ignition until the mixing depth fully develops moves the project time frame later in the day where the smoke column can be subject to the ravages of the afternoon sea breeze. Therefore, if there are otherwise optimal conditions for burning (e.g. low winds and little vertical shear, etc.) and smoke dispersion and good smoke behavior is being exhibited in the test burn, the burn could take place prior to reaching a fully developed mixing height as long as the calculated mixing height is rising and anticipated to reach 1,500’ or more within the next few hours.

Preferred Sky Conditions: Predominately clear skies and no fog.

Fuel model chosen is from the Standard Fire Behavior Fuel model Scott 2005.

FUEL MODEL:	Shrub 8	
Environmental Variables:	**HOT**	**COLD**
Relative Humidity %	20	60
Wind Speed (MFWS)	8	0
Temperature (Dry Bulb %)	80	60
Live Fuel Moisture %	50	100
Dead Fuel Moisture % 1hr. T/L	5	10
10hr. T/L	5	10
100hr. T/L	8	11
Soil / Duff Moisture %	50	50
Probability of Ignition	66%	28%
Season	**Summer**	**Winter**

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7.1 PREDICTED FIRE BEHAVIOR

Fuel Model	**SH 8**		
Environmental Variables:	**HOT**	**OPTIMUM**	**COLD**
Flame Length (ft)	18	7	4.5
Effective Wind Speed (mph)	8	1.8	1.2
Scorch Height (ft)	N/A	N/A	N/A
Forward Spread Rate (chains/hour)	71	10	4.1
Backing Spread Rate (chains/hour)	2	1.6	1
Spotting Distance (miles)	0.6	0.2	0.1

7.2 BEHAVIOR OUTSIDE OF UNIT BOUNDARIES USING WORST CASE WEATHER

The wind was increased to determine escape potential. The other environmental factors remained the same as those used in the "Hot" side of the prescription.

20' Wind (mph)	Rate of Spread (ch/hr) *	Flame Length (ft)	Eye Level Wind Speed (mph)	Fire Area in .5 Hours (ac)	Spot Fire Distance (mi)
16	71	18	8	34	0.6
18	81	19	9	40	0.7
20	92	20	10	48	0.8
22	103	22	11	55	0.8
24	114	23	12	64	0.9
26	125	24	13	72	1

* "ch" refers to chains used in fire behavior modeling. A chain equals 66 feet.

Fire area in acres is without any suppression.

8 WEATHER COLLECTION & FORECASTS

8.1 DATA COLLECTION – RAWS AND ONSITE MEASUREMENTS:

Instrument Locations:

Data is currently collected for the burn site from two Fort Ord remote automated weather stations (RAWS): FO1 at the intersection of trails 92 and 94 (36° 37' 44"latitude, 121°45'27" longitude, 578-ft elevation) and RAWS FO2 at Range 43 (36° 37' 37" latitude, 121° 47' 11" longitude, 490-ft elevation), and two other weather stations located at ranges 7 and 30.

Data to be Collected:

Temperature, relative humidity, 10-hour fuel moisture, live fuel moisture, wind speed and directions and other pertinent automated data will be recorded from the four local weather stations. This data will be used to calculate the 1-hour and probability of ignition for determining the trend in weather and its effect on local fuel conditions.

Data from RAWS 1 and 2 can be accessed online at the following website addresses:

RAWS	Website Address
FO1	http://raws.wrh.noaa.gov/obs/CA_FORT_ORD_1.txt
FO2	http://raws.wrh.noaa.gov/obs/CA_FORT_ORD_2.txt

Sampling Period:

Actual fuel stick and dead fuel moisture will be measured biweekly beginning in April. Live fuel moisture has been measured biweekly since February. Fuel moisture measurements will be increased to weekly in April and twice weekly once the burn season approaches or as recommended by the Fire Behavior Analyst.

8.2 FORECASTS:

Meteorologist Wendell Nuss, from the Naval Post Graduate School (NPS), along with the Monterey National Weather Service, and meteorologists from the Air Resources Board will be used for spot weather forecast. He will post the daily and weekly forecasts on a website dedicated to the fire weather for MRS-16. The website address is:
http://wx.met.nps.navy.mil/~nuss/fort-ord.html

The spot weather forecast will be requested the day prior to the burn and every day until the burn is declared out. The meteorologist is familiar with the project, site location and general area.

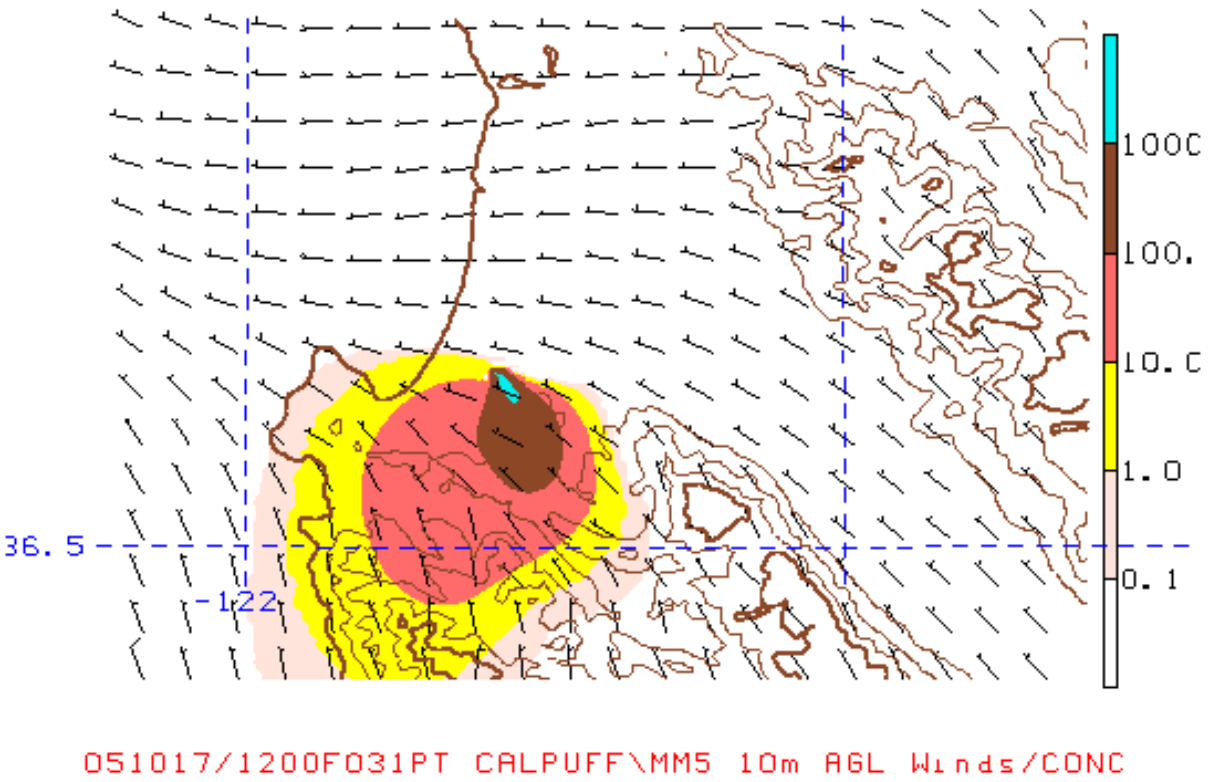
9 SMOKE MANAGEMENT PLAN

In an effort to reduce the risks of smoke impacts from prescribed burns, the burn planning has been closely coordinated with Monterey Bay Unified Air Pollution Control District (MBUAPCD). Representatives from MBUAPCD will be onsite during the burn for coordination and monitoring purposes. MBUAPCD representatives will be monitoring both meteorological conditions and smoke behavior from the ICP. MBUAPCD will confer with the Incident Commander regarding meteorological conditions and smoke behavior information.

It should be stated that since the prescribed burn is part of the former Fort Ord CERCLA clean up action, the Army will comply with the substantive requirements of the MBUAPCD's Smoke Management Plan, however, the procedural requirements, including obtaining an actual district permit to burn, will not be required in order to perform the prescribed burn.

9.1 CALPUFF PROJECTION:

The cal puff image below is from October 17 last fall. The time of 12PM (noon) was selected for this image in for the concentration. The wind profile showed less than 5mph at surface up through 300 m (1000ft) then increasing to about 12 mph by 600m (2000ft). Winds start out weakly offshore (easterly) and then turn to westerly in the afternoon (onshore/sea breeze). Mixing height was well above the 1500 ft.



APPLICATION for Burn Permit

In accordance with the Air District's Smoke Management Program, this Smoke Management Plan (SMP) serves as a permit application that is to be completed by the applicant and submitted to the Air District officials. This SMP application consists of three sections, a Project Description section, and sections A and B. **ALL APPLICANTS MUST COMPLETE THE PROJECT DESCRIPTION SECTION (pages 4 and 5).** Both sections A and B of the SMP may need to be completed depending on the burn's potential to impact smoke sensitive areas and the size of the burn. Once approved by the Air District, this SMP serves as a conditional permit to burn, when combined with the district's permit to burn.

General Information and Requirements regarding this SMP are provided on **pages 1 and 2**. Terms used in this form have the same meaning as those defined in the Air District's open burning regulation definition or the California Code of Regulations, Title 17, Section 80101. Where differences occur, the Air District's definitions apply. **Emission Factors** to assist with calculating burn particulate matter emissions are provided on **pages 12 and 13**. Contact the Air District if you have questions or need assistance with making these calculations.

The **District Review (page 3)** is for Air District use only, but must be kept in tact with the Project Description section. The **Project Description section (pages 4 and 5)** requests general information and identifies conditions for all prescribed burn projects. It identifies the Operator and relevant contact information, who the land owner is, the project name, project location, burn size, purpose of the burn, type of fuel to be burned, and estimated emissions from the burn. It provides a checklist of additional sections of the SMP that may be filled out and attached. Finally, it requests the preparer's signature, the name of the Operator or authorized representative, and the Operator or authorized representative's signature.

Section A (pages 6 - 8), must be completed and attached to the Project Description section if the burn has the potential to result in impacts to smoke sensitive areas. Smoke sensitive areas are defined as "populated areas and other areas where a district determines that smoke and air pollutants can adversely affect public health or welfare." Such areas can include, but are not limited to, towns and villages, campgrounds, trails, populated recreational areas, hospitals, nursing homes, schools, roads, airports, public events, shopping centers, and Class I Areas (areas that are mandatory visibility protection areas designated pursuant to section 169A of the federal Clean Air Act). The Air District can tell you if you are in a Class I Area.

Section B (pages 9 and 10), is a form that must be completed and attached to the Project Description section if the burn will be greater than 100 acres or will produce more than ten tons of particulate matter. Section B identifies meteorological conditions necessary for ignition, contingency actions that will be taken if smoke impacts begin to occur from the burn, and information on consideration and use of alternatives to burning. A **Post-Burn Evaluation** form is provided on **page 11.** This form is to be used for burns greater than 250 acres or for burns that result in impacts to smoke sensitive areas.

Information may need to be extracted from the project burn plan (if available) to supplement the SMP. Air District review of the burn plan is for informational purposes only. When the burn plan is reviewed, the Air District assumes no approval authority or liability for approving the burn plan. The Operator is responsible for assuring firefighter and public safety, which is not the intent of the information included on this form.

General Information and Requirements

SMP Conditions Must Be Met on the Day of the Burn (CCR section 80160(j))

The land manager or his/her designee conducting a prescribed burn is required to ensure that all conditions and requirements stated in the smoke management plan are met on the day of the burn event and prior to ignition. Ignition of a burn project will not occur unless the Air District has authorized the burn on the day of the burn.*

Conditions of Vegetative Material to be Burned (CCR section 80160 (m – p))

Material should be:

- in a condition that will minimize the smoke emitted during combustion when feasible, considering fire safety and other factors;
- piled where possible, unless good silvicultural practices or ecological goals dictate otherwise; and
- prepared so that it will burn with a minimum of smoke.

Description of Burn Types

Forest Management Burning is the use of open fires, as part of a forest management practice, to remove forest debris or for forest management practices which include timber operations, silvicultural practices, or forest protection practices.

Range Improvement Burning is the use of outdoor fires to:

- remove vegetation for wildlife or game habitat;
- remove vegetation for livestock habitat; and
- remove vegetation for the initial establishment of an agricultural practice on previously uncultivated land.

Wildland Vegetation Management Burning is the use of prescribed burning conducted by a public agency, or through a cooperative agreement with a private manager or contract involving a public agency, to burn land predominantly covered with chaparral (as defined in Title 14, California Code of Regulations, section 1561.1), trees, grass, or standing brush.

Determination of Smoke Sensitive Areas

Smoke sensitive areas are defined as “populated areas and other areas where an Air District determines that smoke and air pollutants can adversely affect public health or welfare.” Such areas can include, but are not limited to, towns and villages, campgrounds, trails, populated recreational areas, hospitals, nursing homes, schools, roads, airports, public events, shopping centers, and Class I Areas (areas that are mandatory visibility protection areas designated pursuant to section 169A of the federal Clean Air Act. Your Air District can tell you if your burn is in a Class I Area. If a burn is near a populated area, has potential for substantial emissions, has a long duration, or has the potential for poor smoke dispersion, a smoke sensitive area could be impacted and Section A of the SMP should be completed. Burners may obtain Air District assistance in determining if Section A should be completed.

* CCR 80120(e) provides that an Air District may, by special permit, authorize agricultural burning, including prescribed burning, on days designated by the ARB as no-burn days if the denial of such permit would threaten imminent and substantial economic loss.

Procedures for Operators to Report Public Smoke Complaints to Air Districts to Address Smoke Management Guidelines section 80160(l)

1. The Operator shall immediately report any air quality smoke complaints received about this burn project to the Air District with jurisdiction over the burn. A phone call to the District during normal seasonal business hours will suffice. During non-business hours a fax or voicemail message will suffice.
2. The complaint report shall include the following: the location of the smoke impact, a short description of the smoke behavior including wind direction and speed, visibility, and public safety impacts if available from the complainant.
3. The Operator shall inform the complainant that he or she may also contact the District directly and shall provide the District name, telephone number and address.
4. The Operator shall, in coordination with the Air District, seek resolution for all complaints, as necessary.

Natural Ignition on a No-burn Day (CCR section 80160(h))

When a natural ignition occurs on a no-burn day, the initial "go/no-go" decision to manage the fire for resource benefit will be a "no-go" unless:

1. After consultation with your Air District, the Air District decides, for smoke management purposes, that the burn can be managed for resource benefit; or
2. For periods of less than 24 hours, a reasonable effort has been made to contact the Air District, or if the Air District is not available, the Air Resources Board (ARB); or
3. After 24 hours, the Air District has been contacted, or if the Air District is not available, ARB has been contacted and concurs that the burn can be managed for resource benefit. A "no-go" decision does not necessarily mean that the fire must be extinguished, but that the fire cannot be considered as a prescribed fire.

DISTRICT REVIEW
(For District Use Only)

___ I have reviewed and approved this SMP as a conditional burn permit to be combined with agricultural burn/air pollution permit number _____ , which expires on _____.

___ This burn project is greater than 250 acres and/or is a multi-day burn which requires ARB consultation prior to final approval pursuant to CCR 80160(g)).
Date ARB Notified: _____ Date ARB approval received: _____

Smoke from this fire is expected to travel into the following non-attainment or maintenance areas:
_____
_____
_____

Name: _____

Signature: _____

Agency : _____

Date: _____

SMP Project Description (Complete This Section for ALL PRESCRIBED BURNS)*

1.1 Project Name: *Former Fort Ord: MRS-16*	**1.8 Project Location:** (Report at least one of the following location descriptions. Provide attachment as needed.) **1.8a Legal:** **T** _____ **R** _____ **S** _____ **M&B** _____ **1.8b Lat/Long:** **Lat** *36* (deg.) *37* (min) *30* (sec) *N* **Long** *121* (deg.) *46* (min) *35* (sec) *W* **1.8c UTM: Zone**: ____ N_____m, E_____m
1.2 Operator Name: *Karen Fisbeck* _____ **1.3 Operator Address:** **Street:** *Bldg 4463 Gigling Road* **City:** *Seaside* **State:** *CA* **Zip:** *93955*	
1.4 Operator/Field Contact: *Jack Riso*	**1.9 Project Elevation (msl feet):** **Top:** *488'* **Bottom:** *408'*
1.5 24-hour Phone/Pager: *(831) 760-0797*	**1.10 Land Owner Name:** *U.S. Army BRAC* **Street:** *Bldg 4463 Gigling Road* **City:** *Seaside* **State:** *CA* **Zip:** *93955*
1.6 Project Location (Counties): *Monterey County*	
1.7 Nearest Town: *Seaside*	

1.11 Anticipated Time of Year for Burn (Month/Year): *July – Nov 2006*

1.12a Is the Primary Purpose of the Burn for Fire Hazard Reduction? *No*

1.12b Burn Type (Check one): ___ Forest Mgmt: ___ Range Improvement *X* Wildland Vegetation Management _____ Natural Ignition *X* Other *Prescribed burning is the vegetation removal method selected pursuant to the IA ROD for the Fort Ord Military Munitions Response Program*

1.13 For Range Improvement Burns, Check Vegetation Management Objective: *N/A*
____ Wildlife or Game Habitat Improvement ____ Livestock Habitat Improvement
____ Initial Establishment of Agricultural Practice on Previously Uncultivated Land

1.14 Vegetation Type (Percentage): *95%* Brush *2%* Grass *2%* Timber Litter *1%* Timber Slash ____ Other (Describe): _____

1.14.1 Vegetation Condition: ____ Machine Pile Burn ____ Hand Pile Burn
_____ Understory ____ Landing Pile *Burn* *X* Broadcast

1.16 Project Area: *56.6* (acres) 1.17 Number of Piles: _____

1.18 Average Pile Size: *N/A*

1.19 Total Project Fuel Loading: *707.5* (tons vegetation)

1.20 Particulate Matter Emissions: *5.69* (tons PM10) (Use Emissions Factors Tables on pages 12-13 for assistance with emissions calculation)

1.21 Emission Factor Table Used or EPA-Approved Calculation Method: *Emissions Factors Tables on pages 12-13*

* If your burn is less than 10 acres with less than one ton particulate matter emissions, and your burn will not impact any smoke sensitive areas, you may complete only this page. Attach appropriate SMP sections for all other burns.

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1.22 Preferred Ignition Hours for the Fire: *0800-1100*

1.23 Expected Burn Duration (ignition to complete extinction): Total Time: *3 hours*

1.24 Fuel Drying Time and Conditions Prior to Ignition: *Live and dead fuel moisture between 5-10% (dead) and 50-90% (live).*

1.25 Limitations on Pile Size, Pile Number, and/or Acreage Limitations to Minimize Smoke (complete as appropriate): *MRS-16 will be burned in a manner that minimizes smoke, by using fire behavior techniques and optimum burn conditions to maximize fuel consumption and spread while minimizing smoke over the duration of the burn.*

It is the responsibility of the operator to ensure that conditions of the SMP are met on the day of the burn. The operator will obtain authorization to burn from the Air District contact listed below no more than 24 hours prior to ignition.**

1.26 Air District Name: *Monterey Bay Unified Air Pollution Control District*	**1.28 Contact**: *Compliance Division*
1.27 Address: *24580 Silver Cloud Ct. Monterey, CA 93940-6536*	**1.29 24-hour Telephone**: *(831) 647-9411*
	1.30 Fax: *(831) 647-8501*
	1.31 Email:

The Operator will report public smoke complaints to the Air District per the procedures described in the General Information section of this SMP on pages1 and 2.

