



**Appendix G**  
Dust Control Plan

# APPENDIX G

## DUST CONTROL PLAN

Trailer Disposal and Former Debris Areas  
Rancho Corral de Tierra  
Moss Beach, San Mateo, County, California

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## **1.0 INTRODUCTION**

This Dust Control Plan (“Plan”) addresses the Trailer Disposal and Former Debris Areas at Moss Beach Ranch of the Rancho Corral de Tierra property, located in Montara, San Mateo County, California (these areas are referred to as the “Site,” see Figure G-1). Erler & Kalinowski, Inc. (“EKI”) has prepared this Plan for our client, the Peninsula Open Space Trust (“POST”) to describe the general dust control procedures and protocols that will be employed during implementation of the *Removal Action Workplan* (“RAW”) (EKI, 2012) for the Site. The RAW entails excavation and off-Site disposal of impacted shallow soils and transportation of those soils to a permitted off-Site disposal facility. POST will select a licensed remediation contractor (“Contractor”) to implement the RAW.

The Contractor selected by POST to perform the soil excavation and disposal activities at the Site will be required to prepare an addendum to this Dust Control Plan if the Contractor proposes deviations from procedures specified in this Plan. The Contractor will implement the procedures documented in this Dust Control Plan as well as the Contractor’s addendum to this Plan. EKI and POST will verify that the Contractor implements this Dust Control Plan and the Contractor’s addendum to this Plan.

### **1.1 Site Description and History**

The Trailer Disposal and Former Debris Areas are located on the Moss Beach Ranch portion of the Rancho Corral de Tierra property in Montara, San Mateo County, California. Moss Beach Ranch is a working equestrian facility, located approximately half a mile down an unpaved driveway off of Etheldore Street. The areas are situated approximately 150 feet apart, on either side of San Vicente Creek. The Trailer Disposal area is located behind a trailer home, approximately 40 feet west of San Vicente Creek. The Former Debris Area is located approximately 110 feet east of San Vicente Creek in an open field used for parking and equestrian activities.

The Rancho Corral de Tierra property ownership was transferred from POST to the National Park Service (“NPS”) in December 2011. EKI understands that the NPS is in the process of transforming the area into a park, as a part of the Golden Gate National Recreation Area and that Moss Beach Ranch will continue to operate as an equestrian facility.

## **1.2 Regulatory Status**

The NPS is serving as the Lead Agency responsible for oversight of the cleanup of soil at the Site. POST has retained responsibility for the removal of contaminated soil at the Site per the First Amendment to Corporate Offer to Purchase Real Property, dated 19 October 2011. The POST or EKI will confer with the NPS for review and approval of this Dust Control Plan and the Contractor's Site-specific addendum.

## **1.3 Objective**

Construction activities such as excavation, backfilling, grading operations, stockpiling soil, construction vehicle traffic, and wind flowing over disturbed soil may generate dust when the exposed soil surfaces are dry. The objective of this Dust Control Plan is to establish the project-specific requirements for control of dust emissions during construction activities at the Site.

## **1.4 Nature and Extent of Contamination**

Previous environmental investigations have found that the chemicals of concern ("COCs") in soil at the Site are zinc, endrin, and total petroleum hydrocarbons ("TPH"). The maximum zinc concentration detected in soil at the Site is 1,130 milligrams per kilogram ("mg/kg"). The maximum endrin concentration detected in soil is 0.00511 mg/kg. The maximum detected concentrations of TPH as diesel and as motor oil is 42,000 mg/kg and 60,000 mg/kg, respectively. The EKI Site-specific Health and Safety Plan ("HSP") in Appendix K of the RAW describes the associated potential chemical hazards.

## **2.0 DUST CONTROL PROCEDURES**

Dust control procedures will be performed every work day that excavation and backfilling activities are being conducted. The Contractor will employ the following dust control measures throughout the project:

- Water will be misted or sprayed by a water truck at least twice per day but also as often as needed to prevent formation of dust while clearing the Site, excavating, transferring soil on-Site, stockpiling, or loading or decontaminating transportation vehicles.
- Vehicle speeds will be limited to 5 miles per hour on the Site.
- Drop heights will be kept to a minimum while loading transport vehicles.
- Soil will be sprayed or misted as it is loaded onto transport vehicles if minimizing the drop heights does not adequately prevent dust generation.
- Vehicle tires will be cleaned prior to leaving the Site (see Appendix F, Decontamination Plan).

- Adjacent public streets on-Site and off-Site will be inspected at least three times per day including once at the end of the shift and will be swept using a vacuum street sweeper, if necessary.
- In the event that wind speeds exceed 20 miles per hour for more than 15 minutes or when dust control measures are not able to prevent visible dust emissions, soil-moving activities will be halted until wind speeds decrease and no visible emissions are observed.
- Trucks and transport vehicles will be covered when hauling soil, sand, and other loose material off-Site (see Appendix E, Transportation Plan).
- Excavated soils that may potentially require waste characterization during soil excavation activities and prior to off-Site disposal, assumed to be limited in volume, will be stockpiled. Stockpiled soil will be handled as potential hazardous waste until proven otherwise.
- Stockpiled soil and lead-containing metal debris will be placed on plastic sheeting (minimum 10-mil thickness) and securely covered with plastic sheeting (minimum 10-mil thickness).
- All stockpiles which are not being actively handled will be covered with weighted plastic sheeting or tarps, or watered twice daily, or sprayed with a non-toxic chemical soil binder acceptable to the NPS. Water will be applied at least three times a day or soil stabilizers will be applied to all unpaved access roads, parking areas, and staging areas at the Site as needed to minimize dust.
- A stabilized construction entrance/exit will be constructed and used for any unpaved access way.
- All stockpiles or bins will be covered at the end of each work day.

On weekends and holidays when excavation and backfilling activities are not being conducted, exposed impacted soils will be covered with plastic sheeting and weighted to prevent dust generation.

### **3.0 CONTINGENCY MEASURES FOR DUST CONTROL**

If EKI notifies the Contractor that visible dust is leaving the site, the Contractor will immediately cease all dust generating activities and increase and/or revise dust control measures to the satisfaction of EKI before resuming work. These measures may include increasing the magnitude and frequency of dust control measures and addition of a favorable reviewed dust palliative or surfactant to dust control water. Any use of chemicals to suppress dust must receive prior approval by NPS. If further dust control measures are needed due to meteorological conditions, the Contractor may implement additional dust control fabric or windscreens and enclosure of transport loading operations.

#### **4.0 CONTINGENCY MEASURES FOR ODOR CONTROL**

Based on the known conditions at the Site, odorous soil is not anticipated to be present at the Site. However, during excavation, unknown contamination from historical activities at the Site may be encountered and such soil may be odorous. In such circumstances, the Contractor will implement odor control measures if observations or complaints by the Contractor, EKI, regulatory agencies, air pollution control authorities, or nearby residents indicate the need for odor control measures. The Contractor will employ necessary measures to suppress odor that may include:

- Misting or spraying at a frequency during the work with water amended with an odor suppressant such as Simple Green solution or equivalent.
- Covering odorous open pits, exposed sidewalls, or stockpiles with soil or plastic sheeting to prevent continued release of odors.

Any use of chemicals to control odor must receive prior approval by NPS.

#### **5.0 REFERENCES**

EKI, 2012. *Draft Removal Action Workplan, Trailer Disposal and Former Debris Areas Rancho Corral de Tierra, Montara, San Mateo, County, California*, Erler & Kalinowski, Inc., October 2012.



