

## **SITE INVESTIGATION REPORT**

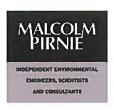
# FORMER FLOUR MILL FACILITY 800 DERR STREET VALLEJO, CALIFORNIA

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## TABLE OF CONTENTS

			rage			
Table	of Coi	ntents	i			
List o	of Figur	re	ii			
		es				
		endices				
		age				
Signa	iiiire 1 c	age	<i>t v</i>			
1.0	INTRODUCTION					
2.0	SITE	E BACKGROUND	2			
3.0	UST	INVESTIGATION	7			
	3.1	Review of Sanborn Maps				
	3.2	Field Activities	8			
4.0	PRE	ELIMINARY SITE INVESTIGATION	9			
5.0	ADD	DITIONAL INVESTIGATION IN AREA C	11			
6.0	GRO	OUNDWATER SAMPLING	13			
7.0	SITE	E INVESTIGATION RESULTS	15			
	7.1	UST Investigation Results				
	7.2	Soil Investigation Results				
		7.2.1 Subsurface Lithology				
		7.2.2 Soil Analytical Results				
	<b>5</b> 0	7.2.3 Geotechnical Test Results				
	7.3	Groundwater Investigation Results				
		<ul><li>7.3.1 Groundwater Flow Direction</li><li>7.3.2 Field Groundwater Quality Measurements</li></ul>				
		7.3.2 Freid Groundwater Quanty Weastrements				
		7.3.4 Comparison to CGS Groundwater Results				
8.0	CON	NCLUSIONS AND RECOMMENDATIONS	23			
PIR	OLM NIE					



9.0	FUTUE	RE ACTIVITIES 24
10.0	REFER	RENCES25
List of	f Figures	3
Figure	2 1-2: 2 2-1: 3 3-1: 4 4-1: 5 5-1: 7 7-2a: 7 7-2a: 7 7-3: 7 7-4: 7 7-5a: 7 7-5a: 7 7-6: 7 7-7: 7 7-8:	Site Location Map Site Map Location of Potential Areas of Concern UST Investigation Areas Location of Monitoring Wells and Geotechnical Boring Location of Soil Borings Location of Geological Cross-Sections Generalized Geological Cross-Section A-A' Generalized Geological Cross-Section B-B' Sitewide Soil Concentration Map Area C Soil Concentration Map TEPH in Soil Isoconcentration Map Above the Groundwater Table TEPH in Soil Isoconcentration Map Below the Groundwater Table Groundwater Surface Elevation Contour Map Groundwater Concentration Map TEPH in Groundwater Isoconcentration Map Comparison of CGS and Malcolm Pirnie Groundwater Results
List of	f Tables	
Table	2-2: 3-1: 4-1: 6-1: 7-1: 7-2a: 7-2b: 7-2c: 7-3: 7-4: 7-5: 7-6:	Summary of Information on History, Contents, and Closure of Tanks T-1 through T-8 Summary of Information on History and Contents on AST-1 through AST-7 Summary of Information on the Five Potential USTs Groundwater Monitoring Well Construction Details Groundwater Sampling Analysis in February 2006 Summary of Tank Closure Confirmation Soil Sample Results Summary of TPH Concentrations in Soil Summary of BTEX Concentrations in Soil Summary of PNA Concentrations in Soil Summary of Geotechnical Test Results Summary of Groundwater Elevation Data Summary of Groundwater Analytical Results Comparison of CGS and Malcolm Pirnie Groundwater Results Groundwater Sampling Analysis for March 2006



## List of Appendices

Appendix A: Summary of CGS Phase II Soil and Groundwater Analytical Results

Appendix B: Solano County August 23, 2004 Closure Letter

Appendix C: 1938 Sanborn Map

Appendix D: Generally Accepted Procedures

Appendix E: Soil Boring Logs and Well Construction Diagrams

Appendix F: Soil Analytical Laboratory Reports (Preliminary Investigation) (on CD)

Appendix G: Surveying Data (on CD)

Appendix H: Soil Analytical Laboratory Reports (Additional Investigation in Area C) (on CD)

Appendix I: Field Activity Reports and Water Level Datasheets (on CD)

Appendix J: Geotechnical Test Laboratory Report (on CD)

Appendix K: Groundwater Analytical Laboratory Reports (on CD)



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This Site Investigation Report (Report) was prepared on behalf of General Mills Operations, Inc. (General Mills) for the Former Flour Mill Facility (Site) located at 800 Derr Street in Vallejo, California (Figures 1-1 and 1-2). The Site is approximately 30 acres in area and was originally developed and used as a flour processing mill. Operations historically conducted on-Site included the cleaning, processing, bleaching, and packaging of flour and other General Mills products. General Mills ceased plant operations in October 2004 and intends to sell the Site.

A Phase I Environmental Site Assessment (ESA) and a Phase II ESA, performed by Clayton Group Services, Inc. (CGS) for a potential buyer in 2005, revealed that soil and groundwater beneath the Site were impacted by total petroleum hydrocarbons (TPH), at concentrations that could potentially impact or limit future use of the property. As a consequence, General Mills decided to further evaluate the nature and extent of the environmental impacts to the Site from historical operations. Preliminary investigation activities included an underground storage tank investigation and the installation of five monitoring wells and advancement of one geotechnical boring in January 2006. Upon review of the preliminary subsurface investigation results, additional characterization activities were warranted in select portions of the Site to further delineate the extent of TPH in soil and groundwater. Additional characterization activities also included commencement of a monthly groundwater monitoring program in February 2006. This Report documents the work conducted at the Site in January and February 2006, presents the results of the Site investigations and groundwater monitoring events, and provides recommendations for future work at the Site.



This section summarizes the historical information gained through a review of the Solano County Department of Resource Management (County) environmental files and previous historical Site investigation reports provided by General Mills. The Site is located at 800 Derr Street in Vallejo, California. It lies along the northeast side of Mare Island Strait, an estuarine waterway adjacent to the San Pablo Bay, which is the northern extent of the San Francisco Bay. The Site had been operated as a flour mill from 1869 to October 2004. Site operations involved the unloading of grain, bleaching and milling the grain, and packaging of the processed grain. Figure 1-2 illustrates the location of current and select former buildings.

Historic potential environmental concerns include 13 former USTs used to store petroleum hydrocarbon fuels, seven former ASTs used to store petroleum hydrocarbon fuels, a machine shop/sheet metal working area, the use and storage of fumigants and a printing shop area. Additionally, the western half of the property was subject to the importation of fill material to raise the land surface above mean sea level. Figure 2-1 illustrates the location of each of these identified potential areas of concern. An assessment of each historical potential area of concern listed above follows. This assessment is based on the Phase I and Phase II ESAs conducted by CGS in 2005 and on a historical records review. Soil and grab groundwater analytical results reported in CGS's Phase II ESA are included in Appendix A.

#### USTs Containing Petroleum Hydrocarbon Fuels

A total of 13 USTs were identified as being potential areas of concern for the Site. These USTs are identified as tanks T-1 through T-13. Environmental impacts associated with the operations of tanks T-1 through T-7 were investigated from 1994 through 1996 and environmental impacts associated with the use of tank T-8 were investigated in 2003. Tanks T-1 through T-7 were closed by Solano County in 1996 and tank T-8 was closed in 2004. The Solano County closure letter dated August 23, 2004 is included as Appendix B. Additional information regarding the history, contents, and closure of these USTs is included in Table 2-1.



In the October 2005 Phase I ESA Report prepared by CGS, seven additional USTs were reported to exist on-Site, based on information contained on a 1938 Sanborn map (Appendix C). Due to their age, these tanks were not permitted by the County and not known to exist. These seven USTs were grouped in five areas of concern, Area A and Areas C through F in CGS Phase I ESA. Upon Malcolm Pirnie review of CGS Phase I ESA and historical Site information, the USTs reported by CGS to be in Area A and Area E were determined to be tanks T-7 and T-6, respectively, as further described in Section 3 and illustrated on Figure 2-1. Hence, the number of additional USTs identified as potential areas of concern is five (not seven).

CGS conducted a Phase II ESA in the vicinity of the five areas of concern in November 2005 to evaluate their potential environmental impacts. Soil and grab groundwater samples collected from borings advanced in the areas of concern were analyzed for TPH as gasoline (-G). TPH as diesel fuel (-D), and TPH as motor oil (-MO) by United States Environmental Protection Agency (USEPA) Method 8015 and volatile organic compounds (VOCs) by USEPA Method 8260. Results of the Phase II ESA revealed elevated concentrations of TPH in the grab groundwater samples collected. Results of the Phase II in the areas of concern and their potential environmental impacts are further discussed in Sections 3 and 7 of this report.

#### ASTs containing Petroleum Hydrocarbon Fuels

A total of seven AST containing TPH were identified as being potential areas of concern for the Site. In the October 2005 Phase I ESA Report prepared by CGS, one additional AST was reported to exist on-Site, based on information contained on the 1919 and 1938 Sanborn maps, (Appendix C). This additional AST is located in Area B in CGS's Phase I ESA. Upon Malcolm Pirnie review of CGS's Phase I ESA Report and historical Site information, the AST reported by CGS as Area B was determined to be an AST storing water used for the fire suppression system, as further described in Section 3 and illustrated on Figure 2-1. Hence, the number of ASTs identified as potential areas of concern is seven.

Tanks AST-1 through AST-3 were located southeast of the New Warehouse in the vicinity of tank T-7. Tanks AST-4 and AST-5 were located in the vicinity of tanks T-3 and T-4. Tank AST-6 was located northeast of the Mill Run in the vicinity of tank T-6. Environmental



impacts in the vicinity of tanks T-3 and T-4; T-5 and T-6; and T-7 were investigated from 1994 to 1996 and received closure in September 1996.

Aboveground tank AST-7 was located along the eastern side of the Grain Elevator Building. A spill reportedly occurred in 1993, releasing approximately 300 gallons of food grade mineral oil spilled to the ground surface. During the Phase II ESA, CGS advanced two borings B-6 and B-7 in the vicinity of tank AST-7. Soil samples collected from both borings were analyzed for TPH-G, TPH-D, and TPH-MO by USEPA Method 8015. Results indicated low TPH-D and TPH-MO concentrations in soil ranging from 1.6 milligrams per kilogram (mg/kg) to 11 mg/kg. Refusal in soil borings B-6 and B-7 due to the presence of bedrock occurred at 6 feet below ground surface (bgs) and 7.5 feet bgs, respectively. No groundwater was encountered during drilling. Hence, no groundwater samples were collected from these borings.

There are no aboveground tanks remaining on Site.

#### **Machine Shop**

A machine shop was located in the Original Mill Warehouse according to the 1919 Sanborn maps and in the New Warehouse approximately from 1950 to 1970, according to CGS. During the Phase II ESA, CGS advanced two soil borings B-8 and B-9 in the Machine Shop. Soil and grab groundwater samples collected from borings B-8 and B-9 were analyzed for TPH-G, TPH-D, and TPH-MO by USEPA Method 8015 and VOCs by USEPA Method 8260. Laboratory results reported concentrations to be below analytical method reporting limits for the constituents analyzed, except for TPH-D and TPH-MO in the grab groundwater sample collected from boring B-9, at concentrations of 720 micrograms per liter (μg/L) and 1,600 μg/L, respectively. No borings were advanced at the former location of the machine shop in the Original Warehouse.

## Storage and Use of Fumigants

Fumigants were historically used and stored at the Site from at least 1938 to 2004. Fumigants were historically stored in the former Fumigation Building located in the western portion of the Site close to the Bay and more recently fumigants were stored in the Garage in the northeast portion of the Site close to the entrance gate. During the Phase II ESA, CGS advanced



soil boring B-15 in the western portion of the Site where the former Fumigation Building was formerly located and soil boring B-3 inside the Garage. One soil and one grab groundwater sample were collected from both borings and analyzed for VOCs by USEPA Method 8260 and organophosphate pesticides by USEPA Method 8082. Laboratory results reported concentrations to be below analytical method reporting limits for the constituents analyzed, except for tetrachloroethene in the soil sample collected from B-15 at a concentration of 0.18 mg/kg, which exceeds its Tier 1 ESL of 0.087 mg/kg.

#### Printing operations

Printing operations were conducted within the former Bag Factory Building in the southern portion of the Site as indicated on the 1938 Sanborn map and within the Original Mill Building in the western portion of the Site as indicated on the 1889 Sanborn map. During the Phase II ESA, CGS advanced boring B-17 inside the Mill Run Building which was partly built on top of the Former Bag Factory Building where the printing operations occurred. One soil and one grab groundwater sample were collected from the soil boring and analyzed for TPH-G, TPH-D, and TPH-MO by USEPA Method 8015, VOCs by USEPA Method 8260. In addition, the soil sample was analyzed for metals by USEPA Method 6010. TPH-G, TPH-D, TPH-MO, and VOCs were not detected in the soil sample above the method reporting limit. Metals concentrations reported in the soil sample were within the range of probable background concentrations. TPH-D was detected at a concentration of 73  $\mu$ g/L and TPH-G, TPH-MO, and VOCs were reported to be below method reporting limits in the grab groundwater sample collected. No soil borings were advanced within the former printing area of the former Original Mill Building in the western portion of the Site.

## Importation of Fill Material

Based on the review of historical Sanborn maps, fill material of unknown origin was imported at various times throughout the Site's operational history to raise the land surface and extend the western portion of the Site. During the November 2005 Phase II ESA, CGS advanced six borings, B-18 through B-23, in the western portion of the Site. One shallow soil sample was

collected from each boring and was analyzed for TPH-G, TPH-D, and TPH-MO by USEPA Method 8015 and for metals by USEPA Method 6010. One grab groundwater sample was collected from each boring and was analyzed for TPH-G, TPH-D, and TPH-MO by USEPA Method 8015 and for VOCs by USEPA Method 8260. TPH-D and TPH-MO were detected in soil borings B-19, B-20, and B-21 at concentrations ranging from 2.6 mg/kg to 280 mg/kg. Metals concentrations reported in the soil sample were within the range of probable background concentrations, except for vanadium in soil boring B-19 (280 mg/kg) and lead in soil boring B20 (180 mg/kg). The laboratory report identified TPH-D and TPH-MO in the six grab groundwater samples collected, with maximum concentrations of 9,100 μg/L and 34,000 μg/L, respectively in boring B-21. 2-Butanone was the only VOC reported above the method reporting limit, and only in the sample collected from boring B-19 at a concentration of 3.7 μg/L.

Based on the results of the Phase I and Phase II ESAs, as presented by CGS, Site-related constituents were detected in both soil and grab groundwater samples collected in the vicinity of areas of concern A through F, in the vicinity of the Machine Shop (soil boring B-9), and in the western portion of the Site (B-18 through B-23) in November 2005. Except for two minor localized areas in the western portion of the Site (tetrachloroethene in boring B-15 and lead in boring B-20), TPH appears to be the primary constituent of concern for the Site.



This section describes and presents the results of the activities related to the investigation of the potential historic USTs reported to exist by CGS at the Site, including a review of the Sanborn maps and potholing on-Site. The investigation activities described below were conducted in January 2006.

#### 3.1 Review of Sanborn Maps

Review of the historical Sanborn maps of the Site by Malcolm Pirnie revealed additional information on the potential locations of the former areas of concern identified by CGS in their Phase I ESA. As mentioned previously, the Phase I ESA conducted by CGS identified seven USTs and one AST on the 1938 Sanborn map. The seven USTs and one AST were grouped in six areas of concern, Areas A through F, including:

- Area A one 720-gallon fuel oil UST
- Area B one 140,000-gallon fuel oil AST
- Area C two 100-gallon fuel oil USTs
- Area D two 280-gallon gasoline USTs
- Area E one 200-gallon fuel oil UST
- Area F one 10,000-gallon gasoline UST

Malcolm Pirnie's review of the 1938 Sanborn map indicated that:

- The UST in Area A is in fact former tank T-7, a 720-barrel (corresponding to 32,000 gallon) concrete UST that was closed in place by Solano County in 1996.
- The UST in Area B was a former water AST used for the fire suppression system, and not a fuel oil AST. The AST was mislabeled on the 1938 Sanborn map and is shown to be linked to fire hydrants throughout the Site. This tank is labeled as a water tank on other historic Sanborn maps prepared for the Site.



Area E and the location of the bag factory were misplaced on Figure 2 of the CGS Phase II ESA Report. The Mill Run was partially built on the location of the former Bag Factory. Even though their descriptions are different according to the Phase I ESA report and the 1938 Sanborn map, their location is similar, and thus the UST reported by CGS as Area E is in fact former tank T-6, closed by the County in 1996.

Based on Malcolm Pirnie's review of the available documentation, the number of USTs identified as potential areas of concern is five. Additional information on these USTs is included in Table 3-1.

#### 3.2 Field Activities

Using the results of the Sanborn map review, Malcolm Pirnie proposed investigating Area A to confirm that T-7 is still in place; and Areas C, D, and F to investigate the potential presence of former USTs. Areas B and E were not investigated for the reasons stated in Section 3.1. Engineering/Remediation Resources Group (ERRG) was contracted by Malcolm Pirnie to advance test pits in Areas A, C, D, and F. Field work occurred on January 5, 2006 under the direct supervision of a Malcolm Pirnie engineer. The location of the investigated areas of concern is illustrated on Figure 3-1. As a results of the field investigation activities, Malcolm Pirnie encountered the five suspect USTs. The removal and closure of the five USTs will be reported separately.



This section describes the preliminary investigation activities conducted at the Site between January 6, 2006 and January 12, 2006. The preliminary investigation activities consisted of installing five monitoring wells and advancing one geotechnical boring on Site. Figure 4-1 illustrates the location of the five monitoring wells and one geotechnical boring. The purpose of the preliminary investigation is to verify the subsurface impacts reported by CGS and obtain Site specific groundwater data, since CGS collected only grab-groundwater samples from open boreholes. The methods and procedures followed by Malcolm Pirnie staff during this investigation are described in detail in Appendix D, Generally Accepted Procedures (GAPs) and are summarized below.

Prior to initiating the preliminary investigation activities, a Well Construction Permit was obtained from the Solano County Department of Resource Management to install five monitoring wells (MP-1 through MP-5) and advance one geotechnical boring (GB-1). California Utility Surveys, an underground utility location firm, performed an active survey at the proposed well locations for underground obstructions.

Drilling and well construction activities were performed by ResonantSonic International, Inc., a California-licensed drilling company, under the supervision of a Malcolm Pirnie geologist between January 6 and 10, 2006. Five soil borings were advanced to a depth of 15.5 feet bgs using a truck-mounted drill rig equipped with hollow stem augers and were completed as monitoring wells MP-1 through MP-5. The borings were continuously cored for lithologic identification and soil samples for laboratory analysis were collected at selected intervals using a California-modified split-spoon sampler lined with brass tubes. During drilling operations, a photoionization detector (PID) was be used to monitor for the presence and concentration of organic vapors in the soil core.

The geotechnical boring was advanced to a depth of 13 feet bgs. Two Shelby tube samples were collected from GB-1 at depths of 5 to 7 feet bgs and 11 to 13.5 feet bgs. The Shelby tubes were capped and stored until delivery to the geotechnical laboratory. The samples were transported to Ninyo & Moore located in Oakland, California and tested for geotechnical parameters.



The monitoring wells were 2 inches in diameter and constructed of a Schedule 40 PVC riser and screen. The well screen is 10 feet long and 0.01-inch slot size. A sand pack was placed around the well screen extending to approximately 0.5 feet above the top of the screen. An approximate 1-foot thick bentonite seal was placed above the sand pack and the remaining portion of the annulus was grouted by a cement-bentonite grout. The well was completed with a flush-mounted cover or stickup casing at the surface. Groundwater monitoring well construction details for MP-1 through MP-5 are included in Table 4-1, and soil borings and well construction diagrams are included in Appendix E.

One soil sample was collected between approximately 4 to 5 feet bgs (above the water table) from each soil boring for laboratory analysis. Samples were analyzed for TPH-G, TPH-D, and TPH-MO by USEPA Method 8015, benzene, toluene, ethylbenzene, and total xylenes (BTEX) by USEPA Method 8021, and polynuclear aromatics (PNAs) by USEPA Method 8270. Samples were accompanied by properly completed chain-of-custody forms included as Appendix F.

Wells MP-1 through MP-5 were developed by bailing, surging, and pumping techniques implemented by ResonantSonic International, Inc. on January 10 and 11, 2006.

The five monitoring wells and the geotechnical boring were surveyed for location (northing and easting) and top of casing elevation on January 11, 2006 by CSS Environmental Services, Inc. (C.S.S.), a land surveying company licensed by the State of California. Surveying data are included as Appendix G.



This section describes the additional investigation activities conducted in Area C between January 31, 2006 and February 10, 2006. The additional investigation activities were conducted in Area C, based on the results of the preliminary field investigation, as described in Section 6 of this report. The supplemental investigation consisted of advancing 24 soil borings and installing three monitoring wells within an area of approximately 250-feet by 250-feet. Figure 4-1 illustrates the locations of the three monitoring wells installed, and Figure 5-1 illustrates the locations of the 24 soil borings advanced on-Site. The methods and procedures followed by Malcolm Pirnie staff during this supplemental investigation are described in detail in Appendix D: GAPs, and are summarized below.

Prior to initiating the drilling activities, a Well Construction Permit was obtained from the Solano County Department of Resource Management to advance 24 soil borings and install three monitoring wells (MP-6 through MP-8). California Utility Surveys, an underground utility location firm, performed an active survey at the proposed well locations for underground obstructions.

Drilling and well construction activities were performed by ResonantSonic International, Inc., under the supervision of a Malcolm Pirnie geologist. Twenty-four soil borings (SB1 through SB24) were advanced to depths ranging from 10 feet bgs to 20 feet bgs on January 31, 2006 and February 1 and 2, 2006 using a direct-push drill rig. Soil borings were continuously cored for lithologic evaluation and samples were collected from select intervals by cutting the acetate liner used inside the direct push rods at the appropriate depth. During drilling operations, a PID was be used to monitor for the presence and concentration of organic vapors in the soil core. Based on the field results three soil borings were advanced to a depth of 15 feet bgs, 14.5 feet bgs, and 14 feet bgs using a hollow stem auger drill rig, and were completed as monitoring wells MP-6, MP-7, and MP-8, respectively. Groundwater monitoring well construction details for MP-6 through MP-8 are included in Table 4-1. Soil boring logs and well construction diagrams are included in Appendix E.

Two to three soil samples were collected from each boring for potential laboratory analysis. Samples were collected from above the groundwater table, at the location of visually confirmed maximum TPH impact (if apparent in the field), and at the bottom of the boring. A



total of 72 soil samples were collected during this investigation but only 57 soil samples were submitted to the analytical laboratory for analysis. The 57 samples were selected depending on their spatial location, as well as visual and odorous field observations and readings. The 57 soil samples were analyzed for TPH-G, TPH-D, and TPH-MO by USEPA Method 8015. Fourteen samples were also analyzed PNAs by USEPA Method 8270 at the request of the County. Chain-of-custody forms are included as Appendix H.

Wells MP-6 through MP-8 were developed by bailing, surging, and pumping techniques implemented by ResonantSonic International, Inc. on February 6 and 7, 2006.

The 24 soil borings and three monitoring wells were surveyed for location (northing and easting) and the three monitoring wells were also surveyed for top of casing elevation on February 6 and 8, 2006 by C.S.S. The surveying data are included as Appendix G.



This section describes the groundwater sampling activities conducted on Site in January and February 2006. Depth-to-water measurements and groundwater samples were collected from five monitoring wells in January and depth-to-water measurements and groundwater samples were collected from eight monitoring wells in February. Methods and procedures followed are detailed in Appendix D: GAPs, and are briefly described below.

#### January 2006 Groundwater Sampling Event

Environmental Sampling Services (ESS) of Martinez, California performed the January 2006 groundwater sampling event. ESS collected depth-to-water measurements from monitoring wells MP-1 through MP-5 prior to purging and sampling the wells on January 12, 2006. ESS then purged and collected a sample from each of the five wells on January 12, 2006 using the low-flow sampling methodology. Water quality parameters were monitored during purging using a flow-through cell. The groundwater samples were submitted to Severn Trent Laboratory, Inc. (STL) – San Francisco, an analytical laboratory licensed by the State of California, and analyzed for the following parameters:

- TPH-G, BTEX, 1,2-DCA, EDB, and MTBE by USEPA Method 8260.
- TPH-D and TPH-MO by USEPA Method 8015.
- PNAs by USEPA Method 8270.

#### February 2006 Groundwater Sampling Event

ESS collected depth-to-water measurements from monitoring wells MP-1 through MP-8 prior to purging and sampling the wells on February 9, 2006. ESS then purged and collected a sample from each of the eight wells on February 9 and 10, 2006, using the low-flow sampling methodology. Water quality parameters were monitored during purging using a flow-through cell. The groundwater samples were submitted to Curtis and Tompkins (C&T), an analytical



laboratory licensed by the State of California. The February 2006 groundwater samples were analyzed by the analysis and analytical methods as indicated in Table 6-1.

Depth-to-water measurements and field measurements collected in January and February 2006 and were recorded on the groundwater sample log sheets included in Appendix I. Chain-of-custody forms are also included in Appendix I.



This section describes the field and laboratory results of the activities conducted at the Site in January and February 2006.

#### 7.1 UST Investigation Results

The presence of the closed-in-place UST T-7, the two USTs in Area C, the two USTs in Area D, and the one UST in Area F were confirmed. The USTs were partially uncovered. However, the interiors were not inspected and their sizes (volumes) were only approximated. Findings of the field activities related to former USTs are described below:

- The UST in Area A, T-7 was found to have an eight-inch-thick concrete sidewall, and was backfilled with gravelly material. The top of the tank wall was encountered at approximately three feet bgs and its base was approximately 7 feet bgs. The sidewall was encountered three feet southeast of CGS boring B-10 and three feet northwest of CGS boring B-11. It appeared that boring B-10 was advanced into the tank by CGS, hence the reason for refusal at 7 feet bgs.
- Two USTs in Area C were encountered at approximately one foot bgs. The USTs
  were estimated to be approximately 100 gallons each, and were oriented northsouth. The two tanks were positioned side-to-side, approximately eight inches
  apart.
- Two tank fill ports were uncovered in Area D. One fill port was visually confirmed to be connected to a UST at approximately five feet bgs. The tank was approximately 200 gallons in size and oriented north-south, positioned end-to-end, and parallel to the building. The presence of the second UST was not confirmed at that time, only the presence of the tank's fill port.
- One UST was uncovered in Area F about 25 feet northwest of the Old Bulk Building at approximately two feet bgs. The tank was oriented east-west at approximately 2 feet bgs.



Malcolm Pirnie submitted an Application to Close an Underground Storage Tank for Hazardous Substances to the County for the removal of the USTs in Areas C, D, and F. These USTs were removed from the Site on January 20 and 27, 2006 under oversight of the County. UST removal activities and confirmation sampling results have been submitted to the County separately. The tank closure confirmation soil sample results are summarized in Table 7-1 and are compared with the Tier 1 ESLs.

TPH-G, TPH-D, TPH-MO, and lead were detected in various confirmation soil samples. TPH-D and lead were reported above their respective Tier 1 ESLs at concentrations of 1,800 milligrams per kilogram (mg/kg) and 380 mg/kg in the confirmation sample collected from the Area C (tank T-10) excavation. TPH-MO was reported above its Tier 1 ESL at a concentration of 580 mg/kg in the confirmation sample collected from the Area D (tank T-12) excavation. Analytical results from the groundwater samples collected from MP-3 were used as confirmation groundwater results for the water contained in the Area F excavation and are summarized in Section 7.3.3.

#### 7.2 Soil Investigation Results

This section presents the soil results from the investigations conducted at the Site in January and February 2006. The results for soil borings SB1 through SB24 and monitoring wells MP-1, MP-3, MP-6, MP-7, and MP-8, are presented as the Area C results. The results for monitoring wells MP-2, MP-4, and MP-5 are presented as the sitewide results. Laboratory results for soil samples collected from beneath the Site (Sections 7.2.2) are compared to Tier 1 screening level concentrations, as presented in the San Francisco Bay Regional Water Quality Control Board's Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, February 2005, to evaluate which of the constituents identified beneath the Site are of concern and warrant further assessment. The Tier 1 ESLs presented herein are for sites with shallow groundwater (less than 3 meters bgs) that will potentially undergo residential site use, and where shallow groundwater is not a drinking water resource.



#### 7.2.1 Subsurface Lithology

The soil lithology encountered during the Site investigation varied depending upon location, but primarily consisted of unconsolidated fill material with thin bay and alluvial deposits overlying weathered upper Cretaceous sandstones and shales or overlying Bay Mud. The unconsolidated material mainly consisted of gravelly clayey silt to sandy silt with occasional clay lenses, brick, wood, and concrete fragments and were encountered in the upper eight to 12 feet bgs, and even to 16 feet bgs in the southwest portion of Area C (soil boring SB12). The thickness of the fill material tends to increase to the west. Weathered sandstones and shales were encountered in the eastern portion of the Site starting at 8.5 feet bgs to 13 feet bgs. Bay Mud was encountered in the western portion of the Site near the shore at various depths starting at 8 feet bgs. Figure 7-1 illustrates the location of generalized geologic cross-sections, which are included as Figures 7-2a and 7-2b.

#### Soil Analytical Results

Tables 7-2a, 7-2b, and 7-2c summarize the TPH, BTEX, and PNA laboratory results for samples collected during the preliminary investigation and the additional investigation in Area C. Tier 1 ESL concentrations are included in the tables for comparison. TPH concentrations are illustrated on Figures 7-3 (sitewide) and 7-4 (Area C). The certified analytical laboratory reports for soil samples are included in Appendices F and H.

TPH-G was detected above its reporting limit in soil samples collected from well MP-6 and 13 of the soil borings in Area C at concentrations ranging from 1.1 mg/kg (SB10 at 4.5 feet bgs) to 860 mg/kg (SB13 at 6.5 feet bgs). TPH-G concentrations were reported to exceed the Tier 1 ESL of 100 mg/kg in samples collected from the smear zone (below the groundwater surface) in ten of the Area C borings. TPH-G was reported in one (SB10 at 15.5 feet) of 22 samples collected from the base of the soil borings at a concentration exceeding the Tier 1 ESL. The remaining TPH-G concentrations were reported to be below the Tier 1 ESL or reporting limit. TPH-G was not reported above its reporting limit in soil samples collected from outside Area C.

TPH-D was detected above its reporting limit in the soil samples collected from each boring and monitoring well in Area C, at concentrations ranging from 2.8 mg/kg to 53,000 mg/kg. TPH-D was reported in 20 soil samples collected from 14 soil borings advanced in Area



C at concentrations exceeding the Tier 1 ESL of 500 mg/kg. Concentrations of TPH-D exceeded the Tier 1 ESL in the smear zone (below the groundwater surface) and were reported to range from 1,700 mg/kg to 53,000 mg/kg. TPH-D concentrations were reported to exceed the Tier 1 ESL in two soil samples collected from the vadose zone, and in four samples collected from the base of the borings (from 720 mg/kg to 4,600 mg/kg).

TPH-D was also detected above its reporting limit but well below the Tier 1 ESL in the sample collected from sitewide well MP-5 at 5 feet bgs. TPH-D was not detected above its reporting limit in the soil samples collected from the other sitewide wells, MP-2 and MP-4.

TPH-MO was detected above its reporting limit in the soil samples collected from each soil boring and monitoring well in Area C, except from the soil samples collected from MP-1 and MP-3 at 4.5 feet bgs. TPH-MO concentrations were reported to range from 5.9 mg/kg (SB22 at 14 feet bgs) to 22,000 mg/kg (SB3 at 5.5 feet bgs). Concentrations of TPH-MO were reported to exceed the Tier 1 ESL of 500 mg/kg in 18 soil samples collected from 14 borings advanced in Area C. Similar to the TPH-D exceedances, most of the exceedances were detected within the smear zone just below the water table. TPH-MO concentrations reported in 10 samples collected from the smear zone just below the groundwater table exceeded the Tier 1 ESL, ranging from 570 mg/kg to 22,000 mg/kg. TPH-MO concentrations reported in four samples collected in the vadose zone exceeded the Tier 1 ESL, ranging from 640 mg/kg to 4,000 mg/kg. TPH-MO concentrations reported in four samples collected from the base of the soil borings exceeded the Tier 1 ESL, ranging from 580 mg/kg to 1,500 mg/kg.

TPH-MO was also detected above its reporting limit but below the Tier 1 ESL in the sample collected from sitewide well MP-5 at 5 feet bgs. TPH-MO was not detected above its reporting limit in the soil samples collected from the other sitewide wells, MP-2 and MP-4.

Residual TPH-D and TPH-MO impacts appear localized within the smear zone in Area C. The TPH-D and TPH-MO concentrations reported in the Area C samples were summed as total extractable petroleum hydrocarbons (TEPH) and plotted on Figures 7-5a and 7-5b. Figure 7-5a illustrates samples collected from the vadose zone, above the shallow groundwater table. Figure 7-5b illustrates the maximum TEPH concentration reported in each boring below the water table.



Concentrations of BTEX were not reported above their respective reporting limits in the soil samples collected from borings MP-1 through MP-5. BTEX results in soil are summarized in Table 7-2b.

At the request of the County, Malcolm Pirnie analyzed selected samples for the presence of PNAs. Laboratory results identified detectable concentrations of PNAs in 10 of the 14 samples analyzed. PNA concentrations were reported to exceed their respective Tier 1 ESLs in three soil samples collected from two soil borings in Area C. Twelve PNAs were detected above their respective Tier 1 ESL in the soil sample collected from SB20 at 5.5 feet bgs. The two other Tier 1 ESL exceedances included benzo[a]pyrene detected slightly above its Tier 1 ESL in the two soil samples collected from SB20 at 9 feet bgs and MP-3 at 4.5 feet bgs. As mentioned previously, Area C was mainly constructed through importation of fill material. Considering the random nature of the fill materials, the detection of the benzo(a)pyrene may not be caused by the former Site operations. PNA soil results are summarized in Table 7-2c.

## 7.2.3 Geotechnical Test Results

Geotechnical laboratory results indicate that the sample collected from 5 to 7 feet bgs, which is characteristic of the fill material in the western portion of the Sites, was classified as inorganic soil or clayey silt with slight plasticity (ML) and had a moisture content of 31.1 percent (%). The soil sample collected from 11 to 13.5 feet bgs, which is characteristic of the native unconsolidated soils was classified as inorganic clay with high plasticity to organic clay (CH-OH) and had a moisture content of 75.3%. Observation of the soil in the Shelby tubes revealed the presence of petroleum hydrocarbons impacts in the soils at a depth of 5 to 7 feet bgs. Geotechnical test results are summarized in Table 7-3. The geotechnical laboratory report is included in Appendix J.

#### 7.3 Groundwater Investigation Results

This section presents shallow groundwater results from the investigations conducted at the Site in January and February 2006. The results for monitoring wells MP-1, MP-3, MP-6, MP-7, and MP-8, advanced during the additional investigation in Area C are presented as the Area C results. The results for monitoring wells MP-2, MP-4, and MP-5 are presented as the sitewide results. Laboratory results for shallow groundwater samples collected from beneath the Site



(Sections 7.3.3) are compared to Tier 1 screening level concentrations, as presented in the San Francisco Bay Regional Water Quality Control Board's Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, February 2005, to evaluate which of the constituents identified beneath the Site are of concern and warrant further assessment. The Tier 1 ESLs presented herein are for sites with shallow groundwater (less than 3 meters bgs) that will potentially undergo residential site use, and where shallow groundwater is not a drinking water resource.

#### 7.3.1 Groundwater Flow Direction

Table 7-4 summarizes depth-to-water measurements and calculated groundwater elevations collected on January 12, 2006 and on February 9, 2006. The shallow groundwater surface beneath at the Site was measured at depths ranging from 3.8 to 5.9 feet bgs on January 12, 2006 and 4.5 and 6.4 feet bgs on February 9, 2006. Depth-to-water measurements collected in January and February 2006 were recorded on the groundwater sample log sheets included in Appendix I.

Based on the February depth-to-water measurements and corresponding groundwater elevations, the groundwater flow direction beneath the Site was calculated to be to the west. The groundwater elevation contour map, based on the calculated groundwater elevation data for February 2006 is included as Figure 7-6.

#### 7.3.2 Field Groundwater Quality Measurements

In January and February 2006, dissolved oxygen (DO) ranged from 0.04 mg/L to 3.31 mg/L. The dissolved oxygen in all monitoring wells in Area C was less than 1 mg/L, indicating anaerobic conditions. The pH ranged from 6.87 to 8.18 and temperatures varied from 17.44 degree Celsius (°C) to 20.15 °C. Oxidation-Reduction Potential (ORP) ranged from -388 millivolts (mV) to -56.4 mV for monitoring wells in Area C, indicating potential reducing conditions. ORP ranged from -44 mV to 75.4 mV for sitewide monitoring wells. Specific conductance was above 1,000 microSiemens (mS), in the eight wells monitored, likely due to the Site's proximity to the Bay. The specific conductance in well MW-8 was measured at 11,250 mS in February 2006. Field measurements collected in January and February 2006 were recorded on the groundwater sample log sheets included in Appendix I.



#### 7.3.3 Groundwater Analytical Results

Table 7-5 summarizes the groundwater analytical results for samples collected in January and February 2006. Figures 7-7 and 7-8 illustrate the TEPH groundwater concentrations for the Site in February 2006 and the TEPH groundwater concentration in Area C for February 2006, respectively. The certified analytical laboratory reports for soil samples are included in Appendix K.

TPH-G was detected above its reporting limit in the samples collected from monitoring wells MP-1 and MP-6 at maximum concentrations of 130  $\mu$ g/L and 79  $\mu$ g/L, respectively. TPH-G was not detected above its Tier 1 ESL of 500  $\mu$ g/L.

TPH-D was reported at concentrations ranging from 210  $\mu$ g/L to 9,600  $\mu$ g/L in the samples collected from the four monitoring wells in Area C. TPH-D was also detected in January 2006 in the sample collected from well MP-5 at a concentration of 86  $\mu$ g/L, and the sample collected from well MP-2 in February 2006 at a concentration of 87  $\mu$ g/L. TPH-D was reported at concentrations above its Tier 1 ESL of 640  $\mu$ g/L in the groundwater samples collected from MP-1, MP-6, and MP-7 (Area C).

TPH-MO was reported in the samples collected from monitoring wells MP-1, MP-6, MP-7 and MP-8 at concentrations ranging from 460  $\mu$ g/L to 3,800  $\mu$ g/L. TPH-MO was detected at concentrations exceeding its Tier 1 ESL of 640  $\mu$ g/L in groundwater samples collected from MP-1 and MP-7 (ranging from 640  $\mu$ g/L to 3,800  $\mu$ g/L).

Toluene was detected above its reporting limit in wells MP-2, MP-3, and MP-6 through MP-8 at a maximum concentration of 2.7  $\mu$ g/L. Total xylenes was detected above its reporting limit in wells MP-3 and MP-6 through MP-8 at a maximum concentration of 1.5  $\mu$ g/L. BTEX constituents were not reported above their respective Tier 1 ESLs.

PNAs were detected above their respective method reporting limits in two of the five samples collected in January and in four of five samples analyzed for PNAs in February. The maximum concentration of naphthalene was reported at 17  $\mu$ g/L in the sample collected from well MP-3 in January 2006. The naphthalene concentration in the sample collected from well MP-3 in February 2006 decreased to 4.5  $\mu$ g/L. Fluorene and phenanthrene were detected above their respective Tier 1 ESLs in the groundwater sample collected from MP-3 at concentrations of 4.7  $\mu$ g/L and 10  $\mu$ g/L, respectively, in January. Benzo[a]anthracene was detected above its Tier 1



ESL in the groundwater sample collected from MP-3 at a concentration of 0.2  $\mu$ g/L in February 2006.

Total dissolved solids (TDS) concentrations ranged from 410 milligrams per liter (mg/L) in MP-4 to 13,300 mg/L in MP-8 in February 2006. TDS concentrations appear to be higher in the wells closer to the shoreline, such as MP-1, MP-6, MP-7, and MP-8. TDS was detected above the its secondary drinking water quality standard of 3,000 mg/L in the groundwater samples collected from MP-7 and MP-8 at concentrations of 4,170 mg/L and 13,300 mg/L, respectively, in February 2006.

Lead was analyzed in groundwater samples collected from MP-3 and MP-5 in February. Lead was not detected above its reporting limit in these two samples.

#### 7.3.4 Comparison to CGS Groundwater Results

Results of the samples collected by Malcolm Pirnie in January and February 2006, when compared to those reported by CGS in November 2005, indicate that the grab-groundwater samples collected by CGS generally overestimated the concentration of dissolved constituent beneath the Site and cannot be reasonably relied upon for characterization purposes. Comparison of the grab-groundwater samples collected from select CGS borings to results for samples collected from nearby monitoring wells (Table 7-6 and Figure 7-9) indicates that there is a one to three order of magnitude difference that results from the different sampling methods. Additionally, Malcolm Pirnie was unable to confirm the elevated soil concentrations or potential presence of free product in Area A (tank T-7) and Area D.



## 8.0 CONCLUSIONS AND RECOMMENDATIONS

The purpose of the preliminary investigation and additional investigation in Area C was to further characterize the environmental impacts to the Site from historical facility-related operations.

Based on the laboratory results for the samples collected during January and February 2006, as summarized in Section 7, the constituents of concern for the Site appear to be limited to TPH and constituents associated with petroleum hydrocarbon compounds (e.g., naphthalene). Significant subsurface impacts appear to be limited to the western potion of the Site, in the vicinity of Area C.

In this report, Malcolm Pirnie compared the soil and groundwater analytical results with the Tier 1 ESLs and identified which areas of the Site were impacted by the constituents of concern. However, Malcolm Pirnie proposes to develop Site-specific target levels for these constituents of concern to further evaluate the areas which will require additional characterization and potentially remediation. Site-specific target levels will be developed following the San Francisco Bay Regional Water Quality Control Board's Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, February, 2005. The proposed Site-specific target levels will be presented to the County prior to recommending or implementing further characterization activities.



Malcolm Pirnie plans to continue collecting groundwater samples from the Site wells on a monthly basis for an additional two months. The samples collected from the eight on-Site wells will be analyzed for the parameters described in Table 9-1 of this document. The next groundwater monitoring event is scheduled to occur in March 2006.

Additionally, Malcolm Pirnie intends to install data loggers into selected Site wells to monitor the change in Site water levels over a minimum-two week period. The purpose of this task is to evaluate the impacts tidal heights in the Bay have on groundwater flow beneath Site. Data loggers will be installed in wells MP-1, MP-2, MP-3, MP-5, and MP-8. Data loggers will be set to record water levels once every four hours throughout the time period they are in place.

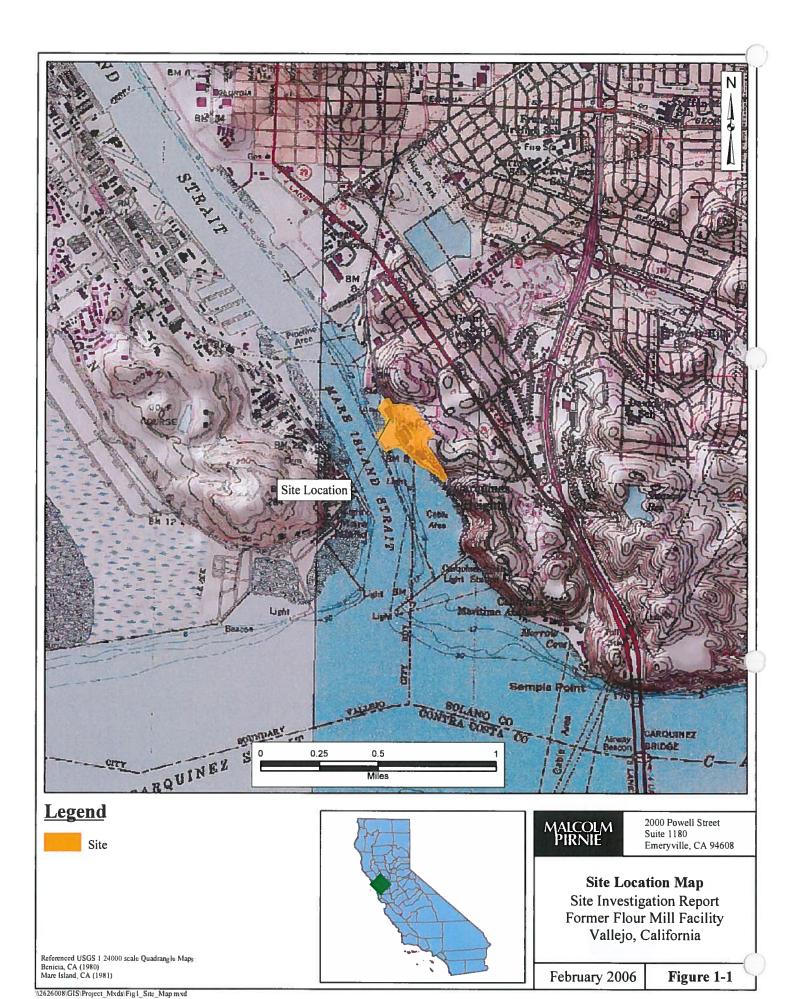


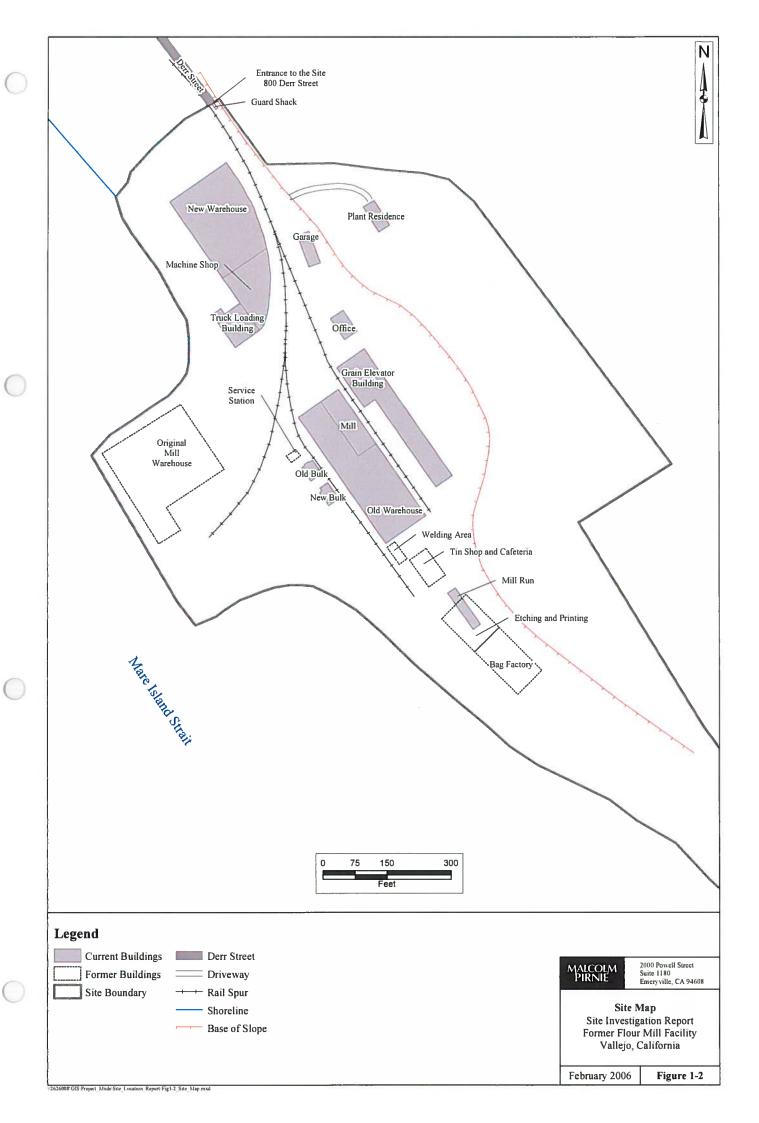
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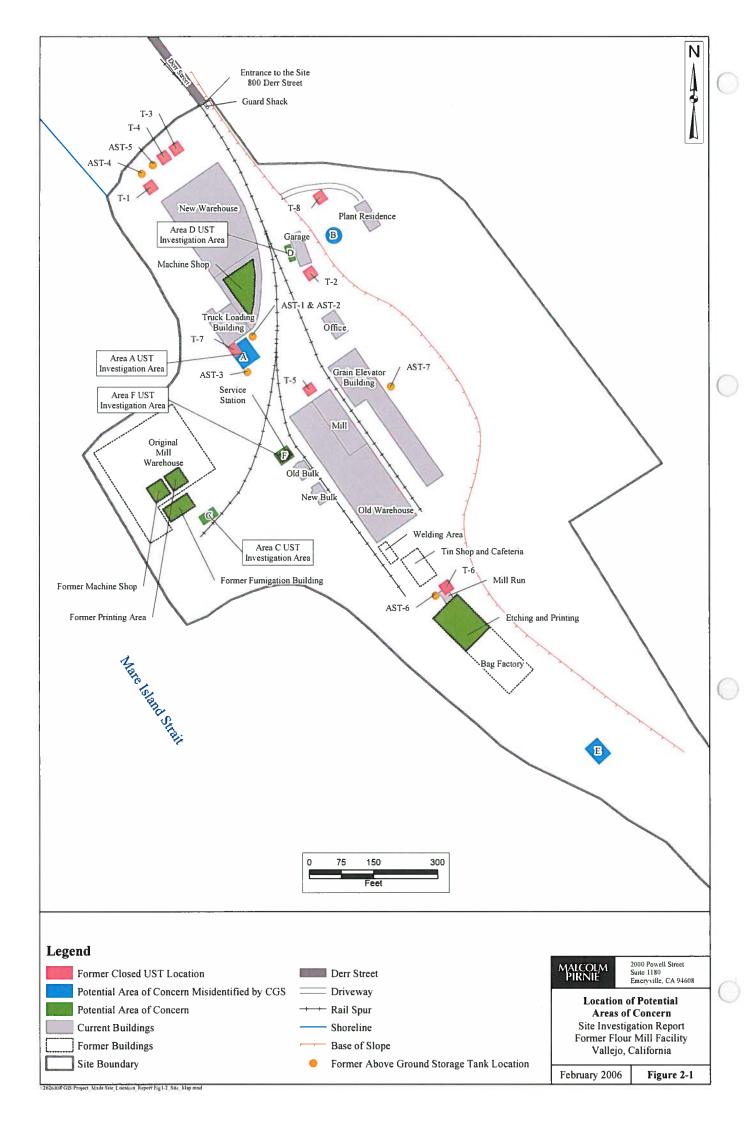