Check as Applicable:

☒ **This burn could have an impact on smoke sensitive areas – I have filled out and attached all of Section A.**

☒ **This burn could have an impact on smoke sensitive areas and Air District policies require that information on meteorological conditions for ignition and contingency planning be provided – I have filled out and attached line items B.1 and B.2 of Section B.**

❑ **This burn is greater than 100 acres (or is estimated to produce greater than 10 tons of particulate matter) – I have filled out and attached all of Section B.**

Preparer's Statement: To the best of my knowledge the information submitted in this application is complete and accurate.

SMP Preparation Date: *22 February 2006*

Preparer's Name/Title (print): *Chris Duymich - Prescribed Burn Manager*

Preparer's Phone: *(831) 242-7701*

Preparer's Signature: _____

Name of Authorized Representative in Control of the Property: *N/A*

Operator or Authorized Representative Signature: *N/A*

Signature Date: _____

** Burner/Air District burn authorization coordination to be determined by the Air District.

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SECTION A: AS REQUIRED BY TITLE 17 AND AIR DISTRICT POLICIES, THIS SECTION APPLIES TO ALL BURNS WITH THE POTENTIAL TO IMPACT SMOKE SENSITIVE AREAS (SSAs) *

A.1. Describe locations of SSAs and distances from burn site (miles) – (Also the attached Map # 8 shows SSAs):

The principle SSAs are the neighboring schools, residential areas, and the Salinas Valley (as far south as King City ~ 60 miles S) within the vicinity of the burn. Including, but not limited to: Ord Military Community: Fitch and Marshal Parks, Cities of Marina, Seaside, Del Rey Oaks, Monterey, Salinas including communities of Toro Park, Las Palmas, Spreckles, Indian Springs and the River Road residential corridor area. Other smoke sensitive areas include facilities such as the Monterey Bay Aquarium and the Community Hospital of the Monterey Peninsula.

(1) Nearest School: *Fitch Park School (~ 2 miles NW)*

(2) Nearest Residential Area: *Fitch Park Military Community: (~ 1.5 miles NW)*

(3) Neighboring Areas: *Distance calculations based on closest town boundary to closest burn site boundary. Distances were calculated via GIS and are considered approximate.*

Neighboring Area	Approximate Distance to MRS-16 burn area
Seaside	1.5 mile W
Del Rey Oaks	3 miles SW
Marina	3 miles N
Mazda Raceway - Laguna Seca	3 miles S
Monterey Peninsula Airport	3 miles SW
Monterey	5 miles SW
Salinas	6 miles NE
Spreckles	6 miles E
Salinas Valley (down to King City)	10–60 miles E to SE

A.2 The attached map# *CALPUFF projection is located on page 24* provides smoke travel projections for: _X_ Day _____ Night _____ Topographical considerations.

A.3 Has prescribed burning historically occurred in this area? _X_ Yes ____ No ____ Don't Know

A.4 If yes, we 2re there impacts to smoke sensitive areas? _X_ Yes ____ No ____ Don't Know

A.5 If yes, please describe impacts: *Smoke impacts in Fitch and Marshall Park Military Communities Seaside, Del Rey Oaks, Spreckles, Salinas Valley, Monterey, Toro Park, Pacific Grove, Carmel and Pebble Beach*

A.6 For burns that will occur past daylight hours and/or for more than one day, please provide Air District contact information and a description of contact procedures that will be used to affirm that the burn project remains within the conditions specified in

this SMP, and/or whether contingency actions are necessary. The Operator will follow any instructions by the Air District to communicate directly with ARB when necessary. Air District contact (or designee) *N/A*

A.7a Telephone: (_____) ____*N/A*_____-_____

A.7b 24-hour Pager (_____) ____*N/A*_____-_____

A.7c Fax: (_____) ____*N/A*_____-_____

A.7d E-mail: _____*N/A*_____

A.8 The Operator will use the frequency and method of contact described below:

_____

_____

_____*N/A*_____

_____

The Operator will monitor the burn project for meteorological conditions and smoke behavior before, during, and after the burn using the following techniques and timing:

A.9 Weather Observation (Wind Direction, Wind Speed, and Temperature):

Method	Details
X Belt Weather Kit	Location On site Beginning 0700 Interval Hourly Ending 2400
X RAWS	Location Fort Ord #1 (Range 43) and Fort Ord #2 Intersection of BLM trails 92 and 94, Ranges 7 and 30 Beginning Jan 2006 Interval Daily Ending Post burn
_____ Aircraft	Location _____ Beginning _____ Interval _____ Ending _____
X Other	Location CALPUFF and Marina Profiler Beginning Week prior Interval Daily/Hourly Ending Day after burn

X Additional Requirements: Desirable resource: Tethersonde System provided by MBUAPCD to be used on site to help determine atmospheric conditions for the Burn Go/No Go decision.

A.10 Smoke Behavior Observations:

Method	Details
X Visual**	Location On site Beginning During Burn Interval Continuous Ending Post Burn
X Test Fire	Location On site Beginning 0900 Interval Continuous Ending: 0930
X Balloon	Location On site Beginning Before Test Burn Interval hourly Ending End of burn
X Aircraft	Location On site Beginning During Burn Interval Continuous Ending Burn Down
X PM Monitoring	Location Various: Mactec will be conducting air monitoring for PM 10 Beginning At Ignition Interval Continuous Ending 24 hours post burn

Additional Requirements: _____

A.11a The Operator shall begin public notification before the day of burning. The notification shall be on-going until the end of burning. Check which of the following procedures will be used to notify and educate the public about this burn project. X

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__Television _____ Radio __X_Newspaper __X__ Posters/flyers __X_Telephone calls __X__ Other (Explained in A.11b below)

A.11b The specifics of the notification procedure(s) checked above are as follows: *Community Involvement Workshops, Public Information Open House, website dedicated to the current activities of the site clean up.*

A.12 The Operator will place appropriate signage at or near burn sites to identify the burn project to the public as noted on the attached figure #__6A__.

Adjacent Air Districts and neighboring state Air Districts which may potentially be impacted by smoke travel or which have previously been impacted by smoke from similar burn projects are listed below.

A.13 Air District Name: N/A
A.14 Contact:
A.15 Address:
A.16 24-hour Telephone:
A.17 Fax:
A.18 Air District Name: N/A
A.19 Contact:
A.20 Address:
A.21 24-hour Telephone:
A.22 Fax:

A 23 Neighboring State Air District Name: N/A
A.24 Contact:
A.25 Address:
A.26 24-hour Telephone:
A.27 Fax:

* See General Information on page 1 for determining if your burn has the potential to impact a smoke sensitive area.

** Visual smoke observation refers to observations made through the eyes of designated individuals.

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SECTION B: AS REQUIRED BY TITLE 17 AND AIR DISTRICT POLICIES, THIS SECTION APPLIES TO ALL BURN PROJECTS GREATER THAN 100 ACRES OR PRODUCING MORE THAN 10 TONS OF PARTICULATE MATTER

B.1. Meteorological Conditions for Ignition

Source of Meteorological Information: *RAWS FO1, RAWS FO2, RAWS Fort Ord, Marina Profiler, Monterey and Salinas airports*

Surface Wind Speed:

Winds should be calm to light and variable light and variable so that the smoke column has the best chance possible to rise vertically off the surface with minimal ground contact.

Ideal: Calm to light and variable less than 5 mph.

Maximum: 8 mph – Gusts not to exceed 12 mph

Surface Wind Direction:

The wind direction becomes less important as long as the smoke rises. It may be possible to condition the wind direction parameter so that it does not apply as long as conditions remain light and variable and smoke impacts is not occurring. However, light and variable wind situation is likely temporary at Fort Ord the following directions have the best potential for minimal smoke impact downwind:

Ideal or Preferred: Any wind direction, as long as winds light and variable and plume lofting vertically

Acceptable: East Southeast to South Southwest

West to North Northeast

East Northeast and East (as long as good smoke behavior is occurring)

Once the plume comes in contact with the ground, there is no ideal direction, since population resides in virtually all directions. It is also important to note that wind directions measured locally at the burn site typically don't represent wind directions in the downwind impact areas due to the effect of terrain, which causes the flow to change direction as it is transported downwind, especially as it enters the Salinas Valley. Straight-line trajectories do not exist in this environment; therefore, CALPUFF was used to help establish burn area (MRS-16) to receptor relationships to refine the range of preferred and acceptable directions.

Transport Wind Direction:

Similar to the surface wind direction, the wind direction aloft is less of a concern as long as the plume is rising intact and vertically. Overall, it seems preferable to have the plume move offshore rather than inland where it could end up stagnating in the Salinas Valley.

Ideal or Preferred: Any wind direction, as long as winds light and variable and plume lofting vertically

Acceptable: East Southeast to South Southwest

West to North Northeast

East Northeast and East (as long as good smoke behavior is occurring.)

In order to prevent plume knockdown and smoke impacts by the lower part of the plume, wind speeds within the first 1,000' should not exceed a sustained 15 knots (17.25 mph).

Target Mixing Height Parameters:

To determine a Burn Go/No-Go decision for the ignition phase we will look for neutral to unstable conditions developing in the lower atmosphere. During the burn phase the target mixing height should reach 1,500' or higher based on the forecasted surface temperature and smoke behavior.

It should be noted that the 1,500' mixing depth may not develop until after ignition since the calculated mixing depth is typically low in the morning. However, postponing ignition until the mixing depth fully develops moves the project time frame later in the day where the smoke column can be subject to the ravages of the afternoon sea breeze.

Preferred Sky Conditions: Predominately clear skies and no fog.

Relative Humidity: Ideal: 25% Maximum: 60% Minimum: 20 (%)

Acceptable Temperature Range: 60 – 80º (degrees)

B.2a Describe contingency actions/methods/procedures Operator will take in the event that serious smoke impacts begin to occur or meteorological conditions deviate from those specified in this SMP (for example: stop ignitions, initiate mop-up, conduct fire suppression – describe in detail):

If smoke impact conditions are present or if meteorological conditions deviate from prescription, the fire ignition may be halted at the discretion of the Incident Commander or the Burn Boss. Chaparral is a quick-burning fuel; once ignition is halted, the resulting smoke will be minimized. If project smoke continues to be a problem, further mop-up procedures will be undertaken. Interior boundary lines can be used as lines of defense to halt burning and bring the fire activity and smoke under control. After ignition is halted, it will not be restarted until the smoke impacts are mitigated.

B.2b Describe any applicable interior unit contingency cutoff lines (refer to map# *N/A* as appropriate):

The primary fuel breaks have been increase to 150' and include a 45 foot asphalt road around 3 sides of the perimeter of the burn. The primary fuel break will have the vegetation removed. The remaining side of the primary fuel break will have a 150 fuel break established by vegetation removal. The secondary and tertiary fuel breaks are hard packed roads with 45' widths. These lines will be used to create lines of defense and control from which POMFD can work towards extinguishing the fire (Figures 2 and 4).

There are existing interior roads and old interior control lines that may be used to slow the burning operations and can be used to the slow the burning of the unit. However, once ignition commences the unit cannot be safely entered by equipment or personnel due to the exclusion zone established around the burn perimeter and the potential presence of high explosives.

B.3 An evaluation of alternatives to burning is described below:

This prescribed burn is being conducted for site preparation for a military munitions response program cleanup action under Comprehensive Environmental Response, Compensation and Liability. Alternatives were evaluated in the document, Final Interim Action Ordnance and Explosives Remedial Investigation/Feasibility Study for Ranges 43–48, Range 30A, Site MRS-16, Former Fort Ord, California, March 7, 2002.

B.4 Alternatives Considered**:**

The Army evaluated the use of herbicides, mechanical, remotely operated mechanical and manual methods, animal grazing, and prescribed burning for vegetation clearance. This evaluation is discussed in Final Interim Action Ordnance and Explosives Remedial Investigation/Feasibility Study for Ranges 43–48, Range 30A, Site MRS-16, Former Fort Ord, California, March 7, 2002.

B.5 Alternatives Rejected and Reasons for Rejection:

All vegetation clearance alternatives were rejected because the area proposed for prescribed burning contains MEC that are fused, and highly sensitive and vegetation clearance workers would be directly exposed to these items while conducting vegetation clearance and could be seriously injured or killed by accidental detonation of MEC. Additional reasons were ineffectiveness at vegetation clearance, logistical difficulties, and excessive environmental impact.

B.6 Alternatives Used, and Tons of Vegetative Material Treated With Each Alternative:

N/A See item B.4

B.7 Particulate Reduction for Each Alternative Used (tons): *N/A See item B.4*

B.8 Total Particulate Reductions from Alternatives Used: *N/A See item B.4*

B.9 If this project is greater than 250 acres or smoke impacts occur, the Operator will provide a completed Post Burn Evaluation Form (see page 11) to the Air District within 30 days of project completion.

Although this project is only 56.6 acres however, if there are still smoke impacts as a result of the burn, the Army will provide a completed Post- Burn Evaluation Form within 45 days of project completion

B.10 For burns greater than 250 acres, Sections A.9 and A.10 describe the site monitoring requirements.

Post-Burn Evaluation
For Burns Greater Than 250 Acres
or Burns For Which Smoke Impacts Occurred*

This form will be used only if there smoke impacts occur.

Section A. General Information:

Date of Burn: _____Burn Location: Monterey, CA - former Fort Ord MRS-16
Number of Acres Burned: _____ Estimated Actual PM Emissions: _____ (tons)
Burner Name: U.S. Army – Base Realignment And Closure
Burner Address: Bldg 4463 Gigling Road, Seaside, CA 93955
Burner Phone Number: (831) 242-7901
Burner Email: _____

1. Did the burn remain within the conditions specified in the Smoke Management Plan? _____
2. Were there substantial complaints or adverse smoke impacts? _____ If so, complete Section B below.
3. Lessons learned (Optional) (Provide attachment if desired):

_____
_____
_____

Section B. For Burns That Had Smoke Impacts, Complete The Following:

1. Describe adverse smoke impacts below (add attachment if needed):

_____
_____
_____
_____
_____

2. Were there substantial complaints from the public? _____ If so, how many and from whom:

_____
_____
_____
_____

3. What Air Districts were Notified (who, when, and at what phone number(s))?

_____
_____
_____
_____
_____

4. Lessons learned (add attachment if needed):

_____
_____
_____
_____

5. Attach all smoke observation and weather data collected before, during, and after the burn. See collection methods checked in sections A.9 and A.10 of the burn plan for relevant data.

* As required by Title 17 and air district policies.

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Table 1

PM-10 EMISSIONS CALCULATIONS FOR PILES

1. Choose the pile size most representative of the piles on your burn site.
2. Multiply the number of piles in your project with the corresponding "Tons of PM10/Pile" value to get the total PM10 tonnage.

PM10 EMISSIONS FOR SPECIFIED PILE SIZES		
PILE SIZE (in feet)	**Pile Tonnage**	**TONS OF PM10/PILE**
4′ diameter x 3′ height	0.056	0.0005
5′ diameter x 4′ height	0.12	0.001
6′ diameter x 5′ height	0.21	0.002
8′ diameter x 6′ height	0.45	0.004
10′ diameter x 6′ height	0.71	0.007
12′ diameter x 8′ height	1.3	0.01
15′ diameter x 8′ height	2.1	0.02
20′ diameter x 10′ height	4.7	0.04
25′ diameter x 10′ height	7.4	0.07
50′ diameter x 10′ height	29	0.3
Pile Tonnage calculated using paraboloid volume formula[a] multiplied by 30 lbs/cu.ft, multiplied by 0.2 packing ratio[b]		
U.S. Forest Service's Conformity Handbook, Table 6 -- PM10 Emissions Factor of 19.0 pounds/ton of fuel burned - average pile and burn slash		
Revised 2/13/2001		

a. Formula used for Paraboloid Volume (cu.ft.) = 3.1416 x [height x (diameter)^2]/8 (see Reference b. below).
b. USDA (2/1996). Forest Service General Technical Report. Report Number: PNW-GTR-364.

Table 2

PM 10 EMISSION CALCULATION FOR BURNING OF MULTIPLE FUEL TYPES[1,2]

Section 80160 (b) of Subchapter 2 Smoke Management Guidelines for Agricultural and Prescribe Burning, Title 17, California Administrative Code states, "requires the submittal of smoke management plans for all burn projects greater than 10 acres in size or estimated to produce more than 1 ton of particulate matter". To determine what the particulate matter (PM 10) amount is of your burn project please use the equation below and review the following examples.

Information needed for PM 10 Calculations:

a. VT = Vegetation type
b. ACRES VT = Estimated number of acres for VT
c. FL est. = Estimated fuel loading in VT TONS per ACRE
d. EV = PM10 emission/ton of fuel

Calculating PM10 Emissions from Prescribed Burning of multiple vegetation types:

PM10 ton(s) emissions per VT = (number of acres VT) (FL tons per acre) (Emission Value (EV)) = _____ ton(s)/VT

PM10 ton(s) emissions per VT = (number of acres VT) (FL tons per acre) (Emission Value (EV)) = _____ ton(s)/VT

Sum Total is the Estimated PM 10 for the project = _____ ton(s)/project

VEGETATION TYPE(S)	ACRES (VT)	x	FL est.	x	EV[1]		PM10 EMISSIONS (ton(s))
Basing Sage/Low Sage	(_____)	x	(_____)	x	(0.010)	=	_____
Ceanothus	(_____)	x	(_____)	x	(0.010)	=	_____
Chamise	(_____)	x	(_____)	x	(0.009)	=	_____
Giant Sequoia	(_____)	x	(_____)	x	(0.007)	=	_____
Grass/Forb	(_____)	x	(_____)	x	(0.007)	=	_____
Hackberry Oak	(_____)	x	(_____)	x	(0.005)	=	_____
Hardwood (Stocked)	(_____)	x	(_____)	x	(0.003)	=	_____
Hardwood (Non-stocked)	(_____)	x	(_____)	x	(0.003)	=	_____
Jeffrey Pine/Knobcone	(_____)	x	(_____)	x	(0.007)	=	_____
Live Oak (Canyon)	(_____)	x	(_____)	x	(0.007)	=	_____
Live Oak (Interior)	(_____)	x	(_____)	x	(0.007)	=	_____
Lodgepole Pine	(_____)	x	(_____)	x	(0.007)	=	_____
Manzanita (Productive Brush)	(2.6)	x	(12.5)	x	(0.009)	=	0.29
Mixed Chaparral/Montane	(54)	x	(12.5)	x	(0.008)	=	5.4
Mixed Conifer	(_____)	x	(_____)	x	(0.006)	=	_____
Oak (Black)	(_____)	x	(_____)	x	(0.005)	=	_____
Oak (Blue)	(_____)	x	(_____)	x	(0.003)	=	_____
Oak (White)	(_____)	x	(_____)	x	(0.003)	=	_____
Pinyon Pine	(_____)	x	(_____)	x	(0.007)	=	_____
Ponderosa Pine, Gray Pine	(_____)	x	(_____)	x	(0.007)	=	_____
Red Fir	(_____)	x	(_____)	x	(0.007)	=	_____
Wet Meadow	(_____)	x	(_____)	x	(0.004)	=	_____
Willow	(_____)	x	(_____)	x	(0.007)	=	_____

Sum Total of the Estimated PM10 for the project in tons/project = 5.69

1. See Table 3 on next page for values used to calculate EVs.
2. For vegetation types not listed, contact Air District for assistance with determining appropriate emission factors.