**Notes:**

1. All locations are approximate.
2. Basemap source: The Thomas Guide Digital Edition, State of California, 2003/2004.

**Erler & Kalinowski, Inc.**

Site Location  
Moss Beach Ranch

Rancho Corral de Tierra  
Moss Beach, CA

October 2012  
EKI B10014.01

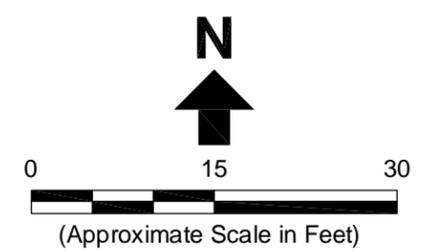
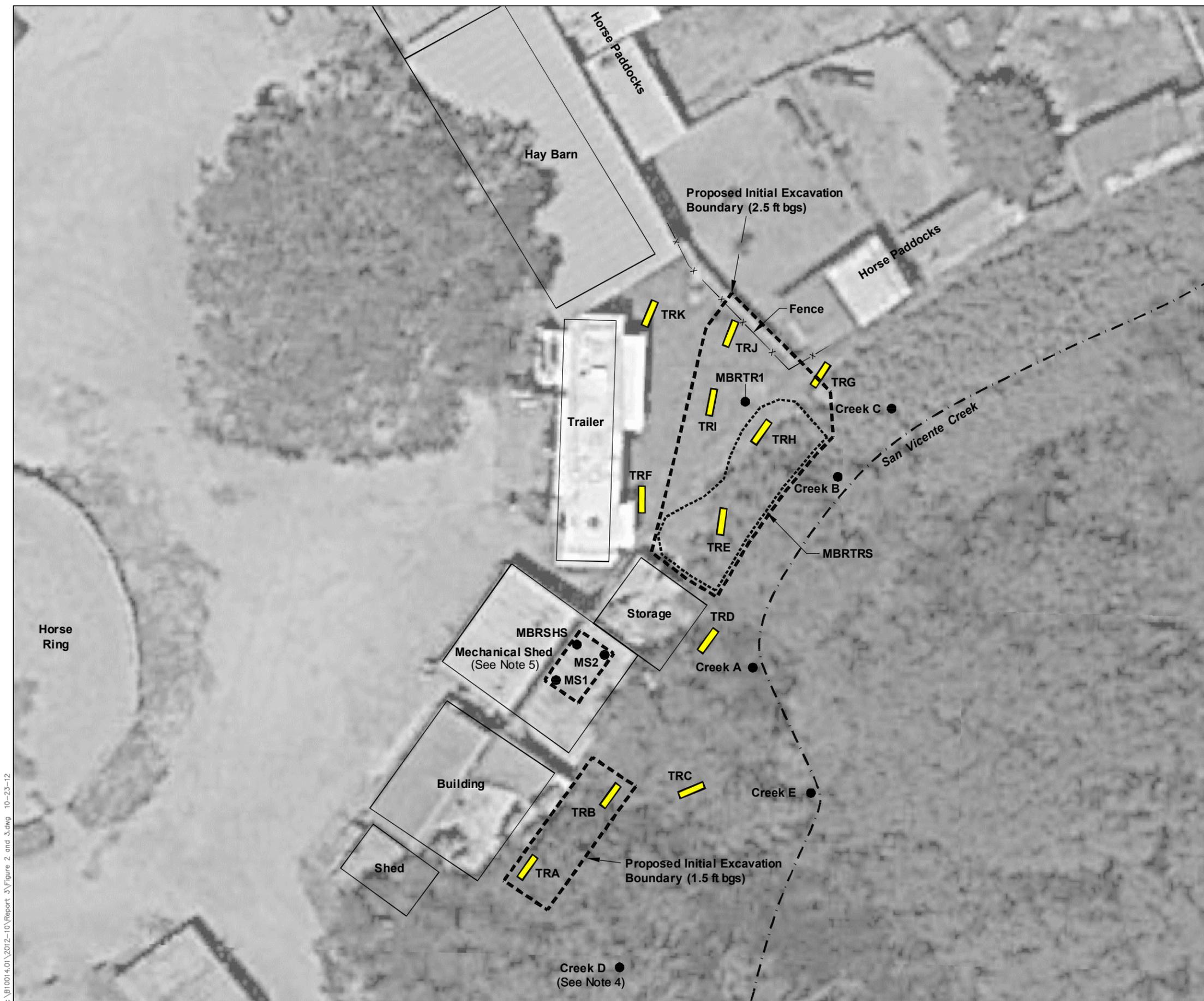
Figure G-1



0 1500 3000



(Approximate Scale in Feet)



- Legend:**
- Soil Sample Location
  - ▭ Test Pit Location
  - ⋯ Multi-Increment Soil Sample Location
  - - - Proposed Initial Excavation Extent

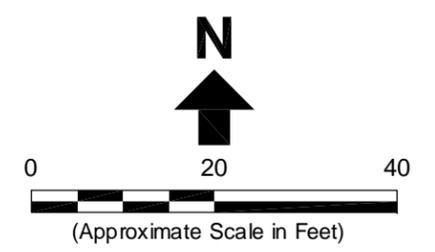
- Abbreviations:**
- ft bgs = Feet below ground surface
  - TPH-d = Total petroleum hydrocarbons as diesel
  - TPH-mo = Total petroleum hydrocarbons as motor oil

- Notes:**
1. All locations are approximate.
  2. Samples with the prefix "TR" and "Creek" were collected in February 2012. All other samples were collected in April 2011.
  3. Basemap source: Google Earth Pro, date of imagery June 19, 2011.
  4. TPH-d detected in sample Creek D was determined to be of natural origins, rather than petroleum hydrocarbons.
  5. The floor of the mechanical shed will be scraped with hand tools to the extent practicable. Due to the on-going use of the mechanical shed and limited access, it may not be feasible to remove all of the impacted soil.

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## Initial Extents of Excavation Trailer Disposal Area

Rancho Corral de Tierra  
Moss Beach, CA  
October 2012  
EKI B10014.01  
Figure G-2



- Legend:**
- Test Pit Location
  - Multi-Increment Soil Sample Location
  - Proposed Initial Excavation Extent

- Abbreviations:**
- ft bgs = Feet below ground surface
  - TPH-d = Total petroleum hydrocarbons as diesel
  - TPH-mo = Total petroleum hydrocarbons as motor oil

- Notes:**
1. All locations are approximate.
  2. Basemap source: Google Earth Pro, date of imagery June 19, 2011.

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## Initial Extents of Excavation Former Debris Area

Rancho Corral de Tierra  
Moss Beach, CA  
October 2012  
EKI B10014.01  
Figure G-3



**Appendix H**  
Storm Water Pollution Prevention Plan

**APPENDIX H**

**STORM WATER POLLUTION PREVENTION PLAN**

**Trailer Disposal and Former Debris Areas  
Rancho Corral de Tierra  
Moss Beach, San Mateo, County, California**

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## APPENDIX H

### STORM WATER POLLUTION PREVENTION PLAN

**Trailer Disposal and Former Debris Areas  
Rancho Corral de Tierra  
Moss Beach, San Mateo, County, California**

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## 1.0 INTRODUCTION

This Storm Water Pollution Prevention Plan (“SWPPP”) addresses the Trailer Disposal and Former Debris Areas at Moss Beach Ranch of the Rancho Corral de Tierra property, located in Moss Beach, San Mateo County, California (these areas are referred to as the “Site,” see Figure H-1). Erler & Kalinowski, Inc. (“EKI”) has prepared this Plan for our client, the Peninsula Open Space Trust (“POST”) to describe the general storm water pollution prevention procedures and protocols that will be employed during implementation of the *Removal Action Workplan* (“RAW”) (EKI, 2012) for the Site. This SWPPP is prepared pursuant to the requirements of the *National Pollution Discharge Elimination System (“NPDES”) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Water Quality Order 2010-0014-DWQ* (“General Permit”) issued by the State Water Resources Control Board (“SWRCB”). The cleanup method described in the RAW entails excavation and off-Site disposal of impacted shallow soils and transportation of those soils to a permitted off-Site disposal facility. POST will select a licensed remediation contractor (“Contractor”) to implement the RAW.

Dischargers, those parties whose activities or projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2010-0014-DWQ). The planned excavation of the Trailer Disposal and Former Debris areas are anticipated to disturb less than one acre of soil and therefore not required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity.

Construction activities are regulated by the General Permit based on the nature of the cleanup activities, which may potentially impair storm water quality.

For projects over one acre in size, the General Permit now requires that SWPPPs are written, amended, and certified by a Qualified SWPPP Developer. It also requires that the Risk Level of a construction site be determined based on a sediment erosivity index and receiving water body risk. The Risk Level for the project is assumed to be Risk Level 1 (i.e., low). However, the R factor, which is used to determine the sediment erosivity index, is time sensitive and highly dependent on when a construction activity takes place and how long it lasts, so the Permit’s Risk Level determination should be re-evaluated just prior to the start of the project when the start date and anticipated length of project are better known. These activities are not applicable as this project will be less than one acre in size.

The Contractor selected by POST to perform the soil excavation and disposal activities at the Site will be required to prepare an addendum to this SWPPP, which shall be prepared by a Qualified SWPPP Developer, in accordance with the General Permit requirements for the project Risk Level determined for the Site. The addendum will follow the NPS Under-an-acre Stormwater Pollution Prevention Plan (U-SWPP) template, provided in

Attachment H-1. The Contractor will implement the procedures documented in this SWPPP as well as the Contractor's addendum to this SWPPP. EKI and POST will verify that the Contractor implements this SWPPP and the Contractor's addendum to this SWPPP.