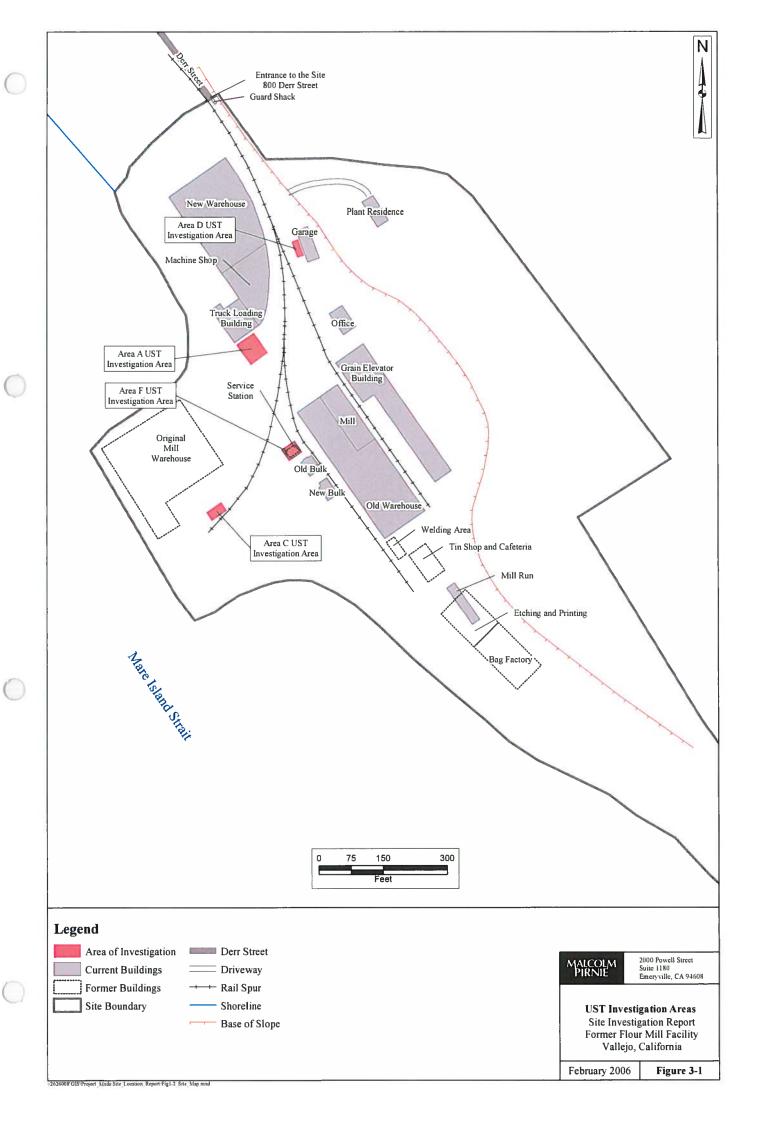
## **FIGURES**

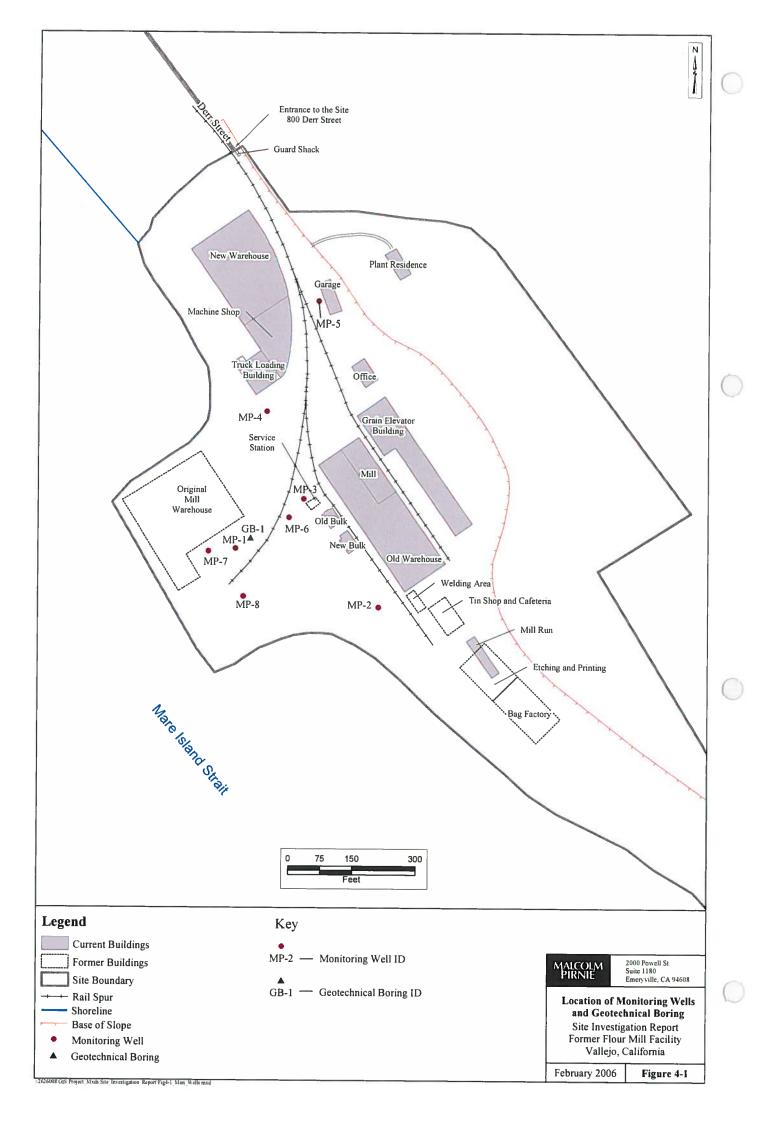


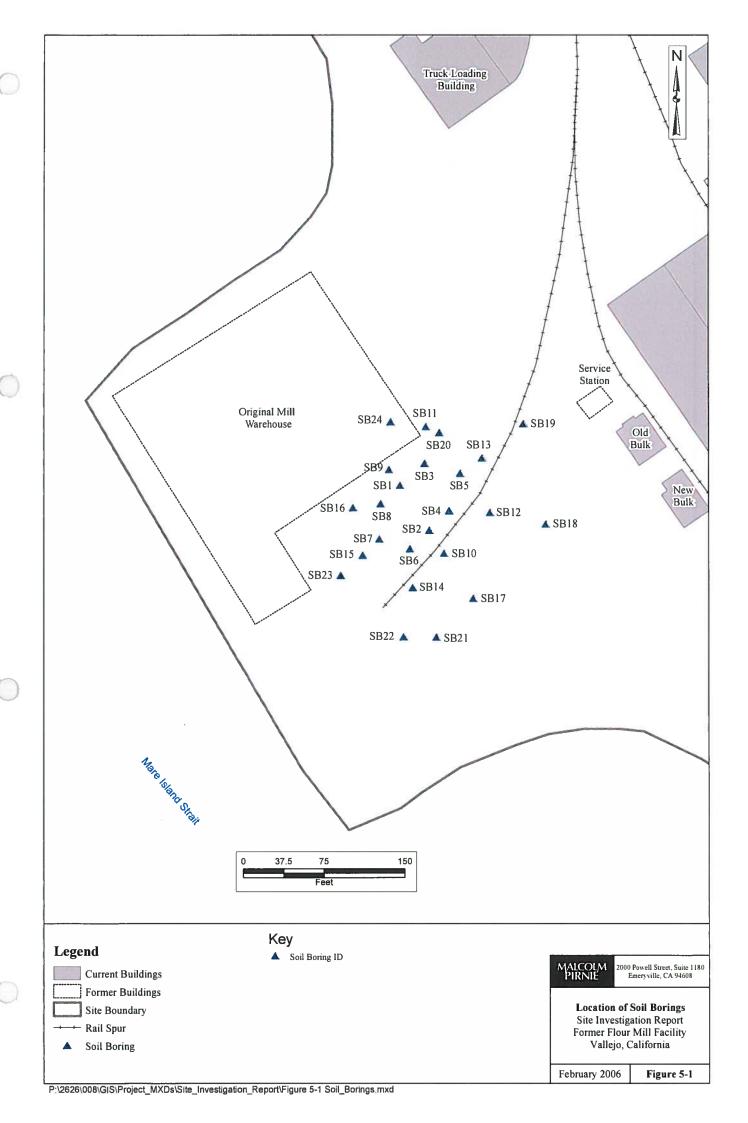


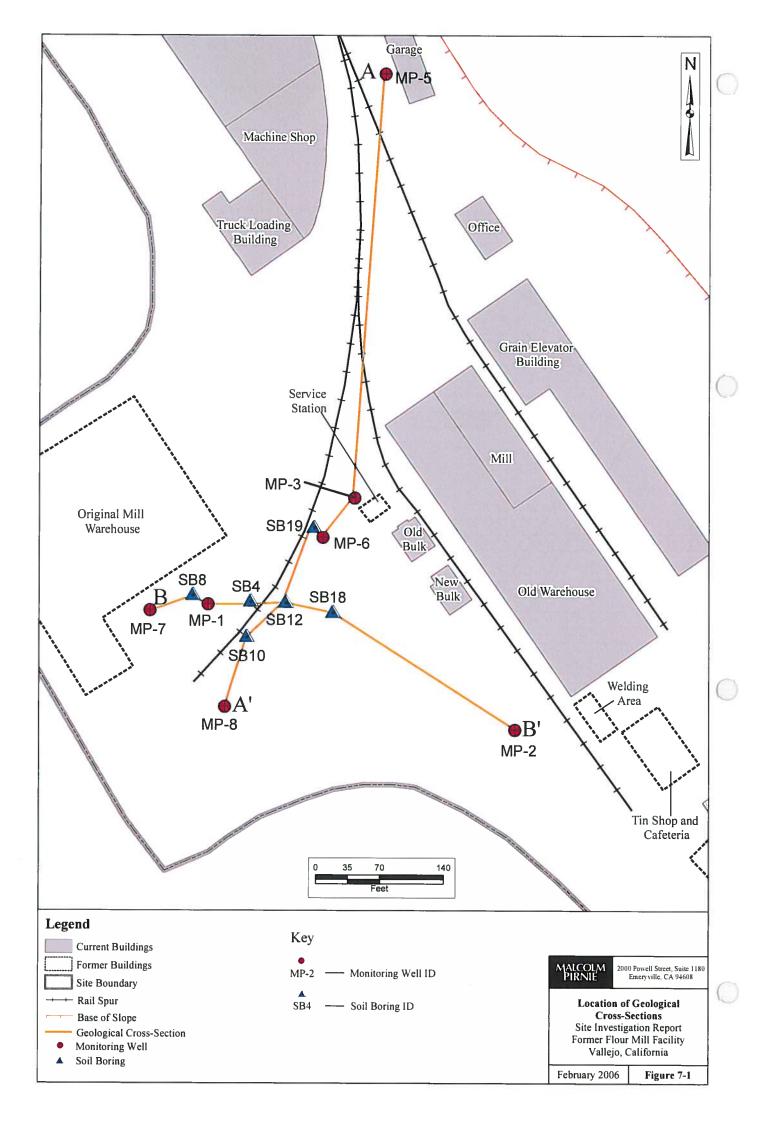


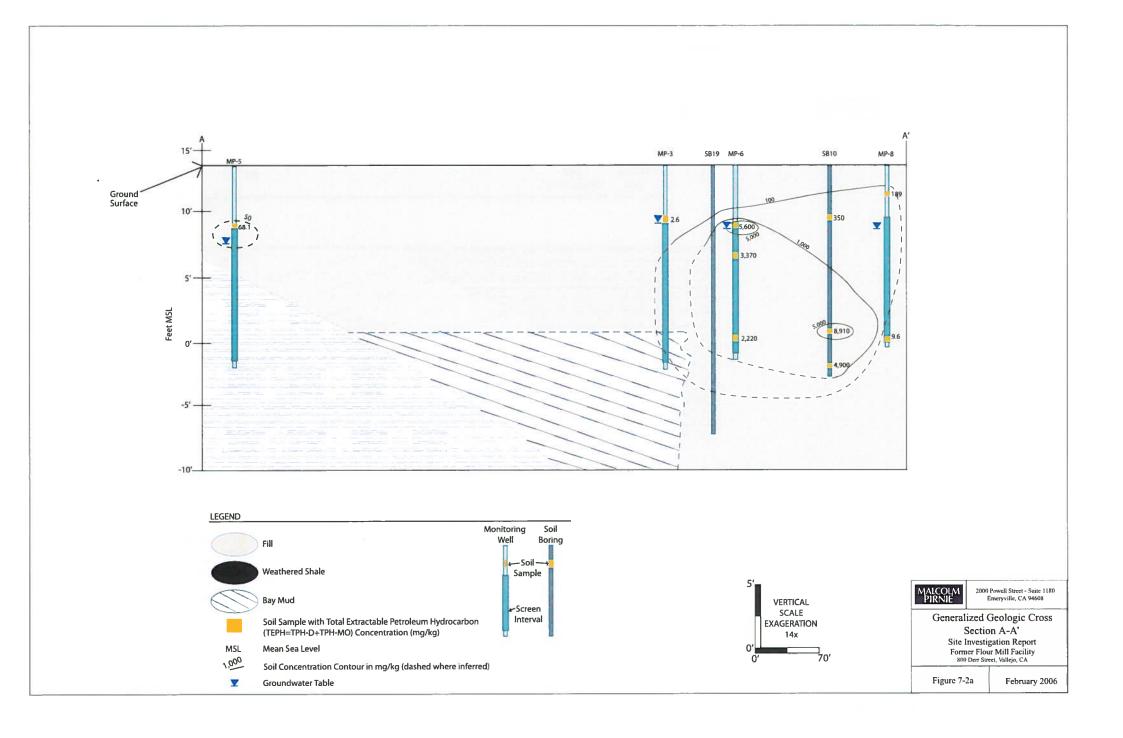


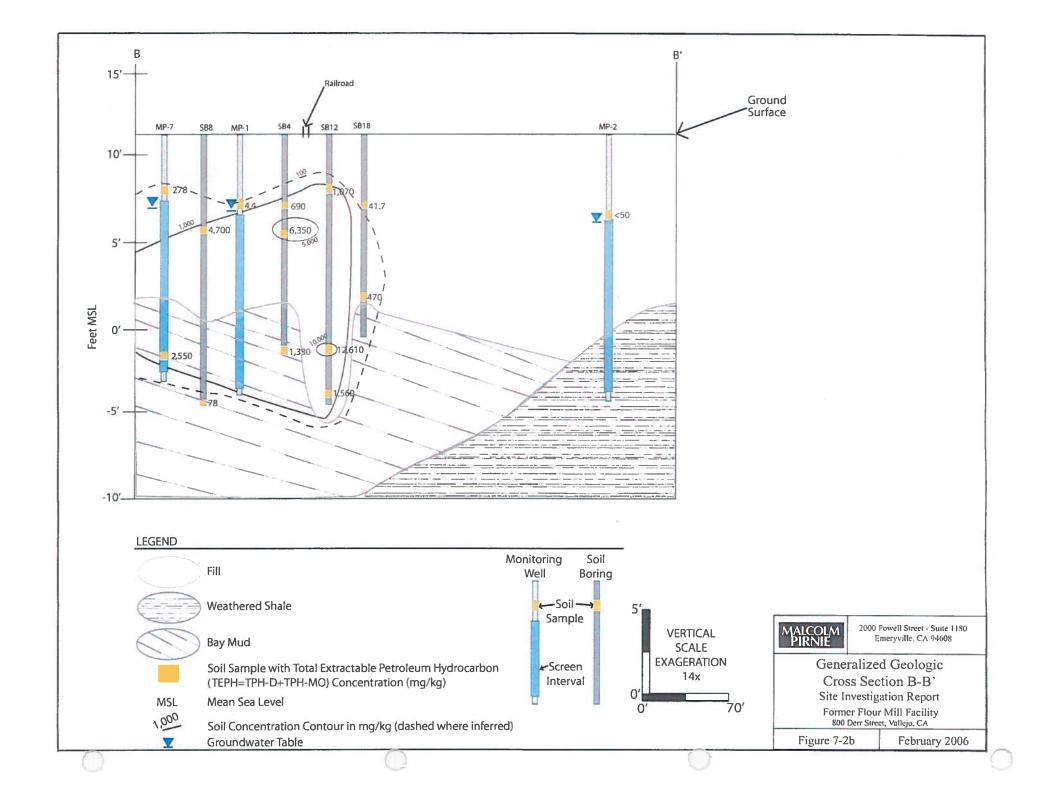


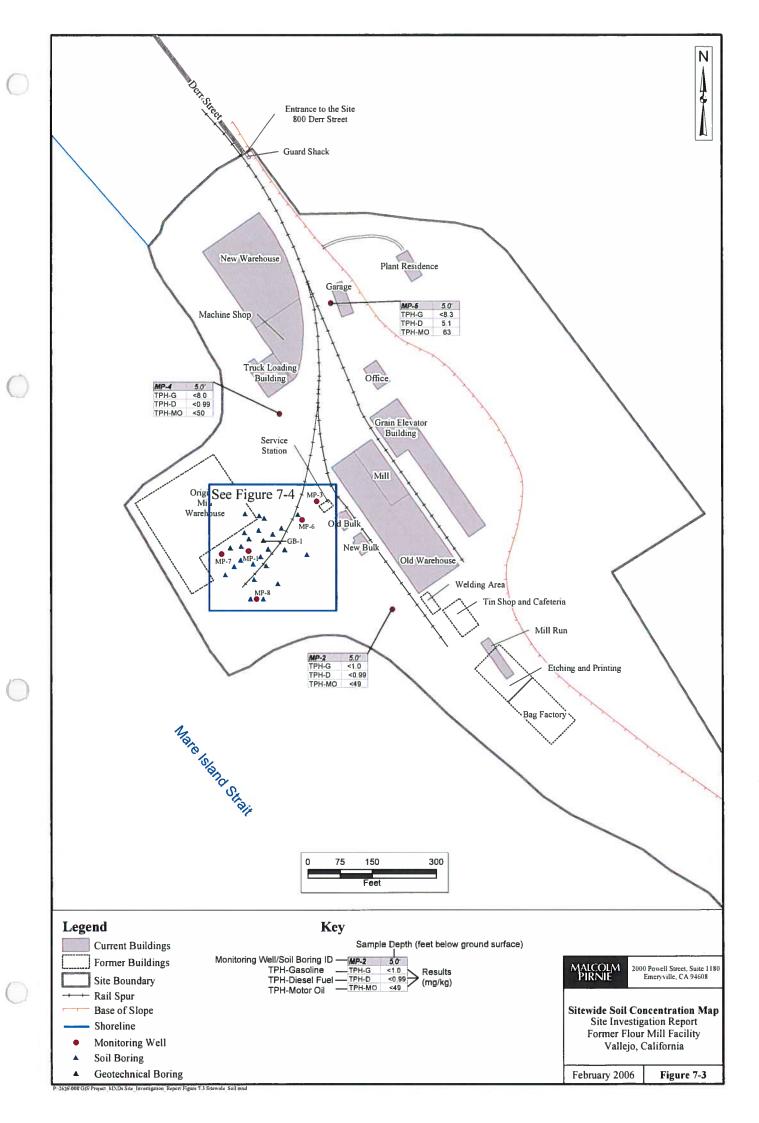












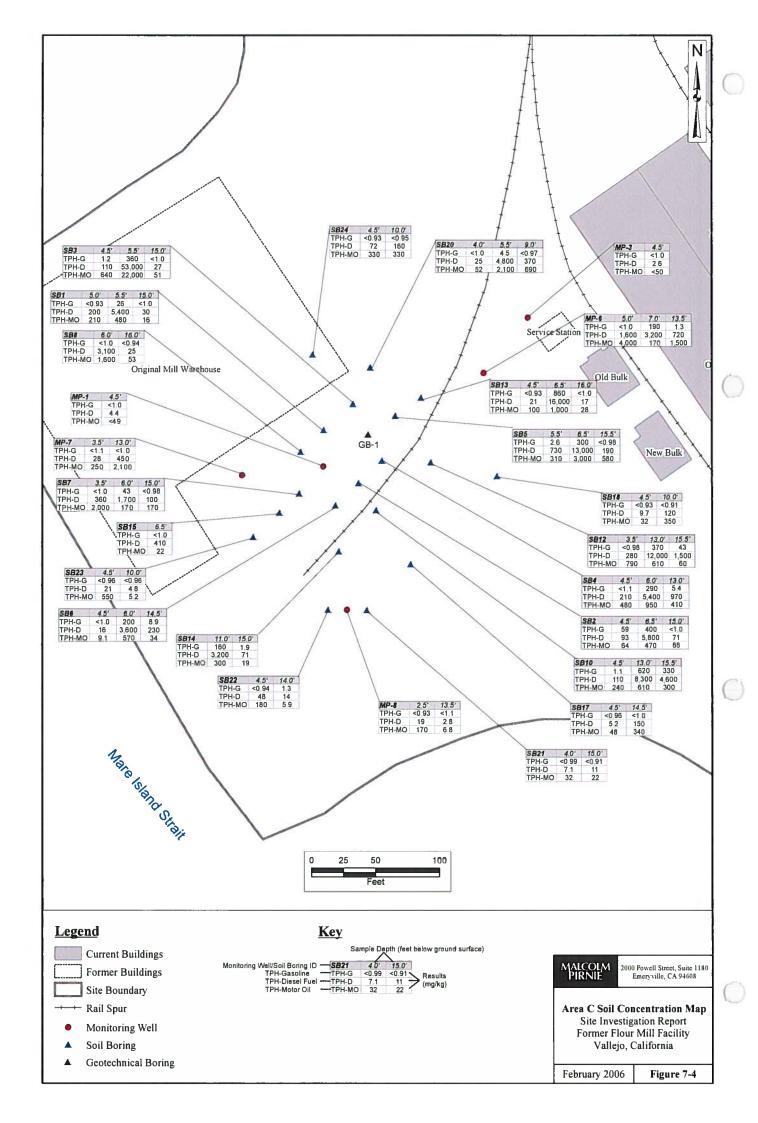


Table 3-1 **Summary of Information on the Five Potential USTs** Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Area of concern	Size (gal)	Content	Sanborn Map Date	Status
Α	32,000	heating oil	1938	Potential tank in Area A is T-7
С	100	fuel oil	1938	See Section 3 and 7
С	100	fuel oil	1938	See Section 3 and 7
D	280	gasoline	1938	See Section 3 and 7
D	280	gasoline	1938	See Section 3 and 7
F	10,000	gasoline	1938	See Section 3 and 7

gal - gallons UST - Underground Storage Tank

# Table 2-2 Summary of Information on History and Contents on AST-1 through AST-7 Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

	Size			
Number	(gallons)	Content	Estimated Date of Use	Location
AST-1	unknown	fuel oil	1900s through 1920s	Southeast of the New Warehouse in the vicinity of T-7
AST-2	unknown	fuel oil	1900s through 1920s	Southeast of the New Warehouse in the vicinity of T-7
AST-3	unknown	fuel oil	1940s - 1970s	Southeast of the New Warehouse in the vicinity of T-7
AST-4	6,000	diagol fuol	Installed in 1988 to replace	In the vicinity of T-3 and T-4
AST-5	6,000	dieseriuer	Installed in 1988 to replace tanks T-3 and T-4	In the vicinity of 1-3 and 1-4
AST-6	550	waste oil	1980s or 1990s	Northeast of the Mill Run in the vicinity of T-6
AST-7	7,000	mineral oil	1990s	Eastern side of the Grain Elevator Building

## Table 2-1 Summary of Information on History, Contents, and Closure of Tanks T1- through T-8 Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

	Size			Estimated Date		
<b>UST Number</b>	(gallons)	Content	Characteristics	of Use	Summary of Environmental Investigations	Status
Т-1	1,000	diesel fuel	Unknown characteristics, piping of the suction type, visual and stock inventory used as leak detection. A permit was issued in 1966 for the installation of a 1,000 gallon diesel tank	1966 - 1987	April 1987: One soil sample was collected from beneath the tank and analyzed for TPH-D. Analytical results from the soil sample were non-detect for TPH-D.  September 1994 - September 1995: Four borings were advanced and four soil samples and one grab groundwater sample were collected. A slight sheen was visible in the boreholes. TPH-D was detected in the soil samples at concentrations ranging from 4 to 16 mg/kg. TPH-D was detected in the groundwater sample collected from one soil boring at a concentration of 420 μg/L. No other compounds were detected above their reporting limit. Following the first quarter 1996 monitoring event, closure was requested.  According to General Mills consultant, significant concentrations of TPH were not present in the groundwater at the Site. Based on the analytical results, the General Mills consultant concluded that since BTEX have not been recorded in any monitoring wells, the groundwater beneath the Site did not appear to have been adversely impacted by the former UST releases. Given the apparent natural attenuation of the petroleum hydrocarbons and the non-potable nature of the groundwater beneath the Site, no adverse impact has been identified. No Further Action was granted in September 1996.	Removed in April 1987. State approved NFA in September 1996
T-2	1,000	diesel fuel	Unknown characteristics, piping of the suction type, visual and stock inventory used as leak detection.	Unknown - 1987	April 1987: One soil sample was collected from beneath the tank and analyzed for TPH-D. Analytical results from the soil sample were non-detect for TPH-D. No further investigation was required.	UST Removed in April 1987, NFA required by County in May 1987. State approved NFA in September 1996.
T-3	5,000	diesel fuel			January 1988: Three sidewall samples and one groundwater sample were collected from the exacavation following removal of the tanks. The three sidewall soil samples did not contain detectable concentrations	
T-4	5,000		Manufactured by Perkins in 1980, installed in 1980 with 1/4" thick steel, non-vaulted, single walled, steel, piping of the suction type, stock inventory used as leak detection		of TPH-D. Product was observed on groundwater at 6 feet below grade. The groundwater sample contained 560,000 μg/L of TPH-D. Soil stockpile samples contained concentrations of TPH-D up to 770 mg/kg. Approximately 50 cubic yards of impacted soils were removed during tank removal. Four groundwater monitoring wells were installed (4" PVC, screened from 6 to 16 feet bgs).  September 1994 - September 1996: Well MW-3, installed in 1988, could not be located. The three other wells were sampled and groundwater results were non-detected in October 1994, February 1995, and May 1995, except for TPH-D detected at 350 μg/L in MW-4 in May 1995. Following the first quarter 1996 monitoring event, closure was requested.  According to General Mills consultant, significant concentrations of TPH were not present in the groundwater at the Site. Based on the analytical results, the General Mills consultant concluded that since BTEX have not been recorded in any monitoring wells, the groundwater beneath the Site did not appear to have been adversely impacted by the former UST releases. Given the apparent natural attenuation of the petroleum hydrocarbons and the non-potable nature of the groundwater beneath the Site, no adverse impact has been identified. No Further Action was granted in September 1996.	Removed in January 1988. State approved NFA in September 1996

Table 2-1
Summary of Information on History, Contents, and Closure of Tanks T1- through T-8
Site Investigation Report
Former Flour Mill Facility, 800 Derr Street, Vallejo, California

	Cine			Estimated Date		
UST Number	Size (galions)	Content	Characteristics	of Use	Summary of Environmental Investigations	Status
T-5	250		Single wall, steel		January 1988: One soil sample was collected from beneath the tank after removal. Analytical results indicated the presence of Oil & Grease at a concentration of 7,500 mg/kg and TPH-D at 200 mg/kg. VOCs were also detected in the soil sample at the following concentrations: carbon tetrachloride (0.098 mg/kg); VOCs were also detected in the soil sample at the following concentrations: carbon tetrachloride (0.098 mg/kg); the soil provided (0.098 mg/kg); the soil provided (0.098 mg/kg);	Removed in January 1988. State approved NFA in September 1996
T-6	1,000	diesel fuel or gasoline	Single wall, steel	1930s	November 1988: Two soil samples and one groundwater sample were collected from beneath the tank after removal. The gorundwater sample contained a concentration of 43,000 µg/L of TPH-D. Soil analytical results were not found in the Solano County files.  September 1994 - September 1996: No analytes were detected above thier reporting limit in the two soil borings advanced in the vicinity of the tank. Following the first quarter 1996 monitoring event, closure was requested.  According to the General Mills consultant, significant concentrations of TPH were not present in the groundwater at the Site. Based on the analytical results, the General Mills consultant concluded that since BTEX have not been recorded in any monitoring wells, the groundwater beneath the Site did not appear to have been adversely impacted by the former UST releases. Given the apparent natural attenuation of the petroleum hydrocarbons and the non-potable nature of the groundwater beneath the Site, no adverse impact has been identified. No Further Action was granted in September 1996.	Removed in November 1988. State approved NFA in September 1996

### Table 2-1 Summary of Information on History, Contents, and Closure of Tanks T1- through T-8 Site Investigation Report Former Fiour Mill Facility, 800 Derr Street, Vallejo, California

	Size			Estimated Date		1
UST Number		Content	Characteristics	of Use	Summary of Environmental Investigations	Status
T-7	32,000	heating oil	Concrete		April 1993: Four soil borings and one Hydropunch groundwater sample were drilled in the vicinity of the tank in April 1993. Soil sample analytical results contained a maximum concentration of TPH-G of 13 mg/kg. Product was reportedly encountered in one soil boring located on the south side of the tank. The groundwater sample collected contained 2,200 µg/L of TPH-G, 100,000 µg/L of TPH-D, and 120,000 µg/L of TPH-MO. No VOCs were detected in the groundwater sample. Detectable concentrations of chromium, lead, nickel, and zinc were detected in the groundwater sample. Detectable concentration of 120 µg/L detected in the grab groundwater sample. The lead concentration of 120 µg/L detected in the grab groundwater sample was the only metal concentration to exceed the MCL.  May 1993: Ten Hydropunch borings were drilled in the vicinity of T-7 and nine soil and ten groundwater samples were collected. No TPH were detected in the soil samples but the groundwater samples contained concentrations of TPH-D up to 130,000 µg/L and TPH-MO up to 150,000 µg/L.  May 1994: Installation of MW-5 immediately west of T-7 (2° PVC, screen from 3 to 13 feet bgs)  September 1994 - September 1996: TPH-MO was detected in MW-5 at a concentration of 220 µg/L in October 1994. No analytes were detected in MW-5 in February 1995, May 1995, and September 1995, except for TPH-MO at a concentration of 300 µg/L in September 1995 but TPH-MO was also detected in the laboratory method blank. Following the first quarter 1996 monitoring event, closure was requested.  According to General Mills consultant, significant concentrations of TPH were not present in the groundwater at the Site. Based on the analytical results, the General Mills consultant concluded that since BTEX have not been activersely impacted by the former UST releases. Given the apparent natural attenuation of the petroleum hydrocarbons and the non-potable nature of the groundwater beneath the Site, no adverse impact has been identified. No Further Action was granted on September 1996.	
T-6	250	heating oil	Single wall, steel		April 2002: T-8 was removed and four confirmation samples were collected. TPH-G was detected at concentrations up to 190 mg/kg and TPH-D was detected at concentrations up to 1,400 mg/kg.  September 2003: Excavation was extended to 10 feet bgs and two confirmation samples were collected. TPH-G and TPH-D were detected in the confirmation samples up to a concentration of 300 mg/kg and 3,900 mg/kg, respectively. Four soil borings were advanced to a maximum depth of 19 feet bgs. Five soil samples were collected from each boring for analysis. Results showed minor TPH-D concentrations at shallow depths, a detection at a concentration of 250 mg/kg at 10 feet bgs in one soil boring, and no detections below 15 feet bgs. The excavation was then extended to 15 feet bgs. A groundwater sample was collected in June 2004 from a temporary monitoring well and no analytes were detected. No Further Action was granted in August 2004.	Removed in April 2002. State approved NFA in September 1996

### Notes:

UST - Underground Storage Tank

bgs - below ground surface µg/L - micrograms per liter mg/kg - milligrams per kilogram

BTEX - Benzene, Toluene, Ethylbenzene, Xylenes

VOCs - Volatile Organic Compounds

TPH-G - Total Petroleum Hydrocarbons as Gasoline

TPH-D - Total Petroleum Hydrocarbons as Diesel Fuel

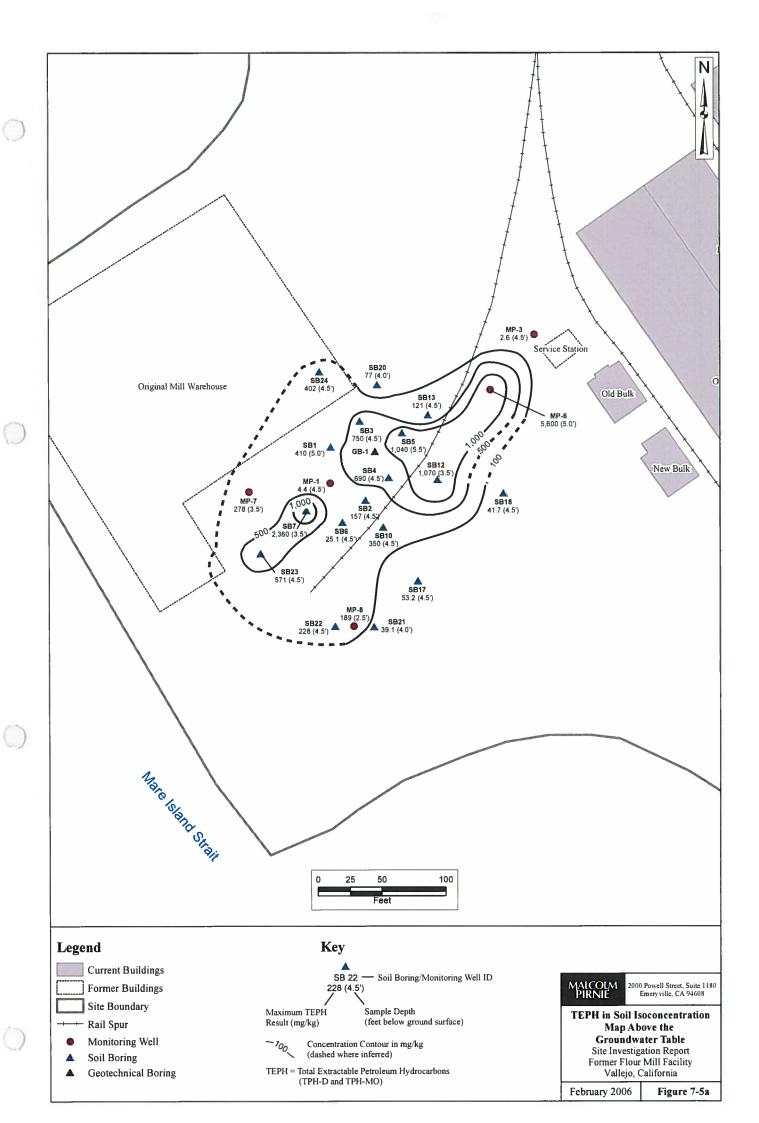
TPH-MO - Total Petroleum Hydrocarbons as Motor Oil

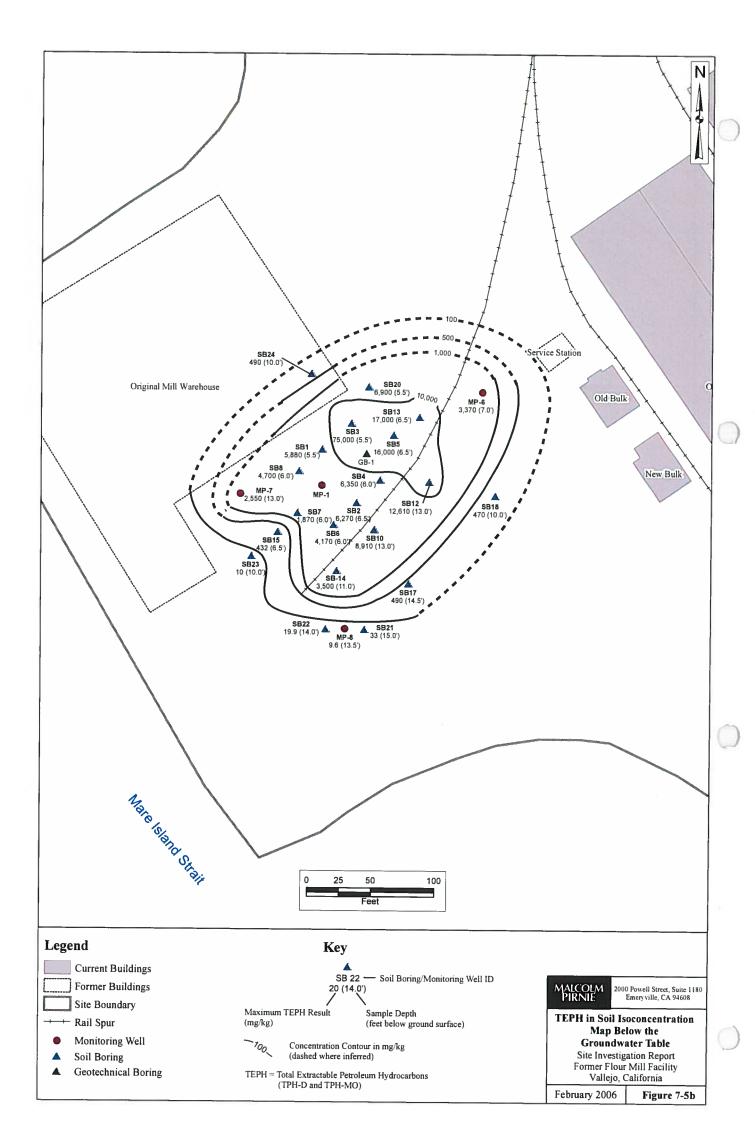
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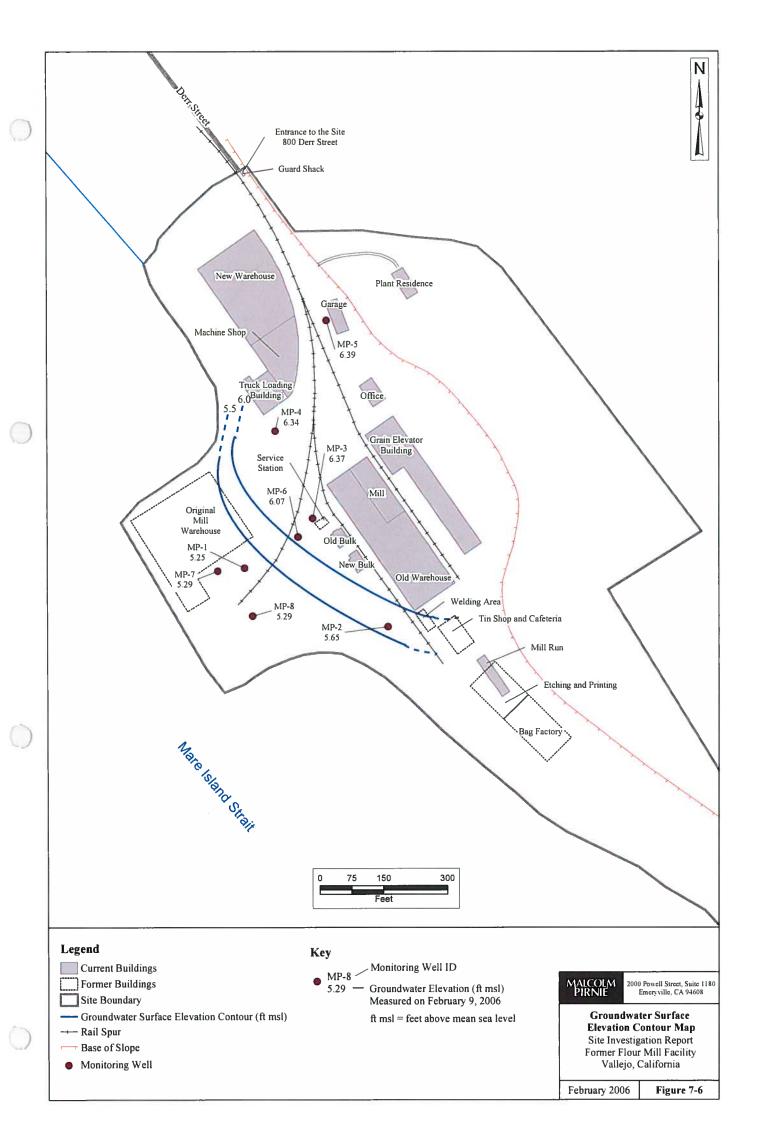
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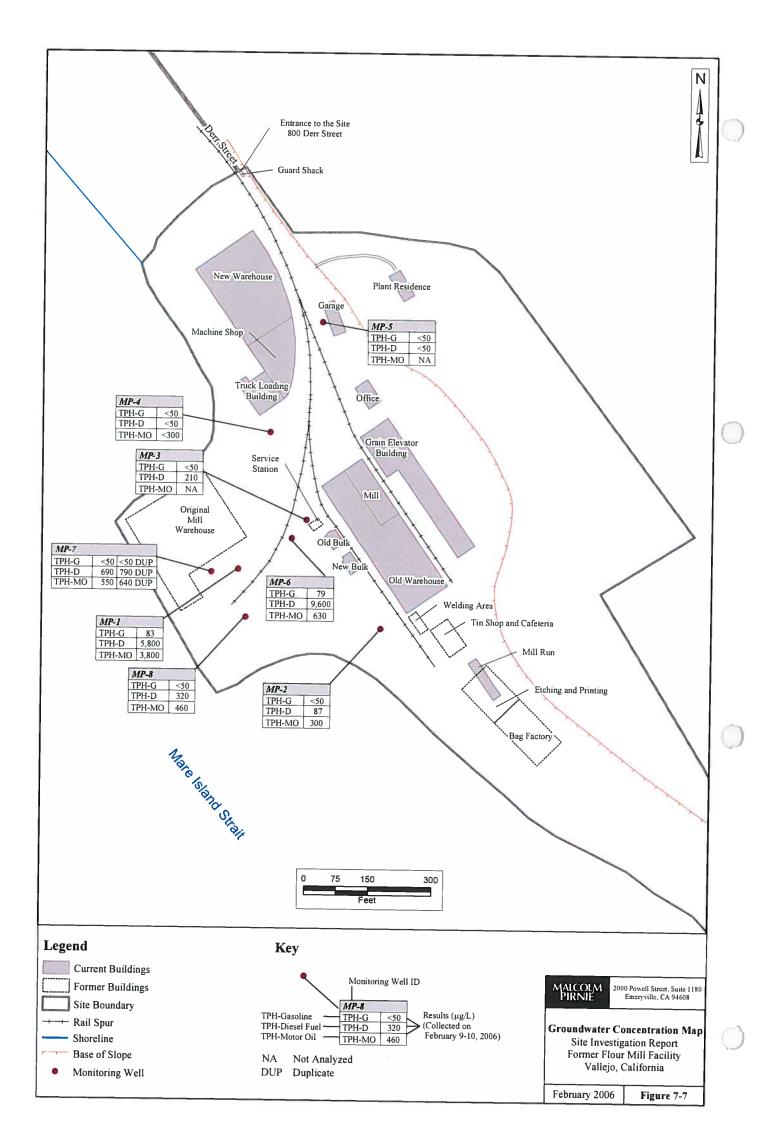
### **TABLES**

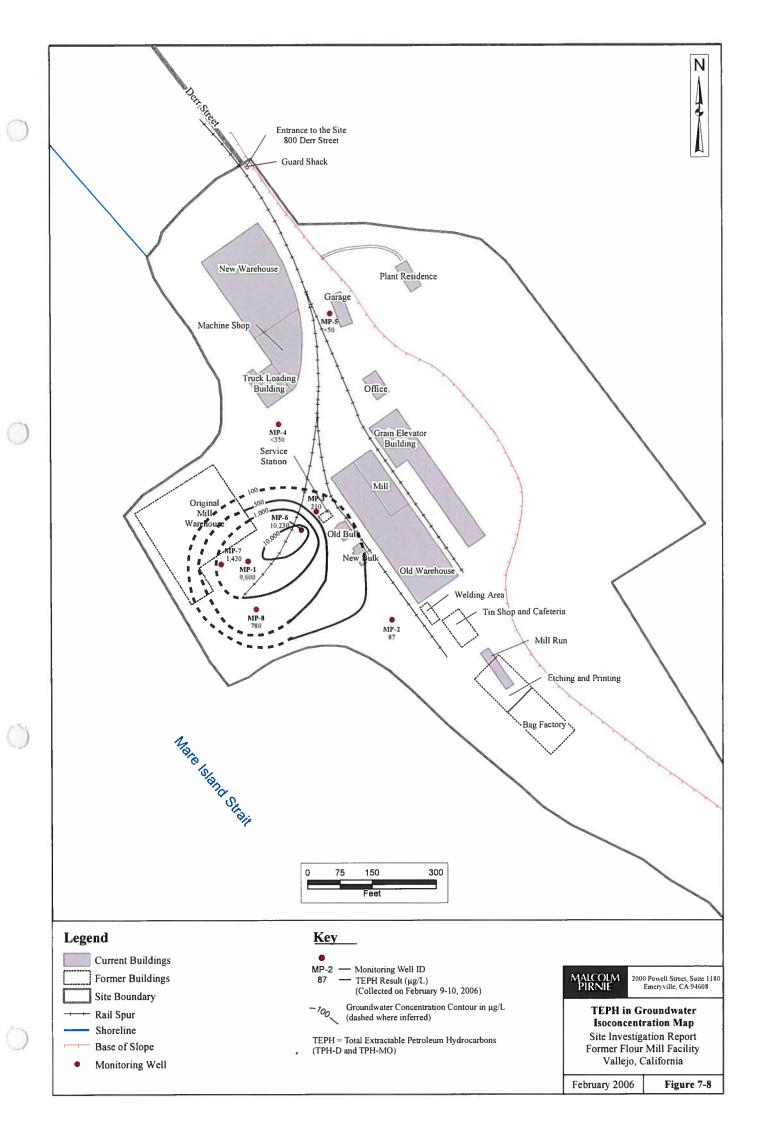












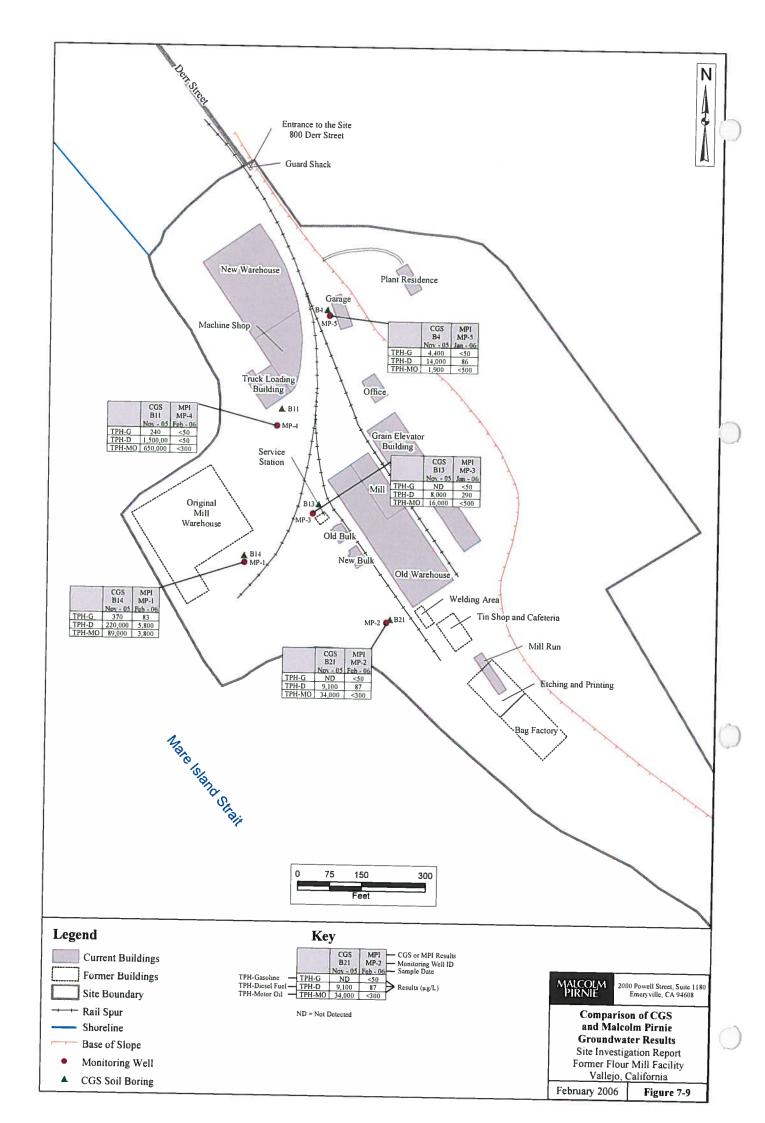


Table 4-1 **Groundwater Monitoring Well Construction Details** Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Well ID	Location	Installation Date	Total Depth (ft bgs)	Casing Material	Casing Diameter (inches)	Screen Slot Size (inches)	Screen Interval (ft bgs)
MP-1	Area C	1/10/2006	15.5	PVC SCH 40	2	0.010	5.5 - 15
MP-2	Southwest portion of the Site	1/10/2006	15.5	PVC SCH 40	2	0.010	5.5 - 15
MP-3	Area F	1/10/2006	15.5	PVC SCH 40	2	0.010	5.5 - 15
MP-4	Area A	1/7/2006	15.5	PVC SCH 40	2	0.010	5.5 - 15
MP-5	Area D	1/7/2006	15.5	PVC SCH 40	2	0.010	5.5 - 15
MP-6	Area C	2/6/2006	15.0	PVC SCH 40	2	0.010	4.5 - 14
MP-7	Area C	2/3/06	14.5	PVC SCH 40	2	0.010	4 - 13.5
MP-8	Area C	2/3/06	14.0	PVC SCH 40	2	0.010	4 - 13.5

ft bgs = feet below ground surface PVC SCH = polyvinyl chloride schedule

Table 6-1
Groundwater Sampling Analysis in February 2006
Site Investigation Report
Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Well ID	Area	TPH-G, BTEX, EDC, EDB	TPH-D	трн-мо	PNAs	TDS	Lead
MP-1	С	Х	Х	X	X	X	
MP-2		Х	X	X		Х	
MP-3	F	Х	Х		Χ	Х	Х
MP-4	Α	X	Х	X		Х	
MP-5	D	Х	Х			Х	X
MP-6	С	Χ	Х	X	Χ	Х	
MP-7	С	Х	Х	Х	Х	Х	
MP-8	С	Х	Х	X	Χ	Х	

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel Fuel

TPH-MO = Total Petroleum Hydrocarbons as Motor Oil

BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes

EDC = 1,2-Dichloroethane

EDB = 1,2-Dibromoethane

PNA = Polynuclear aromatics

TDS = Total dissolved solid

# Table 7-1 Summary of Tank Closure Confirmation Soil Sample Results Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Sample ID	Sample Depth (feet btoc)	Sample Date	TPH-G (mg/kg)	TPH-D (mg/kg)	TPH-MO (mg/kg)	Lead (mg/kg)
	Tie	er 1 ESL <sup>1</sup> (mg/kg ):	100	500	500	200
CS9	5.5	1/20/2006	<0.5	31	<50	8.4
CS10	5.5	1/20/2006	<0.5	1,800	<500	380
CS11	6.0	1/20/2006	<0.5	13	110	9.1
CS12	6.5	1/20/2006	<0.5	42	580	14
CS13	12.5	1/27/2006	2.5	69	120	51
SW-AREAC	2.5	1/20/2006	<0.5	27	<50	13
SW-AREAD	3.0	1/20/2006	<0.5	<1.0	<50	5.9
SW-AREAF-NORTH	6.0	1/27/2006	<1.1	<0.99	<49	5.3
SW-AREAF-SOUTH	6.0	1/27/2006	<0.9	1.2	<50	9.2

### Notes:

btoc = below top of casing

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel Fuel

TPH-MO = Total Petroleum Hydrocarbons as Motor Oil

**Bold values indicate concentrations above the Tier 1 ESL** 

<sup>&</sup>lt;sup>1</sup> Tier 1 Environmental Screening Level assuming shallow soil (< 3 meters bgs), residential land mg/kg = milligrams per kilograms

### Table 7-2a **Summary of TPH Concentrations in Soil** Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Well/Boring ID	Sample Depth (feet bgs)	Sample Date	TPH-G (mg/kg)	TPH-D (mg/kg)	TPH-MO (mg/kg)
	Tier 1 ES	L1 (mg/kg ):	100	500	500
MP-1	4.5	1/9/2006	<1.0	4.4	<49
MP-2	5.0	1/9/2006	<1.0	< 0.99	<49
MP-3	4.5	1/9/2006	<1.0	2.6	<50
MP-4	5.0	1/7/2006	<8.0 UJ	<0.99	<50
MP-5	5.0	1/6/2006	<8.3 UJ	5.1	63
MP-6	5.0	2/3/2006	<1.0	1,600 H	4,000 H
	7.0	2/3/2006	190	3,200	170 H
	13.5	2/3/2006	1.3 H	720 H	1,500 H
MP-7	3.5	2/3/2006	<1.1	28 H	250
	13.0	2/3/2006	<1.0	450 H	2,100 H
MP-8	2.5	2/3/2006	< 0.93	19 H	170
	13.5	2/3/2006	<1.1	2,8 H	6.8
SB1	5.0	1/31/2006	< 0.93	200 H	210 H
	5.5	1/31/2006	26 H,J	5,400	480 H
	15.0	1/31/2006	<1.0	30 H	16 H
SB2	4.5	1/31/2006	59 H	93 H	64 H
	6.5	1/31/2006	400 H,J	5,800	470 H
	15.0	1/31/2006	<1.0	71 H	88 H
SB3	4.5	1/31/2006	1.2 H	110 H	640 H
	5.5	1/31/2006	360 H,J	53,000 H,J	22,000 H,
	15.0	1/31/2006	<1.0	27 H	51 H
SB4	4.5	1/31/2006	<1.1	210 H	480
	6.0	1/31/2006	290 H	5,400 J	950 H,J
	13.0	1/31/2006	5.4 H	970 J	410 H,J
SB5	5.5	1/31/2006	2.6 H	730 H	310 H
555	6.5	1/31/2006	300 H	13,000 J	3.000 H.J
	15.5	1/31/2006	<0.98	190 H	580
SB6	4.5	1/31/2006	<1.0	16 H	9.1 H
000	6.0	1/31/2006	200 H	3,600 J	570 H,J
	14.5	1/31/2006	8.9 H	230	34 H
SB7	3.5	1/31/2006	<1.0	360 H,J	2,000 J
057	6.0	1/31/2006	43 H	1700 J	170 H
	15.0	1/31/2006	<0.98	100 H	170
SB8	6.0	1/31/2006	<1.0	3,100 H,J	1,600 H.J
020	16.0	1/31/2006	<0.94	25 H	53
SB10	4.5	2/1/2006	1.1 H	110 H	240 H
05.0	13.0	2/1/2006	620 H	8,300 J	610 H,J
	15.5	2/1/2006	330 H	4,600 J	300 H,J
SB12	3.5	2/1/2006	<0.98	280 H	790
OBIL	13.0	2/1/2006	370 H.J	12,000	610 H
	15.5	2/1/2006	43 H	1,500 J	60 H,J
SB13	4.5	2/1/2006	<0.93	21 H	100
0510	6.5	2/1/2006	860 H	16,000	1,000 H
	16.0	2/1/2006	<1.0	17 H	28 H
SB14	11.0	2/1/2006	160 H,J	3,200	300 H
0014	15.0	2/1/2006	1.9 H	71	19 H
SB15	6.5	2/1/2006	<1.0	410 H	22 H
SB17	4.5	2/2/2006	<0.96	5.2 H	48
9517	14.5	2/2/2006	<1.0	150 H	340
SB18	4.5	2/2/2006	<0.93	9.7 H	32
5510	10.0	2/2/2006	<0.91	120 H	350 H
SB20	4.0	2/2/2006	<1.0	25 H	52
3320	5.5	2/2/2006	4.5 H	4,800 H	2,100
	9.0	2/2/2006	<0.97	370 H	690
SB21	4.0	2/2/2006	<0.99	7.1 H	32
0051	15.0	2/2/2006	<0.91	11 H	22
SB22	4.5	2/2/2006	<0.94	48 H	180 H
ODEE	14.0	2/2/2006	1.3 H	14 H	5.9 H
SB23	4.5	2/2/2006	<0.96	21 H	550 H
3023	10.0	2/2/2006	<0.96	4.8 H	5.2 H
	10.0	L 2222000	<0.00		
SB24	4.5	2/2/2006	< 0.93	72 H	330 H

bgs = below ground surface

residential land use

mg/kg = milligrams per kilogram bgs = below ground
TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel Fuel
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil
H = Hydrocarbon chromatographic pattern does not match standard
UJ = The reporting limit is considered an estimated value
J = Estimated value

<sup>&</sup>lt;sup>1</sup> Tier 1 Environmental Screening Level assuming shallow soil (< 3 meters bgs), residential land use

## Table 7-2b Summary of BTEX Concentrations in Soil Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Well/Boring ID	Sample Depth Sample (feet bgs) Date Tier 1 ESL¹ (mg/kg ):		Benzene (mg/kg) 0.18	Toluene (mg/kg) 9.3	Ethylbenzene (mg/kg) 4.7	Xylenes (mg/kg) 1.5
MP-1	4.5	1/9/2006	<0.0051	<0.0051	<0.0051	<0.0051
MP-2	5.0	1/9/2006	<0.005	<0.005	<0.005	< 0.005
MP-3	4.5	1/9/2006	<0.0051	<0.0051	<0.0051	<0.0051
MP-4	5.0	1/7/2006	<0.040	<0.040	<0.040	< 0.040
MP-5	5.0	1/6/2006	< 0.041	<0.041	<0.041	<0.041

### **Notes**

<sup>1</sup> Tier 1 Environmental Screening Level assuming shallow soil (< 3 meters bgs), residential land use

mg/kg = milligrams per kilogram bgs = below ground surface

BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes

### Table 7-2c Summary of PNA Concentrations in Soil Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Well/Boring ID	Sample Depth (feet bgs)	Sample Date	Naphthalene (mg/kg)	Acenaphthylene (mg/kg)	Acenaphthene (mg/kg)	Fluorene (mg/kg)	Phenanthrene (mg/kg)	Anthracene (mg/kg)	Fluoranthene (mg/kg)	Pyrene (mg/kg)	Chrysene (mg/kg)	Benzo[a] anthracene (mg/kg)	Benzo[b] fluoranthene (mg/kg)	Benzo[k] fkvoranthene (mg/kg)	Benzojaj pyrene (mg/kg)	Indeno[1,2,3-cd] pyrene (mg/kg)	Benzolg,h,il perylene (mg/kg)
Well bothing to	Tier 1 ES		4.5	13	19	8.9	11	2.8	40	85	3.8	0.38	0.38	0.38	0.038	0.38	27
MP-1	4.5	1/9/2006	<0.067	< 0.067	<0.067	< 0.067	<0.067	< 0.067	< 0.067	< 0.067	<0.067	<0.067	<0.067	<0.067	< 0.067	<0.067	<0.067
MP-2	5.0	1/9/2006	< 0.067	< 0.067	< 0.067	< 0.067	< 0.067	< 0.057	< 0.067	< 0.067	< 0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067
MP-3	4.5	1/9/2006	<0.066	< 0.066	<0.066	<0.066	0.14	<0.066	0.13	0.15	0.077	<0.066	0.11	<0.066	0.12	0.082	0.074
MP-4	5.0	1/7/2006	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066
MP-5	5.0	1/6/2006	<0.067	< 0.067	<0.067	< 0.067	< 0.067	< 0.067	<0.067	< 0.067	< 0.067	<0.067	<0.067	<0.067	< 0.067	<0.067	< 0.067
SB4	6.0	1/31/2006	0.31	0.34	0.85	3.7	5.4	0.47	<0.2	0.23	<0.2	<0.2	<0.2_	<0.2	<0.2	<0.2	<0.2
SB6	6.0	1/31/2006	<0.13	<0.13	0.28	0.14	0.21	0.3	0.14	0.21	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13
SB10	13.0	2/1/2006	0.51	0.44	1.1	4.4	6.2	0.64	0.26	0.34	0.12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SB12	13.0	2/1/2006	0.34	0.43	1.1	4.3	6.3	0.6	0.3	0.28	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SB20	4.0	2/2/2006	0.0069	<0.005	0.013	0.013	0.042	<0.005	0.03	0.023	0.0071	0.0067	0.005	<0.005	< 0.005	< 0.005	<0.005
	5.5	2/2/2006	210	<10	160	100	360	39	240	170	38	45	26	20	27	<10	11
	9.0	2/2/2006	0.28	<0.025	0.23	0.17	0.61	0.074	0.44	0.44	0.11	0.11	0.086	0.059	0.096	0.055	0.076
S824	4.5	2/2/2006	<0.0099	<0.0099	<0.0099	<0.0099	0.033	<0.0099	0.031	0.03	0.015	<0.0099	0.011	<0.0099	<0.0099	<0.0099	0.011
	10.0	2/2/2006	0.011	<0.0051	0.029	0.025	0.13	0.017	0.096	0.11	0.032	0.026	0.019	0.013	0.025	0.016	0.025

Notes

Tier 1 Environmental Screening Level assuming shallow soil (< 3 meters bgs), residential land use mg/kg = milligrams per kilogram bgs = below ground surface
PNA = Polynuclear Aromatics

# Table 7-3 Summary of Geotechnical Test Results Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Sample ID	Sample Depth	USCS Soil Type	Range of Specific Gravity	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Degree of Saturation (%)	Range of Organic Matter (% by dry weight)
GB-1	5.0-7.5	ML	2.696 - 2.732	107.3	31.1	81.8	80.6	4.9 - 5.3
GB-1	11.0-13.5	CH-OH	2.687-2.755	95.4	75.3	54.4	97.8	6.2 - 6.5

Notes:

ft bgs = feet below ground surface

pcf = per cubic foot

# Table 7-4 Summary of Groundwater Elevation Data Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Well ID	Top of Casing Elevation (feet, msl <sup>1</sup> )	Well Depth (feet)	Depth to Water Measurement Date	Depth to Water (feet, bgs <sup>2</sup> )	Groundwater Elevation (feet, msl <sup>1</sup> )
MP-1	9.72	15.37	1/12/2006	3.97	5.75
			2/9/2006	4.47	5.25
MP-2	10.53	15.41	1/12/2006	4.10	6.43
			2/9/2006	4.88	5.65
MP-3 <sup>3</sup>	11.23	14.14	1/12/2006	4.35	6.88
Ī	11.42	]	2/9/2006	5.05	6.37
MP-4	10.64	15.36	1/12/2006	3.82	6.82
			2/9/2006	4.30	6.34
MP-5	12.79	15.23	1/12/2006	5.91	6.88
			2/9/2006	6.40	6.39
MP-6	11.18	14.37	2/9/2006	5.11	6.07
MP-7	10.23	14.16	2/9/2006	4.94	5.29
MP-8	10.71	13.75	2/9/2006	5.42	5.29

<sup>&</sup>lt;sup>1</sup> mean sea level

<sup>&</sup>lt;sup>2</sup> below ground surface

<sup>&</sup>lt;sup>3</sup> Top-of-casing was damaged during UST removal. Top-of-casing was reconstructed and resurveyed on 02/09/2006

### Table 7-5 **Summary of Groundwater Analytical Results** Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

				Concentrations (µg/L)								
Well ID	Screen Depth (feet bloc)	Sample Date	TPH-G	TPH-D	трн-мо	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,2-DCA	мтве	EDB
	Tier 1	ESL¹ (μg/L)	500	640	640	46	130	290	130	200	1,800	160
MP-1	5.5 - 15.0	1/12/2006	100	3,100	1,500	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
		1/12/2006 duplicate	130	3,300	1,800	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
		2/10/2006	83	5,800 H	3,800	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5
MP-2	5.5-15.0	1/12/2006	<50	<50	<500	<0.5	2.1	<0.5	<1	<0.5	<0.5	<0.5
		2/9/2006	<50	87 H	<300	<0.5	2.5	<0.5	<1	<0.5		<0.5
MP-3	5.5-15.0	1/12/2006	<50	290	<500	<0.5	0.74	<0.5	1.5	<0.5	<0.5	<0.5
		2/10/2006	<50	210 H		<0.5	0.84	<0.5	0.93	<0.5		<0.5
MP-4	5.5-15.0	1/12/2006	<50	<50	<500	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
		2/9/2006	<50	<50	<300	<0.5	<0.5	<0.5	<1	<0.5		< 0.5
MP-5	5.5-15.0	1/12/2006	<50	86	<500	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
		2/9/2006	<50	<50		<0.5	<0.5	<0.5	<1	<0.5	-	< 0.5
MP-6	4.5 - 14.0	2/10/2006	79	9,600 H	630	<0.5	2.7	<0.5	1.1	<0.5	-	<0.5
MP-7	4.0 - 13.5	2/10/2006	<50	690 H	550	<0.5	0.8	<0.5	<1	<0.5		< 0.5
		2/10/2006 duplicate	<50	790 H	640	<0.5	0.75	<0.5	0.53	<0.5		<0.5
MP-8	4.0 - 13.5	2/9/2006	<50	320 H	460	<0.5	0.69	<0.5	0.68	<0.5		<0.5
Trip Blank		1/12/2006	<50	-		<0.5	<0.5	<0.5	<1	0.52	<0.5	<0.5
		2/9/2006	<50	_		<0.5	<0.5	<0.5	<1	<0.5		<0.5

Notes
Tier 1 Environmental Screening Level assuming residential land

TPH-G = Total Petroleum Hydrocarbons as Gasoline TPH-D = Total Petroleum Hydrocarbons as Diesel Fuel

μg/L = micrograms per liter bloc = below top of casing

TPH-MO = Total Petroleum Hydrocarbons as Motor Oil H = Hydrocarbon chromatographic pattern does not match standard 1,2-DCA = 1,2-Dichloroethane MTBE = Methyl-tert-butyl ether EDB = 1,2-Dibromomethane

### Table 7-5 **Summary of Groundwater Analytical Results** Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

		1		_			Concent	rations (µg/L)					
Well ID	Screen Depth (feet bloc)	Sample Date	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a] anthracene	Chrysene	Benzo[a]
	Tier 1	l ESL¹ (μg/L)	24	30	23	3.9	4.6	0.73	8.0	2.0	0.027	0.35	0.014
MP-1	5.5 - 15.0	1/12/2006	<2.1	<2.1	<2.1	3.2	3.7	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
		1/12/2006 duplicate	<2.1	<2.1	<2.1	3.7	3.5	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
		2/10/2006	<0.5	<0.5	1.4	1.7	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MP-2	5.5-15.0	1/12/2006	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 <b>L</b> J
		2/9/2006		-			_	-			_	-	
MP-3	5.5-15.0	1/12/2006	17	<2.1	2.1	4.7	10	<2.1	2.3	<2.1	<2.1	<2.1	<2.1
		2/10/2006	4.5	0.6	0.7	1.6	3.8	0.7	1.2	1.2	0.2	0.2	0.1
MP-4	5.5-15.0	1/12/2006	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ	<2.1 UJ
		2/9/2006					-		_	-		_	-
MP-5	5.5-15.0	1/12/2006	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
		2/9/2006					-		_	_		-	
MP-6	4.5 - 14.0	2/10/2006	<0.5	<0.5	8.0	1.3	1.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MP-7	4.0 - 13.5	2/10/2006	4.5	<0.1	3.8	1.8	2.0	0.3	0.3	0.3	<0.1	<0.1	<0.1
		2/10/2006 duplicate	5.5	<0.1	4.4	2.0	2.2	0.3	0.4	0.3	<0.1	<0.1	<0.1
MP-8	4.0 - 13.5	2/9/2006	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Trip Blank	_	1/12/2006		-					-	-		_	**
		2/9/2006		-			_			_		_	

Notes

1 Tier 1 Environmental Screening
Level assuming residential land

μg/L = micrograms per liter btoc = below top of casing

UJ = The reporting limit is considered an estimated value

### Table 7-5 **Summary of Groundwater Analytical Results** Site Investigation Report Former Flour Mill Facility, 800 Derr Street, Vallejo, California

		1		
			Concent	rations
Weli ID	Screen Depth (feet btoc)	Sample Date	TDS (mg/L)	Lead (μg/L)
Tier 1 ESL <sup>1</sup> (μg/L)			3,000	2.5
MP-1	5.5 - 15.0	1/12/2006		-
		1/12/2006 duplicate		-
		2/10/2006	2,660	
MP-2	5.5-15.0	1/12/2006		
		2/9/2006	1,800	
MP-3	5.5-15.0	1/12/2006		
		2/10/2006	560	<3.0
MP-4	5.5-15.0	1/12/2006		
		2/9/2006	410	
MP-5	5.5-15.0	1/12/2006		
		2/9/2006	680	<3.0
MP-6	4.5 - 14.0	2/10/2006	1,280	
MP-7	4.0 - 13.5	2/10/2006	4,170	
		2/10/2006 duplicate	4,150	-
MP-8	4.0 - 13.5	2/9/2006	13,300	
Trip Blank		1/12/2006	-	
		2/9/2006		

Notes

Tier 1 Environmental Screening
Level assuming residential land

μg/L = micrograms per liter btoc = below top of casing

mg/L = milligrams per liter TDS = Total Dissolved Solids

Table 7-6
Comparison of CGS and Malcolm Pirnie Groundwater Results
Site Investigation Report
Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Boring/Well ID	Sample Date ier 1 ESL¹ (µg/L)	Τ <b>ΡΗ-G</b> (μg/L) 500	TPH-D (μg/L) 640	T <b>PH-MO</b> (μg/L) 640
B4	Nov-05	4,400 H	14,000 S	1,900
MP-5	Jan-06	<50	86	<500
	Feb-06	<50	<50	
B11	Nov-05	240 H	1,500,000 H	650,000
MP-4	Jan-06	<50	<50	<500
	Feb-06	<50	<50	<300
B13	Nov-05	ND	8000 H	16,000
MP-3	Jan-06	<50	290	<500
	Feb-06	<50	210 H	
B14	Nov-05	370 H	220,000 H	89,000
MP-1	Jan-06	100	3,100	1,500
	Feb- <b>0</b> 6	83	5,800 H	3,800
B21	Nov-05	ND	9,100 H	34,000
MP-2	Jan-06	<50	<50	<500
Ness	Feb-06	<50	87 H	<300

 $\mu$ g/L = micrograms per liter

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel Fuel

TPH-MO = Total Petroleum Hydrocarbons as Motor Oil

ND = Not detected

<sup>&</sup>lt;sup>1</sup> Tier 1 Environmental Screening Level assuming residential land use H = Hydrocarbon chromatographic pattern does not match standard

S = Refers to stoddard solvent/mineral spirits

Table 9-1
Groundwater Sampling Analysis for March 2006
Site Investigation Report
Former Flour Mill Facility, 800 Derr Street, Vallejo, California

Well ID	Area	TPH-G, BTEX, EDC, EDB	TPH-D	трн-мо	PNAs	TDS	Lead
MP-1	С	X	X	X	X	X	
MP-2		Х	Х	X		X	
MP-3	F	Χ	Х	X	Χ	Х	X
MP-4	Α	X	Х	X		X	
MP-5	D	X	Х	X		Х	Х
MP-6	С	X	Х	X	Χ	Х	
MP-7	С	X	Х	X	Χ	Х	
MP-8	С	X	Х	Х	Χ	Χ	

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel Fuel

TPH-MO = Total Petroleum Hydrocarbons as Motor Oil

BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes

EDC = 1,2-Dichloroethane

EDB = 1,2-Dibromoethane

PNA = Polynuclear aromatics

TDS = Total dissolved solids

APP	EN	DI	$\mathbf{X}$	4
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Summary of CGS Phase II Soil and Groundwater Analytical Results



### TABLE 1

# SOIL ANALYTICAL RESULTS TOTAL PETROLEUM HYDROCARBONS PHASE II ENVIRONMENTAL SITE ASSESSMENT 800 DERR STREET VALLEJO, CALIFORNIA

Sample ID	ТРН-д	TPH-d	TPH-mo	
B1-3.0	ND 1.0	7.2,g,b	15	
B2-3.0	ND 1.0	14,g,b	32	
B4-3.0	ND 1.0	ND 1.0	ND 5.0	
B5-3.0	ND 1.0	ND 1.0	ND 5.0	
B6-3.5	ND 1.0	1.6,g	11	
B7-7.0	ND 1.0	5.5,c	5.6	
B8-4.5	ND 1.0	ND 1.0	ND 5.0	
B9-4.0	ND 1.0	ND 1.0	ND 5.0	
B10-3.5	1.9,g	2.4,d,b	ND 5.0	
B11-3.5	ND 1.0	2.0,b	ND 5.0	
B12-3.5	ND 1.0	4.8,g,b	32	
B13-3.5	ND 1.0	ND 1.0	ND 5.0	
B14-3.5	ND 1.0	19,c,g	29	
B16-7.5	ND 1.0	7.2,g,b	12	
B17-6.5	ND 1.0	ND 1.0	ND 5.0	
B18-3.5	ND 1.0	ND 1.0	ND 5.0	
B19-4.0	ND 1.0	7.3,g	66	
B20-2.0	ND 1.0	37,g,b	280	
B21-3.5	ND 1.0	2.6,g	8.6	
B22-3.5	ND 1.0	ND 1.0	ND 5.0	
B23-3.5	ND 1.0	ND 1.0	ND 5.0	
	100	100	500	7
	100	100	1000	

### M

- 1. Analytical results are presented in milligrams per kilogram (mg/kg).
- 2. RWQCB ESL refers to the Regional Water Quality Control Board Environmental Screening Level assuming groundwater is a current or potential source of drinking water for shallow soils less than or equal to approximately 10 feet below ground surface (RWQCB, February 2005, Table A), for residential and commercial/industrial (comm/ind) land uses.
- 3. Samples were analyzed using EPA Method 8015C.
- 4. TPH-g comments:
  - g refers to strongly aged gasoline or diesel range compounds are significant.
- 5. TPH-d and TPH-mo comments
  - b refers to diesel range compounds are significant; no recognizable pattern.
  - c refers to aged diesel (?) is significant.
  - d refers to gasoline range compounds are significant.
  - g refers to oil range compounds are significant.

