

APPENDIX I-11
Revised Site Management Plan

Kennedy/Jenks Consultants

303 Second Street, Suite 300 South
San Francisco, California 94107
415-243-2150
FAX: 415-896-0999

Revised Site Management Plan

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Prepared for

General Mills Operations, LLC
One General Mills Boulevard
Golden Valley, Minnesota 55426

K/J Project No. 1365048*00

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Section 1: Introduction

At the request of the Solano County Department of Resource Management (County), and in conjunction with the City of Vallejo (Owner), Kennedy/Jenks Consultants, Inc. (Kennedy/Jenks) has prepared this Site Management Plan (SMP) for a portion of the property referred to as 790 and 800 Derr Street, in the City of Vallejo, County of Solano, State of California, which is identified as the western portion of Solano County Assessor's Parcel Number 0061-160-230 in Vallejo, California (referred to "Site" or "Burdened Property"). The 790/800 Derr Street address property is comprised of two separate parcels. The eastern portion of the property identified as Solano County Assessor's Parcel Number 0061-160-220 (see Figure 1) was formerly owned by General Mills and was referred to as the "Owned" or "Unrestricted" parcel. The western portion of the property, Solano County Assessor's Parcel Number 0061-160-230 (Burdened Property, Figure 1) is owned by the City of Vallejo (Owner). Vallejo Marine Terminal, Inc. (VMT) has purchased the unrestricted parcel of the 790/800 Derr Street property and entered into a long-term lease agreement with the City of Vallejo for access to and use of the Burdened Property. The Burdened Property is subject to State Lands Commission covenants that prevent residential development and restricts use to waterfront access by the general public and commercial/industrial uses associated with maritime activities. Future development or use of the Burdened Property for certain commercial uses including medical facilities, day care centers, and schools are prohibited in accordance with an environmental covenant recorded for the Burdened Property.

This SMP is an attachment to the covenant as such requirements presented in this SMP are mandatory for Owner and current and future occupants. Current and future tenants and Owner are required to submit a copy of this SMP to any occupant or site worker having access to the SMP Area, and any subcontractor that will be conducting subsurface activities at the Site. Occupants, workers and subcontractors shall sign an acknowledgement that they received the SMP and will adhere to the requirements herein.

This SMP is valid until any changes that are approved by the regulatory oversight agencies (County or the San Francisco Bay Regional Water Quality Control Board [RWQCB]) to the SMP are recorded and redistributed to the appropriate parties. Acknowledgements of any recorded changes to the SMP shall also be obtained from parties that have access to the SMP area.

The specific portion of the Burdened Property that is subject to this SMP consists of 1.1 acres identified as "SMP Area" (see Figure 2) and an additional 0.7 acres adjacent to the SMP area, identified as the "Buffer Zone". The SMP Area, and deep soils (saturated soils greater than 5 feet below ground surface [bgs]) in the Buffer zone, have been identified as requiring special designation and restrictions pertaining to subsurface activities because soil and shallow groundwater in the SMP Area and Buffer Zone (Figure 2) contain residual concentrations of total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAHs), and related chemicals of concern.

Kennedy/Jenks understands that VMT intends to use the Site, including the SMP Area for office space, as well as loading, off-loading and storage of bulk materials and construction materials and equipment associated with their business. VMT also intends to sublease a portion of the Site.

1.1 Objectives of the Site Management Plan

The procedures specified in this SMP have been developed to:

- Manage the clean soil cap placed over the former excavation containing impacted soil and groundwater
- Control exposure to impacted soils and groundwater within and adjacent to the SMP Area; and
- Document procedures and protocols for monitoring activities and for agency notification, as required, during development and subsurface construction within the SMP Area.

In addition to the site-specific provisions, this SMP presents general restrictions and requirements including:

- The County or RWQCB shall be permitted reasonable access to the property for inspection, surveillance, monitoring, maintenance, or other purposes necessary to protect public health or safety pursuant to Section 25299.36.
- Prohibition of property subdividing except as allowed under Sections 25232(a) (2) and 25232(b) (2) of the Health and Safety Code.
- Each and all of the Restrictions run with the land pursuant to Section 1471 of the Civil Code. Each and all of the Restrictions are enforceable by the RWQCB or the County.

Surface and subsurface work to be conducted outside the SMP Area and Buffer Zone is not controlled by this SMP, as long as work is conducted in an area where petroleum hydrocarbons have not been previously detected in soil (see Figure 2), and as long as the work does not result in a disturbance of the subsurface soils or shallow groundwater within the SMP Area and Buffer Zone (e.g., horizontal drilling for utility installation) or a change to the normal shallow groundwater flow direction or conditions (e.g., construction dewatering).

1.2 Site Management Plan Organization

The remainder of this SMP is organized as follows:

- Section 2 provides a summary of the SMP Area and Buffer Zone background, including the setting, geology, environmental conditions, chemicals of concern and site-specific screening levels (SSL).
- Section 3 describes the procedures to be conducted prior to subsurface construction.
- Section 4 presents the management procedures for handling contaminated soil and groundwater.
- Section 5 presents the environmental health and safety requirements applicable to the site-specific contaminants.
- Section 6 provides cited literature references.

Section 2: Site Background

General Mills, Inc. formerly owned and operated a flour milling facility at the 800 Derr Street address. The flour mill is no longer in operation. The property consists of two parcels – the unrestricted parcel including APN 0061-160-220 and the Burdened Property (or Site), APN 0061-160-230, as described in Section 1. The Site encompasses approximately 10 acres of land that is bordered on the north by Mare Island Strait and a rail yard, on the south and west by Mare Island Strait, and on the east by the unrestricted parcel. The Site is located in a mixed residential and commercial development area. The 1.1 acre SMP Area and the 0.7 acre Buffer Zone are contained within the Site boundaries, as shown in Figure 2.

Historical Site use, investigation and remediation efforts, and groundwater monitoring results are provided in detail in the documents referenced in Section 6, which are available from the County Department of Resource Management, and on the State Water Resource Control Board (SWRCB) website, GeoTracker (<http://geotracker.waterboards.ca.gov>).

2.1 Site Lithology and Hydrogeology

The Site is located in the San Francisco Bay Physiographic Region of California, and is designated by the State Lands Commission as “Formerly Filled Tidelands” because, prior to 1950, the western portion of the property (including the SMP Area) was extended into Mare Island Strait by adding artificial fill to the bay. This fill consists of low- to moderate-permeability unconsolidated clayey silts and gravelly sandy silts, extending to depths from 3 to greater than 28 feet below ground surface (bgs), based on historical soil borings logs. Low-permeability clay (i.e., Bay Mud) is present beneath the unconsolidated fill in portions of the SMP Area. The eastern portion of the Site, including the SMP Area, is underlain by native bedrock (inter-bedded layers of sandstone and siltstone of the Great Valley Sequence formation). The ground surface elevation of the SMP Area is approximately 10 feet above mean sea level. Groundwater was observed at approximately 5 to 6 feet bgs in the SMP Area (Malcolm Pirnie, 2013).