Table 3

EMISSION VALUES (EVs) FOR BURNING OF MULTIPLE VEGETATION TYPES*

Calculation of PM10 emission values = (% combustion) x (PM10 emission lbs/ton) x (1 ton/2000 lbs)*

VEGETATION	% Combustion			PM EMISSION (lbs/ton fuel)		Conversion Factor		PM Emissions Value**
Basing Sage/Low Sage	=	(1.0)	x	(20.17 lbs/ton)	x	(1 ton/2000 lbs)	=	0.010
Ceanothus	=	(1.0)	x	(20.17 lbs/ton)	x	(1 ton/2000 lbs)	=	0.010
Chamise	=	(0.9)	x	(20.17 lbs/ton)	x	(1 ton/2000 lbs)	=	0.009
Giant Sequoia	=	(0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	=	0.007
Grass/Forb	=	(1.0)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	=	0.007
Hackberry Oak	=	(0.4)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	=	0.005
Hardwood (Stocked)	=	(0.4)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	=	0.003
Hardwood (Non-stocked)	=	(0.4)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	=	0.003
Jeffrey Pine/Knobcone	=	(0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	=	0.007
Live Oak (Canyon)	=	(0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	=	0.007
Live Oak (Interior)	=	(0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	=	0.007
Lodgepole Pine	=	(0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	=	0.007
Manzanita (Productive Brush)	=	(0.9)	x	(20.17 lbs/ton)	x	(1 ton/2000 lbs)	=	0.009
Mixed Chaparral/Montane	=	(0.8)	x	(20.17 lbs/ton)	x	(1 ton/2000 lbs)	=	0.008
Mixed Conifer	=	(0.6)	x	(20.5 lbs/ton)	x	(1 ton/2000 lbs)	=	0.006
Oak (Black)	=	(0.4)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	=	0.005
Oak (Blue)	=	(0.4)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	=	0.003
Oak (White)	=	(0.4)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	=	0.003
Pinyon Pine	=	(0.6)	x	(22 lbs/ton)	x	(1 ton/2000 lbs)	=	0.007
Ponderosa Pine, Gray Pine	=	(0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	=	0.007
Red Fir	=	(0.6)	x	(23.1 lbs/ton)	x	(1 ton/2000 lbs)	=	0.007
Wet Meadow	=	(0.6)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	=	0.004
Willow	=	(0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	=	0.007

()

*** Percent combustion and PM10 emission factors for various fuel types derived from Table 8, Section 6, "Air Quality Conformity Handbook" from the USDA-Forest Service Air Resources / Fire Management Pacific Southwest Region dated November 1995.**

**** PM10 tons emissions /ton fuel**

***** These are the vegetation's estimated emissions values(EV) from the vegetation type as determined above to be use when the burn operator provides the vegetation's fuel loading estimate per acre.**

****** For additional information on emissions factors, see EPA document AP-42: "Compilation of Air Pollutant Emission Factors. Volume 1: Stationary Point and Area Sources," Fifth Edition, AP-42, January 1995, U.S. EPA. Table 2.5-5.**

10 FIRING/IGNITION PROCEDURES

All firing will be done to minimize flame lengths and rates of spread. Burn prescriptions and fire behavior can be altered by proper ignition to minimize the potential for an escape. The firing pattern can be adjusted by the Incident Commander to fit the environmental factors. (See Figure 7 for Ignition Patterns)

Generally, the ignition pattern will start on the downwind side of a burn unit depending on the wind direction to create a black line back into the wind or by narrow strips. Once a sufficient black line has been established the burning crews can adjust the firing pattern to meet the consumption criteria for the brush as identified in the prescribed fire objectives.

The burn site takes advantage of existing roads and breaks in dense vegetation on all side except the western side (Unit B). A temporary 150' fuel break will be established on Unit B to allow access for the firefighters.

All sides are bordered maritime chaparral and coast live oak woodlands. A helitorch will be used to ignite MRS-16. The Burn Boss will have the prerogative of using the Terra-Torch for any additional ignition use as needed.

Ignition fuel will be mixed at the helipad. A backup unit will also be available on site in case of malfunction. The helispot will be used and will have on hand tools for converting the helicopter from ignition to suppression. A back up helicopter will be available for ignition, holding, suppression and water hauling if needed.

10.1 HELITORCH MODULE

10.1.1 Requirements, Restrictions, and Approvals

A. The helicopter and Pilot must be approved for helitorch use and FAA approved for external load operations.

B. Pilots and ground personnel accomplishing the mixing, loading, and application of the gelled fuel will have received proper training to perform helitorch operations.

C. **All** personnel involved in the project will be thoroughly briefed in helicopter safety and the helitorch operation on the morning of the burn prior to flights of any kind.

D. All elements of the helitorch module will be certified as qualified by the helicopter operator for helitorch operations. The helitorch must be built or modified to current standards identified for aerial ignition devices,

E. All helitorch/helicopter operations will be conducted in accordance with this plan and a Job Hazard Analysis for the prescribed burn.

F. A discrete radio frequency is required for any helitorch operation.

G. The helitorch fuel mixing operation will be done in accordance with this safety plan regarding handling, mixing, transportation, and storage of the fuel.

10.1.2 Operational Sequence

A. Training

1. Assemble helitorch module personnel and equipment
2. Conduct training and review session on the helitorch, assuring that all necessary equipment and supplies are available and in proper working order for the day of the burn and that all personnel are thoroughly familiar with operational procedures and equipment maintenance.

B. Day prior to Burn (or early morning on the day of the burn)

1. Deliver necessary equipment and supplies to project helibase.
2. Set up helibase, i.e., lading area, parking area, mixing area, crash rescue, etc.

C. Day of Burn

1. Burn boss to hold briefing on project explaining it in detail, i.e., specific duties of each person, communications plan, JHA, flight paths and patterns, emergency procedures. All flight hazards will be reviewed and discussed.
2. Helitorch manager conduct operational and safety procedures meeting with all personnel concerning helicopter and torch operations and safety.
3. Make and orientation flight with the pilot and helitorch manager/lighting boss. The flight will include:
    a. Reconnaissance of burn site
    b. Flight patterns
    c. Ignition patterns
    d. Local hazards
    e. Water sources for dipping operations
    f. Personnel and equipment locations during the burn.
    g. Location of project helispots and landing areas
    h. Review size, shape, number and location of burn areas.
4. Mixing of helitorch fuel and hookup of helitorch will be done and helitorch operation will be checked on the ground.
5. Burn Boss will radio to helibase when ready for ignition to begin. All radio communication will be rechecked.
6. Helitorch operation will begin under close direction of the Burn Boss.

7. When ignition is completed, helicopter will return to helibase and shut down at the discretion of the Burn Boss.
8. Post operational safety briefing will be conducted by the Prescribed Fire Burn Boss and the Helitorch Manager.

10.1.3 HELIBASE OPERATIOAL PROCEDURES

1. Fuel truck and mix area will be outside of the safety circle - truck and tanks, etc. 50 fee or more from helicopter landing area.
2. Position foam equipped engines away from fuel truck, mixing area, and clear of helicopter approach/departure path. Engines must be equipped with foam approved for extinguishing petroleum fires.
3. Helicopter will not take off or land unless landing area is clear of all personnel.
4. Helicopter takeoffs and landings will be directed by the pilot.
5. Unloading /loading crew will clear landing area perimeter immediately after completion of loading and will not enter landing area except when signaled to do so by the Pilot.
    a. The helitorch shall be positioned in front of the helicopter, for hookup and liftoff.
    b. If cables tangle or other problems occur requiring adjustment of the helitorch or its suspension system the helicopter Pilot shall be instructed to land or jettison the helitorch. The helitorch shall not be flown over persons on the ground at any time.
    c. All mix barrels being used will be grounded at all times except when being transported.
    d. Spare barrels will be stored away from the mixing area and outside the safety area.
    e. The foam engine assigned will be staffed and prepared to take suppression action during helicopter operations and mixing and loading of fuel.
6. No one is allowed in the mixing or landing area except those authorized by the Helitorch manager.
7. The helicopter is under the control of the Helitorch manager. However the Pilot has the final say and shall not be pressured in any way to do something that he/she is not comfortable with.

10.1.3.1 Mixing Safety Gasoline-gel

1. Helitorch Manager will appoint a Mixmaster who is in direct control of mixing operations.
2. The Mixmaster sees that:
    a. Tanks are grounded at all times except when being transported.

b. Gasoline-gel quantities are exact.

c. Gasoline nozzle is completely shut off before removal from tank being filled.

3. Mix Crew - only the number of people necessary to conduct mixing and transporting functions will be in the mixing and helitorch area.

4. General

a. All members of the mixing-transporting job will wear safety clothing consisting of hardhat with chin strap, cotton coveralls, hearing protectors, safety goggles, dust mask, gloves, field boots at all times while engaged in the mixing-transporting operation. The mixing crew, due to the possibility of static electricity discharge, will wear no nylon or synthetic fabric.

b. The foam engine assigned to the helibase will be placed in a location that provides quick access to both the mixing area and the helicopter -helitorch area. Pre-laid hose may be used where appropriate.

c. The Helitorch manager will establish escape routes and all helibase personnel will know where to go and what to do in the event of an emergency.

d. In the event that an emergency occurs procedures outlined in the Crash Rescue Plan will be followed.

10.1.3.2 Helibase Safety

1. Helibase Manager is directly responsible for helipad safety. This includes:

a. All personnel clear of the landing area during all takeoffs and landings.

b. Mix crew is in the helitorch area only as long as required for loading and unloading torch.

c. Mixing operation is conducted safely.

d. Assures proper communications are established according to the communications plan

e. Foam engine is properly positioned to provide emergency service to both mixing and helicopter functions.

f. All helibase personnel are properly equipped with prescribed safety equipment.

1) Hard Hats with chin straps

2) Hearing Protection

3) Safety Goggles

4) Dust Masks

5) Cotton Coveralls for the mixers

6) Boots

7) Gloves

10.2 CRASH RESCUE PLAN

In the event of an accident during the project the Helitorch Manager or Burn Boss will supervise and coordinate the crash rescue activities. Specific crash rescue duties will be assigned to helibase personnel each morning before flights of any kind. Crash rescue and first aid equipment will be located on or near the engine assigned to the helibase and the equipment location made known to all helibase personnel.

The local fire Department will be notified immediately and assistance requested. All requests for assistance will be coordinated through the California Department of Forestry and Fire Protection personnel through the Burn Boss.

10.3 COMMUNICATION PLAN

There will be a separate discrete frequency used for communication between the Pilot, Burn Boss, Helibase Manager, and Helitorch Manager during helitorch operations.

Flight following will be done on-site during helitorch operations.

All communications will be checked prior to start of operation and rechecked just prior to start of the operation.

HELITORCH OPERATIONS CHECKLIST

This Helitorch Operations Checklist shall be completed prior to each day's operation.

A. Organization

1. Helitack organization chart has been prepared and posted showing responsibilities for functions named. ☐
2. All positions are filled by qualified personnel ☐

B. Helibase Operations

1. Helibase Manager
   a. Has established separate radio frequencies as designated on Comm Plan ☐
   b. Communications tested and operational ☐
   c. Briefings to include all required helitack personnel, key firing personnel, and helitorch pilot. ☐
      1) Overhead responsibilities and authorities ☐
      2) Flight routes ☐
      3) Area Flight Hazards ☐
      4) Radio Frequencies ☐
      5) Personnel assignments ☐
      6) Emergency procedures ☐

NOTE: All personnel will be briefed on the adherence of alumagel and the hazards from coming into contact with it and gasoline.

C. Mixing Area

1. Separate from Helibase activities ☐
2. Traffic control ☐
3. Helitorch fuel supply available and properly located and grounded ☐
4. Fire Suppression equipment available ☐
5. Personnel assignments ☐
6. Emergency procedures reviewed ☐

D. Landing Area

1. Located where safe approach and departure paths exist, and separate from other helibase activities take place ☐
2. Free from flight hazards ☐
3. Traffic control of ground vehicles, personnel, and aircraft ☐
4. Dust abatement ☐
5. Helicopter fuel truck security - parking area and driving route designated, located away from flight routes, landing areas and personnel. Static grounding measures required ☐
6. Helitorch loading procedures briefed ☐
7. Fire suppression equipment available ☐
8. Fire suppression person available ☐

F. Orientation flight completed ☐
G. Go/no-go check list completed ☐

CERTIFICATION - All items of the Helitorch operations Check list have been accomplished

FINAL

_____ _____
Helitorch Manager Date

_____ _____
Burn Boss Date

This Plan was developed with the framework from the Federal Interagency Aerial Ignition Guide, May 1995

11 PROVISIONS FOR TEST FIRE & RECORDING RESULTS

A small 0.25-acre test burn will be established inside the MRS-16 burn unit. The test burn will be monitored and evaluated to validate a wind profile, the prescription, and smoke dispersion. Visual evaluation will focus on smoke dispersal meeting the transport elevation and transport wind direction criteria for the burn as identified in the Smoke Management Plan and by the project meteorologist.

12 HOLDING PROCEDURES

All holding resources will be positioned to be able to suppress any escapes or spot fires. They will be located outside the exclusion zone. Prior to entry into or near the exclusion zone the holding boss will need to get permission for suppression action.

Secondary and Tertiary lines of defense are established using existing road ways and will be used in the event of an escape. The incident commander will determine the type of attack on any escape

12.1 EQUIPMENT NEEDS:

2 – Type 2 Helicopter for suppression

1 – Type 3 Helicopter for ignition and suppression

1 - Type 2 Water tender (1500 - 2,000 gallon) – staffed by one or two personnel

4 - Type 3 Engines – staffed by 3 personnel

1 - Type 3 or 4 Engine – staffed by 3 personnel

2 - Patrol units – 1-2 person crew

12.2 PERSONNEL PLACEMENT:

The Holding Boss and Incident Commander will stage personnel and equipment at selected locations. Personnel will be instructed to hold, set the hose lays, and spot fire control

Two staging areas have been selected, primary staging area will be in Parker Flats and a secondary on at the POM Fire Department. Staging areas are selected for briefings, equipment storage, organizing crews, and debriefing. Both staging areas are within minutes of MRS-16 for quick response.

A third staging area will be established in Parker Flats near the MRS-16 site for mutual aid resources if needed.

The roads into the burn are very narrow and need to be kept clear of vehicles. All one-way roads will be designated and marked with signs to eliminate any chance of congestion. Public roads in the area will be clearly signed to minimize unnecessary travel. Areas are identified on the accompanying map.

Conditions will be monitored for early warning in case of fire escape or excessive smoke impacts.

12.3 WATER (SOURCES, PUMP LOCATIONS, HOSELAYS, ETC):

The primary water source is located at the tank at suicide corner (Eucalyptus and Parker Flats Cut Off). Additional water can be secured from hydrants near POM military housing, shown on the area map (Figures: Map 2), approximately 1 mile west of MRS-16 or a hydrant at 8th Ave Cutoff and Gigling Road. Additional pumpkin tanks and fold-a-tanks will be set up around the areas surrounding the burn parcel. These locations will be determined in the Technical Planning meeting.

12.4 LINE CONSTRUCTION:

All line construction will be completed prior to the day of the burn as previously identified in the burn preparation documentation.

13 FIREFIGHTER, PUBLIC SAFETY & SPECIAL CONDITIONS

13.1 COMMUNICATIONS AND RADIO NEEDS

(4) Radio communications will be identified by the agency performing the prescribed burn. An ICS form will be used to identify frequencies and assignments. Sample forms are show below:

Table A:

CHANNEL	RECEIVE	RXL PL	TRANSMIT	TX PL	Controlled

IMPORTANT PHONE NUMBERS

Fire Staff	Radio #	Office Number	Cell Phone	Pagers/Alt Cell	Home Numbers

EMERGENCY CONTACTS:

AGENCY	LOCATION	NUMBER

13.2 PUBLIC SAFETY:

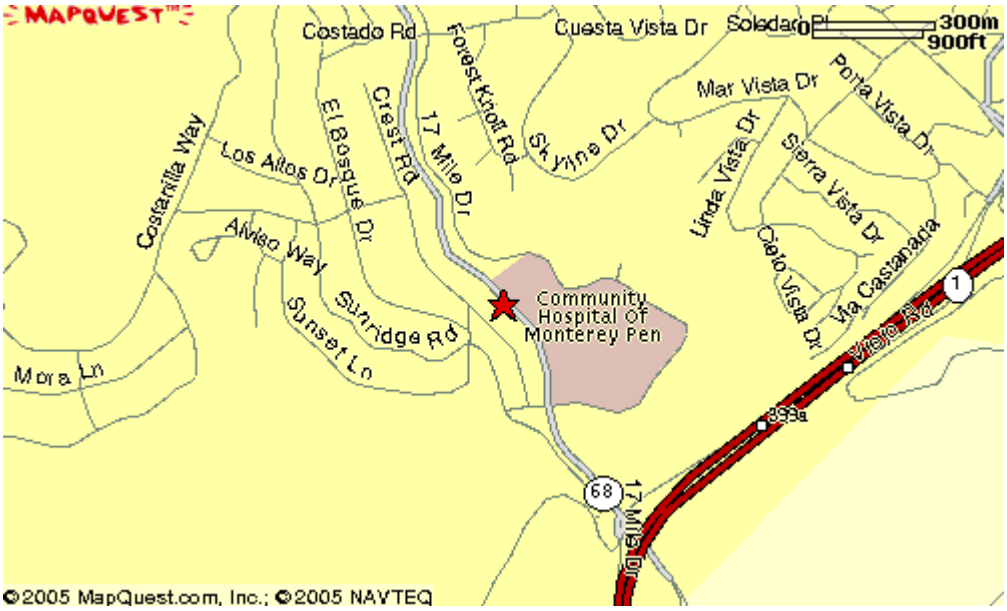
The area will be closed to the public. The Site Security Plan identifies the locations of check points and road closures. Signing is very important along any road that is close to the burn area. Signs stating Prescribed Burn in Progress will be installed at locations as identified in Figure 6A. POMFD will set up and manage the burn event warning signs. Fire and emergency vehicles are clearly marked. Safety is the primary concern, speed and congestion will be closely monitored especially for reduced visibility due of smoke.

13.3 MEDICAL FACILITY

The Incident Commander will handle all medical emergencies according to standard emergency procedures. Medivac orders will be placed through Monterey County Communications 911. On site EMT's will be identified and onsite medical assistance pre-planned

Minor injuries will be handled through the Incident Commander and the injured can be sent to the emergency room at CHOMP.

Community Hospital of the Monterey Peninsula
23625 Holman Highway (Hwy 68)
Monterey, CA 93942



13.4 SAFETY AND HEALTH JOB HAZARD ANALYSIS

(See Attachment D)

14 PUBLIC INFORMATION PRE-BURN INFORMATION / COORDINATION

A press release will be provided to all local media when the Army anticipates conducting the prescribed burn. For the parties that have made the request, a notification will be given by phone or email when the fire is ignited.

All burn information coordination will be conducted by the BRAC Office. Contact: Melissa Broadston Fort Ord Community Relations: 831-393-1284

15 ESCAPED FIRE PROCEDURES AND CONTINGENCY PLAN

The detailed Escape Contingency Plan document is located in Attachment B of the Burn Plan.