TABLE 2

# SOIL ANALYTICAL RESULTS VOLATILE ORGANICS PHASE II ENVIRONMENTAL SITE ASSESSMENT 800 DERR STREET VALLEJO, CALIFORNIA

Sample ID	n-Butyl benzene	4-Isopropyl toluene	Tetrachioroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
B1-3:0	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B2-3.0	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B3-4.0	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B4-3.0	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B5-3.0	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B6-3.5	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B7-7.0	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B8-4.5	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B9-4.0	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B10-3.5	0.014	0.0055	ND 0.005	0.034	0.0064
B11-3.5	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B12-3.5	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B13-3.5	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B15-3.5	ND 0.005	ND 0.005	0.18	ND 0.005	ND 0.005
B16-7.5	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
B17-6.5	ND 0.005	ND 0.005	ND 0.005	ND 0.005	ND 0.005
RWQCB ESL res	-		0.087	•	•
<b>NQCB ESL comm/ind</b>	-		0.24	-	-

### Notes:

- 1. Analytical results are presented in milligrams per kilogram (mg/kg).
- 2. RWQCB ESL refers to the Regional Water Quality Control Board Environmental Screening Level assuming groundwater is a current or potential source of drinking water for shallow soils less than or equal to approximately 10 feet below ground surface (RWQCB, February 2005, Table A), for residential (res) and commercial/industrial (comm/ind) land uses.
- 3. Samples were analyzed using EPA Method 8260B.
- 4. Analytical results are shown in bold if regulatory levels are exceeded.

TABLE 3

# SOIL ANALYTICAL RESULTS METALS PHASE II ENVIRONMENTAL SITE ASSESSMENT 800 DERR STREET VALLEJO, CALIFORNIA

Metals	B17-6.5	B18-3.5	B19-4.0	Sample ID B20-2.0	B21-3.5	B22-3.5	B23-3.5	RWQCB ESL residential	RWQCB ESL comm/ind	TTLC	STLC	STICSI
Antimony Arsenic Barium Beryllium Cadmium Chromlum Cobalt Copper Lead Mercury Molybdenum Nickel Selenium Silver Thallium	0.73 . 19 330 0.58 ND 0.25 47 15 53 7.5 0.1 ND 0.5 48 ND 0.5 ND 0.5 ND 0.5 ND 0.5	0.65 4.2 81 0.59 ND 0.25 59 23 67 10 0.11 ND 0.5 65 ND 0.5 ND 0.5 ND 0.5	ND 0.5 1.5 46 ND 0.5 1.5 18 29 72 1.7 0.42 ND 0.5 55 0.90 ND 0.5 ND 0.5	3.4 8.6 350 0.62 0.87 32 13 51 180 0.18 1.2 44 ND 0.5 ND 0.5	0.89 8 190 ND 0.5 0.36 52 19 62 16 0.06 ND 0.5 71 ND 0.5 ND 0.5 ND 0.5	0.65 10 310 0.55 ND 0.25 56 25 81 9.1 0.11 ND 0.5 71 ND 0.5 ND 0.5 ND 0.5	0.65 7.7 270 0.54 ND 0.25 54 19 73 10 0.08 ND 0.5 55 ND 0.5 ND 0.5 ND 0.5	6.1 5.5 750 4 1.7 58 10 230 150 3.7 40 150 10 20		500 500 10000 75 100 2500 8000 2500 1000 20 3500 2000 100 500 700	5TLC 15 5 100 0.75 1 5 80 25 5 0.2 350 20 1 5	150 50 1000 7.5 10 <b>50</b> 800 250 <b>50</b> 2 3500 200 10 50 70
Vanadlum Zinc	91 87	83 120	<b>280</b> 98	72 300	82 110	93 110	<b>110</b> 110	110 600	<b>200</b> 600	2400 5000	24 250	240 2500

- 1. Analytical results are presented in milligrams per kilogram (mg/kg).
- 2. RWQCB ESL refers to the Regional Water Quality Control Board Environmental Screening Level assuming groundwater is a current or potential source of drinking water for shallow soils less than or equal to approximately 10 feet below ground surface (RWQCB, February 2005, Table A). for residential and commercial/industrial (comm/ind) land uses.
- 3. TTLC refers to Total Threshold Limit Concentration.
- 4. STLC refers to Soluble Threshold Limit Concentration.
- 5. STLC SL refers to Soluble Threshold Limit Concentration Screening Level.
- 6. Samples were analyzed using EPA Method 6020A.
- 7. Analytical results are shown in bold if regulatory levels are exceeded.

TABLE 4

# GROUNDWATER ANALYTICAL RESULTS TOTAL PETROLEUM HYDROCARBONS PHASE II ENVIRONMENTAL SITE ASSESSMENT 800 DERR STREET VALLEJO, CALIFORNIA

Sample ID	TPH-g	TPH-d	TPH-mo
B4	4400,a,i	14000,n,i	1900
B5	510,a,i	2500,c,b,d,i	4500
B8	ND 50	ND 50	ND 250
B9	ND 50	720,g,b	1600
B10	65,b,i	4000,g,b,i	5200
B11	240,g,h,i	1500000,c,g,h,i	650000
B12	ND 50,i	2600,b,g,i	5100
B13	ND 50,i	8000,b,g,i	16000
B14	370,g,m,h	220,000,a,h	89000
B17	ND 50	73,b	ND 250
B18	ND 50,i	200,b,g,i	830
B19	ND 50	4300,g,b	12000
B20	ND 50	250,b,g	440
B21	ND 50	9100,g,b	34000
B22	. ND 50	1500,g,b	8600
B23	ND 50	1400,g,b	7600
RWQCB ESL	100	100	100

- 1. Analytical results are presented in micrograms per liter (ug/L).
- RWQCB ESL refers to the Regional Water Quality Control Board Environmental Screening Level
  assuming groundwater is a current or potential source of drinking water for shallow soils less
  than or equal to approximately 10 feet below ground surface (RWQCB, February 2005, Table A).
- 3. Samples were analyzed using EPA Method 8015C.
- 4. Analytical results are shown in bold if regulatory levels are exceeded.
- 5. TPH comments:
  - a refers to unmodified or weakly modified gasoline is significant.
  - g refers to strongly aged gasoline or diesel range compounds are significant.
  - h refers to lighter than water immiscible sheen/product is present.
  - i refers to liquid sample that containes greater than approximately 1 volume percentage of sediment.
- 6. TPId and TPIIno comments
  - a refers to unmodified or weakly modified diesel is significant.
  - b refers to diesel range compounds are significant; no recognizable pattern.
  - c refers to aged diesel (?is significant.
  - d refers to gasoline range compounds are significant.
  - g refers to oil range compounds are significant.
  - h refers to lighter than water immiscible sheen/product is present.
  - i refers to liquid sample that containes greater than approximately 1 volume percentage sediment.
  - n refers to stoddard solvent/mineral spirits.

TABLE 5

# GROUNDWATER ANALYTICAL RESULTS VOLATILE ORGANICS PHASE II ENVIRONMENTAL SITE ASSESSMENT 800 DERR STREET VALLEJO, CALIFORNIA

Sample ID	Bomodichloomethane	2-Btanone MEK	n-Btybenzne sec-Bty	benane Chloo6m	1,1-Dichlopetha	ine
B4	ND 0.5	ND 2.0	4.4			
B5	0.82	ND 2.0	14	7	1.5	ND 0.5
B8	ND 0.5	ND 2.0	1.5	0.94	ND 0.5	ND 0.5
B9	ND 0.5		ND 0.5	ND 0.5	ND 0.5	ND 0.5
B10		ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5
	ND 0.5	ND 2.0	0.53	ND 0.5	ND 0.5	ND 0.5
B11	ND 0.5	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B12	ND 0.5	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B13	ND 0.5	ND 2.0	ND 0.5	ND 0.5	ND 0.5	2.2
B14	ND 0.5	3	4.7	3.6	ND 0.5	
B15	ND<5.0	ND<20	ND<5.0	ND<5.0	ND<5.0	ND 0.5
B17	ND 0.5	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND<5.0
B18	ND 0.5	ND 2.0	ND 0.5	ND 0.5		ND 0.5
B19	ND 0.5	3.7	ND 0.5		ND 0.5	ND 0.5
B20	ND 0.5	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B21	ND 0.5	ND 2.0		ND 0.5	ND 0.5	ND 0.5
			ND 0.5	ND 0.5	ND 0.5	ND 0.5
B22	ND 0.5	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B23	ND 0.5	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5
RWQCB ESL	100	4200	•	-	70	5
DHS MCL	<del>-</del>	-	-		-	5

- 1. Analytical results are presented in micrograms per liter (ug/L).
- 2. RWQCB ESL refers to the Regional Water Quality Control Board Environmental Screening Level assuming groundwater is a current or potential source of drinking water for shallow soils less than or equal to approximately 10 feet below ground surface (RWQCB, February 2005, Table A).
- 3. Samples were analyzed using EPA Method 8260B.

TABLE 5

# GROUNDWATER ANALYTICAL RESULTS VOLATILE ORGANICS PHASE II ENVIRONMENTAL SITE ASSESSMENT 800 DERR STREET VALLEJO, CALIFORNIA

Sample ID	Ethibenene	Isopopjbenene	4-Isopopytolene	Naphthalene	n-Popybenzne Tetachlop	ethene
B4	6.6	24	12	0.4		
B5	0.81	1.7	2	6.4	30	ND 0.5
B8	ND 0.5	ND 0.5	ND 0.5	0.69	2.1	ND 0.5
B9	ND 0.5	ND 0.5		ND 0.5	110 0.0	ND 0.5
B10	0.66	ND 0.5	ND 0.5	ND 0.5	110 0.0	ND 0.5
B11	ND 0.5	ND 0.5	ND 0.5	5.6	0.5	ND 0.5
B12	ND 0.5		ND 0.5	ND 0.5		ND 0.5
B13	ND 0.5	ND 0.5	ND 0.5	ND 0.5	0.0	ND 0.5
B14	ND 0.5	4.8	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B15	ND<5.0		ND 0.5	4.6	4.4	ND 0.5
B17	ND 0.5	ND<5.0	ND<5.0	ND<5.0	110 10.0	ND<5.0
		ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B18	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B19	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B20	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B21	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B22	ND 0.5	ND 0.5	ND 0.5	ND 0.5		ND 0.5
B23	ND 0.5	ND 0.5	ND 0.5	ND 0.5		ND 0.5
RWQCB ESL	30	-	•	17		5
DHS MCL	300	-				5

- 1. Analytical results are presented in micrograms per liter (ug/L).
- 2. RWQCB ESL refers to the Regional Water Quality Control Board Environmental Screening Level assuming groundwater is a current or potential source of drinking water for shallow solls less than or equal to approximately 10 feet below ground surface (RWQCB, February 2005, Table A).
- 3. Samples were analyzed using EPA Method 8260B.

TABLE 5

# GROUNDWATER ANALYTICAL RESULTS VOLATILE ORGANICS PHASE II ENVIRONMENTAL SITE ASSESSMENT 800 DERR STREET VALLEJO, CALIFORNIA

Sample ID	1,1,1-TCA	1,2,4-Timethybenene	1,3,5-Timethibenene	Xjenes
B4	ND 0.5	0.76	1.3	1.7
B5	ND 0.5	ND 0.5	0.64	ND 0.5
B8	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B9	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B10	ND 0.5	5.8	1.5	5.5
B11	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B12	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B13	3.7	ND 0.5	ND 0.5	ND 0.5
B14	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B15	ND<5.0	ND<5.0	ND<5.0	ND<5.0
B17	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B18	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B19	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B20	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B21	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B22	ND 0.5	ND 0.5	ND 0.5	ND 0.5
B23	ND 0.5	ND 0.5	ND 0.5	ND 0.5
RWQCB ESL	5	-	-	20
DHS MCL	200	-	<u> </u>	1750

- 1. Analytical results are presented in micrograms per liter (ug/L).
- 2. RWQCB ESL refers to the Regional Water Quality Control Board Environmental Screening Level assuming groundwater is a current or potential source of drinking water for shallow soils less than or equal to approximately 10 feet below ground surface (RWQCB, February 2005, Table A).
- 3. Samples were analyzed using EPA Method 8260B.

#### APPENDIX B

Solano County August 23, 2004 Closure Letter





## SOLANO COUNTY Department of Resource Management

470 Chadbourne Road, Suite 200 Fairfield, CA 94534 www.solanocounty.com

Telephone No: (707) 421-6765 Fax: (707) 421-4805 Birgitta Corsello, Director Cliff Covey, Asst Director

#### REMEDIAL ACTION COMPLETION CERTIFICATION

August 23, 2004

MR. BRUCE ANDROTTI GENERAL MILLS 800 DERR AVENUE VALLEJO, CA 94590

RE: UNDERGROUND STORAGE TANK (UST) CASE CLOSURE, Unauthorized Release, General Mills, 800 Derr Avenue, Vallejo, SCDRM File # 29-10316-5

Dear Mr. Androtti:

This letter confirms the completion of site investigation and corrective action for the underground storage tank(s) formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of sile conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code. Please contact our office at (707) 421-6765 if you have any questions regarding this matter.

Sincerely,

Terry Schmidtbauer, REHS

Environmental Health Manager



## SOLANO COUNTY Department of Resource Management

470 Chadbourne Road, Suite 200
Fairfield, CA 94534
www.solanocounty.com

Telephone No: (707) 421-6765 Fax: (707) 421-4805

Birgitta Corsello, Director Cliff Covey, Asst Director

August 23, 2004

MR. BRUCE ANDROTTI GENERAL MILLS 800 DERR AVENUE VALLEJO, CA 94590

RE: TRANSMITTAL LETTER, UNDERGROUND STORAGE TANK (UST) CASE CLOSURE, Unauthorized Release, General Mills, 800 Derr Avenue, Vallejo, SCDRM File # 29-10316-5

Dear Mr. Androtti:

Enclosed, please find one copy each of the Remedial Action Completion Certification and Case Closure Summary for your files. Please be advised that the attached information does not relieve you of any liability under the California Health and Safety Code or Water Code for past, present, or future operations at the site.

Nor does it relieve you of the responsibility to clean up existing, additional or previously unidentified conditions at the site which cause or threaten to cause pollution or nuisance or otherwise pose a threat to water quality or public health. This information shall be disclosed to future property owners. Please contact me at (707) 421-6765 if you have any questions regarding this matter.

Sincerely,

Misty C. Kaltreider, CHMM, R.G.

w Beid

Geologist

Enclosures: Remedial Action Completion Certification

Case Closure Summary

cc:

Ms. Mary Rose Cassa, San Francisco Bay - RWQCB

Mr. Allan Patton, Fund Manager, UST Cleanup Fund Program

Ms. Jenniscr Gomez, Kleinfelder

Page 1 of 3

### CASE CLOSURE SUMMARY Local Oversight Program

#### I. AGENCY INFORMATION

Date: 8/13/2004

Agency Name: Solano County DRM

Address: 470 Chadbourne Road, Suite 200

City/State/Zip: Fairfield, CA 94534 Project Lead: Misty C. Kaltreider, RG Phone: 707/421-6765 Title: Geologist

#### CASE INFORMATION II.

Site Name: General Mills, 800 Derr Avenue, Vallejo, CA

RB Lustis case no:

SWEEPS no: 10316

URF filing date: 5/19/2003

Responsible Party Info.

Responsible Party

Address

Information

Mr. Bruce Androtti

General Mills Vallejo Mill

800 Derr Avenue Vallejo, CA 94590

#### Tank Info.

Tank No.	Size (gal)	Contents	Closed?	Closure Method	Date			
1	1,000	Diesel	Yes	Removed	4/16/1987			
2	1,000	Diesel	Yes	Removed	4/16/1987			
3	5,000	Diesel	Yes	Removed	Jan 1988			
4	5,000	Diesel	Yes	Removed	Jan 1988			
5	250	Waste Oil	Yes	Removed	Jan 1988			
6	1,000	Gasoline	Yes	Removed	Nov 1988			
7	31,000	Heating oil	Yes	Removed	April 1993			
8	250	Heating oil	Yes	Removed	4/29/2003			

#### III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release:

Tank System

Is site characterization complete? Yes

Date approved by oversight agency: 8/13/04

How many monitoring wells installed? 0

Proper screened interval? NA

Lowest depth: unknown

Highest water depth below grade: 18 ft bgs

Groundwater flow direction: Regionally, West

Most sensitive current use: Residential/Commercial

Drinking water aquifer name: N/A

Are drinking wells affected? No

Is surface water affected? No

Neurest surface water body name: Mare Island Strait

Address/location of off-site impact: NA

Report(s) on file?

Where? SCDRM

This document and the related CASE CLOSURE LETTER, shall be retained by the lead agency as part of the official site file.

Page 2 of 3

## CASE CLOSURE SUMMARY Local Oversight Program

#### III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Treatment and Disposal of Affected Materials

Material	Amount	Action (treatment/disposal w/destination)	Date
Soil	18 tons	Disposed at Altamont Landfill, Livenmore 7	1/7/2004

#### Maximum Documented Contaminant Concentrations - before and after cleanup

Constituent	Soil (ppm) Water (p		(ppb) Constituent		Soil (ppm)		Water (ppb)		
	Before	After	Before*	After**		Before	After	Before*	After**
TPH (gas)	300	6.9	<50	<50	Xylenes	<5	<0.005	<0.5	NA
TPH (diesel)	3,900	260	260	<50	Ethylbenzene	<5	<0.005	<0.5	NA
Benzene	<5	<0.005	<0,5	NA	Oxygenates	<5	NA	<0.5	NA
Toluene	<5	7,6	<0.5	NA	Lead	70	ΝA	NA	NA

Notes: NA = not analyzed

Oxygenates = MtBE, DIPE, ETBE, TAME, TBA, Methanol, and Ethanol

#### COMMENTS (DEPTH OF REMEDIATION, ETC.):

Seven underground storage tanks were removed from 1987 through 1993. The USTs were located on the property and associated with the General Mills commercial facility. Subsurface assessment and limited overexcavation occurred and the release(s) were accepted for closure and no further action on September 9, 1996.

In April 2003, one 250-gallon heating oil tank was uncovered on site. The tank was associated with the historic residence (Plant Residence), located northeast of the General Mills plant operations. The tank was located adjacent to a home that has existed on site since the 1900s. Concentrations in the soil samples collected during the tank removal reported up to 3,900 mg/Kg diesel. Based on the results of the work, an unauthorized release of petroleum hydrocarbons has occurred.

The tank pit was overexcavated to approximately 15 feet bgs. Subsequent soil samples collected from the excavation reported below detectable concentrations of constituents. Soil samples from borings completed adjacent to the tank excavation indicated low to below detectable concentrations of constituents. One boring (B-5) was completed into a temporary well for the collection of groundwater. Groundwater was encountered at approximately 18 feet bgs. Initial grab water samples collected from the boring reported below laboratory detection limits for TPHg and BTEX. The initial water sample analysis reported 6,100 ppb ethanol that was considered suspect. Subsequent water samples collected from B-5 reported below detectable concentrations of TPHd and ethanol.

Results of the overexcavation and subsequent verification sampling confirmed that the release was limited to the immediate area adjacent to the tank and overexcavation activities were successful in mitigating the impact.

This document and the related CASE CLOSIJRE LETTER, shall be retained by the lead agency as part of the official site file.

Page 3 of 3

### CASE CLOSURE SUMMARY Local Oversight Program

#### IV. **CLOSURE**

Are existing beneficial uses protected per RB Basin Plan? Yes Are potential beneficial uses protected per RB Basin Plan? Yes Is public health protected for current land use? Yes Describe site management requirements: None Should corrective action be reviewed if site use changes? No Number remaining: 0 Are MWs decommissioned? NA How many? Describe enforcement actions taken: None Describe enforcement actions rescinded: None

#### LOCAL AGENCY REPRESENTATIVE DATA

Name: Teny Schmidtbauer, REHS

Buy selwet

Title: Environmental Health Manager

Date: 8 13-04

RWQCB NOTIFICATION VI.

Date submitted to RB: 3/13/04

RWQCB Staff Name: Mary Rose Cassa, R.G. Signature: Mary Past Laster

RB response: Davalun Title: Engineering Geologist

Date: 3/19/04

#### VII. ADDITIONAL COMMENTS (attach pages as necessary)

Based on the findings from the work performed to date, this identified release is considered a low-risk case. This case does not pose a threat to human health or the environment, and therefore should be closed from further investigation.

### APPENDIX C

1938 Sanborn Map (Not Included)



### APPENDIX D

Generally Accepted Procedures



### **Generally Accepted Procedures**

The following Generally Accepted Procedures (GAPs) were used to conduct the field work to conduct the Site Investigation:

- 1. Monitoring Well Installation using Hollow Stem Augers
- 2. Geoprobe Boring
- 3. Geotechnical Boring with Shelby Tube Sampling
- 4. EnCore Sampling
- 5. Well Development
- 6. Surveying
- 7. Low Flow Groundwater Sampling
- 8. Groundwater Level Measurements
- 9. Sample Container, Preservation, and Handling
- 10. Decontaminating Field Sampling Equipment



#### 1. Monitoring Well Installation using Hollow Stem Augers

Installation of groundwater monitoring wells includes hand clearing the boring location, advancing the soil boring to a pre-determined depth, installing well casing, filter pack and seal materials, and completing the well with a surface containment box specific for the intended use and site conditions.

Hand auger to between 2.5 feet and 5 feet bgs depending of the surface and subsurface conditions using a post hole digger. If a hand auger is to be used, then the boring shall be cleared in two to three separate locations, depending on the size of the augers to be used. Hand augering is intended to identify the presence of underground utilities at the location specified.

Clear the surface of debris and then advance the soil boring using eight- to twelve-inch-diameter hollow-stem augers. The hollow-stem augers consisted of a hollow, steel shaft with a continuous, spiraled steel flight welded onto the exterior side of the stem. The flights transports cuttings to the surface when rotated..

Depth specific or continuous coring can be completed using a California split-spoon sampler (2-inch inside diameter, 18-inch length). The split-spoon sampler is driven into the undisturbed soil (ahead of the auger flights) using a 140-pound hammer falling 30 inches. Soil lithology is recorded in the field by the on-site geologist or engineer. Boring logs included the following information: boring number and location; soil sample identification numbers; sample time; sample depth; lithologic description in accordance with the Unified Soil Classification System; description of any visible evidence of soil contamination (e.g., odor or staining); and PID readings.

Following borehole advancement, the well is constructed using two-inch-diameter, 0.010-inch factory-slotted and blank polyvinyl chloride (PVC) casing. Slotted casing extends from the base of the boring to above the groundwater table. The remaining well casing is completed using blank PVC. The well annulus is backfilled with Lonestar No. 2/12 silica sand from the bottom of the borehole to 6-inches to one-foot above the top of the screen interval. The screen interval is then surged for 15 minutes to allow the filter-pack material to settle. The depth of the filter pack is then measured and additional sand is added to return the filter-pack to its pre-surge height. One foot of bentonite chips shall be added on top of filter pack and properly hydrated before filling the remainder of the annulus with neat cement grout to one foot bgs. Complete the well suing a flush-mounted, traffic-rated, well containment box or stove pipe, set in concrete.



#### 2. Geoprobe Boring

Hand augering was performed from the base of the asphalt (if present) to a maximum depth of 2 to 4 feet bgs to confirm that no unidentified utilities (e.g., non-metallic pipes) are encountered and possibly damaged during drilling. Borings advanced using a Geoprobe<sup>TM</sup> direct-push drill rig, which advanced sampling equipment using a hydraulic hammer or vibrator. Continuous soil cores were collected using a Macro Core Sampler or a Dual Tube Sampler. As the Sampler is advanced, soil is driven into an inner 1¾-inch-diameter by 4-foot-long sample barrel lined with a plastic sleeve. After being driven 4 feet, the Sampler and rods will be removed from the borehole, and the plastic sleeve containing the soil removed from the sample barrel. Selected 6-inch-long sections were cut and sealed for laboratory analysis. Remaining soil was used for lithologic description and visual contaminant inspection. The Sampler was decontaminated, lined with a new plastic sleeve, and lowered back into the soil boring. An additional 4-footlong section of drill rod will be added, and the sampling process repeated. completion, each boring was grouted with a bentonite/cement grout to ground surface. During drilling operations, a photoionization detector (PID) was be used to monitor for the presence and concentration of organic vapors in the soil core.

Boring logs, completed in the field by the on-site geologist, included the following information: boring number and location; soil sample identification numbers; sample time; sample depth; lithologic description in accordance with the Unified Soil Classification System; description of any visible evidence of soil contamination (e.g., odor or staining); and PID readings.



#### 3. Geotechnical Boring with Shelby Tube Sampling

The geotechnical boring was advanced to 5 feet bgs. A thin-walled stainless steel tube (Shelby Tube) was inserted into the sampler. The sampler was then attached to the drilling rod and lowered to into the borehole. A hammer was used to drive the sampler into the undisturbed soil just below the bottom of the borehole. The sampler was then removed from the hole and the Shelby Tube extracted from the sampler. This procedure was repeated at 11 feet bgs, depth of the second sample collected for geotechnical test, after the equipment was decontaminated as required. The Shelby Tubes were capped and stored until delivery to the geotechnical laboratory. The samples were transported to Ninyo & Moore laboratory in Oakland, California and tested for geotechnical parameters.



#### 4. EnCore Sampling

#### PURPOSE/APPLICATION

The En Core<sup>®</sup> sampling device is designed to facilitate soil sample collection with minimal handling by field personnel. The En Core<sup>®</sup> sampler is used for collection, storage and delivery of soil samples. It is a disposable, self-contained sampler, and thus is ideal for the collection of soils containing volatile organic compound (VOC) concentrations. In accordance with USEPA SW-846 Method 5035, soil samples collected with the En Core<sup>®</sup> sampler do not require field preservation if received and preserved by an analytical laboratory within 48 hours of sample collection. The En Core<sup>®</sup> sampling device is most applicable for collection of cohesive soils, such as those containing clay or silt matrix material. The En Core<sup>®</sup> sampler typically is not effective for collection of noncohesive soils, coarse gravels and till. Coarse sediment clasts also may not fit inside the sampler coring body.

#### RECOMMENDED EQUIPMENT

- 5 gram disposable En Core® sampler.
- Standard En Core® T-handle.
- Protective gloves.

#### **EQUIPMENT DECONTAMINATION PROCEDURES**

The sampler is disposable, therefore no decontamination is necessary. The T- handle can be cleaned with low phosphate detergent (Alconox or equivalent) and water.

#### **PROCEDURES**

#### **Before Taking Sample:**

- 1. Hold coring body and push plunger rod down until small o-ring rests against tabs (Figure 1). This will assure that plunger moves freely.
- 2. Depress locking lever on En Core<sup>®</sup> T-handle. Place coring body, plunger end first, into open end of T-handle, aligning the (2) slots on the coring body with the (2) locking pins in the T-handle. Twist coring body clockwise to lock pins in slots. Check to ensure sampler is locked in place. Sampler is ready for use.

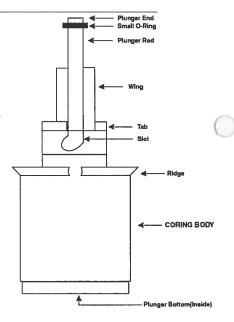


Figure 1. En Core® sampling Device



2626008 Site Investigation Report

#### Taking Sample:

- 3. Turn T-handle with T-up and coring body down (Figure 2). This positions the plunger bottom flush with bottom of coring body (ensure that plunger is in position). Using T-handle, push sampler into soil until coring body is completely full. When full, small o-ring will be centered in T-handle viewing hole. Wipe excess soil from sampler. Wipe excess soil from coring body exterior.
- 4. Cap coring body while it is still on T-handle. Push cap over flat area of ridge (Figure 3). Push and twist cap to lock arm in place. Cap must be seated to seal sampler.
- 5. To ensure sufficient sample volume, collect three En Core<sup>®</sup> samples for each sample point.

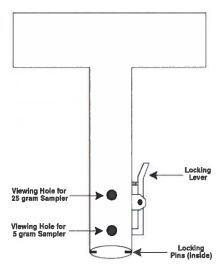


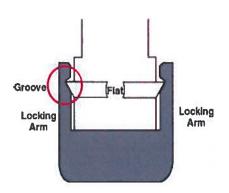
Figure 2. T-handle

#### **Sampler Correctly Capped** Locking arm grooves seated over coring

body ridge



Cap appears crooked; locking arm grooves not fully seated over coring body ridge



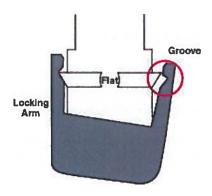


Figure 3. The En Core® sampler capped correctly and incorrectly.



#### **Preparing Sampler for Shipment:**

- 6. Remove capped sampler by depressing locking lever on T-handle while twisting and pulling sampler from T-handle.
- 7. Lock plunger by rotating extended plunger rod fully counter-clockwise until wings rest firmly against tabs (Figure 4).
- 8. Attach completed label to cap on coring body.
  9. Return En Core<sup>®</sup> Sampler to zipper bag. Seal bag and put on ice.
- 10. Samples must be received and preserved at an analytical laboratory within 48 hours of collection.

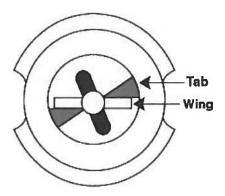


Figure 4. Plunger in locked position with wings resting firmly against tabs.

#### **REFERENCES**

All procedures provided by: En Novative Technologies, Inc. http://www.ennovativetech.com/encore/sampling.htm

USEPA SW-846 Method 5035 can be downloaded at: http://www.epa.gov/epaoswer/hazwaste/test/pdfs/5035.pdf



### 5. Well Development

Each well was developed using a similar set of procedures. Surging was performed with a surge block for 15 minutes, accompanied by bailing at least three times to remove any sediment accumulated at the bottom of the well and to clear the screen interval. Each well was then pumped using a negative air displacement pump and/or a Grundfos<sup>TM</sup> pump until a minimum of five casing volumes of water were removed.



### 6. Surveying

Each of the groundwater monitoring wells and soil boring were surveyed by C.S.S, a California-licensed surveyor. The survey included the well location and top of well casing elevations as referenced by the local coordinate system. The Northings, Eastings, and top of well casing elevations were surveyed and only the Northings and Eastings were surveys for the soil borings.



#### 7. Low Flow Groundwater Sampling

#### 1. PURPOSE/APPLICATION

This low flow groundwater purging and sampling procedure presents a standard method for collecting groundwater samples that are representative of the formation from which they are being withdrawn. By using low flow rates for purging and sampling to minimize drawdown within the well, three primary benefits gained. First, using a low flow rate during sampling promotes laminar flow, which minimizes the disturbance of sediment at the bottom of a well or fine particles in the well's filter pack. Groundwater samples are therefore less turbid, which reduces sampling time and generally eliminates the need to filter. Second, the amount of groundwater purged from the sampling well is significantly reduced, minimizing investigation derived waste. Third, low flow purging and sampling reduces aeration and therefore helps to preserves the natural chemical characteristics of the groundwater sample. Low flow sampling may be used to collect groundwater samples for analysis of contaminants of concern, as well as geo-chemical and biological parameters.

This guideline is for information purposes and should not take precedence over the requirements of project specific plans. This is especially true for federal project sites, which are governed by regionally directed United States Environmental Protection Agency (USEPA) low flow groundwater sampling protocols.

#### 2. EQUIPMENT

Low flow groundwater sampling requires traditional groundwater sampling equipment with the addition of the following:

- # Multi-parameter water quality monitoring system (e.g. Horiba U-22 or equivalent) equipped with a flow through cell.
- # An adjustable rate, positive displacement, groundwater pump (e.g., centrifugal, submersible, or bladder pumps) constructed of stainless steel or Teflon capable of achieving low flow pumping rates (i.e., 100 to 500 ml/min).
- # Polyethylene tubing or equivalent.
- # Flow measurement device (e.g., a graduated container and stop watch).



# A water level probe or oil/water interface probe.

#### 3. PRE-SAMPLING PROCEDURES

The pre-sampling procedures for low flow groundwater sampling and purging are as follows:

- To minimize the risk of cross-contamination, if possible, begin with the monitoring well that is known or believed to have the lowest contaminant concentrations.
- 2. Position a sheet of polyethylene over the monitoring well for placement of all sampling equipment.
- 3. Where applicable, measure the concentration of volatile organic compounds (VOCs) in the well's headspace with a photoionization detector (PID) and record the concentration in the field log book.
- 4. Measure and record the depth to water and if applicable, the depth to light non-aqueous phase liquid (LNAPL).

#### 4. SAMPLING PROCEDURES

The procedures for collecting groundwater samples using low flow are as follows:

- 1. **Pump Installation:** Install the pump by slowly lowering the pump assembly and tubing into the well. The pump should be set to the appropriate depth with the intake being a minimum of two-feet above the bottom of the well to prevent disturbing and re-suspending any sediment at the bottom of the well.
- 2. **Water Level Measurement:** Measure the depth to groundwater from the top of the well casing using a water level probe. Leave the probe in the well for subsequent water level measurements.
- 3. **Purging:** Begin purging the well at a rate of 200 to 500 milliliters per minute (ml/min) and measure the water level. If excessive drawdown is observed in



the well (i.e. greater that 0.3 feet), reduce the flow rate until the water level stabilizes. When the water level has stabilized, subsequent measurements should be made on five minute intervals. The flow rate, as well as flow rate adjustments should be recorded on a field purge log.

- 4. **Field Parameter Monitoring:** Field parameters (pH, conductivity, reduction/oxidation potential, DO, and turbidity) should be recorded every five minutes with water level measurements. The well is considered stable and ready to be sampled once the field parameters are stable over three consecutive readings (USEPA Region 2, 1998). The following criteria identify stabilized field parameters:
  - ± 0.1 for pH
  - ± 3.0 percent for conductivity
  - ± 10.0 mv for redox potential
  - ± 10.0 percent for DO and turbidity

The pump should **not** be removed or shut off between purging and sampling.

- 5. Sample Collection: If necessary, reduce the flow rate to 100 to 250 ml/min to reduce turbulence while filling sample containers during sample collection. Where wells are purged at a flow rate less than 100 ml/min, maintain the same flow rate during sample collection. Disconnect the inflow line from the flow through cell and collect the groundwater sample. All sample containers should be filled directly from the tubing. Allow water to flow from the tubing gently down the inside of the containers to minimize turbulence during sample collection. Groundwater samples should be collected in order of importance, according to the project requirements.
- 6. **Pump Removal:** Once sampling is complete, slowly remove the pump assembly and tubing from the well. If the tubing is dedicated to the well, disconnect the tubing from the pump, re-insert the tubing into the well, and secure the tubing so it is easily accessible.
- 7. **Secure Well:** Secure the top of the well casing with a locking cap or expansion plug and close the well. In the case of a stick-up protective well cover, lock the outer casing.



#### 5. DECONTAMINATION

All dedicated or "single use" groundwater sampling equipment should be disposed in accordance with all applicable local and federal regulations. The decontamination procedures for non-dedicated low flow groundwater sampling equipment are as follows:

- 1. **Pre-rinse:** Operate the pump and flush equipment thoroughly with deionized or distilled water for approximately five minutes.
- 2. **Wash:** Operate the pump and flush equipment thoroughly with Alconox or other non-phosphate detergent solution for approximately five minutes.
- 3. **Rinse:** Operate the pump and flush equipment thoroughly with deionized or distilled water for approximately five minutes or until all of the detergent has been removed from the equipment.

#### 6. REFERENCES

United States Environmental Protection Agency (USEPA) Region II, 1998, Ground Water Sampling Procedure, Low Stress (low flow) Purging and Sampling, GW Sampling SOP, March 16th.

#### POTENTIAL PROBLEMS/TROUBLESHOOTING

Insufficient yield, cascading, field parameters failing to stabilize, and aerating the groundwater sample are potential problems when trying to use low flow protocols to collect representative groundwater samples.

#### **Insufficient Yield/Cascading**

A low yielding well that cannot sustain a low flow purge rate may eventually go dry. The sampler should take care not to dewater the well below the top of the well screen to prevent cascading of the sand pack. Therefore, pumping a well dry should be avoided in all situations. If a well should go dry, the groundwater sample should be collected as soon as there is sufficient recharge to collect the sample. If the well has not recharged sufficiently within 48 hours, the well should not be sampled.



A low yielding well that consistently demonstrates that it cannot sustain a low flow purge rate of 250 ml/min or less should not be sampled using low flow protocols. Groundwater samples collected from low yielding wells are often representative of the stagnant groundwater within the well and the surrounding sand pack, and not representative of the geologic formation. In addition, these samples are typically very turbid, which can skew the analytical results of groundwater samples being analyzed for organic compounds and metals.

#### **Key Field Parameters Fail to Stabilize**

If any key parameters fail to stabilize within four hours of purging, then the following alternatives should be considered:

- 1. Continue purging until stabilization.
- 2. Stop purging, do not collect a sample, and document the activity.
- 3. Stop purging, collect a sample, and document the activity.
- 4. Stop purging, secure the well, and resume purging the following day.

The key parameter for samples being analyzed for VOCs is dissolved oxygen (DO). The key parameter for all other analytical samples is turbidity. Typically DO and turbidity take the longest to stabilize.

Non-stabilizing turbidity measurements may be avoided by periodically removing sediments that may be trapped in the flow through cell during purging. Trapped sediments may cause artificial fluctuations in turbidity measurements. Additionally, the sampler should visually compare the turbidity of the groundwater in the Cell with the groundwater entering the Cell. If the groundwater entering the Cell is clearer, disconnect the inflow line, drain the turbid groundwater from the Cell, and reconnect the inflow line. Turbidity readings should more accurately reflect true groundwater conditions.

Fluctuations in DO measurements may be caused by air bubbles that form in the flow through cell or sample tubing. Ensure that the inflow tubing is sealed tightly to the flow through cell to prevent the intrusion of air. It may be necessary to drain the flow through cell to remove all air bubbles that may interfere with accurate DO readings.



#### **Aerating the Sample**

To prevent inadvertently aerating the groundwater sample, the flow rate should be set so that pump suction and positive groundwater flow through the sample tubing is maintained. The sampler should minimize the length and diameter of the sample tubing. It is recommended that either one-quarter or three-eights-inch inner diameter tubing are used.

Where centrifugal pumps are being used to collect a groundwater sample from a deep well, preventing aeration and sustaining a low flow rate becomes problematic. These issues can be minimized if an impeller is removed from the pump. This allows the pump to run at a lower flow rate and reduces the potential for aerating the groundwater sample. There is also concern that the centrifugal pump will heat the groundwater sample, however, the increases in temperature rarely increases more than two degrees Celsius during sampling.



#### 8. Groundwater Level Measurements

Depths to water measurements were collected by Malcolm Pirnie personnel utilizing an electronic measuring device incremented to 0.01-feet. Groundwater depth measurements were referenced to the top of the PVC casing of the well, from which the surveyed elevation was available. The depth to groundwater was subtracted from the top of well casing elevation to provide the groundwater elevation.



#### 9. Sample Container, Preservation, and Handling

#### I. Introduction

Sample control is a vital aspect of any environmental monitoring program that generates data that may be used for regulatory purposes or as evidence in a court of law. This procedure defines the methods used to handle, preserve, and store environmental samples taken at the [Site].

#### II. Guidelines

The method of sample handling after collection and prior to analysis is determined by the type of test to be run and the specific parameter being quantified. Each test provides different information on the sample and therefore, requires different handling procedures. Samples are subject to chemical, biological, and physical changes as soon as they are collected. Sample handling, preservation, and storage techniques have to be designed to minimize any changes in composition of the sample by retarding chemical and/or biological activity and by avoiding contamination.

#### 1. Handling

Sampling handling is project- and analysis- specific. The USEPA "QA/QC Guidance for Sampling and Analysis of Sediments, Water, and Tissues for Dredged Material Evaluations" provides guidance for handling and collecting samples for most analyses to be performed in the field (See Attachment 1). Each field sampling event has a specific plan listing the handling and preservation requirements, as documented in the FSP and QAPP.

#### 2. Sample Collection Requirements

- Samples to be analyzed for trace metals should not come into contact with metals (*i.e.*, no metal utensils, jars or collection equipment.)
- Samples to be analyzed for organic compounds should not come into contact with plastics.
- For analysis of volatile compounds, samples should completely fill the storage container, leaving no airspace. These samples should be refrigerated but never frozen or the containers will crack.



 Sediment samples for biological testing should have larger (possible predatory) animals removed from the sediment by screening or press sieving prior to testing. Other material retained on the screen with the organisms, such as shell fragments, gravel, and debris, should be recorded and discarded.

#### 3. Sample Splitting

Sufficient sample volume should be collected to perform necessary analyses. Each project manager should determine the minimum amounts needed to be collected before sampling begins. If samples are not split in the field then they should be split as soon as possible after sampling is completed. Documentation of splitting should be recorded on a Sample Split form (See Attachment 2). Each split retains its original Field Sample identification number with analysis type marked on sample label. If compositing is needed the samples will be assigned a new, unique identification field number.

#### 4. Sample Container Requirements

All sample containers should be scrupulously cleaned (acid-rinsed for analysis of metals, solvent-rinsed for analysis of organic compounds). Container labels have to withstand soaking, drying, and freezing without becoming detached or illegible. The labeling system should be tested prior to use in the field.

Samples for other kinds of chemical analysis are sometimes frozen. Only wide-mouth ('Squat') jars should be used for frozen samples; narrow-mouth jars are less resistant to cracking. If the sample is to be frozen, sufficient air space should be left to allow expansion to take place (i.e., the wide-mouth sample container should be no more than 3/4ths full. For more specific information regarding sample containers see Attachment 1.

#### 5. Sample Preservation

Preservation steps should be taken immediately upon collection, whether it is by refrigeration, freezing, or addition of chemicals. If final preservation techniques cannot be implemented in the field, the sample should be temporarily preserved in a manner that retains its integrity. Onboard refrigeration is easily accomplished with coolers and ice. Samples should be segregated from melting ice and cooling water. Samples that are to be frozen on board may be stored in an



onboard freezer or may simply be placed in a cooler with dry ice or blue ice.

There is no universal preservation or storage technique, although storage in the dark at 4°C is generally used for all samples held for any length of time prior to processing and for some samples after processing. If specific storage requirements are known and a technique for one group of analyses interferes with other analyses then collecting sufficient sample volume in multiple containers can prevent any storage conflicts. (See Attachment 1 for specific requirements)

#### 6. Storage

The elapsed time between sample collection and analysis should be as short as possible. Sampling holding times for chemical evaluations are analysis-specific (See Attachment 1 for specific requirements.)

• Sediments for bioassay (toxicity and/or bioaccumulation) testing should be tested as soon as possible, preferably within 2 weeks of collection. Sediment toxicity does change with time. Studies to date suggest that sediment storage time should never exceed 8 weeks (at 4 • C)

#### III. References

The procedure described below is a method adapted from two separate documents:

United States Environmental Protection Agency. Office of Water. 1995. "QA/QC Guidance for Sampling and Analysis of Sediments, Water, and Tissues for Dredged Material Evaluations." Report Number EPA 823-B-95-001.

United States Environmental Protection Agency/ Corps of Engineers Technical Committee on Criteria for Dredged and Fill Material. 1981. "Procedures for Handling and Chemical Analysis of Sediment and Water Samples".





## Attachment 1 Sample Handling Requirements

	Prese	rvation	
Containers (Volume)	Temperature	Other	Holding Time
Glass with Teflon lined caps	Cool 4°C ±2°C	Store in dark	7 days
Glass with Teflon lined caps	Cool 4°C ±2°C	pH<2 Headspace ≤1% of sample No bubbles	14 days
Teflon	Cool 4°C ±2°C	Acidify with 0.2% nitric acid < 2pH	28 days (Hg) 6 months (Other metals)
OIL (50 g)			
Glass with Teflon lined caps	Cool 4°C ±2°C or Frozen <20°C		14 days 1 year
Glass with Teflon lined caps	Cool 4°C ±2°C		14 days
Glass with Teflon	Cool 4°C ±2°C		28 days (Hg)
	Glass with Teflon lined caps  Glass with Teflon lined caps  Teflon  Glass with Teflon lined caps  Glass with Teflon lined caps	Containers (Volume)  Glass with Teflon lined caps  Glass with Teflon lined caps  Cool 4°C ±2°C  Cool 4°C ±2°C  Teflon  Cool 4°C ±2°C  Teflon  Cool 4°C ±2°C  Glass with Teflon lined caps  Cool 4°C ±2°C  Teflon  Cool 4°C ±2°C  Cor  Frozen <20°C  Glass with Teflon lined caps  Cool 4°C ±2°C  Cool 4°C ±2°C	Glass with Teflon lined caps  Glass with Teflon lined caps  Cool 4°C ±2°C  Glass with Teflon lined caps  Cool 4°C ±2°C  Cool 4°C ±2°C  Acidify with 0.2% nitric acid < 2pH  Cool 4°C ±2°C  Glass with Teflon lined caps  Cool 4°C ±2°C  Glass with Teflon lined caps  Cool 4°C ±2°C  Cool 4°C ±2°C



#### Attachment 2 Sample Split Form

Sample Split and Transfer Log

Project Num	ber:		Date of Work:					
Project Title	2:							
Analysis Type (s):								
Splitting Pro	ocedure:			<del></del>				
	(include des	cription of amount or	weight of split, packag	ing, storage)				
Name:								
Date:								
Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID			
		<del></del>						
			1					
Released			Received					
Signature/Date:			Signature/Date: Storage Location:					
Storage Location	Storage Location:			Received				
Signature/Date:	Released		Signature/Date:	Keceivea				
Storage Location	:		Storage Location	:				

MALCOLM PIRNIE	
THE COMPANIES OF	

#### 10. Decontaminating Field Sampling Equipment

#### I. Introduction

This procedure describes the methods used to decontaminate sampling equipment and sample processing tools. The procedures specifically address equipment used to collect soil samples.

#### II. Definitions

PPE

Personal Protective Equipment

#### III. Equipment and Supplies

The following equipment will be used to decontaminate equipment and tools used to collect sediment and soil samples:

- 1. Tap water for initial cleaning and rinsing of equipment.
- 2. De-ionized water for final rinsing of equipment after tap water or solvent rinse.
- 3. Non-phosphate detergent (e.g. Alconox<sup>TM</sup>) for cleaning equipment.
- **4. Dishwashing detergent** (e.g. Joy<sup>TM</sup> which provides suds in seawater) to remove oily or organic residue.
- 5. Nitric acid as a 10% solution for removing metal contaminants from equipment
- **6.** Organic solvent for final cleaning of equipment (e.g. hexane)
- 7. Personnel protective equipment (PPE) including disposable gloves (nitrile preferred), disposable wipes, eye wash system, first aid kit, and waterproof outerwear (if necessary).
- 8. Re-sealable buckets approved for waste collection and transportation.
- 9. Squirt bottles for water, alcohol, and solvents.
- 10. Brushes for cleaning equipment.
- 11. Field notebooks, pens, pencils, and digital camera to document decontamination procedures.

#### IV. Guidelines

The following equipment will be used to collect sediment cores and require decontamination:

1. Rotary drilling rig (truck-mounted or skid type) sampling equipment (e.g., split spoons). Large drilling equipment (e.g., tri-cone bits, casing, augers, rods, etc.) will be steam-cleaned only.

2626008 Site Investigation Report

- 2. **Tripod drill** follow procedures for drill rig above.
- 3. Calibrated Steel Rod to investigate the sediment type and probe the depth of unconsolidated sediments at a sampling location and to determine the length of tubing to use.
- 4. **Shelby tubes** conforming to thin-walled tube specifications outlined in ASTM D 1587 with a 3-inch O.D.
- 5. **Vibracorer** and ancillary equipment.
- 6. Aluminum, Polycarbonate, Lexane, or Cellulose Acetate Butyrate (CAB) Tubing of appropriate diameter (approximately 3.75 inch O.D. and 0.07 inch wall thickness) for use with the vibracoring apparatus.
- 7. Stainless steel scoops, spoons, bowls, and other equipment that come into contact with the sample, are used for homogenization, or are used to segment core tubes.

Collection of sediment, soil, and water samples for chemical analysis requires that the equipment be cleaned between sample locations to avoid sample contamination. Generally, the cleaning procedures to be followed between sample locations are as follows:

Decontaminate all sample collection tools that contact the sample as well as all bowls and mixing/distribution implements in accordance with the following procedures.

- 1. Rinse each item with tap water to remove mud, dirt, or other visually present material.
- 2. Scrub the item with a brush and soapy water, using non-phosphate detergent such as Alconox<sup>TM</sup> for non-oily residue, or a detergent (e.g. Joy<sup>TM</sup>) for items with oily or other sticky organic residue.
- 3. Rinse the item with tap water to remove all residual soap
- 4. Rinse the item with 10% nitric acid to remove residual metals
- 5. Rinse the item with de-ionized water
- 6. Rinse the item with organic solvent (e.g. hexane)
- 7. Rinse the item with de-ionized or analyte-free water and allow to air dry.
- 8. Wrap the item(s) in aluminum foil or plastic bag to protect it until it is used.

All solvents must be captured and disposed of in appropriate, labeled, aqueous waste containers. All instruments that come into contact with the sample (i.e. syringe, ruler, collection buckets) must be cleaned in the same manner as the sampling device. Liquids collected into the chemical waste container must be discarded in an appropriate waste stream. Staff performing decontamination procedures need to wear appropriate PPE, gloves (e.g. nitrile) and eye protection. Care must be taken in cleaning not to allow contact of cleaning solutions with clothing as much as possible. If circumstances dictate contact will occur (e.g. high pressure washing, splashing, high wind), waterproof outer clothing must be worn (e.g. foul weather gear or rain gear).



Decontamination procedures may vary depending on specific workplan specifications, and unique contaminants of concern at specific locations. The project workplan may designate collection of equipment rinse samples to document effectiveness of cleaning.

This GAP does not address radioactive decontamination, PPE for radioactive waste, or disposal of radioactive contaminated waste material.

## IV. References

American Society for Testing and Materials (ASTM), 1994. Standard Practice for Decontamination of Field Equipment Used at Nonradioactive Waste Sites. Designation: D 5088 – 90.