2.2 Environmental Conditions and Chemicals of Concern

Three underground fuel storage tanks (USTs) were formerly located beneath the Site in the SMP Area (Malcolm Pirnie, 2006a) as shown in Figure 2. These USTs were removed, and the County approved the UST closure activities and associated remedial activities. Site specific chemicals of concern include TPH and PAHs. Site remedial activities included excavating and treating on-site soils containing TPH and PAH concentrations that exceeded site-specific screening levels. Following completion of the remedial activities, treated soils were reused to backfill the excavation. Clean fill was imported and used to cover the treated site soils. Residual concentrations of TPH and PAHs remain adsorbed to the soils and in the groundwater within the SMP Area and Buffer Zone.

2.2.1 SMP Area Remedial Activities

Between November 2006 and May 2007, soils in the SMP Area were excavated, treated and re-used, in accordance with a Remedial Action Work Plan and addendum approved by the County (Malcolm Pirnie, 2006b and 2007c). Remedial activities included excavation and ex-situ treatment of approximately 14,000 tons of contaminated soil using chemical oxidants to reduce

adsorbed petroleum hydrocarbon concentrations; and extraction of more than one million gallons of groundwater for treatment then discharge. Excavated soils were also treated on site using quicklime to improve the compaction properties. The former excavation consisted of an irregular shaped area approximately 300 feet long, up to 150 feet wide, and up to 18 feet deep, as shown on Figure 2. Following confirmation that soil treatment met the remedial objectives (County, 2007), the treated soil was used to backfill the excavation area to approximately 3.5 feet bgs (ERRG, 2007). Untreated site soils containing TPH and PAHs at concentrations that ranged from non-detect to less than the County-approved SSLs were used to backfill the excavation to 1 foot bgs. The upper 1 foot of the excavation was backfilled with clean imported fill. Additionally, deep saturated soils adjacent to the SMP area (i.e., the Buffer Zone) are known to contain TPH concentrations that exceed ESLs but are below SSLs (Figure 2).

Groundwater beneath the Site was monitored on a quarterly to semi-annual basis between 2007 and 2013. In 2009, a thin layer of residual petroleum hydrocarbon product was detected on the groundwater surface within well MP-6R (Malcolm Pirnie, 2009). The residual hydrocarbons were removed from well MP-6R (Figure 2) and an investigation was conducted in the vicinity of MP-6R to evaluate the extent of the residual product. Results of the investigation and subsequent high vacuum extraction (HiVac) pilot tests on three extraction wells and MP-6R installed in the residual source area indicated that the residual petroleum hydrocarbons are not mobile and limited in extent to soil located north-northeast and south-southeast of well MP-6R (Malcolm Pirnie, 2012). In addition, measurable product has not been detected on the groundwater at the site since November 2009.

Results from groundwater monitoring events conducted in 2012 indicate that dissolved TPH concentrations are at or below their respective SSLs, and concentrations remain stable or declining. This monitoring program indicated that residual concentrations of COCs were reported in the groundwater, but at concentrations deemed acceptable for restricted site use according to the requirements presented within this SMP.

2.2.2 Potential Exposure Pathways and Screening Levels

Soils below 1 foot bgs in the SMP area, and deep (below 5 feet bgs) saturated soils in the Buffer Zone contain detectable concentrations of TPH that exceed the RWQCB's Tier 1 ESLs for industrial properties. The following potential exposure pathways were identified in the SMP Area and Buffer Zone, based on a risk assessment and environmental screening evaluation conducted by Malcolm Pirnie (Malcolm Pirnie, 2007a):

Table 1: Potential Exposure Pathways

Potential Receptor Population	Exposure Media				
	Shallow Soil Inside SMP Area (1 to 3.5 ft bgs)	Shallow Soil in Buffer Zone (<5 ft bgs)	Deep Soil Inside SMP Area (>3.5 ft bgs)	Deep Soil in Buffer Zone (>5 ft bgs)	Shallow Groundwater
Construction / Utility Worker	Likely	Incomplete	Possible	Possible	Possible
Commercial / Industrial Workers	Possible	Incomplete	Incomplete	Incomplete	Incomplete
Recreationists – Public Park	Possible	Incomplete	Incomplete	Incomplete	Incomplete
Recreationists – Maritime Use	Incomplete	Incomplete	Incomplete	Incomplete	Possible
Saltwater Aquatic Biota	Incomplete	Incomplete	Incomplete	Incomplete	Possible

Notes:

- < = less than
- > = greater than
- ft = feet
- bgs = below ground surface

Based on the potential exposure scenarios noted above, Malcolm Pirnie developed SSLs for contaminants of concern (COCs) identified in shallow soil (less than 5 feet bgs) deep soil (greater than 5 feet bgs) and groundwater (Malcolm Pirnie, 2007a). The applicable RWQCB ESLs and County-approved SSLs are presented below:

Table 2: Screening Levels for Site-specific Contaminants of Concern

	Concentration (mg/kg)			Concentration (µg/L)		
	Soil ESLs (< 10 ft)	Shallow Soil SSL (< 5 ft)	Deep Soil SSL (> 5 ft)	Groundwater ESLs	Inland Groundwater SSL	Buffer Zone Groundwater SSL
TPH-G	100	400	400	210	500	500
TPH-D	100	1,875	10,000	210	2,500	640
TPH-MO	370	11,500	20,000	210	2,500	640
PAHs:						
Acenaphthene	19	19	19	23	23	23
Acenaphthylene	13	13	13	30	30	30
Anthracene	2.8	2.8	2.8	0.73	0.73	0.73
Benzo[a]anthracene	0.38	12	12	0.027	5	0.027
Benzo[a]pyrene	0.038	15	15	0.014	1.9	0.014
Benzo[b]fluoranthene	0.38	46	46	0.4	N/A	N/A
Benzo[g,h,i]perylene	27	27	27	0.1	N/A	N/A
Benzo[k]fluoranthene	0.38	37	37	0.4	N/A	N/A
Chrysene	23	23	23	0.35	0.35	0.35
Dibenzo[a,b]anthracene	0.062	43	43	0.25	N/A	N/A
Fluoranthene	40	60	60	8	8	8
Fluorene	8.9	8.9	8.9	3.9	950	3.9
Indeno[1,2,3-cd]pyrene	0.62	7.7	7.7	0.048	N/A	N/A
1- & 2-Methylnaphthalene	0.25	7.1	7.1		N/A	
Naphthalene	1.3	2.8	4.8	2.1		N/A
Phenanthrene	11	11	11	24	24	24
Pyrene	11	11	11	4.6	410	4.6
Pyrene	85	85	85	2	2	2

Notes:

Source: Human Health and Ecological Exposure Analysis (Malcolm Pirnie, March 2007) and Characterization of Treated Soils for Polynuclear Aromatic Hydrocarbons, (Malcolm Pirnie, April 25, 2007).