### **1.1 Purpose and Objectives**

The SWPPP has been prepared to identify and evaluate pollutant sources associated with construction activities that may affect the quality of storm water discharges and to identify non-storm water discharges from the Site. In addition, the SWPPP has been prepared to identify Site-specific BMPs to reduce or prevent the discharge of pollutants associated with storm water discharges and authorized non-storm water discharges, and to identify a maintenance schedule for BMPs.

### **1.2 Regulatory Status**

Based on a discussion with NPS and POST on 9 December 2011, EKI understands that NPS will act as the lead regulatory agency overseeing the cleanup of the Trailer Disposal Area and the Former Debris Area at Moss Beach Ranch.

### **1.3 SWPPP Amendments**

The Contractor will be required to prepare an addendum to this SWPPP, which shall be prepared by a Qualified SWPPP Developer, in accordance with the General Permit requirements for the project Risk Level determined for the Site, that includes: (1) determination of the Risk Level for the Site, (2) Material Safety Data Sheets ("MSDS") for chemicals used or stored on the site during construction, (3) an example best management practices ("BMP") inspection form, (4) emergency contact information, and (5) any proposed deviations from the procedures specified in this SWPPP. The Contractor will implement the SWPPP and SWPPP addendum, and EKI and POST will oversee Contractor implementation of this SWPPP and addendum.

The SWPPP shall also be updated and amended by the Contractor, as necessary, to include Contractor-specific information during soil removal activities if the scope of work changes significantly. Changes to the SWPPP may also be implemented if more economical or effective means are identified to reduce pollutant loading to storm water than the ones currently proposed or used.

The Contractor shall comply with all requirements including but not limited to submittal of all documentation and providing all monitoring required.

## **2.0 SITE DESCRIPTION**

### **2.1 Site Description and History**

The Trailer Disposal and Former Debris Areas are located on the Moss Beach Ranch portion of the Rancho Corral de Tierra property in Moss Beach, San Mateo County, California. Moss Beach Ranch is a working equestrian facility, located approximately half a mile down an unpaved driveway off of Etheldore Street. The areas are situated approximately 150 feet apart, on either side of San Vicente Creek. The Trailer Disposal area is located behind a trailer home, approximately 40 feet west of San Vicente Creek. The Former Debris Area is located approximately 110 feet east of San Vicente Creek in an open field used for parking and equestrian activities.

The Rancho Corral de Tierra property ownership was transferred from POST to the NPS in December 2011. NPS is in the process of transforming the area into a park, as a part of the Golden Gate National Recreation Area. Moss Beach Ranch will continue to operate as an equestrian facility.

### **2.2 Nature and Extent of Contamination**

Previous environmental investigations have found that the chemicals of concern (“COCs”) in soil at the Site are zinc, endrin, and total petroleum hydrocarbons (“TPH”). The maximum zinc concentration detected in soil at the Site is 1,130 milligrams per kilogram (“mg/kg”). The maximum endrin concentration detected in soil is 0.00511 mg/kg. The maximum detected concentrations of TPH as diesel and as motor oil is 42,000 mg/kg and 60,000 mg/kg, respectively. The EKI Site-specific Health and Safety Plan (“HSP”) in Appendix K of the RAW describes the associated potential chemical hazards.

### **2.3 Identification of Potential Pollutant Sources**

Potential pollutant sources during implementation of cleanup activities include disturbed soils, which can generate dust and sediment, exposure of contaminated soil to wind and rain, and spills from construction vehicles and construction-related facilities. No sources of non-storm water discharge to the storm drain are anticipated. Construction activities, potential pollutant sources, and potential pollutants are summarized in Table H-1.

### **2.4 Drainage Patterns**

The Moss Beach Ranch is a largely undeveloped, active equestrian facility. Roads in the general vicinity of the Site are of compacted dirt. Water generally flows over vegetated terrain and these dirt roads. San Vicente Creek runs between the Trailer Disposal and the Former Debris Areas, and likely receives all storm water flow in this area.

### **3.0 BEST MANAGEMENT PRACTICES**

BMPs will be implemented in accordance with the Golden Gate National Recreation Area Storm Water Management Plan Appendix C – BMP Handbook (“GGNRA BMP Handbook;” Kennedy/Jenks, 2010). Applicable BMPs for the Site are outlined in Table H-2, and detailed guidelines for implementation of these BMPs are included in Attachment H-2. The Contractor is expected to use experience and good judgment in the implementation of these guidelines and is expected to adapt these guidelines based on Site-specific needs.

#### **3.1 Protection of Storm Water from Soil**

In general, the majority of the impacted soil will be excavated and directly off-hauled; minimal on-Site stockpiling is anticipated. When feasible, excavation and loading operations will be timed to not occur during rainstorms. If soil is temporarily stockpiled, the soil will be placed on plastic sheeting and covered with plastic sheeting to minimize contact between storm water and the stockpiled soil. The stockpile will be managed in accordance with the BMPs outlined in Table H-2 and Attachment H-2. Based on inspection and evaluation of the implemented BMPs, additional controls, including silt fences, straw bales, and sandbag or gravel bag dikes, will be implemented if necessary.

#### **3.2 Waste Handling**

Waste handling BMPs will include spill prevention and control and the management of solid wastes, hazardous wastes, and sanitary and septic wastes. BMPs for waste handling are detailed in Table H-2 and Attachment H-2. Liquid construction wastes, such as equipment decontamination wash water collected from the decontamination pad sump, will be collected and containerized as outlined in the Decontamination Plan (see Appendix F).

#### **3.3 Control of Non-Storm Water Discharges**

BMPs will also be implemented to control non-storm water discharges, as necessary. The most likely potential sources of non-storm water discharges are equipment and vehicle cleaning, fueling, and maintenance activities. Proposed BMPs to control non-storm water discharges are included in Table H-2 and Attachment H-2.

#### **3.4 Post-Construction BMPs**

Post-construction BMPs, may include Site grading such that drainage velocities do not result in soil erosion and hydroseeding to stabilize shallow soil.

#### **3.5 Schedule of Removal Activities**

Removal activities are anticipated to commence in fall 2012 and will be completed within approximately six weeks. EKI has assumed that one to two weeks will be required for setup and staging prior to excavation activities, up to two weeks will be required for

excavation and soil off-haul, and an additional week will be required for final confirmation sampling, overexcavation, and surveying.

#### **4.0 EROSION CONTROL**

Erosion control BMPs will be implemented to retain soil and sediment on the construction site.

Wind erosion will be controlled during construction using the dust control measures outlined in the Dust Control Plan (see Appendix G of the RAW). Erosion controls for storm water runoff may include the installation and maintenance of fiber rolls (waddles) at the perimeter of the active construction areas or subareas at the Site to reduce off-Site storm water run-on to the Site. Post-construction erosion control measures may include Site grading such that drainage velocities do not result in soil erosion and hydroseeding.

Wind erosion from active stockpiles, if any, will be controlled during construction using the dust control measures outlined in the Dust Control Plan (see Appendix G of the RAW). Erosion due to storm water runoff from stockpiles will be controlled by placing the stockpiles on plastic sheeting and covering them with plastic sheeting.

#### **5.0 STABILIZATION**

The General Permit requires that all disturbed areas of a construction site must be stabilized. Final stabilization is achieved when a uniform vegetative cover with approximately 70-percent coverage has been established.

#### **6.0 SEDIMENT CONTROL**

Storm water from the Site currently runs off to San Vicente Creek. Erosion control measures will be employed as described in Section 4.0 and BMPs for storm water inlets as described in Section 3.1. Sediment control BMPs include protecting storm drain inlets with gravel berms or other sediment removal means. Additional controls including silt fences, hay bales, sandbag dikes, and sediment traps may be implemented if necessary based on inspection and evaluation of the proposed BMPs.

#### **7.0 RECORD KEEPING**

Records and plans (including this SWPPP, addenda, and all documents incorporated by reference) will be maintained by the Contractor. Other records maintained by the Contractor include:

- MSDS
- BMP Inspection records
- Records of emergency reports

## **7.1 Inspection and SWPPP Personnel**

BMP inspections will be conducted (to the extent practical during regular working hours) prior to storms, during storms, and immediately following storms pursuant to the General Permit requirements. During extended storm events, Contractor will endeavor to conduct inspections every 24-hour period. The purposes of the inspections are: (1) to identify areas contributing to storm water discharges, (2) to evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly installed and function in accordance with the terms of the General Permit, and (3) to evaluate whether additional controls or corrective maintenance activities are needed.

Contractor will identify and designate qualified persons responsible for these inspections.

## **7.2 Record Keeping**

As required by the General Permit, the results of the inspections will be documented and kept on file by the Contractor. Records of the BMPs implemented at the Site will also kept on file.