## APPENDIX E

Soil Boring Logs and Well Construction Diagrams



	M	II.	CO	JIE JIE		LOG O	FE	BORII	NG M		(Page 1 of 1)
		800 1		Mill Facility Street	Date Started Date Completed Hole Diameter Drilling Method/Rig	: 01/09/2006 : 01/10/2006 : 8 inches : Hollow-Stem Auger		E	orilling Co lorthing Co asting Co survey By	oord. ord.	: Resonant Sonic : 2220489.737 : 6059244.211 : C.S.S.
	F			26-008	Sampling Method	: Split-spoon			ogged By		: Maryline Laugier
Depth in Feet	Ground Surf.Elev 10.37	SOIL TYPE	GRAPHIC		DESCRIPTION		Samples	Recovery	Blow Count		: MP-1 : 9.72
0-	- 10		,	0-4.5 ft Hand Augering (HA)							- Grout
				grained sand, brown 30% fines)	VEL, small angular gr , dry, loose, (55% gra de collected at 4.5 fee	avel, 15% sand,	1	НА			Blank PVC 2"  Bentonite Chip Se
5-	- 5	FILL		-Wet, dark gray with hydrocarbons and st 6-7.5 ft - No recover	presence of residual rrong odor, PID readir y	petroleum ng of 20 ppm	3	18"/18" 0"/18"	4/8/14 23/17/10		
_							4	12"/18"	4/3/2		
10-	- 0	FILL		grained sand, dark of petroleum hydrocart fines), PID reading of	SILT, small angular gray, very moist, soft, sons, (25%gravel, 15° ons, (26 ppm	little odor of	5	18"/18"	3/1/2		Sand Pack (#2/12
-		CL		10.5-13.5 ft CLAY, bay mud, gra odor of sulfides	y to black, wet, very s	soft, plastic,	6	18*/18"	1/1/0		
-							7	18*/18"	4/1/2		
-											

	ľ			JIE OLM							(Page 1 of 1)
		800		Mill Facility Street	Date Completed Hole Diameter	: 01/09/2006 : 01/10/2006 : 8 Inches : Hollow-Stem A	uger		Drilling C Northing Easting C Survey B	Coord.	: Resonant Sonic : 2220352,326` : 6059580,519 : C.S.S.
	F	Proje	ct 262	26-008	Sampling Method	: Spilt-spoon			Logged E	Ву	: Maryline Laugler
Dep	Ground Surf.Elev 10.87	SOIL TYPE	GRAPHIC	DI	ESCRIPTION		Samples	Recovery	Blow Count	I	MP-2 : 10.53
0-				0-2.5 ft Hand Augering (HA)	2		į				— Grout — Blank PVC 2"
^	= _			to medium grained sagravel, 30% sand, 65		gravel, fine soft, (5%	1	12"/18"	4/10/11		Bentonite Chlp Sea
5-	- 6			Wet, presence of gra	e collected at 5 feet b wels from wheathered s, size of gravel incre	bedrock	2	12"/18"	6/6/8	V Property of the property of	
-				depth, PID reading o	5, 3128 of graver more. f 0 ppm	aces with	3	6"/18"	4/7/30		
-		FILL	7. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.				4	12"/18"	6/8/12		
10-	- 1			-			5	12"/18"	7/9/8		Sand Pack (#2/12) Screen (0.010 slot
-							6	12"/18"	3/4/6		
		SH		12.5-13.25 ft	DDOCK (obole/cilleter		7	18"/18"	8/3/50		
-		-			DROCK (shale/siltston L at 13.5 ft bgs (50 blo		8	3"	50		
15-											Cap

	P		<	<b>NIE</b>							(1	Page 1 of 1)
		800 Va	Derr	Mill Facility Street  , CA 326-008	Date Started Date Completed Hole Diameter Drilling Method/Rig Sampling Method	: 01/09/2006 : 01/10/2006 : 8 Inches : Hollow-Ste : Split-spoon	m Au	ger	F .	Orilling Con Northing Con Easting Con Survey By Logged By	oord. ord.	: Resonant Sonic : 2220606.236 : 6059404.374 : C.S.S. : Maryline Laugier
	<u> </u>	10,0				, ,						
Dep	Ground Surf.Elev 11.93	SOIL TYPE	GRAPHIC	DES	SCRIPTION	-	Samples	Recovery	Blow Count	Well: Elev.:	MP-3 11.42	
0-	- 12			0-4.5 ft Hand Augering (HA)								
			18 (S)	2-10.5 ft							— Grot — PVC	ut Cond.Casing.12" 0-3
				SANDY SILT with sm wheathered bedrock, brown, dry, medium s 80%fines)	all angular gravel fro medium grained san iiff, (5% gravel, 15%	m d, light sand,	1	НА				k PVC 2"
5-	- 7			[Soil analytical sample		t bgs]	2	12"/18"	4/8/23	**************************************	Beni	tonite Chip Seal
-		FILL		Increase in gravel cor PID reading of 0 ppm			3	12"/18"	35/48/14			
				7.5-9 ft - No recovery shale in shoe  SANDY SILT with sm.			4	0"/18"	2/4/10			
10-	- 2			wheather bedrock, mo brown, very moist, so gravel, 15%sand, 80%	edium grained sand, it. odor of SVOCs, (5	light 5%	5	18"/18"	5/10/8		X	d Pack (#2/12) een (0.010 slot)
		FILL		10.5-12 ft GRAVEL, small, black (100%gravel)	k, wet, loose, slight o	dor,	6	12"/18"	5/6/5			
,		CL		CLAY (bay mud), gra plastic, odor of sulfide	y to dark gray, wet, v es	very soft,	7	12"/18"	1/1/2			
15-				Harder and moist			8	18"/18"	4/8/25		Cap	

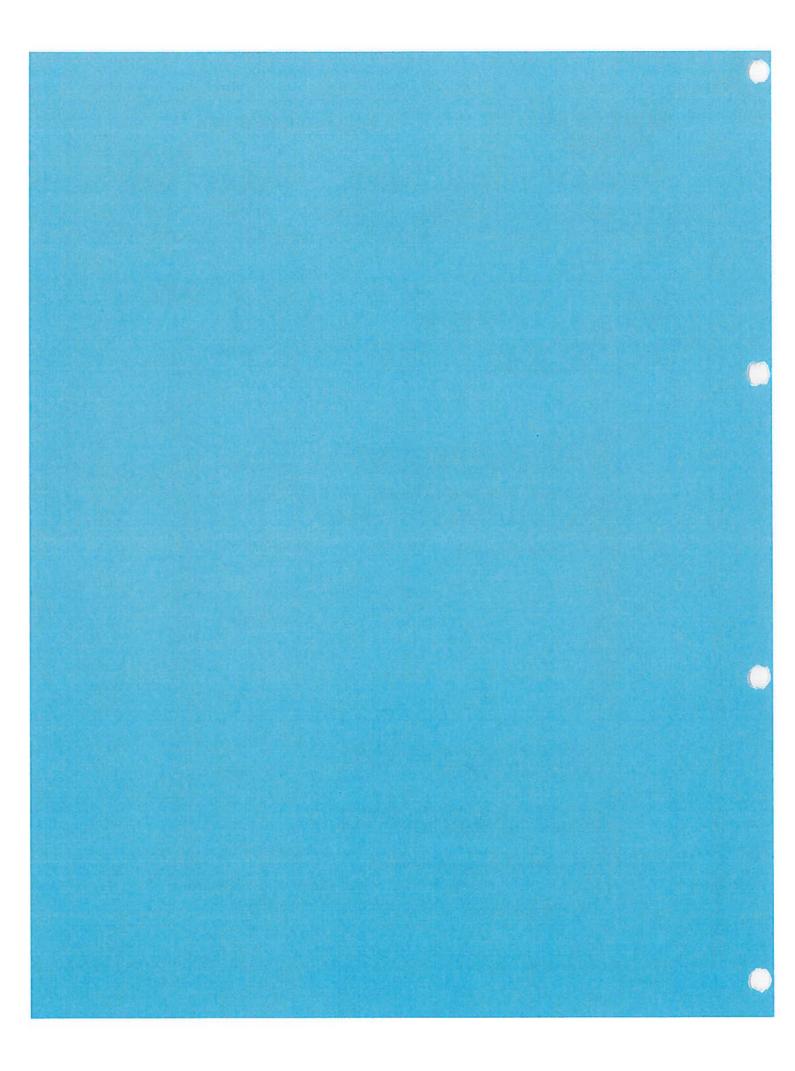
	P		SV.	IIE IIE						(F	Page 1 of 1)
		800	Derr S	Aill Facility Street	Date Started Date Completed Hole Diameter Drilling Method/Rig	: 01/07/2006 : 01/07/2006 : 8 inches : Hollow-Stem Aug	or	N/ Ea	rilling Co orthing C asting Co urvey By	oord.	: Resonant Sonic : 2220811.37 : 6059316.85 : C.S.S.
	F		llejo, ct 262	26-008	Sampling Method	: Split-spoon			ogged By		: Maryline Laugier
Depth in Feet	Ground Surf Elev 11.27	SOIL TYPE	GRAPHIC	4	DESCRIPTION	, , , , ,	Samples	Recovery	Blow Count	Well: I Elev.:	
0-	- 11			0-5 ft Hand AugerIng (HA	)						
-						:					- Grout
									•		Blank PVC 2"
				reading of 0 ppm	nall angular gravel, bravel, 0%sand, 30% fi		1	НА			Bentonite Chip Se
5-	- 6			~[Soil analytical sam	nple collected at 4.5 fo	eet bgsj	2	12"/18"	4/4/2		
7/		F!LL					3	12"/18"	2/2/1		
							4	12*/18*	2/5/5		Screen (0.010 slo
10-	- 1			N	4 to 40 5 feet has (Da	and of well	5	12"/18"	2/1/2		Sand Pack (#2/12
				graded sand, dark,	1 to 12.5 feet bgs (Pr wet, and loose in the	shoe)	6	0"/18"	1/1/0		
	-	SH	2		DROCK (shale/siltstor AL at 13 ft bgs (50 blo		7	5*	50		
15-											- Cap

			31	<b>VIE</b> OLM							(Page 1 of 1)
	For	800	lour Derr	Mill Facility Street	Date Started Date Completed Hole Diameter Drilling Method/Rig	: 01/06/2006 : 01/07/2006 : 8 inches : Hollow-Stem Auge	ar.	N E	Orilling Colorthing Color	Coord.	: Resonant Sonic : 2221070.945 : 6059437.212 : C.S.S.
				26-008	Sampling Method	: Spllt-spoon			ogged B		: Maryline Laugier
Depth in Feet	Ground Surf.Ele 13.29	۸ <u>۲</u>	GRAPHIC	. [	DESCRIPTION		Samples	Recovery	Blow Count		I: MP-5 r.: 12.79
0-	- 13			0-5 ft Hand Augering (HA)						W. Gaza	Constant
-											Grout Blank PVC 2"
	moderately plastic,			SANDY CLAYEY SIL gravel, medium grain moderately plastic, (s	5% gravel, 25% sand	1	НА	НА		Bentonite Chip Se	
5-	- 8	FILL		►[Soil analytical samp		et bgs]	2	18"/18"	3/4/6		
		e		Olive with iron oxide	specks, petroleum o	dor. PID reading	3	6"/18"	3/3/6		
-		SH		of 35 ppm SAMPLER REFUSA 8.5-10.5 ft WEATHERED BEDR	L at 8.5 ft bgs (50 blo	ow counts for 6")	4	6"	50		Screen (0.010 slo
10-	- 3			SAMPLER REFUSAL	at 10.5 ft bgs (50 bl	ow counts for 3")	5_	3"	60		—Sand Pack (#2/12
-											
15-											Cap

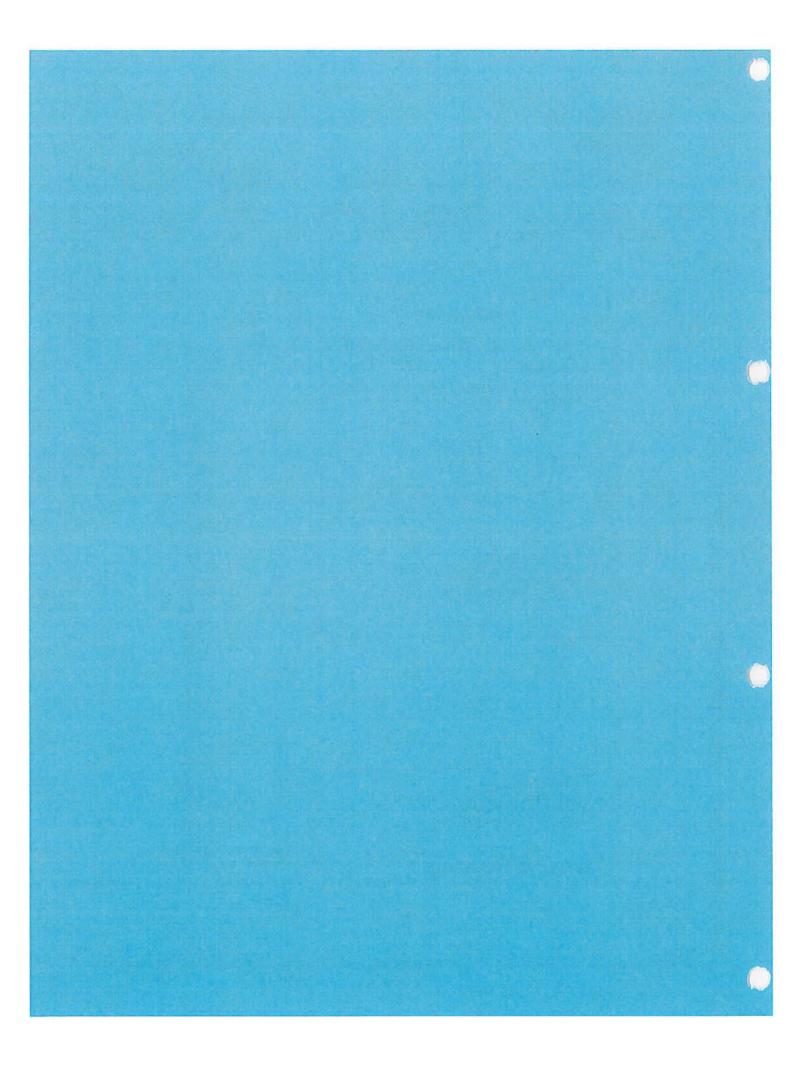
	r	4		NIE OLM						(Pa	age 1 of 1)
	Fori	800	Derr	Mill Facility Street	Date Started Date Completed Hole Diameter	: 02/03/2006 : 02/06/2006 : 8 inches	l.		Drilling Com Northing Co Easting Coo	ord.	: Resonant Sonic : 2220572.693 : 6059355.739
			allejo,	, CA 26-008	Drilling Method/Rlg Sampling Method	: Hollow-Stem Auge : Split-spoon	er		Survey By		: C.S.S.
		rioje	CL 20.	20-008	Sampling Method	. Spit-spoon		Τ	Logged By	}	: Maryline Laugier
Dep	Ground Surf.Elev 11.46	SOIL TYPE	GRAPHIC	[	DESCRIPTION		Samples	Recovery	Blow Count	Well: Elev.:	MP-6 11.18
0-	- 11			0-4 ft Hand Augering (HA)							
				_	-		4		,	Statistation and statistation (	Grout Blank PVC 2*
5-	- 6			4-13.5 ft GRAVELLY CLAYEY gravel, brown, dry, ha 0% sand, 70% fines), [Soil analytical samp Gray, wet, strong pe	rd, moderately plast PID reading of 0 pp le collected at 5 feet	ic, (30% gravel, m bgs]	1	18*/24"	21/19/7/8	<b>-</b>	- Bentonite Chip
_				[Soil analytical sample	e collected at 7 feet t	ogs]	2	12"/24"	4/5/9/11		
10-		FILL		PID reading of 40 ppn		-6	3	12"/24"	1/3/5/7		— Screen (0.010 s — Sand Pack (#2/
	- 1						4	12"/24"	9/11/13/15		
-				SANDY SILT, coarse soft, no petroleum odd fines), PID reading of [Soil analytical sample	0 ppm		5	18"/24"	7/9/11/13		
15-				No recovery from 14-1	15 feet bgs		6	0"/12"	9/13		— Сар
10-				Total depth at 15 feet	bas					4.50	1

	P		3	IIE OLM						(F	Page 1 of 1)
		800 Va	Derr	Mill Facility Street CA 26-008	Date Started Date Completed Hole Diameter Drilling Method/Rlg Sampling Method	02/03/2006 : 02/03/2006 : 8 Inches : Hollow-Stem Auger : Split-spoon	,	P E S	Drilling Com Northing Coo Easting Coo Survey By Logged By		: Resonant Sonic : 2220495.108 : 6059199.34 : C.S.S. : Maryline Laugler
Depth in Feet	Ground Surf.Elev 10.40	SOIL TYPE	GRAPHIC	ז	DESCRIPTION		Samples	Recovery	Blow Count	Well: I	
0-	- 10			0-2 ft Hand Augering (HA)							Blank PVC 2" Grout
				2-9 ft GRAVELLY CLAYEY dry to moist, soft to r gravel, 0% sand, 70% [Soil analytical samp	% fines)		1	24"/24"	NA		—Bentonite Chip Se
5-	- 5	FILL		Wet, PID reading of 0		ze)	2	12"/24"	NA		
-							3	12"/24"	NA		S (0.040 slat)
10-							4	24"/24"	NA		Screen (0.010 slot
-	- 0	CL		9-13 ft CLAY, bay mud, gray odor of sulfides, piece	to black, wet, very ses of wood chips	soft, plastic,	5	24"/24"	NA		
-				[Soil analytical sampl	e collected at 13 fee	t bgs]	6	12"/24"	NA		Сар
15-				Total depth at 14.5 fe NA = Not available	eet bgs		<u> </u>				j

	r			OLM OLM						(Pa	age 1 of 1)
		800 Va	Derr allejo,	Mill Facility Street CA 26-008	Date Started Date Completed Hole Diameter Drilling Method/Rig Sampling Method	: 02/03/2006 : 02/03/2006 : 8 Inches : Hollow-Stem Auge : Split-spoon	er	1	Drilling Com Northing Coo Easting Coo Survey By Logged By	ord. rd.	: Resonant Sonic : 2220377.581 : 6059262.625 : C.S.S. : Maryline Laugler
Depth in Feet	Ground Surf.Elev 11.39	SOIL TYPE	GRAPHIC		DESCRIPTION	CI ,	Samples	Recovery	Blow Count	Well: Elev.:	MP-8 10.71
0-	- 11			0-2 ft Hand Augering (HA)	)					100000000000000000000000000000000000000	Grout
				2-13.5 ft	V CII T. ampli ta madi						Blank PVC 2"
	GRAVELLY CLAYE gravel, brown, dry, le gravel, 0% sand, 70 [Soil analytical sam		ose, moderately plas % fines), PID reading	stic, (30% of 0 ppm	1	6"/24"	19/18/6/7	ACCES NAME OF THE PERSON	Bentonite Chip S		
5			-10 feet bgs (sample	in shoe is same	2	0"/24"	8/9/15/16	-2			
		FILL					3	0"/24"	7/10/12/17		
10-							4	0"/24"	7/9/11/13		— Screen (0.010 slo — Sand Pack (#2/12
-	- 1			SANDY CLAYEY SI grained sand, gray, 60% fines), PID read	LT with small angular wet, soft, (5% gravel, ding of 0 ppm	gravel, coarse 35% sand,	5	18"/24"	11/9/13/18		
	GRAVELLY CLAYE gravel, gray, wet, low own sand, 70% fines	YEY SILT, large to medium angular loose, moderately plastic, (30% gravel, les), PID reading of 0 ppm		6	18"/24"	6/10/11/13					
			etologie	[Soil analytical samp	ole collected at 13.5 fe	eet bgs]					Сар
15-				Total depth at 14.5 f	eet bgs		1	L			



		800		Mill Facility Street	Date Started Date Completed Hole Diameter Drilling Method/Rig	: 01/10/2006 : 01/10/2006 : 8 Inches : Hollow-Stem Auger	-	Drilling Controlling Control	ompany Coord.	Page 1 of 1)  : Resonant Sonic : 2220514.901 : 6059279.239 : C.S.S.
	F			26-008	Sampling Method	: Split-spoon		Logged B		: Maryline Laugier
3	Ground Surf.Elev 10.37	SOIL TYPE	GRAPHIC	I	DESCRIPTION		Samples	Recovery		
0-	- 10	FILL		0-5 ft Hand Augering SANDY SILT with sm grained sand	nall angular gravel, n	nedium to fine				
-	- 5	FILL		5-7.5 ft SHELBY TUBE SAM Two feet of soll coller Odor of petroleum hy Residual petroleum h	cted in the shelby tule drocarbons	oe	1			
0-	- 0			,		8				_
		CL		11-13.5 ft SHELBY TUBE SAM Full shelby tube (2.5 Odor of petroleum hy Residual petroleum h	feet of soil in tube)		2			
			<u> </u>	Total depth of boring	at 13.5 feet bgs					-13.5



	M		CO	LOG OF BORII	NG S	B-1	
	r			E			(Page 1 of 1)
	\		eral Mills o, Califor	Date Completed : 1/31/2008 N Hole Dlameter : 2 in. E Drilling Method : Direct Push S	levation orthing C asting Co urvey By ogged By	ord.	: Not measured : N 2220518.289 : E 6059244.329 : C.S.S. : M. Laugier
Depth In Feet	Surf. Elev. NM	Coring Interval	Recov.	DESCRIPTION	nscs	GRAPHIC	REMARKS
0	- 0	1	НА	0-4.5 ft Brick and Filt			Surface Conditions - Soil
2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	2 4	2	12"/24"		FILL		
6	- <b>-</b> 6	3	18"/48"	4.5-8 ft GRAVELLY SILTY SAND, fine to medium grained sand, small angular gravel, brown, dry, loose, (20% gravel, 55% sand, 25%fines)  -[Soil analytical sample collected at 5 feet bgs]  -Black staining with TPH odor, wet	FILL		Water Table at 5 feet bgs PID Measurement = 11 ppr
8	8			L[Soil analytical sample collected at 5.5 feet bgs]  8-9.5 ft  CLAY, soft, dark gray, TPH odor, wet, plastic, (100% fines)  3" brick fragment @ 9 feet	FILL		PID Measurement = 3 ppm
10	10	4	30"/48"	9.5-15 ft SANDY GRAVEL, small angular gravel, coarse grained sand, loose, wet, TPH odor, (80% gravel, 20% sand, 0%fines)			PID Measurement = 6 ppm
12	12			TPH odor decreases with depth	FILL		PID Measurement = 4 ppm
14	14	5	36"/48"	[Soil analytical sample collected at 15 feet bgs]			PID Measurement = 6 ppm PID Measurement = 0.5 pp
16	- <b>-</b> 16			Bottom of boring at 16 feet bgs			
18	18	la.					
11111							

	þ	TR	CO			LOG OF E	JOI (II VO	00 2	(Page 1 of 1)	
			eral Mills o, Califor		Date Started Date Completed Hole Diameter Drilling Method Sampling Method	: 1/31/2006 : 1/31/2006 : 2 in. : Direct Push : Macro-Core	Elevation Northing Easting Survey E Logged	Coord. Coord. By	: Not measured : N 2220476,594 : E 6059271,569 : C.S.S : M. Laugier	
Depth In Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRI	PTION	USCS	GRAPHIC	REMARKS	
11111111	-2	1	НА	0-4.5 ft GRAVELY SANI	DY SILT , Dry		FIL		Surface Conditions - Soil	
6	-6	2	30"/48"	4.5-8 ft SANDY SILT, m gray, TPH odor,	ample collected at 4 edium grained sand (0%gravel, 20%san ample collected at 6	, wet, moderately hard, da d, 80%fines)	ark FIL		Water Table at 4.5 feet bgs PID Measurement = 23 ppi PID Measurement = 60 ppi	
10	-10	3	36"/48"	8-13.5 ft GRAVELLY SIL dark gray, wet, 1	F, small angular grav PH odor, (20%grav	vel, moderately hard, grayel, 0%sand, 80%fines)	y to		PID Measurement = 26 pp PID Measurement = 35 pp PID Measurement = 11 pp	
12	-12	4	36"/48"	13.5-15 ft CLAY, Bay Mud plastic, (100%fi	, dark gray, Hydroge nes)	en Sulfide odor, soft, wet,	CH		PID Measurement = 10 pp PID Measurement = 2 ppm PID Measurement = 0 ppm	
16	-16 -18			[Soil analytical	sample collected at g at 16 feet bgs	15 feet bgs]				

	P		CO	LM E		LOG OF	BORIN	IG S	B-3	(Page 1 of 1)
	١		eral Mills o, Califor		Date Started Date Completed Hole Diameter Drilling Method Sampling Method	: 1/31/2006 : 1/31/2006 : 2 In. : Direct Push : Macro-core	No Ea Su	evation orthing Co asting Co arvey By gged By	ord.	: Not measured : N 2220538,586 : E 6059267,108 : C.S.S. : M. Laugler
Depth In Feet	Surf. Elev. NM	Coring Interval	Recov.	r	DESCRI	PTION		nscs	GRAPHIC	REMARKS
0-	- 0			0-4.5 ft SANDY SILT, dry	loose, light brown					Surface Conditions - Soll PID Measurement = 0 ppm
2-	2	1	48"/48"	TPH odor				FILL		PID Measurement = 0 ppm
4-	4			4.5-12 ft	mple collected at 4.	5 feet bgs] PH odor, plastic, (100%	úfines)			PID Measurement = 0 ppm Water Table at 4.5 feet bgs PID Measurement = 27 ppm
6	6	2	30"/48"		ample collected at 8	5.5 feet bgs] sence of gray clay with T	ГРН			PID Measurement ≈ 10 ppm
8	8		2					FILL		
10	10	3	0"/48"							
12-	12			12-15 ft SANDY GRAVEL sand, loose, gray sand, 0% fines)	, small angular grav to dark gray, wet, 1	/le, coarse to medium g PH odor, (70% gravel, 3	rained 30%			PID Measurement = 0 ppm
14	14	4	36"/48"	Soil analytical sa	mple collected at 1	5 feet bgs]		FILL		PID Measurement = 0 ppm
16	16			Bottom of boring a	at 16 feet bgs					15
18	18	=								

	M	1		TW.		LOG OF B	ORING S	SB-4	
		Ger	neral Mills o, Califor	3	Date Started Date Completed Hole Dlameter Drilling Method Sampling Method	: 1/31/2006 : 1/31/2006 : 2 In. : Direct Push : Macro-core	Elevation Northing Easting C Survey B Logged B	Coord. Coord.	(Page 1 of 1)  : Not measured : N 2220494.274 : E 6059289.760 : C.S.S. : M. Laugier
Depth Surf. In Elev. Feet NM		Coring Interval	Recov.		DESCRI	PTION	USCS	GRAPHIC	REMARKS
2	2	47	НА	0-4 ft SANDY SILT, sn TPH odor	nall grained sand, di	y, loose, light brown	FILL		Surface Conditions - Soil
6 11 11 11 11 11 11 11 11 11 11 11 11 11	6	2	30"/48"	4.5-10 ft SANDY SILT, mo TPH odor, (0% g	ample collected at	, wet, soft, dark gray to bla 9% fines)	FILL		Water Table at 4.5 feet bgs PID Measurement = 138 pp
10	10 12	3	36"/48"	plastic, (100% fir with trace small a	wet, soft, very dark les) angular gravel @ 12		СН		PID Measurement = 6 ppm PID Measurement = 5 ppm
14-11-11-11-11-11-11-11-11-11-11-11-11-1			J		gs, wood chips obs			<i>V )</i>	
18	18								

	M	AL IR		LOG OF BOR	RING	SB-	
	\		eral Mills o, Califor		Elevatio Northing Easting Survey I Logged	Coord. Coord.	(Page 1 of 1)  : Not Measured : N 2220529.500 : E 6059300.387 : C.S.S. : M. Laugier
Depth in Feet	Surf. Eiev. NM	Coring Interval	Recov.	DESCRIPTION	USCS	GRAPHIC	REMARKS
0-	- 0 2	1	24"/48"	0-8 ft SANDY SILT, medium grained sand, dry, medium stiff, light brown, (0% gravel, 20% sand, 80% fines)			Surface Conditions - Soll PID Measurement = 0 ppm
4-1	4				FIL		
6	6	2	30"/48"	[Soil analytical sample collected at 5.5 feet bgs]  gray to dark gray, TPH odor  [Soil analytical sample collected at 6.5 feet bgs]			Water Table at 5.5 feet bgs PID Measurement = 30.8 ppm
8	8			8-15.5 ft CLAY (Bay Mud), wet, very soft, gray to dark gray, TPH odor, plastic, (100% fines)	••••		
10	10	3	36"/48"	dark gray only			
12-	12				CH		PID Measurement = 2.4 ppn
14-	14	4	42"/48*				PID Measurement = 0.1 ppn PID Measurement = 0 ppm
16	16			[Soil analytical sample collected at 15.5 feet bgs]  (SANDY GRAVEL, wet, black with TPH odor in shoe)  Bottom of boring at 16 ft bgs			1
18~	18						

	M	Ä	CO	LOG OF BORIN	NG S	B-6	
	r		4211				(Page 1 of 1)
	\	-	neral Mills o, Califor	Date Completed : 1/31/2006 N Hole Diameter : 2 in E Drilling Method : Direct Push	levation orthing Co asting Co urvey By ogged By		: Not measured : N 2220459.224 : E 6059253.454 : C.S.S. : M. Laugier
Depth in Feet	Surf. Elev. NM	Coring Interval	Recov.	DESCRIPTION	nscs	GRAPHIC	REMARKS
2-	- 0 2	1 ::	НА	0-13 ft SANDY SILT, medium grained sand, dry, brown, medium stiff, (0% gravel, 20% sand, 80%fines)			Surface Conditions - Soil
6-	4	2	30"/48"	[Soil analytical sample collected at 4.5 feet bgs] wet to very moist, light brown, soft color change to gray, TPH odor, trace medium size to small angular gravel [Soil analytical sample collected at 6 feet bgs]	FILL		Water Table at 4.5 feet bgs PID Measurement = 70.8 ppm
10-	-8	3	36"/48"	with small angular gravel, (5% gravel, 15% sand, 80% fines)			PID Measurement = 40 ppm  PID Measurement = 20 ppm
12- 14-	-12	4	42"/48"	13-14.5 ft SILTY GRAVEL, small angular gravel, medium grained sand, wet, light brown and gray, TPH odor, (80% gravel, 20% sand, 0%fines)  [Soil analytical sample collected at 14.5 feet bgs]	FILL		PID Measurement = 5.1 ppm
16- - 18-	-16 18		11	Bottom of boring at 16 ft bgs			

	M	AL IR	CO	LM E		LOG C	F BORII	NG S	B-7	(Page 1 of 1)
	\		neral Mills o, Califor		Date Completed : 1/31/2006 Nord Hole Diameter : 2 In Eas Drilling Method : Direct Push Sun		levation lorthing Co asting Co urvey By ogged By	ord.	: Not measured : N 2220468.590 : E 6059225.222 : C.S.S : M. Laugier	
Depth in Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRI	PTION		nscs	GRAPHIC	REMARKS
0- 2-	- 0 2	1	НА	0-13 ft SANDY SILT, me moderately stiff to	edium grained sand o soft, (0% gravel, 2	light brown, dry to 0% sand, 80% fines	moist,			Surface Conditions - Soil  PID Measurement = 0 ppm
4	-4	2	18"/24"		ample collected at 3 fragments and sma		ay, TPH odor			Water Table at 4 feet bgs PID Measurement = 0 ppm PID Measurement = 30 ppm
6	6	3	24"/48"	[Soll analytical sa	ample collected at 6	feet bgs]		FILL		
10	8 10	4	18"/48"	with small angula	ar gravel, soft, minor	TPH odor				PiD Measurement = 2.6 ppm
12-	12		8	13-15 ft						PID Measurement = 0.5 ppm
14	-14	5	36"/48"	CLAY, Bay Mud, odor, slight hydro	wet, very soft, dark ogen sulfide odor ample collected at 1		ic, no TPH	СН		
	16 18			Bottom of boring	at 16 ft bgs					L
20-										

	M	11	COI	LM.		LOG O	F BORIN	IG S	B-8		
	ľ		4511				:			(Page 1 of 1)	
	\		eral Mills o, Californ		1				oord.	: Not measured : N 2220501.159 : E 6059226 312 : C.S.C : M. Laugier	
epth In Feet	Surf. Eiev. NM	Coring Interval	Recov.	*	DESCRI	PTION		nscs	GRAPHIC	REMARKS	
0-	- 0			0-4.5 ft SAND and BRIG	CK fragments		:			Surface Conditions - Soil	
2 1111111	2	1	на					FILL			
6	- <b>-4</b> 6	2	24*/48*	wet, very soft, d gravel, 5% sand	n small angular grave lark gray to blak, TP d, 90% fines) sample collected at	el and medium graine H odor, moderately pl 6 feet bgs]	d sand, astic, (5%	FILL		Water Table @ 4 ft bgs PiD Measurement = 0 ppn	
8	8			8-12 ft SANDY GRAVE sand, wet, very 20%sand, 10%	loose, TPH odor wit	angular gravel, medion h sheen, (70% gravel	ım grained			PiD Measurement ≖ 0 ppm	
10	10 ·	3	18"/48"					FILL			
12	12			12-16 ft CLAY with trace TPH odor, very	e small angular grav soft, plastic, (100%	el, trace sand, wet, bl fines)	ack, slight			PID Measurement = 0 ppm	
14	14	4	48"/48"					СН		PiD Measurement = 0 ppm	
16-	16			[Soil analytical s Bottom of borin	sample collected at g at 16 ft bgs	16 feet bgs]			//	1	
18	18										

	M	AL	CO	LM E		LOG OF	BORI	NG S	B-9	(Page 1 of 1)
	,		neral Mills o, Califor						oord.	: Not measured : N 2220532.837 : E 6059234.148 : C.S.S. : M. Laugier
Depth In Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRII	PTION		USCS	GRAPHIC	REMARKS
0	- 0	1	НА							Surface Conditions - Soll
2	2	2	12"/24"	2- 9.5 ft GRAVELY SILT, medium stiffness	small to medium co , brown, (30% grave	oarse angular gravel, dr el, 0% sand, 70%fines)	y, loose,			PiD Measurement = 0 ppm
4-111111	4			[Soil analytical sa Wet, color chang bottom of sample	ample collected at 4 le to reddish brown, er	feet bgs] wood chips with TPH o	dor in	FILL		Water Table @ 4 ft bgs PID Measurement = 0 ppm
6	6	3	6*/48"							1
8	8 10	4	18*/48*	wet, loose/soft, fi (25%gravel, 15%	OY SILT, fine gravel ragments of wood a 5 sand, 60% fines) sample collected at	, fine to medium coarse nd bricks, no TPH odor, 9.5 feet bgs]	sand,			PID Measurement = 0 ppm
2	310	7	10740							
12	12			Bottom of boring	at 12 ft bgs	E#), =				
14	14					2				
16	16									
18	-18									

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	P	4R	CO	E			(Page 1 of 1)
	,		eral Mills o, Califor		Elevation Northing C Easting Co Survey By Logged By	oord.	: Not Measured : N 2220455.388 : E 6059285.316 : C.S.S. : M. Laugler
Depth in Feet	Surf, Elev, NM	Coring Interval	Recov.	DESCRIPTION	USCS	GRAPHIC	REMARKS
0-11-11-1	0	1	НА	0-15.5 ft GRAVELLY SILT			Surface Conditions - Asphalt
2	2	2	12"/24"	GRAVELLY SILT with fine sand, small angular diameter gravel, dry, loose, brown, (20% gravel, 5% sand, 75% fines)			PID Measurement = 0 ppm
4	4 6	3	24*/48"	Wet, with smaller gravel, with clay, brown  TPH odor begins at 4 feet bgs [Soil Analytical Sample collected at 4.5 feet bgs]  Gray with TPH odor			Water Table @ 4.5 ft bgs PiD Measurement = 6 ppm PID Measurement = 20 ppm
8	8			Strong TPH odor	FILL		PiD Measurement ≖ 40 ppm
10-		4	36"/48"				PID Measurement = 20 ppm
12-		5	42"/48"	Strong TPH odor and residual TPH In soil [Soil Analytical Sample collected at 13 feet bgs]			PID Measurement = 120 ppm PID Measurement = 120 ppi
		3	42 /40	[Soil Analytical Sample collected at 15.5 feet bgs]			PID Measurement - 120 ppi
16-				Bottom of boring at 16 ft bgs			
18	-18						

	"p	Ï	CO	Ë		LO	G OF BOR	ING OI	ו -ר	(Page 1 of 1)
	\		eral Mills o, Califor		Date Started Date Completed Hole Diameter Drilling Method Sampling Method	: 2/1/2006 : 2/1/2006 : 2 in. : Direct Push : Dual Tube		Elevation Northing C Easting Co Survey By Logged By	ord.	: Not Measured : N 2220572.922 : E 6059268.581 : C.S.S. : M. Laugier
Depth in Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRIF	PTION		nscs	GRAPHIC	REMARKS
0-11111	- 0	1	НА	0-5 ft GRAVELLY SIL	Т					Surface Conditions - Soil
2-	2	2	24"/24"	GRAVELLY SIL stiffness, brown 0% sand, 70% f	T (small angular grav graded to brownish ines)	vel), dry to mo gray with der	oist, loose, mediur oth, (30% gravel,	n FILL		PID Measurement = 0 ppm
4-	4	3	12"/18"	Wood chips with	gray Sample collected at 4 n TPH odor and oily s		om of sampler,			PiD Measurement = 0 ppm Water Table @ 4 ft bgs
6-11-1-1	6			refusal at 5.5 fe [Soil Analytical S Bottom of boring	Sample collected at 5	feet bgs]	0.11			
8-	8									
10-	10									
12-	12									
14-	14	:								
16	16									
18	18									

	M	ALIA IR	CO	LM F		LOG	OF BORII	NG SE	3-12	
	\		eral Mills o, Califor		Date Started Date Completed Hole Diameter Drilling Method Sampling Method	: 2/1/2006 : 2/1/2006 : 2 in. : Direct Push : Macro-core	1 E S	Elevation Northing Co Easting Co Survey By Logged By	ord.	(Page 1 of 1)  : Not Measured : N 2220492.998 : E 6059328.082 : C.S.S. : M. Laugier
Depth in Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRII	PTION		nscs	GRAPHIC	REMARKS
0-	- 0 2	1	НА	0-15.5 ft GRAVELLY SILT	r, small to medium a	angular gravel, dry	to majet lagge			Surface Conditions - Asphait
4-	4	2	18"/24"	brown, (30% gra	wel, 0% sand, 70% if ample collected at 3	ines) 3.5 feet bgs]				PiD Measurement = 3 ppm Water Table @ 4.5 ft bgs
6-	6	3	48*/48*	moderately stiff, Gray with strong	TPH odor, (10% gra	y filolat, brown will evel, 0% sand, 90%	fines)			PiD Measurement = 12 ppm
8-	-8			GRAVELLY SILT	Γ, small to medium a gravel, 0% sand, 60	angular gravel, wel 0% fines)	t, soft, strong	FILL		PID Measurement = 74 ppm PID Measurement = 74 ppm
10-	-10	4	36*/48*	residual TPH ob	served					>-
-	-12			with fine angular Strong TPH odo [Soil Analytical S	gravel r and residual TPH i ample collected at	in soil 13 feet bgs]				PID Measurement = 100 ppr
14-	-14	5	42"/48"		sample collected at	15.5 feet bgs]				PID Measurement = 15 ppm
14 - 14 - 16 - 16 - 16 - 16 - 16 - 16 -			8	Bottom of boring	at 16 ft bgs				•	

	P	IR		LOG OF BORIN			(Page 1 of 1)
	**		eral Mills o, Califor	Date Completed : 2/1/2006 Molecular : 2 in. Drilling Method : Direct Push	Elevation Northing C Easting Co Survey By Logged By	ord.	: Not Measured : N 2220543.505 : E 6059320.515 : C.S.S. : M. Laugier
Depth in Feet	Surf. Elev. NM	Coring Interval	Recov.	DESCRIPTION	nscs	GRAPHIC	REMARKS
0-	- 0	1	НА	0-4.5 ft GRAVELLY SILT			Surface Conditions - Soli
2-	2	2	12"/24"	GRAVELLY SILT, small angular gravel, dry, loose, brown, (30% gravel, 0% sand, 70% fines)	FILL		PID Measurement = 8 ppm
6 11111	6	3	30"/48"	4.5-8 ft SILTY SAND with gravel, coarse sand, small angular gravel, wet, loose, reddish brown, TPH odor, residual TPH product, (5% gravel, 80% sand, 15% fines) [Soil Analytical Sample collected at 4.5 feet bgs]  Color change to gray	FILL		Water Table @ 4.5 ft bgs PID Measurement = 9 ppm PID Measurement = 80 ppi
8 10 - 10 - 1	8 10	4	18"/48"	L[Soil Analytical Sample collected at 6.5 feet bgs]  8-8.5 ft SANDY SILTY GRAVEL, coarse sand, coarse angular gravel, wet, loose, strong TPH odor, (80% gravel, 10% sand, 10% fines)  8.5-12 ft CLAY, dark gray, wet, very soft, TPH odor, wood chips in base of sampler, (100% fines)	FILL		PID Measurement ≃ 32 ppn
12	12 14	5	48"/48"	12-13 ft GRAVELLY CLAY with sand, small angular gravel, coarse sand, wet, very soft, gray, TPH odor, wood chips, (25% gravel, 5% sand, 70% fines) 13-16 ft CLAY, (Bay Mud), wet, very soft, dark gray, TPH odor, (100% fines)	FILL		PiD Measurement = 20 ppn
16	16			[Soil Analytical Sample collected at 16 feet bgs]  Bottom of boring at 16 ft bgs			PiD Measurement = 20 ppr
18	-18						

	P	R		LM E					(Page 1 of 1)
	,		eral Mills o, Califor	_	Date Started Date Completed Hole Diameter Drilling Method Sampling Method	: 2/1/2006 : 2/1/2006 : 2 in. : Direct Push : Macro-core	Elevation Northing C Easting Co Survey By Logged By	oord	: Not Measured : N 2220423.252 : E 6059255.984 : C.S.S. : M. Laugler
Depth in Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRIF	PTION	nscs	GRAPHIC	REMARKS
0-	- 0	1	НА	0-8.5 ft GRAVELLY SILT					Surface Conditions - Aspha
2	2	2	18"/24"	GRAVELLY SILT, gravel, 0% sand, 7	small angular grav 75% fines)	el, dry, loose, brown, (25%			PID Measurement = 0 ppm
4	4			sand, wet, reddish 65% fines)	with sand, fine ang n, soft, slight TPH of ample collected at	ular gravel, fine- to medium- dor, (25% gravel, 10% sand, 5 feet bgs]	FILL		PiD Measurement = 1 ppm Water Table @ 5 ft bgs
8 - 1	6 8	3	18"/48"						PID Measurement = 2.6 pp
10-	10	4	36"/48"	8.5-10.5 ft CLAY, wet, very s	oft, dark gray, TPH	odor, (100% fines)	FILL		
12	12			fines)	ese, TPH odor, gray	(60% gravel, 0% sand, 40%	FILL		PID Measurement = 71 ppr
				[Soil Analytical S	ample collected at	11 feet bgs]			PID Measurement = 20 ppr
14-	14	5	36"/48"	GRAVELLY SILT.	small angular grav or, (30% gravel, 0%	el, coarse sand, wet, medium sand, 70% fines)	FILL		PID Measurement = 6.5 pp
40	45			[Soil Analytical Sa	imple collected at 1	5 feet bgs]		127	
16	16			Bottom of boring a	at 16 ft bgs				•
18	18								

	P		<b>32</b> 1	LM E						(Page 1 of 1)
	\		eral Mills		Date Started Date Completed Hole Diameter Drilling Method Sampling Method	: 2/1/2006 : 2/1/2006 : 2 in. : Direct Push : Macro-core	No Ea Su	evation orthing Co asting Co urvey By ogged By	ord.	: Not Measured : N 2220453.362 : E 6059209.631 : C.S.S. : M. Laugler
Depth In Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRI	PTION		USCS	GRAPHIC	REMARKS
0-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	- 0	1	НА		/EL and SAND, fine a ss, (5% gravel, 10% s	angular gravel, brown, and, 85% fines)	dry,			Surface Conditions - Soil
2	2	2	24"/24"					FILL		PID Measurement = 0 ppm
4	4			5 to 5.5 ft		- — — — gravel, 0% sand, 5% fi		FILL		PiD Measurement = 0 ppm Water Table at 5 feet bgs
6	6	3	30"/48"	Soil Analytical 5.5-7 ft SILT with grave soft, slight TPH Soil Analytical	Sample collected at 5	6 feet bgs] el, gray, medium stiffne 6 sand. 95% fines)		FILL		PID Measurement = 13 pp
8				odor, (80% graves) 8.5-10 ft GRAVELLY CL	vel, 0% sand, 20% fin	el. wet. black, verv soft		FILL		PID Measurement = 0 ppm
10	10	4	24"/48"	1	Sample collected at	A CONTRACTOR OF THE CONTRACTOR				
12	12		1	Bottom of borin	g at 12 ft bgs			1		
14-	14									
16	16									
18	18									

	M	AL	CO	LМ		LOG OF BO	RING	SB-	16		
	P		RNI	E		(Page 1 of 1)					
	,		neral Mill o, Califor		Date Started : 2/1/2008 Date Completed : 2/1/2006 Hole Diameter : 2 In. Drilling Method : Direct Push Sampling Method : Dual Tube			on g Coord Coord By I By			
Depth in Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRIF	PTION	0,01	SOCO	REMARKS		
0-	- 0	1	НА	0-4.5 ft GRAVELLY SIL	Γ			(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Surface Conditions - Soil		
2-	2	2	6"/24"	soft. (30% grave	Γ, small angular grav I, 0% sand, 70% fine ample collected at 2	vel, brown, moist to very moi as) 5 feet bgs]	ist, FI		PiD Measurement = 0 ppm Water Table at 2.5 feet bgs		
4-	-4			4.5-10.5 ft CLAY, (Bay Mud	I), black, wet, very so	oft, hydrogen sulfide odor,			PID Measurement = 0 ppm		
6	6	3	24"/48"	(100% fines)	,,,,,	oft, hydrogen sulfide odor,					
8	8						C	Н	PID Measurement = 0 ppm		
10-	-10	4	30"/48"	Soil Analytical S	sample collected at 1	0.5 feet bgs]			PID Measurement = 0 ppm		
12-	-12			Bottom of boring					=		
14-	-14				6						
1977	-17										
16-	-16										
18-	-18										
20-											

	M		CO	ħΜ		LOG OF E	BORIN	IG SI	3-1	7
		Ш		E						(Page 1 of 1)
	,		neral Mill o, Califor		Date Started Date Completed Hole Diameter Drilling Method Sampling Method	: 2/2/2006 : 2/2/2006 : 2 in. : Direct Push : Dual Tube	No Ea Su	evation orthing C asting Co urvey By ogged By	ord.	: Not Measured : N 2220413.284 : E 6059312.384 : C.S.S : M. Laugier
Depth In Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRI	PTION		nscs	GRAPHIC	REMARKS
0-1	- 0	1	НА	0-12.5 ft GRAVELLY CLA	YEY SILT					Surface Conditions - Asphait
2	2	2	12"/24"	GRAVELLY CLA stiff, (20% grave)	YEY SILT, small an , 0% sand, 80% fine	gular gravel, light brown ss)	ı, dry,	•		PiD Measurement = 0 ppn
4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4			Wet [Soil Analytical S	ample collected at 4	.5 feet bgs]				Water Table @ 4.5 ft bgs PiD Measurement = 0 ppn
6	6	3	24"/48"	Color change to	gray			FILL		DID Management - 0
8	8									PID Measurement = 0 ppm
10	10	4	30"/48"	GRAVELLY SILT gray to light gray [Soil Analytical S	with sand, small ar , wet, loose, (20% gr ample collected at 1	igular gravel, medium sa ravel, 20% sand, 60% fii 0 feet bgs]	and, nes)			
12	12			12.5-14.5 ft	dark gray to black	very soft, wet, (100% fi	2001			PID Measurement = 0 ppm
14	14	5	30"/48"		ample collected at 1		iida)	СН		PID Measurement = 0 ppm
16	16			Bottom of boring	at 16 ft bgs					
18	18									
أعسيان	.0									*

	P		CO	E						(Page 1 of 1)
	\		neral Millio, Califor	-	Date Started Date Completed Hole Diameter Drilling Method Sampling Method	: 2/2/2006 : 2/2/2006 : 2 in. : Direct Push : Dual Tube	F S	Elevation Northing Control Easting Control Survey By Logged By	ord.	: Not Measured : N 2220482.132 : E 6059379 958 : C.S.S. : M. Laugier
in Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRII	PTION		nscs	GRAPHIC	REMARKS
0+0		1	НА	0-8 ft GRAVELLY SIL	т					Surface Conditions - Asphalt
	2	2	24"/24"	GRAVELLY SIL gravel, 0% sand	SILT, small angular gravel, light brown, dry, loose, (30% and, 70% fines)					PID Measurement = 0 ppm
	6	3	24"/48"	[Soil Analytical \$	Sample collected at 4	9.5 feet bgs]		FILL		Water Table at 4.5 feet bgs PID Measurement = 0 ppm
10		4	24"/48"	9-9.5 ft, SILT wi 9.5 to 10 ft CLAY, (Bay Mud fines)	th trace rounded graved), gray, wet, soft, h	ydrogen sulfide odor, (10		FILL FILL CH	<b>Z</b>	PID Measurement = 0 ppm
12	12			[Soil Analytical S	Sample collected at 1  at 12 ft bgs	0 feet bgs]				
14	14									
16	16									
18	18									

	r			LOG OF BORI			(Page 1 of 1)
			neral Mill o, Califor	Date Completed : 2/2/2006  Hole Diameter : 2 in.  Drilling Method : Direct Push	Elevation Northing Co Easting Co Survey By Logged By	oord.	: Not Measured : N 2220575.403 : E 6059359.213 : C.S.S. : M. Laugier
Depth In Feel	Surf. Elev. NM	Coring Interval	Recov.	DESCRIPTION	nscs	GRAPHIC	REMARKS
0-	- 0	1	НА	0-8 ft GRAVELLY SILT			Surface Conditions - Asphalt
2	2	2	18"/24"	GRAVELLY SILT, small angular gravel, light brown, dry, loose, (30% gravel, 0% sand, 70% fines)			PID Measurement = 0 ppi
4	-4			with CLAY and slightly less gravel, wet, color change to gray, TPH odor, (10% gravel, 0% sand, 90% fines) [Soil analytical sample collected at 4.5 feet bgs]	FILL		Water Table at 4.5 feet by PID Measurement = 5 pp PID Measurement = 70 pp
6-	-6	3	24"/48"	[Soil analytical sample collected at 6 feet bgs]			
8 -	-8			8-12 ft SILTY GRAVEL with sand, fine angular gravel, black, wet, loose, very slight unknown odor, (55% gravel, 5% sand, 40% fines)			PID Measurement = 40 pp
10-	-10	4	18"/48"		FILL		
12	-12		400//	12-16 ft GRAVELLY SANDY SILT, medium to fine gravel, medium to coarse sand, wet, gray, soft, TPH odor, (15% gravel, 15% sand, 70% fines)			PID Measurement = 20 pp
14	-14	5	12"/48"		FILL		
18	-18	6	3"/48"	16-20.5 ft Medium gravel with wood fragments, TPH odor			PiD Measurement = 7 ppn
20-	-20			[Coil amplitical garmen collected of CO C C	FILL		
4	-	7	6"/6"	[Soil analytical sample collected at 20.5 feet bgs]  Bottom of Boring at 20.5 ft		ES.	

	ŀ	11		LOG OF BORIN			(Page 1 of 1)
			neral Mill o, Callfor	nia         Date Completed         : 2/2/2006         1           Hole Diameter         : 2 In.         6           Drilling Method         : Direct Push         5	Elevation Northing C Easting Co Survey By Logged By	oord.	: Not Measured : N 2220567.091 : E 6059280.744 : C.S.S. : M. Laugier
Depth In Feet	Surf. Elev. NM	Coring Interval	Recov.	DESCRIPTION	nscs	GRAPHIC	REMARKS
0-11111	- 0	1	НА	0-8 ft GRAVELLY SILT			Surface Conditions - Asphalt
2	2 4	2	24"/24"	GRAVELLY CLAYEY SILT, small angular gravel, light brown, dry to moist, medium stiff to loose, slight PAH odor, (20% gravel, 0% sand, 80% fines)  color change to Gray/Light Gray [Soil analytical sample collected at 4 feet bgs]	FILL		PID Measurement = 0 ppn
6	6	3	18"/48"	Wet, less gravel, strong PAH odor, (10% gravel, 0% sand, 90% fines)  [Soll analytical sample collected at 5.5 feet bgs]			Water Table at 4.5 feet bg PID Measurement ≃ 0 ppn
8	8			8-9 ft CLAY, (Bay Mud), gray, soft, slight PAH odor [Soll analytical sample collected at 9 feet bgs]	СН	//	PiD Measurement = 0 ppn
10	10	4	12"/48"				
12	12					T.	
14	14	5	0*/48"				
16	16			Bottom of boring at 16 ft bgs			
18	18						
1							

DESCRIPTION   Second   DESCRIPTION   Second   DESCRIPTION   DESCRIPTION   Second   DESCRIPTION   DESCRIPTION   Second   DESCRIPTION   DESCRI				CO					(Page 1 of 1)
O-10   1		,			a Date Completed : 2/2/2006 Hole Diameter : 2 in. Drilling Method : Direct Pusi	h	Northing Co Easting Co Survey By	ord.	: N 2220377.247 : E 6059278.071 : C.S.S
2 - 2   1	In Feet	Elev. NM	Coring Interval	Recov.	DESCRIPTION		nscs	GRAPHIC	REMARKS
GRAVELLY SILT, small angular gravel, light brown, dry, loose, (30% gravel, own sand, 70% fines)  [Soil analytical sample collected at 4 feet bgs]  10	0	- 0	1	НА					Surface Conditions - Aspha
with clay, (40% gravel, 0% sand, 60% fines)  PID Measurement = 0 gravel, own, very fine gravel, wet, very soft, black to dark gray, (10% gravel, 0% sand, 90% fines)  PID Measurement = 0 gravel, own, very soft, black to dark gray, (10% gravel, 0% sand, 90% fines)  Solid analytical sample collected at 15 feet bgs  Bottom of boring at 16 ft bgs			2	24*/24*	ravel, 0% sand, 70% fines) wet, with sand, less gravel, (15% gravel, 15% sa				PID Measurement = 0 ppm PID Measurement = 0 ppm Water Table at 4 feet bgs
very fine gravel, wet, very soft, black to dark gray, (10% gravel, 0% sand, 90% fines)  PID Measurement = 0 gravel, 0% sand, 90% fines)  1414	6	-6	3	12"/48"			FILL		*
sand, 90% fines)  14 -14   5   36"/48"  14-15 ft CLAY, (Bay Mud), dark gray, wet, very soft, (100% fines) [Soil analytical sample collected at 15 feet bgs]  Bottom of boring at 16 ft bgs			4	12"/48"	vith clay, (40% gravel, 0% sand, 60% fines)				PID Measurement = 0 ppm
14-15 ft CLAY, (Bay Mud), dark gray, wet, very soft, (100% fines) [Soil analytical sample collected at 15 feet bgs]  Bottom of boring at 16 ft bgs	12	-12			ery fine gravel, wet, very soft, black to dark gray, and, 90% fines)	(10% gravel, 0%			PID Measurement = 0 ppm
Bottom of boring at 16 ft bgs	14	-14	5	36"/48"	4-15 ft CLAY, (Bay Mud), dark gray, wet, very soft, (100% Soil analytical sample collected at 15 feet bgs]	% fines)	СН		
	16	-16			lottom of boring at 16 ft bgs				
18- <del>1</del> -18	18-	-18							÷ί

	r			LM E						(Page 1 of 1)
			eral Mill o, Califor		Date Started Date Completed Hole Diameter Drilling Method Sampling Method	: 2/2/2006 : 2/2/2006 : 2 in. : Direct Push : Dual Tube	Easti Surv	ation hing Co ing Co ey By jed By	ord.	: Not Measured : N 6059247.595 : E 6059278.071 : C.S.S. : M. Laugler
Depth in Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRII	PTION		nscs	GRAPHIC	REMARKS
0	- 0	1	НА	0-9 feet GRAVELLY SILT	7					Surface Conditions - Asphalt
2	2	2	0*/24"	GRAVELLY SILT loose, (30% grav	r, small- to medium- rel, 0% sand, 70% fi	angular gravel, brown, dr nes)	ry.			
6	4	3	12"/48"	[Soil analytical sa	ample collected at 4.	5 feet bgs]	F	FILL		PID Measurement = 0 ppn
8	-8			medium- to coars TPH odor, wet, s	se-gravel with clay, t oft, (45% gravel, 0%	prown and gray lenses wit sand, 65% fines)	h			PtD Measurement = 7 ppn
10	-10	4	18"/48"	9-12 feet	, medium- to coarse	ual product, (100% gravel 5 feet bgs] e-gravel, wet, (45% gravel	)/	FILL		
12-	-12	5	24"/42 <b>"</b>	12-14 ft SILTY GRAVEL, TPH odor, (80%	medium- to coarse- gravel, 0% sand, 20	gravel, wet, loose, very s % fines)	light F	FILL		PiD Measurement = 0 ppn
				Soil analytical s	ample collected at 1 ottom of sampler	4 feet bgs]	3 8			
16	-16			Bottom of boring	at 15.5 ft bgs, REFI	JSAL				
18	-18									

MALCOLM PIRNIE			N		LOG OF BORING SB-23 (Page 1 of 1)				
			neral Mill o, Califo		Elevation Northing C Easting C Survey By Logged By	oord.	: Not Measured		
Depth in Feet	Surf. Elev. NM	Coring Interval	Recov.	DESCRIPTION	SOS	GRAPHIC	REMARKS		
0	- 0	1	НА	0-6 feet GRAVELLY SILT			Surface Conditions - Aspha		
2-	2	2	0"/24"	rock in bottom of sampler at 4 ft	FILL				
6	4	3	12"/48"	4.5-7 feet GRAVEL, coarse gravel, wet, loose, (100% gravel) [Soil analytical sample collected at 4.5 feet bgs]	FILL		PiD Measurement = 0 ppm Water Table at 4.5 feet bgs		
8	8	4	24"/24"	7-10 feet GRAVELLY SILT  GRAVELLY SILT, small to medium gravel, gray, slight TPH odor, soft, wet, (30%, gravel, 0% sand, 70% fines)  No odor, dry [Soil analytical sample collected at 10 feet bgs]	/ery FILL		PID Measurement = 0.7 pp		
12	-12			Bottom of boring at 10 ft bgs, REFUSAL					
14-1	-14								
16	-16								
18	-18								

	M	AL IR	CO	LM E		LOG OF BOR	ING S	3-24	(Page 1 of 1)
	\		neral Mills o, Califor		Date Started Date Completed Hole Diameter Drilling Method Sampling Method	: 2/2/2006 : 2/2/2006 : 2 In. : Direct Push : Dual Tube	Elevation Northing C Easting Co Survey By Logged By	ord.	: Not Measured : N 2220577.304 : E 6059235.721 : C.S.S. : M. Laugler
Depth in Feet	Surf. Elev. NM	Coring Interval	Recov.		DESCRIF	PTION	nscs	GRAPHIC	REMARKS
	- 0	1	НА	0-4.5 feet SILT with trace g	ravel, dry to moist, t	prown, hard, (100% fines)			Surface Conditions - Soil
2-	2 4	2	12"/24"				FILL		PID Measurement = 0 ppm
6	6	3	12"/48"	gray, slight odor	with coarse SAND, of PAH, (30%, grave ample collected at 4	fine angular gravel, wet, loose al, 5% sand, 65% fines) 5 feet bgs}	FILL		PID Measurement = 0 ppm Water Table at 4.5 feet bgs
8	8			8-10 ft CLAY (Bay Mud) (100% fines)	, possible slight odd	or of PAH or Hydrogen Sulfide,	СН		PID Measurement = 0 ppm
10	10	4	24"/48"	[Soil analytical sa	ample collected at 1	0 feet bgs]			
12	12		<u> </u>	Bottom of boring	at 12 ft bgs				
14									
16	16 18								
20-									

A	P	P	E	N	$\mathbf{IL}$	П	X	$\mathbf{F}$
4			1	т.				