ESLs: Bay Area Regional Water Quality Control Board Environmental Screening Levels, Interim Final May 2008:

Table B-1: Shallow Soil Screening Level, residential land use, groundwater is not a drinking water resource.

Table F-1b: Groundwater Screening Level, groundwater is not a drinking water resource.

N/A = Not applicable. Constituent has not been identified in groundwater beneath the site.

2.3 Areas Applicable to SMP Restrictions

The objective of the remedial activities was to remove soils impacted by TPH at concentrations that exceeded their respective SSL. Because the SSLs exceed the RWQCB's Environmental Screening Levels (ESLs), they are considered above acceptable levels for unrestricted land use. As such, an SMP is required to be prepared and implemented to restrict site activities and preserve management of the residual impact to minimize human health and environmental risk and exposure. The SMP restrictions presented in Sections 3 and 4 of this document are applicable to the two areas illustrated on Figure 2:

- SMP Area: contains clean imported fill from ground surface to 1 foot below grade; treated soils containing TPH concentrations exceeding ESLs, but below SSLs below 1 foot bgs, and
- Buffer Zone : native soils possibly containing TPH concentrations less than ESLs from ground surface to 5 feet bgs; and native soils possibly containing TPH concentrations greater than ESLs but less than SSLs below 5 feet bgs.

Section 3: SMP Area Inspection and Non-SMP Area

Based on historical remediation activities and groundwater monitoring data, and the County-approved 2007 exposure assessment, subsurface conditions within and adjacent to the SMP Area do not pose a significant human health or environmental risk under the restricted land use. Since residual chemicals are not present in near surface soils (upper 1 foot of soil column) in the SMP Area, and present to a limited extent in saturated (deep) soil in the Buffer Zone, future industrial workers are not expected to be exposed to hazardous material or COCs. However, there is a potential for construction workers installing foundations or underground utilities, landscape workers, and other persons performing subsurface work to become exposed to residual contaminants. There is also a potential for exposure to site workers and construction workers if the clean soil cap is not maintained in accordance with the requirements presented in this SMP, or if a building is constructed within the SMP Area without proper barrier if determined to be warranted.

The SMP area is identified by 1-foot by 1-foot flush-mounted concrete monuments with brass markers installed at the locations illustrated on Figure 2. Construction details for the monuments are illustrated on Figure 3. Monuments are identified by a unique number (No. 1 through 12), which correspond to the locations illustrated on Figure 2.

3.1 Annual Soil Cap Inspection – SMP Area

As noted above, treated soil in the SMP Area has been capped with 1 foot thick layer of clean import fill material. Owner and tenant are required to maintain the thickness and integrity of this cap in accordance with the procedures specified in this document. Inspection of the cap on an annual basis is the responsibility of the Owner. Inspections will consist of a visual reconnaissance of the SMP Area and Buffer Zone for evidence of surface erosion or disturbance. The 1-foot cap thickness can be confirmed by visually confirming a level ground surface exists in between the SMP Area monuments. Inspections will be documented in a field inspection report that will be submitted to the County (using the form included as Appendix A, or similar). If the annual inspection indicates that the cap or surface materials inside the Buffer Zone are disturbed, the field inspection report will include recommendations for corrective actions to restore and maintain the cap integrity.

3.2 Site Construction Activities Outside of the Buffer Zone

If any worker conducting subsurface activities outside the Buffer Zone encounters soil or groundwater that is potentially impacted by COCs (i.e., petroleum odors, staining, sheen on groundwater water, etc.), they should notify the Owner. The Owner will assess the reported observation with respect to relevant historical subsurface investigation data to determine if the reported contamination represents a previously unknown impact. If the reported contamination is in an area known to be impacted and was previously evaluated, no additional investigation activities will be conducted. Otherwise, the Owner will collect samples of the potentially-impacted soil or groundwater to determine if COCs exist at concentrations exceeding the SSLs. If concentrations exceed their respective SSLs, the Owner will notify the County of the site conditions and submit a work plan to characterize and/or mitigate the nature and extent of the impact. California State Law requires that any individual including handlers, employees, authorized representatives, agents or designees shall, upon discovery, immediately report any

release or threatened release of hazardous materials (Health and Safety Code 25507). If a release or threaten release is determined based on environmental investigations performed on any property, then it is required to be immediately reported.

The specific characterization activities (e.g., collection and testing of samples) will depend on site conditions and input from the County or RWQCB, as applicable. If characterization activities indicate that chemicals in the soil or groundwater are present at concentrations above the SSLs the impacted area will be included in the SMP Area, and managed in accordance with this document. An updated SMP shall be submitted to the County and RWQCB to include the additional area that is required to be managed under the SMP. Monument locations will be altered, or additional monuments added, to delineate the additional area.

3.3 Agency Notification

The Owner shall notify the County in writing (letter) a minimum of 15 days in advance of conducting any planned subsurface activity within the SMP Area. If it is necessary to conduct any subsurface activity before written notification can be provided (i.e., urgent response), the Owner shall notify the Environmental Health Department by telephone at: (707) 784-6765 a minimum of 72 hours in advance of work.

3.4 Health and Safety Requirements

Worker health and safety is addressed by Federal and State law requiring appropriate employee health and safety precautions be followed when working with chemically impacted soil and groundwater. See Title 29 of the Code of Federal Regulations, Part 1910.120 (29 CFR 1910.120) and Title 8 of the Code of California Regulations, Section 5192 (8 CCR 5192) and other relevant local, state and federal regulations. Contractors conducting subsurface activities in the SMP Area will prepare a site-specific health and safety plan that, at a minimum, shall identify the level of risk to site and construction workers, provide site worker restrictions, specify the appropriate personal protection equipment (PPE) and indicate when the PPE may need to be changed due to changes in site conditions.

Site tenant shall notify all contractors that impacted soils and groundwater is likely present within the work area and worker protection shall be required. Contractors conducting subsurface activities shall prepare a site-specific health and safety plan that, at a minimum, includes the following:

- The Contractor's organizational structure – including all responsible employees assigned to manage or supervise the contracted work. The document shall name the responsible individuals, include their various titles, and include their responsibilities and reporting structure. Contractor shall assign a Competent Person for overseeing excavation safety. The document shall clearly spell out responsibilities for overall safety plan preparation and implementation, periodic documented site safety inspections, initial and daily safety talks, emergency response activities and accident investigations.
- The Contractor's Safety Training Program – including documented initial site orientation and the presentation of safety rules and procedures, as well as the presentation of daily safety talks and briefings. Contractor's Safety Plan shall include an Emergency

Response Plan including first aid supplies, fire extinguishers, hospital maps, and spill containment and clean-up equipment.