Definition of Escaped Fire:

If a prescribed burn is not meeting the identified management objectives or otherwise meets the criteria below, the prescribed burn becomes a wildland fire. Once a prescribed burn becomes a wildland fire it cannot be returned to prescribe burn status.

A prescribed burn becomes a wildland fire when the Incident Commander determines that an escape has, or is likely to occur, or environmental conditions and/or fire behavior exceeds the parameters in the prescribed burn plan and as such, the fire is no longer meeting the identified management objectives. Fire outside of the planned perimeter that cannot be contained with the holding forces identified in the prescribed burn plan is an escape and will be declared a wildland fire. This is not a "slop-over" that crosses the fire line but which can be contained by resources on site (no suppression charges will be used).

15.1 ESCAPED FIRE ACTION:

When an escape is declared, managers still have the full range of suppression options available under the concept of the "Appropriate Management Response."

If an escape is declared a wildfire a "Fire Name" will be assigned. The following actions will be taken on all prescribed fires that escape and are declared wildland fires.

1. Take prompt and reasonable action to control and suppress the fire.
2. Notify the appropriate representatives responsible for the area
3. Notify other Agency Administrator(s), and/or other landowners that may be affected, by the escaped fire. Coordinate suppression actions with the other affected parties
4. Document the time and environmental conditions that existed when the escape occurred
5. Document the incident, including all actions prior to and after the escape. Set up a file that includes all pertinent information including, but not limited to:
    - The prescribed burn plan:
    - A chronology of events including the fire report and unit logs or individual statements and the fire investigation report

- Weather forecasts including any spot forecasts, Remote Automated Weather Station (RAWS) data and National Fire Danger Rating System (NFDRS) data for the day of the escape for the nearest weather stations
- Photos
- Any appraisal of damages.

15.2 ESCAPEMENT CONTINGENCY PLAN

This is only a summary the Escape Fire Contingency Plan is a document attached to the Burn Plan

1. Should an escape occur, the Prescribed Fire Incident Commander (IC) (or other designated person) will organize all on site resources for an aggressive response.
2. The IC will notify Monterey County Communications Center of the situation and order the needed resources.
3. The IC and command staff will develop a Wild Fire Situation Analysis. This document will determine what the suppression effort will be, which resources can be deployed and which resources cannot be used for suppression inside the habitat and watershed boundaries.
4. Upon an escape, all key personnel will initiate a unit log to document all actions taken. After the incident is contained, the Incident Commander will submit a report documenting weather, resources on site, ignition sequence, suppression actions, and other pertinent data.
5. The strategy for an escaped fire will include flanking the fire until forward rate of spread is stopped and/or burning out from roads and/or natural barriers is complete.
6. The helicopter will be used for holding and helping to control any escape by transporting water and personnel to the safe and strategic locations.

15.3 CONTAINMENT OPPORTUNITIES:

Analysis of on site resources:

Line Building Rate: Chains per hour over an extended period. A higher rate can be expected during the first hour.

NWCG[1] Type IV Engine: 200 Gallon	NWCG Type III Engine: 500 gallons +
Ch/hr. 40	Ch/hr. 40

Onsite Resources: 4 Type III engines, 1 Type IV engine, one Type 2 helicopter, one type 3 helicopter and a dozer for back up.

Total onsite line building capabilities: 180 Ch/hr.

(5) The line-building rate of onsite equipment will exceed the expected fire spread rate or increase in perimeter during an initial escape. If the escape occurs at eye level wind speeds over 12 MPH, additional resources will be required to hold the line and mop up. In some cases, fire intensity or flame length could limit the effectiveness of engines in suppressing an escape.

(6) Topography and unexploded ordnance are significant factors limiting direct attack on any spot fires. Helicopters will play a significant role in knocking down any spot fires in restricted areas. If necessary the secondary fuel breaks will be used to indirectly attach the escape fire. The escape burn area target is based on the ability of the on-site firefighters to contain the fire within the prescribed plan. Containment will be evaluated before an escape or target acreage is declared. At the time of an escape, efforts to burn the unit will cease and all resources will be committed to containment efforts.

15.4 CLOSEST FORCES:

Local strike teams assigned to the Monterey County area will be activated. The strategy for an escaped fire will include flanking the fire until the forward rate of spread is stopped.

15.5 POST BURN CONTINGENCY PLAN

This document describes the weather conditions, which would trigger the activation of post burn contingency actions with the objective of minimizing the potential for escape. It is the responsibility of the assigned prescribed Incident Commander to monitor weather forecasts and on-site conditions and to order the appropriate contingency action as outlined in this plan.

Activation levels are based upon the potential for prescribed burns to spot across control lines. This is a factor of the receptiveness of the receiving fuel bed to new ignitions from embers (Probability of Ignition), and the horizontal force driving embers across fire lines and into receptive fuel beds (Wind speed). These two factors, both of which are easily measurable on site or can be predicted from weather forecasts, will be matrixed to identify activation levels.

Three levels of Probability of Ignition, (PI), will be used and are categorized as follows:

PI of 10 to 40:	Low potential for new ignitions
50 to 60:	Moderate potential for new ignitions
70+:	High potential for new ignitions

Weather records from a local weather stations will be used. The three wind speed levels will be used based on the frequency of their occurrence and their effect on spotting. Wind speeds are 10-minute average readings at the 20' level.

0 to 12 mph:	85% occurrence:	Minimal effect on holding.
13 to 24 mph:	12% occurrence:	Significant effect on holding.
25+ mph:	03% occurrence:	Adverse effect on holding.

The chart below shows the level of action required for actual and predicted weather conditions.

Activation Levels		**Actions Required**		
Probability of Ignition	**20' Windspeed**	**Mop-up Distance**	**Patrol Frequency**	**Available Resources**
10 to 40	0 to 12	Incident Commander	Incident Commander	Incident Commander
	13 to 24	Incident Commander	Incident Commander	Incident Commander
	25+	50 feet	1 Patrol/day	5 Firefighters
50 to 60	0 to 12	Incident Commander	Incident Commander	Incident Commander
	13 to 24	50 feet	1 Patrol/day	5 Firefighters
	25+	100 feet	2 Patrol/day	10 Firefighters
70 +	0 to 12	50 feet	2 Patrol/day	10 Firefighters
	13 to 24	100 feet	3 Patrol/day	10 Firefighters
	25+	150 feet	Continuous	20 Firefighters

16 POST BURN SUMMARY AND DOCUMENTATION

SMOKE CONDITIONS: Direction of Smoke Movement: _____

Convection column or smoke plume: Well Formed ( ) Weak ( )

Height above fire: 5000'+ ( ) 500 - 5000' ( ) < 500' ( )

Describe smoke conditions day after ignition:

_____

_____

_____

_____

_____

_____

_____

FIRE EFFECTS AND RESULTS (Narrative):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

17 BURN DAY GO-NO-GO CHECKLIST

(To be filled out daily by burn boss and filed in project folder.)

A "NO" response to any item means stop!!!

17.1 BURNING OPERATIONS:

1. Are **ALL** fire prescription criteria met **Y/N?**
2. Is the fire weather forecast favorable **Y/N?**
3. Are **ALL** personnel required in the prescribed fire burn plan on site **Y/N?**
4. Have **ALL** personnel been briefed on safety hazards, escape routes and safety zones **Y/N?**
5. Is **ALL** of the required equipment in place and in working order **Y/N?**
6. Have **ALL** personnel been briefed on the prescribed fire burn plan requirements **Y/N?**
7. Are sufficient backup resources available for containment of escapes **Y/N?**
8. Can the burn be executed according to plan and will it meet management objectives **Y/N?**

17.2 HELICOPTER OPERATIONS:

9. Have **ALL** aviation safety requirements been met and the helicopter operation check list completed. **Y/N?**
10. Have aerial hazards been noted **Y/N?**
11. Have pilots been appraised of unavoidable flight hazards **Y/N?**
12. Have pilots been reminded of hazards **Y/N?**
13. Have over flights been avoided and personnel placed away from flight paths **Y/N?**

17.3 SMOKE MANAGEMENT:

14. Are **ALL** smoke management prescription specifications met **Y/N?**

IF ALL QUESTIONS ABOVE HAVE BEEN ANSWERED "YES" YOU MAY PROCEED WITH IGNITION.

CERTIFIED BY:_____DATE:_____
Incident Commander POM Fire Chief

Daily Positions: **RX Burn Boss** _____

Ignition Specialist _____

Holding Specialist _____

Other _____

18 TECHNICAL REVIEW

Checklist for Review of Prescribed Fire Burn Plans

Project Name: MRS-16

____ Plan is in compliance with the IA ROD, Habitat Management Plan and Biological Opinion for this project.

____ Objectives, Desired Results & Tolerable Deviations clearly outlined.

____ Prescription adequate to meet objectives and have a safe burn.

____ Plan includes a prediction of expected fire behavior.

____ Plan provides for requesting a spot weather forecast on moderate and high complexity burns.

____ Plan requires a test burn.

____ Problem areas or sensitive areas identified clearly.

____ Plan includes organization needed and instructions for overhead.

____ Maps adequate.

____ Escape Contingency Plan adequate.

____ Safety Plan adequate.

____ Smoke sensitive areas identified & Smoke Management Plan adequate.

____ Required documentation submitted to MBUAPCD for burn permit.

____ RECOMMENDED FOR APPROVAL.

INSTRUCTIONS: Technical Reviewer shall complete this checklist and attach it to the prescribed burn plan. Initial each box to indicate item found satisfactory. Enter N/A (not applicable) for those items reviewed and found not applicable.

Technical Review Completed by: _____Date_____

Prescribed Fire Qualification_____

19 COMPLEXITY RATING

NWCG
PRESCRIBED FIRE COMPLEXITY RATING WORK SHEET

Project Name MRS - 16

Complexity elements:

1. POTENTIAL FOR ESCAPE	
RISK	**RATING AND RATIONALE**
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: Potential for multiple spot fires that can propagate at moderate rates of spread but can be held by skilled and prompt holding actions. The fire has some limited potential to cross burn unit perimeters or allowable area boundaries and exceed the capability of holding forces to suppress it. The probability of ignition in fuels outside of the unit is between 60% and 80%.

POTENTIAL CONSEQUENCES	**RATING AND RATIONALE**
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: An escape could result in moderate damage to vegetation, habitat, or improvements. No residences are expected to be involved, but other structures might be involved. The fire could burn onto other agency lands (BLM). There would be moderate impact to the public or users. Social or political concerns from an escape could be expected. Primary concern would be smoke impacts from an escape.

TECHNICAL DIFFICULTY	**RATING AND RATIONALE**
Preliminary Rating: ***Low*** **Moderate** ***High***	**MODERATE**: Holding activities require supervision at the Strike Team/Task Force Leader level. Several types of resources are involved in the holding operation. Portions of the burn unit and allowable area are not easily accessible to the holding resources. Only POM personnel will be permitted into the impact area. Attach will be indirect along secondary control fuel breaks. Except for direct attack by suppression helicopters.

2. THE NUMBER AND DEPENDANCY OF ACTIVITIES

RISK	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Aerial ignition activities are complex and highly interactive. The failure of single key activities ie aerial ignition can prevent the implementation of many subsequent actions and lead to a failure to successfully complete the project. Few opportunities to remedy failures exist and require highly skillful actions to be taken.

POTENTIAL CONSEQUENCES	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Coordination failure(s) could result in a high risk of escape, failure to complete the project, failure to meet the project objectives, or serious safety issues for implementation personnel or the public. A significant delay in implementation would be expected.

TECHNICAL DIFFICULTY	RATING AND RATIONALE
Preliminary Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Requires a highly skilled team to successfully complete the project. Continuous coordination and communication is critical to the success of the project. Out side pressure could significantly impact the outcome of the burn. There is considerable involvement from base agencies that could impact completion of the burn

3. OFF SITE VALUES

RISK	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Several areas of high value are located adjacent or near the project area or the project is expected to take place during periods of high visitor use. Substantial risk to improvements, private or other agency lands. More than one critical protection area has been identified those area are the BLM office and the impact ranges that have not been cleared of ordnance.

POTENTIAL CONSEQUENCES	RATING AND RATIONALE
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: Some negative impacts are expected in the event of spot fires, slop-overs, and escapes. The vegetation potentially affected generally has moderate recovery rates or the expected fire behavior may cause limited damage or some other limited serious consequences to off-site values, improvements, and BLM lands. Visitor use will be restricted during project implementation for a short period of time.

TECHNICAL DIFFICULTY	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Protection of the off-site values requires special management, a high skill level and a high level of team coordination, particularly at the critical holding points. POM Fire Department has the skills and experience to protect these values.

4. ON SITE VALUES

RISK	RATING AND RATIONALE
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: There is ordnance present within the unit that may need to be addressed in planning, strategies and briefings, and during project implementation.

POTENTIAL CONSEQUENCES	RATING AND RATIONALE
Rating: **Low** ***Moderate*** ***High***	**LOW**: Implementation problems will not damage special features or adversely affect on-site resource values.

TECHNICAL DIFFICULTY	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: The potential of high explosive ordnance within the unit requires the development of special ignition AND holding plans. Special or additional equipment will be needed. Considerable pre-burn preparation work is required Black lining is important to the success of the burn.

5. FIRE BEHAVIOR

RISK	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Fuels vary moderately within the unit, both in loading and arrangement. Medium loadings with some high concentrations are present. More than one fuel model may be present on significant portions of the area. Variable terrain features may significantly affect fire behavior and present moderate ignition and control problems. Local winds and burning conditions will vary enough to cause notable shifts in fire behavior. Periodic torching can be expected either as isolated points or limited areas at one time. Spotting is expected to be short-range.

POTENTIAL CONSEQUENCES	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Fire behavior outside of the primary unit boundary would be about the same as that experienced within the unit. Due to the time of the year required for the burn July 1 thru December 31 the vegetation is at its driest and the weather becomes critical to the success of the burn.

TECHNICAL DIFFICULTY	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Fire behavior may create unique safety problems or the need for special escape routes or other safety measures. Limited containment opportunities exist again due to the presence of unexploded ordnance. Fire behavior and the presence of unexploded ordnance is such that indirect attack tactics will be necessary for any major slop-overs that can not be attacked directly with the engine resources.

6. MANAGEMENT ORGANIZATION

Risk	Rating and Rationale
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: May require staffing of a majority of the prescribed fire positions with qualified personnel. A single person may fill more than one position. Two levels of supervision are needed (i.e. Burn Boss, Ignition Specialist and/or Holding Specialist aerial ignition specialists, helibase manager and helicopter coordinator plus lighters and holders).

Potential Consequences	Rating and Rationale
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: Problems related to supervision or communication may cause failure to meet some objectives, an increased chance of escaped fire, or violation of safety standards.

Technical Difficulty	Rating and Rationale
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Numerous and varied resources, multiple ignition methods, and/or a large team of specialized positions are needed. The burn has difficult assess, complicated logistics, potentially conflicting objectives, unusual fuel complexes, and is proximate to smoke sensitive/ areas and wildland urban interface. The Burn Boss and/or two or more primary team members will need to be ordered from outside the local unit and may not be familiar with local factors. Certain skills and qualified personnel are not available on the local unit. Special skills or supervision required for more than one function. (RXB1 suggested)

7. PUBLIC AND POLITICAL INTEREST

Risk	Rating and Rationale
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: The prescribed fire is highly visible to the public. Public or political interest is high in either the project or the program causing high management interest in the day-to-day preparation necessary to carry out the project. Media are interested in the project and may desire to be present on-site during some phases of the project.

Potential Consequences	Rating and Rationale
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Unexpected or adverse events would attract significant public, political, or media attention and may cause a shut-down of the program. Calls for investigations into the unexpected or adverse events could be expected from the public or politicians.

Technical Difficulty	Rating and Rationale
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Requires a fire information officer. A political liaison may be assigned to the project. Requires considerable involvement from the Agency Administrator. Media is expected to be on site during implementation. Multiple direct notifications are needed prior to project implementation.

8. FIRE TREATMENT OBJECTIVES

Risk	Rating and Rationale
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: Objectives may include changes in two or more strata of vegetation for ecosystem restoration or maintenance. Objectives are judged to be moderately hard to achieve. Basic monitoring of fire behavior and weather is needed to determine if prescribed fire objectives are being met. Time of the year for burning is limited by habitat concerns to that time when containment is difficult.

Potential Consequences	Rating and Rationale
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Other opportunities to meet objectives are not available. Unexploded ordnance removal activities are dependant on the completion of the project. Failure to meet objectives would have an impact on follow up projects and timely closure of the former Fort Ord. There would be little or no impact to the natural resources.

Technical Difficulty	Rating and Rationale
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Measures to achieve the objectives are both moderately difficult/difficult to achieve and there are restrictions on the techniques. High intensity fire or a combination of fire intensities are needed to meet resource objectives. Success depends on precise timing and sequence of ignition. Extensive pre-burn monitoring is required to determine when the unit is in prescription.

9. CONSTRAINTS

Risk	Rating and Rationale
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Significant constraints exist on access to parts of the project area use of specific tactics, heavy equipment, or aircraft use. Potential smoke impacts and the season of the burn significantly affect the burn and increase the risks.

Potential Consequences	Rating and Rationale
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: The constraints result in a very narrow burn window and are likely to cause the project to be implemented under less than optimal conditions. Limitations on the available tactics will increase the risk of unexpected or adverse events.

Technical Difficulty	Rating and Rationale
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Constraints significantly increase the difficulty of completing the project. The length of time to complete the project and the size of organization will increase and project feasibility may be in doubt.

10. SAFETY

Risk	Rating and Rationale
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Complex safety issues exist. Special safety briefings are required. Several safety hazards remain that require special cautions. Potential adverse impacts to public health and safety require special mitigation. Several activities can be characterized as low frequency/high risk.

Potential Consequences	Rating and Rationale
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: Moderate potential exists for more serious accidents/injuries to firefighters or the public.

TECHNICAL DIFFICULTY	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Extra caution is needed during project mitigation to manage several safety concerns. The implementation team will include a qualified fire Safety Officer and an ordnance Safety Officer. A special safety briefing with special issues or emphasis areas is needed as part of the project briefing. Special mitigation are required to protect public health and safety.

11. IGNITION PRACTICES & METHODS

RISK	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Firing sequence and timing are critical to meet project objectives. Portions of the project area are not readily visible to the Ignition Specialist and Burn Boss.

POTENTIAL CONSEQUENCES	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Firing methods and procedures must be carefully planned and well coordinated to address safety concerns, meet project objectives, and reduce the risk of an unexpected or adverse event. Opportunities for remedial actions or corrections are limited in the event of problems.

TECHNICAL DIFFICULTY	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: The need for special firing equipment, or different techniques, or firing patterns has been identified. Firing procedures are complex and the ignition function may be broken into multiple teams with more than one Ignition Specialist used. Simultaneous ignitions could occur. Use of several different ignition devices (aerial and ground) is planned. The ignition patterns and techniques to manipulate fire behavior are used and require tight control of the lighters to achieve project objectives and manage safety concerns. (RXI1 suggested)

12. INTERAGENCY COORDINATION

RISK	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: The project involves other land management agencies or jurisdictions and project completion is dependent on coordinated implementation. Several interagency partners have interest or concerns with the project that may require additional attention. Restrictions related to National and regional preparedness levels may cause significant delays in project implementation or project cancellation in a given burn window.