Soil Analytical Laboratory Reports (Preliminary Investigation)



# **ANALYTICAL REPORT**

Job Number: 720-1375-1

Job Description: General Mills

For:

Malcolm Pirnie, Inc. 2000 Powell St, Suite 1180 Emeryville, CA 94608

Attention: Ms. Maryline Laugier

Alanaf Sal D

Afsaneh Salimpour Project Manager I

asalimpour@stl-inc.com 01/24/2006

### **METHOD SUMMARY**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Description	on	Lab Location	Method		Preparation Method	
Matrix:	Solid					<u> </u>
	e Compounds by Gas Chromatography/Mass ry (GC/MS)	STL-SF	SW846	82700	;	
opeonome	Ultrasonic Extraction	STL-SF			SW846	3550B
Nonhaloger Range Orga	nated Organics using GC/FID -Modified (Gasoline	STL-SF	SW846	8015B		
rtungo Orgi	Closed System Purge & Trap/Laboratory	STL-SF			SW846	5035
Aromatic ar	nd Halogenated VOCs by Gas Chromatography	STL-SF	SW846	8021B		
	Closed System Purge & Trap/Laboratory	STL-SF			SW846	5035
Nonhaloger Range Orga	nated Organics using GC/FID -Modified (Diesel	STL-SF	SW846	8015B		
i.a.i.go Oigi	Ultrasonic Extraction	STL-SF			SW846	3550B

#### LAB REFERENCES:

STL-SF = STL-San Francisco

#### **METHOD REFERENCES:**

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

# METHOD / ANALYST SUMMARY

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Method	Analyst	Analyst ID
SW846 8270C	Zhao, June	JZ
SW846 8015B	Sakaki, Liz	LS
SW846 8021B	Sakaki, Liz	LS
SW846 8015B	Ho, Sonia	SO

# **SAMPLE SUMMARY**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-1375-1	MP-5-5	Solid	01/06/2006 1445	01/09/2006 1730
720-1375-2	MP-4-5	Solid	01/07/2006 0830	01/09/2006 1730

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Client Sample ID:

MP-5-5

Lab Sample ID:

720-1375-1

Client Matrix:

Solid

Date Sampled:

01/06/2006 1445

Date Received:

01/09/2006 1730

#### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

8270C

Analysis Batch: 720-4391

Instrument ID:

Sat 2K1

Preparation:

3550B

Prep Batch: 720-4156

Lab File ID:

d:\data\200601\011206\720-

Dilution:

1.0

Initial Weight/Volume:

30.20 g

Date Analyzed:

01/12/2006 1545

Final Weight/Volume:

1 mL

Date Prepared: 01/11/2006 0608 Injection Volume:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Naphthalene		ND		0.067
Acenaphthylene		ND		0.067
Acenaphthene		ND		0.067
Fluorene		ND		0.067
Phenanthrene		ND		0.067
Anthracene		ND		0.067
Fluoranthene		ND		0.067
Pyrene		ND		0.067
Benzo[a]anthracene		ND		0.067
Chrysene		ND		0.067
Benzo[b]fluoranthene		ND		0.067
Benzo[k]fluoranthene		ND		0.067
Benzo[a]pyrene		ND		0.067
Indeno[1,2,3-cd]pyrene		ND		0.067
Benzo[q,h,i]perylene		ND		0.067
2-Methylnaphthalene		ND		0.067
Dibenz(a,h)anthracene		ND		0.67
Surrogate		%Rec		Acceptance Limits
Nitrobenzene-d5		71		23 - 120
2-Fluorobiphenyl		72		30 - 115
Terphenyl-d14		80		18 - 137

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Client Sample ID:

MP-4-5

Lab Sample ID:

720-1375-2

01/11/2006 0608

Client Matrix:

Solid

Date Sampled:

01/07/2006 0830

Date Received:

01/09/2006 1730

#### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

8270C

Analysis Batch: 720-4391

Instrument ID:

Preparation:

3550B

Prep Batch: 720-4156

Lab File ID:

d:\data\200601\011206\720-

Dilution:

1.0

30.31 g

Date Analyzed: Date Prepared: 01/12/2006 1613

Initial Weight/Volume: Final Weight/Volume: 1 mL

Injection Volume:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Naphthalene		ND		0.066
Acenaphthylene		ND		0.066
Acenaphthene		ND		0.066
Fluorene		ND		0.066
Phenanthrene		ND		0.066
Anthracene		ND		0.066
Fluoranthene		ND		0.066
Pyrene		ND		0.066
Benzo[a]anthracene		ND		0.066
Chrysene		ND		0.066
Benzo[b]fluoranthene		ND		0.066
Benzo[k]fluoranthene		ND		0.066
Benzo[a]pyrene		ND		0.066
Indeno[1,2,3-cd]pyrene		ND		0.066
Benzo[g,h,i]perylene		ND		0.066
2-Methylnaphthalene		ND		0.066
Dibenz(a,h)anthracene		ND		0.66
Surrogate		%Rec		Acceptance Limits
Nitrobenzene-d5		71		23 - 120
2-Fluorobiphenyl		72		30 - 115
Terphenyl-d14		70		18 - 137

Client: Malcolm Pirnie, Inc. Job Number: 720-1375-1

Client Sample ID:

MP-5-5

Lab Sample ID:

720-1375-1

Client Matrix:

Solid

Date Sampled:

01/06/2006 1445

Date Received:

01/09/2006 1730

#### 8015B Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Method:

Analysis Batch: 720-4667

Instrument ID:

Preparation:

5035

Prep Batch: 720-4664

1.0

Lab File ID:

N/A

Dilution:

Initial Weight/Volume:

Final Weight/Volume:

2.46 g 10 mL

Date Analyzed:

Injection Volume: Column ID:

**PRIMARY** 

Date Prepared:

01/20/2006 1335 01/20/2006 1331

Result (mg/Kg)

DryWt Corrected: N Analyte Gasoline Range Organics (GRO)-C6-C10

ND

Qualifier

RL 8.3

Surrogate 4-Bromofluorobenzene %Rec 56

Acceptance Limits 58 - 124

Client: Malcolm Pirnie, Inc. Job Number: 720-1375-1

Client Sample ID: MP-4-5

Lab Sample ID:

720-1375-2

Client Matrix:

Solid

Date Sampled:

01/07/2006 0830

Date Received:

01/09/2006 1730

#### 8015B Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Method:

Analysis Batch: 720-4667

Instrument ID:

Preparation:

5035

Prep Batch: 720-4664

N/A

Dilution:

1.0

Lab File ID:

Initial Weight/Volume:

Final Weight/Volume:

2.50 g 10 mL

Date Analyzed: Date Prepared: 01/20/2006 1335 01/20/2006 1331

Injection Volume: Column ID:

**PRIMARY** 

DryWt Corrected: N Analyte Gasoline Range Organics (GRO)-C6-C10

ND

Result (mg/Kg)

Qualifier

RL 8.0

Surrogate %Rec 4-Bromofluorobenzene 8

Acceptance Limits 58 - 124

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Client Sample ID:

MP-5-5

Lab Sample ID:

720-1375-1

Client Matrix:

Solid

Date Sampled:

01/06/2006 1445

Date Received:

01/09/2006 1730

#### 8021B Aromatic and Halogenated VOCs by Gas Chromatography using PID or ECD

Method:

Analysis Batch: 720-4661

Instrument ID:

GC 5

Preparation:

5035

N/A

Dilution:

1.0

Prep Batch: 720-4660

Lab File ID:

Initial Weight/Volume:

2.46 g 10 mL

Date Analyzed: Date Prepared: 01/20/2006 1314 01/20/2006 1301

Final Weight/Volume: Injection Volume:

Column ID:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Benzene		ND		0.041
Toluene		ND		0.041
Ethylbenzene		ND		0.041
Xylenes, Total		ND		0.041
Surrogate		%Rec		Acceptance Limits
a,a,a-Trifluorotoluene (pid)		76		58 - 124
4-Bromofluorobenzene		64	58 - 124	

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Client Sample ID:

MP-4-5

Lab Sample ID:

720-1375-2

Client Matrix:

Solid

Date Sampled:

01/07/2006 0830

Date Received:

01/09/2006 1730

### 8021B Aromatic and Halogenated VOCs by Gas Chromatography using PID or ECD

Method:

8021B

Analysis Batch: 720-4661

Instrument ID:

GC 5

Preparation:

5035

Prep Batch: 720-4660

Dilution:

1.0

Lab File ID:

N/A

Initial Weight/Volume:

Final Weight/Volume:

2.5 g 10 mL

Date Analyzed: Date Prepared: 01/20/2006 1314 01/20/2006 1301

Injection Volume: Column ID:

Analyte	DryWt Corrected: N Result (mg/Kg	) Qualifier	RL
Benzene	ND		0.040
Toluene	ND		0.040
Ethylbenzene	ND		0.040
Xylenes, Total	ND		0.040
Surrogate	%Rec		Acceptance Limits
a,a,a-Trifluorotoluene (pid)	75		58 - 124
4-Bromofluorobenzene	82		58 - 124

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Client Sample ID:

MP-5-5

Lab Sample ID:

720-1375-1

Client Matrix:

Solid

Date Sampled:

01/06/2006 1445

Date Received:

01/09/2006 1730

#### 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:

8015B

Analysis Batch: 720-4252

Instrument ID:

HP DRO3

Preparation:

3550B

N/A

Dilution:

1.0

Prep Batch: 720-4155

Lab File ID:

Date Analyzed:

Initial Weight/Volume:

Final Weight/Volume:

30.30 g 5 mL

Date Prepared:

01/12/2006 1322 01/11/2006 0531

Injection Volume: Column ID:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]	5.1		0.99	
Motor Oil Range Organics [C24-C3	36]	63		50
Surrogate		%Rec		Acceptance Limits
o-Terphenyl		86		60 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Client Sample ID:

MP-4-5

Lab Sample ID:

720-1375-2

Client Matrix:

Solid

Date Sampled:

01/07/2006 0830

Date Received:

01/09/2006 1730

#### 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:

8015B

Analysis Batch: 720-4252

Instrument ID:

HP DRO3

Preparation:

3550B

Prep Batch: 720-4155

Dilution:

o-Terphenyl

1.0

Lab File ID:

N/A

Date Analyzed:

Initial Weight/Volume:

Final Weight/Volume:

30.27 g 5 mL

Date Prepared:

01/11/2006 2028 01/11/2006 0531

Injection Volume: Column 1D:

**PRIMARY** 

Qualifier DryWt Corrected: N Result (mg/Kg) RL Analyte Diesel Range Organics [C10-C28] ND 0.99 ND Motor Oil Range Organics [C24-C36] 50 %Rec Acceptance Limits Surrogate 60 - 130

68

# **DATA REPORTING QUALIFIERS**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Lab Section	Qualifier	Description
GC VOA		
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits

Client: Malcolm Pirnie, Inc. Job Number: 720-1375-1

Method Blank - Batch: 720-4156 Method: 8270C Preparation: 3550B

Lab Sample ID: MB 720-4156/1-A Analysis Batch: 720-4391 Instrument ID: Sat 2K1

Client Matrix: Solid Prep Batch: 720-4156 Lab File ID: d:\data\200601\011206\mb

Dilution: 1.0 Units: mg/Kg Initial Weight/Volume: 30.11 g
Date Analyzed: 01/12/2006 1423 Final Weight/Volume: 1 mL

Date Prepared: 01/11/2006 0608 Injection Volume:

Analyte	Result	Qual	RL
Naphthalene	ND		0.067
Acenaphthylene	ND		0.067
Acenaphthene	ND		0.067
Fluorene	ND		0.067
Phenanthrene	ND		0.067
Anthracene	ND		0.067
Fluoranthene	ND		0.067
Pyrene	ND		0.067
Benzo[a]anthracene	ND		0.067
Chrysene	ND		0.067
Benzo[b]fluoranthene	ND		0.067
Benzo[k]fluoranthene	ND		0.067
Benzo[a]pyrene	ND		0.067
Indeno[1,2,3-cd]pyrene	ND		0.067
Benzo[g,h,i]perylene	ND		0.067
2-Methylnaphthalene	ND		0.067
Dibenz(a,h)anthracene	ND		0.67
Surrogate	% Rec	Acceptance Limits	
Nitrobenzene-d5	73	23 - 120	
2-Fluorobiphenyl	80	30 - 115	
Terphenyl-d14	76	18 - 137	

Client: Malcolm Pirnie, Inc. Job Number: 720-1375-1

**Laboratory Control/** 

Laboratory Control Duplicate Recovery Report - Batch: 720-4156

Method: 8270C Preparation: 3550B

LCS Lab Sample ID: LCS 720-4156/2-A

Client Matrix:

Solid

Dilution: 1.0

Date Analyzed: Date Prepared:

01/12/2006 1449 01/11/2006 0608 Analysis Batch: 720-4391 Prep Batch: 720-4156

Units: mg/Kg

Instrument ID: Sat 2K1

Lab File ID: d:\data\200601\011206\LC:

30.36 g Initial Weight/Volume: Final Weight/Volume: 1 mL

Injection Volume:

LCSD Lab Sample ID: LCSD 720-4156/3-A

Client Matrix: Dilution:

Solid 1.0

Date Analyzed: Date Prepared:

01/12/2006 1517 01/11/2006 0608 Analysis Batch: 720-4391 Prep Batch: 720-4156

Units: mg/Kg

Instrument ID: Sat 2K1

Lab File ID: d:\data\200601\011206\LCS

Initial Weight/Volume: 30.20 g Final Weight/Volume: 1 mL

Injection Volume:

	(	<u>% Rec.</u>					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Naphthalene	80	85	21 - 133	7	35		
Acenaphthylene	94	94	33 - 145	0	35		
Acenaphthene	81	82	47 - 145	2	35		
Fluorene	88	91	59 - 121	3	35		
Phenanthrene	105	102	10 - 130	2	35		
Anthracene	97	94	27 - 133	2	35		
Fluoranthene	98	96	26 - 137	1	35		
Pyrene	112	109	52 - 115	2	35		
Benzo[a]anthracene	93	100	33 - 143	8	35		
Chrysene	112	110	17 - 168	1	35		
Benzo[b]fluoranthene	114	123	24 - 159	8	35		
Benzo[k]fluoranthene	112	92	11 - 162	19	35		
Benzo[a]pyrene	111	108	17 - 163	2	35		
Indeno[1,2,3-cd]pyrene	114	110	9 - 171	3	35		
Benzo[g,h,i]perylene	119	111	9 - 219	7	35		
2-Methylnaphthalene	91	94	10 - 130	4	35		
Dibenz(a,h)anthracene	122	118	10 - 130	3	35		
Surrogate	I	LCS % Rec	LCSD %	Rec	Accep	otance Limits	3
Nitrobenzene-d5	-	75	76		2	3 - 120	
2-Fluorobiphenyl	1	32	74		3	0 - 115	
Terphenyl-d14		83	95		1	8 - 137	

Client: Malcolm Pirnie, Inc. Job Number: 720-1375-1

Method Blank - Batch: 720-4664 Method: 8015B Preparation: 5035

Lab Sample ID: MB 720-4664/1-A Analysis Batch: 720-4667 Instrument ID: GC 5
Client Matrix: Solid Prep Batch: 720-4664 Lab File ID: N/A

Dilution: 1.0 Units: mg/Kg Initial Weight/Volume: 5 g
Date Analyzed: 01/20/2006 1335 Final Weight/Volume: 10 mL

Date Prepared: 01/20/2006 1331 Injection Volume:

Column ID: PRIMARY

Analyte Result Qual RL
Gasoline Range Organics (GRO)-C6-C10 ND 2.0

Surrogate % Rec Acceptance Limits

4-Bromofluorobenzene 80 58 - 124

Laboratory Control/ Method: 8015B
Laboratory Control Duplicate Recovery Report - Batch: 720-4664 Preparation: 5035

LCS Lab Sample ID: LCS 720-4664/2-A Analysis Batch: 720-4667 Instrument ID: GC 5
Client Matrix: Solid Prep Batch: 720-4664 Lab File ID: N/A

Dilution: 1.0 Units: mg/Kg Initial Weight/Volume: 5 g
Date Analyzed: 01/20/2006 1335 Final Weight/Volume: 10 mL

Date Prepared: 01/20/2006 1331 Injection Volume:

Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 720-4664/3-A Analysis Batch: 720-4667 Instrument ID: GC 5

Client Matrix: Solid Prep Batch: 720-4664 Lab File ID: N/A
Dilution: 1.0 Units: mg/Kg Initial Weight/Volume: 5 g

 Date Analyzed:
 01/20/2006 1335
 Final Weight/Volume:
 10 mL

 Date Prepared:
 01/20/2006 1331
 Injection Volume:

Date Prepared: 01/20/2006 1331 Injection Volume: Column ID: PRIMARY

% Rec.

Analyte LCS LCSD Limit **RPD** RPD Limit LCS Qual LCSD Qual Gasoline Range Organics (GRO)-C6-C10 107 75 - 125 5 35 112 Surrogate LCS % Rec LCSD % Rec Acceptance Limits 4-Bromofluorobenzene 95 92 58 - 124

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Malcolm Pirnie, Inc.

Job Number: 720-1375-1

Method Blank - Batch: 720-4660

Method: 8021B Preparation: 5035

Lab Sample ID: MB 720-4660/1-A

Client Matrix:

Solid Dilution: 1.0

Date Analyzed: 01/20/2006 1314 Date Prepared: 01/20/2006 1301 Analysis Batch: 720-4661 Prep Batch: 720-4660

Units: mg/Kg

Instrument ID: GC 5 Lab File ID: N/A

Initial Weight/Volume: 5 g Final Weight/Volume: 10 mL

Injection Volume:

Column ID:

**PRIMARY** 

Analyte	Result	Qual	RL
Benzene	ND		0.010
Toluene	ND		0.010
Ethylbenzene	ND		0.010
Xylenes, Total	ND		0.010
Surrogate	% Rec	Acceptance Limits	
a,a,a-Trifluorotoluene (pid)	100	58 - 124	
4-Bromofluorobenzene	91	58 - 124	

**Laboratory Control/** 

Laboratory Control Duplicate Recovery Report - Batch: 720-4660

Method: 8021B Preparation: 5035

LCS Lab Sample ID: LCS 720-4660/4-A

Client Matrix:

Dilution:

Date Analyzed:

Date Prepared:

Solid 1.0

01/20/2006 1314 01/20/2006 1301 Analysis Batch: 720-4661 Prep Batch: 720-4660

Units: mg/Kg

Instrument ID: GC 5 Lab File ID: N/A

Initial Weight/Volume: Final Weight/Volume:

Injection Volume:

Column ID:

**PRIMARY** 

5 g

10 mL

LCSD Lab Sample ID: LCSD 720-4660/5-A

Client Matrix: Dilution:

Solid

Date Analyzed: Date Prepared:

1.0

01/20/2006 1314 01/20/2006 1301 Analysis Batch: 720-4661 Prep Batch: 720-4660

Units: mg/Kg

Instrument ID: GC 5 Lab File ID: N/A

Initial Weight/Volume: 5 g Final Weight/Volume: 10 mL

Injection Volume:

Column ID:

**PRIMARY** 

	<u>9</u>	<u> 6 Rec.</u>					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	91	93	77 - 123	2	35		
Toluene	96	99	78 - 122	3	35		
Ethylbenzene	97	99	70 - 130	2	35		
Xylenes, Total	96	98	75 - 125	3	35		
Surrogate	L	CS % Rec	LCSD %	Rec	Accep	tance Limits	
a,a,a-Trifluorotoluene (pid)	1	01	101		5	8 - 124	
4-Bromofluorobenzene	9	4	94		5	8 - 124	

Calculations are performed before rounding to avoid round-off errors in calculated results.

60 - 130

Client: Malcolm Pirnie, Inc. Job Number: 720-1375-1

Method Blank - Batch: 720-4155 Method: 8015B Preparation: 3550B

Lab Sample ID: MB 720-4155/1-A Analysis Batch: 720-4252 Instrument ID: HP DRO3

Client Matrix: Solid Prep Batch: 720-4155 Lab File ID: N/A
Dilution: 1.0 Units: mg/Kg Initial Weight/Volume: 30.22 g

Date Analyzed: 01/11/2006 1428 Final Weight/Volume: 5 mL

Date Prepared: 01/11/2006 0531 Injection Volume: Column ID: PRIMARY

 Analyte
 Result
 Qual
 RL

 Diesel Range Organics [C10-C28]
 ND
 0.99

 Motor Oil Range Organics [C24-C36]
 ND
 50

 Surrogate
 % Rec
 Acceptance Limits

o-Torobonyl 60 60 130

o-Terphenyl 69 60 - 130

Laboratory Control/ Method: 8015B
Laboratory Control Duplicate Recovery Report - Batch: 720-4155 Preparation: 3550B

LCS Lab Sample ID: LCS 720-4155/2-A Analysis Batch: 720-4252 Instrument ID: HP DRO3

Client Matrix: Solid Prep Batch: 720-4155 Lab File ID: N/A

Dilution: 1.0 Units: mg/Kg Initial Weight/Volume: 30.12 g
Date Analyzed: 01/11/2006 1333 Final Weight/Volume: 5 mL

Date Prepared: 01/11/2006 0531 Injection Volume:

Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 720-4155/3-A Analysis Batch: 720-4252 Instrument ID: HP DRO3

Client Matrix: Solid Prep Batch: 720-4155 Lab File ID: N/A

75

Dilution: 1.0 Units:mg/Kg Initial Weight/Volume: 30.27 g
Date Analyzed: 01/11/2006 1401 Final Weight/Volume: 5 mL

Date Prepared: 01/11/2006 0531 Injection Volume: Column ID: PRIMARY

% Rec. LCS **LCSD** Limit **RPD** RPD Limit LCS Qual LCSD Qual Analyte Diesel Range Organics [C10-C28] 71 76 60 - 130 6 30 LCSD % Rec Surrogate LCS % Rec Acceptance Limits

75

Calculations are performed before rounding to avoid round-off errors in calculated results.

o-Terphenyl

SEVERN	C		T
TRENT	0	4	

STL San Francisco Chain of Custody

Reference #: 300066

Date 1 07/06 Page 1 of 1 Analysis Request Report To 8020(2) AIIN MARYLINE LAUGIER 0 CI 0 SO, 0 NO, 0 F 1.0.w Level Metals by EPA 200 8/5020 (ICP-MS) Metals O Lead O LUFT O RCRA O Atkalınıty TEPH EPA 8015M" | Saica Gel Votatile Organics GC/MS (VOCs) COMPANY MALLOLM PIRNIE TPH EPA - O 8015/8021 C 82608 O Gas w O BTEX C MTBE Oil and Grease Detroleurn (EPA 1654) Ditotal **X** 8270 CD 8310 Purgeable Halocarbons (HVOCs) EPA 8021 by 82608 Purgeable Aromatics BTEX EPA - © 8021 © 82609 Pesticides D EPA 6081 PCBs D EPA 8082 Address Semivolatiles GC/MS CI EPA 8270 © 625 Phone Spec Cond ISS Email Sampled By VOCS PNAs by Aitn Phone 00 00 00 Date Time Mat Pres Sample ID ... 1/6/06/1445 500 MARKEDAM 1/7/06 830 501 3) Relinquished by: 1) Relinquished by Sample Receipt Project Info. Project Name # of Containers Time Signature Properti Head Space Date Printed Name PO# MALCOLM PIRNIE Company Conforms to record Credit Card# 1 3) Received by 24h Other Time Signature Report D Routine D Level 3 D Level 4 D EDD M State Tank Fund EDF ☐ Grobal ID \_1 Special Instructions / Comments will be given Date Printed Name Company Pev [\$404 \*STU SF reports 8015M from C<sub>5</sub>-C<sub>74</sub> (industry norm). Defaul for 8015B is C<sub>10</sub>-C<sub>20</sub>

## LOGIN SAMPLE RECEIPT CHECK LIST

Client: Malcolm Pirnie, Inc. Job Number: 720-1375-1

Login Number: 1375

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present, is intact.	NA	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

# **ANALYTICAL REPORT**

Job Number: 720-1376-1

Job Description: Generial Mills

For:

Malcolm Pirnie, Inc. 2000 Powell St, Suite 1180 Emeryville, CA 94608

Attention: Ms. Maryline Laugier

Afsaneh Salimpour
Project Manager I
asalimpour@stl-inc.com

Alenaf Sal D

01/24/2006

## **METHOD SUMMARY**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Description	on	Lab Location	Method	<b>Preparation Method</b>
Matrix:	Solid			
	e Compounds by Gas Chromatography/Mass	STL-SF	SW846 827	0C
-р	Ultrasonic Extraction	STL-SF		SW846 3550B
Nonhalogei Range Org	nated Organics using GC/FID -Modified (Gasoline	STL-SF	SW846 801	5B
	Closed System Purge & Trap/Laboratory	STL-SF		SW846 5035
Aromatic ar	nd Halogenated VOCs by Gas Chromatography	STL-SF	SW846 802	1B
<b>3</b>	Closed System Purge & Trap/Laboratory	STL-SF		SW846 5035
Nonhalogei Range Org	nated Organics using GC/FID -Modified (Diesel	STL-SF	SW846 801	5B
	Ultrasonic Extraction	STL-SF		SW846 3550B

#### LAB REFERENCES:

STL-SF = STL-San Francisco

### **METHOD REFERENCES:**

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

# METHOD / ANALYST SUMMARY

Client: Malcolm Pirnie, Inc. Job Number: 720-1376-1

Method	Analyst	Analyst ID
SW846 8270C	Zhao, June	JZ
SW846 8015B	Sakaki, Liz	LS
SW846 8021B	Sakaki, Liz	LS
SW846 8015B	Ho, Sonia	SO

# **SAMPLE SUMMARY**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-1376-1	MP-2-5	Solid	01/09/2006 1420	01/10/2006 1305
720-1376-2	MP-3-4.5	Solid	01/09/2006 1615	01/10/2006 1305
720-1376-3	MP-1-4.5	Solid	01/09/2006 1635	01/10/2006 1305

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Client Sample ID:

MP-2-5

Lab Sample ID:

720-1376-1

Client Matrix:

Solid

Date Sampled:

01/09/2006 1420

Date Received:

01/10/2006 1305

#### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

Analysis Batch: 720-4391

Instrument ID:

Preparation:

Date Prepared:

3550B

Prep Batch: 720-4156

Lab File ID:

d:\data\200601\011206\720-

Dilution:

1.0

30.13 g

Date Analyzed:

Initial Weight/Volume:

1 mL

01/12/2006 1642 01/11/2006 0608

Final Weight/Volume: Injection Volume:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Naphthalene		ND		0.067
Acenaphthylene		ND		0.067
Acenaphthene		ND		0.067
Fluorene		ND		0.067
Phenanthrene		ND		0.067
Anthracene		ND		0.067
Fluoranthene		ND		0.067
Pyrene		ND		0.067
Benzo[a]anthracene		ND		0.067
Chrysene		ND		0.067
Benzo[b]fluoranthene		ND		0.067
Benzo[k]fluoranthene		ND		0.067
Benzo[a]pyrene		ND		0.067
Indeno[1,2,3-cd]pyrene		ND		0.067
Benzo[g,h,i]perylene		ND		0.067
2-Methylnaphthalene		ND		0.067
Dibenz(a,h)anthracene		ND		0.67
Surrogate		%Rec		Acceptance Limits
Nitrobenzene-d5		67		23 - 120
2-Fluorobiphenyl		81		30 - 115
Terphenyl-d14		83		18 - 137

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Client Sample ID:

MP-3-4.5

Lab Sample ID:

720-1376-2

Client Matrix:

Solid

Date Sampled:

01/09/2006 1615

Date Received:

01/10/2006 1305

#### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

8270C

Analysis Batch: 720-4391

Instrument ID:

Sat 2K1

30 - 115

18 - 137

Preparation:

3550B

Prep Batch: 720-4156

Lab File ID:

d:\data\200601\011206\720-

Dilution:

1.0

Initial Weight/Volume:

30.23 g

Date Analyzed:

Final Weight/Volume: Injection Volume:

1 mL

Date Prepared:

2-Fluorobiphenyl

Terphenyl-d14

01/12/2006 1709 01/11/2006 0608

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Naphthalene		ND		0.066
Acenaphthylene		ND		0.066
Acenaphthene		ND		0.066
Fluorene		ND		0.066
Phenanthrene		0.14		0.066
Anthracene		ND		0.066
Fluoranthene		0.13		0.066
Pyrene		0.15		0.066
Benzo[a]anthracene		ND		0.066
Chrysene		0.077		0.066
Benzo[b]fluoranthene		0.11		0.066
Benzo[k]fluoranthene		ND		0.066
Benzo[a]pyrene		0.12		0.066
Indeno[1,2,3-cd]pyrene		0.082		0.066
Benzo[g,h,i]perylene		0.074		0.066
2-Methylnaphthalene		ND		0.066
Dibenz(a,h)anthracene		ND		0.66
Surrogate		%Rec		Acceptance Limits
Nitrobenzene-d5		81		23 - 120

83

78

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Client Sample ID:

MP-1-4.5

Lab Sample ID:

720-1376-3

Client Matrix:

Solid

Date Sampled:

01/09/2006 1635

Date Received:

01/10/2006 1305

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

Analysis Batch: 720-4391

Instrument ID:

Preparation:

3550B

Dilution:

1.0

Prep Batch: 720-4156

Lab File ID:

d:\data\200601\011206\720-

Initial Weight/Volume:

30.15 g 1 mL

Date Analyzed: Date Prepared: 01/12/2006 1736 01/11/2006 0608

Injection Volume:

Final Weight/Volume:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Naphthalene		ND		0.067
Acenaphthylene		ND		0.067
Acenaphthene		ND		0.067
Fluorene		ND		0.067
Phenanthrene		ND		0.067
Anthracene		ND		0.067
Fluoranthene		ND		0.067
Pyrene		ND		0.067
Benzo[a]anthracene		ND		0.067
Chrysene		ND		0.067
Benzo[b]fluoranthene		ND		0.067
Benzo[k]fluoranthene		ND		0.067
Benzo[a]pyrene		ND		0.067
Indeno[1,2,3-cd]pyrene		ND		0.067
Benzo[g,h,i]perylene		ND		0.067
2-Methylnaphthalene		ND		0.067
Dibenz(a,h)anthracene		ND		0.67
Surrogate		%Rec		Acceptance Limits
Nitrobenzene-d5		79		23 - 120
2-Fluorobiphenyl		79		30 - 115
Terphenyl-d14		76		18 - 137

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

**Client Sample ID:** 

MP-2-5

Lab Sample ID:

720-1376-1

Client Matrix:

Solid

Date Sampled:

01/09/2006 1420

Date Received:

01/10/2006 1305

#### 8015B Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Method: Preparation:

Dilution:

5035

1.0

Date Analyzed: Date Prepared: 01/20/2006 1335

01/20/2006 1301

Analysis Batch: 720-4667

Prep Batch: 720-4660

Instrument ID:

GC 5 N/A

Lab File ID:

Initial Weight/Volume: Final Weight/Volume:

Injection Volume:

Column ID:

**PRIMARY** 

Analyte

DryWt Corrected: N

Result (mg/Kg)

Qualifier

RL

Gasoline Range Organics (GRO)-C6-C10

ND

1.0

Surrogate

%Rec

Acceptance Limits 58 - 124

4-Bromofluorobenzene

87

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Client Sample ID:

MP-3-4.5

Lab Sample ID:

720-1376-2

01/20/2006 1335

01/20/2006 1301

Client Matrix:

Solid

Date Sampled:

01/09/2006 1615

Date Received:

01/10/2006 1305

#### 8015B Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Method:

8015B

Analysis Batch: 720-4667

Instrument ID:

GC 5

Preparation:

5035

Prep Batch: 720-4660

Lab File ID:

N/A

Dilution: Date Analyzed: 1.0

Initial Weight/Volume: Final Weight/Volume:

Injection Volume: Column ID:

**PRIMARY** 

Date Prepared:

DryWt Corrected: N

Result (mg/Kg)

Qualifier

RL

Gasoline Range Organics (GRO)-C6-C10

ND

1.0

Surrogate

Analyte

%Rec

Acceptance Limits

4-Bromofluorobenzene

59

58 - 124

Client: Malcolm Pirnie, Inc. Job Number: 720-1376-1

Instrument ID:

N/A

Lab File ID:

Client Sample ID: MP-1-4.5

 Lab Sample ID:
 720-1376-3
 Date Sampled:
 01/09/2006 1635

 Client Matrix:
 Solid
 Date Received:
 01/10/2006 1305

8015B Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

 Method:
 8015B
 Analysis Batch: 720-4667

 Preparation:
 5035
 Prep Batch: 720-4660

Dilution: 1.0 Initial Weight/Volume:

Date Analyzed: 01/20/2006 1335 Final Weight/Volume:

Date Prepared: 01/20/2006 1301 Injection Volume:

Column ID: PRIMARY

Analyte DryWt Corrected: N Result (mg/Kg) Qualifier RL

Gasoline Range Organics (GRO)-C6-C10 ND 1.0

Surrogate %Rec Acceptance Limits

4-Bromofluorobenzene 64 58 - 124

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Client Sample ID:

MP-2-5

Lab Sample ID:

720-1376-1

Client Matrix:

Solid

Date Sampled:

01/09/2006 1420

Date Received:

01/10/2006 1305

### 8021B Aromatic and Halogenated VOCs by Gas Chromatography using PID or ECD

Method:

Analysis Batch: 720-4661

Instrument ID:

GC 5

Preparation:

5035

Dilution:

1.0

Prep Batch: 720-4660

Lab File ID: Initial Weight/Volume:

N/A

01/20/2006 1314 Date Analyzed: Date Prepared: 01/20/2006 1301

Final Weight/Volume: Injection Volume:

Column ID:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL	
Benzene		ND		0.0050	
Toluene		ND	0.0050		
Ethylbenzene		ND		0.0050	
Xylenes, Total		ND		0.0050	
Surrogate		%Rec		Acceptance Limits	
a,a,a-Trifluorotoluene (pid)		81		58 - 124	
4-Bromofluorobenzene		84		58 - 124	

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Client Sample ID:

MP-3-4.5

Lab Sample ID:

720-1376-2

Client Matrix:

Solid

Date Sampled:

01/09/2006 1615

Date Received:

01/10/2006 1305

#### 8021B Aromatic and Halogenated VOCs by Gas Chromatography using PID or ECD

Method:

8021B 5035

01/20/2006 1301

Analysis Batch: 720-4661

Instrument ID:

GC 5

Preparation:

Date Prepared:

1.0

Prep Batch: 720-4660

N/A

Dilution:

Lab File ID:

Date Analyzed:

01/20/2006 1314

Initial Weight/Volume: Final Weight/Volume:

Injection Volume:

Column ID:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Benzene		ND		0.0051
Toluene		ND		0.0051
Ethylbenzene		ND		0.0051
Xylenes, Total		ND		0.0051
Surrogate		%Rec		Acceptance Limits
a,a,a-Trifluorotoluene (pid)		75		58 - 124
4-Bromofluorobenzene		60		58 - 124

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Client Sample ID:

MP-1-4.5

Lab Sample ID:

720-1376-3

01/20/2006 1314

01/20/2006 1301

Client Matrix:

Solid

Date Sampled:

01/09/2006 1635

Date Received:

01/10/2006 1305

### 8021B Aromatic and Halogenated VOCs by Gas Chromatography using PID or ECD

Method:

8021B

Analysis Batch: 720-4661

Instrument ID:

Preparation:

Date Prepared:

5035

N/A

Prep Batch: 720-4660

Lab File ID:

Dilution: Date Analyzed: 1.0

Initial Weight/Volume:

Final Weight/Volume: Injection Volume:

Column ID:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Benzene		ND		0.0051
Toluene		ND		0.0051
Ethylbenzene		ND		0.0051
Xylenes, Total		ND		0.0051
Surrogate	%Rec			Acceptance Limits
a,a,a-Trifluorotoluene (pid)		84		58 - 124
4-Bromofluorobenzene		70		58 - 124

## **Analytical Data**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Client Sample ID:

MP-2-5

Lab Sample ID:

720-1376-1

Client Matrix:

Solid

Date Sampled:

01/09/2006 1420

Date Received: 01/10/2006 1305

## 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:

Analysis Batch: 720-4252

Instrument ID:

HP DRO3

Preparation:

3550B

N/A

Dilution:

1.0

Prep Batch: 720-4155

Lab File ID:

Date Analyzed:

Initial Weight/Volume: Final Weight/Volume:

30.40 g 5 mL

Date Prepared:

01/11/2006 2246 01/11/2006 0531

Injection Volume: Column ID:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		ND		0.99
Motor Oil Range Organics [C24-C3	86]	ND		49
Surrogate		%Rec		Acceptance Limits
o-Terphenyl		69		60 - 130

## **Analytical Data**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Client Sample ID:

MP-3-4.5

Lab Sample ID:

720-1376-2

Client Matrix:

Solid

Date Sampled:

01/09/2006 1615

Date Received:

01/10/2006 1305

# 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:

8015B

Analysis Batch: 720-4252

Instrument ID:

HP DRO3

Preparation:

3550B

Prep Batch: 720-4155

Dilution:

1.0

Lab File ID:

N/A

Date Analyzed: Date Prepared:

Initial Weight/Volume:

Final Weight/Volume:

30.09 g 5 mL

01/11/2006 2341 01/11/2006 0531

Injection Volume: Column ID:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		2.6		1.0
Motor Oil Range Organics [C24-C3	86]	ND		50
Surrogate		%Rec		Acceptance Limits
o-Terphenyl		72		60 - 130

# **Analytical Data**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Client Sample ID:

MP-1-4.5

Lab Sample ID:

720-1376-3

Client Matrix:

Solid

Date Sampled:

01/09/2006 1635

Date Received:

01/10/2006 1305

## 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:

8015B

Analysis Batch: 720-4252

Instrument ID:

HP DRO3

Preparation:

3550B

Prep Batch: 720-4155

N/A

Dilution:

1.0

Lab File ID:

Initial Weight/Volume: 30.33 g

Date Analyzed:

01/12/2006 1158

Final Weight/Volume: Injection Volume:

5 mL

Date Prepared:

01/11/2006 0531

Column ID:

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		4.4		0.99
Motor Oil Range Organics [C24-C3	36]	ND		49
Surrogate		%Rec		Acceptance Limits
o-Terphenyl		86		60 - 130

# **DATA REPORTING QUALIFIERS**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits

Client: Malcolm Pirnie, Inc. Job Number: 720-1376-1

Method Blank - Batch: 720-4156 Method: 8270C Preparation: 3550B

Lab Sample ID: MB 720-4156/1-A Analysis Batch: 720-4391 Instrument ID: Sat 2K1

Client Matrix: Solid Prep Batch: 720-4156 Lab File ID: d:\data\200601\011206\mb

Dilution: 1.0 Units: mg/Kg Initial Weight/Volume: 30.11 g
Date Analyzed: 01/12/2006 1423 Final Weight/Volume: 1 mL

Date Prepared: 01/11/2006 0608 Injection Volume:

Analyte	Result	Qual	RL
Naphthalene	ND		0.067
Acenaphthylene	ND		0.067
Acenaphthene	ND		0.067
Fluorene	ND		0.067
Phenanthrene	ND		0.067
Anthracene	ND		0.067
Fluoranthene	ND		0.067
Pyrene	ND		0.067
Benzo[a]anthracene	ND		0.067
Chrysene	ND		0.067
Benzo[b]fluoranthene	ND		0.067
Benzo[k]fluoranthene	ND		0.067
Benzo[a]pyrene	ND		0.067
Indeno[1,2,3-cd]pyrene	ND		0.067
Benzo[g,h,i]perylene	ND		0.067
2-Methylnaphthalene	ND		0.067
Dibenz(a,h)anthracene	ND		0.67
Surrogate	% Rec	Acceptance Limit	ts
Nitrobenzene-d5	73	23 - 120	
2-Fluorobiphenyl	80	30 - 115	
Terphenyl-d14	76	18 - 137	

Job Number: 720-1376-1 Client: Malcolm Pirnie, Inc.

**Laboratory Control/** 

Laboratory Control Duplicate Recovery Report - Batch: 720-4156

Method: 8270C Preparation: 3550B

LCS Lab Sample ID: LCS 720-4156/2-A

Client Matrix: Dilution:

Solid

1.0

Date Analyzed:

Date Prepared:

01/12/2006 1449 01/11/2006 0608 Analysis Batch: 720-4391 Prep Batch: 720-4156

Units: mg/Kg

Lab File ID:

Instrument ID: Sat 2K1

d:\data\200601\011206\LC

Initial Weight/Volume: Final Weight/Volume:

30.36 g 1 mL

Injection Volume:

LCSD Lab Sample ID: LCSD 720-4156/3-A

Client Matrix: Dilution:

Solid 1.0

Date Analyzed: Date Prepared: 01/12/2006 1517 01/11/2006 0608 Analysis Batch: 720-4391 Prep Batch: 720-4156

Units:mg/Kg

Instrument ID: Sat 2K1

Lab File ID: d:\data\200601\011206\LCS

Initial Weight/Volume: 30.20 g Final Weight/Volume: 1 mL

Injection Volume:

<u>% Rec.</u>							
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Naphthalene	80	85	21 - 133	7	35		
Acenaphthylene	94	94	33 - 145	0	35		
Acenaphthene	81	82	47 - 145	2	35		
Fluorene	88	91	59 - 121	3	35		
Phenanthrene	105	102	10 - 130	2	35		
Anthracene	97	94	27 - 133	2	35		
Fluoranthene	98	96	26 - 137	1	35		
Pyrene	112	109	52 - 115	2	35		
Benzo[a]anthracene	93	100	33 - 143	8	35		
Chrysene	112	110	17 - 168	1	35		
Benzo[b]fluoranthene	114	123	24 - 159	8	35		
Benzo[k]fluoranthene	112	92	11 - 162	19	35		
Benzo[a]pyrene	111	108	17 - 163	2	35		
Indeno[1,2,3-cd]pyrene	114	110	9 - 171	3	35		
Benzo[g,h,i]perylene	119	111	9 - 219	7	35		
2-Methylnaphthalene	91	94	10 - 130	4	35		
Dibenz(a,h)anthracene	122	118	10 - 130	3	35		
Surrogate	L	.CS % Rec	LCSD %	Rec	Accep	tance Limits	
Nitrobenzene-d5	7	5	76		2	3 - 120	
2-Fluorobiphenyl	8	2	74		3	0 - 115	
Terphenyl-d14	8	3	95		1	8 - 137	

Job Number: 720-1376-1

Client: Malcolm Pirnie, Inc.

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 720-4156

Method: 8270C Preparation: 3550B

MS Lab Sample ID:

720-1376-3

Analysis Batch: 720-4391

Instrument ID: Sat 2K1

Client Matrix:

Solid

Prep Batch: 720-4156

d:\data\200601\011206\72 Lab File ID:

Dilution:

1.0

Date Analyzed:

01/12/2006 1926

Initial Weight/Volume: 30.19 g Final Weight/Volume: 1 mL

Date Prepared:

01/11/2006 0608

Injection Volume:

MSD Lab Sample ID: 720-1376-3

Analysis Batch: 720-4391

Instrument ID: Sat 2K1

Client Matrix: Dilution:

Solid

Lab File ID: d:\data\200601\011206\720

Date Analyzed:

1.0

Prep Batch: 720-4156

Initial Weight/Volume: 30.23 g Final Weight/Volume: 1 mL

01/12/2006 1954 01/11/2006 0608 Date Prepared:

Injection Volume:

	%	Rec.					
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Naphthalene	85	79	21 - 133	7	35		
Acenaphthylene	97	100	33 - 145	3	35		
Acenaphthene	83	84	47 - 145	0	35		
Fluorene	81	100	59 - 121	21	35		
Phenanthrene	99	96	10 - 130	3	35		
Anthracene	86	97	27 - 133	12	35		
Fluoranthene	91	97	26 - 137	7	35		
Pyrene	114	119	52 - 115	4	35		*
Benzo[a]anthracene	99	93	33 - 143	7	35		
Chrysene	109	111	17 - 168	2	35		
Benzo[b]fluoranthene	106	123	24 - 159	15	35		
Benzo[k]fluoranthene	106	94	11 - 162	13	35		
Benzo[a]pyrene	112	114	17 - 163	1	35		
Indeno[1,2,3-cd]pyrene	109	112	9 - 171	3	35		
Benzo[g,h,i]perylene	115	119	9 - 219	3	35		
2-Methylnaphthalene	97	93	10 - 130	5	35		
Dibenz(a,h)anthracene	115	116	10 - 130	1	35		
Surrogate		MS % Rec	MSD % Rec Acceptance Limit		ts		
Nitrobenzene-d5		81	76		2:	3 - 120	
2-Fluorobiphenyl		81	82		30	0 - 115	
Terphenyl-d14		91	87		18	8 - 137	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Method Blank - Batch: 720-4660

Method: 8021B Preparation: 5035

Lab Sample ID: MB 720-4660/1-A

Client Matrix: Solid

Dilution: 1.0

Date Analyzed: 01/20/2006 1314 Date Prepared: 01/20/2006 1301

Analysis Batch: 720-4661 Prep Batch: 720-4660

Units: mg/Kg

Instrument ID: GC 5 Lab File ID: N/A

Initial Weight/Volume: 5 g Final Weight/Volume: 10 mL

Injection Volume:

Column ID:

**PRIMARY** 

Analyte	Result	Qual	RL
Benzene	ND		0.010
Toluene	ND		0.010
Ethylbenzene	ND		0.010
Xylenes, Total	ND		0.010
Surrogate	% Rec	Acceptance Limits	
a,a,a-Trifluorotoluene (pid)	100	58 - 124	
4-Bromofluorobenzene	91	58 - 124	

**Laboratory Control/** 

Laboratory Control Duplicate Recovery Report - Batch: 720-4660

Method: 8021B Preparation: 5035

LCS Lab Sample ID: LCS 720-4660/4-A

Client Matrix:

Dilution:

Solid

Date Analyzed:

Date Prepared:

01/20/2006 1314 01/20/2006 1301

Analysis Batch: 720-4661 Prep Batch: 720-4660

Units: mg/Kg

Instrument ID: GC 5

Lab File ID: N/A Initial Weight/Volume:

5 g Final Weight/Volume: 10 mL

Injection Volume:

Column ID:

**PRIMARY** 

LCSD Lab Sample ID: LCSD 720-4660/5-A

Client Matrix:

Solid

Dilution:

1.0

Date Analyzed: Date Prepared:

01/20/2006 1314 01/20/2006 1301

Analysis Batch: 720-4661 Prep Batch: 720-4660

Units: mg/Kg

Instrument ID: GC 5 Lab File ID: N/A

Initial Weight/Volume: 5 g Final Weight/Volume: 10 mL

Injection Volume:

Column ID:

**PRIMARY** 

	9	<u> 6 Rec.</u>					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	91	93	77 - 123	2	35		(1 <del>12 - 215 - 110 - 21 - 1</del>
Toluene	96	99	78 - 122	3	35		
Ethylbenzene	97	99	70 - 130	2	35		
Xylenes, Total	96	98	75 - 125	3	35		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
a,a,a-Trifluorotoluene (pid)	1	01	101		5	8 - 124	
4-Bromofluorobenzene	9	4	94		5	8 - 124	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Malcolm Pirnie, Inc.

Job Number: 720-1376-1

Method Blank - Batch: 720-4155

Method: 8015B Preparation: 3550B

Lab Sample ID: MB 720-4155/1-A

Client Matrix:

Solid

Dilution: 1.0

Date Analyzed: 01/11/2006 1428 Date Prepared: 01/11/2006 0531

Analysis Batch: 720-4252 Prep Batch: 720-4155

Units: mg/Kg

Instrument ID: HP DRO3 Lab File ID: N/A

Initial Weight/Volume: 30.22 g Final Weight/Volume: 5 mL

Injection Volume:

Column ID:

**PRIMARY** 

Analyte	Result	Qual	RL
Diesel Range Organics [C10-C28]	ND		0.99
Motor Oil Range Organics [C24-C36]	ND		50
Surrogate	% Rec	Acce	eptance Limits
o-Terphenyl	69		60 - 130

**Laboratory Control/** 

Laboratory Control Duplicate Recovery Report - Batch: 720-4155

Method: 8015B Preparation: 3550B

LCS Lab Sample ID: LCS 720-4155/2-A

Client Matrix:

Solid 1.0

Dilution:

Date Analyzed:

Date Prepared:

01/11/2006 1333

01/11/2006 0531

Analysis Batch: 720-4252 Prep Batch: 720-4155

Units: mg/Kg

Instrument ID: HP DRO3

Lab File ID: N/A

Initial Weight/Volume: 30.12 g 5 mL

Final Weight/Volume:

Injection Volume:

Column ID:

**PRIMARY** 

LCSD Lab Sample ID: LCSD 720-4155/3-A

Client Matrix:

Solid

Dilution:

1.0

Date Analyzed:

01/11/2006 1401

Date Prepared:

01/11/2006 0531

Analysis Batch: 720-4252

Prep Batch: 720-4155

Units: mg/Kg

Instrument ID: HP DRO3

Lab File ID: N/A

Initial Weight/Volume: 30.27 g

Final Weight/Volume: 5 mL

Injection Volume:

Column ID:

	0	<u> 6 Rec.</u>					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Diesel Range Organics [C10-C28]	71	76	60 - 130	6	30		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
o-Terphenyl	7	5	75		6	0 - 130	

SEVERN	CT	
TRENT	31	سا

STL San Francisco Chain o Cydy
1220 Quany Lydd (22 anton CA)
Phone: (925, 48 -19)
Fax: (94 anton CA)
Email: silogin@stl-inc.com

770-1376
Reference #: 300080

Date 01/09/06\_ Page \_ of \_ Analysis Request MARYLINE LAUGIER Fuel Tesis EPA 82608 □ Gas □ 81£x □ Fwe Orychales □ DCA, EDB □ Elhand Company MALLOLM PIANIE 608 603 Low Level Metals by EPA 200 6/5020 (ICP-MS) J O Metals D Lead O LUFT O RCRA TEPHEPA 8015M° (1) Silica Gel Volatile Organics GC/MS (VOCs) Hexavaleni Chromium pH (24h hold lime for H<sub>2</sub>O) Spec Cond Cl Alkalnuty TSS Cl TDS Cl (8020) 0 SO, 0 NO, 0 Purgeable Habicarbons (HVOCs) EPA 8021 by 8260B Oil and Grease | Detroleum (EPA 1664) | | Total 00 Purgeable Aromatics BTEX EPA - C 8021 C 82608 Pesticides D EPA 8081 PCBs D EPA 8082 Address CAM17 Metals (EPA 6010/7470/7471) Semivolatiles GC/MS Phone. Email PNAS by X 8270 Bill To Sampled By 0 D Attn Phone Sample ID Date : Time 00 00 00 MP-2-5 01(9/04 1420 800)  $\sim$ MP-3-4.5 × 1615 × MP-1-4.5 1635 10 t Sample Receipt 1) Relinquished by 2) Relinquished by 3) Relinquished by Project Info. 5 · 30p 1:05 Time Deneral Mills # of Containers Signature Time MARYLINE LAVINGE 1/9/06
Printed Name Date Head Space: Printed Name Dale PO# 2ª MALLOLM BRIVE Company Credit Card# Conforms to record 3) Received by 48h 24h Other Signature Report: □ Routine □ Level 3 □ Level 4 □ ECD # State Tank Fund EDF Time Gobal ID \_ Special Instructions / Comments Printed Name Date Company "STL SF reports 8015M from C<sub>9</sub>·C<sub>74</sub> (industry norm). Defaul for 8015B is  $C_{19}$ ·C<sub>28</sub>

# LOGIN SAMPLE RECEIPT CHECK LIST

Client: Malcolm Pirnie, Inc. Job Number: 720-1376-1

Login Number: 1376

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present, is intact.	NA	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

# APPENDIX G

Surveying Data



# CSS

CSS ENVIRONMENTAL SERVICES, INC 100 Galli Drive, Suite 1 Novato, CA 94949 (415) 883-6203 fax (415) 883-6204

### Site Positions

6352 800 Derr St., Vallejo CA

Horizontal Coordinate System: North American 1983-CONUS Date: 10/13/05

Height System: NAVD88 - Ortho. Ht. (GPS - GEOID99)

Project file: 6352 Wells.spr

Please note TBM1 elevation is GPS derived, others by differential leveling

Desired Horizontal Accuracy: 0.100Ft + 1ppm
Desired Vertical Accuracy: 0.100Ft + 2ppm

Confidence Level: 95% Err. Linear Units of Measure: Int. Feet Date of Survey: 1/13/06

	Site							95%	Fix	Position
	<u>ID</u>	Site Descriptor				Positio	_	Error	Status	Status
	MP-1	N RIM THIS IS TEM-1	Lat.			48.80751"		0.023		Adjusted
				122°	14'	44.42273"	W	0.028		
		NR Elevation	Elv.			10.37		0.050		
		TOC Elevation	Elv.			9.72				
	MP-2	NR THIS IS TEM-2	Lat.		04'	47.51128"	N	0.024		Adjusted
			Lon.	122°	14'	40.18517"	W	0.029		
		NR Elevation	Elv.			10.87				
		TOC Elevation	Elv.			10.53				
j	MP-3	NR Well Loc	Lat.	38°	04'	49.98857"	N	0.023		Adjuste
			Lon.	122°	14'	42.44706"	W	0.029		_
		NR Elevation	Elv.			11.93				
		TOC Elevation	Elv.			11.23				
	MP-4	NR (North Rim)OF	Lat.	38°	04'	52.00006"	N	0.024		Adjuste
		WELL LOC		122°	14'			0.029		J
		NR Elevation	Elv.			11.27	**	0.023		
		TOC Elevation	Elv.			10.64				
		200 22674 0201	22							
5	MP-5	NR Well Loc	Lat.			54.58799"		0.023		Adjuste
			Lon.	122°	14'	42.14479"	W	0.029		
		NR Elevation	Elv.			13.29				
		TOC Elevation	Elv.			12.79				
5	GB-1	BOREHOLE LOC	Lat.	38°	04'	49.06288"	N	0.030		Adjuste
			Lon.	122°	14'	43.99015"	W	0.035		
7	9563	JT9563 HPGN	Lat.	38°	01'	48.78742"	N	0.000	Fixed	Adjuste
		Reference Monument	Lon.	122°	15'	16.40456"	W	0.000	Fixed	
			Elv.			183.000		0.000	Fixed	
}	9617	JT9617 HPGN-D	Lat.	38°	09'	17.24406"	N	0.000	Fixed	Adjuste
•	J 4 2 1	Reference Monument	Lon.	122°		12.45092"		0.000	Fixed	SPOF
			Elv.			33.100	•••	0.000	Fixed	SED H. S



CSS ENVIRONMENTAL SERVICES, INC.
100 Galli) Drive, Sulte 1
Novato, CA 94949
Telephone: (415) 883-6203
Facsimile: (415) 883-6204

## Geo\_XY.txt

T0609557699 0,8 box. Control fro	MP-1 MW 01/13/2006 CSS Environmental Services om JT9563, JT9617.	38.0802243 -122.2456730 APM This is TBM-1, stamped of	STAT NAD83 on N Rim of well
T0609557699 0.8 box.	MP-2 MW 01/13/2006 CSS Environmental Services	38.0798642 -122.2444959 APM This is TBM-2, stamped of	STAT NAD83 on N Rim of well
T0609557699	MP-3 MW 01/13/2006	38.0805524 -122.2451242	STAT NAD83
0.8	CSS Environmental Services	APM	
T0609557699	MP-4 MW 01/13/2006	38.0811111 -122.2454415	STAT NAD83
0.8	CSS Environmental Services	APM	
T0609557699	MP-5 MW 01/13/2006 CSS Environmental Services	38.0818300 -122.2450402 APM	STAT NAD83
T0609557699	MP-6 MW 02/08/2006	38.0804578 -122.2452910	STAT NAD83
0.8	CSS Environmental Services	APM	
T0609557699	MP-7 MW 02/06/2006	38,0802368 -122.2458292	STAT NAD83
0.8	CSS Environmental Services	APM	
T0609557699	MP-8 MW 02/06/2006	38.0799173 -122.2456018	STAT NAD83
0,8	CSS Environmental Services	APM	
T0609557699	GB-1 BH 01/13/2006	38,0802952 -122,2455528	STAT NAD83
0.8	CSS Environmental Services	APM Boring Location	
T0609557699	SB-1 BH 02/06/2006 CSS Environmental Services	38.0803027 -122.2456744 APM Boring Location	STAT NAD83
T0609557699	SB-2 BH 02/06/2006	38.0801896 -122.2455771	STAT NAD83
0.8	CSS Environmental Services	APM Boring Location	
T0609557699	SB-3 BH 02/06/2006	38.0803596 -122.2455966	STAT NAD83
0.8	CSS Environmental Services	APM Boring Location	
T0609557699	SB-4 BH 02/06/2006	38,0802391 -122,2455151	STAT NAD83
0.8	CSS Environmental Services	APM Boring Location	
T0609557699	SB-5 BH 02/06/2006	38.0803364 -122.2454805	STAT NAD83
0,8	CSS Environmental Services	APM Boring Location	
T06095 <b>57</b> 699	SB-6 BH 02/06/2006 CSS Environmental Services	38.0801410 -122.2456389 APM Boring Location	STAT NAD83



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T0609557699 0.8	SB-7 BH 02/06/2006 CSS Environmental Services	38.0801653 -122.2457376 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-8 BH 02/06/2006 CSS Environmental Services	38.0802548 -122.2457359 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-9 BH 02/06/2006 CSS Environmental Services	38.0803421 -122.2457107 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-10 BH 02/06/2006 CSS Environmental Services	38,0801321 -122,2455280 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-11 BH 02/06/2006 CSS Environmental Services	38.0804540 -122.2455937 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-12 BH 02/06/2006 CSS Environmental Services	38,0802376 -122,2453819 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-13 BH 02/06/2006 CSS Environmental Services	38.0803758 -122.2454114 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-14 BH 02/06/2006 CSS Environmental Services	38.0800424 -122.2456278 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-15 BH 02/06/2006 CSS Environmental Services	38.0801227 -122.2457907 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-16 BH 02/06/2006 CSS Environmental Services	38.0802434 -122.2458250 APM Boring Location	STAT	NAD83
T06 <b>095576</b> 99 Q.8	SB-17 BH 02/06/2006 CSS Environmental Services	38.0800179 -122.2454312 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-18 BH 02/06/2006 CSS Environmental Services	38,0802104 -122.2452010 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-19 BH 02/06/2006 CSS Environmental Services	38.0804654 -122.2452791 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-20 BH 02/06/2006 CSS Environmental Services	38.0804386 -122.2455511 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-21 BH 02/06/2006 CSS Environmental Services	38,0799172 -122,2455481 APM Boring Location	STAT	NAD83
T0609557699 0.8	SB-22 BH 02/06/2006 CSS Environmental Services	38.0799165 -122.2456540 APM Boring Location	STAT	NAD83