- Smoking in the work area shall be avoided. Eating, drinking, chewing gum, and other similar hand-to-mouth activities shall also be avoided in the work area and when in contact with soil that may be impacted.
- Workers' skin shall be washed with soap and water after contact with soil or groundwater that may be impacted.
- The Contractor's Personal Protective Equipment Program including gloves, long-sleeved shirts, and other appropriate personal protective equipment that will be used as protective mechanisms for reducing the potential for skin contact with potentially impacted materials.
- Worker and equipment decontamination procedures and equipment that shall be used to minimize tracking of impacted materials around or off the Site.

Section 4: Soil and Groundwater Management Procedures

This section describes the general procedures required to be followed by the tenant and any party planning or conducting subsurface construction activities below a depth of 1 foot in the SMP Area, or below a depth of 5 feet in the Buffer Zone (Figure 2). Any subsurface excavation, construction, or investigation activities ("subsurface activities") planned for the Site will be reviewed by the Owner to determine if the proposed subsurface activities are located in or adjacent to the SMP Area and will be deep enough to result in potential contact with impacted soil. If the proposed subsurface activities are located in, or adjacent to, the SMP Area, then it should be assumed that TPH- and PAH-impacted soil and/or groundwater will be encountered, and appropriate steps shall be followed to ensure worker health and safety and environmental compliance. Table 3 provides a summary of the required procedures to mitigate potential exposure from contaminated soil and/or groundwater beneath the SMP Area and Buffer Zone.

Appropriate engineering controls shall be used for subsurface work to limit contact with or spread the potentially-impacted materials. Material handling activities shall be conducted in a manner that controls the potential for off-site transport of soils or groundwater via water or wind erosion. Soil (or fill material) that is not disturbed by subsurface activities is not subject to the procedures in this SMP.

4.1 Construction Activities Subject to Restrictions

Construction activities that will involve earthwork in the SMP Area or Buffer Zone are subject to the provisions specified in this SMP. The boundary of the area covered by this SMP is shown on Figure 2 and outlined by the onsite monuments.

For each activity described below, soils excavated, or otherwise disturbed, at depths from ground surface to 1 foot bgs within the SMP Area and to 5 feet bgs in the Buffer Zone, shall be stockpiled separately (see Section 4.4) for potential on-site reuse. Soils excavated from greater than 1 foot bgs inside the SMP Area and 5 feet bgs in the Buffer Zone that will not be re-used onsite, shall be temporarily stockpiled and managed to prevent discharge into surface water and subsurface drains pending characterization and off-site disposal (Sections 4.2 and 4.5). Vehicles and equipment shall be decontaminated in accordance with Section 4.3. Dust control and erosion measures, described in Sections 4.6 and 4.7, and shall be implemented for earthwork activities as required.

Any party planning or executing subsurface activities in the SMP Area below 1 foot bgs, or Buffer Zone below 5 feet bgs, shall coordinate with the Owner, whose primary responsibility shall be to ensure the contractors' practices adhere to the provisions of this SMP. Personnel at the Site who handle, or have the potential to come in contact with, potentially contaminated soil or groundwater shall have the appropriate health and safety training (see Section 5) and wear the appropriate personal protective equipment.

Replacement of the cap with the designated clean removed material or other appropriate material is required following completion of the subsurface work. No materials removed below the cap can be reused as cap material. Groundwater generated during drilling/dewatering activities shall be contained, handled and disposed of as described in Section 4.9.

4.2 Loading and Transportation of Soil

Impacted soils excavated from the Site shall be managed to minimize spillage and the generation of airborne particulates. Soils to be transported for off-site disposal shall be loaded into trucks following proper procedures to minimize dust generation. Dry soils, or soils prone to generating dust, shall be wetted during loading operations. Loads shall be covered prior to any truck leaving the Site. Removal and disposal documentation shall be submitted to the County upon completion of the construction activities.

4.3 Construction Equipment Decontamination

Construction vehicles and equipment that may come in contact with potentially-impacted materials shall be decontaminated prior to leaving the Site. Decontamination reduces the potential for impacted material being tracked off-site. A designated area shall be setup on Site where decontamination can be performed. If decontamination procedures include using water, the resulting waste must be captured, containerized, and profiled for appropriate disposal (see Section 4.9).

4.4 Soil Stockpile Management

Shallow soils (less than 1 foot bgs inside the SMP Area and less than 5 feet bgs in the Buffer zone) are considered clean and may be re-used at the Owners discretion. If shallow soils are to be reused, then they shall be stockpiled separately during construction. Vegetation, concrete, asphalt, and/or other demolition debris shall be removed from other soil and fill materials prior to backfilling.

Inside the SMP Area, soils excavated from below 1 foot bgs shall be placed into segregated stockpiles. Discrete stockpiles shall be created for soils excavated from 1 foot bgs to 3.5 feet bgs and from below 3.5 feet bgs. Re-use of the soils as backfill material within the SMP Area is permissible as long as soils are placed back in the excavation within the same horizons (below 3.5 feet bgs, and 1 foot bgs to 3.5 feet bgs). Similar procedures will be followed while excavating soils from the Buffer Zone. Soils excavated from the upper 5 feet of the soil column will be stockpiled separately from deeper soils and will be reused to backfill the upper 5 feet of the resulting excavation.

Soil excavated from inside the SMP Area for the purpose of installing subsurface utilities will not be used for backfill. Utility trenches shall be backfilled with only designated clean fill over geotextile fabric (that meets specifications indicated in Section 4.8). No soil removed from the SMP area below 1 foot can be reused as surface soil without characterization and pre-approval from the County or the RWQCB.

Impacted soils shall be stockpiled, placed on and covered by plastic sheeting, and stored separately from non-contaminated soils. Plastic sheeting used to cover the stockpiles shall be overlapped a minimum of 24-inches at the seams and secured so that no portion of the contaminated soils is exposed to the atmosphere. Once covered, stockpiles shall remain undisturbed until being re-used or removed from the Site. Stockpiles shall be labeled and the Oversight Consultant shall record the location, origin, and contents of each stockpile in a written log (refer to Section 4.10 of this SMP). Daily inspections shall be conducted of stockpiled soils

to ensure the integrity of the plastic cover. Any holes, tears or other potential sources of exposure to the atmosphere shall be repaired immediately.

4.5 Soil Reuse, Recycling, Treatment and/or Disposal

The State of California's hazardous waste regulations, the Resource Conservation and Recovery Act, and other applicable waste management regulations have requirements and procedures for the handling of hazardous and regulated wastes. The regulations regarding disposal of wastes to land are overseen in California by the Department of Toxic Substances Control (DTSC) and the RWQCB. Generators of waste resulting from Site activities shall be responsible for characterizing the waste according to Federal (40 CFR 261), California regulations (CCR Title 22), and disposal facility requirements. General guidelines for reuse of soil in and adjacent to the SMP Area as general fill and for offsite recycling, treatment, and/or disposal are presented in the following sections.