POTENTIAL CONSEQUENCES	RATING AND RATIONALE
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: Interagency coordination issues may delay project implementation or require minor modifications to the prescribed fire plan.

TECHNICAL DIFFICULTY	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Project requires use of several special agreements. Implementation requires special attention to certain interagency details, such as communications and standards for operations. Interagency resources are limited in availability and several restrictions on their use in the MRI impact area are an important consideration.

13. PROJECT LOGISTICS

RISK	RATING AND RATIONALE
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: The project requires some logistical support in certain areas, such as communications, ground transportation, or personnel support. Most supplies are readily available. Some special transportation or storage needs may exist for burning equipment. One to two pieces of special equipment aerial ignition device and the terra torch requiring more intensive logistical support. Requiring a fuel truck and mixing area.

POTENTIAL CONSEQUENCES	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Problems or failures related to logistical support will substantially affect the completion of the project.

TECHNICAL DIFFICULTY	RATING AND RATIONALE
Rating: ***Low*** **Moderate** ***High***	**MODERATE**: Project implementation requires a small logistical support operation. Logistical support may be combined with other functions. Securing, transporting, or storing some supplies or equipment may require additional effort. Obtaining some personnel may require additional contacts and advanced scheduling.

14. SMOKE MANAGEMENT

RISK	RATING AND RATIONALE
Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Smoke concerns are high and require special and sometimes difficult mitigation. Smoke will be readily visible to the public and last several days to weeks. Smoke exposures or amounts are likely to cause some health and safety concerns that will require special mitigation. A small but highly vocal segment of the public are concerned about smoke.

POTENTIAL CONSEQUENCES	RATING AND RATIONALE
Preliminary Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Vistas, roads, and residences may experience longer-term decreases in visibility OR significant decreases in visibility over the short-term. Major smoke intrusions may occur into smoke sensitive areas, such as schools, hospitals, and or major airports, at levels that trigger regulatory concern.
TECHNICAL DIFFICULTY	**RATING AND RATIONALE**
Preliminary Rating: ***Low*** ***Moderate*** **High**	**HIGH**: Special considerations are needed in the prescribed fire plan. Special smoke management techniques will be used. Burn window/opportunities are limited by the required weather/dispersion conditions. Special coordination with air quality officials is required. Accelerated mop up may be planned to reduce smoke impacts. Some mitigation measures or additional smoke modeling are required to address potential concerns with smoke impacts. Specific smoke monitoring is required to determine smoke plume heights and directions.

PRESCRIBED FIRE SUMMARY
COMPLEXITY RATING SHEET

(Document why H,M,L ratings where selected under rationale.)

RISK	OVERALL RATING:	**HIGH**
POTENTIAL CONSEQUENCES	OVERALL RATING:	**HIGH**
TECHNICAL DIFFICULTY	OVERALL RATING:	**HIGH**
SUMMARY COMPLEXITY DETERMINATION:		**HIGH**

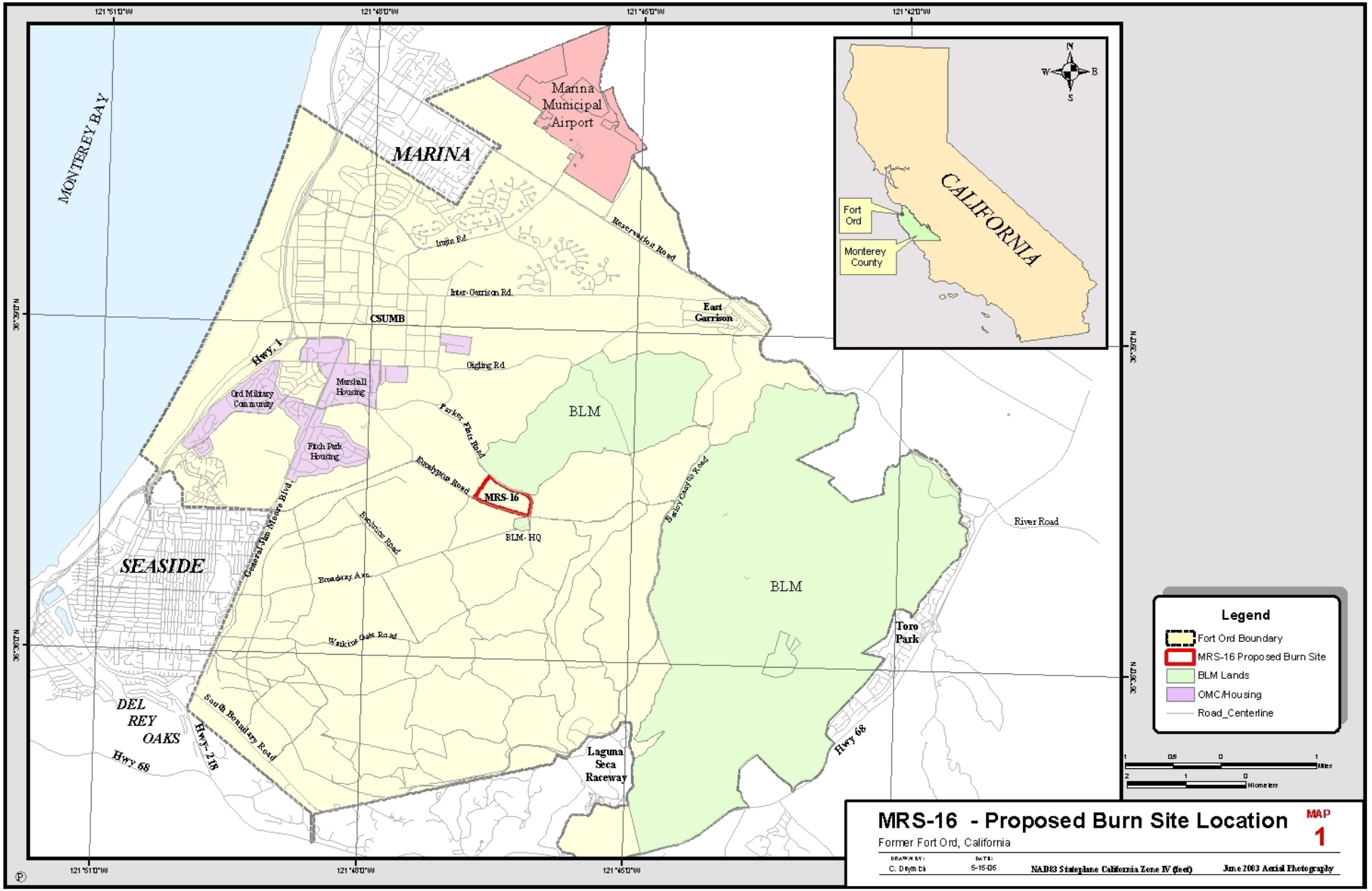
FINAL

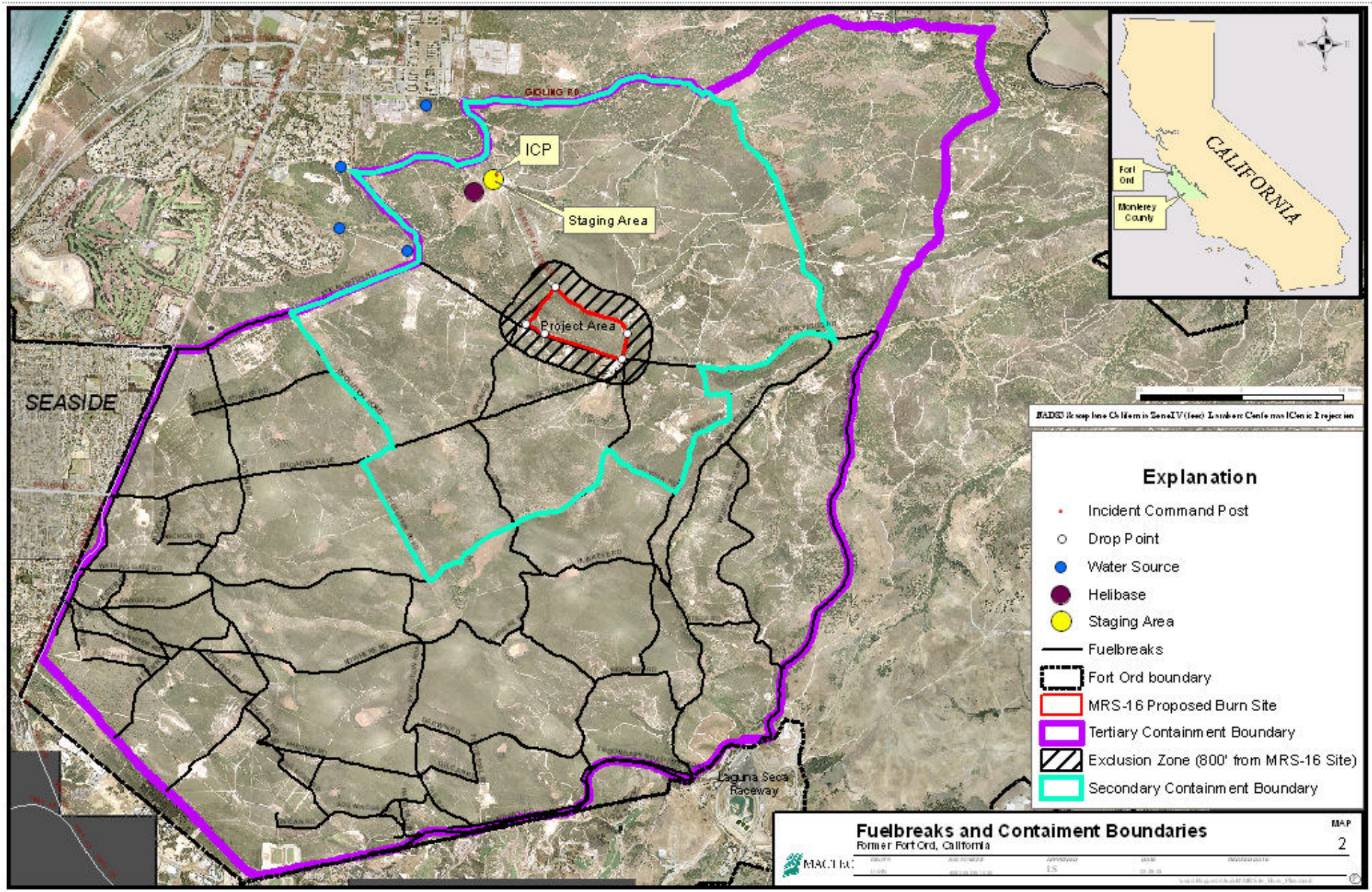
RATIONALE: The burn at MRS-16 is extremely complex from a political stand point and implementation stand point which elevates the complexity to a High. A great deal of Planning and coordination will be part of the burn process.

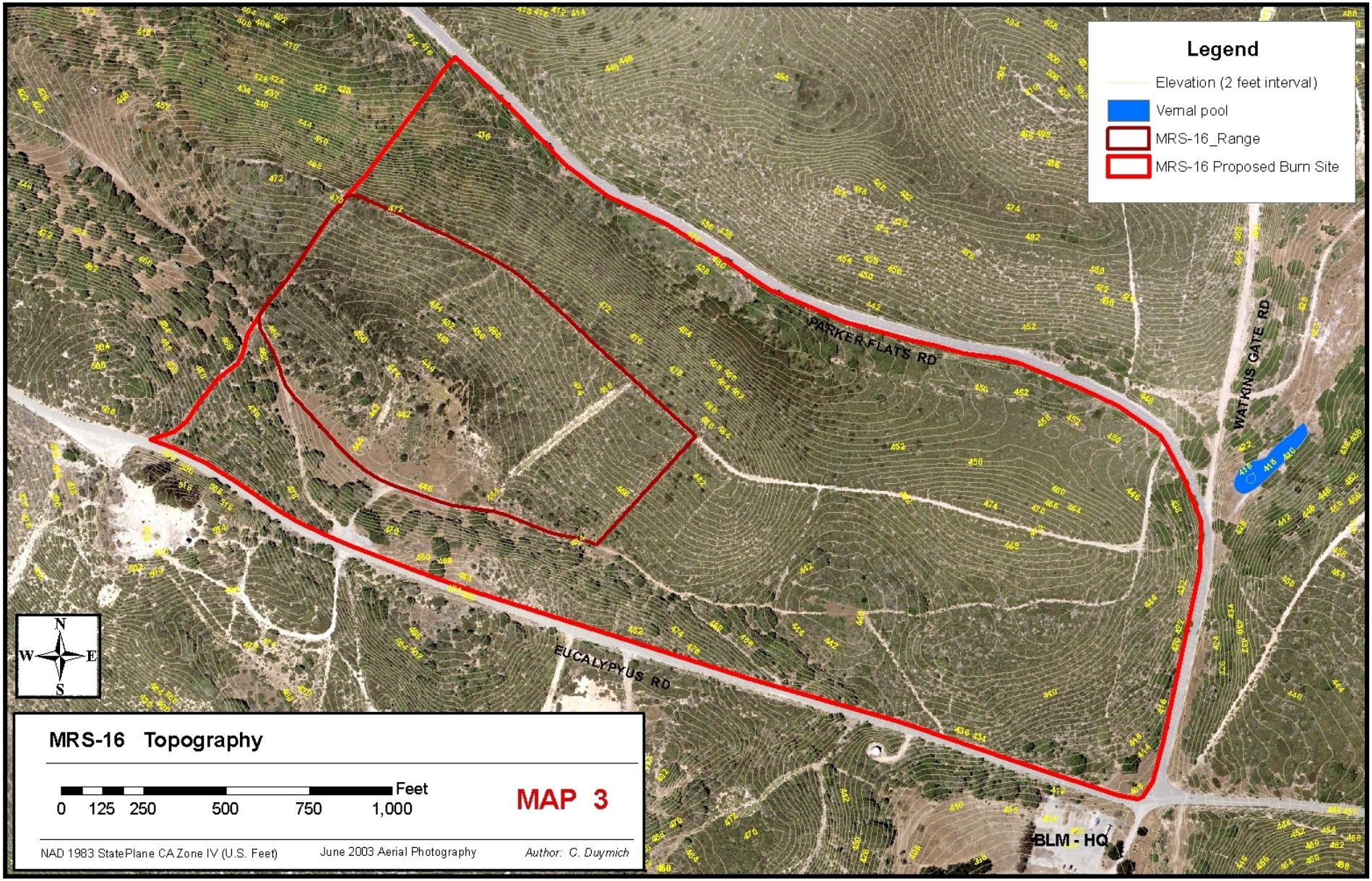
Prepared by:_____ Date: _____
Barry Callenberger (Burn Boss)

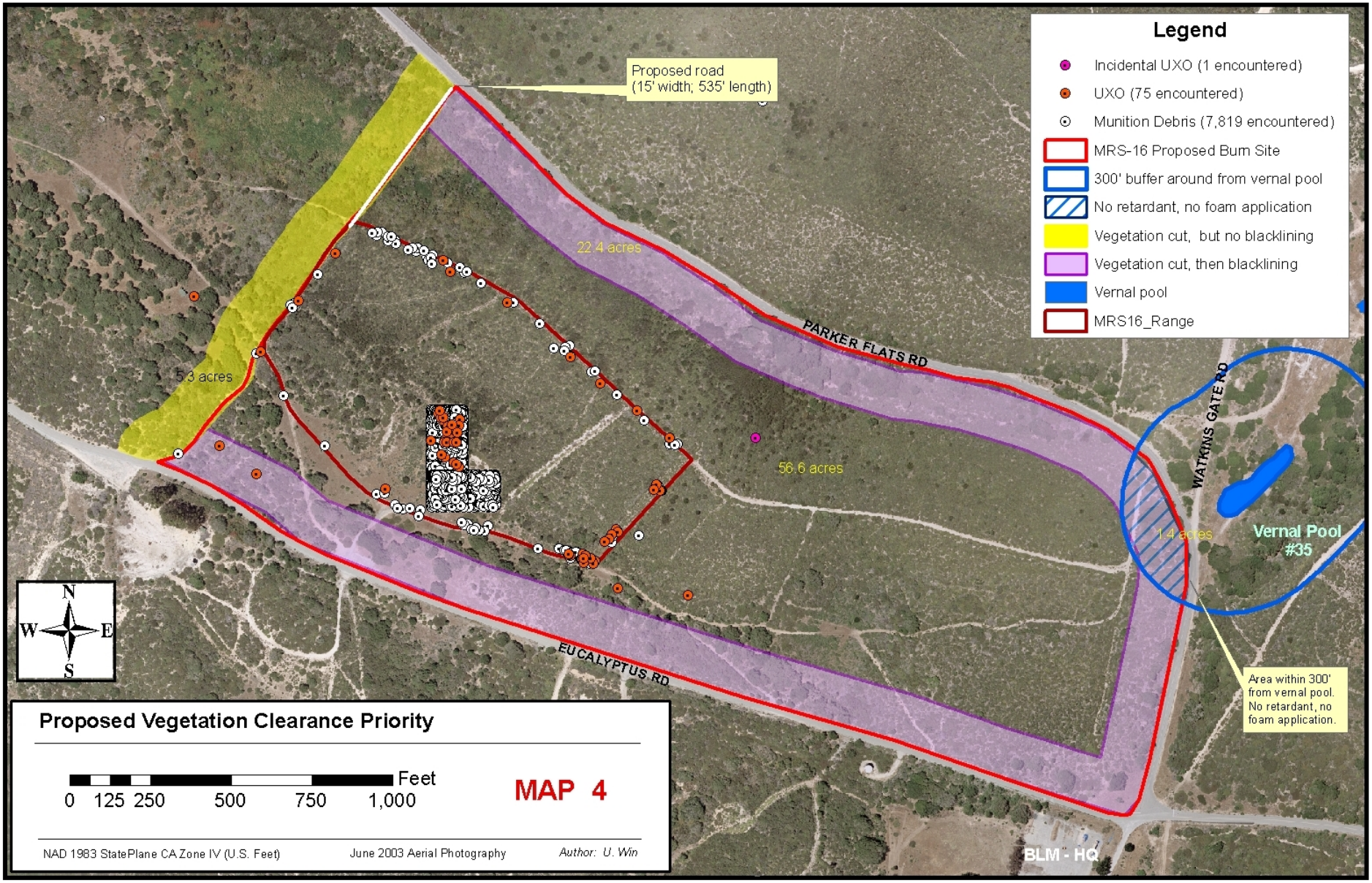
Approved by: _____ Date: _____
Jack Riso (Incident Commander)