## **8.0 REFERENCES**

California Department of Transportation (“Caltrans”), 2003. *Construction Site Best Management Practice Manual*, March 2003.

EKI, 2012. *Draft Removal Action Workplan, Trailer Disposal and Former Debris Areas Rancho Corral de Tierra, Montara, San Mateo, County, California*, Erler & Kalinowski, Inc., October 2012.

Kennedy/Jenks, 2010. *Golden Gate National Recreation Area Storm Water Management Plan Appendix C – BMP Handbook*, Kennedy/Jenks Consultants, February 2010.

**TABLE H-1**  
**SUMMARY OF POTENTIAL POLLUTANT SOURCES**  
Trailer Disposal and Former Debris Areas, Rancho Corral de Tierra  
Moss Beach, San Mateo, County, California

<b>Construction Activities</b>	<b>Pollutant Source</b>	<b>Potential Storm Water Pollutants</b>
Soil Excavation	Soil from excavation activities carried off-Site by runoff and wind.	Sediment, dust, and metals
Stockpiling of Soil	Wind erosion, dust, and runoff from stockpile.	Sediment, dust, and metals
Off-haul of soil	Tracking of dirt from Site to streets. Runoff from transportation route (e.g. roads) to storm drains or streams.	Sediment, dust, and metals
General grading	Water from runoff. Wind erosion from Site.	Sediment, dust.
Construction Equipment Fueling and Maintenance	Spills from fueling and maintenance operations.	Diesel fuel, motor oil, hydraulic oil, antifreeze/coolant.
Construction Equipment Leaks	Leaking construction equipment.	Diesel fuel, motor oil, hydraulic oil, antifreeze/coolant.
Construction Equipment Cleaning	Cleaning of trucks in equipment decontamination area.	Sediment, metals, organochlorine pesticides, diesel fuel, motor oil, hydraulic oil, antifreeze/coolant.

**TABLE H-2**  
**SUMMARY OF APPLICABLE BEST MANAGEMENT PRACTICES**  
Trailer Disposal and Former Debris Areas, Rancho Corral de Tierra  
Moss Beach, San Mateo, County, California

ID (a)	BMP
<b>Protection of Storm Water Catch Basins</b>	
SE-3	Sediment Trap
SE-5	Fiber Rolls
SE-10	Storm Drain Inlet Protection
NS-8	Vehicle and Equipment Cleaning
WE-1	Wind Erosion Control
--	Decontamination Plan (Appendix F of the RAW)
--	Dust Control Plan (Appendix G of the RAW)
<b>Protection of Storm Water from Soil</b>	
WM-3	Stockpile Management
WM-7	Contaminated Soil Management
<b>Control of Non-Storm Water Discharges</b>	
NS-9	Vehicle and Equipment Fueling
NS-10	Vehicle and Equipment Maintenance
<b>Waste Handling</b>	
WM-4	Spill Prevention and Control
WM-5	Solid Waste Management
WM-6	Hazardous Waste Management
<b>Post-Construction BMPs</b>	
EC-4	Hydroseeding
EC-9	Earth Dikes and Drainage Swales
--	Final grading design to assist in erosion control.

**Abbreviations:**

BMP = Best Management Practices

RAW = Removal Action Workplan

**Notes:**

(a) BMP Working Details IDs from the *Golden Gate National Recreation Area Storm Water Management Plan Appendix C – BMP Handbook* (see Attachment 1).

**References:**

(1) Kennedy/Jenks, 2010. *Golden Gate National Recreation Area Storm Water Management Plan Appendix C – BMP Handbook*, Kennedy/Jenks Consultants, February 2010.

(2) EKI, 2012. *Draft Removal Action Workplan, Trailer Disposal and Former Debris Areas Rancho Corral de Tierra, Montara, San Mateo, County, California*, Erler & Kalinowski, Inc., October 2012.



**Notes:**

1. All locations are approximate.
2. Basemap source: The Thomas Guide Digital Edition, State of California, 2003/2004.

**Erler & Kalinowski, Inc.**

Site Location  
Moss Beach Ranch

Rancho Corral de Tierra  
Moss Beach, CA

October 2012  
EKI B10014.01

Figure H-1



(Approximate Scale in Feet)

**ATTACHMENT H-1**

Under-an-acre Stormwater Pollution Prevention Plan (U-SWPP) Template

*NOTE: For guidance on how to complete this template see the Under-An-Acre Pollution Prevention Plan (UPPP) Guideline on the [DSC Workflows](#) website.*

# UNDER-AN-ACRE POLLUTION PREVENTION PLAN (UPPP) *TEMPLATE*

*Project Title*

*Park Name*

*NPS Contract Number*

UPPP Prepared by:

*Company Name*

*Address 1*

*Address 2*

*City, State, ZIP*

*Telephone*

Name and Title of Preparer:

*Name and Title of Preparer*

UPPP Preparation Date:

*Date*

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- A. Contact Information
- B. Pollution Prevention Control Map or Sheet(s)
- C. Standard Installation Specifications for each BMP
- D. Blank forms

# 1 General Information

## 1.1 Responsible Parties

The following people and their companies are responsible for the implementation of this Under-an-acre Pollution Prevention Plan (UPPP) and their complete contact information can be found in Appendix A.

The Company responsible for the UPPP is: *Name, Company, and phone*

The UPPP Preparer assigned to this project is: *Name, Company, and phone*

The UPPP Manager assigned to this project is: *Name, Company, and phone*

Additional UPPP staff are: *Name, Company, and phone; Name, Company, and phone; etc*

## 1.2 UPPP Amendments

When changes in the approved UPPP are required, the contractor shall prepare and certify an amendment and submit it to the CO for review and approval. See Division 1 Specifications, Section 01 57 23 – Amending UPPPs.

### UPPP Amendment Log

Amendment No.	Date	Brief Description of Amendment	Prepared By

## 1.3 Project Scope

*Provide information in a narrative format that can be easily understood by a person who is not familiar with the project and explain the projects purpose, work scope, general description of location, and any special feature on or adjacent to the project site. Add UPPP Vicinity Map to Appendix B.*

## 1.4 Standards and Constraints

*Provide text to explain the possible constraints imposed on the project, such as: permits requirements relevant to the UPPP; National Environmental Policy Act (NEPA) requirements relevant to the UPPP; and standards or requirements that do not apply.*

## 1.5 Spill Prevention

The Environmental Protection Agency (EPA) has promulgated an oil pollution prevention regulation requiring facilities to prepare and implement Spills Prevention Control and Counter measures (SPCC) plan to prevent discharge of oil or other petroleum products into waters of the United States.

*If a separate SPCC is not being prepared for the project, include a list of SPCC BMPs in this section.*

## **2 Project Details that Relate to the UPPP**

### **2.1 Project Scheduling**

*Include in the project Gantt chart a Section Called "UPPP". Within this section include the UPPP schedule items and clearly show how the rainy season relates to soil-disturbing and re-stabilization activities. The schedule shall contain an adequate level of detail to show major activities sequenced with implementation of construction site BMPs, possibly including but not limited to the list below, which should be edited as required:*

- project start and finish dates
- rainy season dates
- mobilization dates
- mass clearing and grubbing/roadside clearing dates
- major grading/excavation dates
- special dates named in permits
- rainy season implementation schedule
- deployment of temporary BMPs, by BMP
- deployment of BMPs, by BMPs
- final stabilization activities staged over time for each area of the project

### **2.2 Site Information**

*Provide the following information in a narrative and table format, that can be easily understood by a person who is not familiar with the project, possibly including but not limited to the list below, which should be edited as required:*

- Project size (acres)
- Area of disturbance (acres)
- Impervious area
  - before
  - after
- Existing vegetative cover (type and present cover)
- Site topography
  - Drainage
  - Slope
  - Watershed
- Receiving water (including storm drains)
- Environmentally sensitive areas

#### **2.2.1 Known Data on Soil and Fill**

##### **2.2.1.1 Soil**

*In this section, at a minimum, provide a narrative and table describing types, nature and properties of the project site's soil, particularly as it relates to erosion by water, wind, or other agent. If warranted, include a map of the site's soils.*

### **2.2.1.2 Fill**

*In this section provide a narrative and table describing the nature and properties of any know fill. Include the fill's potential to contain pollutants that could be mobilized by storm water if disturbed. If needed please provide a map of the location of fill.*

## **2.3 Construction Information**

### **2.3.1 Activities with the Potential to Generate Non-Storm Water Pollution**

*Provide text in list format that explains the possible activity sources with the potential to generate non-storm water pollution. Such as, but not limited to, the list below which should be edited as required:*