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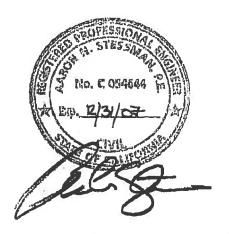
100 Galli Drive, Suite 1

Novato, CA 94949

Telephone: (415) 883-6203

Facsimile: (415) 883-6204

T0609557699 0.8	SB-23 BH 02/06/2006 CSS Environmental Services	38.0800701 -122.2458604 APM Boring Location	STAT	NAD83
T0609557699 0,8	SB-24 BH 02/06/2006 CSS Environmental Services	38.0804643 -122.2457081 APM Boring Location	STAT	NAD83

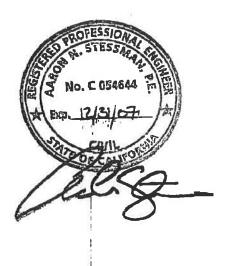




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## Geo\_Z.txt

T0609557699 Services	MP-1 This is	01/13/2006 TBM-1, stamped	9.72 l on N Rim	DIG of well	88 box. TÉ	1.8 BM-1 Elev	CSS Environmental ation is 10.37
T0609557699 Services	MP-2 This is	01/13/2006 TBM-2, stamped	10,53 l on N Rim	DIG of well	88 box. TE	1.8 BM-2 Elev	CSS Environmental ation is 10.87
T0609557699 Services	MP-3	01/13/2006	11.42	DIG	88	1.8	CSS Environmental
T0609557699 Services	MP-4	01/13/2006	10.64	DIG	88	1.8	CSS Environmental
T0609557699 Services	MP-5	01/13/2006	12.79	DIG	88	1.8	CSS Environmental
T0609557699 Services	MP-6	02/08/2006	11.18	DIG	88	1.8	CSS Environmental
T0609557699 Services	MP-7	02/08/2006	10.23	DIG	88	1.8	CSS Environmental
T0609557699 Services	MP-8	02/08/2006	10.71	DIG	88	1.8	CSS Environmental



APPENDIX H
------------

Soil Analytical Laboratory Reports (Additional Investigation in Area C)





	Total Vol	atile Hydrocarbo	ns	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie,Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mg/Kg	Received:	02/01/06	

Field ID:

SB1-013106-5.0

Type: Lab ID: Diln Fac:

SAMPLE 184670-001 1.000

Batch#: Sampled: 110090 01/31/06 02/03/06

Analyzed:

[	Analyte	Result	RL
- [	Gasoline C7-C12	ND	0.93

Surrogate %REC Limits Trifluorotoluene (FID) 59-140 110 62-149 Bromofluorobenzene (FID)

Field ID: Type: Lab ID:

SB1-013106-5.5

SAMPLE

184670-002

Batch#:

110045

Sampled: Analyzed:

01/31/06 02/01/06

Diln Fac: 1.000

Analyte	Result	RL	
Gasoline C7-C12	26 H Y	1.0	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	96	59-140	
Bromofluorobenzene (FID)	186 *	62-149	

Field ID:

SB1-013106-15.0 SAMPLE

Batch#:

110045

Type: Lab ID: Diln Fac:

184670-003 1.000

01/31/06 Sampled: 02/01/06 Analyzed:

RL	
1.0	
	1.0

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	89	59-140	
Bromofluorobenzene (FID)	95	62-149	

<sup>\*=</sup> Value outside of QC limits; see narrative

H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected

RL= Reporting Limit >LR= Response exceeds instrument's linear range



	Total Vola	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mg/Kg	Received:	02/01/06	

Diln Fac:

SB2-013106-4.5

SAMPLE 184670-004

10.00

Batch#: Sampled: Analyzed: 110045 01/31/06 02/02/06

Analyte		Result	RL	paro sido / Surgra / Guida e de de s
Gasoline C7-C12		59 H Y	10	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	93 133	59-140 62-149		

Field ID: Type: Lab ID: Diln Fac:

SB2-013106-6.5

SAMPLE

184670-005 20.00

Batch#: Sampled: Analyzed: 110045 01/31/06 02/02/06

Analyte	Result	RL	
Gasoline C7-C12	400 H Y	20	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	112	59-140	····
Bromofluorobenzene (FID)	221 * >LR	b 62-149	

Field ID:

SB2-013106-15.0

Batch#:

Type: Lab ID: Diln Fac: SAMPLE 184670-006 Sampled: Analyzed: 110090 01/31/06 02/02/06

1.000

Analyte		Result	RL	
Gasoline C7-C12	N.	D	1.0	
Surrogate	*REC	Limits		
Trifluorotoluene (FID)	90	59-140		
Bromofluorobenzene (FID)	93	62-149		

<sup>\*=</sup> Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RI= Perperting Limit

RL= Reporting Limit >LR= Response exceeds instrument's linear range Page 2 of 12



Total Volatile Hydrocarbons Lab #: 184670 Location: General Mills Prep: Analysis: Client: Malcolm Pirnie, Inc. EPA 5030B EPA 8015B Project#: STANDARD as received 02/01/06 Matrix: Soil Basis: Units: mq/Kg Received:

Field ID: Type: Lab ID:

Diln Fac:

SB3-013106-4.5

SAMPLE 184670-007

1.000

Batch#: Sampled: Analyzed:

110045 01/31/06 02/01/06

Analyte		Result	RL	
Gasoline C7-C12		1.2 H Y	1.0	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	91	59-140		
Bromofluorobenzene (FID)	105	62-149		

Field ID: Type: Lab ID:

Diln Fac:

SB3-013106-5.5

SAMPLE

20.00

184670-008

Batch#: Sampled: Analyzed: 110090

01/31/06 02/02/06

Analyte	Result	RL	
Gasoline C7-C12	360 н ү	20	

Surrogate	FREC	Limits	
Trifluorotoluene (FID)	113	59-140	
Bromofluorobenzene (FID)	157 *	62-149	

Field ID:

SB3-013106-15.0

Batch#:

110090

Type: Lab ID:

SAMPLE 184670-009

Sampled: Analyzed:

01/31/06 02/02/06

Diln Fac:

1.000

_	Analyte	Result	RL	
- )	Gasoline C7-C12	ND	1.0	
الزر				

in the state of th			
Surrogate	%REC	Limits	
Trifluorotoluene (FID)	91	59-140	
Bromofluorobenzene (FID)	92	62-149	

b= See narrative ND= Not Detected

Page 3 of 12

<sup>\*=</sup> Value outside of QC limits; see narrative

H= Heavier hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard

RL= Reporting Limit
>LR= Response exceeds instrument's linear range



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie,Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mg/Kg	Received:	02/01/06	

Diln Fac:

SB5-013106-5.5

SAMPLE 184670-010

1.000

Batch#: Sampled: Analyzed: 110045 01/31/06 02/02/06

Analyte	Result	RL	(0-73)
Gasoline C7-C12	2.6 H Y	1.0	 
Surrogate	%REC Limits		
Surrogate Trifluorotoluene (FID)	<b>%REC Limits</b> 94 59-140 106 62-149		

Field ID: Type: Lab ID: Diln Fac:

SB5-013106-15.5

SAMPLE 184670-011

1.000

Batch#: Sampled: Analyzed: 110090 01/31/06 02/02/06

Analyte	Result	RL	
Gasoline C7-C12	ND	0.98	
	**		

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	93	59-140	 ***
Bromofluorobenzene (FID)	91	62-149	 

Field ID: Type: Lab ID:

SB5-013106-6.5 SAMPLE

Batch#: Sampled: Analyzed:

110090 01/31/06 02/02/06

184670-012 Diln Fac: 50.00

Analyte	Result	RL	
Gasoline C7-C12	300 H Y	50	
Surrogate	%REC Limits		
Surrogate Trifluorotoluene (FID)	<b>%REC Limits</b> 98 59-140		

Page 4 of 12

<sup>\*=</sup> Value outside of QC limits; see narrative H= Heavier hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard b= See narrative
ND= Not Detected

RL= Reporting Limit >LR= Response exceeds instrument's linear range



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mg/Kg	Received:	02/01/06	

SB4-013106-4.5

SAMPLE 184670-013

1.000

Batch#: Sampled: Analyzed:

110045 01/31/06 02/02/06

Diln Fac: Analyte
Gasoline C7-C12 Result RL

%REC Surrogate Limits Trifluorotoluene (FID) Bromofluorobenzene (FID) 59-140 62-149

Field ID: Type: Lab ID:

Diln Fac:

SB4-013106-13.0

SAMPLE

184670-014 1.000

Batch#:

01/31/06 02/02/06 Sampled: Analyzed:

Analyte	Result	RL	
Gasoline C7-C12	5.4 H Y	1.1	

Surrogate	%REC	Limits
Trifluorotoluene (FID)	99	59-140
Bromofluorobenzene (FID)	108	62-149

Field ID:

SB4-013106-6.0

Batch#:

110090

Type: Lab ID:

SAMPLE

Sampled:

01/31/06 02/02/06

Diln Fac:

184670-015

20.00

Analyzed:

,,,,,,	Analyte		Result	RL	
	Gasoline C7-C12		290 н Ү	20	
V					
	Surrogate	%REC	Limits		
	Trifluorotoluene (FID)	113	59-140		

62-149

136

Bromofluorobenzene (FID)

<sup>\*=</sup> Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected

RL= Reporting Limit >LR= Response exceeds instrument's linear range



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mg/Kg	Received:	02/01/06	

SB7-013106-3.5

SAMPLE 184670-016 Batch#: Sampled: Analyzed:

110045 01/31/06 02/01/06

Diln Fac:

1.000

Analyte Gasoline C7-C12 Result RL

Surrogate	%REC	Limits
Trifluorotoluene (FID)	91	59-140
Bromofluorobenzene (FID)	97	62-149

Field ID: Type: Lab ID:

SB7-013106-15.0

SAMPLE 184670-017 Batch#: Sampled: Analyzed: 110090 01/31/06 02/02/06

110090 01/31/06 02/02/06

Diln Fac: 1.000

Allary Ce	uit Ku	
Gasoline C7-C12 ND	0.98	

Surrogate	%REC	Limits
Trifluorotoluene (FID)	91	59-140
Bromofluorobenzene (FID)	91	62-149

Field ID: Type: Lab ID:

SB7-013106-6.0

Batch#: Sampled: Analyzed: SAMPLE 184670-018

Diln Fac: 5.000

Analyte	Result	RL	
Gasoline C7-C12	43 H Y	5.0	W.C.
Surrogate	%REC Limits		

\*= Value outside of QC limits; see narrative H= Heavier hydrocarbons contributed to the quantitation

Page 6 of 12

Y= Sample exhibits chromatographic pattern which does not resemble standard

b= See narrative ND= Not Detected

RL= Reporting Limit >LR= Response exceeds instrument's linear range



	Total Volatile Hydrocarbons				
Lab #:	184670	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	STANDARD	Analysis:	EPA 8015B		
Matrix:	Soil	Basis:	as received		
Units:	mg/Kg	Received:	02/01/06		

Field ID:

Type: Lab ID: Diln Fac: SB6-013106-4.5 SAMPLE 184670-019

1.000

Batch#: Sampled: Analyzed:

110090 01/31/06 02/02/06

	Analyte		Result	RL	
Ę	Gasoline C7-C12	ND		1.0	
i	Surrogate	%REC	Limits		
ľ	Trifluorotoluene (FID)	87	59-140		
L	Bromofluorobenzene (FID)	87	62-149		

Field ID: Type: Lab ID:

Diln Fac:

SB6-013106-14.5

SAMPLE

184670-020

1.000

Batch#: Sampled: Analyzed: 110062 01/31/06 02/01/06

Analyte	Result	RL	
Gasoline C7-C12	8.9 H Y	1.0	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	102	59-140	
Bromofluorobenzene (FTD)	125	62-149	

Field ID:

Diln Fac:

SB6-013106-6.0

SAMPLE

Type: Lab ID: 184670-021 20.00 Batch#:

110062

01/31/06 02/02/06 Sampled: Analyzed:

Analyte	Result	RL	
Gasoline C7-C12	200 H Y	20	
1			
Cummonaka	ADEC Timita		

1			· <del></del> - ·	
	Surrogate	%REC	Limits	
	Trifluorotoluene (FID)	104	59-140	
	Bromofluorobenzene (FID)	134	62-149	

<sup>\*=</sup> Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mg/Kg	Received:	02/01/06	

SB8-013106-16.0

SAMPLE 184670-022

Diln Fac: 1.000

Batch#: Sampled: Analyzed: 110062 01/31/06 02/01/06

Analyte		Result	RL	
Gasoline C7-C12	ND		0.94	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	88	59-140		
Bromofluorobenzene (FID)	88	62-149		

Field ID: Type: Lab ID:

Diln Fac:

SB8-013106-6.0

SAMPLE

184670-023 1.000

Batch#: Sampled:

Analyzed:

110062 01/31/06 02/01/06

Analyte	Result	RE	
Gasoline C7-C12	ND	1.0	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	93	59-140	
Bromofluorobenzene (FID)	95	62-149	

Field ID:

SB10-020106-15.5

SAMPLE

Type: Lab ID:

184670-024

Batch#: Sampled: Analyzed: 110090 02/01/06 02/02/06

Diln Fac: 50.00

Analyte	Result	RL	
Gasoline C7-C12	330 H Y	50	
Surrogate	%REC Limits		
Trifluorotoluene (FID)	94 59-140		
Bromofluorobenzene (FID)	110 62-149		

<sup>\*=</sup> Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected

RL= Reporting Limit >LR= Response exceeds instrument's linear range Page 8 of 12



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mg/Kg	Received:	02/01/06	

Field ID:

SB10-020106-4.5

SAMPLE 184670-025 Type: Lab ID:

1.000 Diln Fac:

Batch#: Sampled: Analyzed: 110062 02/01/06 02/01/06

	Analyte		Result	RL	
-	Gasoline C7-C12		1.1 H Y	1.0	
-	Surrogate	%REC	Limits		
1	Trifluorotoluene (FID)	95	59-140		
	Bromofluorobenzene (FID)	97	62-149		

Field ID: Type: Lab ID:

SB10-020106-13

SAMPLE 184670-026

100.0

Batch#: Sampled: Analyzed: 110062 02/01/06 02/02/06

Diln Fac: Analyte
Gasoline C7-C12 Result RL 620 H Y 100

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	95	59-140	
Bromofluorobenzene (FID)	114	62-149	

Field ID: Type: Lab ID:

SB12-020106-15.5

SAMPLE

184670-027

Batch#: Sampled: Analyzed: 110062

02/01/06 02/02/06

Diln Fac: 20.00

[	Analyte	Result	RL	
	Gasoline C7-C12	43 H Y	20	
-				

V			
Surrogate	%REC	Limits	
Trifluorotoluene (FID)	90	59-140	
Bromofluorobenzene (FID)	99	62-149	

Page 9 of 12

<sup>\*=</sup> Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit

<sup>&</sup>gt;LR= Response exceeds instrument's linear range



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mg/Kg	Received:	02/01/06	

Field ID:

SB12-020106-3.5

SAMPLE 184670-028 1.000

Batch#: Sampled: Analyzed: 110062 02/01/06 02/01/06

Type: Lab ID: Diln Fac:

Analyte		Result	RL	
Gasoline C7-C12	ND		0.98	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	85	59-140		
Bromofluorobenzene (FID)	89	62-149		

Field ID: Type: Lab ID:

SB12-020106-13.0

SAMPLE

Batch#: Sampled: Analyzed: 110062 02/01/06 02/02/06

184670-029 Diln Fac: 20.00

Analyte	Result	RL	
Gasoline C7-C12	370 H Y	20	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	111	59-140	
Bromofluorobenzene (FID)	157 *	62-149	

Field ID: Type: Lab ID:

SB13-020106-16.0

SAMPLE 184670-030 Batch#: Sampled: Analyzed: 110062 02/01/06 02/02/06

Diln Fac: 1.000

Analyte	THE WA	Result	RL	
Gasoline C7-C12	N1	)	1.0	
Surrogate	AREC.	Limits		
Trifluorotoluene (FID)	86	59-140		
Bromofluorobenzene (FID)	8.8	62-149		

<sup>\*=</sup> Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected

RL= Reporting Limit >LR= Response exceeds instrument's linear range Page 10 of 12



Total Volatile Hydrocarbons Lab #: 184670 Location: General Mills Prep: Analysis: Client: Malcolm Pirnie, Inc. EPA 5030B Project#: STANDARD 8015B EPA as received 02/01/06 Matrix: Soil Basis: Units: mg/Kg Received:

Field ID: Type:

SB13-020106-4.5

SAMPLE 184670-031

Batch#: Sampled: Analyzed: 110062 02/01/06

Lāb ID: Diln Fac:

1.000

02/02/06

Analyte	Result	RL	
Gasoline C7-C12	ND	0.93	
Surrogate	%REC Limits		
Trifluorotoluene (FID)	93 59-140		
Bromofluorobenzene (FID)	91 62-149		

Field ID: Type: Lab ID:

SB13-020106-6.5

SAMPLE 184670-032

Batch#: Sampled: Analyzed: 110090 02/01/06 02/02/06

Diln Fac:

200.0

Analyte	Result	RL	
Gasoline C7-C12	860 H Y	200	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	96	59-140	
Bromofluorobenzene (FID)	105	62-149	

Type: Lab ID:

BLANK

Batch#:

110045

Diln Fac:

QC326361 1.000

Analyzed:

02/01/06

	Analyte		Result	RL	DOMESTIC OF THE PARTY OF THE PA
-	Gasoline C7-C12	ND	)	1.0	
	Surrogate	%REC	Limits		
	Trifluorotoluene (FID)	96	59-140		
	Bromofluorobenzene (FID)	100	62-149		

Type: Lab ID:

BLANK QC326430

Batch#: Analyzed: 110062 02/01/06

Diln Fac: Ĩ.000

Analyte Result ND Gasoline C7-C12

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	92	59-140	
Bromofluorobenzene (FID)	93	62-149	

\*= Value outside of QC limits; see narrative

H= Heavier hydrocarbons contributed to the quantitation Y= Sample exhibits chromatographic pattern which does not resemble standard

b= See narrative ND= Not Detected

RL= Reporting Limit

>LR= Response exceeds instrument's linear range

Page 11 of 12



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mg/Kg	Received:	02/01/06	

Type: Lab ID: Diln Fac:

BLANK OC326553 1.000 Batch#: Analyzed: 110090 02/02/06

	Pocult	DI.	
Analyte	Kesuit	RLi	
Gasoline C7-C12	ND	1.0	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	93	59-140	
Bromofluorobenzene (FID)	91	62-149	

<sup>\*=</sup> Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range
Page 12 of 12



	Total Vola	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Type:	LCS	Basis:	as received	
Lab ID:	QC326363	Diln Fac:	1.000	
Matrix:	Soil	Batch#:	110045	
Units:	mg/Kg	Analyzed:	02/01/06	

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.928	99	80-120

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	120	59-140	
Bromofluorobenzene (FID)	117	62-149	

Page 1 of 1



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Type:	LCS	Basis:	as received	
Lab ID:	QC326432	Diln Fac:	1.000	
Matrix:	Soil	Batch#:	110062	
Units:	mg/Kg	Analyzed:	02/01/06	

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.770	98	80-120

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	109	59-140	 
Bromofluorobenzene (FID)	97	62-149	

Page 1 of 1



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Field ID:	SB7-013106-3.5	Diln Fac:	1.000	
MSS Lab ID:	184670-016	Batch#:	110045	
Matrix:	Soil	Sampled:	01/31/06	
Units:	mg/Kg	Received:	02/01/06	
Basis:	as received	Analyzed:	02/01/06	_ =

Type:

MS

Lab ID: QC326472

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<0.1379	10.20	6.241	61	44-120

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	104	59-140	
Bromofluorobenzene (FID)	107	62-149	

Type:

MSD

Lab ID: QC326473

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.99	7.982	73	44-120	17	23

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	111	59-140	
Bromofluorobenzene (FID)	114	62-149	



Total Volatile Hydrocarbons					
Lab #:	184670	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	STANDARD	Analysis:	EPA 8015B		
Field ID:	SB8-013106-16.0	Diln Fac:	1.000		
MSS Lab ID:	184670-022	Batch#:	110062		
Matrix:	Soil	Sampled:	01/31/06		
Units:	mg/Kg	Received:	02/01/06		
Basis:	as received	Analyzed:	02/01/06		

Type:

MS

Lab ID: QC326482

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.07184	9.804	6.360	64	44-120

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	115	59-140	
Bromofluorobenzene (FID)	95	62-149	

Type:

MSD

Lab ID:

QC326483

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.615	6.670	69	44-120	7	23

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	103	59-140	
Bromofluorobenzene (FID)	93	62-149	



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	STANDARD	Analysis:	EPA 8015B	
Type:	LCS	Basis:	as received	
Lab ID:	QC326555	Diln Fac:	1.000	
Matrix:	Soil	Batch#:	110090	
Units:	mg/Kg	Analyzed:	02/02/06	

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	10.82	108	80-120

Surrogate	%REC	Limits		
Trifluorotoluene (FID)	111	59-140		
Bromofluorobenzene (FID)	94	62-149		

Page 1 of 1 7.0



Total Volatile Hydrocarbons					
Lab #:	184670	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	STANDARD	Analysis:	EPA 8015B		
Field ID:	SB7-013106-15.0	Diln Fac:	1.000		
MSS Lab ID:	184670-017	Batch#:	110090		
Matrix:	Soil	Sampled:	01/31/06		
Units:	mg/Kg	Received:	02/01/06		
Basis:	as received	Analyzed:	02/02/06		

Type:

MS

Lab ID: QC326612

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<0.07384	10.64	7.113	67	44-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	111	59-140
Bromofluorobenzene (FID)	95	62-149

Type:

MSD

Lab ID:

QC326613

Analyte	Spiked	Result	%REC	Limits	RPD	
Gasoline C7-C12	9.346	6.465	69	44-120	3	23

Surrogate	%REC	Limits		
Trifluorotoluene (FID)	100	59-140	·	
Bromofluorobenzene (FID)	89	62-149		



	Total Extractable Hydrocarbons						
Lab #:	184670	Location:	General Mills				
Client:	Malcolm Pirnie,Inc.	Prep:	SHAKER TABLE				
Project#:	STANDARD	Analysis:	EPA 8015B				
Matrix:	Soil	Basis:	as received				
Units:	mg/Kg	Received:	02/01/06				

110116 01/31/06 02/02/06 SB1-013106-5.0 Field ID: Batch#: Type: Lab ID: SAMPLE Sampled: 184670-001 Prepared: Diln Fac: 2.000 Analyzed: 02/04/06

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result ŔĽ 200 H Y 210 L 2.0 10

Surrogate	%REC	Limits	
Durrogate	orda C	TITME CO	
Hexacosane	93	48-132	

110116 01/31/06 02/02/06 02/05/06 SB1-013106-5.5 Field ID: Batch#: SAMPLE 184670-002 Type: Lab ID: Diln Fac: Sampled: Prepared: Analyzed: 40.00

Result 5,400 480 L Analyte
Diesel C10-C24
Motor Oil C24-C36 RL 40 200

Surrogate	FREC	Limits	
Hexacosane	DO	48-132	

110116 01/31/06 Field ID: SB1-013106-15.0 Batch#: Type: Lab ID: SAMPLE Sampled: Prepared: Analyzed: 02/02/06 02/03/06 184670-003 Diln Fac: 1.000

Analyte
Diesel C10-C24 Result 30 Н 1.0 Motor Oil C24-C36

Surrogate	%REC	Limits	
Hexacosane	91	48-132	

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out

ND= Not Detected RL= Reporting Limit Page 1 of 12



	Total Extra	actable Hydrocar	bons	
Lab #: Client:	184670 Malcolm Pirnie, Inc.	Location: Prep:	General Mills SHAKER TABLE	
Project#: Matrix: Units:	STANDARD Soil mg/Kg	Analysis: Basis: Received:	EPA 8015B as received 02/01/06	:4

Field ID: Type: Lab ID:

SB2-013106-4.5

SAMPLE 184670-004

Batch#: Sampled: Prepared: Analyzed:

110116 01/31/06 02/02/06 02/04/06

Diln Fac:

1.000

Analyte	Result	RL
Diesel C10-C24	93 н Ү	1.0
Motor Oil C24-C36	64 L Y	5.0

Surrogate	%REC	Limits		
Hexacosane	0.1	48-132		

Field ID: Type: Lab ID:

SB2-013106-6.5 SAMPLE 184670-005

Batch#: Sampled: Prepared:

Analyzed:

110116 01/31/06 02/02/06 02/05/06

Diln Fac:

40.00

Analyte

Result RL

Motor Oil C24-C36	470 L Y	200	
Surrogate	%REC Limits		
Hexacosane	DO 48-132		

Field ID: Type: Lab ID: Diln Fac:

Hexacosane

SB2-013106-15.0

SAMPLE 184670-006 1.000

Batch#: Sampled: 110116

Prepared: Analyzed: 01/31/06 02/02/06 02/04/06

Analyte	Result	RL
Diesel C10-C24	71 н	1.0
Motor Oil C24-C36	9.9 T.	5.0

Motor Oil C24-C36		88 T	5.0	
Surrogate	%REC	Limits		
Hexacosane	101	48-132		

 $H\!=\!$  Heavier hydrocarbons contributed to the quantitation  $L\!=\!$  Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard DO= Diluted Out

ND= Not Detected

RL= Reporting Limit

Page 2 of 12



	Total Extra	actable Hydrocar	rbons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie,Inc.	Prep:	SHAKER TABLE	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mq/Kg	Received:	02/01/06	

Field ID: SB3-013106-4.5 Batch#: 110116 Type: Lab ID: Sampled: 01/31/06 02/02/06 SAMPLE 184670-007 Prepared: Analyzed: Diln Fac: 10.00 02/04/06

10 50 Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 110 H 640 L 50

**Limits** 48-132 Surrogate **%REC** Hexacosane

Field ID: SB3-013106-5.5 Batch#: 110136 01/31/06 02/03/06 02/07/06 SAMPLE Type: Sampled: Lab ID: 184670-008 Prepared: Diln Fac: 200.0 Analyzed:

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 53,000 H 22,000 L 400 2,000

Limits 48-132 Surrogate Hexacosane DO

Field ID: SB3-013106-15.0 Batch#: 110136 SAMPLE 184670-009 01/31/06 02/03/06 Type: Lab ID: Sampled: Prepared: 1.000 Diln Fac: Analyzed: 02/07/06

Diesel C10-C24 **Result** 27 0.99 H Motor Oil C24-C36 .0

Surrogate Limits 48-132 Hexacosane

DO= Diluted Out ND= Not Detected RL= Reporting Limit Page 3 of 12

 $H\!=\!$  Heavier hydrocarbons contributed to the quantitation  $L\!=\!$  Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard



Total Extractable Hydrocarbons						
Lab #:	184670	Location:	General Mills			
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE			
Project#:	STANDARD	Analysis:	EPA 8015B			
Matrix:	Soil	Basis:	as received			
Units:	mg/Kg	Received:	02/01/06			

SB5-013106-5.5 Field ID: Type: Lab ID: Diln Fac: SAMPLE 184670-010 3.000

Sampled: Prepared: Analyzed:

110136 01/31/06 02/03/06 02/07/06

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 730 3.0 15 730 H 310 L

Batch#:

Surrogate	%REC	Limits	
Hexacosane	56	48-132	***

Field ID: Type: Lab ID: Diln Fac:

SB5-013106-15.5

SAMPLE 184670-011 3.000

Batch#: Sampled: Prepared: Analyzed:

110136 01/31/06 02/03/06 02/06/06

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 190 H Y 580 3.0 15

Surrogate	%REC Limits
Hexacosane	102 48-132

Field ID: Type: Lab ID:

Diln Fac:

SB5-013106-6.5

Batch#: SAMPLE Sampled: 184670-012 50.00

110136 01/31/06 02/03/06 02/06/06 Prepared: Analyzed:

Analyte	Result	RL	
Diesel C10-C24	13,000	50	(
Motor Oil C24-C36	3,000 H L	250	

Surrogate	%REC	Limits	
Hexacosane	DO	48-132	 

 $H\!=\!$  Heavier hydrocarbons contributed to the quantitation  $L\!=\!$  Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard DO= Diluted Out

ND= Not Detected RL= Reporting Limit

Page 4 of 12



Total Extractable Hydrocarbons Lab #: 184670 Location: General Mills Prep: Analysis Client: Malcolm Pirnie, Inc. SHAKER TABLE EPA 8015B as received 02/01/06 Project#: STANDARD Matrix: Soil Basis: Units: mq/Kq Received:

Field ID: SB4-013106-4.5 Type: Lab ID: SAMPLE 184670-013 Diln Fac: 1.000

10.00

Batch#: 110136 01/31/06 02/03/06 Sampled: Prepared: Analyzed: 02/06/06

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 210 H Y 1.0 48<u>0</u> 5.0

Limits 48-132 Surrogate Hexacosane 84

Field ID: Type: Lab ID: Diln Fac: SB4-013106-13.0 SAMPLE 184670-014

Batch#: Sampled: Prepared: Analyzed: 110136 01/31/06 02/03/06 02/07/06

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 10 50 970 410 L

Surrogate **&REC** Limits 48-132 Hexacosane DO

Field ID:

SB4-013106-6.0

Batch#:

110136

Type: Lab ID: Diln Fac: SAMPLE 184670-015

50.00

Sampled: Prepared: Analyzed: 01/31/06 02/03/06 02/07/06

Diesel C10-C24 Result RL 5,400 50 250

Motor Oil C24-C36 950 L **Limits** 48-132 **&REC** Surrogate Hexacosane DO

 $\mbox{\sc H=}$  Heavier hydrocarbons contributed to the quantitation  $\mbox{\sc L=}$  Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard

DO= Diluted Out ND= Not Detected RL= Reporting Limit

Page 5 of 12



	Total Extr	actable Hydrocar	rbons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE	
Project#:	STANDARD	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
Units:	mg/Kg	Received:	02/01/06	

110136 01/31/06 02/03/06 02/06/06 Field ID: SB7-013106-3.5 Batch#: Type: Lab ID: Sampled: SAMPLE 184670-016 Prepared: Diln Fac: 40.00 Analyzed:

Analyte	Result	RL	
Diesel C10-C24	360 H Y	40	
Motor Oil C24-C36	2,000	200	

Surrogate	%REC	Limits	
Hexacosane	DO	48-132	

110136 01/31/06 02/03/06 SB7-013106-15.0 Batch#: Field ID: SAMPLE Sampled: Type: Lab ID: 184670-017 Prepared: 02/07/06 3.000 Diln Fac: Analyzed:

RL Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 100 H 3.0 15 170

Surrogate	%REC	Limits	
Hexacosane	74	48-132	

SB7-013106-6.0 110136 Field ID: Batch#: Sampled: 01/31/06 02/03/06 SAMPLE Type: Lab ID: Prepared: Analyzed: 184670-018 10.00 02/07/06 Diln Fac:

Analyte
Diesel C10-C24 Result 1,700 9.9 <u>50</u> Motor Oil C24-C36

Surrogate	%REC	Limits	
Hexacosane	DO	48-132	

H= Heavier hydrocarbons contributed to the quantitation L= Lighter hydrocarbons contributed to the quantitation Y= Sample exhibits chromatographic pattern which does not resemble standard

DO= Diluted Out ND= Not Detected RL= Reporting Limit Page 6 of 12

16.0



Total Extractable Hydrocarbons					
Lab #: Client:	184670 Malcolm Pirnie, Inc.	Location: Prep:	General Mills SHAKER TABLE		
Project#:	STANDARD	Analysis:	EPA 8015B		
Matrix:	Soil	Basis:	as received		
Units:	mq/Kq	Received:	02/01/06		

SB6-013106-4.5 Field ID: Batch#: 110136 01/31/06 02/03/06 Type: Lab ID: SAMPLE Sampled: 184670-019 Prepared: 02/04/06 Diln Fac: 1.000 Analyzed:

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 1.0 5.0 16 H

Surrogate	%REC	Limits	
Hexacosane	62	48-132	

110136 01/31/06 02/03/06 02/05/06 SB6-013106-14.5 Field ID: Batch#: SAMPLE 184670-020 Type: Lab ID: Sampled: Prepared: Diln Fac: 1.000 Analyzed:

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 1.0 5.0 230 34 L

Surrogate	\$REC	Limits	
Hexacosane	68	48-132	

SB6-013106-6.0 Field ID: Batch#: 110136 01/31/06 02/03/06 Type: Lab ID: SAMPLE Sampled: 184670-021 Prepared: Diln Fac: 10.00 Analyzed: 02/07/06

Diesel C10-C24 Result 3,600 10 Motor Oil C24-C36

Surrogate	FREC	Limits	
Hexacosane	DO	48-132	

 $\mbox{\sc H=}$  Heavier hydrocarbons contributed to the quantitation  $\mbox{\sc L=}$  Lighter hydrocarbons contributed to the quantitation

DO= Diluted Out ND= Not Detected RL= Reporting Limit Page 7 of 12

Y= Sample exhibits chromatographic pattern which does not resemble standard



Total Extractable Hydrocarbons					
Lab #:	184670	Location:	General Mills		
Client:	Malcolm Pirnie,Inc.	Prep:	SHAKER TABLE		
Project#:	STANDARD	Analysis:	EPA 8015B		
Matrix:	Soil	Basis:	as received		
Units:	mg/Kg	Received:	02/01/06		

Field ID: Type: Lab ID:

Diln Fac:

SB8-013106-16.0

SAMPLE 184670-022 1.000

Batch#: Sampled: Prepared: Analyzed: 110136 01/31/06 02/03/06 02/07/06

Analyte	Result	RL	
Diesel C10-C24	25 H Y	1.0	
Motor Oil C24-C36	53	5.0	

Surrogate	%REC	Limits	J
Hexacosane	7.5	48-132	

Field ID: Type: Lab ID: Diln Fac: SB8-013106-6.0 SAMPLE

184670-023 10.00

Batch#: Sampled: Prepared: Analyzed: 110136 01/31/06 02/03/06 02/07/06

Analyte	Result	RL	
Diesel C10-C24	3,100 H Y	10	
Motor Oil C24-C36	1 600 T	50	

Surrogate	FREC	Limits	
Heyacosane	DO	48-132	

Field ID: Type:

SB10-020106-15.5

SAMPLE 184670-024

Batch#: Sampled: Prepared: 110136 02/01/06

	Analyte	Result	RL	
Diln Fac:	20.00	Analy		02/07/06

Analyte	Result	RL	
Diesel C10-C24	4,600	20	
Motor Oil C24-C36	300 L Y	100	
''			

Surrogate	%REC	Limits	
Hexacosane	DO	48-132	

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out
ND= Not Detected
RL= Reporting Limit
Page 8 of 12

16.0



Total Extractable Hydrocarbons					
Lab #:	184670	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE		
Project#:	STANDARD	Analysis:	EPA 8015B		
Matrix:	Soil	Basis:	as received		
Units:	mg/Kg	Received:	02/01/06		

Field ID: Type: Lab ID:

Diln Fac:

SB10-020106-4.5

SAMPLE 184670-025

3.000

Analyzed:

Batch#: Sampled: Prepared: 110136

02/01/06 02/03/06 02/07/06

Analyte	Result	RL	
Diesel C10-C24	110 H Y	3.0	
Motor Oil C24-C36	240 H	15	

-	Surrogate	SDEC	Limite	
- 1	Bullodate	- PICEIC	TITMIT CO	
	Hexacosane	85	48-132	

Field ID:

SB10-020106-13

Type: Lab ID: Diln Fac:

SAMPLE 184670-026 50.00

Batch#:

Sampled: Prepared: Analyzed:

110136 02/01/06 02/03/06 02/07/06

Analyte	Result	RL	
Diesel C10-C24	8,300	50	
Motor Oil C24-C36	610 L Y	250	

O	0.000	* 1 m 1 h m	
Surrodate	%REC	Limits	

Field ID: Type: Lab ID: Diln Fac: SB12-020106-15.5

SAMPLE

184670-027

10.00

Batch#:

Sampled: Prepared: 110136 02/01/06 02/03/06 02/07/06

Analyzed:

Analyte	Result	RL	
Diesel C10-C24	1,500	10	
Motor Oil C24-C36	60 L Y	50	

Surrogate	FREC	Limits
Hexacosane	DO	48-132

H= Heavier hydrocarbons contributed to the quantitation L= Lighter hydrocarbons contributed to the quantitation Y= Sample exhibits chromatographic pattern which does not resemble standard

DO= Diluted Out

ND= Not Detected

RL= Reporting Limit

Page 9 of 12



Total Extractable Hydrocarbons						
Lab #:	184670	Location:	General Mills			
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE			
Project#:	STANDARD	Analysis:	EPA 8015B			
Matrix:	Soil	Basis:	as received			
Units:	mg/Kg	Received:	02/01/06			

Field ID:

SB12-020106-3.5

SAMPLE

Type: Lab ID: Diln Fac:

184670-028

3.000

Batch#:

Sampled:

Prepared: Analyzed:

110159 02/01/06 02/04/06 02/07/06

Analyte	Result	RL	
Diesel C10-C24	280 Н Ү	3.0	
Motor Oil C24-C36	790	15	

Surrogate	%REC	Limits	
Hexacosane	99	48-132	١

Field ID:

SB12-020106-13.0

Type: Lab ID:

Diln Fac:

184670-029 50.00

SAMPLE

Batch#:

Sampled:

110159 02/01/06 02/04/06

Prepared: Analyzed: 02/07/06

Analyte	Result	RL	
Diesel C10-C24	12,000	50	
Motor Oil C24-C36	610 L Y	250	

Surrogate	%REC	Limits	
Hexacosane	DO	48-132	

Field ID:

SB13-020106-16.0

SAMPLE 184670-030

Type: Lab ID: 1.000 Diln Fac:

Batch#:

Sampled: Prepared: Analyzed: 110159 02/01/06 02/04/06 02/06/06

Analyte	Result	RL	
Diesel C10-C24	17 H Y	1.0	-
Motor Oil C24-C36	28 Н	5.0	

Surrogate	%REC	Limits	
Hexacosane	96	48-132	 

H= Heavier hydrocarbons contributed to the quantitation L= Lighter hydrocarbons contributed to the quantitation Y= Sample exhibits chromatographic pattern which does not resemble standard

DO= Diluted Out ND= Not Detected

RL= Reporting Limit

Page 10 of 12

16.0



Total Extractable Hydrocarbons Lab #: 184670 Location: General Mills Malcolm Pirnie, Inc. Client: Prep: SHAKER TABLE EPA 8015B Project# STANDARD Analysis: as received 02/01/06 Matrix: Soil Basis: Units: mq/Kq Received:

110159 02/01/06 02/04/06 02/07/06 Field ID: SB13-020106-4.5 Batch#: Type: Lab ID: SAMPLE Sampled: 184670-031 Prepared: Diln Fac: 1.000 Analyzed:

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 1.0 5.0 21 100

Surrogate **%REC** Limits Hexacosane 111 48-132

Field ID: SB13-020106-6.5 110159 Batch#: Type: Lab ID: SAMPLE 02/01/06 Sampled: Prepared: Analyzed: 184670-032 02/04/06 02/07/06 Diln Fac: 40.00

**RL** 40 Analyte
Diesel C10-C24 Result 16,000 Motor Oil C24-C36 ,000 200

Surrogate **%REC** Limits 48-132 Hexacosane DO

Type: Lab ID: BLANK 02/02/06 Prepared: QC326657 Analyzed: 02/03/06 Diln Fac: 1.000 Cleanup Method: EPA 3630C

Batch#: 110116

Result Analyte 1.0 5.0 Diesel C10-C24 ND Motor Oil C24-C36 ND

Surrogate Limits Hexacosane 48-132

Type: Lab ID: BLANK Batch#: 110136 02/03/06 02/04/06 Prepared: Analyzed: QC326729 1.000 Diln Fac:

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result ND 1.0 5.0 ND

%REC Limits Surrogate Hexacosane 90 48-132

 $\ensuremath{\text{H=}}$  Heavier hydrocarbons contributed to the quantitation L= Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard DO= Diluted Out

ND= Not Detected RL= Reporting Limit



Total Extractable Hydrocarbons						
Lab #:	184670	Location:	General Mills			
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE			
Project#:	STANDARD	Analysis:	EPA 8015B			
Matrix:	Soil	Basis:	as received			
Units:	mg/Kg	Received:	02/01/06			

Type: Lab ID: Diln Fac: Batch#:

BLANK QC326843 1.000 110159

Prepared: 02/04/06 Analyzed: 02/06/06 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	0.99	/
Motor Oil C24-C36	ND	5.0	

Surrogate	%REC	Limits	
Hexacosane	101	48-132	

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out
ND= Not Detected
RL= Reporting Limit
Page 12 of 12



Total Extractable Hydrocarbons				
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE	
Project#:	STANDARD	Analysis:	EPA 8015B	
Type:	LCS	Diln Fac:	1.000	-
Lab ID:	QC326658	Batch#:	110116	
Matrix:	Soil	Prepared:	02/02/06	
Units:	mg/Kg	Analyzed:	02/03/06	
Basis:	as received	_		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.30	43.21	86	54-137

Surrogate	%REC	Limits		
Hexacosane	80	48-132	·	

Page 1 of 1 17.0



Total Extractable Hydrocarbons				
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE	
Project#:	STANDARD	Analysis:	EPA 8015B	
Field ID:	ZZZZZZZZZZ	Batch#:	110116	
MSS Lab ID:	184663-009	Sampled:	01/31/06	
Matrix:	Soil	Received:	01/31/06	
Units:	mg/Kg	Prepared:	02/02/06	
Basis:	as received	Analyzed:	02/03/06	
Diln Fac:	1.000			

Type:

MS

Cleanup Method: EPA 3630C

Lab ID:

QC326659

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	4.063	49.90	42.27	77	28-163

Surrogate	%REC	Limits
Hexacosane	79	48-132

Type: Lab ID: MSD

QC326660

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.38	41.27	74	28-163	3	46

Surrogate	%REC	Limits	
Hexacosane	77	48-132	



Total Extractable Hydrocarbons				
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE	
Project#:	STANDARD	Analysis:	EPA 8015B	
Type:	LCS	Diln Fac:	1.000	
Lab ID:	QC326730	Batch#:	110136	
Matrix:	Soil	Prepared:	02/03/06	
Units:	mg/Kg	Analyzed:	02/04/06	
Basis:	as received	_		

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.11	40.91	82	54-137

Surrogate	%REC	Limits	
ane	80	48-132	



Total Extractable Hydrocarbons				
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE	
Project#:	STANDARD	Analysis:	EPA 8015B	
Field ID:	SB12-020106-15.5	Batch#:	110136	
MSS Lab ID:	184670-027	Sampled:	02/01/06	
Matrix:	Soil	Received:	02/01/06	
Units:	mg/Kg	Prepared:	02/03/06	
Basis:	as received	Analyzed:	02/04/06	
Diln Fac:	1.000			

Type:

MS

Lab ID:

QC326731

Analyte	MSS Result	Spiked	Result	%REC Li	mits
Diesel C10-C24	1,529	49.98	1,675 >LR	293 NM 28	-163

Surrogate	%REC	Limits	
Hexacosane	93	48-132	

Type:

MSD

Lab ID:

QC326732

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.07	1,427 >LR	-203 NM	28-163	NC	46

Surrogate	%REC	Limits	
Hexacosane	83	48-132	

NC= Not Calculated

 $\mbox{NM=}$  Not Meaningful: Sample concentration > 4X spike concentration

>LR= Response exceeds instrument's linear range

RPD= Relative Percent Difference



Total Extractable Hydrocarbons				
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE	
Project#:	STANDARD	Analysis:	EPA 8015B	
Type:	LCS	Diln Fac:	1.000	
Lab ID:	QC326844	Batch#:	110159	
Matrix:	Soil	Prepared:	02/04/06	
Units:	mg/Kg	Analyzed:	02/06/06	
Basis:	as received			

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.88	51.97	104	54-137

Surrogate	%REC	Limits	
Hexacosane	92	48-132	



	Total Extr	actable Hydrocar	rbons	
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE	
Project#:	STANDARD	Analysis:	EPA 8015B	
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000	
MSS Lab ID:	184707-007	Batch#:	110159	
Matrix:	Soil	Sampled:	02/02/06	
Units:	mg/Kg	Received:	02/02/06	
Basis:	as received	Prepared:	02/04/06	

Type: Lab ID: MS

QC326845

Analyzed: 02/06/06 Cleanup Method: EPA 3630C

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	2.574	50.33	50.87	96	28-163

Surrogate	%REC	Limits
Hexacosane	93	48-132

Type:

MSD

Analyzed: 02/07/06

Lab ID:

QC326846

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD Lin	m
Diesel C10-C24	50.18	53.57	102	28-163	5 46	

Surrogate	%REC	Limits	
Hexacosane	98	48-132	



Semivolatile Organics by GC/MS SIM					
Lab #:	184670	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B		
Project#:	STANDARD	Analysis:	EPA 8270C-SIM		
Field ID:	SB4-013106-6.0	Batch#:	110148		
Lab ID:	184670-015	Sampled:	01/31/06		
Matrix:	Soil	Received:	02/01/06		
Units:	ug/Kg	Prepared:	02/03/06		
Basis:	as received	Analyzed:	02/06/06		
Diln Fac:	40.00	-			

Analyte	Result	RL	
Naphthalene	310	200	
Acenaphthylene	340	200	
Acenaphthene	850	200	
Fluorene	3,700	200	
Phenanthrene	5,400	200	
Anthracene	470	200	
Fluoranthene	ND	200	
Pyrene	230	200	
Benzo(a)anthracene	ND	200	
Chrysene	ND	200	
Benzo(b)fluoranthene	ND	200	
Benzo(k)fluoranthene	ND	200	
Benzo(a)pyrene	ND	200	
Indeno(1,2,3-cd)pyrene	ND	200	
Dibenz(a,h)anthracene	ND	200	
Benzo(g,h,i)perylene	ND	200	

Surrogate	%REC	Limits	
Nitrobenzene-d5	DO	33-151	
2-Fluorobiphenyl	DO	34-126	
Terphenyl-d14	DO	42-135	

RL= Reporting Limit



Semivolatile Organics by GC/MS SIM				
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B	
Project#:	STANDARD	Analysis:	EPA 8270C-SIM	
Field ID:	SB6-013106-6.0	Batch#:	110148	
Lab ID:	184670-021	Sampled:	01/31/06	
Matrix:	Soil	Received:	02/01/06	
Units:	ug/Kg	Prepared:	02/03/06	
Basis:	as received	Analyzed:	02/06/06	
Diln Fac:	25.00			

Analyte	Result	RL	
Naphthalene	ND	130	
Acenaphthylene	ND	130	
Acenaphthene	280	130	
Fluorene	140	130	
Phenanthrene	210	130	
Anthracene	300	130	
Fluoranthene	140	130	
Pyrene	210	130	
Benzo(a)anthracene	ND	130	
Chrysene	ND	130	
Benzo(b)fluoranthene	ND	130	
Benzo(k)fluoranthene	ND	130	
Benzo(a)pyrene	ND	130	
Indeno(1,2,3-cd)pyrene	ND	130	
Dibenz(a,h)anthracene	ND	130	
Benzo(g,h,i)perylene	ND_	130	

Surrogate	%REC	Limits	
Nitrobenzene-d5	DO	33-151	
2-Fluorobiphenyl	DO	34-126	
Terphenyl-d14	DO	42-135	



Semivolatile Organics by GC/MS SIM					
Lab #:	184670	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B		
Project#:	STANDARD	Analysis:	EPA 8270C-SIM		
Field ID:	SB10-020106-13	Batch#:	110148		
Lab ID:	184670-026	Sampled:	02/01/06		
Matrix:	Soil	Received:	02/01/06		
Units:	ug/Kg	Prepared:	02/03/06		
Basis:	as received	Analyzed:	02/07/06		
Diln Fac:	20.00				

Analyte	Result	RL	
Naphthalene	510	100	
Acenaphthylene	440	100	
Acenaphthene	1,100	100	
Fluorene	4,400	100	
Phenanthrene	6,200	100	
Anthracene	640	100	
Fluoranthene	260	100	
Pyrene	340	100	
Benzo(a)anthracene	ND	100	
Chrysene	120	100	
Benzo(b)fluoranthene	ND	100	
Benzo(k)fluoranthene	ND	100	
Benzo(a)pyrene	ND	100	
Indeno(1,2,3-cd)pyrene	ND	100	
Dibenz(a,h)anthracene	ND	100	
Benzo(g,h,i)perylene	ND	100	

	Surrogate	%REC	Limits	
N	litrobenzene-d5	DO	33-151	
2	-Fluorobiphenyl	DO	34-126	
T	Cerphenyl-d14	DO	42-135	

RL= Reporting Limit



Semivolatile Organics by GC/MS SIM					
Lab #:	184670	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B		
Project#:	STANDARD	Analysis:	EPA 8270C-SIM		
Field ID:	SB12-020106-13.0	Batch#:	110148		
Lab ID:	184670-029	Sampled:	02/01/06		
Matrix:	Soil	Received:	02/01/06		
Units:	ug/Kg	Prepared:	02/03/06		
Basis:	as received	Analyzed:	02/06/06		
Diln Fac:	40.00	-			

Analyte	Result	RL	
Naphthalene	340	200	1
Acenaphthylene	430	200	
Acenaphthene	1,100	200	1
Fluorene	4,300	200	1
Phenanthrene	6,300	200	
Anthracene	600	200	
Fluoranthene	300	200	
Pyrene	280	200	1
Benzo(a)anthracene	ND	200	
Chrysene	ND	200	
Benzo(b)fluoranthene	ND	200	- 1
Benzo(k) fluoranthene	ND	200	1
Benzo(a)pyrene	ND	200	
Indeno(1,2,3-cd)pyrene	ND	200	- 1
Dibenz(a,h)anthracene	ND	200	
Benzo(g,h,i)perylene	ND	200	

Surrogate	%REC	Limits	
Nitrobenzene-d5	DO	33-151	
2-Fluorobiphenyl	DO	34-126	J
Terphenyl-d14	DO	42-135	



Semivolatile Organics by GC/MS SIM				
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B	
Project#:	STANDARD	Analysis:	EPA 8270C-SIM	
Type:	BLANK	Diln Fac:	1.000	
Lab ID:	QC326781	Batch#:	110148	
Matrix:	Soil	Prepared:	02/03/06	
Units:	ug/Kg	Analyzed:	02/03/06	
Basis:	as received	-		

Analyte	Result	RL	
Naphthalene	ND	5.0	
Acenaphthylene	ND	5.0	
Acenaphthene	ND	5.0	
Fluorene	ND	5.0	
Phenanthrene	ND	5.0	
Anthracene	ND	5.0	
Fluoranthene	ND	5.0	
Pyrene	ND	5.0	
Benzo(a)anthracene	ND	5.0	
Chrysene	ND	5.0	
Benzo(b)fluoranthene	ND	5.0	
Benzo(k)fluoranthene	ND	5.0	
Benzo(a)pyrene	ND	5.0	
Indeno(1,2,3-cd)pyrene	ND	5.0	
Dibenz(a,h)anthracene	ND	5.0	
Benzo(g,h,i)perylene	ND	5.0	

Surrogate	%REC	Limits	
Nitrobenzene-d5	72	33-151	
2-Fluorobiphenyl	69	34-126	
Terphenyl-d14	76	42-135	



Semivolatile Organics by GC/MS SIM				
Lab #:	184670	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B	
Project#:	STANDARD	Analysis:	EPA 8270C-SIM	
Type:	LCS	Diln Fac:	1.000	
Lab ID:	QC326782	Batch#:	110148	
Matrix:	Soil	Prepared:	02/03/06	
Units:	ug/Kg	Analyzed:	02/03/06	
Basis:	as received	_		

Analyte	Spiked	Result	%REC	Limits	(
Acenaphthene	33.52	17.93	53	49-120	
Pyrene	33.52	18.05	54	48-120	

Surrogate	%REC	Limits	
Nitrobenzene-d5	59	33-151	 • • • • • • • • • • • • • • • • • • •
2-Fluorobiphenyl	58	34-126	
Terphenyl-d14	60	42-135	

Page 1 of 1 14.0



Semivolatile Organics by GC/MS SIM					
Lab #:	184670	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B		
Project#:	STANDARD	Analysis:	EPA 8270C-SIM		
Field ID:	ZZZZZZZZZZ	Batch#:	110148		
MSS Lab ID:	184679-001	Sampled:	02/01/06		
Matrix:	Soil	Received:	02/01/06		
Units:	ug/Kg	Prepared:	02/03/06		
Basis:	as received	Analyzed:	02/06/06		
Diln Fac:	1.000				

Type:

MS

Lab ID: QC326783

Analyte	MSS Result	Spiked	Result	%REC	Limits
Acenaphthene	1.891	33.52	13.18	34 *	52-125
Pyrene	170.2	33.52	64.32	-316 N	M 39-135

Surrogate	%REC	Limits	
Nitrobenzene-d5	51	33-151	
2-Fluorobiphenyl	38	34-126	
Terphenyl-d14	30 *	42-135	

Type:

MSD

Lab ID: QC326784

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Acenaphthene	33.06	26.55	75	52-125	68 *	35
Pyrene	33.06	399.4 >LR	693 NM	39-135	NC	44

Surrogate	%REC	Limits	
Nitrobenzene-d5	87	33-151	
2-Fluorobiphenyl	68	34-126	
Terphenyl-d14	77	42-135	

<sup>\*=</sup> Value outside of QC limits; see narrative

NC= Not Calculated

 $<sup>{\</sup>tt NM=}$  Not Meaningful: Sample concentration > 4X spike concentration

<sup>&</sup>gt;LR= Response exceeds instrument's linear range

RPD= Relative Percent Difference

DATE / TIME

## Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

SIGNATURE

## **CHAIN OF CUSTODY**

Page 1 of 3

C&TLOGIN #: 18+670

**Analysis** 

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DATE / TIME

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Project P.O.:	Telephone: 510 735 3- 34	
Turnaround Time:	Fax: 512 576 3855	

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Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone

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CHAIN	OF	CUST	ODY
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Page of 5

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Total Volatile Hydrocarbons Lab #: 184700 Location: General Mills Malcolm Pirnie, Inc. 2626008 Prep: Analysis: EPA 5030B EPA 8015B 02/01/06 Client: Project#: Matrix: Soil Sampled: 02/02/06 Units: mg/Kg Received: Basis: as received

Field ID: Type: Lab ID:

SB14-020106-15.0

SAMPLE 184700-001

Diln Fac: Batch#: Analyzed: 1.000 110164 02/05/06

Analyte Gasoline C7-C12 Result RT. 0.99 **%REC** Limits 59-140 62-149 Surrogate 95 105 Trifluorotoluene (FID)

Field ID:

Bromofluorobenzene (FID)

SB14-020106-11.0

Diln Fac:

10.00 110147

Type: Lab ID:

SAMPLE 184700-003 Batch#: Analyzed:

02/04/06

Analyte	The management of the second	Result	RL	
Gasoline C7-C12		160 H Y	10	
Surrogate	%REC	Limits		
Trifluorotoluene (FID) Bromofluorobenzene (FID)	105 197 *	59-140 62-149		

Type: Lab ID:

BLANK

QC326778 1.000

Batch#:

110147

Diln Fac:

Analyzed:

02/03/06

Analyte		Result	RL	
Gasoline C7-C12	ND		1.0	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)		59-140		
Bromofluorobenzene (FID)	95	62-149		

Type: Lab ID:

BLANK OC326863 1.000 Batch#:

Diln Fac:

110164 02/05/06 Analyzed:

Analyte	Result	RL,
Gasoline C7-C12	ND	1.0
Surrogate	%REC Limits	
Trifluorotoluene (FID)	95 59-140	
Bromofluorobenzene (FID)	94 62-149	

<sup>\*=</sup> Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected

RL= Reporting Limit

Page 1 of 1



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184700	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	2626008	Analysis:	EPA 8015B	
Type:	LCS	Basis:	as received	
Lab ID:	QC326780	Diln Fac:	1.000	
Matrix:	Soil	Batch#:	110147	
Units:	mg/Kg	Analyzed:	02/03/06	

Analyte	Spiked	Result	%REC	Limits	
Gasoline C7-C12	2.000	2.079	104	80-120	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	113	59-140	
Bromofluorobenzene (FID)	108	62-149	



	Total Volatile Hydrocarbons				
Lab #:	184700	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	2626008	Analysis:	EPA 8015B		
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000		
MSS Lab ID:	184717-010	Batch#:	110147		
Matrix:	Soil	Sampled:	02/01/06		
Units:	mg/Kg	Received:	02/03/06		
Basis:	as received	Analyzed:	02/04/06		

Type:

MS

Lab ID: QC326828

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<0.1393	10.00	8.197	82	44-120

Surrogate	%REC	Limits	Variable version with the	
Trifluorotoluene (FID)	115	59-140		
Bromofluorobenzene (FID)	107	62-149		

Type:

MSD

Lab ID:

QC326829

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	7.829	78	44-120	5	23

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	114	59-140	
Bromofluorobenzene (FID)	107	62-149	



Total Volatile Hydrocarbons				
Lab #:	184700	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	2626008	Analysis:	EPA 8015B	
Type:	LCS	Basis:	as received	
Lab ID:	QC326864	Diln Fac:	1.000	
Matrix:	Soil	Batch#:	110164	
Units:	mg/Kg	Analyzed:	02/05/06	

Analyte	Spiked	Result	%REC	Limits	
Gasoline C7-C12	10.00	10.27	103	80-120	

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-140
Bromofluorobenzene (FID)	100	62-149



	Total Volatile Hydrocarbons				
Lab #:	184700	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	2626008	Analysis:	EPA 8015B		
Field ID:	SB18-020206-10.0	Diln Fac:	1.000		
MSS Lab ID:	184729-004	Batch#:	110164		
Matrix:	Soil	Sampled:	02/02/06		
Units:	mg/Kg	Received:	02/03/06		
Basis:	as received	Analyzed:	02/05/06		

Type:

MS

Lab ID:

QC326868

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.2438	9.709	5.751	57	44-120

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	105	59-140	
Bromofluorobenzene (FID)	94	62-149	

Type:

MSD

Lab ID:

QC326869

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.42	5.378	49	44-120	14	23

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	99	59-140	
Bromofluorobenzene (FID)	91	62-149	



Total Extractable Hydrocarbons Lab #: 184700 Location: General Mills Prep: Analysis: Sampled: SHAKER TABLE EPA 8015B Client: Malcolm Pirnie, Inc. 2626008 Soil Project#: 02/01/06 02/02/06 02/04/06 Matrix: Units: mg/Kg Received: Basis: as received Prepared: Batch#: 110159

Field ID:

SB14-020106-15.0 SAMPLE

Type: Lab ID:

184700-001

Diln Fac: Analyzed: 1.000 02/07/06

Analyte	Result	RL
Diesel C10-C24	71	1.0
Motor Oil C24-C36	19 L Y	5.0

Surrogate	%REC	Limits	
Hexacosane	86	48-132	

Field ID:

SB14-020106-11.0

SAMPLE

Diln Fac:

Type: Lab ID:

184700-003

Analyzed:

20.00 02/08/06

Analyte	Result	RL	AS REPORTED TO THE REPORT OF THE PERSON OF T
Diesel C10-C24	3,200	20	
Motor Oil C24-C36	300 L Y	100	

Surrogate	%REC	Limits	
Hexacosane	DO	48-132	

Type: Lab ID:

BLANK

Analyzed: Cleanup Method:

02/06/06 EPA 3630C

Diln Fac:

QC326843 1.000

Analyte	Kesuit	KL CONTRACTOR	
Diesel C10-C24	ND	0.99	/00
Motor Oil C24-C36	ND	5.0	(
the state of the s			
	7555		

Surrogate Hexacosane

L= Lighter hydrocarbons contributed to the quantitation Y= Sample exhibits chromatographic pattern which does not resemble standard

DO= Diluted Out ND= Not Detected RL= Reporting Limit



Total Extractable Hydrocarbons					
Lab #:	184700	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE		
Project#:	2626008	Analysis:	EPA 8015B		
Type:	LCS	Diln Fac:	1.000		
Lab ID:	QC326844	Batch#:	110159		
Matrix:	Soil	Prepared:	02/04/06		
Units:	mg/Kg	Analyzed:	02/06/06		
Basis:	as received				

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.88	51.97	104	54-137

Surrogate	%REC	Limits	
Hexacosane	92	48-132	



	Total Extr	actable Hydroca:	rbons	
Lab #:	184700	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE	
Project#:	2626008	Analysis:	EPA 8015B	1
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000	
MSS Lab ID:	184707-007	Batch#:	110159	
Matrix:	Soil	Sampled:	02/02/06	
Units:	mg/Kg	Received:	02/02/06	
Basis:	as received	Prepared:	02/04/06	

Type: Lab ID: MS

QC326845

Analyzed:

02/06/06

Cleanup Method: EPA 3630C

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	2.574	50.33	50.87	96	28-163

Surrogate	%REC	Limits	
Hexacosane	93	48-132	

Type:

MSD

Analyzed:

02/07/06

Lab ID:

QC326846

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.18	53.57	102	28-163	5	46

Surrogate	%REC	Limits	
Hexacosane	98	48-132	_

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878

# **CHAIN OF CUSTODY**

Analysis

C.	2323 Fifth Street Berkeley, CA 94710 510) 486-0900 Phone (510) 486-0532 Fax		C&TL					[84	-	0					(	<b>%</b>				1	-	alys	112		1	*	:	
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	Total Vol	atile Hydrocarbo	ons	
Lab #:	184729	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	2626008	Analysis:	EPA 8015B	
Matrix:	Soil	Diln Fac:	1.000	
Units:	mg/Kg	Sampled:	02/02/06	
Basis:	as received	Received:	02/03/06	

Field ID: Type: Lab ID:

SB17-020206-14.5

SAMPLE 184729-001

Batch#: Analyzed: 110147 02/03/06

Analyte		Result	RL	
Gasoline C7-C12	ND		1.0	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	96	59-140		
Bromofluorobenzene (FID)	103	62-149		

Field ID:

SB17-020206-4.5 SAMPLE

Type: Lab ID:

184729-002

Analyte

Batch#: Analyzed: 110147 02/03/06

the same of the sa	ARTHUR DESIGNATION OF THE PARTY			
Gasoline C7-C12	ND		0.96	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	93	59-140		
Bromofluorobenzene (FID)	98	62-149		

Regul +

Field ID:

SB18-020206-10.0 SAMPLE

Batch#:

110164 02/05/06

Type: Lab ID:

184729-004

Analyzed:

DT.