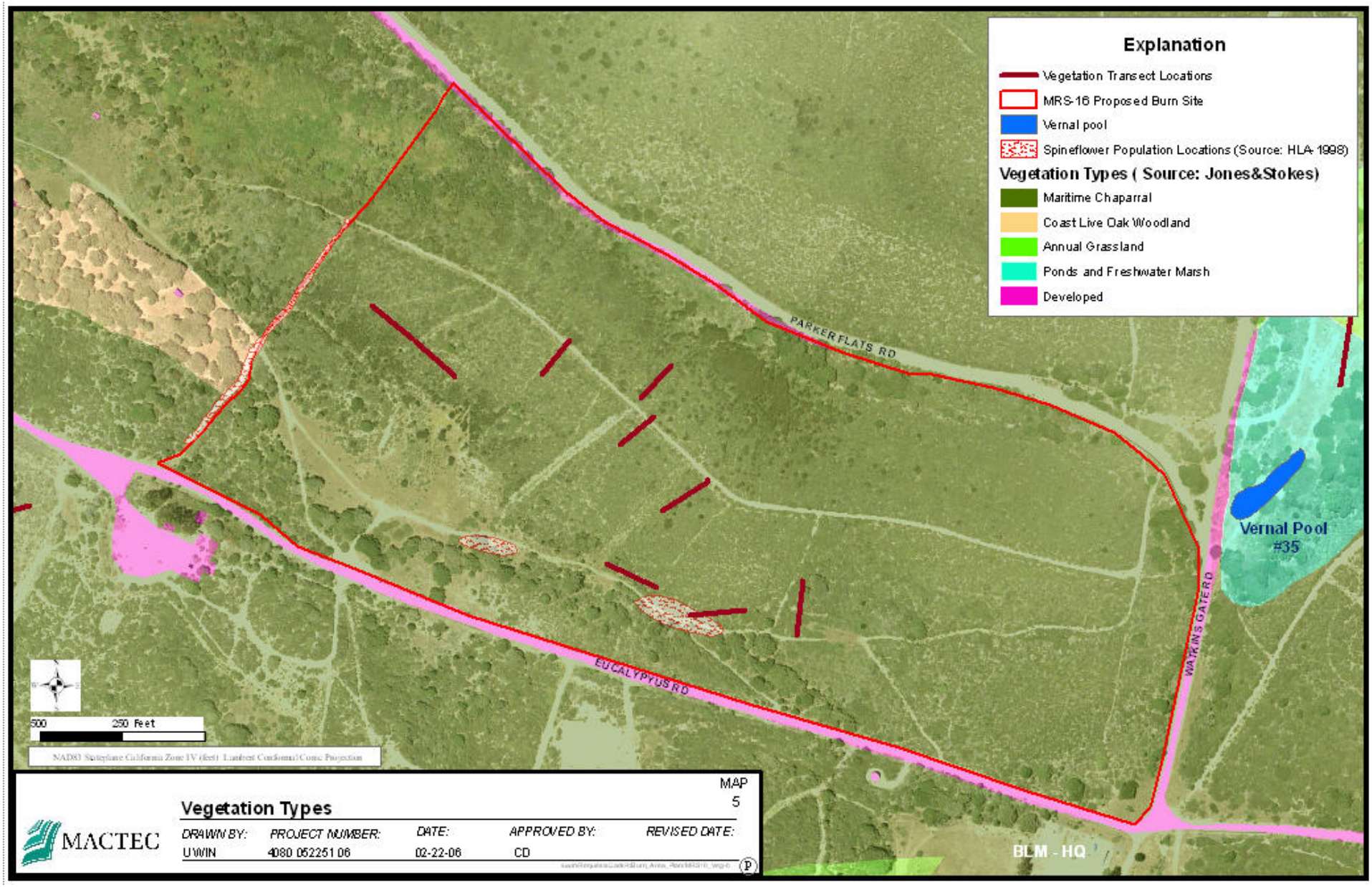
FIGURES

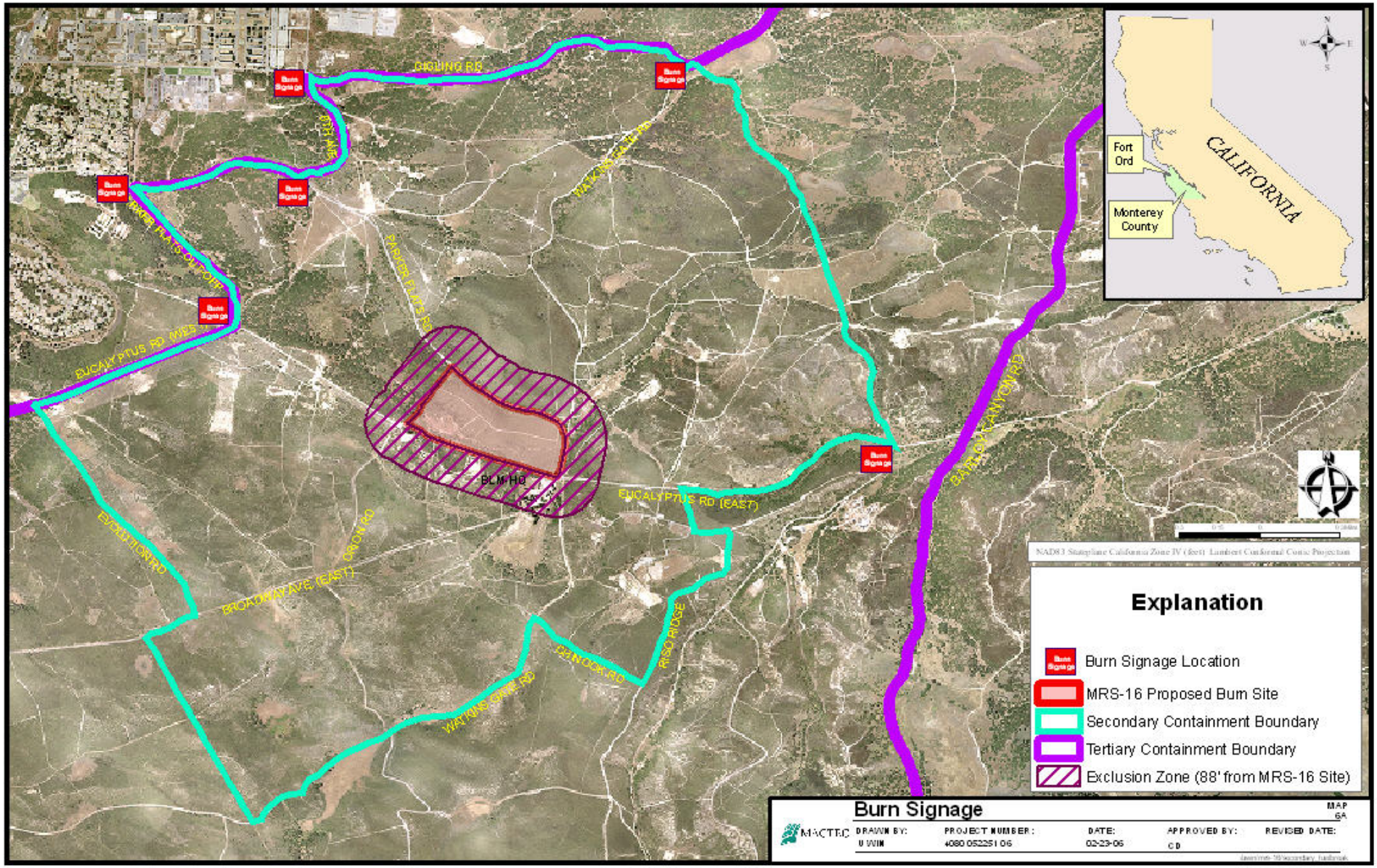

MONTEREY BAY
MARINA
Marina Municipal Airport
SEASIDE
DEL REY OAKS
CSUMB
East Garrison
Ord Military Community
Marshall Housing
Fitch Park Housing
BLM
BLM
BLM
MRS-16
BLM- HQ
Toro Park
Laguna Seca Raceway
Irwin Rd.
Reservation Road
Inter-Garrison Rd.
Gigling Rd.
Parker Flats Road
Eucalyptus Road
Eucalyptus Road
Broadway Ave.
Watkins Gate Road
South Boundary Road
Hwy 1
Hwy 218
Hwy 68
Hwy 68
General Jim Moore Blvd.
Reservation Road
River Road
CALIFORNIA
Fort Ord
Monterey County
N
S
E
W
Legend
Fort Ord Boundary
MRS-16 Proposed Burn Site
BLM Lands
OMC/Housing
Road_Centerline
MRS-16 - Proposed Burn Site Location
MAP 1
Former Fort Ord, California
C. Drymbi
5-15-06
NAD83 Stateplane California Zone IV (feet)
June 2003 Aerial Photography

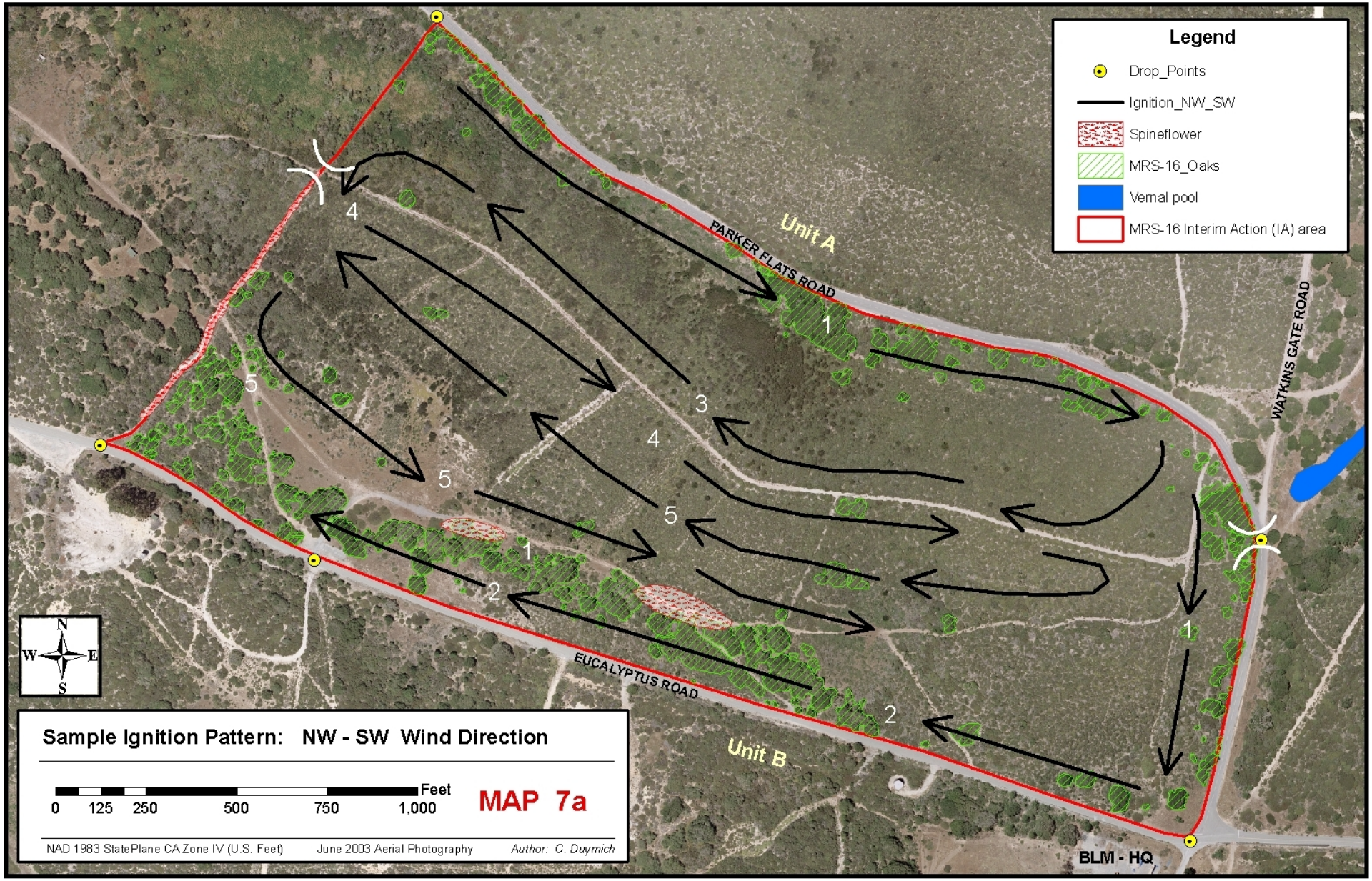

ICP
Staging Area
Project Area
SEASIDE
Laguna Seca Raceway
CALIFORNIA
Fort Ord
Monterey County
Explanation
Incident Command Post
Drop Point
Water Source
Helibase
Staging Area
Fuelbreaks
Fort Ord boundary
MRS-16 Proposed Burn Site
Tertiary Containment Boundary
Exclusion Zone (800' from MRS-16 Site)
Secondary Containment Boundary
Fuelbreaks and Containment Boundaries
Former Fort Ord, California
MAP
2

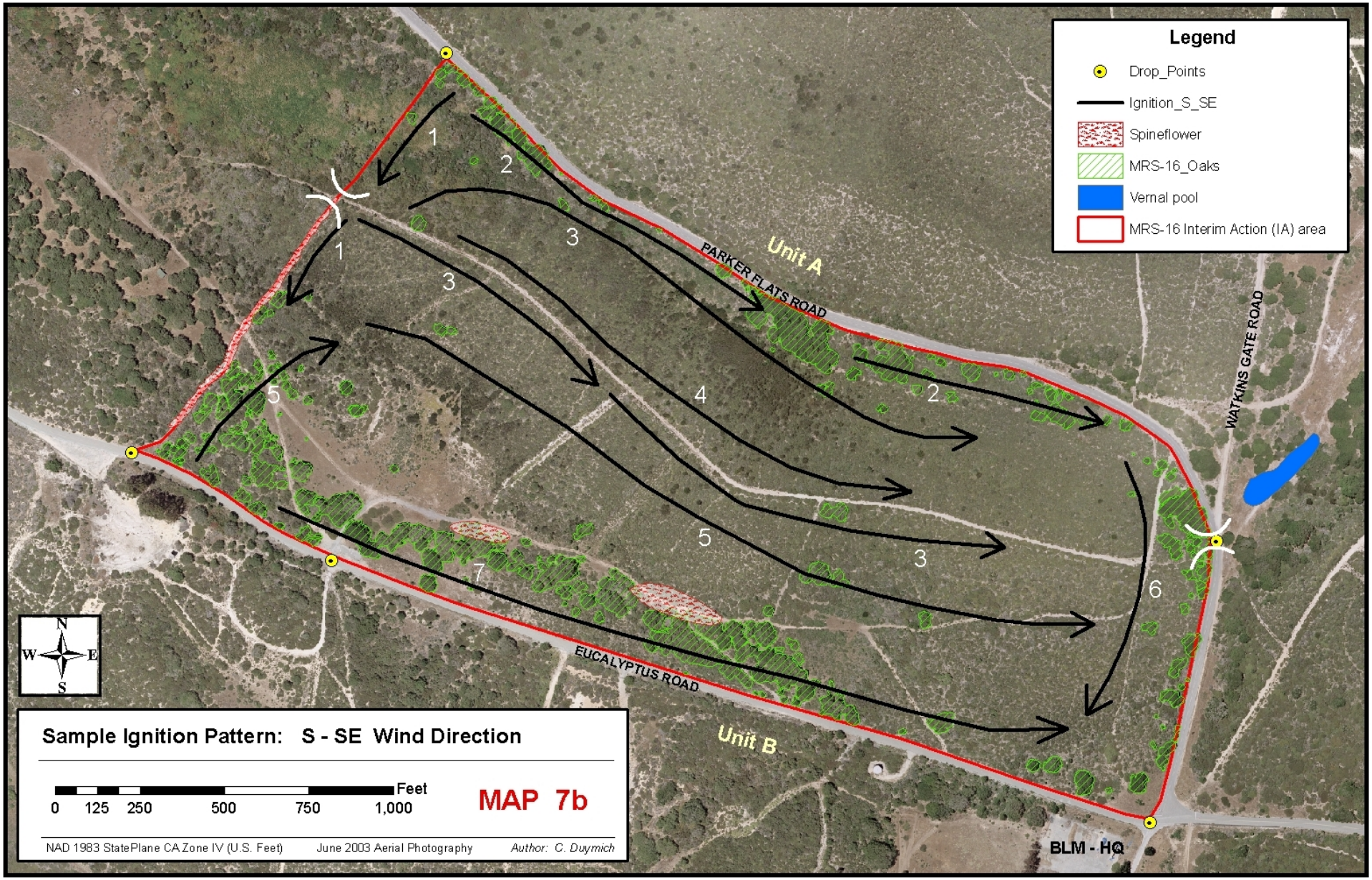

Legend
Elevation (2 feet interval)
Vernal pool
MRS-16_Range
MRS-16 Proposed Burn Site
PARKER FLATS RD
WATKINS GATE RD
EUCALYPYUS RD
BLM - HQ
N
W
E
S
MRS-16 Topography
Feet
0 125 250 500 750 1,000
MAP 3
NAD 1983 StatePlane CA Zone IV (U.S. Feet)
June 2003 Aerial Photography
Author: C. Duymich

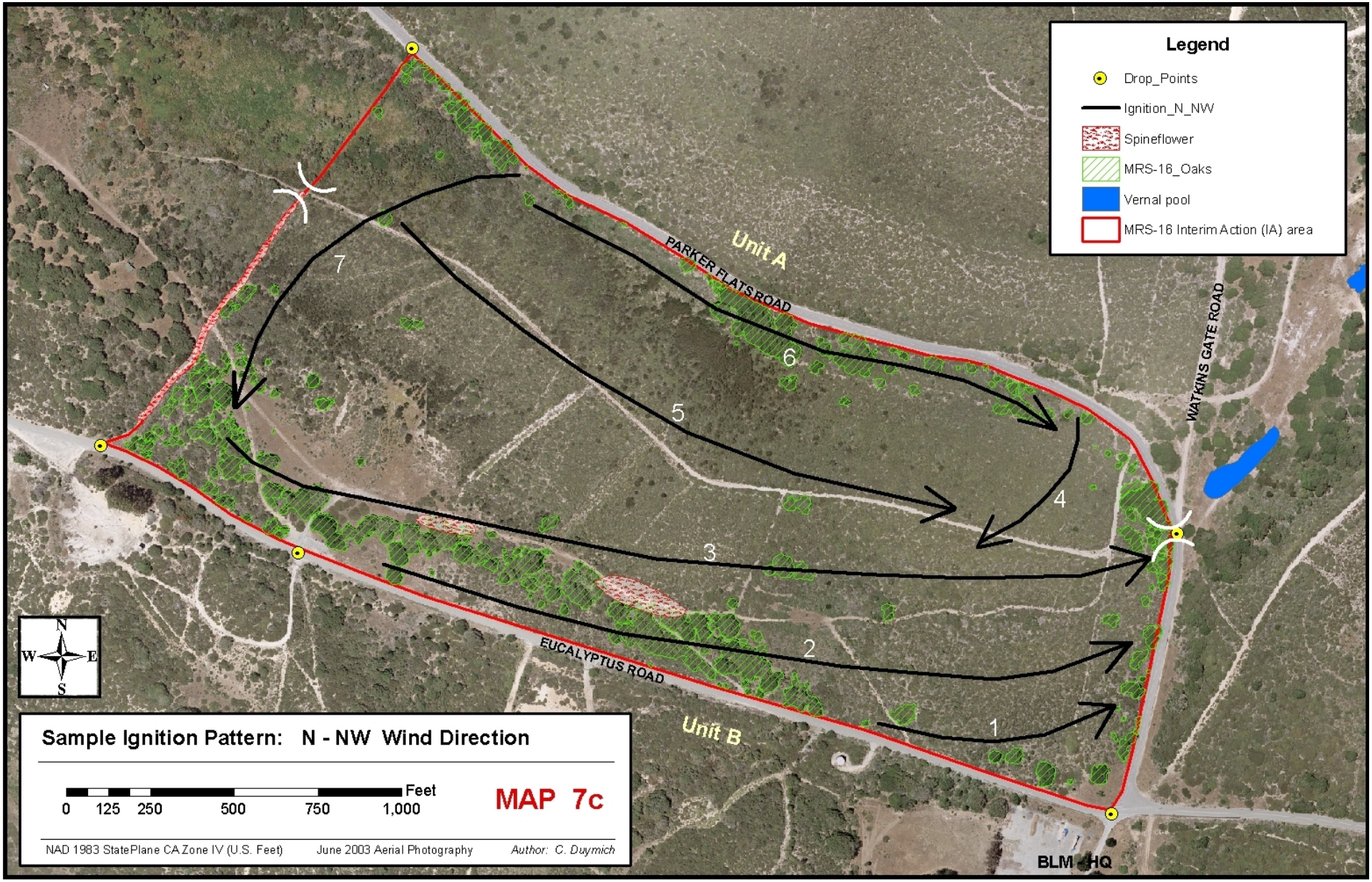

Legend
Incidental UXO (1 encountered)
UXO (75 encountered)
Munition Debris (7,819 encountered)
MRS-16 Proposed Burn Site
300' buffer around from vernal pool
No retardant, no foam application
Vegetation cut, but no blacklining
Vegetation cut, then blacklining
Vernal pool
MRS16_Range
Proposed road
(15' width; 535' length)
22.4 acres
5.3 acres
56.6 acres
1.4 acres
PARKER FLATS RD
WATKINS GATE RD
EUCALYPTUS RD
Vernal Pool
#35
Area within 300' from vernal pool. No retardant, no foam application.
BLM - HQ
N
W
E
S
Proposed Vegetation Clearance Priority
Feet
0 125 250 500 750 1,000
MAP 4
NAD 1983 StatePlane CA Zone IV (U.S. Feet)
June 2003 Aerial Photography
Author: U. Win