- Dust generated by scraping or grading
- Trash or debris
- Other

### **2.3.2 Activities and Materials with the Potential to Pollute Storm Water**

*Provide text in list format that explains the possible activity sources that may generate non-sediment pollutants. Such as, but not limited to, the list below which should be edited as required:*

- General construction activities and litter
- Vehicle fueling, repair and fluids (oil, grease, petroleum, and coolants)
- Paints
- Solvents, thinners, acids
- Mortar mix
- Treated lumber (materials and wastes)
- Demolition and masonry block rubble
- Landscaping, raw materials and wastes (topsoil, plant materials, herbicides, fertilizers, pesticides, mulch)
- BMP materials (sandbags, liquid copolymer)
- Base and sub-base material
- Asphaltic emulsions associated with asphalt-concrete paving operations
- Cement materials
- Concrete curing compounds
- Other

### **2.3.3 Activities with the Potential to Generate Sediment**

*Provide text in list format that explains the possible activity sources with sediment as a pollutant. Such as, but not limited to, the list below which should be edited as required:*

- Lay down area and stockpiles
- Grubbing
- Grading
- Concrete work
- Trenching
- Dewatering
- Landscaping
- Other

### 3 Temporary Best Management Practices for Project

Based on the project location's characteristics, soil, and the scope of work, this project will require the following categories of BMPs:

- Management and Reporting;
- Waste Management;
- Non-Storm Water Pollution Control;
- Soil Stabilization (erosion prevention);
- Sediment Control;
- Other Pollution Control.

Each of the above identified project activities will be managed by BMPs in one or more of these sections below.

*Specific BMPs for each category are discussed below and relevant installation specifications can be found Appendix C.*

#### 3.1 Management and Reporting

*Management and Reporting is a required section. This section shall include the project information and activities and detail which BMPs will be used and why. Such as, but not limited to, the list below; which should be edited as required:*

- Who is responsible and contact information
- Inspection procedures
- Incident reporting
- Incident remediation
- UPPP adaptive management and addendums
- Reference to reporting and inspection forms in appendix
- Maintenance of BMPs
- Weather monitoring
- Or other relevant BMP.

#### 3.2 Waste Management

*Waste Management is a required section. This section shall include the project information and activities and detail which BMPs will be used and why. Such as, but not limited to, the list below; which should be edited as required:*

- Material Storage
- Solid Waste management
- Material use
- Hazardous waste management (including contaminated soil)
- Sanitary/septic waste
- Or other relevant BMP.

#### 3.3 Non-Storm Water Pollution Control

*In this section take the project information and activities then detail which BMPs will be used and why. Such as, but not limited to, the list below; which should be edited as required:*

- De-watering

- Water sampling for non-visible pollutants
- Vehicle fueling
- Vehicle cleaning
- Demolition controls
- Or other relevant BMP.

*If this section is not relevant to the project then make a statement that the project activities were reviewed and no Non-Storm Water Pollution Control BMPs are needed.*

### **3.4 Erosion Control - Soil Stabilization**

*Consider the following possible issues and provide text to explain the list below, which should be edited as required:*

- Exposed soil, active
- Exposed soil, temporary inactive
- Exposed soil, work completed
- Slopes
- Or other relevant BMP.

*If this section is not relevant to the project then make a statement that the project activities were reviewed and no Soil Stabilization BMPs are needed.*

### **3.5 Sediment Control**

*Consider the following possible issues and provide text to explain the list below, which should be edited as required:*

- Drainage control
- Soil stockpiles
- Storm drain protection
- Public roadways
- Or other relevant BMP.

*If this section is not relevant to the project then make a statement that the project activities were reviewed and no Sediment Control BMPs are needed.*

### **3.6 Other Pollution Control**

*Consider the following possible issues and provide text to explain the list below, which should be edited as required:*

- Wind erosion
- Vehicle tracking pollutants:
  - Offsite: mud
  - On site: Invasive species
- Or other relevant BMP.

*If this section is not relevant to the project then make a statement that the project activities were reviewed and no Other Pollution Control BMPs are needed.*

## **4 Permanent Pollution Control Practices**

*This section shall include a list with a short description of any Permanent Pollution Control Practices for the project. The information should include which BMPs will be used, why and to what standard. Include design drawings at the end of this report.*

## 5 References

*Prepare a list of the documents referenced in and used to prepare the UPPP; Project Plans & Specifications, reports, design, and storm water management related documents.*

*The reference for each document shall include:*

- *Complete name of the referenced document*
- *Number of the document (if applicable)*
- *Author*
- *Date Published or Produced (in the case of internal documents)*
- *Document date/revision that applies*

*Documents should include:*

- *Permits*
- *Geo-technical Reports*
- *Regulatory correspondences providing guidance*
- *Project Plans*
- *NPS contract*

## Appendices

- A. Contact Information
- B. Vicinity and Pollution Prevention Control Map or Sheet(s)
- C. Standard Installation Specifications for each BMP
- D. Blank forms

## Appendix A: Contact Information

*Include:*

*The Company responsible for the UPPP is: Name, Company and contact information*

*The UPPP Preparer assigned to this project is: Name, Company and contact information*

*The UPPP Manager assigned to this project is: Name, Company and contact information*

## Appendix B: Pollution Prevention Control Maps or Sheet(s)

*Include:*

*UPPP Vicinity Map: A map extending approximately one quarter mile beyond the property boundaries of the construction site showing: the construction site, surface water bodies (including known springs and wetlands), known wells, an outline of offsite drainage areas that discharge into the construction site, general topography, and the anticipated discharge location(s) where the construction site's storm water discharges to a municipal storm drain system or other water body. A U.S. Geological Survey (USGS) quad map may be used for showing the project site and a one-quarter mile extension beyond the property boundaries of the construction site.*

*Pollution Prevention Control Map(s): A map clearly showing boundaries of the construction site showing and includes: symbols for the location of BMPs, surface water bodies (including drainages and wetlands), topography, municipal storm drain system intake location, and UPPP discharge points.*

## Appendix C: Standard Installation Specifications for each BMP

*For each BMP include a section that provides sufficient information for the installation and maintenance of the structure. Include installation details, material lists, narratives, and resource references.*

## Appendix D: Blank forms

### Include:

- 1. Inspection Form*
- 2. Incident reporting Form*
- 3. UPPP Amendment Form*

Attachments

1. Permits (if any)
2. Spills Prevention Control and Counter measures plan (if required)
3. Supporting reports (if any)
4. Permanent Pollution Control Practices for Project (if any)

**ATTACHMENT H-2**

*Golden Gate National Recreation Area Storm Water Management Plan Appendix C –  
BMP Handbook (Kennedy/Jenks, 2010) (provided on CD)*

**Appendix I**  
Soil Sampling and Analysis Plan

# APPENDIX I

## SOIL SAMPLING AND ANALYSIS PLAN

**Trailer Disposal and Former Debris Areas  
Rancho Corral de Tierra  
Montara, San Mateo, County, California**

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## **APPENDIX I**

### **SOIL SAMPLING AND ANALYSIS PLAN**

**Trailer Disposal and Former Debris Areas  
Rancho Corral de Tierra  
Moss Beach, San Mateo, County, California**

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- I-1 Sample Containers, Preservatives, and Hold Times for Soil Samples
- I-2 Summary of Expected Analytical Laboratory Reporting Limits for Soil Analyses

##### **FIGURES**

- I-1 Site Location Map
- I-2 Initial Lateral and Vertical Extents of Excavation, Trailer Disposal Area
- I-3 Initial Lateral and Vertical Extents of Excavation, Former Debris Area

##### **ATTACHMENTS**

- I-1 Example Chain-of-Custody Form for Confirmation Samples
- I-2 Example Chain-of-Custody Form for Waste Samples

## **1.0 INTRODUCTION**

This Soil Sampling and Analysis Plan (“SAP”) addresses the Trailer Disposal and Former Debris Areas at Moss Beach Ranch of the Rancho Corral de Tierra property, located in Moss Beach, San Mateo County, California (these areas are referred to as the “Site”; see Figure I-1). Erler & Kalinowski, Inc. (“EKI”) has prepared this Plan for our client, the Peninsula Open Space Trust (“POST”) to standardize the procedures that will be used by EKI to collect and analyze soil samples during implementation of the *Removal Action Workplan* (“RAW”) (EKI, 2012) for the Site. The RAW entails excavation and off-Site disposal of impacted shallow soils and transportation of those soils to a permitted off-Site disposal facility. POST will select a licensed remediation contractor (“Contractor”) to implement the RAW.