4.5.1 Clean Soil – Surface Cap Soil

Soils encountered in the upper 1 foot of the SMP Area are considered clean and fit for on-Site unrestricted reuse without testing. Based on the comprehensive soil sampling program conducted at the Site, soils outside of the SMP Area may also be considered acceptable for reuse on the site unless there is visual or olfactory evidence of contamination (odor, discoloration, sheen or other), or analytical results indicate concentrations exist above the ESLs for unrestricted site use. Soil brought to the Site to be used as fill material shall be characterized to ensure that it is free from contamination. Testing shall be conducted in general accordance with the DTSC – Information Advisory for Clean Imported Fill Material, included as Appendix B to this document.

4.5.2 Impacted Site Soils

SMP Area soil generated from a depth of 1 foot bgs to 3.5 feet bgs, as well as soils adjacent to the SMP Area at a depth greater than 5 feet bgs may contain Site COCs at concentrations above the ESLs but below the SSLs. These soils can only be re-used within their respective areas and within the horizon from which they were generated. SMP Area soil generated from a depth below 3.5 feet bgs can only be re-used within the SMP area and from the horizon from which it was generated, as long as field observations or analytical results do not identify free-phase hydrocarbon product or gross contamination. The use of these soils for backfill in other areas of the Site is not acceptable unless it is approved by the County or the RWQCB after conducting the required analytical testing and verifying that levels are within acceptable levels for unrestricted use.

4.5.3 Off-Site Recycling, Treatment and/or Disposal

Soils that are not intended to be re-used on-site shall be characterized and transported off-site for recycling or disposal. Non-hazardous wastes that contain Site COCs may be recycled, at the discretion of the recycler, or disposed at an accepting licensed disposal facility. Hazardous wastes, if encountered, must be disposed at a permitted facility in accordance with state and Federal regulations. On-Site treatment is not acceptable for impacted soils unless it is approved by the County or RWQCB, and appropriately permitted.

4.6 Dust Control Measures

Dust emissions shall be controlled during excavation activities using industry best management practices (BMPs). Dust control may be maintained through water application. Groundwater shall not be used for dust control. Wetting of work areas may be performed to control the generation of dust, but in a manner that avoids spreading the contaminated soil or water. Other dust controlling measures may include application of water or foam to the excavation sidewalls and base, as well as to soils during truck loading activities. Dust control measures shall be monitored and revised as necessary to prevent visible fugitive dust or track-out from the SMP Area.

4.7 Erosion Control Measures

A Construction Storm Water Pollution and Prevention Plan (SWPPP) shall be prepared to control off-site discharge of sediments and other chemicals during construction activities. The Construction SWPPP shall be prepared in accordance with the State's Construction General Permit requirements, and shall include appropriate BMPs to be implemented at the Site to control and abate the discharge of sediments and other chemicals. The Construction SWPPP shall be available on-site for review by the County or the RWQCB, anytime during construction.

4.8 Potential Direct Soil Contact Areas

In landscape and utility trench areas, workers may come into direct contact with soils as part of maintenance activities. Procedures for handling of potentially impacted soils and worker protection requirements identified in previous Sections 3 and 4 shall be followed. Only soil that is designated as "clean" shall be used to backfill utility trenches. Soil brought to the Site to be used as fill material shall be characterized to ensure that it is free from contamination before it is considered "clean". Testing shall be conducted in general accordance with the DTSC – Information Advisory for Clean Imported Fill Material, included as Appendix B to this document. Removed soil shall be disposed according to the procedures described in Section 4.5.3.

Utility trenches shall be backfilled with clean soil. Before any utility or fill material is placed on top of existing soil in the trenches, a water-permeable, synthetic netting fabric shall be used to line the base and sidewalls of the trench (Figure 4). The utility and fill material shall be placed on top of the fabric. The purpose of this fabric is to serve as a marker to help future construction workers identify where the clean fill ends and potentially-impacted soils begin. However, any soils encountered below the groundwater surface (approximately 5 to 6 feet bgs) within and adjacent to the SMP Area should be considered to be impacted.

4.9 Handling of Shallow Groundwater from Construction Dewatering Activities

Dewatering of utility trenches or deep excavations may be necessary due to the elevation of shallow groundwater at the Site (Section 2.0). Groundwater produced during dewatering activities may be treated to remove sediment; then discharged to the sanitary sewer in accordance with applicable permits from the appropriate regulatory agencies. Groundwater shall not be used for dust control or discharged to Mare Island Strait or into any storm drains.

4.10 Recordkeeping, Inspection Procedures and Reporting

Recordkeeping and inspection procedures to monitor compliance with this SMP shall be the responsibility of the Owner or Contractor, as appropriate. During periods of active construction, the Contractor shall maintain a written daily log and take photographs that provide detailed documentation of work activities including management of the 1-foot cap and the handling of soil, fill materials, and groundwater within the SMP Area and Buffer Zone. As appropriate, daily logs and photographs will be provided to the Owner for their records. The Owner shall submit an annual report to the County (in January of each year) documenting the cap maintenance inspections and any subsurface work conducted during the previous year. Electronic copies of annual reports shall also be uploaded to the SWRCB website GeoTracker as part of the long-term management of the site.

4.11 Import and Placement of Clean Fill

Future landscaping and development plans may include the import and placement of clean fill within the SMP Area. Whether Site generated or imported, the upper 1 foot of the backfill will comprise of clean fill. Where applicable, clean fill placed below 1 foot bgs shall be separated from surrounding soils using geotextile fabric (see Section 4.8). Soils encountered below the groundwater surface (approximately 5 to 6 feet bgs) within the SMP Area should be considered impacted, whether or not they were originally placed as clean import.

Changes to the Site grading will likely require securing a grading permit from the City of Vallejo and recording new Site elevations with the City and the County, as a modification to this SMP. In the event the surface elevation of the Site is lowered, the Owner and/or party conducting the construction activities is required to ensure that the upper 1 foot of soil within the SMP Area is comprised of clean material and maintained. Surface monuments will be reset to be flush with the new grade. Plans and surveys documenting any grading or site changes to the SMP area shall be submitted to the County and uploaded to the SWRCB website, GeoTracker.

4.12 Building Vapor Barrier

New buildings constructed on top of the SMP Area or adjacent impacted soil areas shall include a sub-slab venting (SSV) or sub-slab depressurization (SSD) system. The SSV or SSD system shall follow the design basis and criteria as presented in the California Department of Toxic Substances Control's (DTSC's) *Vapor Intrusion Mitigation Advisory, Final Revision 1, October 2011*, Design considerations or an active or passive soil vapor barrier. Alternatively, Owner can demonstrate that a SSV or SSD is unnecessary by conducting an active soil gas investigation, in accordance with the April 2012 *Advisory - Active Soil Gas Investigations, California Environmental Protection Agency, Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board, San Francisco Regional Water Quality Control Board*.