Analyte		Result	RL	
Gasoline C7-C12	NE	)	0.91	
Surrogate	FREC	Limits		
Trifluorotoluene (FID)	96	59-140		
Bromofluorobenzene (FID)	97	62-149		1

Field ID:

SB18-020206-4.5 SAMPLE 184729-005

Batch#: Analyzed: 110147 02/04/06

Type: Lab ID:

Analyte		Result	RL	
Gasoline C7-C12	ND		0.93	
Surrogate	%REC	Limits		
Surrogate Trifluorotoluene (FID)	<b>%REC</b> 95	<b>Limits</b> 59-140		

 $<sup>\</sup>mbox{H=}$  Heavier hydrocarbons contributed to the quantitation  $\mbox{Y=}$  Sample exhibits chromatographic pattern which does not resemble standard  $\mbox{ND=}$  Not Detected

RL= Reporting Limit
Page 1 of 5



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184729	Location:	General Mills	
Client:	Malcolm Pirnie,Inc.	Prep:	EPA 5030B	
Project#:	2626008	Analysis:	EPA 8015B	
Matrix:	Soil	Diln Fac:	1.000	
Units:	mg/Kg	Sampled:	02/02/06	
Basis:	as received	Received:	02/03/06	

Field ID:

SB20-020206-4.0

SAMPLE

Type: Lab ID: 184729-010 Batch#: Analyzed: 110147 02/04/06

Analyte		Result	RL	
Gasoline C7-C12	NI	)	1.0	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	94	59-140		
Bromofluorobenzene (FID)	99	62-149		

Field ID:

SB20-020206-9.0

SAMPLE

Type: Lab ID: 184729-011 Batch#: Analyzed:

110164 02/05/06

Kesult	KLI .	
ND	0.97	
%REC Limits		
	ND	ND 0.97

59-140 62-149 Trifluorotoluene (FID) Bromofluorobenzene (FID)

Field ID:

SB20-020206-5.5

Batch#: Analyzed: 110164

Type: Lab ID:

SAMPLE 184729-012 02/05/06

	Analyte		Result	RL	
	Gasoline C7-C12		4.5 H Y	0.98	
	Surrogate	%REC	Limits		
7	Trifluorotoluene (FID)	96	59-140		
- 1	Promofluorobongono /FID)	1 0 1	62-149		

Field ID:

Batch#:

110164

Type: Lab ID:

SB21-020206-15.0 SAMPLE 02/05/06 Analyzed: 184729-013

Analyte		Result	RL	
Gasoline C7-C12	NE	)	0.91	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	90	59-140		
Promofluorobenzene (FID)	aa	62-149		

H= Heavier hydrocarbons contributed to the quantitation Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

Page 2 of 5



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184729	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	2626008	Analysis:	EPA 8015B	
Matrix:	Soil	Diln Fac:	1.000	
Units:	mg/Kg	Sampled:	02/02/06	
Basis:	as received	Received:	02/03/06	

Field ID: Type: Lab ID:

SB21-020206-4.0 SAMPLE 184729-014

Batch#: Analyzed: 110147 02/04/06

Analyte		Result	RL	
Gasoline C7-C12	ND		0.99	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	98	59-140		
	105	62-149		

Field ID:

SB22-020206-4.5

Type: Lab ID: SAMPLE

184729-015

Batch#: Analyzed:

110147 02/04/06

Analyte	Result	RL	
Gasoline C7-C12	ND	0.94	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	92	59-140	
Bromofluorobenzene (FID)	98	62-149	

Field ID: Type: Lab ID:

SB22-020206-14.0

SAMPLE 184729-017

Batch#: 110164 Analyzed: 02/05/06

Analyte	Result	RL	
Gasoline C7-C12	1.3 H Y	0.98	

			112
Surrogate	%REC	Limits	
Trifluorotoluene (FID)	98	59-140	1
Bromofluorobenzene (FID)	104	62-149	Г

Field ID:

SB23-020206-4.5 SAMPLE 184729-018

Batch#: Analyzed:

110147 02/04/06

Type: Lab ID:

Anallyte	Result	RL	
Gasoline C7-C12	ND	0.96	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	91	59-140	
Bromofluorobenzene (FID)	96	62-149	

H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Page 3 of 5



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184729	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	2626008	Analysis:	EPA 8015B	
Matrix:	Soil	Diln Fac:	1.000	
Units:	mg/Kg	Sampled:	02/02/06	
Basis:	as received	Received:	02/03/06	

Field ID: Type: Lab ID:

SB24-020206-4.5

SAMPLE

184729-019

Batch#: Analyzed: 110147 02/04/06

Analyte		Result	RL	
Gasoline C7-C12	ND		0.93	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	90	59-140		
Bromofluorobenzene (FID)	95	62-149		

Field ID: Type: Lab ID:

SB24-020206-10.0

SAMPLE

184729-020

Batch#: Analyzed: 110164 02/05/06

Analyte		Result	RL		
Gasoline C7-C12	ND		0.95		
Surrogate	%REC	Limits			
Trifluorotoluene (FID)	99	59-140			
Bromofluorobenzene (FID)	97	62-149			

Field ID: Type: Lab ID:

SB23-020206-10.0 SAMPLE

184729-021

Batch#: Analyzed: 110147 02/04/06

Analyte	Result	RL RL
Gasoline C7-C12	ND	0.96
Surrogate	%REC Limits	
Trifluorotoluene (FID)	92 59-140 96 62-149	

Type: Lab ID:

BLANK QC326778

Batch#: Analyzed:

110147 02/03/06

Analyte		Result	RL	
Gasoline C7-C12	ND		1.0	
Surrogate	*REC	Limits		
Trifluorotoluene (FID)	89	59-140		-
Bromofluorobenzene (FID)	95	62-149		

 $\mbox{H=}$  Heavier hydrocarbons contributed to the quantitation  $\mbox{Y=}$  Sample exhibits chromatographic pattern which does not resemble standard  $\mbox{ND=}$  Not Detected

RL= Reporting Limit

Page 4 of 5



	Total Vo	olatile Hydrocarbo	ns	
Lab #:	184729	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	2626008	Analysis:	EPA 8015B	
Matrix:	Soil	Diln Fac:	1.000	
Units:	mg/Kg	Sampled:	02/02/06	
Basis:	as received	Received:	02/03/06	

Type: Lab ID:

BLANK QC326863

Batch#: Analyzed:

110164 02/05/06

Annlute	Pagult	Direction of the second	Commence of the Commence of the last
Gasoline C7-C12	ND	1.0	

			1
Surrogate	%REC	Limits	
Trifluorotoluene (FID)	95	59-140	'n
Bromofluorobenzene (FID)	94	62-149	

H= Heavier hydrocarbons contributed to the quantitation Y= Sample exhibits chromatographic pattern which does not resemble standard ND= Not Detected RL= Reporting Limit Page 5 of 5



Total Volatile Hydrocarbons					
Lab #:	184729	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	2626008	Analysis:	EPA 8015B		
Type:	LCS	Basis:	as received		
Lab ID:	QC326780	Diln Fac:	1.000		
Matrix:	Soil	Batch#:	110147		
Units:	mg/Kg	Analyzed:	02/03/06		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2.000	2.079	104	80-120

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	113	59-140	
Bromofluorobenzene (FID)	108	62-149	

Page 1 of 1



Total Volatile Hydrocarbons					
Lab #:	184729	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	2626008	Analysis:	EPA 8015B		
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000	_	
MSS Lab ID:	184717-010	Batch#:	110147		
Matrix:	Soil	Sampled:	02/01/06		
Units:	mg/Kg	Received:	02/03/06		
Basis:	as received	Analyzed:	02/04/06		

Type:

MS

Lab ID:

QC326828

Analyte	MSS	Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	,	<0.1393	10.00	8.197	82	44-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	59-140
Bromofluorobenzene (FID)	107	62-149

Type:

MSD

Lab ID:

QC326829

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	7.829	78	44-120	5	23

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	114	59-140	
Bromofluorobenzene (FID)	107	62-149	



Total Volatile Hydrocarbons					
Lab #:	184729	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	2626008	Analysis:	EPA 8015B		
Type:	LCS	Basis:	as received		
Lab ID:	QC326864	Diln Fac:	1.000		
Matrix:	Soil	Batch#:	110164		
Units:	mg/Kg	Analyzed:	02/05/06		

Analyte	Spiked	Result	%REC	Limits	ATTINITY (
Gasoline C7-C12	10.00	10.27	103	80-120	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	113	59-140	
Bromofluorobenzene (FID)	100	62-149	

Page 1 of 1 5.0



Total Volatile Hydrocarbons				
Lab #:	184729	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	2626008	Analysis:	EPA 8015B	
Field ID:	SB18-020206-10.0	Diln Fac:	1.000	
MSS Lab ID:	184729-004	Batch#:	110164	
Matrix:	Soil	Sampled:	02/02/06	
Units:	mg/Kg	Received:	02/03/06	
Basis:	as received	Analyzed:	02/05/06	

Type:

MS

Lab ID: QC326868

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.2438	9.709	5.751	57	44-120

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	105	59-140	
Bromofluorobenzene (FID)	94	62-149	

Type:

MSD

Lab ID:

QC326869

Analyte	Spiked	Result	*REC	Limits	RPD	Lim
Gasoline C7-C12	10.42	5.378	49	44-120	14	23

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	99	59-140	
Bromofluorobenzene (FID)	91	62-149	 



Total Extractable Hydrocarbons Lab #: 184729 Location: General Mills SHAKER TABLE EPA 8015B 02/02/06 Prep: Analysis: Client: Malcolm Pirnie, Inc. Project#: 2626008 Soil Matrix: Sampled: Units: 02/03/06 mg/Kg Received: Basis: as received

Field ID: Type: Lab ID:

SB17-020206-14.5

SAMPLE 184729-001

Batch#: Prepared: Analyzed: 110159 02/04/06 02/07/06

Diln Fac:

2.000

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result RI. 150 H Y 340 2.0 10

Surrogate **%REC** Limits 48-132 Hexacosane

Field ID: Type: Lab ID:

SB17-020206-4.5

SAMPLE 184729-002 Batch#: Prepared: Analyzed: 110159 02/04/06 02/07/06

Diln Fac:

1.000

Analyte
Diesel C10-C24 Result 5.2 H Y 1.0 Motor Oil C24-C36 48 5.0

**VREC Limits** 48-132 Surrogate Hexacosane 88

Field ID: Type: Lab ID:

SB18-020206-10.0

SAMPLE 184729-004

Batch#: Prepared: Analyzed: 110159 02/04/06 02/07/06

Diln Fac:

RL Analyte Result Diesel C10-C24 Motor Oil C24-C36 120 H Y 350 L 1.0 5.0

Limits 48-132 Surrogate Hexacosane 114

H= Heavier hydrocarbons contributed to the quantitation L= Lighter hydrocarbons contributed to the quantitation Y= Sample exhibits chromatographic pattern which does not resemble standard

DO= Diluted Out ND= Not Detected RL= Reporting Limit Page 1 of 6



Total Extractable Hydrocarbons General Mills SHAKER TABLE EPA 8015B 02/02/06 Lab #: 184729 Location: Client: Malcolm Pirnie, Inc. Prep: Project#: 2626008 Analysis: Matrix: Soil Sampled: 02/03/06 Units: mg/Kg Received: Basis: <u>aš réceived</u>

Field ID: Type: Lab ID:

Diln Fac:

SB18-020206-4.5

SAMPLE 184729-005

1.000

Batch#:

110166 02/05/06 02/08/06

Prepared: Analyzed:

Analyte	Result	RL	
Diesel C10-C24	9.7 H Y	0.99	
Motor Oil C24-C36	32	5.0	

%REC Limits 48-132 Surrogate 84 Hexacosane

Field ID: Type: Lab ID:

SB20-020206-4.0

SAMPLE 184729-010

Batch#: Prepared: Analyzed: 110166 02/05/06 02/08/06

1.000 Diln Fac:

Analyte	Result	RL
Diesel C10-C24	25 H Y	0.99
Motor Oil C24-C36	52	5.0

Surrogate	%REC	Limits	
Hexacosane	8 <u>8</u>	48-132	

Field ID: Type: Lab ID:

Diln Fac:

SB20-020206-9.0

SAMPLE 184729-011 3.000

Batch#: Prepared: Analyzed: 110166 02/05/06 02/08/06

Result Annitre DT.

22162766	1100020	The state of the s	
Diesel C10-C24	370 H Y	3.0	
Motor Oil C24-C36	690	15	- 100 M

Surrogate	%REC	Limits	
Hexacosane	113	48-132	

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out

ND= Not Detected RL= Reporting Limit

Page 2 of 6



Total Extractable Hydrocarbons General Mills Lab #: 184729 Location: SHAKER TABLE EPA 8015B 02/02/06 Client: Malcolm Pirnie, Inc. Prep: 2626008 Analysi Project#: Matrix: Soil Sampled: mg/Kg Received: 02/03/06 Units: as réceived Basis:

Field ID: Type:

SB20-020206-5.5

SAMPLE

Láb ID: Diln Fac: 184729-012 40.00

Batch#:

110166 02/05/06

Prepared: 02/09/06 Analyzed:

Analyte Result Diesel C10-C24 Motor Oil C24-C36 4,800 H 40 200 2,100

Surrogate %REC Limits 48-132 Hexacosane

Field ID:

SB21-020206-15.0

Type: SAMPLE Lab ID:

184729-013

Batch#:

110166

02/05/06 02/06/06 Prepared: Analyzed:

1.000 Diln Fac:

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 1.0 11 H 5.0

Limits 48-132 %REC Surrogate Hexacosane

Field ID: Type: Lab ID:

Diln Fac:

SB21-020206-4.0

SAMPLE 184729-014 1.000

Batch#:

110166

02/05/06 02/08/06

Prepared: Analyzed:

Analyte	Result	RL	
Diesel C10-C24	7.1 H	0.99	-
Motor Oil C24-C36	32	5.0	

Surrogate	%REC	Limits	
Hexacosane	103	48-132	

 $<sup>\</sup>ensuremath{\mathtt{H=}}$  Heavier hydrocarbons contributed to the quantitation L= Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard

DO= Diluted Out ND= Not Detected RL= Reporting Limit



Total Extractable Hydrocarbons Lab #: 184729 Location: General Mills SHAKER TABLE EPA 8015B 02/02/06 Client: Malcolm Pirnie, Inc. Prep: <u>Analysis:</u> Project#: 2626008 Soil Matrix: Sampled: 02/03/06 Units: mg/Kg Received: Basis: <u>aš rēceived</u>

Field ID: Type: Lab ID:

SB22-020206-4.5 SAMPLE

184729-015

3.000

Batch#: Prepared: Analyzed: 110166 02/05/06 02/08/06

110166

02/05/06

02/06/06

Diln Fac:

Analyte	Result	RL	
Diesel C10-C24	48 H Y	3.0	
Motor Oil C24-C36	180 H	15	

&REC **Limits** 48-132 Surrogate Hexacosane

Field ID: Type: Lab ID:

SB22-020206-14.0

SAMPLE 184729-017

Batch#: Prepared: Analyzed:

Diln Fac: 1.000

Analyte	Result	RL	
Diesel C10-C24	14 H Y	0.99	
Motor Oil C24-C36	5.9 L	5.0	

Surrogate	%REC	Limits	
Hexacosane	86	48-132	

Field ID: Type: Lab ID:

SB23-020206-4.5

SAMPLE 184729-018

Batch#: Prepared: Analyzed: 110166 02/05/06 02/08/06

Diln Fac: 10.00

Analyte	Result	RL	
Diesel C10-C24	21 H Y	9.9	
Motor Oil C24-C36	550 H	50	

Surrogate	%REC	Limits	
Hexacosane	DO	48-132	

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out

ND= Not Detected RL= Reporting Limit

Page 4 of 6



Total Extractable Hydrocarbons Lab #: General Mills 184729 Location: Prep: Analysis: Client: Malcolm Pirnie, Inc. SHAKER TABLE EPA 8015B 02/02/06 Project#: 2626008 Matrix: Soil Sampled: mg/Kg Received: 02/03/06 Units: <u>as réceived</u> Basis:

Field ID: Type: Lab ID:

Diln Fac:

SB24-020206-4.5

SAMPLE 184729-019

1.000

Batch#:

110166

02/05/06 Prepared: Analyzed: 02/09/06

Result Analyte 72 Н 330 Н Diesel C10-C24 0.99 Motor Oil C24-C36 5.0

Limits 48-132 Surrogate Hexacosane

Field ID: Type: Lab ID: Diln Fac: SB24-020206-10.0

SAMPLE

184729-020 1.000

Batch#: Prepared: Analyzed:

110166

02/05/06 02/08/06

Analyte Diesel C10-C24 Motor Oil C24-C36 1.0 5.0 330 H

Surrogate Limits 48-132 **%REC** Hexacosane

Field ID: Type: Lab ID:

Diln Fac:

SB23-020206-10.0

SAMPLE 184729-021 1.000

Batch#:

110166

02/05/06 02/06/06 Prepared: Analyzed:

Analyte
Diesel C10-C24 Result RL 3.8 1.0 Motor Oil C24-C36 5.0 ND

Surrogate &REC Limits 48-132 Hexacosane 104

 $H\!\!=\!$  Heavier hydrocarbons contributed to the quantitation  $L\!\!=\!$  Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard

DO= Diluted Out ND= Not Detected RL= Reporting Limit

Page 5 of 6



Total Extractable Hydrocarbons Lab #: 184729 Location: General Mills SHAKER TABLE EPA 8015B 02/02/06 Prep: Client: Malcolm Pirnie, Inc. Project#: 2626008 Analysis: Matrix: Soil Sampled: 02/03/06 Units: mg/Kg Received: Basis: as réceived

Type: Lab ID: BLANK QC326843 Diln Fac:  $\bar{1}.000$ 110159 Batch#:

Prepared: Analyzed: 02/04/06 02/06/06 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	0.99	
Motor Oil C24-C36	ND	5.0	i v

**Limits** 48-132 Surrogate

Type: Lab ID: Diln Fac: BLANK QC326870 1.000 Batch#: 110166

Prepared: 02/05/06 Analyzed: 02/06/06 Cleanup Method: EPA 3630C

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result RL 0.99 ND ND 5.0

Surrogate %REC Limits Hexacosane 48-132

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out

ND= Not Detected RL= Reporting Limit Page 6 of 6



Total Extractable Hydrocarbons					
Lab #:	184729	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE		
Project#:	2626008	Analysis:	EPA 8015B		
Type:	LCS	Diln Fac:	1.000	-	
Lab ID:	QC326844	Batch#:	110159		
Matrix:	Soil	Prepared:	02/04/06		
Units:	mg/Kg	Analyzed:	02/06/06		
Basis:	as received				

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.88	51.97	104	54-137

Surrogate	%REC	Limits	
Hexacosane	92	48-132	

Page 1 of 1



Total Extractable Hydrocarbons					
Lab #:	184729	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE		
Project#:	2626008	Analysis:	EPA 8015B		
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000	<u>-</u>	
MSS Lab ID:	184707-007	Batch#:	110159		
Matrix:	Soil	Sampled:	02/02/06		
Units:	mg/Kg	Received:	02/02/06		
Basis:	as received	Prepared:	02/04/06		

Type: Lab ID: MS

QC326845

Analyzed: 02/06/06

Cleanup Method: EPA 3630C

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	2.574	50.33	50.87	96	28-163

Surrogate	%REC	Limits	
Hexacosane	93	48-132	

Type:

MSD

Analyzed:

02/07/06

Lab ID:

QC326846

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	*REC	Limits	RPD	Lim
Diesel C10-C24	50.18	53.57	102	28-163	5	46

Surrogate	%REC	Limits	
Hexacosane	98	48-132	



Total Extractable Hydrocarbons				
Lab #:	184729	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE	
Project#:	2626008	Analysis:	EPA 8015B	
Type:	LCS	Diln Fac:	1.000	
Lab ID:	QC326871	Batch#:	110166	
Matrix:	Soil	Prepared:	02/05/06	
Units:	mg/Kg	Analyzed:	02/06/06	
Basis:	as received	_		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.85	53.17	107	54-137

Surrogate	%REC	Limits	
Hexacosane	97	48-132	

Page 1 of 1



Semivolatile Organics by GC/MS SIM					
Lab #:	184729	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B		
Project#:	2626008	Analysis:	EPA 8270C-SIM		
Field ID:	SB20-020206-4.0	Batch#:	110224		
Lab ID:	184729-010	Sampled:	02/02/06		
Matrix:	Soil	Received:	02/03/06		
Units:	ug/Kg	Prepared:	02/07/06		
Basis:	as received	Analyzed:	02/07/06		
Diln Fac:	1.000				

Analyte	Result	RL	7
Naphthalene	6.9	5.0	
Acenaphthylene	ND	5.0	
Acenaphthene	13	5.0	
Fluorene	13	5.0	
Phenanthrene	42	5.0	
Anthracene	ND	5.0	
Fluoranthene	30	5.0	
Pyrene	23	5.0	
Benzo(a)anthracene	6.7	5.0	
Chrysene	7.1	5.0	
Benzo(b)fluoranthene	5.0	5.0	
Benzo(k)fluoranthene	ND	5.0	
Benzo(a)pyrene	ND	5.0	
Indeno(1,2,3-cd)pyrene	ND	5.0	
Dibenz(a,h)anthracene	ND	5.0	
Benzo(g,h,i)perylene	ND	5.0	

Surrogate	%REC	Limits	
Nitrobenzene-d5	76	33-151	
2-Fluorobiphenyl	58	34-126	
Terphenyl-d14	77	42-135	(



Semivolatile Organics by GC/MS SIM					
Lab #:	184729	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B		
Project#:	2626008	Analysis:	EPA 8270C-SIM		
Field ID:	SB20-020206-9.0	Batch#:	110224		
Lab ID:	184729-011	Sampled:	02/02/06		
Matrix:	Soil	Received:	02/03/06		
Units:	ug/Kg	Prepared:	02/07/06		
Basis:	as received	Analyzed:	02/09/06		
Diln Fac:	5.000				

Analyte	Result	RL	
Naphthalene	280	25	
Acenaphthylene	ND	25	
Acenaphthene	230	25	
Fluorene	170	25	
Phenanthrene	610	25	
Anthracene	74	25	
Fluoranthene	440	25	
Pyrene	440	25	
Benzo(a)anthracene	110	25	
Chrysene	110	25	
Benzo(b)fluoranthene	86	25	
Benzo(k)fluoranthene	59	25	
Benzo(a)pyrene	96	25	
Indeno(1,2,3-cd)pyrene	55	25	
Dibenz(a,h)anthracene	ND	25	
Benzo(g,h,i)perylene	76	25	

Surrogate	%REC	Limits	
Nitrobenzene-d5	56	33-151	
2-Fluorobiphenyl	45	34-126	
Terphenyl-d14	52	42-135	



Semivolatile Organics by GC/MS SIM					
Lab #:	184729	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B		
Project#:	2626008	Analysis:	EPA 8270C-SIM		
Field ID:	SB20-020206-5.5	Batch#:	110224		
Lab ID:	184729-012	Sampled:	02/02/06		
Matrix:	Soil	Received:	02/03/06		
Units:	ug/Kg	Prepared:	02/07/06		
Basis:	as received	Analyzed:	02/09/06		
Diln Fac:	1,000				

Analyte	Result	RL	
Naphthalene	210,000	10,000	-
Acenaphthylene	ND	10,000	
Acenaphthene	160,000	10,000	1
Fluorene	100,000	10,000	
Phenanthrene	360,000	10,000	
Anthracene	39,000	10,000	
Fluoranthene	240,000	10,000	i
Pyrene	170,000	10,000	
Benzo(a)anthracene	45,000	10,000	
Chrysene	38,000	10,000	
Benzo(b)fluoranthene	26,000	10,000	
Benzo(k)fluoranthene	20,000	10,000	
Benzo(a)pyrene	27,000	10,000	
Indeno(1,2,3-cd)pyrene	ND	10,000	
Dibenz(a,h)anthracene	ND	10,000	
Benzo(g,h,i)perylene	11,000	10,000	

Surrogate	%REC	Limits	
Nitrobenzene-d5	DO	33-151	
2-Fluorobiphenyl	DO	34-126	
Terphenyl-d14	DO	42-135	



Semivolatile Organics by GC/MS SIM					
Lab #:	184729	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B		
Project#:	2626008	Analysis:	EPA 8270C-SIM		
Field ID:	SB24-020206-4.5	Batch#:	110224		
Lab ID:	184729-019	Sampled:	02/02/06		
Matrix:	Soil	Received:	02/03/06		
Units:	ug/Kg	Prepared:	02/07/06		
Basis:	as received	Analyzed:	02/08/06		
Diln Fac:	2.000				

Analyte	Result	RL	
Naphthalene	ND	9.9	
Acenaphthylene	ND	9.9	
Acenaphthene	ND	9.9	
Fluorene	ND	9.9	
Phenanthrene	33	9.9	
Anthracene	ND	9.9	
Fluoranthene	31	9.9	
Pyrene	30	9.9	
Benzo(a)anthracene	ND	9.9	
Chrysene	15	9.9	
Benzo(b) fluoranthene	11	9.9	
Benzo(k) fluoranthene	ND	9.9	
Benzo(a)pyrene	ND	9.9	
Indeno(1,2,3-cd)pyrene	ND	9.9	
Dibenz(a,h)anthracene	ND	9.9	İ
Benzo(g,h,i)perylene	11	9.9	

Surrogate	%REC	Limits	
Nitrobenzene-d5	97	33-151	
2-Fluorobiphenyl	75	34-126	
Terphenyl-d14	80	42-135	



Semivolatile Organics by GC/MS SIM					
Lab #:	184729	Location:	General Mills	4 - 11	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B		
Project#:	2626008	Analysis:	EPA 8270C-SIM		
Field ID:	SB24-020206-10.0	Batch#:	110224		
Lab ID:	184729-020	Sampled:	02/02/06		
Matrix:	Soil	Received:	02/03/06		
Units:	ug/Kg	Prepared:	02/07/06		
Basis:	as received	Analyzed:	02/08/06		
Diln Fac:	1.000	_			

Analyte	Result	RL	
Naphthalene	11	5.1	
Acenaphthylene	ND	5.1	
Acenaphthene	29	5.1	
Fluorene	25	5.1	
Phenanthrene	130	5.1	
Anthracene	17	5.1	
Fluoranthene	96	5.1	
Pyrene	110	5.1	
Benzo(a)anthracene	26	5.1	
Chrysene	32	5.1	
Benzo(b)fluoranthene	19	5.1	
Benzo(k)fluoranthene	13	5.1	
Benzo(a)pyrene	25	5.1	
Indeno(1,2,3-cd)pyrene	16	5.1	
Dibenz(a,h)anthracene	ND	5.1	
Benzo(g,h,i)perylene	25	5.1	

%REC	Limits	
79	33-151	
60	34-126	
69	42-135	
	79 60	79 33-151 60 34-126



	Semivolatile	Organics by GC/	'MS SIM	
Lab #:	184729	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B	
Project#:	2626008	Analysis:	EPA 8270C-SIM	
Type:	BLANK	Diln Fac:	1.000	
Lab ID:	QC327124	Batch#:	110224	
Matrix:	Soil	Prepared:	02/07/06	
Units:	ug/Kg	Analyzed:	02/07/06	
Basis:	as received		·	

Analyte	Result	RL	
Naphthalene	ND	5.0	
Acenaphthylene	ND	5.0	
Acenaphthene	ND	5.0	
Fluorene	ND	5.0	
Phenanthrene	ND	5.0	
Anthracene	ND	5.0	
Fluoranthene	ND	5.0	
Pyrene	ND	5.0	
Benzo(a)anthracene	ND	5.0	
Chrysene	ND	5.0	
Benzo(b) fluoranthene	ND	5.0	
Benzo(k)fluoranthene	ND	5.0	
Benzo(a)pyrene	ND	5.0	
Indeno(1,2,3-cd)pyrene	ND	5.0	
Dibenz(a,h)anthracene	ND	5.0	
Benzo(g,h,i)perylene	ND	5.0	

Surrogate	%REC	Limits	
Nitrobenzene-d5	82	33-151	***
2-Fluorobiphenyl	71	34-126	
Terphenyl-d14	83	42-135	



	Semivolatile	Organics by GC/	MS SIM	
Lab #:	184729	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B	
Project#:	2626008	Analysis:	EPA 8270C-SIM	
Type:	LCS	Diln Fac:	1.000	
Lab ID:	QC327125	Batch#:	110224	
Matrix:	Soil	Prepared:	02/07/06	
Units:	ug/Kg	Analyzed:	02/07/06	
Basis:	as received			

Analyte	Spiked	Result	%REC	Limits	,
Acenaphthene	33.28	24.27	73	49-120	
Pyrene	33.28	23.71	71	48-120	

Surrogate	%REC	Limits	
Nitrobenzene-d5	89	33-151	
2-Fluorobiphenyl	74	34-126	
Terphenyl-d14	85	42-135	



	Semivolatile	Organics by GC/	MS SIM	
Lab #:	184729	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3550B	
Project#:	2626008	Analysis:	EPA 8270C-SIM	
Field ID:	SB20-020206-4.0	Batch#:	110224	
MSS Lab ID:	184729-010	Sampled:	02/02/06	
Matrix:	Soil	Received:	02/03/06	
Units:	ug/Kg	Prepared:	02/07/06	
Basis:	as received	Analyzed:	02/07/06	
Diln Fac:	1.000	_		

Type:

MS

Lab ID:

QC327126

Analyte	MSS Result	Spiked	Result	%REC	Limits
Acenaphthene	13.16	33.76	34.20	62	52-125
Pyrene	23.38	33.76	46.77	69	39-135

Surrogate	%REC	Limits	
Nitrobenzene-d5	88	33-151	
2-Fluorobiphenyl	66	34-126	
Terphenyl-d14	88	42-135	

Type:

MSD

Lab ID:

QC327127

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Acenaphthene	33.69	40.37	81	52-125	17	35
Pyrene	33.69	63.90	120	39-135	31	44

Surrogate	%REC	Limits
Nitrobenzene-d5	95	33-151
2-Fluorobiphenyl	64	34-126
Terphenyl-d14	85	42-135

#### Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878

### **CHAIN OF CUSTODY**

Analysis

(!	2323 Fifth Street Berkeley, CA 94710 510) 486-0900 Phone (510) 486-0532 Fax	C & T L	.OGI	IN #:			1-17		í				1										
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#### Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878 2323 Fifth Street Berkeley, CA 94710 (510) 486-0900 Phone (510) 486-0532 Fax

# **CHAIN OF CUSTODY**

Page of

**Analysis** 

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Total Volatile Hydrocarbons Lab #: 184753 Location: General Mills Prep: Analysis: Sampled: EPA 5030B EPA 8015B Client: Malcolm Pirnie, Inc. 2626008 Soil Project#: 02/03/06 Matrix: Units: mg/Kg Received: 02/06/06 02/06/06 as réceived Analyzed: Basis: 110181 Batch#:

Field ID:

MP-7-020306-3.5

Lab ID: Diln Fac:

184753-001 1.000

Type:

SAMPLE

Analyte	Result	RL	
Gasoline C7-C12	ND	1.1	
Surrogate	%REC Limits		
Surrogate Trifluorotoluene (FID)	<b>%REC Limits</b> 102 59-140		

Field ID:

MP-7-020306-13.0

Lab ID:

184753-002

Type: SAMPLE

Analyte Result Diln Fac: 1.000 RL

Gasoline C7-C12	ND	****	1.0	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	94	59-140		
Bromofluorobenzene (FID)	96	62-149		

MP-8-020306-2.5

Lab ID: Diln Fac:

184753-003

Field ID: Type:

SAMPLE

1.000

Analyte	Result	RL	
Gasoline C7-C12	ND	0.93	
Surrogate	%REC Limits		
Trifluorotoluene (FID)	91 59-140 93 62-149		(

Field ID:

MP-8-020306-13.5

Lab ID:

184753-004

Type:

SAMPLE Diln Fac: 1.000

Analyte	Result	RL	
Gasoline C7-C12	ND	1.1	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	89	59-140	
Bromofluorobenzene (FID)	88	62-149	

H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected

RL= Reporting Limit

Page 1 of 2



	Total Vol	atile Hydrocarbo	ons	
Lab #: Client: Project#:	184753 Malcolm Pirnie, Inc. 2626008	Location: Prep: Analysis:	General Mills EPA 5030B EPA 8015B	
Matrix: Units: Basis: Batch#:	Soil mg/Kg as received 110181	Sampled: Received: Analyzed:	02/03/06 02/06/06 02/06/06	

Field ID:

MP-6-020306-7.0

Lab ID: Diln Fac:

184753-005 20.00

SAMPLE Type:

	Analyte	Res	ult	RL .	
7	Gasoline C7-C12	1	90	20	
į.	Sunnagata	%REC Li	mita		
	Bullogate	TREC LI	mits		
	Trifluorotoluene (FID)	91 59	-140		
	Bromofluorobenzene (FID)	120 62	-149		

Field ID: Type:

MP-6-020306-5.0

184753-006

SAMPLE

Lab ID: Diln Fac:

1.000

Analyte		Result	RL	Division Name and Association of the Control of the
Gasoline C7-C12	ND	<u> </u>	1.0	
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	87	59-140		
Bromofluorobenzene (FID)	91	62-149		

Field ID:

MP-6-020306-13.5

Lab ID:

184753-007

Type:

Analyte

SAMPLE

Diln Fac:

1.000

RL

Gasoline C7-C12		1.3 H Y	1.0	
Surrogate	FREC	Limits		
Trifluorotoluene (FID)	87	59-140		
Bromofluorobenzene (FID)	95	62-149		

Result

Type: Lab ID:

BLANK QC326928 Diln Fac:

1.000

Analyte	Result	RL	
Gasoline C7-C12	ND	1.0	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	89	59-140	
Bromofluorobenzene (FID)	93	62-149	

 $\mbox{H= Heavier}$  hydrocarbons contributed to the quantitation  $\mbox{Y= Sample}$  exhibits chromatographic pattern which does not resemble standard  $\mbox{ND= Not Detected}$  RL= Reporting Limit  $\mbox{Page 2 of 2}$ 



	Total Vol	atile Hydrocarbo	ons	
Lab #:	184753	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B	
Project#:	2626008	Analysis:	EPA 8015B	
Type:	LCS	Basis:	as received	
Lab ID:	QC326930	Diln Fac:	1.000	
Matrix:	Soil	Batch#:	110181	
Units:	mg/Kg	Analyzed:	02/06/06	

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	10.05	100	80-120

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	102	59-140	
Bromofluorobenzene (FID)	96	62-149	

Page 1 of 1 3.0



Total Volatile Hydrocarbons					
Lab #:	184753	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	2626008	Analysis:	EPA 8015B		
Field ID:	MP-7-020306-3.5	Diln Fac:	1.000		
MSS Lab ID:	184753-001	Batch#:	110181		
Matrix:	Soil	Sampled:	02/03/06		
Units:	mg/Kg	Received:	02/06/06		
Basis:	as received	Analyzed:	02/07/06		

Type:

MS

Lab ID:

QC327030

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.1691	10.20	7.464	71	44-120

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	100	59-140	
Bromofluorobenzene (FID)	89	62-149	

Type:

MSD

Lab ID:

QC327031

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.804	7.111	71	44-120	1	23

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	59-140
Bromofluorobenzene (FID)	95	62-149



Total Extractable Hydrocarbons Lab #: 184753 Location: General Mills Malcolm Pirnie, Inc. Prep: Analysis: Sampled: SHAKER TABLE EPA 8015B 02/03/06 Client: Project#: 2626008 Soil 02/06/06 Units: mg/Kg Received: 02/06/06 as réceived Basis: Prepared: 110209 Batch#:

Field ID:

MP-7-020306-3.5

Diln Fac:

5.000

Type: Lab ID:

SAMPLE 184753-001 Analyzed:

02/09/06

Analyte	Result	RL	
Diesel C10-C24	28 H Y	5.0	
Motor Oil C24-C36	250	25	

Surrogate	*REC	Limits
Hexacosane	92	48-132

Field ID:

MP-7-020306-13.0

Diln Fac:

Type: Lab ID:

SAMPLE 184753-002 Analyzed:

10.00 02/09/06

Analyte	Result	KL	
Diesel C10-C24	450 H Y	10	
Motor Oil C24-C36	2,100 H	50	

Surrogate	%REC	Limits	
Hexacosane	DO	48-132	 

Field ID:

MP-8-020306-2.5

Diln Fac:

1.000

Type: Lab ID:

SAMPLE 184753-003 Analyzed:

02/09/06

Analyte	Result	RL	
Diesel C10-C24	19 H Y	1.0	
Motor Oil C24-C36	170	5.0	

Surrogate	%REC	Limits	
Hexacosane	83	48-132	

Field ID:

MP-8-020306-13.5

Diln Fac:

Type: Lab ID:

SAMPLE 184753-004 Analyzed:

1.000 02/08/06

Analyte	Result	RL	
Diesel C10-C24	2.8 H Y	1.0	
Motor Oil C24-C36	6.8	5.0	

Surrogate	%REC	Limits	
Hexacosane	68	48-132	

 $H\!\!=\!$  Heavier hydrocarbons contributed to the quantitation  $L\!\!=\!$  Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard DO= Diluted Out

ND= Not Detected

RL= Reporting Limit

Page 1 of 2



Total Extractable Hydrocarbons General Mills SHAKER TABLE EPA 8015B 02/03/06 02/06/06 Lab #: 184753 Location: Prep: Analysis: Client: Malcolm Pirnie, Inc. Project#: Matrix: 2626008 Sampled: Soil mg/Kg as received 110209 Units: Received: 02/06/06 Basis: Prepared: Batch#:

Field ID:

MP-6-020306-7.0

Diln Fac:

Type: Lab ID:

SAMPLE 184753-005 Analyzed:

10.00 02/09/06

_	Analyte	Result	RL	
	Diesel C10-C24	3,200	10	
1	Motor Oil C24-C36	170 L Y	50	

Surrogate	%REC	Limits
Hexacosane	DO	48-132

Field ID:

MP-6-020306-5.0

Diln Fac:

Type: Lab ID:

SAMPLE 184753-006 Analyzed:

20.00 02/09/06

Analyte	Result	RL	
Diesel C10-C24	1,600 H Y	20	
Motor Oil C24-C36	4,000 H L	99	

Surrogate	%REC	Limits			
Hexacosane	DO	48-132			

Field ID:

MP-6-020306-13.5

Diln Fac:

Type: Lab ID:

SAMPLE 184753-007 Analyzed:

20.00 02/09/06

	Analyte	Result	RL	
-	Diesel C10-C24	720 H Y	20	
-	Motor Oil C24-C36	1,500 H L	100	
0				

Surrogate	%REC	Limits	
Hexacosane	DO	48-132	

Type: Lab ID: Diln Fac:

BLANK

Analyzed:

02/07/06

OC327065 1.000

Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	1.0	
Motor Oil C24-C36	ND	5.0	

Surrogate	%REC	Limits	
Hexacosane	113	48-132	

 $\ensuremath{\mathtt{H=}}$  Heavier hydrocarbons contributed to the quantitation L= Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Page 2 of 2



Total Extractable Hydrocarbons					
Lab #:	184753	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE		
Project#:	2626008	Analysis:	EPA 8015B		
Type:	LCS	Diln Fac:	1.000		
Lab ID:	QC327066	Batch#:	110209		
Matrix:	Soil	Prepared:	02/06/06		
Units:	mg/Kg	Analyzed:	02/07/06		
Basis:	as received				

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.70	58.01	117	54-137

Surrogate	%REC	Limits	STEP STEP STEP STEELS STEELS STEELS STEELS STEELS STEELS STEELS STEELS STEELS STEELS STEELS STEELS STEELS STEEL
Hexacosane	112	48-132	

Page 1 of 1 6.0



Batch QC Report

Total Extractable Hydrocarbons						
Lab #:	184753	Location:	General Mills			
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE			
Project#:	2626008	Analysis:	EPA 8015B			
Field ID:	ZZZZZZZZZZ	Batch#:	110209			
MSS Lab ID:	184697-004	Sampled:	02/01/06			
Matrix:	Soil	Received:	02/02/06			
Units:	mg/Kg	Prepared:	02/06/06			
Basis:	as received	Analyzed:	02/08/06			
Diln Fac:	1.000					

Type:

MS

Lab ID:

QC327067

Cleanup Method: EPA 3630C

Analyte	MSS Result	Spiked	Result	%REC Limits
Diesel C10-C24	424.5	50.12	377.0	-95 NM 28-163

	Surrogate %REG	Limits
exacosane	cosane 5 *	48-132

Type:

MSD

Lab ID:

QC327068

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.17	388.6	-72 NM	28-163	3	46

Surrogate	%REC	Limits	
Hexacosane	7 *	48-132	

<sup>\*=</sup> Value outside of QC limits; see narrative

NM= Not Meaningful: Sample concentration > 4X spike concentration

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878

# **CHAIN OF CUSTODY**

2323 Fifth Street Berkeley, CA 94710 (510) 486-0900 Phone (510) 486-0532 Fax	C & T L	OGIN #		8475	3						Ana	alysi	<b>S</b>		· · · · · · · · · · · · · · · · · · ·		
Project No.: 262 68  Project Name: GCNOQOL NI  Project P.O.:  Turnaround Time:	Sample Report Compar Telepho Fax:	ny:		ni lau				SIDS CITY CT									
Lab No. Sample ID.	Sampling Date Time		Waste	# of Containers	Pre	Servat ONH		JHGL									
Notes: $ \frac{1}{4} $ Notes: $ \frac{1}{4} $	11 1140 11 1200 Eli 1446	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		IED BY:	\ O4	DA		1	FIVE	D BX:	5	2/0	25/6	[		S / TIN	
SIGNATURE						DA	TE / TIME		<u> </u>					[	DATE	/ TIN	ΛE



Total Volatile Hydrocarbons							
Lab #:	184897	Location:	General Mills				
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B				
Project#:	2626008	Analysis:	EPA 8015B				
Field ID:	SB15-020106-6.5	Batch#:	110400				
Matrix:	Soil	Sampled:	02/01/06				
Units:	mg/Kg	Received:	02/02/06				
Basis:	as received	Analyzed:	02/13/06				
Diln Fac:	1.000						

rype:

SAMPLE

Lab ID:

184897-001

Analyte	Result	RL	
Gasoline C7-C12	ND	1.0	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	92	59-140	
Bromofluorobenzene (FID)	106	62-149	

Type:

BLANK

Lab ID: QC327836

Analyte	Result	RL	
Gasoline C7-C12	ND	1.0	-

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	92	59-140	
Bromofluorobenzene (FID)	103	62-149	



Batch QC Report

Total Volatile Hydrocarbons						
Lab #:	184897	Location:	General Mills			
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B			
Project#:	2626008	Analysis:	EPA 8015B			
Type:	LCS	Basis:	as received			
Lab ID:	QC327838	Diln Fac:	1.000			
Matrix:	Soil	Batch#:	110400			
Units:	mg/Kg	Analyzed:	02/13/06			

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.984	100	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	59-140
Bromofluorobenzene (FID)	117	62-149

Page 1 of 1



Batch QC Report

Total Volatile Hydrocarbons					
Lab #:	184897	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	2626008	Analysis:	EPA 8015B		
Field ID:	SB15-020106-6.5	Diln Fac:	1.000		
MSS Lab ID:	184897-001	Batch#:	110400		
Matrix:	Soil	Sampled:	02/01/06		
Units:	mg/Kg	Received:	02/02/06		
Basis:	as received	Analyzed:	02/13/06		

Type:

MS

Lab ID:

QC327923

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.6188	10.42	8.595	77	44-120

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	114	59-140	
Bromofluorobenzene (FID)	116	62-149	

Type:

MSD

Lab ID:

QC327924

Analyte	Spiked	Result	FREC	Limits	RPD	Lim
Gasoline C7-C12	10.75	8.482	73	44-120	4	23

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	111	59-140	
Bromofluorobenzene (FID)	110	62-149	



Total Extractable Hydrocarbons					
Lab #:	184897	Location:	General Mills		
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE		
Project#:	2626008	Analysis:	EPA 8015B		
Field ID:	SB15-020106-6.5	Batch#:	110410		
Matrix:	Soil	Sampled:	02/01/06		
Units:	mg/Kg	Received:	02/02/06		
Basis:	as received	Prepared:	02/13/06		
Diln Fac:	1.000	Analyzed:	02/14/06		

Type:

SAMPLE

Lab ID: 184897-001

Analyte	Result	RL	
Diesel C10-C24	410 H q	1.0	
Motor Oil C24-C36	22 L Y q	5.0	

Surrogate	%REC	Limits	
Hexacosane	82 q	48-132	

Type:

BLANK

Cleanup Method: EPA 3630C

Lab ID:

QC327876

Analyte	Result	RL	
Diesel C10-C24	ND q	1.0	
Motor Oil C24-C36	р dи	5.0	

Surrogate	%REC	Limits	
Hexacosane	111 q	48-132	

H= Heavier hydrocarbons contributed to the quantitation

L= Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard

q= Draft result - ending instrument QC not yet analyzed

ND= Not Detected

RL= Reporting Limit

Page 1 of 1



Batch QC Report

	Total Extra	actable Hydrocan	rbons	
Lab #:	184897	Location:	General Mills	
Client:	Malcolm Pirnie, Inc.	Prep:	SHAKER TABLE	
Project#:	2626008	Analysis:	EPA 8015B	
Type:	LCS	Diln Fac:	1.000	•
Lab ID:	QC327877	Batch#:	110410	
Matrix:	Soil	Prepared:	02/13/06	
Units:	mg/Kg	Analyzed:	02/14/06	
Basis:	as received	_		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.44	59.08 q	117	54-137

Surrogate	%REC	Limits	
Hexacosane	122 q	48-132	

# APPENDIX I

Field Activity Reports and Water Level Datatsheets





January 31, 2006

Mr. Todd Miller Malcolm Pirnie, Inc. 2000 Powell Street, Suite 1180 Emeryville, California 94608

SUBJECT: January 2006 Groundwater Monitoring Event at Former General Mills Site in Vallejo, California

Dear Mr. Miller,

Please find enclosed a Field Activity Report for the groundwater monitoring event at the Former General Mills site that occurred on January 12, 2006. This Field Activity Report contains all documentation associated with this event.

If you have any questions or concerns regarding this Field Activity Report, please do not hesitate to call me.

Sincerely,

Stephen Penman Owner/Partner

Enclosure



# FIELD ACTIVITY REPORT FOR

# FORMER GENERAL MILLS SITE VALLEJO, CALIFORNIA

# GROUNDWATER MONITORING EVENT JANUARY 2006

Task: January 2006 Groundwater Monitoring and Sampling Event

ESS Personnel: Stephen Penman

#### Decontamination Procedures

All downhole equipment was cleaned with Liqui-Nox® laboratory grade soap, potable water, and rinsed with distilled water prior to use.

### Groundwater Level and Well Depth Measurements

January 12, 2006, depth to groundwater and well depth were measured and recorded for five monitoring wells (MP-1, MP-2, MP-3, MP-4, and MP-5). Each well was allowed to equilibrate to atmospheric pressure for approximately twenty minutes. All readings were performed with a Solinst® Oil /Water Interface Meter. Three successive readings that agreed to within one-hundredth of a foot determined depth to groundwater (Table 1). Depths to groundwater were referenced to the north rim of the well casing.

No product or odor was detected at any of the five monitoring wells onsite.

Organic vapor readings were not requested.

### Field Equipment Calibration

The multi-parameter instrument with an in-line flow through chamber was used to monitor water quality parameters throughout well purging. The instrument was calibrated with solution standards prior any monitoring activities (see Daily Equipment Calibration Sheet). Field measurements included: pH, Specific Conductance (uS), Temperature (Celsius), Dissolved Oxygen (mg/L), Oxidation/Reduction Potential (mV), Turbidity (NTUs) and physical characteristics such as pumping water level, color, and odor (see Water Quality Sample Log Sheets).

### Well Purging and Sampling Procedures

All five monitoring wells were purged and sampled via low-flow purging; whereby, the well is purged at a rate no greater than 500-ml per minute until water quality parameters stabilized within 10% for three consecutive readings. Samples were collected immediately following stabilization of water quality parameters by disconnecting the tubing from the flow through chamber.



Sample labels were completed with waterproof ink and affixed to sample containers prior to sample collection.

All sample containers were wiped dry, sealed in Ziploc bags and placed in chilled coolers for storage and shipment. Samples were relinquished to Severn Trent Laboratory (STL) of Pleasanton, California on January 13, 2006.

### Sample Containers and Analyses

STL provided all sample containers. All monitoring wells were sampled for a combination of following analyses: VOCs TPH-gas w/BTEX (EPA Method 8015/8021), TPH-Diesel, and Motor Oil (EPA Method 8015M), and PNAs (EPA 8270)

### STL Sample Containers

Each VOC sample set was contained in three, 40-ml clear VOA containers preserved with hydrochloric acid.

Each TPH-Diesel and Motor Oil sample was contained in one, non-preserved, one-liter amber glass container.

Each PNA sample was contained in two, non-preserved, one-liter amber glass containers.

### QA/QC

One Trip Blank set was submitted to STL for EPA Method 8260B analysis.

As per requested, one duplicate sample was collected during this sampling event. The duplicate is identified with its well identification followed by the suffix, "DUP" and was collected from monitoring well MW-1.

### Chain of Custody (COC) Forms

All sampling and sample handling were conducted under strict chain of custody procedures. Each COC included: sampler's name and signature, sample identification, sample date and time, type and number of bottles submitted, and analysis request section.

### Storage of Purged Groundwater and Decontamination Water

Purged groundwater and decontamination water generated during this sampling event was transferred into a new labeled 55-gallon steel drum supplied by ESS. The drum is stored adjacent to monitoring well MP-1, by the existing drums left onsite from well installation and development.

#### Comments

The monitoring wells are not secured with locks.

There is approximately thirteen gallons of waste water contained in the labeled 55-gallon drum.



Stephen Penman Owner/Partner

 ${\tt Enclosure}$ 

Table 1: Summary of Groundwater Sample Date and Time Water Sample Log Sheets
Equipment Calibration Sheet
Copies of Chain of Custodies



Table 1: Summary of January 2006 Groundwater Monitoring Event

Project Name: Former General Mills Site

Project Address: 800 Derr Avenue, Vallejo, California

Well I.D.	Date of Measurement	Time of Measurement	Depth to Product (ft.)	Groundwater Level Measurement (ft, BTOC.)	Measured Well Depth (feet, BTOC)	Sample Date	Sample Time	QA/QC	Comments
MP-1	1/12/2006	11:17	ND	3.97	15.37	01/12/06	17:18	Duplicate	No lock.
MP-2	1/12/2006	11:08	. ND	4.10	15.41	01/12/06	14:47	None	No lock.
МР-3	1/12/2006	11:13	ND	4.35	15.36	01/12/06	16:35	None	No lock.
MP-4	1/12/2006	11:04	.#° ND	3.82	15.36	01/12/06	13:42	None	No lock.
MP-5	1/12/2006	11:10	ND	5.91	15.23	01/12/06	15:54	None	No lock.