EKI personnel will implement this SAP to collect soil samples from the limits of the excavations (“confirmation soil samples”) and waste characterization samples from stockpiled soils identified for additional characterization, if needed. For purposes of this SAP, waste characterization samples are defined as soil samples collected from excavated soil for characterization for off-Site disposal. Other soil or debris sampling and analysis may also be required to characterize materials encountered during excavation activities. Although soil samples for waste characterization purposes have been already collected from the Site (EKI, 2012), additional soil sampling and characterization may be necessary for disposal of materials excavated from the Site in the event that debris, visibly contaminated soil, or odorous soil is discovered during excavation activities that is different in character from that previously observed at the Site.

## **2.0 BACKGROUND**

### **2.1 Site Description and Use History**

The Trailer Disposal and Former Debris Areas are located on the Moss Beach Ranch portion of the Rancho Corral de Tierra property in Moss Beach, San Mateo County, California. Moss Beach Ranch is a working equestrian facility, located approximately half a mile down an unpaved driveway off of Etheldore Street. The areas are situated approximately 150 feet apart, on either side of San Vicente Creek. The Trailer Disposal area is located behind a trailer home, approximately 40 feet west of San Vicente Creek. The Former Debris Area is located approximately 110 feet east of San Vicente Creek in an open field used for parking and equestrian activities.

The Rancho Corral de Tierra property ownership was transferred from POST to the NPS in December 2011. NPS is in the process of transforming the area into a park, as a part of the Golden Gate National Recreation Area. Moss Beach Ranch will continue to operate as an equestrian facility.

### **2.2 Planned Excavation**

Soil will be excavated and removed from the Site in accordance with the RAW.

## 3.0 SAMPLING RATIONALE AND PROCEDURES

### 3.1 Confirmation Sampling of Excavated Areas

Confirmation soil samples will be collected once the initial lateral and vertical extents of the excavation shown in Figures I-2 and I-3 have been reached. Confirmation sidewall samples will be collected every 20-linear feet from excavation sidewalls, with at least one confirmation sample collected per sidewall. Sidewall samples will only be collected on excavation faces that are 1-foot in depth or greater. At each sidewall sampling location, one discrete sidewall sample will be collected at the mid-point of the sidewall depth. In the Trailer Disposal Area (including the Mechanical Shed), one discrete confirmation floor sample will be collected for every approximately 400-square foot area, with at least one confirmation floor sample collected per excavation area. As discussed previously with POST and NPS, the vertical extent has been characterized in the Former Debris Area and therefore, no floor confirmation samples will be collected in this area.<sup>1</sup>

Further soil removal and collection of additional confirmation soil samples may be necessary in the event that the analytical results of the initial confirmation samples indicate that Preliminary Cleanup Goals (“PCGs”) are not achieved. PCGs will generally be applied as an upper bound value for comparison to confirmation sampling results, with the following exceptions, which will be evaluated case-by-case, but are consistent with DTSC guidance (DTSC, 2009):

- Additional soil removal to meet the zinc PCG may not be necessary at isolated areas with zinc concentrations slightly over the PCG<sup>2</sup> where the data indicate that the extent of contamination is not significant.
- As a conservative measure, analytical data for samples with zinc concentrations between 110 milligrams per kilogram (“mg/kg”; the 95<sup>th</sup> percentile of the zinc population) and 138 mg/kg (the PCG) will be reviewed to determine if other analytes (e.g., petroleum hydrocarbons) are present above cleanup goals. In such cases, the zinc may be representative of environmental impacts, not background conditions, and the 110 mg/kg value may be more appropriate.

Such decisions will be made in consultation with POST and the NPS.

### 3.2 Additional Characterization Soil Sampling

Waste characterization samples were collected in February 2012, during exploratory trenching activities. If requested by disposal facilities, additional waste characterization samples may be collected. A waste characterization sample for an excavated soil or

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<sup>1</sup> In the 2012 investigation, six exploratory trenches (FDC, FDD, FDK, FDL, FDO, and FDP) were excavated within the footprint of the initial multi-increment soil sample decision unit (sample MBR9S) and samples were collected from depths of 1 ft bgs and 2.5 ft bgs. TPH as diesel and TPH as motor oil were not detected in any of the soil samples. These data will be used to represent floor confirmation samples for the Debris Disposal Area.

<sup>2</sup> Given that the zinc PCG is based on the 95% UTL on the 95<sup>th</sup> percentile, zinc concentrations slightly greater than 138 mg/kg may still represent background.

debris stockpile is anticipated to consist of a four-point composite sample per approximately 300 to 500 cubic yards. At a minimum, the frequency will be consistent with the disposal facility requirements. Four discrete soil samples will be collected from different portions of the stockpile and field composited using a decontaminated stainless steel bowl and trowel or composited by the analytical laboratory. A wide-mouth glass jar or a brass or stainless steel liner will be filled with the sample. If a liner is used, both ends of the liner will be covered with Teflon sheets and capped with plastic end caps. A sample label will be attached to the jar or liner and the sample will be handled in accordance with procedures described in Section 5.2. Waste characterization samples will be analyzed for analytes specified in Section 4.2.

### 3.2.1 Soil Sample Collection Procedures

The procedures for collecting soil samples are described below.

1. Soil samples collected from excavation pits will be collected by hand either from the sidewall or bottom of the pit or from soil collected in the shovel or backhoe bucket. For excavation areas 3 feet or less in depth, soil samples will be collected directly from the sidewalls and floors of the excavations. If any excavation areas are deeper than 3 feet, soil samples will be collected from an excavator shovel or bucket. If water is present, the excavation areas will be dewatered prior to collecting the soil samples.
2. If collecting soil samples directly from sidewalls and floors of excavation pits, field staff will scrape the sidewall face or excavation floor with a decontaminated trowel or spoon to expose a fresh surface to sample. If collecting soil samples from an excavator shovel or bucket, field staff will instruct the excavator operator to scrape the sidewall face or excavation floor to expose a fresh surface prior to sampling.
3. If collecting soil samples from the excavated material, field staff will collect the soil samples directly from the excavator shovel or bucket or from the stockpiled material.
4. Soil samples collected for waste characterization will be composited into four-point composite samples. Composite samples will be created by breaking up the clay-rich material of each individual sample with stainless steel sieves and graters. Four equal sized increments of soil will be mixed to create the composite samples.
5. Soil samples will be placed into the appropriate containers supplied by the laboratory, as shown in Table I-1. Sample naming, labeling, handling, transport, and chain-of-custody procedures are described in Section 5.0.
6. Accessible sample locations will be marked with stakes or flags to identify sample location and identification (“ID”). Sample locations will be sketched in field

notes, with distances from known points to allow relocation and will be subsequently surveyed by a California licensed surveyor.

#### **4.0 LABORATORY ANALYTICAL METHODS**

Sample bottles, preservatives, and hold times for the analytical methods listed below are included in Table I-1. All laboratory analyses will be performed by a California state certified analytical laboratory. A summary of the expected analytical laboratory reporting limits for soil analyses is included in Table I-2. Chemical analyses of soil and debris samples for waste characterization purposes are discussed below. Chemical analyses of soil samples collected from visibly contaminated or odorous soil, if encountered and different in character from that previously observed at the site, will be determined in the field and discussed with POST and NPS.

#### **4.1 Confirmation Soil Samples**

##### **4.1.1 Trailer Disposal Area**

Confirmation soil samples from the Trailer Disposal Area will be analyzed by a California state-certified laboratory for:

- TPH reported as diesel fuel and motor oil using U.S. EPA Method 8015m (with silica gel cleanup applied to the samples prior to analysis);
- Endrin using U.S. EPA Method 8081A;
- Zinc using EPA Method 6020A; and
- Percent moisture using ASTM Method D2216.

Confirmation samples from the Mechanical Shed at the Trailer Disposal Area will be analyzed for all of the above constituents, except for endrin.

##### **4.1.2 Former Debris Area**

Confirmation soil samples from the Former Debris Area will be analyzed by a California state-certified laboratory for:

- TPH reported as diesel fuel and motor oil using U.S. EPA Method 8015m (with silica gel cleanup applied to the samples prior to analysis);
- Zinc using EPA Method 6020A; and
- Percent moisture using ASTM Method D2216.

#### **4.2 Waste Characterization Soil Samples**

Additional soil sampling for waste characterization will be determined based on discussions with the Contractor's proposed disposal facilities in accordance with their acceptance requirements and the characteristics of the wastes encountered. Chemical

analyses for waste characterization may include the following analytical methods, to be performed by a California state-certified laboratory:

- TPH reported as diesel fuel and motor oil using U.S. EPA Method 8015m;
- Organochlorine pesticides using U.S. EPA Method 8081A;
- Title 22 metals using U.S. EPA Method 6020;
- Waste Extraction Test (“WET”) using CCR Title 22, Division 4.5, Chapter 11, Appendix II and subsequent selected metals analysis using EPA Method 6020; and
- Toxicity Characteristic Leaching Procedure (“TCLP”) using EPA method 1311 and subsequent selected metals analysis using EPA Method 6020.