Table 3: Recommended Procedures Prior to Subsurface Construction within the SMP Area, 800 Derr Street, Vallejo, California

Activity	General Activities	Below 1 foot bgs In SMP Area	Below 5 feet bgs adjacent to SMP Area
General Construction Where Earthwork is Involved	Implement Dust and Erosion Control Measures	Tenant to notify County	Tenant to notify SCDRM
Excavation	Implement Vehicle Decontamination	Tenant to oversee activities	Tenant to oversee activities
Drilling/Excavation for Piers, Footings and Piles	Segregate and stockpile separately upper 1-foot of clean material	Segregate and stockpile separately soils excavated between upper 1-foot bgs and 3.5 feet bgs; and below 3.5 feet bgs.	Segregate and stockpile separately soils excavated between ground surface and 5-foot bgs; and below 5 feet bgs.
Loading and Transportation of Clean Soil	Implement Dust Control Measures Implement Vehicle Decontamination		
Management of Soil Stockpiles	Implement Dust and Erosion Control Measures Implement Vehicle Decontamination	Segregate and dispose separately any vegetation, concrete, asphalt, and/or other demolition debris. Reuse soils excavated from 1 to 3.5 feet bgs and below 3.5 bgs in same horizons; or characterize for off-site disposal.	Segregate and dispose separately any vegetation, concrete, asphalt, and/or other demolition debris. Reuse soils excavated from 1 to 5 feet bgs and below 5 bgs in same horizons; or characterize for off-site disposal.
Off-Site Recycling and/or Disposal	Implement Dust Control Measures Implement Vehicle Decontamination	Characterize soils for recycling or disposal in accordance with recycler or landfill requirements. Off-haul as hazardous or non-hazardous waste, as appropriate, using the proper manifest.	Characterize soils for recycling or disposal in accordance with recycler or landfill requirements. Off-haul as hazardous or non-hazardous waste, as appropriate, using the proper manifest.
Utility Trenches	Clean soil (obtained from outside the SMP Area or off-site) shall be used as backfill.	Place water-permeable, geotextile fabric for separation of potentially-impacted fill and clean import	Place water-permeable, geotextile fabric for separation of potentially-impacted fill and clean import
Shallow Groundwater	Remove suspended sediments and discharge to sanitary sewer under permit from appropriate agency		

Notes:

SMP = Site Management Plan

N/A = Not applicable

Section 5: Environmental Health and Safety Guidelines

Subsurface construction activities conducted within the SMP Area, or at depths greater than 5 feet bgs in the Buffer Zone, must be in compliance with applicable rules and regulations governed by the California Occupational Health and Safety Administration, even if not expressly noted in this SMP. A project-specific health and safety plan shall be prepared by the Contractor prior to initiating subsurface construction work. The health and safety plan will be reviewed and approved by a qualified Certified Industrial Hygienist. The plan will be maintained onsite and accessible to staff and site workers.

References

- California EPA, 2012, Low-Threat Underground Storage Tank Case Closure Policy, California Environmental Protection Agency; State Water Resources Control Board. Resolution No. 2012-0016, May 1.
- Department of Toxic Substances Control (DTSC), 2011, Vapor Intrusion Mitigation Advisory, Final Revision 1, October
- DTSC, 2012, Advisory - Active Soil Gas Investigations, California Environmental Protection Agency, Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board, San Francisco Regional Water Quality Control Board, April.
- Engineering/Remediation Resources Group (ERRG), 2007, Final Backfill Report, Large Excavation Site – Leasehold Property, Former General Mills Facility, Vallejo, California. August 9.
- Malcolm Pirnie, 2006a. Site Investigation Report, Former Flour Mill Facility, 800 Derr Street, Vallejo, California. February.
- Malcolm Pirnie, 2006b. Leasehold Property Remedial Action Work Plan. November 9.
- Malcolm Pirnie, 2007a. Human Health and Ecological Exposure Analysis. March.
- Malcolm Pirnie, 2007b. Leasehold Property Remedial Action Completion Report, Former General Mills Flour Mill Facility, 800 Derr Street, Vallejo, California, LOP Case #102042. May 8.
- Malcolm Pirnie, 2007c. Leasehold Property Remedial Action Work Plan Addendum. February 13.
- Malcolm Pirnie, 2009. Leasehold Property Supplemental Investigation Report, Former General Mills Flour Mill Facility, 800 Derr Street, Vallejo, California, LOP Case #102042. March 12.
- Malcolm Pirnie, 2010. Closure Action Plan. Leasehold Property – Former General Mills Flour Mill Facility, 800 Derr Street, Vallejo, California, LOP Case #102042. July 7.
- Malcolm Pirnie, 2011. 2010 Closure Action Plan Addendum, Leasehold Property – Former General Mills Flour Mill Facility, 800 Derr Street, Vallejo, California, LOP Case #102042. September 9.
- Malcolm Pirnie, 2012. High Vacuum Extraction Pilot Test Report, Leasehold Property, Former Flour Mill Facility, 800 Derr Street, Vallejo, California. February.
- Malcolm Pirnie, 2013. Fourth Quarter 2012 Groundwater Monitoring Report, Leasehold Property, Former Flour Mill Facility, 800 Derr Street, Vallejo, CA, February.
- Solano County Department of Resource Management (County), 2007. Former General Mills Vallejo Mills, 800 Derr Avenue, Vallejo, CA, County File # 29-102042. April 25.

Figures



Path: Z:\Projects\General Mills\Events\20140415_Figures\Fig1_BurdenedPropertyBoundary.mxd