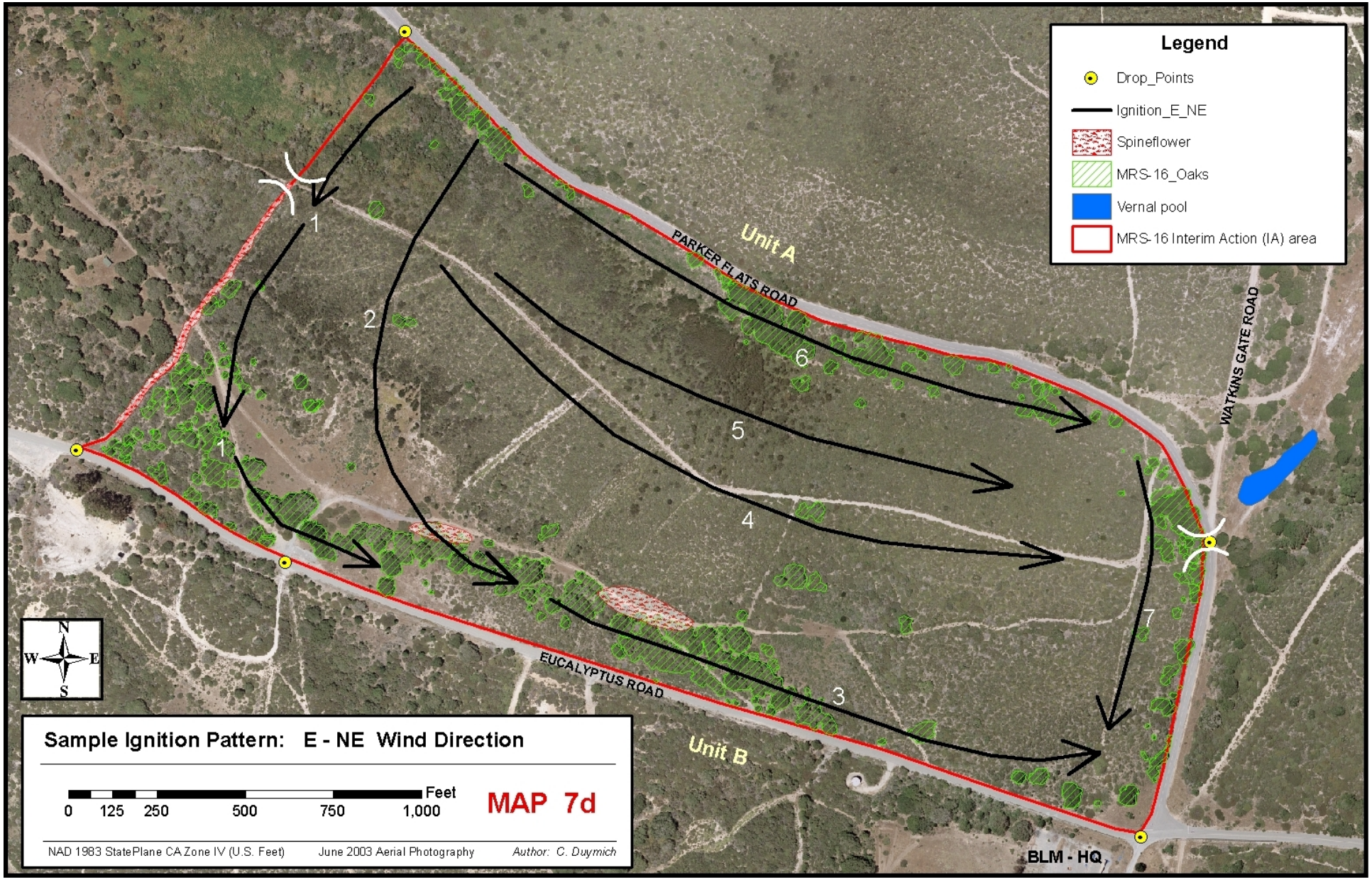

Explanation
Vegetation Transect Locations
MRS-16 Proposed Burn Site
Vernal pool
Spineflower Population Locations (Source: HLA 1998)
Vegetation Types (Source: Jones&Stokes)
Maritime Chaparral
Coast Live Oak Woodland
Annual Grassland
Ponds and Freshwater Marsh
Developed
PARKER FLATS RD
EUCALYPTUS RD
WATKINS GATE RD
Vernal Pool #35
BLM - HQ
500
250 Feet
NAD83 Stateplane California Zone IV (feet) Lambert Conformal Conic Projection
MAP 5
Vegetation Types
MACTEC
DRAWN BY: UWIN
PROJECT NUMBER: 4080 052251 06
DATE: 02-22-06
APPROVED BY: CD
REVISED DATE:

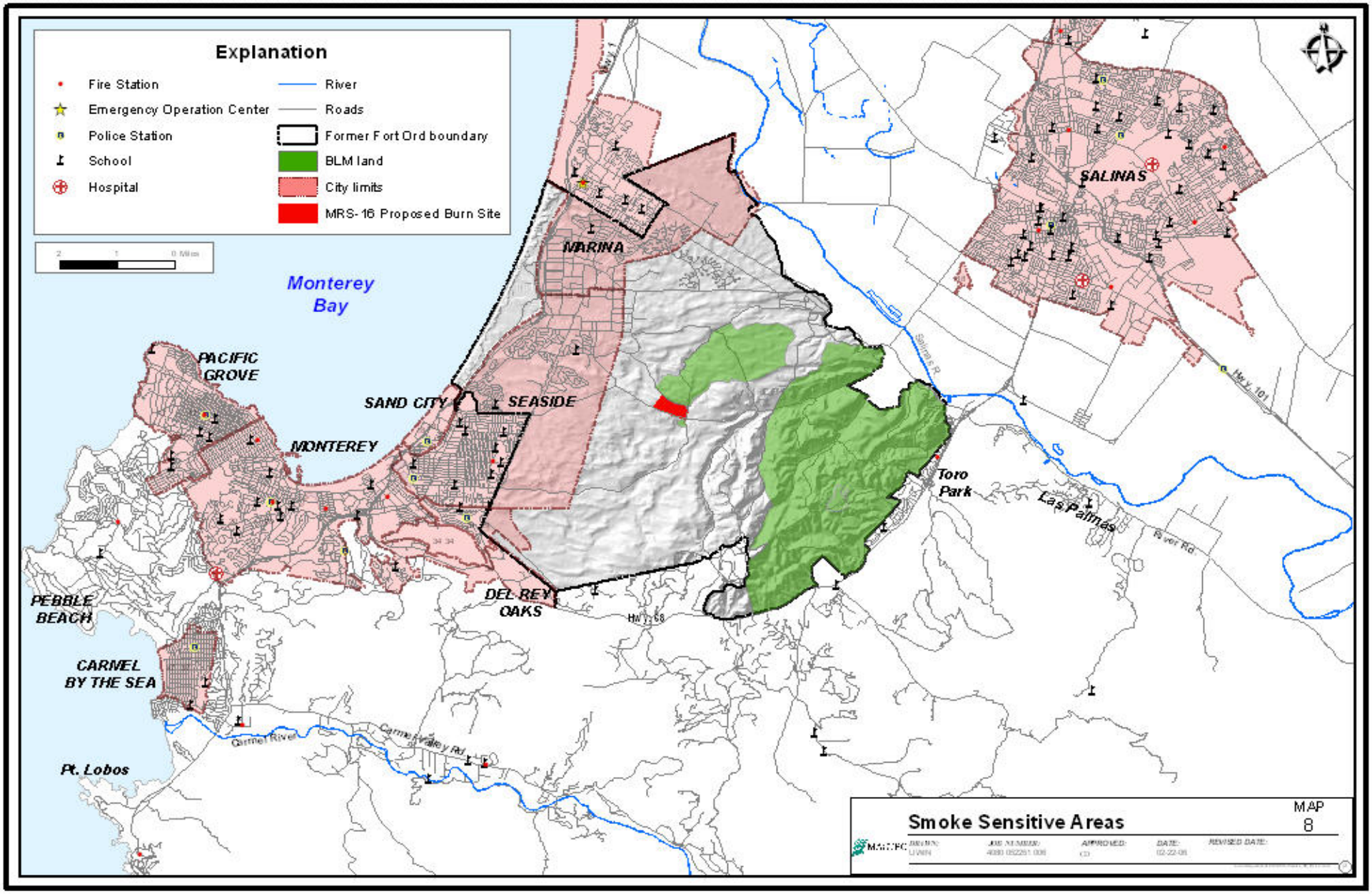

DIGLING RD
WATKINS GAP RD
PARKER FLATS RD
EUCALYPTUS RD (WEST)
EUCALYPTUS RD (EAST)
BARLOW CANYON RD
EXCELSIOR RD
CROW RD
BROADWAY AVE (EAST)
WATKINS GAP RD
CANNON RD
RISO RIDGE
BLM HQ
Fort Ord
CALIFORNIA
Monterey County
Explanation
Burn Signage Location
MRS-16 Proposed Burn Site
Secondary Containment Boundary
Tertiary Containment Boundary
Exclusion Zone (88' from MRS-16 Site)
NAD83 Stateplane California Zone IV (feet) Lambert Conformal Conic Projection
Burn Signage
MAP 6A
MACTEC
DRAWN BY: U WIN
PROJECT NUMBER: 4080052251 06
DATE: 02-23-06
APPROVED BY: CD
REVISED DATE:


Legend
Drop_Points
Ignition_NW_SW
Spineflower
MRS-16_Oaks
Vernal pool
MRS-16 Interim Action (IA) area
PARKER FLATS ROAD
WATKINS GATE ROAD
EUCALYPTUS ROAD
Unit A
Unit B
BLM - HQ
N
W
E
S
Sample Ignition Pattern: NW - SW Wind Direction
0 125 250 500 750 1,000 Feet
MAP 7a
NAD 1983 StatePlane CA Zone IV (U.S. Feet)
June 2003 Aerial Photography
Author: C. Duymich


Legend
Drop_Points
Ignition_S_SE
Spineflower
MRS-16_Oaks
Vernal pool
MRS-16 Interim Action (IA) area
Unit A
Unit B
PARKER FLATS ROAD
WATKINS GATE ROAD
EUCALYPTUS ROAD
BLM - HQ
1
2
3
1
3
5
4
2
5
3
7
6
N
W
E
S
Sample Ignition Pattern: S - SE Wind Direction
Feet
0 125 250 500 750 1,000
MAP 7b
NAD 1983 StatePlane CA Zone IV (U.S. Feet)
June 2003 Aerial Photography
Author: C. Duymich


Legend
Drop_Points
Ignition_N_NW
Spineflower
MRS-16_Oaks
Vernal pool
MRS-16 Interim Action (IA) area
Unit A
Unit B
PARKER FLATS ROAD
EUCALYPTUS ROAD
WATKINS GATE ROAD
BLM - HQ
1
2
3
4
5
6
7
N
W
E
S
Sample Ignition Pattern: N - NW Wind Direction
Feet
0 125 250 500 750 1,000
MAP 7c
NAD 1983 StatePlane CA Zone IV (U.S. Feet)
June 2003 Aerial Photography
Author: C. Duymich


Legend
Drop_Points
Ignition_E_NE
Spineflower
MRS-16_Oaks
Vernal pool
MRS-16 Interim Action (IA) area
PARKER FLATS ROAD
Unit A
WATKINS GATE ROAD
EUCALYPTUS ROAD
Unit B
BLM - HQ
1
2
3
4
5
6
7
N
W
E
S
Sample Ignition Pattern: E - NE Wind Direction
0 125 250 500 750 1,000 Feet
MAP 7d
NAD 1983 StatePlane CA Zone IV (U.S. Feet)
June 2003 Aerial Photography
Author: C. Duymich


Explanation
Fire Station
Emergency Operation Center
Police Station
School
Hospital
River
Roads
Former Fort Ord boundary
BLM land
City limits
MRS-16 Proposed Burn Site
Monterey Bay
MARINA
SALINAS
PACIFIC GROVE
SAND CITY
SEASIDE
MONTEREY
Toro Park
Las Palmas
River Rd.
Salinas R.
Hwy 101
DEL REY OAKS
Hwy 68
PEBBLE BEACH
CARMEL BY THE SEA
Carmel River
Carmel Valley Rd.
Pt. Lobos
Smoke Sensitive Areas
MAP 8

ATTACHMENTS

Attachment A

COMMAND AND CONTROL PLAN

PRESIDIO OF MONTEREY FIRE DEPARTMENT

FORMER FORT ORD, MONTEREY, CALIFORNIA

FINAL

MRS-16
PRESCRIBED BURN

COMMAND AND CONTROL PLAN

FINAL

JULY 2006

MRS-16
2006 PRESCRIBED BURN
COMMAND AND CONTROL PLAN

1 PURPOSE

This command and control plan is provided to outline the command and control procedures to be implemented for the 2006 prescribed burn operations.

2 DAY-TO-DAY OPERATIONS

This section outlines the support provided to the prescribed burn operations during day-to-day operations.

2.1 FACILITIES

The Fire Department will be the designated headquarters for fire service personnel during the prescribed burn. Arrangements will be made to accommodate all command staff personnel working on the burn at the Incident Command Post (ICP)

Table 1: Points of Contact for MRS-16 43–48 Prescribed Burn Operations

Agency		Name	Phone No.	
			Landline	Cell
Garrison	Directorate of Emergency Services			
Garrison	POM Police			
	POM Fire Department			
USACE	OESS			
Contractor	Burn Boss			
	Rx Burn Manager			

2.1.1 Parking

On the burn days, all fire service personnel will be able to park their privately owned vehicles in the regular parking area in the Fire Department parking lot. Also parking will be made available for command staff personnel near the incident command post.

2.1.2 Incident Command Post

Incident Command Post (ICP) will be restricted to Incident Command Personnel only unless authorized by the Incident Commander.

Table 2:Incident Commander Authorized Personnel

Personnel	Authorized By	Access

2.1.3 Heliport

In addition to the heliport locations in the field that are shown in the burn plan there will be a heliport positioned near the ICP for use by the Incident Commander if needed. This heliport will be used by the project helicopters for routine operations and in case of an emergency/escape. The designated heliport area will be clear of debris.

2.1.4 Communications

Communications will be established at all security positions. During routine operations, agencies will communicate on their assigned frequencies, listed below. In case of an escape or other emergency, the POM Fire Department channel, Fed Red, will be the primary communication channel to be used while implementing the contingency plan.

Table 3: Radio Channels and Frequencies for Prescribed Burn Operations

Agency	Channel	Frequency		Channel Guard
		Receive	Transmit	

3 MUTUAL AID

The Incident Commander will request mutual Aid if additional resources are needed in the event of an escape. Mutual aid support will be under the direct command and control of the Incident Commander and his command and field operations personnel.

Table 4: Radio Channels and Frequencies for Prescribed Burn Operations

Agency	Channel	Frequency		Channel Guard
		Receive	Transmit	

4 EVACUATION:

In the event an evacuation order is given by the Incident Commander for selected urban or rural areas due to an escape, the local jurisdiction will be notified and a follow local evacuation protocols for their jurisdiction. For areas within the Ord Military Community the Presidio of Monterey Police Chief or designated representative will be responsible for evacuation of those areas selected by the Incident Commander.

Attachment B

FINAL

PRESIDIO OF MONTEREY FIRE DEPARTMENT

FORMER FORT ORD, MONTEREY, CALIFORNIA

FINAL

MRS-16
PRESCRIBED BURN

ESCAPE CONTINGENCY PLAN

FINAL

JULY 2006

MRS-16
PRESCRIBED BURN
ESCAPE CONTINGENCY PLAN

1 PURPOSE

This contingency plan provides guidance for suppressing spot fires or slop-overs outside the perimeter of the MRS-16 burn area.

It should be noted that if there is an escape, fire conditions may exclude from use, some or all of the tactical alternatives described in this contingency plan or may dictate other alternatives not described herein. In the event an escaped fire cannot be contained within the guidelines of this contingency plan, a Wildland Fire Situation Analysis (WFSA) will be developed to determine the appropriate strategy for containing the fire.

2 ESCAPE DETERMINATION

The Incident Commander will determine to issue an escape declaration based on the following criteria:

- A slop-over or spot fire that escapes the Maximum Allowable Perimeter of the containment area, or
- A slop-over or spot fire that escapes initial attack within the first burning period following its occurrence, or
- More than two spot fires, or
- At the discretion of the Incident Commander.

2.1 NOTIFICATIONS:

Should an escape occur, the Incident Commander will organize all onsite resources for an aggressive response. The Incident Commander will notify Monterey County Fire Communications and place orders for any necessary additional resources.

2.2 WILDLAND FIRE SITUATION ANALYSIS (WFSA):

In the event a WFSA is required, the Incident Commander will assemble a command staff of essential personnel which will establish an assessment team to determine what suppression efforts will be required to reestablish containment.

2.3 STRATEGY:

The strategy for an escape will include utilizing all resources and techniques to reduce the forward rate of spread. This can include, if necessary, burning out from the fuel breaks and or natural barriers using aerial and ground support personnel (depending upon location and safety factors).

2.4 TACTICS:

Slop-overs or spot fires constitute the need for immediate suppression efforts to hold the fire within the primary containment lines. The slop-over or spot fire suppression and holding forces will utilize changes in fuel type, natural barriers and all man-made barriers to their advantage to prevent the spread of fire past the defensible polygons.

2.5 OPPORTUNITIES FOR CONTAINMENT:

Primary containment opportunities for an escape are Parker Flats Road, Watkins Gate Road, and Eucalyptus Road.

Secondary containment opportunities include Parker Flats Cutoff, Parker Flats Road, Hennikens Ranch Road, Watkins Gate Road, and 8th Avenue Extension.