## **5.0 FIELD QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES**

The analytical results of environmental samples collected at the Site will be evaluated for data quality in accordance with the guidelines set in the Quality Assurance Project Plan (“QAPP”) (Appendix J of the RAW).

### **5.1 Equipment Decontamination**

Reusable sampling equipment will be cleaned prior to sampling and after each use. Between sampling locations, reusable sampling equipment will be washed using a Liquinox (or equivalent non-phosphate containing detergent) solution in water. After washing, the sampling equipment will be rinsed first with clean water, then with distilled water, prior to initial use and between each subsequent use. Disposable sampling equipment, if used, will be discarded after each soil sample is collected.

### **5.2 Sample Identification Nomenclature**

A unique sample ID will be assigned to each collected sample. Example sample ID nomenclature is described below and may be subject to change.

#### **5.2.1 Soil Sample IDs**

A unique sample ID will be assigned to each collected sample. The code that may include:

1. a sample identifier;
2. the purpose of the sample;
3. the matrix, if appropriate for debris;
4. a sequence number;
5. the sampling depth, if appropriate; and
6. a letter for composites, if appropriate.

### **5.3 Sample Handling and Transport Procedures**

A sample label will be attached to each sample container following sample collection. The label will include the following information and will be filled out with waterproof, permanent ink.

1. Client and project number;
2. Unique sample identification number;
3. Date and time the sample was collected;
4. Initials of sample collector;
5. Preservatives used, if any; and
6. Analyses requested.

After labeling, the soil samples will be placed in zip-closure plastic bags, in a cooler with sufficient blue ice or wet ice to maintain the samples temperature at 4 ( $\pm$ 2) °C. Sample containers will be transported to the analytical laboratory under chain-of-custody procedures, as described below. Completed chain-of-custody records will be placed in a sealable plastic bag and placed inside the cooler. Each cooler will be sealed with a custody seal that consists of a security tape or label with the date and initials of the sampler. The tape or label will be placed such that the seal must be broken to gain access to the contents of the transport container.

### **5.4 Field Documentation**

#### **5.4.1 Field Logbook/Forms**

A field logbook or field forms will be used to document specific field activities and provide a daily record of field activities at the Site.

#### **5.4.2 Chain-of-Custody**

Samples will be transported to the analytical laboratory under chain-of-custody procedures. An example chain-of-custody is included in Attachments I-1 and I-2. Field personnel will record the following information on the chain-of-custody record in waterproof permanent ink:

1. Client and project number;
2. Site and property name;
3. Name or initials and signature of sampler;
4. Name of analytical laboratory;
5. Field sampling identification number for each sample;
6. Date and time of collection for each sample;
7. Number and type of sample containers for each sample;
8. Analysis requested for each sample;
9. Preservatives used, if any, for each sample;
10. Sample matrix for each sample;

11. Signatures of all persons involved in possession of the samples, (i.e. “relinquished by” and “received by”);
12. Dates and times of transfers of sample possession;
13. Shipping company air bill number, if applicable;
14. Any remarks by either sample collector.

## **5.5 Field QA/QC Samples**

### **5.5.1 Field Duplicates**

Field duplicates are a second sample collected at the same time as the original sample using identical sampling techniques. Field duplicate sample results are used to assess the precision of the sample collection process and to help determine the representativeness of the sample. Due to the heterogeneous nature of soil properties and matrix effects, a true soil duplicate sample also is difficult to properly subsample. Therefore, no soil duplicates will be collected.

### **5.5.2 Temperature Blanks**

For each cooler that is shipped or transported to an analytical laboratory a 40 milliliter (“mL”) VOA vial will be included that is marked “temperature blank.” This blank will be used by the sample custodian to check the temperature of samples upon receipt.

### **5.5.3 Equipment Blanks**

Equipment blanks on decontaminated trowels, spoons, or shovels will be collected at a 5-percent frequency of all samples collected and will be analyzed for TPH as diesel and motor oil and endrin.<sup>3</sup> An equipment blank consists of distilled water poured over the sampling equipment and into sample containers.

## **6.0 SURVEYING**

Following completion of fieldwork, horizontal coordinates and elevations of the excavation pits and confirmation soil sampling locations will be surveyed by a California state licensed land surveyor. Vertical elevations will be surveyed relative to a local vertical datum, approximately relative to the National Geodetic Vertical Datum (“NGVD”) 1988. Horizontal coordinates will be surveyed relative to the California Coordinate System North American Datum (“NAD”) 1983, Zone 3.

## **7.0 SITE HEALTH AND SAFETY PLAN**

The EKI Site Health and Safety Plan (“HSP”) is included in Appendix K of the RAW. All fieldwork will be performed in accordance with the HSP. In general, work on the Site will likely be conducted using Level D protection (e.g., Tyvek, hard hat, and steel-

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<sup>3</sup> Equipment blank samples will not be analyzed for zinc because the soil sampling equipment will be metal (e.g., trowels), which could result in significant interferences.

toed boots). Air quality within the breathing zone will be monitored with an organic vapor meter (“OVM”) while work is in progress, and respirators with organic vapor cartridges will be available for use if elevated OVM readings are encountered and sustained in the breathing zone (see Appendix K).

## **8.0 REFERENCES**

DTSC, 2009. *Arsenic Strategies: Determination of Arsenic Remediation Development of Arsenic Cleanup Goals, California* Environmental Protection Agency, Department of Toxic Substances Control, 16 January 2009.

EKI, 2012. *Draft Removal Action Workplan, Trailer Disposal and Former Debris Areas Rancho Corral de Tierra, Montara, San Mateo, County, California*, Erler & Kalinowski, Inc., October 2012.

**TABLE I-1**  
**SAMPLE CONTAINERS, PRESERVATIVES, AND HOLD TIMES FOR SOIL SAMPLES**  
Trailer Disposal and Former Debris Areas, Rancho Corral de Tierra  
Moss Beach, San Mateo, County, California

Analyte (a)	Analytical Method	Sample Container/Preservative	No. of Sample Containers Needed	Hold Time
TPH-d and TPH-mo	EPA Method 8015M with silica gel cleanup	6-inch long, 2-inch diameter pre-cleaned stainless steel or butyrate liner or 12-ounce glass jar/ Chill to 4°C	1	48-hours for extraction 14-days from extraction to analysis
Organochlorine Pesticides (Endrin)	EPA Method 8081A			14-days for extraction 40-days from extraction to analysis
Title 22 Metals (Zinc)	EPA Method 6020/7471			28-days for mercury 6-months for other metals
Percent Moisture	ASTM Method D2216			Not Applicable
WET	CCR Title 22, Division 4.5, Chapter 11, Appendix II	12-inch long, 2-inch diameter pre-cleaned stainless steel or butyrate liner or 12-ounce glass jar/ Chill to 4°C	1	28-days for mercury 6-months for other metals
TCLP	EPA Method 1311			28-days for mercury 6-months for other metals

**Abbreviations:**

ASTM = American Society for Testing and Materials Standards  
EPA = U.S. Environmental Protection Agency  
No. = number  
TCLP = Toxicity Characteristic Leaching Procedure  
TPH-d = total petroleum hydrocarbons as diesel  
TPH-mo = total petroleum hydrocarbons as motor oil  
WET = Waste Extraction Test

**Note:**

(a) Confirmation samples collected from the Trailer Disposal Area will be analyzed for TPH-d, TPH-mo, endrin, and zinc. Confirmation samples collected from the Trailer Disposal area will be analyzed for TPH-d and TPH-mo. If required by disposal facilities, additional waste characterization samples may be collected and analyzed for the additional analyses listed herein.