Source: Mapping reproduced from Northgate Environmental Management, Inc. 2009

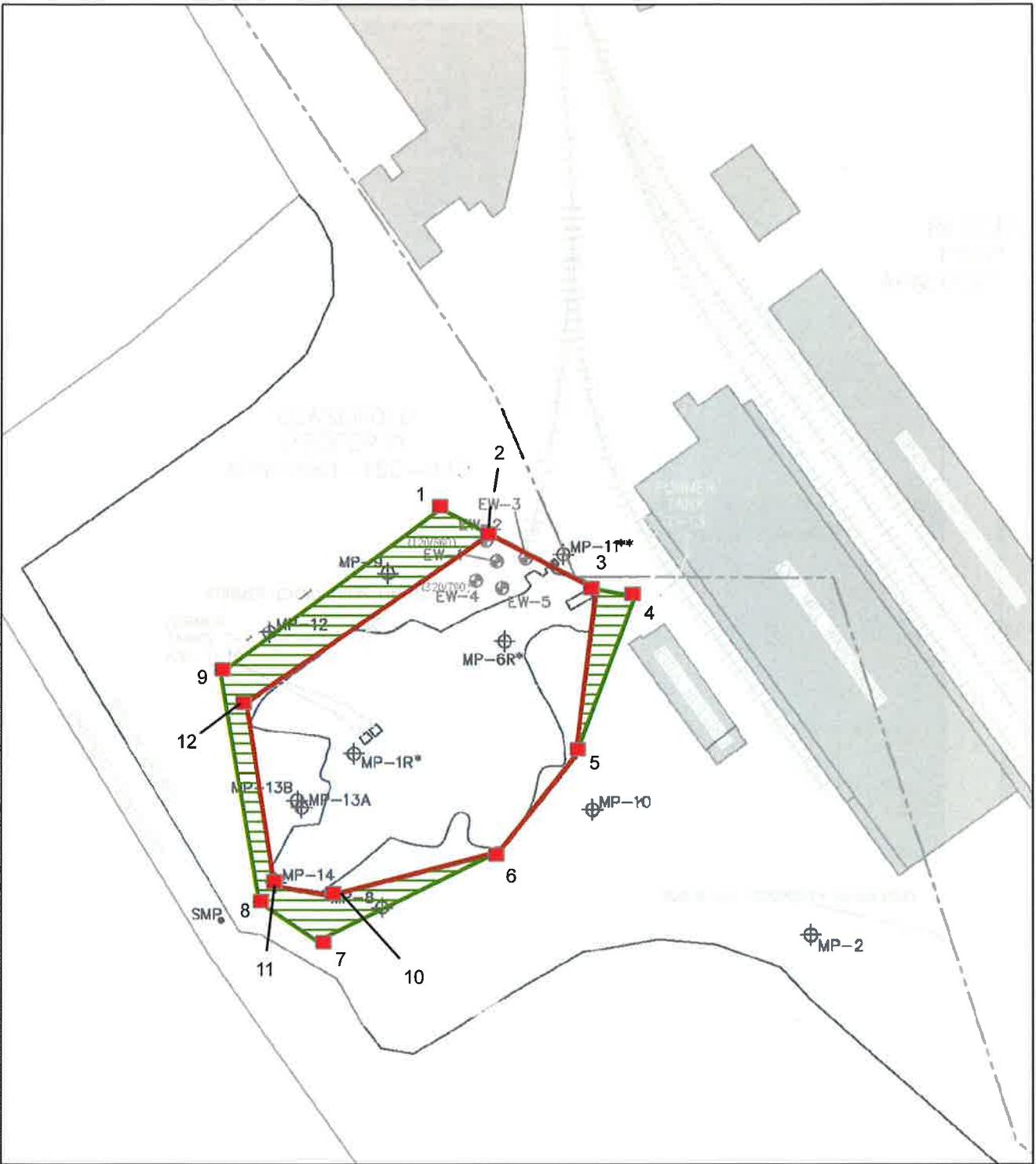
Kennedy/Jenks Consultants
 General Mills - Former Flour Mill Facility
 800 Derr Street
 Vallejo, California

Burdened Property Location

K/J 1365048*00

Figure 1

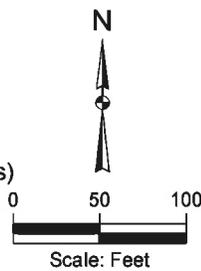
Path: Z:\Projects\General Mills\Events\20140415_Figures\Fig2_SiteManagementPlanArea-updated.mxd



Source: Mapping reproduced from Northgate Environmental Management, Inc. 2009

Legend

-  Site Management Plan Area
-  Buffer Zone
-  1 Monument (12 total, see Figure 3 for details)

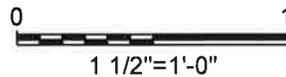
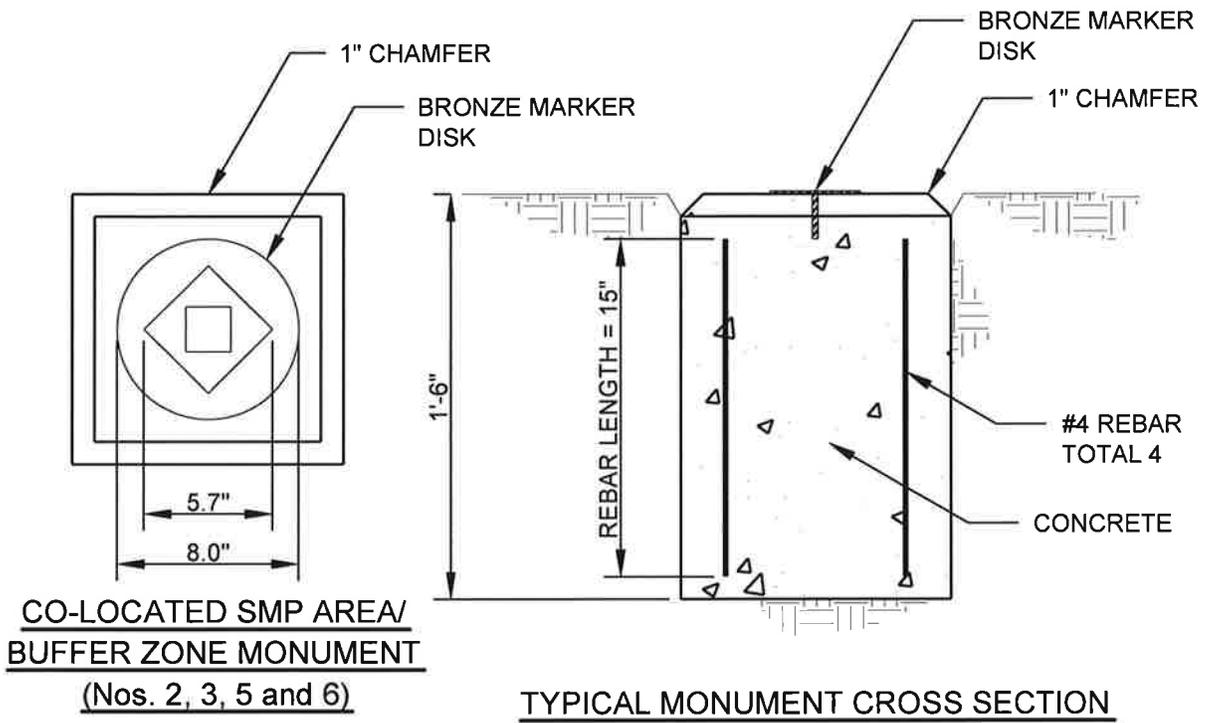
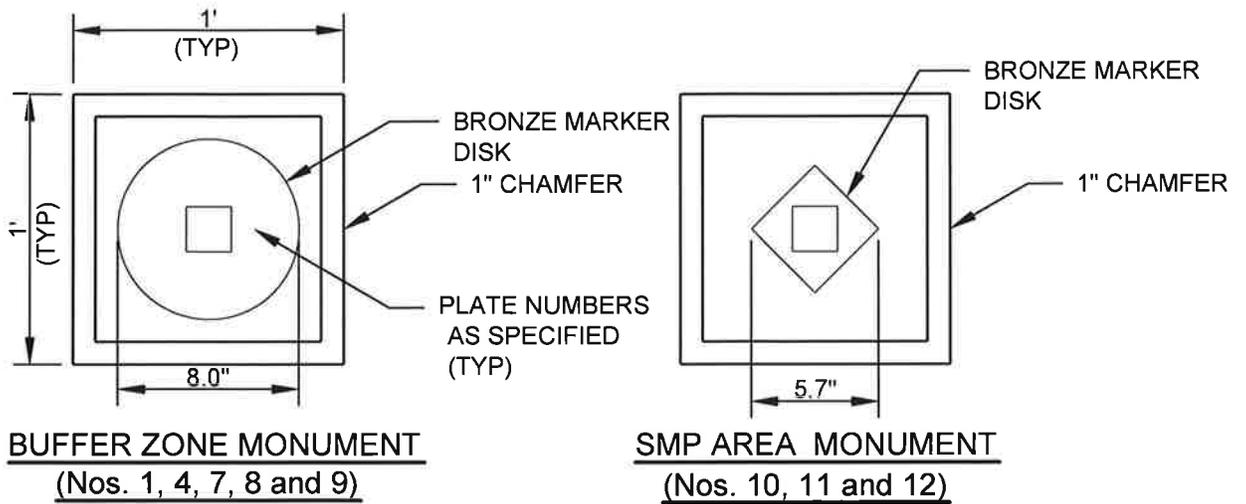