Tertiary containment opportunities include Barloy Canyon Road, Giggling Road, 8th Avenue Extension, Eucalyptus Road West, General Jim Moore and South Boundary Road.

Firing from containment lines and roads, followed by aerial water drops and fire line construction may reduce the intensity of the fire and diminish the threat of an escape thereby maintaining firefighting conditions where engine companies and hand crews can directly attack the fire. (Engine company and hand crew use is dependant upon MEC restrictions and safety concerns.)

2.6 ANALYSIS OF ONSITE RESOURCES:

The resources on hand, including a minimum of one dozer, will meet the expected rate of fire spread and should contain the fire within the secondary containment area of Watkins Gate Road, Giggling Road and Parker Flats Cutoff. In the event that a spot fire or slop-over occurs and it is anticipated that the rate of spread will not be exceeded by onsite resources additional resources will be ordered for suppression and containment.

If an escape occurs with winds over 10 miles an hour, additional resources will be required. In some cases, flame lengths could limit effectiveness of crew in suppressing the escape. Topography, fuels, water sources and MEC restrictions could limit containment efforts.

2.7 EVACUATION PROCEDURES:

Evacuation, if needed, will be handled by the agency having jurisdiction and local, state and county protocols will be followed. Military property will be evacuated as set forth in the evacuation plan established. Evacuations will be voluntary, precautionary and mandatory.

3 ESCAPE INTO THE IMPACT AREA (IA):

If an escape enters the Impact Area (IA) all firefighting operations will fall under the direction of the Presidio of Monterey Chief, Fire and Emergency Services or his designated representative. The IA, which contains MEC, is considered a safety sensitive area for

firefighters. Department of Defense firefighters will facilitate all containment and suppression activities. Outside resources will be strategically placed to prevent escapes onto civilian property. Resources will remain outside the exclusion zone (MEC Fragmentation Distance) in order to sustain safety requirements set forth by Department of Defense.

3.1 STRATEGY

The strategy for an escape will include utilizing all resources and techniques to reduce the forward rate of spread. This can include, if necessary, burning out from the fuel breaks and or natural barriers using aerial and ground support personnel (depending upon location and safety factors).

3.2 TACTICS

Slop-overs or spot fires will constitute the need for immediate suppression efforts to suppress or contain the fire within the primary lines of the IA. Fire suppression and holding forces will utilize changes in fuel type and natural and manmade barriers to their advantage to prevent the spread of fire past the defensible polygons.

3.3 OPPORTUNITIES FOR CONTAINMENT

Primary containment opportunities for the IA include Riso Ridge Road, Chinook Road, Watkins Gate Road and Evolution Roads.

Secondary containment opportunities include all roads and fuel breaks within the IA that provides accessibility.

Tertiary containment opportunities include Eucalyptus Road, Barloy Canyon Road, General Jim Moore Boulevard and South Boundary Road.

Mobile firing from pre-established fuel breaks, foam lines, and wet lines may reduce the intensities and diminish the threat of fire.

4 ANALYSIS OF ONSITE RESOURCES

The Presidio of Monterey resources may meet the expected rate of fire spread and may contain the fire to within the primary and secondary containment lines of the IA. In the event that a spot fire or slop-over occurs and it is anticipated that the rate of spread will be exceeded by onsite resources additional resources will be ordered for suppression and containment.

If an escape occurs with winds over 8 miles an hour additional resources will be required. In some cases, flame lengths, MEC and lack of engineering controls could limit effectiveness of crew in suppressing the escape inside the IA. Topography, fuels, water sources, exclusion zone and MEC restrictions could limit containment efforts.

4.1 ESCAPED FIRE INCIDENT RESOURCE ORGANIZATION

Resources for an escaped fire incident will be organized under the Incident Command System structure.

Table 2—Contingency Resources Available

Resource Supplied by	Resource	Qty
For Hire	Suppression helicopters)	2
	Ignition helicopters	1
	Engine Type 6	1
	Bulldozers (with operator)	1
POM Fire Department	Type III Engines	2
	Engine Crash and Rescue	1
	Water Tender	1
	Terra Torch Mixing Unit	1
	Command Vehicle	1
	Operations Vehicle	1
	Utility Truck	1
	Operations Officer	1
	Division Supervisor	2
Local Fire Agencies in Tri-County Area	Incident Command Technical Support	2
	Safety Officer	1
	Operations Officer	1
	Public Information Officer	1
	Branch Director	1
	Division Group Supervisor	4
	Strike Team Leaders (5 engines each)	3
	Bulldozers	2
	Aircraft	—[a]
	Hand crews	1
	U.S. Department of Agriculture Forest Service (USFS)	—[b]
	More equipment as needed	N/A

[a]Available resources dependant on other commitments and requirements
[b]Available resources dependant on staffing and requests

Table 3—Estimated Time of Arrival for Resources from Local Fire Agencies

Fire Agency	Estimated Time of Arrival (min.)
Seaside Fire Department	5
Monterey Fire Department	10
Salinas Rural Fire Department	10
Marina Fire Department	15
California Department of Forestry (CDF)	15
Carmel Fire Department	15
Pacific Grove Fire Department	15
Salinas Fire Department	15
Carmel Valley Fire Department	20

4.2 FACILITIES

In the event of an escape, all incoming resources assigned to the contingency operations will report to the designated staging area. The incident command post (ICP) will be located on a site, near the burn parcel but outside the exclusion zone. The location of the ICP will be determined the morning of the burn.

4.3 ESCAPED FIRE OPERATION BRIEFING

If an escape is declared, the incident safety officer will brief the incoming resources before being assigned to the contingency operation. The existing resources will be used to contain the escape. This briefing will cover the following topics which are essential to the contingency operations:

- Maps and orientation
- Organization
- Communications
- Strategy/tactics
- Fire behavior
- Weather
- Safety
- Lookouts, Communications, Escape Routes, Safety Zones (LCES)
- MEC safety

At this briefing, the incident safety officer will inform all incoming resources on the authorized areas (defensible polygon fuel breaks and areas inside the exclusion zone); restricted areas (the IA); and areas to be avoided, if possible (the habitat area).

The incident commander will ensure that all incoming firefighters are qualified for their positions and have the required fire line PPE. A strike team leader and either an engineer or a captain must accompany each engine before they are deployed. A division supervisor will perform reconnaissance and identify safety zones and escape routes before committing the incoming resources.

It should be noted that all onsite resources will not be required to attend the escape briefing as they will have already been briefed before the start of the prescribed burn operations and will be engaged in the contingency operations.

Attachment C

SITE SECURITY PLAN

PRESIDIO OF MONTEREY FIRE DEPARTMENT

FORMER FORT ORD, MONTEREY, CALIFORNIA

FINAL

MRS-16
PRESCRIBED BURN

SITE SECURITY PLAN

JULY 2006

Attachment D

JOB HAZARD ANALYSIS

MRS-16 Prescribed Burn
Job Hazard Analysis

TASK / PROCEDURES	HAZARD	ABATEMENT ACTIONS
1) Personnel, past experience and	Persons not physical fit, lack of experience and	Follow requirements for qualifications and physical testing with minimum
knowledge of duties.	knowledge could endanger themselves or others.	standards to meet or exceed NWCG310-1 training and physical standards.
		Keep documentation on each person. Each person is to carry a firefighter
		ID card with all qualifications listed.
		Structure Group firefighters will meet qualifications of either CA State Fire
		Marshall or NWCG 310-1.
2) PPE Required	As with any wildland fire, prescribed burning exposes	Follow NWCG specifications: Nomex shirt, pants, hard hat, eye protection
	employees to the same conditions and hazards -	leather non-skid boots, leather gloves, fire shelter, hearing protection, and
	known and unknown such as burns, trips and falls,	carry enough water.
	sharp tools, vehicles, etc.	
3) Travel in and around project site	All normal traffic hazards.	Drivers trained to operate equipment. Drive safe, defensively, follow all laws
before, during and after the project.		and wear seat belts.
	Heavy load - loss of brake.	
		Use proper 2-way communication at all times.
		Drive safe, defensively and be courteous.
		Watch for Drop Point signs. Be familiar with project site.
4) Traveling on narrow back roads.	Steep, winding, rough dusty roads.	Drive slow, watch for rough areas, check load.
	Some roads may be eroded.	Drive slow, keep to far right and use 2-way radios.
	Other traffic and oncoming traffic.	Install DP signs and arrows.
5) Staging Area unloading and set	Backing of vehicles.	Use a backer, if no second person, check backing area first.
up.		
	Handling heavy loads - back injuries	Use proper lifting procedures - lift with knees - not with your back.
Parking of vehicles.	Vehicle rolling out of control.	Use Chock-blocks. Tie bright flagging on chock-block as a reminder.
6) Use and handling of burn fuels.	Spills, exposure, vapors, burns may cause injury to	Transport fuels in proper containers that are marked. Containers secure
	personnel or damage to the environment.	properly. Haul less than 119 g / vehicle. Use visquine or tarp while mixing

MRS-16 Prescribed Burn
Job Hazard Analysis

TASK / PROCEDURES	HAZARD	ABATEMENT ACTIONS
		and transferring. Carry a spill kit to handle any spills and notify supervisor
		in case of spill. Properly dispose of any contaminated soils or absorbent.
		Do not carry fuel inside cab. Clean torches.
	Possible for a Class B type fire.	Carry a Class B fire extinguisher or foam on vehicle.
7) Project Safety Meetings /	If not done, may lead to confusion and	Hold a Safety Meeting / Briefing at the beginning of the project and each
Briefings	possible cause of accidents and / or injuries	day and shift. Hold tail gate safety meeting / briefing at each division, group
		base of each shift. Read over entire JHA and have all sign at the first
		safety meeting / briefing. Go over Chain of Command, Teams, Objectives,
		Tactics, Assignments, Contingencies.
8) UXO Safety Briefing by USACE	UXO items are scattered throughout the area includ-	All personnel, including subcontractors personnel must attend a UXO Safety
UXO Safety	ing outside the burn unit. These may cause serious	Meeting prior to any work on the base.
	injury or death if disturbed. They come in many	
	different sizes and shapes and many are armed and	No one is allowed to enter any area is inside the holding lines
******MANDATORY******	and ready to explode with the slightest touch.	(please see maps) unless authorized by the IC.
		Areas outside the holding lines must be entered into with caution.
		Watch for any signs of UXO. DO NOT TOUCH ANY ITEMS
9) Cutting fire line and pre-burn prep.	Sharp tools causing injuries.	Keep proper spacing of 10+ feet during work or hiking. Check tools for
		proper condition. Work as a Team. Keep full PPE on and use good
		communication.
	UXO may cause injury or death.	May need UXO escort. Follow proper procedures as given .
10) Felling of trees/snags with chain	Improper operation may cause injury or	Only certified sawyers at appropriate levels may use chainsaws. Use a
saws.	death to sawyer or others. May cause damage to.	swamper and all safety steps when felling operations are taking place.
	environment	LCES Before cutting any tree, get approval from BRAC Biologist.
11) Patrolling, Hiking, Cutting Line in	Trip / Fall may cause injury. UXO in area may cause	Wear proper PPE, watch your step, do not run, work in pairs. If in a UXO
normal suppression operations.	injury/death.	area, have a UXO escort
	Poison Oak may cause skin irritation and may	Wear PPE with sleeve rolled down. Stay out of the Poison Oak. Change
	become serious enough to cause loss of time. Poison	clothes each night, wash effected clothing. Shower and don't allow others to
	Oak is scattered throughout coast live oak woodlands	touch clothing. Point out the plant to others and stay out of heavy plant

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Job Hazard Analysis

TASK / PROCEDURES	HAZARD	ABATEMENT ACTIONS
	on the site.	smoke. If necessary take medication prior to being on site.
	Ticks may be in the area and can cause health	Keep full PPE on and sleeve down. Check yourself and each other at end
	problems like Lyme disease	of the day. Avoid walking through brush whenever possible.
12) Engine and Vehicle Operations.	Broken high pressure hose, slip and fall, foam use,	Wear full PPE when working around high pressure hose. Watch step while
	sharp tools may cause injuries to personnel.	on engine. Keep tools properly stored while on or off engine. Any damaged
		tools, hose or equipment must be flagged and taken out of service. Notify
		Supervisor for replacement.
	Driving of engines and vehicles may cause injury or	Drive cautiously, follow all local vehicle laws.
	death while on the project or during mob or demob.	
		Pass all questions on to the Army's PIO unless otherwise directed
	Protesters or un-lookers may cause	Notify your supervisor on any protester /on-looker problems or any
	problems to disrupt the project.	trespassers.
13) Communication.	If not used or used properly may cause confusion	Proper 2-way communication to be issued to the following: Burn Boss,
	which may lead to injury or escape of fire.	Ignition Specialist, Holding Specialist, Medics, Strike Team Leader, Engines
		WT operator, Mixing Teams all overhead personnel will have radios.
		Radio Frequency list is located in the Communications Plan. Three
		Freq. will be issued to Air Ops. Burn Boss will have contact with Incident
		Commander at all times with 2 -way radio and cell phone.
14) Aerial Ignition Operation	If not done by a certified and experienced person,	Aerial Ignition freq. will be controlled. Only the Burn Boss, Ignition Specialist
.	may cause escape which may cause injury to	and pilots will have the freq. The Ignition Specialist is under supervision of
	personnel or damage to the environment and/or	Burn Boss and in communication with the Burn Boss and Holding Specialist.
	private property. Dripping ignited fuel outside of	The Aerial Ignition Specialist to be in direct radio communications with
	burn area or near ground personnel.	every helicopter & Helibase Director. Ignition Specialist's duties are to
		supervise and not light.
15) Fuel Mixing Operation.	If not done by a qualified and experienced crew, may	Only qualified mixing crew-members will operate the fuel mixing system and
	cause injury to personnel or damage to the	loading systems. Area will be will posted with proper signage and cordoned
	environment or ignition Equipment. Fuel on clothing	off to keep unauthorized person out. Area to be kept picked up and
	my cause skin irritation.	organized for proper safe and efficient operation.
	Fire gel may cause health problems.	Wear proper PPE as shown in the MSDS. Do not breath or get into eyes.
		Avoid prolong skin contact. Wash off with detergent and water. Flush eyes

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Job Hazard Analysis

TASK / PROCEDURES	HAZARD	ABATEMENT ACTIONS
	Fuel on clothing my cause skin irritation or serious	with plenty of water. Wash body were fuel contact was made.
	burns.	
16) Pretreatment Operation.	Failure to follow safety regulations may cause injury	If spraying under the high power lines or around any power, lines, use
	or death to drivers and/or assistant during spraying of	extreme caution and keep the spray low and under control at all times.
	water, foam or retardant. High voltage power lines	When necessary, strap the monitor tip down in a manner that will not allow
	are located on the west side of the unit.	the angle to pass above level spray
	Other power lines are located at various locations	Prior to any pre-treatment under the line, engine and water crews will hold
	that may look to be out of service but may be	a safety meeting as to the safe methods to be used. Use horizontal spray
	energized. Spraying water, foam or retardant on	only from tenders and engines.
	lines may cause electrocution.	
	Foam and retardant may cause slick road conditions.	Make sure that all foam and retardant is washed off any road surfaces.
18) Helicopter Pre-treatment	Power lines in the area may cause injury or death.	Tour of site shall be conducted by all pilots prior to any flight operations to
	Retardant or foam on roadways may cause slick	become familiar with all obstacles that may cause problems to lower
	conditions.	flying aircraft.
19) Holding Operations.	If not done by a certified and experienced person,	A qualified Holding Specialist will be in direct communication with the Burn
	may cause escape which may cause injuries to	Boss and the Ignition Specialist along with STL and engines on all lines,
	personnel or damage to the environment and private	dozer and the WT operators. Holding needed, procedures will follow the
	property.	Burn Plan. If additional resources are contact the Burn Boss.
	UXO in area that may cause injury or death	Only patrol in designated areas. Do not patrol in any areas posted for UXO.
		On entering these areas, you must have a UXO escort at all times.
		DO NOT TOUCH ANY UXO ITEMS.
		Observe all areas around the burn for spot fires caused by UXO. Report the
		location, rate of spread, type of fuel, scope potential, and other information
		to your supervisor. USACE UXO Safety will Inspect are prior to mop up.
		Do not go into area with exposed UXO without approval from UXOSO.
		Some areas may be pre-approved for ground suppression. Report any
		hazards to your supervisor and flag the area or post a look- put until the
		hazard has been mitigated.
20) Slop-over / Spot Fires.	Fire may cause injuries to personnel. Spot fire may	If the spot fire is outside the UXO area, use all standard safety procedures
	causeUXO to detonate which could cause injury or	on direct attack. Notify your supervisor. Watch out for UXO. If found, report

MRS-16 Prescribed Burn
Job Hazard Analysis

TASK / PROCEDURES	HAZARD	ABATEMENT ACTIONS
	death to personnel and/or damage to equipment.	that information to your supervisor and flag if safe. If necessary, post a
		lookout to insure that other engines and equipment stays clear of the
		device. If the spot fire is inside the UXO area, report the location to your
		supervisor and monitor its spread. Air Operation will direct air attach
		suppression into the area If firing-out procedures may be needed and only
		under the direction of the IC.
21) Firing Out Operation.	May cause injury or death to personnel and damage	Firing out procedures may be used to contain fires inside the UXO areas.
	to the environment and personal property	Firing out operation will be under the direction of the IC and engines may be
		used to follow up behind the firing operation to suppress any slop-over of
		spots outside the UXO area. Water Tender may be used to pre-treat areas
		ahead of the firing operation Report any slop-overs or spot fires to your
		supervisor immediately Mark spot with flagging. Use date, time, etc. plus
		name.
22) Suppression	High-power lines, both transmission and distribution,	Signs stating "CAUTION - High-Voltage Overhead" will be posted in areas
	are located in several areas around the burn unit.	to warn firefighting personnel of the hazard.
	Any water or foam coming in contact with these line	
	may cause injury or death.	All pilots must tour the site and check the "Hazard Map" as to the location of
		these lines. No aerial suppressant will be dropped on the lines.
23) Medical Problems and Care	Medical problems: Heat stress or exhaustion, cut,	Notify your supervisor and get help as soon as possible. Hydrate
	scrapes, sprains, broken bones, head injuries, foot	yourself throughout the day. Eat properly and get the proper rest.
	problems, burns, smoke inhalation and all other	
	medical problems. If not taken care of properly, may	Stay out of smoke or in for short duration and monitor each other.
	cause additional injury or loss of work.	Notify your supervisor for any medical attention.
24) Patrol Operations.	If not conducted properly, may cause escape which	Follow the Burn Plan and any Burn Boss changes to that Plan
	could lead to injuries to personnel.	A Division qualified person will be in charge of holding operations.
		Follow the JHA plans for safety.
	UXO in area and may cause injury or death. Steep	Stay on designated roads. Always use an escort when entering into UXO
	terrain in some areas need caution when driving.	area. Drive safe and slow, follow all posted speeds. Obey all local vehicle
	Interested public or protesters may cause traffic	laws.
	congestion in some areas.	
25) Clean Up and Demob.	Completed to prevent damage to the habitat or the	Check water bars, pick up all trash and remove from the project site.

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Job Hazard Analysis

TASK / PROCEDURES	HAZARD	ABATEMENT ACTIONS
	reputation of the U.S. Army and/or POMFD	Remove all signage on site and road ways. Pick up all tools, hoses and
		equipment.