**TABLE I-2**  
**SUMMARY OF EXPECTED ANALYTICAL LABORATORY**  
**REPORTING LIMITS FOR SOIL ANALYSES**  
Trailer Disposal and Former Debris Areas, Rancho Corral de Tierra  
Moss Beach, San Mateo, County, California

Category/Analytical Method	Analyte (a)	Soil (b)
		RL
TPH (EPA Method 8015M)	TPH-d	5 mg/kg
	TPH-mo	5 mg/kg
Organochlorine Pesticides (EPA Method 8081A)	4,4'-DDD	5 ug/kg
	4,4'-DDE	5 ug/kg
	4,4'-DDT	5 ug/kg
	Aldrin	5 ug/kg
	Alpha-BHC	5 ug/kg
	Beta-BHC	5 ug/kg
	Chlordane	50 ug/kg
	Delta-BHC	5 ug/kg
	Dieldrin	5 ug/kg
	Endosulfan I	5 ug/kg
	Endosulfan II	5 ug/kg
	Endosulfan Sulfate	5 ug/kg
	Endrin	4 ug/kg
	Endrin Aldehyde	5 ug/kg
	Endrin Ketone	5 ug/kg
	Gamma-BHC	5 ug/kg
	Heptachlor	5 ug/kg
	Heptachlor Epoxide	5 ug/kg
Methoxychlor	5 ug/kg	
Toxaphene	100 ug/kg	
Title 22 Metals (EPA Method 6020)	Antimony	0.5 mg/kg
	Arsenic	0.2 mg/kg
	Barium	0.1 mg/kg
	Beryllium	0.1 mg/kg
	Cadmium	0.1 mg/kg
	Chromium	0.1 mg/kg
	Cobalt	0.1 mg/kg
	Copper	0.1 mg/kg
	Lead	0.1 mg/kg
	Molybdenum	0.1 mg/kg
	Nickel	0.1 mg/kg
	Selenium	0.5 mg/kg
	Silver	0.1 mg/kg
	Thallium	0.1 mg/kg
	Vanadium	0.1 mg/kg
Zinc	1 mg/kg	
(EPA Method 7471)	Mercury	0.0835 mg/kg

**Abbreviations:**

EPA = U.S. Environmental Protection Agency  
mg/kg = milligrams per kilogram  
RL = Reporting Limit

**Notes:**

- (a) Confirmation samples collected from the Trailer Disposal Area will be analyzed for TPH-d, TPH-mo, endrin, and zinc. Confirmation samples collected from the Trailer Disposal area will be analyzed for TPH-d and TPH-mo. If required by disposal facilities, additional waste characterization samples may be collected and analyzed for the additional analyses listed herein.
- (b) Expected analytical laboratory RLs may vary between analytical laboratories.



**Notes:**

1. All locations are approximate.
2. Basemap source: The Thomas Guide Digital Edition, State of California, 2003/2004.

**Erler & Kalinowski, Inc.**

Site Location  
Moss Beach Ranch

Rancho Corral de Tierra  
Moss Beach, CA

October 2012  
EKI B10014.01

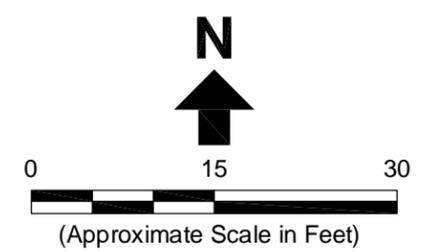
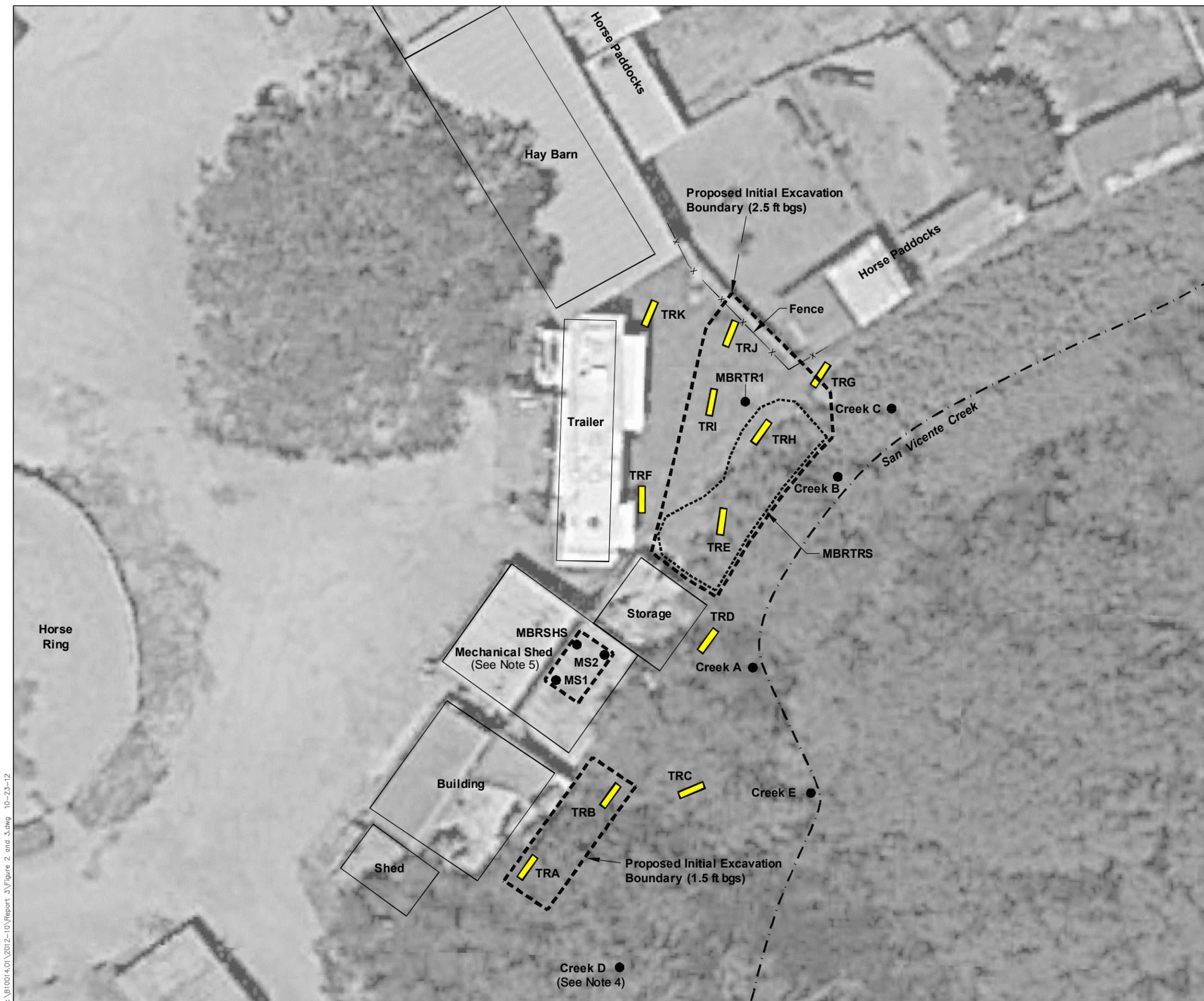
Figure I-1



0 1500 3000



(Approximate Scale in Feet)



- Legend:**
- Soil Sample Location
  - ▭ Test Pit Location
  - ⋯ Multi-Increment Soil Sample Location
  - - - Proposed Initial Excavation Extent

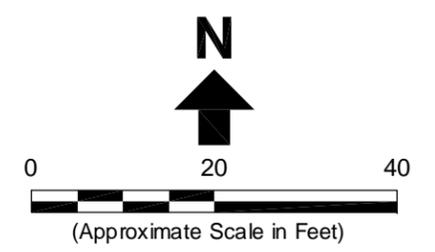
- Abbreviations:**
- ft bgs = Feet below ground surface
  - TPH-d = Total petroleum hydrocarbons as diesel
  - TPH-mo = Total petroleum hydrocarbons as motor oil

- Notes:**
1. All locations are approximate.
  2. Samples with the prefix "TR" and "Creek" were collected in February 2012. All other samples were collected in April 2011.
  3. Basemap source: Google Earth Pro, date of imagery June 19, 2011.
  4. TPH-d detected in sample Creek D was determined to be of natural origins, rather than petroleum hydrocarbons.
  5. The floor of the mechanical shed will be scraped with hand tools to the extent practicable. Due to the on-going use of the mechanical shed and limited access, it may not be feasible to remove all of the impacted soil.

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## Initial Extents of Excavation Trailer Disposal Area

Rancho Corral de Tierra  
Moss Beach, CA  
October 2012  
EKI B10014.01  
**Figure I-2**



- Legend:**
- Test Pit Location
  - Multi-Increment Soil Sample Location
  - Proposed Initial Excavation Extent

- Abbreviations:**
- ft bgs = Feet below ground surface
  - TPH-d = Total petroleum hydrocarbons as diesel
  - TPH-mo = Total petroleum hydrocarbons as motor oil

- Notes:**
1. All locations are approximate.
  2. Basemap source: Google Earth Pro, date of imagery June 19, 2011.

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### Initial Extents of Excavation Former Debris Area

Rancho Corral de Tierra  
Moss Beach, CA  
October 2012  
EKI B10014.01  
Figure I-3

**ATTACHMENT I-1**

Example Chain-of-Custody Form for Confirmation Samples



**ATTACHMENT I-2**

Example Chain-of-Custody Form for Waste Samples