Kennedy/Jenks Consultants
General Mills - Former Flour Mill Facility
800 Derr Street
Vallejo, California

Site Management Plan Area

K/J 1365048*00
April 2014
Figure 2

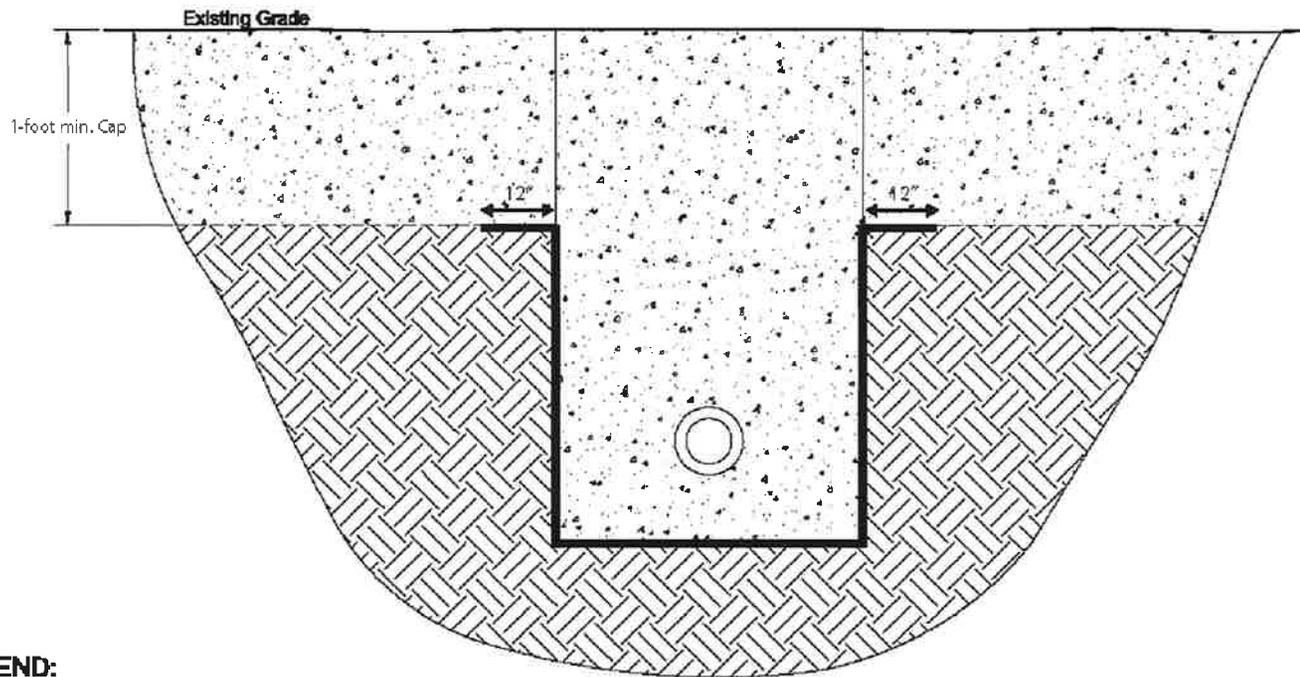
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Kennedy/Jenks Consultants
General Mills - Former Flour mill Facility
800 Derr Street
Vallejo, California
MONUMENT DETAILS

K/J 1365048*00
Figure 3

Path: Z:\Projects\General Mills\Events\20140415 - Figures\Fig3 - Utility TrenchDetail.mxd



LEGEND:

-  Clean fill material
-  Remediated fill soil
-  Synthetic Netting
-  Buried Utility

Note: Not to Scale

Source: Mapping reproduced from Northgate Environmental Management, Inc. 2009

Kennedy/Jenks Consultants
General Mills - Former Flour Mill Facility
800 Derr Street
Vallejo, California

Typical Utility Trench Detail

K/J 1365048*00
April 2014

Figure 4

Appendix A

Annual Inspection Form

**ANNUAL INSPECTION FORM
SITE MANAGEMENT PLAN AREA
800 Derr Street, Vallejo Napa**

Date: _____ Time: _____

Inspection Completed By:

Name: _____ Company: _____

Weather Conditions: _____

Current Site Use: _____

Current Site Activities: _____

Changes in Site Activities Over the Past 12 Months: _____

Have Site Activities in the Past 12 Months Disturbed the Clean Soil Cap? _____

If yes, please explain _____

Current Condition of Ground Surface in SMP Area: _____

Planned Subsurface Activities in SMP Area over the Next 12 Months: _____

Appendix B

DTSC – Information Advisory for Clean Imported Fill Material

Information Advisory

Clean Imported Fill Material



October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California



California
Environmental
Protection Agency



Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed.

It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.dtsc.ca.gov.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contami-

nation and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:	Target Compounds
Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area

Sampling Requirements

2 acres or less

Minimum of 4 samples

2 to 4 acres

Minimum of 1 sample every 1/2 acre

4 to 10 acres

Minimum of 8 samples

Greater than 10 acres

Minimum of 8 locations with 4 subsamples per location

Volume of Borrow Area Stockpile

Samples per Volume

Up to 1,000 cubic yards

1 sample per 250 cubic yards

1,000 to 5,000 cubic yards

4 samples for first 1000 cubic yards + 1 sample per each additional 500 cubic yards

Greater than 5,000 cubic yards

12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

materials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary

to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17/Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) *only*. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all com-

pounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is *not* acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Richard Coffman, Ph.D., R.G., at (818) 551-2175.