BTOC = Below Top of Casing

ND = Not Detected



Grand Co.							CONTRACTOR OF THE PARTY OF THE	THE RESERVE OF THE PERSON NAMED IN COLUMN 1					
WATER QUALITY SAMPLE LOG SHEET WELL IDENTIFICATION MP-1 DATE 1/12/06													
Project N	lame: <u>Forn</u>	ner Genera	l Mills Sit	<u>e</u>	Project No.: _2	2626-008	Project N	Manager: <u>T</u>	odd Mille	<u>er</u>			
Laboratory: STL San Francisco Weather Conditions: Motty Sund to Bresd  Well Description: 3/4" 1" 2" 4" 6" Other: Well Type: PVC Stainless Steel Other:													
					Type of lock								
Observations / Comments: set pump intake @ 10.37 ft.(BTOC) Screen Interval:Other:													
Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump Peristaltic Pump Other:  Pailer Line: All Now / Cleaned Delicated													
Pump Lines: NA New Cleaned Dedicated Bailer Line: NA New / Cleaned / Dedicated													
Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other:													
Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other:													
Sampling Method: Disp. Teflon Bailer Disp. PE Bailer Peristaltic Pump Other:													
YSI 600XL Meter Serial No.: 319340B/ 208541R Multiparameter Probe Serial No. 00K0300/ 00C1522													
Equipment Calibration: See Daily Equipment Calibration Sheet													
Method to Measure Water Level: Slope Indicator Serial No. 25083/25742 P.I.D. Reading: NA ppm													
Water Level at Start (DTW): 3.97e 11:17 Water Level Prior To Sampling: 4.13													
$TD = 15.37 - 3.97  (DTW) = 1.9  (ft.of water) \times "K" = 1.9  (Gals./CV) \times NA  (No. of CV) = NA  (Gals.)$													
"K"= 0.002 (3/4" well) "K" = 0.04 (1" well) ("K" = .163 (2" well) "K" = 0.65 (4" well) "k" = 1.46 (6" well)  FIELD WATER QUALITY PARAMETERS													
			TILLD TO	TER GOA	Specific			Dissolved	Water				
Date	Time	Discharge	рН	Temp.	Conductance	Turbidity	Redox	Oxygen	Level	Color			
		(Liters)		(°C)	ms (us)	(NTU's)	(mV)	(mg/L)	(BTOC)				
1/12/06	16:58	Initial	7.14	18.36	5665	62.2	-145.3	2.11	4.07	Cloub! Grey Brn.			
	17:00	0.5	7.00	18.71	5116	40,1	-179.3	0.53	4.10	11			
	17:02	1.0	6.96	18.63	4868	34.6	-189.4	0.43	4.11	C lange			
	17:05	1.5	6.92	18.49	4757	30. (	-198.8	0.36	4.13	11			
	17:08	2.0	6.90	18.36	4723	28.4	-24.8	0.35	4.13	Slightly County			
	17:11	2.5	6.89	18.30	4704	26.7	-209.0	0.33	4.13	Ťt.			
	17:14	3.0	6.87	18.29	4671	26.0	-209.8	0.31	4,13	1/			
	17:17	3.5	6.87	18.26	4646	26.3	-211.2	0.29	4.13	£ P			
		4.0											
Total Di	scharge:	3.9 Li	ters		Casing Volum	nes Remo	ved: <u>NA</u>						
				5 Gallon Di	rum(s) Poly			stem Othe	er:				
					nalysis: TPI					and TPH-			
1	il; PNA's (8		-	rvative(s):				sample con					
	MP-1-DU	10-	·		ent Blank (Du	-		•					
		asurable s											
					1								
	-			Recorde	Adva	7	J						



WATER QUALITY SAMPLE LOG SHEET WELL IDENTIFICATION MP-2 DATE 1/12/06													
Project Name: Former General Mills Site Project No.: 2626-008 Project Manager: Todd Miller													
Laboratory: STL San Francisco Weather Conditions: Mostly Sumy + COO													
Well Description: 3/4" 1" 2" 4" 6" Other: Well Type: PVC Stainless Steel Other:	-												
Is Well Secured? Yes / No Bolt Size: 9//6" Type of lock / Lock number: No Lock													
Observations / Comments: set pump intake @ 10-41 ft.(BTOC) Screen Interval:													
Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump Peristaltic Pump Other:  Bailer Line: NA New / Cleaned / Dedicated Bailer Line: NA New / Cleaned / Dedicated													
Pump Lines: NA New / Cleaned / Dedicated Bailer Line: NA New / Cleaned / Dedicated													
Method of Cleaning Pumpi: Na Alconox Liqui-nox Tap Water DI Rinse Other:													
Method of Cleaning Bailer: A Alconox Liqui-nox Tap Water DI Rinse Other:													
Sampling Method: Disp. Teflon Bailer Disp. PE Bailer Peristaltic Pump Other:													
YSI 600XL Meter Serial No.: 319340R 208541R Multiparameter Probe Serial No.: 00K0300 / 00C1522													
Equipment Calibration: See Daily Equipment Calibration Sheet													
Method to Measure Water Level: Slope Indicator Serial No.: 25083V 25742 P.I.D. Reading: NA ppm													
Water Level at Start (DTW): 4.10e II:08 Water Level Prior To Sampling: 4.26													
TD = 15.41 - 4.95 en: 1 (DTW) = 11.36 (ft. of water) x "K" = 1.9 (Gals./CV) x NA (No. of CV) = NA (Gals.)													
"K" = 0.002 (3/4" well) "K" = 0.04 (1" well) ("K" = .163 (2" well) "K" = 0.65 (4" well) "k" = 1.46 (6" well)													
FIELD WATER QUALITY PARAMETERS													
Specific Dissolved Water  Date Time Discharge pH Temp Conductance Turbidity Redox Oxygen Level Color													
Date Time Discharge pH Temp. Conductance Turbidity Redox Oxygen Level Color (Liters) (°C) mS (S) (NTU's) (mV) (mg/L) (BTOC)													
7.13													
14:38 2.0 7.77 20.18 1869 1.8 17.9 1.06 7.26													
14:34 2.5 7.97 20.31 1496 1.7 18.6 1.01 4.26 11													
14:38 3.0 7.98 20.22 1503 1.8 17.8 0.94 4.26 "													
14:42 3.5 7.98 20.00 1485 1.6 20.5 1.00 4.26 "													
J 14:46 4.0 7.99 20.00 1417 1.4 21.2 1.06 9.26 11													
Total Discharge: 4.4 Liters Casing Volumes Removed: NA													
Method of disposal of discharged water: 55 Gallon Drum(s) Poly Tank Treatment System Other:													
Date/Time Sampled: 1/12/06 @ 14:47 Analysis: TPHgas & BTEX (8015/8021); TPH-diesel and TP	- <b>-</b>  -												
Motor Oil; PNA's (8270)  Preservative(s): Hcl Total number of sample containers:	<u> </u>												
QA/QC: as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank													
Comments:													
Sampled by Stephen Penman Jacki Lee Recorded by:													



WATER	R QUALITY	SAMPLE	LOG SHE	ET	WELL IDEN	TIFICATI	ON MP-	3 DATE	1/12/0	6			
Project I	Name: <u>Forn</u>	ner Genera	l Mills Sit	e	Project No.: _	2626-008	Project I	Manager: <u>T</u>	odd Mille	<u>er</u>			
Laborato	ory: STL Sa	n Francisco	Weather	Conditions	Mostly Su	may Co	01 + B+	cert					
Well De	scription: 3	/4" 1" (2")	4" 6" Otl	her:	Well Type:	Sta	inless Ste	el Other:					
					Type of lock					N. A. A. A. A. A. A. A. A. A. A. A. A. A.			
					ft.(BTOC)								
Purge M	lethod: Tefl	on / PE Disp	osable Ba	iler_ Centri	fugal Pump 🧲	eristaltic	Pump O	ther:					
Pump Lines: NA New / Cleaned Dedicated Bailer Line: NA New / Cleaned / Dedicated													
Method of Cleaning Pump NA Alconox Liqui-nox Tap Water DI Rinse Other:													
Method of Cleaning Bailer No Alconox Liqui-nox Tap Water DI Rinse Other:													
Sampling Method: Disp. Teflon Bailer Disp. PE Bailer Peristaltic Pump Other:													
YSI 600XL Meter Serial No.: 319340B 208541R Multiparameter Probe Serial No. 00K0300 00C1522													
Equipme	ent Calibrati	on: See Da	ily Equipm	ent Calibrat	tion Sheet					3			
					ial No.: 25083				ppm				
					er Level Prior								
TD =	5.36 -4	. <b>35</b> (D1	rw) = <u>  [[.(</u>	) [ (ft.of wa	ater) x "K" =	. <u>8    </u> (Gals	./CV) x <u>NA</u>	(No. of CV)	= <u>NA</u> (Gal	s.)			
"K"	= 0.002 (3/4"	well) "K" =	0.04 (1" we	ell) ("K" = .	163 (2" well) '	'K" = 0.65 (	4" well)	"k" = 1.46 (6'	well)				
			FIELD WA	ATER QUA	LITY PARAME	ETERS							
					Specific			Dissolved	Water				
Date	Time	Discharge	рΗ	Temp.	Conductance			Oxygen	Level	Color			
		(Liters)		(°C)	ms (us)	(NTU's)	(mV)	(mg/L)	(BTOC)				
1/12/06	16:20	Initial	7.46	19,50	1585	14.6	-147.9	0.88	440	Clear			
	16:22	0.5	7.52	19.64	1587	18.3	-164.6	0.55	4.40	11			
	16:24	1.0	7.59	19.69	1582	15.7	-1726	0.45	4.40	11			
	16:26	1.5	7,60	19.73	1581	13.3	-125.4	0.38	4.40	••			
	16:28	2.0	7.61	19.69	1282	12.3	-177.6	0.34	4.40	• 4			
	16:30	2.5	7.62	19.67	1578	11.5	-179.5	0.30	4.40	.,			
	16:32	3.0	7.62	19.66	1575		-179.5	0.30	4.40	ti.			
U	16:34	3.5	7.62	19,64	1572	11.7	-179.3	0.29	4.40	11			
		4.0											
Total Di	scharge:	3.9 Li	ters		Casing Volum	nes Remo	ved: NA						
	-		-	The same of the sa	rum(s) Poly			stem Othe	r:				
1			_		nalysis: TPF								
		, ,	_		HCI					_			
						_							
ł .					ent Blank Du	pricate IV	IO/IVIOU	ran ohiir i	icin Digi	ir.			
Comments:													
Commi	III.3.												
		en Penman				$\bigcirc$							



	WATER QUALITY SAMPLE LOG SHEET WELL IDENTIFICATION MP-4 DATE 1/12/06													
Project Name: Former General Mills Site Project No.: 2626-008 Project Manager: Todd Miller  Laboratory: STL San Francisco Weather Conditions: Mostly Sany + 60														
										<del></del>				
		•	*****			Well Type:					<del></del>			
						Type of lock					<del></del>			
						ft.(BTOC)								
Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump Peristaltic Pump Other:  Pump Lines: NA New / Cleaned / Dedicated Bailer Line: NA New / Cleaned / Dedicated														
Pump Lines: NA New / Cleaned / Dedicated  Bailer Line: NA New / Cleaned / Dedicated  Method of Cleaning Rumo NA Alconox Liquinox Tap Water DI Rinse Other:														
Method of Cleaning Pump. No Alconox Liqui-nox Tap Water DI Rinse Other:														
Method of Cleaning Bailer: Na Alconox Liqui-nox Tap Water DI Rinse Other:														
Sampling Method: Disp. Teflon Bailer Disp. PE Bailer Peristaltic Pump Other:														
YSI 600XL Meter Serial No.: 319340R 208541R Multiparameter Probe Serial No.: 00K0300/ 00C1522														
Equipment Calibration: See Daily Equipment Calibration Sheet														
Method to Measure Water Level: Slope Indicator Serial No.: 25083/ 25742 P.I.D. Reading: NA ppm Water Level at Start (DTW): 3.82 6 11:04 Water Level Prior To Sampling: 3.82														
TD =						ater) x "K" =					ls.)			
<u> </u>	"K":	= 0.002 (3/4"	well) "K" =	-		163 (2" well)	Andrew	(4" well)	"K" = 1.46 (6	" well)	U 51 U			
	FIELD WATER QUALITY PARAMETERS													
			D'b	-11	<b></b>	Specific	Translations	Dada	Dissolved		0-1			
Da	ate	Time	Discharge (Liters)	pН	Temp. (°C)	Conductance mS (US)	(NTU's)	Redox (mV)	Oxygen (mg/L)	Level (BTOC)	Color			
<del> ,,-</del>	1													
1/12	06	13:25	Initial	6.77	18.95	/068	2.9	40.5	2.84	3.82	Clear			
		13:27	0.5	6.87	19.03	1057	1.4	19.8	0.72	3.82	11			
	13:21 10 6.77 78.17 7000 1.0 0.2 0.93 3.62													
			1.0 1.5		I		1				11			
		13:31		7.09	18.73	1039	0.7	- ଥିଠା ।	0.38	3,82	11			
			1.5	7.09 7.17	18.93	1033	0.7	- 26.0 -26.0	0.40	3,82 3.82				
		3:3   3:33	1.5 2.0	7.09	18.93 18.86 18.74	1039	0.7	- 26.0 -36.6	0.38	3,82	11			
		13:31 13:33 13:35	1.5 2.0 2.5	7.09 7.17 7.	18.93 18.86 18.74 18.78	1033	0.7	- 26.0 -26.0	0.38	3,82 3,82 3,82	11			
		13:35 13:35 13:35 13:37	1.5 2.0 2.5 3.0 3.5	7.09 7.17 7.24 7.33 7.34	18.93 18.86 18.74 18.78 18.81	1039 1033 1024 1023 1022	0.7 0.6 0.4 0.4	-30.6 -30.6 -41.1	0.38 0.40 0.39 0.35 0.34	3,82 3,82 3,82 3,82 3,82	1 t			
		13:35 13:35 13:35 13:37 13:37	1.5 2.0 2.5 3.0 3.5 4.0	7.09 7.17 7.24 7.33 7.34 7.34	18.93 18.86 18.74 18.78	1039 1033 1024 1023 1022	0.7 0.6 0.4 0.4 0.4	- 20.1 - 26.0 - 30.6 - 41.1 - 43.1 - 44.4	0.38 0.40 0.39 0.35 0.34	3,82 3,82 3,82 3,82	1 t t t t t t t t t t t t t t t t t t t			
Tota	al Dis	13:31 13:35 13:35 13:37 13:39 13:41 scharge:	1.5 2.0 2.5 3.0 3.5 4.0	7.09 7.17 7.24 7.33 7.34 7.34 ters	18.93 18.86 18.74 18.78 18.81 18.82	1033 1034 1023 1023 1023 Casing Volum	0.7 0.6 0.4 0.4 0.6	- 26.0 - 30.6 - 41.1 - 43.1 - 44.4 ved: NA	0.38 0.40 0.39 0.35 0.34	3.82 3.82 3.82 3.82 3.82 3.82	67 67 67			
Tota Metl	al Dis	13:35 13:35 13:37 13:37 13:41 scharge:of disposal	1.5 2.0 2.5 3.0 3.5 4.0 <b>4.4</b> Li	7.09 7.17 7.24 7.33 7.34 7.34 ters d water: (5	18.93 18.86 18.74 18.78 18.81 18.82	1033 1024 1023 1022 1023 Casing Volum	0.7 0.6 0.4 0.4 0.5 nes Remo	- 26.0 - 30.6 - 41.1 - 43.1 - 44.4 ved: NA atment Sy	0.38 0.40 0.39 0.35 0.34 0.53	3,82 3.82 3.82 3.82 3.82	of 01 14			
Tota Meti Date	al Dis	13:35 13:35 13:37 13:37 13:41 scharge:	1.5 2.0 2.5 3.0 3.5 4.0 4.4 Li of discharge	7.09 7.17 7.24 7.33 7.34 7.34 ters d water: (5	18.73 18.86 18.74 18.78 18.81 18.82 5 Gallon Dr	1033 1034 1023 1023 1023 Casing Volumum Poly	0.7 0.4 0.4 0.4 0.6 nes Remorant Treedgas & BT	- <b>20.1</b> - <b>26.0</b> - <b>30.6</b> - <b>41.1</b> - <b>43.1</b> - <b>44.4</b> ved: NA atment Sy	0.38 0.40 0.39 0.35 0.34 0.53	3.82 3.82 3.82 3.82 3.82 7.82	or or or or			
Tota Metl Date Mote	al Dishod of	13:35 13:35 13:37 13:37 13:41 scharge: of disposal one Sampled	1.5 2.0 2.5 3.0 3.5 4.0 4.4 Li of discharge	7.09 7.17 7.24 7.33 7.34 7.39 ters d water: 6	18.73 18.86 18.74 18.78 18.81 18.82 5 Gallon Dr.	1033 1024 1023 1022 1023 Casing Volumerums) Polymalysis: TPH	o.7 o.4 o.4 o.5 nes Remo Tank Tre	- 30.1 - 26.0 - 30.6 - 41.1 - 43.1 - 44.4 ved: NA atment Sy EX (8015,	0,38 0,40 0,39 0,35 0,34 0,53 /stem Other/sample con	3.82 3.82 3.82 3.82 3.82 7.82 er:	11 11 11 11			
Tota Metl Date Moto	al Dischod of	13:35 13:35 13:37 13:37 13:41 scharge:of disposal ne Sampled il; PNA's (82	1.5 2.0 2.5 3.0 3.5 4.0 4.4 Li of discharge : 1/2/06	7.09 7.17 7.24 7.33 7.34 7.39 ters d water: 5 Preser as a	18.73 18.86 18.74 18.78 18.81 18.82 5 Gallon Dr 19.82 Avative(s):	1033 1034 1035 1035 1023 1023 1023 Casing Volumerums) Folymalysis: TPH	o.7 o.4 o.4 o.5 nes Remo Tank Tre	- 30.1 - 26.0 - 30.6 - 41.1 - 43.1 - 44.4 ved: NA atment Sy EX (8015,	0,38 0,40 0,39 0,35 0,34 0,53 /stem Other/sample con	3.82 3.82 3.82 3.82 3.82 7.82 er:	11 11 11 11			
Tota Metl Date Moto	al Dischod of	13:35 13:35 13:37 13:37 13:41 scharge:of disposal ne Sampled il; PNA's (82	1.5 2.0 2.5 3.0 3.5 4.0 4.4 Li of discharge	7.09 7.17 7.24 7.33 7.34 7.39 ters d water: 5 Preser as a	18.73 18.86 18.74 18.78 18.81 18.82 5 Gallon Dr 19.82 Avative(s):	1033 1034 1035 1035 1023 1023 1023 Casing Volumerums) Folymalysis: TPH	o.7 o.4 o.4 o.5 nes Remo Tank Tre	- 30.1 - 26.0 - 30.6 - 41.1 - 43.1 - 44.4 ved: NA atment Sy EX (8015,	0,38 0,40 0,39 0,35 0,34 0,53 /stem Other/sample con	3.82 3.82 3.82 3.82 3.82 7.82 er:	11 11 11 11			
Tota Metl Date Moto	al Dischod of	13:35 13:35 13:37 13:37 13:41 scharge:of disposal ne Sampled il; PNA's (82	1.5 2.0 2.5 3.0 3.5 4.0 4.4 Li of discharge : 1/2/06	7.09 7.17 7.24 7.33 7.34 7.39 ters d water: 5 Preser as a	18.73 18.86 18.74 18.78 18.81 18.82 5 Gallon Dr 19.82 Avative(s):	1033 1034 1035 1035 1023 1023 1023 Casing Volumerums) Folymalysis: TPH	o.7 o.4 o.4 o.5 nes Remo Tank Tre	- 30.1 - 26.0 - 30.6 - 41.1 - 43.1 - 44.4 ved: NA atment Sy EX (8015,	0,38 0,40 0,39 0,35 0,34 0,53 /stem Other/sample con	3.82 3.82 3.82 3.82 3.82 7.82 er:	11 01 11 11 11			
Tota Meti Date Moto QA/G	hal Disable Di	13:31 13:35 13:37 13:37 13:41 scharge: of disposal ne Sampled il; PNA's (82	1.5 2.0 2.5 3.0 3.5 4.0 4.4 Li of discharge : 1/2/06	7.09 7.17 7.24 7.34 7.34 7.39 ters d water: (5	18.73 18.86 18.74 18.78 18.81 18.82 5 Gallon Drawary Anative(s):	1033 1034 1035 1034 1023 1023 1023 Casing Volumoums) Folymalysis: TPHHellent Blank Du	o.7 o.4 o.4 o.5 nes Remo Tank Tre	- 30.1 - 26.0 - 30.6 - 41.1 - 43.1 - 44.4 ved: NA atment Sy EX (8015,	0,38 0,40 0,39 0,35 0,34 0,53 /stem Other/sample con	3.82 3.82 3.82 3.82 3.82 7.82 er:	11 01 11 11 11			



WA	WATER QUALITY SAMPLE LOG SHEET  WELL IDENTIFICATION MP-5 DATE 1/12/06  Project Name: Former General Mills Site  Project No.: 2626-008 Project Manager: Todd Miller													
Proj	ect N	Vame: Forn	ner Genera	l Mills Sit	<u>e</u>	Project No.: _2	2626-008	Project I	Manager: <u>T</u>	odd Mille	<u>).</u>			
Labo	orato	ory: STL Sa	n Francisco	Weather	Conditions	: Mostly &	unny &	Caol						
Well	Des	scription: 3	/4" 1" (2")	4" 6" Otl	ner:	Well Type:	Sta	inless Ste	el Other:					
ls W	ell S	Secured? 🔇	es No Bo	It Size:	9/16"	Type of lock	/ Lock nur	nber: 🔟	o Lock					
Obs	erva	tions / Com	ments: set	pump intak	e @ 10.2	ft.(BTOC)	Screen In	terval:						
Purg	je M	ethod: Tefl	on / PE Dis	posable Ba	iler Centri	fugal Punıp 🧲	éristaltic l	oump O	ther:	,				
Pum	ıp Li	nes: NA 🛈	ew/Cleane	d Dedicat	ed	Bailer Line:	New /	Cleaned /	Dedicated					
Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other:														
Method of Cleaning Bailer: (NA) Alconox Liqui-nox Tap Water DI Rinse Other:														
Sampling Method: Disp. Teflon Bailer Disp. PE Bailer Peristaltic Pump Other:														
YSI 600XL Meter Serial No.: 319340R)/ 208541R Multiparameter Probe Serial No. 00K0300 00C1522														
Equipment Calibration: See Daily Equipment Calibration Sheet														
Method to Measure Water Level: Slope Indicator Serial No. 25083 25742 P.I.D. Reading: NA ppm  Water Level at Start (DTW): 5.91 41:10 Water Level Prior To Sampling: 5.93														
Wat	er L	evel at Star	t (DTW): <u>5</u>	91 211:11	Wat	er Level Prior	To Sampl	ing:	0.73					
TD =						ater) x "K" = 1,5					ls.)			
<u> </u>	"K":	= 0.002 (3/4"	well) "K" =			163 (2" well) '		4" well)	"K" = 1.46 (6"	' well)				
	FIELD WATER QUALITY PARAMETERS													
_			D'	-11	T	Specific	Turnshindikur	Dadov	Dissolved	1 1	Color			
l Da	Date Time Discharge pH Temp (Liters) (°C)					Conductance mS (JS)	(NTU's)	Redox (mV)	Oxygen (mg/L)	Level (BTOC)				
4/														
413	06	15:37	Initial	8.04	18.92	1327	5.5	29.3	5'88	5.93	Cless/			
_		15:39	0.5	7.42	18.80	1287	4.7	49.2	2.03	5.93	• 1			
$\vdash$	-	15:41	1.0	7.34	18.75	/270	2.1	51.1	1.90	5.93	• • •			
L		15:43	1.5	7.28	18.61	1252	2.0	54.1	1.90	5.93				
		15:45	2.0	7.27	18.69	1235	1.8	56.3	1.90	5.93	ы			
		15:47	2.5	7.26	18.55	/226	1.6	57.1	1,90	5.93	11			
		15:49	3.0	7.23	18.46	1216	1.3	58.3	1.87	5.93	•1			
		15:51	3.5	7.21	18.43	1206	1.7	59.1	1.88	5.93	41			
J	/	15:53	4.0	7.19	18.36	1200	1.5	59.9	1.86	5.93	ęŧ			
Tota	ıl Dis	scharge:	<b>4.4</b> L	iters		Casing Volum	nes Remo	ved: <u>NA</u>						
					5 Gallon Di	rum(s) Poly	Tank Tre	atment Sy	stem Othe	er:	·····			
				-		nalysis: TPF								
1		il; PNA's (8)				HCI								
		11, 1 147(3 (0.		•		ent Blank Du	-							
•				as a	an Equipino	SIIL DIAIIK Du	pilicate iv	IO/IVIOD	Lab Opin 1	icid Diai	IIX			
Comments:														
800	nla	d by Stock	en Penman	/ lackiles	Decords	d by Atral	_1_	)			400 1 1 4			
Joan	ihie	ny orehit	on Femilian	Jacki Lee	Records	u uy.	7.							



SITE NAME: Former General Mills Site

SITE LOCATION: 800 Derr Avenue, Vallejo, CA

TASK: January 2006 Monitoring Well Sampling Event

# DAILY EQUIPMENT CALIBRATION SHEET

				Dissolved		pН	-	Specific Conductance	ORP	TURBIDITY
DATE	TIME	Instrument	Probe	Oxygen	4	7	10	1,000 or 10,000	237	0.02/0.0
		Serial Number	Serial Number	(%)				uS/cm	mV	NTU
112/06	11:20	319340R	ODEO300AB	100.2	4.00	6.99	10.01	1,000	236.9	0.0
			!							
-										
						1	1			



STL San Francisco Chain of Custody 1220 Quarry Lane ● Pleasanton CA 94566-4756 Phone: (925) 484-1919 ● Fax: (925) 484-1096 Email: info@chromalab.com

	•
Reference #:	•

TRENT OIL	Pn	ione: (92: Ei				nalab.		104-10	Jao		D	ate <u>o</u>	1/12	06	_ Pag	je <u> </u>	of	1
	avart control						STREET COLUMN	lysis	Requ	est	11/10/2	7 70		Henr				
Report To  Attn: Maryline Laugier  Company: Malcolm Pirmie Inc.  Address: 2000 Parell State 1180  Address: Emeryville CA 94603	260B	1 Other Ses CI BTEX EDB CI Ethand		IS (VOCs)		Petroleum Total	□ 608 □ 608	8310		II RCRA		mium e for H <sub>2</sub> O)	Alkalinity TDS	□ NO <sub>3</sub> □ F □ PO <sub>4</sub>				
Phone (510) 735-3034 Email: Massiere Printe Con & X & X & X & X & X & X & X & X & X &	Purgeable Aromatics BTEX EPA - (1) 6021 (1) 62608	KDiese K Adrawa Danica Cer KDiese K Adrator Oil O Other Fuel Tests EPA 82608: Cl Gas CI BTEX Cl Five Oxyentales CI DCA. EDB CI Ethand	Purgeable Halocarbons (HVOCs) EPA 8021	Volatile Organics GC/MS (VOCs)	Semivolatiles GC/MS [] EPA 8270 [] 625	Oil and Grease ☐ Pe (EPA 1664) ☐ To	Pesticides D EPA 8081 PCBs D EPA 8082	PNAs by K 8270	CAM17 Metals (EPA 6010/7470/7471)	Metals: 🗇 Lead 🗇 LUFT	O WE.T (STLC)	☐ Hexavalent Chromium ☐ pH (24h hold time for H <sub>2</sub> O)	Spec Cond.	Anions : DICI DISO4				
Trip Blank 1/12/06 that HCI X MP-4 1/12/06 H32 Work HCI X	0.00	X	T.S.	74	0,2			X	-									- 1
MP-2 1/12/06/14:47 Water HC1 X		メメ						X			:							
MP-3 1/12/66 K:35 web HC1 X MP-1 1/12/06 H:18 beto HC1 X MP-1-DOP 1/12/06/HW8 beto HC1 X		×						X										
Project Info. Sample Receipt Project Name: # of Containers:		1) Rélinquis Signature			Tir	ne	.	Relinqu gnature	ished b	y:	<u>1</u>	lme		) Relinq Signature				l'ime
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		Company					1	orthau							•			Rev C



February 14, 2006

Ms. Maryline Laugier Malcolm Pirnie, Inc. 2000 Powell Street, Suite 1180 Emeryville, California 94608

SUBJECT: February 2006 Monthly Groundwater Monitoring & Sampling Event at Former General Mills Site, Vallejo, California

Dear Ms. Laugier,

Please find enclosed a Field Activity Report for the monthly monitoring and sampling event that occurred February 9 and 10, 2006. This Field Activity Report contains all pertinent documentation associated with this task.

If you have any questions or concerns regarding this Field Activity Report, please do not hesitate to call me.

Sincerely,

Jacqueline Lee

Partner

Enclosure



# FIELD ACTIVITY REPORT FOR

# FORMER GENERAL MILLS SITE VALLEJO, CALIFORNIA

# MONTHLY GROUNDWATER MONITORING EVENT FEBRUARY 2006

Task: Monthly Groundwater Monitoring and Sampling Event

ESS Personnel: Stephen Penman

Date(s) of Activities: February 9 and 10, 2006

## **Decontamination Procedures**

All downhole equipment was cleaned with Liqui-Nox® laboratory grade soap, potable water, and rinsed with distilled water prior to use and between each monitoring well.

## **Groundwater Measurements**

Depths to groundwater were measured and recorded for eight monitoring wells (MP-1 through MP-8). All readings were performed with a Solinst® Water Level Meter. Each monitoring well was allowed to equilibrate to atmospheric pressure for approximately twenty minutes. Three successive readings that agreed to within one-hundredth of a foot determined depth to groundwater (Table 1). All measurements were referenced to the surveyor's mark or at the north rim of the well casing.

Organic vapor readings were not requested.

# Field Equipment Calibration

A multi-parameter instrument with an in-line flow through chamber was used to monitor water quality parameters during well purging. The instrument was calibrated with solution standards prior to any well purging (see Daily Equipment Calibration Sheet).

### Field Measurements

Field measurements included: pH, Specific Conductance (uS), Temperature (Celsius), Dissolved Oxygen (mg/L), Oxidation/Reduction Potential (mV), Turbidity (NTUs) and physical characteristics such as pumping water level, color, and odor (see Water Quality Sample Log Sheets).

# Well Purging and Sampling Procedures

A peristaltic pump was used for low-flow purging and sampling whereby, the well is purged at a rate no greater than 500-ml per minute until water quality parameters stabilized within 10% for three consecutive readings. Each monitoring well was purged and sampled with new or dedicated tubing. Samples were collected immediately following stabilization of water quality parameters by disconnecting the tube from the flow through chamber.



### Chemical Analyses

Curtis & Tompkins, Ltd. of Berkeley, California, provided all sample containers. All monitoring wells were sampled for a combination of following analyses: TPH-Gasoline; Benzene Toluene Ethylene Xylene (BTEX); EDC/EDB (EPA 8015/8021); TPH-Diesel, TPH-Motor Oil (EPA 8015M); Poly Nuclear Aromatics, PNAs (EPA 8270); Total Dissolved Solids (TDS), and Total Lead.

### Sample Containers

The TPH-Gasoline, BTEX, and/or EDC/EDB sample set was contained in three, 40-ml amber VOA containers preserved with hydrochloric acid.

Each TPH-Diesel, and/or Motor Oil sample was contained in a non-preserved, one-liter amber glass container.

Each PNA sample was contained in a non-preserved, one-liter amber glass container.

Each TDS sample was contained in a non-preserved 250-ml, plastic container.

Each Lead sample was contained in a 500-ml plastic container preserved with nitric acid.

# Sample Handling

Sample labels were completed with waterproof ink and affixed to sample containers prior to sample collection.

During decanting, all 40-ml VOA sample containers were slightly tilted to avoid aeration or degassing. Each container was filled until there was a meniscus at the top. After capping, the container was inverted and tapped lightly to check for air bubbles. The absence of air bubbles indicated a successful seal.

All other sample containers were filled to capacity. Preserved containers were not overfilled.

All sample containers were wiped dry, sealed in Ziploc® bags and placed in chilled coolers for storage and shipment. Samples were relinquished to Curtis & Tompkins February 10, 2006.

## QA/QC

One Trip Blank set was supplied and submitted for analysis.

One duplicate sample was collected from monitoring well MW-7 and labeled "MW-7-DUP @10:28".

No other QA/QC samples were requested.

# Chain of Custody (COC) Forms

All sampling and sample handling were conducted under strict chain of custody procedures. The COC included: sampler's name and signature, sample identification, sample date and time, type and number of bottles submitted, and analysis request section.



# Storage of Purged Groundwater and Decontamination Water

Approximately 17 gallons of purged groundwater and decontamination water generated during this sampling event were transferred into an existing, labeled 55-gallon steel drum previously used by the drillers.

### Comments

All eight monitoring wells need locks.

Jacqueline Lee

Parther

Enclosure

Table 1: Summary of Groundwater Sample Date and Time

Water Sample Log Sheets Equipment Calibration Sheet Copy of Chain of Custody



TABLE 1: Summary of February 2006 Monthly Groundwater Monitoring Event

SITE NAME: Former General Mills Site

SITE LOCATION: 800 Derr Street, Vallejo, California

Well ID	Date of Measurement	Time of Measurement	Depth to Groundwater (Ft., TOC)	Well Depth (Ft., TOC)	Sample Date	Sample Time	QA/QC Type	QA/QC Identification
MP-1	2/9/2006	11:57	4.47	15.37	2/10/2006	13:48	None	NA
MP-2	2/9/2006	11:36	4.88	15.41	2/9/2006	15:31	None	NA
MP-3	2/9/2006	11:54	5.05	14.14	2/10/2006	13:02	None	NA
MP-4	2/9/2006	11:33	4.30	15.36	2/9/2006	14:18	None	NA.
MP-5	2/9/2006	11:44	6.40	15.23	2/9/2006	17:06	None	NA
MP-6	2/9/2006	11:51	5.11	14.37	2/10/2006	11:58	None	NA.
MP-7	2/9/2006	11:47	4.94	14.16	2/10/2006	10:28	Duplicate	MW-7-DUP
MP-8	2/9/2006	11:38	5.42	13.75	2/9/2006	16:18	None	NA

TOC= Top of Well Casing
NA= Not Applicable



JWA`	ΓER	QUALITY	SAMPLE	LOG SHE	ET	WELL IDEN.	TIFICATI	ON MP-	1 DATE	2/10/0	<b>%</b>	
Project Name: Former General Mills Site Project No.: 2626-008 Project Manager: Todd Miller												
Laboratory: Curtis & Tompkins - Berkeley, CA Weather Conditions: Char, best24 + Warm												
Well Description: 3/4" 1" 2" 4" 6" Other: Well Type: PVC Stainless Steel Other: Is Well Secured? Yes No Bolt Size: Type of lock / Lock number: No lock												
ls W	ell S	ecured?(Y	es No Bo	It Size:	9/16"	Type of lock	Lock nur	nber: No	ock			
Obse	ervat	ions / Com	ments: set	pump intak	e @   .3	ft.(BTOC)	Screen In	terval:				
Purg	е Ме	ethod: Tefl	on / PE Disp	osable Ba	iler Centrit	fugal Pump 👍	eristaltic l	oump O	ther:			
Pum	p Lir	nes: NA N	ew / Cleane	d Dedicat	ed	Bailer Line	New /	Cleaned /	Dedicated			
						ap Water DI F						
						ap Water DIF						
Sam	pling	Method: I	Disp. Teflon	Bailer Dis	sp. PE Baile	er Peristaltic	Pump	ther:				
						Multiparamete	er Probe S	erial No.	00K0300/	00C1522	2	
Equi	pme	nt Calibrati	on: See Da	ily Equipmo	ent Calibrat	ion Sheet						
Meth	od t	o Measure	Water Leve	i: Slope in	dicator Seri	al N 25083	<b>y</b> 25742	P.I.D. R 	teading: <u>NA</u>	ppm		
						er Level Prior						
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_	"K"=	0.002 (3/4"	well) "K" =		The second second second second	163 (2" well) '		4" Well)	"K" = 1.46 (b)	well)		
				FIELD WA	TER QUAI	LITY PARAME	TERS		6:			
			<b>.</b>	-11	<b>T</b>	Specific Conductance	Turkiditu	Dodov	Dissolved	Water Level	Color	
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		13:30	0.5	7,05	18.98	4095		-260.3		4.72	even.	
$\vdash$		13:32	1.0	7.02	18.97	4104		-278.3		4.70	1.1	
		13:34	1.5	7.01	19.05	4118	31.5	-185.4	0,02	4.69	Clendy	
		13:37	2.0	7.01	19.05	4128	29.5	-296.7	0.02	4.69	Lt. Every	
		13:40	2.5	7.01	19.05	4/13	27.9	-308.2	0.04	4.69	11	
		13:43	3.0	7.01	19.10	4084	26.5	-3189	0.04	4 69	13	
13:43 3.0 7.01 19.10 9089 26.5 -318.7 0.04 7.61												
\	J	13:47	3.5	7.00	19.03	4142	25.8	-338.0		4.69	11	
_	Ų		3.5					f			*/	
		13:47	3.5 4.0	7.00			25.5	-3 <b>%</b> .0			*1	
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Tota Meti Date Moto QA/	al District	charge: of disposal ne Sampled il; PNA's (8.	3.5 4.0 3.9 L of discharge d: 2/10/0 270); and T(	7.00 iters id water: 6 6 @ 13 DS	5 Gallon Dr :48 A Preservationan Equipment	Casing Volum Tumb) Poly Analysis: TPH Ves: HCl	25.6 nes Remo Tank Tre Hgas & BT Total n	ved: NA atment Sy EX (8015)	stem Other	4.69 er: H-Diesel attainers:	and TPH-	



WAT	ΓEF	R QUALITY	SAMPLE	LOG SHE	ET	WELL IDEN	TIFICATI	ON MP-	2 DATE	2/9/0	6		
Project Name: Former General Mills Site Project No.: 2626-008 Project Manager: Todd Miller													
Laboratory: Curtis & Tompkins - Berkeley, CA Weather Conditions: Clear brees + Worm													
Well Description: 3/4" 1"(2") 4" 6" Other: Well Type: (PVC) Stainless Steel Other:													
ls W	ell S	Secured? (Y	es/No Bo	It Size:	9/16"	Type of lock	Lock nur	nber: 📈	lock				
						ft.(BTOC)							
						fugal Pump 🧲							
						Bailer Line:							
Meth	od (	of Cleaning	Pump: NA	Alconox I	∟iqui-nox T	ap Water DIF	Rinse Oth	er:					
Meth	od (	of Cleaning	Bailer: (NA)	Alconox I	_iqui-nox T	ap Water DIF	Rinse Oth	er:					
	•	-				er Peristaltic							
						Multiparamete	er Probe S	Serial No.:	00K0300	00C1522	2		
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						ial No.: 25083				ppm			
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e e e e e				FIELD WA	ATER QUA	LITY PARAME	TERS						
						Specific			Dissolved	Water			
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Total Meth Date Moto QA/0	I Dissipod (/Timer Oi)	14:46 14:55 15:01 15:06 15:12 15:18 15:24 15:24 15:30 scharge: of disposal one Sampled il; and TDS. None nts: <u>Pump</u>	0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  4.4 Li of discharge	8.14 8.14 8.15 8.16 8.17 8.17 8.17 8.18 ters d water: 5 Preser	19.76 20.38 19.94 19.85 19.84 19.91 19.90 19.88 5 Gallon Dr vative(s):	2387 2387 2360 2358 2340 2325 2312 2302 Casing Volumerums) Polynalysis: TPH	7.3 7.2 6.8 6.2 6.0 5.8 fines Remorant Treedgas & BT Total number of the series of the	63.7 74,4 65.1 59.5 53.1 48.8 47.5 47.0 ved: NA atment Sy EX (8015)	1.50 0.91 0.65 0.57 0.53 0.52 0.50 /stem Other/sample con	5.09 5.00 6.01 5.02 5.02 5.02 5.02 6.01	v1  v1  v1  v1  v1  v1  v1  v1  v1  v1		
Total Meth Date Moto QA/0	I Dissipod (/Timer Oi)	14:46 14:55 15:01 15:06 15:12 15:18 15:24 15:24 15:30 scharge: of disposal one Sampled il; and TDS. None nts: <u>Pump</u>	0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  4.4  Liof discharge	8.14 8.14 8.15 8.16 8.17 8.17 8.17 8.18 ters d water: 5 Preser	19.76 20.38 19.94 19.85 19.84 19.91 19.90 19.88 5 Gallon Dr vative(s):	2387 2387 2360 2358 2340 2325 2312 2302 Casing Volum rum)s) Poly	7.3 7.2 6.8 6.2 6.0 5.8 fines Remorant Treedgas & BT Total number of the series of the	63.7 74,4 65.1 59.5 53.1 48.8 47.5 47.0 ved: NA atment Sy EX (8015)	1.50 0.91 0.65 0.57 0.53 0.52 0.50 /stem Other/sample con	5.09 5.00 6.01 5.02 5.02 5.02 5.02 6.01	v1  v1  v1  v1  v1  v1  v1  v1  v1  v1		
Total Meth Date Moto QA/C	I Dissided ()/Timer Oic QC:	14:46 14:55 15:01 15:06 15:12 15:18 15:24 15:30 scharge:_of disposal in Sampled il; and TDSNone_nts:_Pump_Pecal.br	0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  4.4  Liof discharge	8.14 8.14 8.15 8.16 8.17 8.17 8.18 ters d water:(5 Preser as as a second	19.76 20.38 19.94 19.85 19.84 19.91 19.90 19.88 5 Gallon Dr 231 A vative(s): an Equipment of the second of the sec	2387 2387 2360 2358 2340 2325 2312 2302 Casing Volumerum)s) Polymanalysis: TPH	7.3 7.2 6.8 6.2 6.0 5.8 fines Remorant Treedgas & BT Total number of the series of the	63.7 74,4 65.1 59.5 53.1 48.8 47.5 47.0 ved: NA atment Sy EX (8015)	1.50 0.91 0.65 0.57 0.53 0.52 0.50 /stem Other/sample con	5.09 5.00 6.01 5.02 5.02 5.02 5.02 6.01	v1  v1  v1  v1  v1  v1  v1  v1  v1  v1		



WA:	TER	QUALITY	SAMPLE	LOG SHE		WELL IDEN																
Project Name: Former General Mills Site Project No.: 2626-008 Project Manager: Todd Miller																						
Laboratory: Curtis & Tompkins - Berkeley, CA Weather Conditions: Char brees + (Norm Well Description: 3/4" 1" 20 4" 6" Other: Well Type PVC Stainless Steel Other:																						
Well	Des	scription: 3	/4% 1" 💇	4" 6" Oth	her:	Well Type.	Sta (Sta	inless Ste	el Other:													
ls W	lell S	Secured?	No Bo	It Size: No	Well Month	Type of lock	Lock nur	nber: Ne	ock													
Obs	erva	tions / Com	ments: set	pump intak	ce @ 11.30	ft.(BTOC)	Screen In	terval: _														
Purg	је М	ethod: Tefl	on / PE Dis	oosable Ba	iler Centri	fugal Pump (F	eristaltic	Pump O	ther:													
Pum	ıp Liı	nes: NA 🚺	ew Cleane	d Dedicat	ed	Bailer Line	IA)New /	Cleaned /	Dedicated													
Meth	nod o	of Cleaning	Pump NA	Alconox I	Liqui-nox T	ap Water DIF	Rinse Oth	er:														
						ap Water DLF																
Sam	pling	g Method:	Disp. Teflon	Bailer Di	sp. PE Baile	er Peristaltic	Pump	ther:	<b>—</b>													
						Multiparamete	er Probe S	Serial No.	00K0300	00C1522	2											
Equi	ipme	ent Calibrati	on: See Da	ily Equipm	ent Calibrat	ion Sheet																
Metl	nod t	to Measure	Water Leve	l: Slope In	dicator Ser	ial No. 25083	// 25742	P.I.D. R	leading: <u>NA</u>	ppm												
Wat	er Le	evel at Star	t (DTW):	5.05	Wat	er Level Prior	To Sampi	ing: <b>5</b>	<b>,</b> 08													
TD =		<u> 15.36</u> - <b>5</b>	TD) <b>&lt;0.</b>	W) = 10.3	(ft.of wa	ter) x "K" =	(Gals.	/CV) x <u>NA</u>	(No. of CV)	= <u>NA</u> (Gals	s.)											
	"K"	= 0.002 (3/4"	well) "K" =			163 (2" well)		(4" well)	"k" = 1.46 (6	" well)												
				FIELD WA	ATER QUA	LITY PARAME	TERS															
					_	Specific			Dissolved	Water	Onlan											
Da	ate	Time	Discharge	pН	Temp.	Conductance			Oxygen	Level	Color											
2	,		(Liters)	- 4					_													
M / 10	V	17:45	Initial	Li Q	1 30 M	1 14/11	5 1.	-13 <b>9</b> <	(Liters) (°C) mS (uS) (NTU's) (mV) (mg/L) (BTOC)													
	/06	1					5.6															
	/06	12:47	0.5	7.98	19.73	1396	5.2	-152.4	0.59	5.08	41											
	/06	1		7.98	19.73	1398	5.2 5.0	-152.4 -164.0	0.59	5.08 5.08	68											
	/06	12:47	0.5	7.98	19.73	1390	5.2	-152.4	0.59	5.08	68 88 88											
	/06	12:47	0.5 1.0	7.98	19.73	1398 1398 1398	5.2 5.0	-152.4 -164.0	0.59 0.47 0.42	5.08 5.08	68											
	/06	12:47 12:49 12:51 12:53	0.5 1.0 1.5	7.98 7.82	19.73 19.61 19.60	1398 1398	5.2 5.0 4.6	-152.4 -164.0 -168.6	0.59 0.47 0.42	5.08 5.08 5.08	68 88 88											
	/06	12:47 12:49 12:51 12:53 12:55	0.5 1.0 1.5 2.0	7.98 7.82 7.80	19.61 19.60 19.62	1398 1398 1398	5.2 5.0 4.6 3.9	-152.4 -164.0 -168.6 -169.0 -169.9	0.59 0.47 0.42 0.39	5.08 5.08 5.08 5.08	81 91 81											
	/06	12:47 12:49 12:51 12:53	0.5 1.0 1.5 2.0 2.5	7.98 7.82 7.80 7.83	19.61 19.60 19.62 19.67	8961 8961 6961 8861 8861	5.2 5.0 4.6 3.9 3.8	-162.4 -164.0 -168.6 -169.0 -169.9 -168.6	0.59 6.40 6.40 PC.0 88.0	5.08 5.08 5.08 6.08	61 61 61 61											
	/06	12:47 12:49 12:51 12:53 12:55 12:57 12:57	0.5 1.0 1.5 2.0 2.5 3.0	7.98 7.82 7.80 7.83 7.80 7.80	19.61 19.60 19.62 19.62 19.67 19.71	8961 8961 8861 8861 1388	5.2 5.0 4.6 3.9 3.8 3.6	-152.4 -164.0 -168.6 -169.0 -169.9 -168.6 -171.8	0.59 0.47 0.42 0.39 0.38 0.35	5.08 5.08 5.08 5.08 6.08 5.08	60 61 61 61 61 7											
		12:47 12:49 12:51 12:53 12:55 12:57 12:57 13:01	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0	7.98 7.82 7.80 7.83 7.80 7.80 7.79	19.61 19.60 19.62 19.62 19.67	8961 8961 6961 8861 8861	5.2 5.0 4.6 3.9 3.8 3.6 3.4 3.4	-152.4 -168.6 -169.0 -169.9 -168.6 -171.8 -172.4	0.59 0.42 0.42 0.39 0.38 0.35	5.08 5.08 5.08 5.08 5.08 5.08	81 91 91 97 81 81											
Tota	al Dis	12:47 12:49 12:51 12:53 12:55 12:57 12:59 13:01	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0	7.98 7.82 7.80 7.83 7.80 7.80 7.79 iters	19.61 19.60 19.62 19.67 19.71 19.70	139% 1398 1393 1388 1388 1389 1389 Casing Volun	5.2 5.0 4.6 3.9 3.8 3.6 3.4 3.4	-152.4 -168.6 -169.0 -169.0 -169.0 -169.6 -171.8 -172.4 ved: NA	0.59 0.47 0.42 0.39 0.38 0.35 0.33 0.32	5.08 5.08 5.08 5.08 5.08 5.08 5.08	81 91 91 97 81 81 81											
Tota	al Dis	12:47 12:49 12:51 12:55 12:55 12:57 12:57 13:01 scharge: of disposal	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0	7.98 7.82 7.80 7.80 7.80 7.30 7.30 7.39 iters	19.61 19.60 19.62 19.67 19.70 19.69	139% 1398 1393 1388 1389 Casing Volun	5.2 5.0 4.6 3.9 3.8 3.6 3.4 100 Tank Tre	-162.4 -164.0 -169.0 -169.1 -168.6 -171.8 -172.4 ved: NA eatment Sy	0.59 0.42 0.42 0.39 0.38 0.35 0.33 0.32	5.08 5.08 5.08 6.08 5.08 5.08 5.08	61 61 61 61 61 61 61											
Tota Met	al Dis	12:47 12:49 12:51 12:53 12:55 12:57 12:57 13:01 scharge: of disposal ne Sampled	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.4 Lof discharge	7.98 7.82 7.80 7.83 7.80 7.80 7.79 iters ed water: (5	19.60 19.60 19.62 19.67 19.70 19.69	1398 1398 1393 1388 1388 1389 1389 Casing Volun	5.2 5.0 4.6 3.9 3.8 3.6 3.4 3.4 nes Remo	-152.4 -164.0 -169.0 -169.0 -169.1 -168.6 -171.8 -172.4 ved: NA eatment Sy	0.59 0.47 0.42 0.39 0.38 0.35 0.32 (stem Other EDB (8015	5.08 5.08 5.08 5.08 5.08 5.08 5.08	81 91 91 91 81 91 91											
Tota Met Date	hod hodel; F	12:47 12:49 12:51 12:53 12:55 12:57 12:57 13:01 scharge: of disposal me Sampled PNA's (8270	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.4 Loft discharge	7.98 7.82 7.80 7.83 7.80 7.80 7.79 iters ed water: (5	19.61 19.60 19.62 19.67 19.70 19.69 5 Gallon D	1398 1398 1393 1388 1388 1389 1389 Casing Volun rum's) Poly	5.2 5.0 4.6 3.9 3.8 3.6 3.4 19 19 19 19 19 19 19 19 19 19 19 19 19 1	-152.4 -164.0 -169.0 -169.0 -169.1 -168.6 -171.8 -172.4 ved: NA eatment Sy EX. EDC.	0.59 0.47 0.42 0.39 0.38 0.35 0.35 0.32 vstem Other EDB (8015)	5.08 5.08 5.08 5.08 5.08 5.08 5.08 5.08	11 11 11 11 11 11 11 11											
Tota Met Date QA/	al Dishod	12:47 12:49 12:51 12:53 12:55 12:57 13:01 scharge: of disposal me Sampled PNA's (8270 None	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.4 Loft discharge	7.98 7.82 7.80 7.83 7.80 7.80 7.79 iters ed water: (5	19.61 19.60 19.62 19.67 19.70 19.69 5 Gallon D	1398 1398 1393 1388 1388 1389 1389 Casing Volun	5.2 5.0 4.6 3.9 3.8 3.6 3.4 19 19 19 19 19 19 19 19 19 19 19 19 19 1	-152.4 -164.0 -169.0 -169.0 -169.1 -168.6 -171.8 -172.4 ved: NA eatment Sy EX. EDC.	0.59 0.47 0.42 0.39 0.38 0.35 0.35 0.32 vstem Other EDB (8015)	5.08 5.08 5.08 5.08 5.08 5.08 5.08 5.08	11 11 11 11 11 11 11 11											
Tota Met Date QA/	al Dishod	12:47 12:49 12:51 12:53 12:55 12:57 12:57 13:01 scharge: of disposal me Sampled PNA's (8270	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.4 Loft discharge	7.98 7.82 7.80 7.83 7.80 7.80 7.79 iters ed water: (5	19.61 19.60 19.62 19.67 19.70 19.69 5 Gallon D	1398 1398 1393 1388 1388 1389 1389 Casing Volun rum's) Poly	5.2 5.0 4.6 3.9 3.8 3.6 3.4 19 19 19 19 19 19 19 19 19 19 19 19 19 1	-152.4 -164.0 -169.0 -169.0 -169.1 -168.6 -171.8 -172.4 ved: NA eatment Sy EX. EDC.	0.59 0.47 0.42 0.39 0.38 0.35 0.35 0.32 vstem Other EDB (8015)	5.08 5.08 5.08 5.08 5.08 5.08 5.08 5.08	11 11 11 11 11 11 11 11											
Tota Met Date QA/	al Dishod	12:47 12:49 12:51 12:53 12:55 12:57 13:01 scharge: of disposal me Sampled PNA's (8270 None	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.4 Loft discharge	7.98 7.82 7.80 7.83 7.80 7.80 7.79 iters ed water: (5	19.61 19.60 19.62 19.67 19.70 19.69 5 Gallon D	1398 1398 1393 1388 1388 1389 1389 Casing Volun rum's) Poly	5.2 5.0 4.6 3.9 3.8 3.6 3.4 19 19 19 19 19 19 19 19 19 19 19 19 19 1	-152.4 -164.0 -169.0 -169.0 -169.1 -168.6 -171.8 -172.4 ved: NA eatment Sy EX. EDC.	0.59 0.47 0.42 0.39 0.38 0.35 0.35 0.32 vstem Other EDB (8015)	5.08 5.08 5.08 5.08 5.08 5.08 5.08 5.08	11 11 11 11 11 11 11 11											
Tota Met Data Dies QA/	al Dishod	13:47 12:49 12:51 12:53 12:55 12:57 13:01 scharge: of disposal ne Sampled PNA's (8270 None nts:	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.4 Loft discharge	7.98 7.82 7.80 7.80 7.80 7.80 7.30 7.30 7.30 7.30 7.30 7.30	19.43 19.61 19.60 19.62 19.67 19.70 19.69 5 Gallon D 3:02 A eservative(s an Equipment	1398 1398 1393 1388 1388 1389 (Casing Volum rum)s) Poly (malysis: TPh s): Hol, HAX ent Blank Du	5.2 5.0 4.6 3.9 3.8 3.6 3.4 19 19 19 19 19 19 19 19 19 19 19 19 19 1	-152.4 -164.0 -169.0 -169.0 -169.1 -168.6 -171.8 -172.4 ved: NA eatment Sy EX. EDC.	0.59 0.47 0.42 0.39 0.38 0.35 0.35 0.32 vstem Other EDB (8015)	5.08 5.08 5.08 5.08 5.08 5.08 5.08 5.08	11 11 11 11 11 11 11 11											



WATER QUALITY SAMPLE LOG SHEET WELL IDENTIFICATION MP-4 DATE 2/9/06												
Project Name: Former General Mills Site Project No.: 2626-008 Project Manager: Todd Miller												
Laboratory: Curtis & Tompkins - Berkeley, CA Weather Conditions: Clear, breaze 4 www												
Well Description: 3/4" 1" 2" 4" 6" Other: Well Type: PVC Stainless Steel Other:												
		The second second	The state of the s			Type of lock						
Obs	erva	tions / Com	ments: set	pump intak	ce @ 11.30	ft.(BTOC)	Screen In	terval:				
Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump Peristaltic Pump Other:												
Pump Lines: NA New / Cleaned Dedicated Bailer Line NA New / Cleaned / Dedicated												
Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other:  Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other:												
		_			•							
						er Peristaltic						
YSI	600)	XL Meter Se	erial No.: 31	9340R)/ 20	08541R	Multiparamete	er Probe S	Serial No.:	00K0300/	00C1522	2	
			on: See Da									
						ial No. 25083				ppm		
						er Level Prior						
TD =						ter) x "K" = 1.8					s.)	
	"K"=	= 0.002 (3/4"	well) "K" =	THE RESERVE OF THE PARTY OF THE		163 (2" well) '		4" well)	"k" = 1.46 (6	" well)		
				FIELD WA	ATER QUA	LITY PARAME	ETERS					
						Specific			Dissolved	Water		
Di	ate	Time	Discharge	рН	Temp.	Conductance mS us			Oxygen	Level	Color	
-/-			(Liters)		(°C)		(NTU's)	(mV)	(mg/L)	(BTOC)		
214	06	שיחם	Initial	92.3	2029	1734	4.0	48.0	2.15	4.31	Clear	
29/06 14:00 Initial 6.69 2069 1734 4.0 48.0 2.15 4.31 Clear												
14:02 0.5 6.78 20.01 1678 4.0 9.5 0.71 4.31 "												
		17.5		_							61	
		14:02	0.5	6.78	20.01	1678	4.0	9,5	0.71	4.31		
		14:02	0.5 1.0	6.78	20.01 19.83	1678	4.0	9.5 ·5.9	0.71	4.31	61	
		14:08 14:04 14:07	0.5 1.0 1.5	6.78 6.95 7.07	20.01 19.83 19.97	1678 1648 /639	4.0 3.9 4.0	9.5 ·5.9 -7.0	0.71	4.31 4.31 4.31	61	
		14:08 14:06 14:07	0.5 1.0 1.5 2.0	6.78 6.95 7.07 7.20	20.01 19.83 19.97 19.90	1678 1648 1637 1632	4.0 3.9 4.0 3.9	9.5 ·5.9 -7.0 -13.3	0.71	4.31 4.31 4.31 4.31	61 b)	
		14:18 14:08 14:08 14:06 14:07	0.5 1.0 1.5 2.0 2.5	6.78 6.95 7.07 7.20 7.29 7.36	20.01 19.83 19.97 19.90 19.91	1678 1648 1637 1632	4.0 3.9 4.0 3.9 3.7 3.7	9.5 ·5.9 -7.0 -13.3 -17.6	0.71 0.47 0.44 0.37 0.34	4.31 4.31 4.31 4.31	61 b) ec	
2	<i>J</i>	14:14 14:19 14:10 14:08 14:06 14:04	0.5 1.0 1.5 2.0 2.5 3.0 3.5	6.78 6.95 7.07 7.20 7.29 7.36 7.42	20.01 19.83 19.97 19.90 19.91 19.88 19.82	1678 1648 1637 1632 1632 1618	4.0 3.9 4.0 3.9 3.7 3.7 3.6	9.5 ·5.9 -7.0 -13.3 -17.6 -17.1 -18.9	0.71 0.47 0.44 0.37 0.34 0.39	4.31 4.31 4.31 4.31 4.31 4.31	61 b) ec 67	
		14:16 14:19 14:08 14:08 14:06 14:07	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0	6.78 6.95 7.07 7.20 7.29 7.36 7.42 7.44	20.01 19.83 19.97 19.90 19.91	1678 1648 1637 1632 1632	4.0 3.9 4.0 3.7 3.7 3.6	9.5 ·5.9 -7.0 -13.3 -17.6 -17.1 -18.7 -18.0	0.71 0.47 0.44 0.37 0.34 0.39	4.31 4.31 4.31 4.31 4.31	61 b) es 61 51	
Tota	al Dis	14:04 14:06 14:08 14:10 14:16 scharge:	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0	6.78 6.95 7.07 7.20 7.29 7.36 7.42 7.44	20.01 19.83 19.97 19.90 19.91 19.88 19.82	1678 1648 1637 1632 1632 1618 1616	4.0 3.9 4.0 3.7 3.7 3.6 es Remo	9.5 ·5.9 -7.0 -13.3 -17.6 -17.1 -18.7 -18.0 ved: NA	0.71 0.47 0.44 0.37 0.39 0.36	4.31 4.31 4.31 4.31 4.31 4.31 4.31	61 b) es 61 57 51	
Tota Met	al Dis	14:02 14:04 14:06 14:08 14:10 14:13 14:14 14:16 scharge:of disposal	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.4 Li	6.78 6.95 7.07 7.20 7.29 7.36 7.42 7.44 iters	20.01 19.83 19.97 19.90 19.91 19.88 19.82 19.83	1678 1648 1632 1632 1618 1616 1615 Casing Volumerums) Poly	4.0 3.9 4.0 3.7 3.7 3.6 nes Remo	9.5 -5.9 -7.0 -13.3 -17.6 -17.1 -18.1 -18.0 ved: NA atment Sy	0.71 0.47 0.44 0.37 0.39 0.36 0.38	4.31 4.31 4.31 4.31 4.31 4.31	61 b) ex b7 b7	
Tota Met Dat	al Dis hod ( e/Tim	14:02 14:04 14:06 14:08 14:10 14:16 14:16 scharge:of disposal ne Sampled	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.4 Li	6.78 6.95 7.07 7.20 7.29 7.36 7.42 7.44 ters d water: (5	20.01 19.83 19.97 19.90 19.91 19.88 19.82 19.83	678  648  637  632  632  618  616  616 Casing Volumerums) Poly	3.9 4.0 3.9 3.7 3.7 3.6 nes Remo Tank Tre	9,5 -5,9 -7.0 -13,3 -17.6 -17.1 -18.7 -18.0 ved: NA atment Sy 5/8021); T	0.71 0.47 0.44 0.37 0.39 0.36 0.38	4.31 4.31 4.31 4.31 4.31 4.31 4.31	er er er er	
Tota Met Data	al Dis hod o e/Tin TDS	14:02 14:04 14:06 14:08 14:18 14:18 14:16 scharge: of disposal ne Sampled	0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  4.9  Li of discharge	6.78 6.95 7.07 7.20 7.29 7.36 7.42 7.44 iters d water: (5	19.83 19.97 19.90 19.91 19.88 19.82 19.83 5 Gallon Di	678  648  637  632  632  618  616  1615  Casing Volumerumbs) Poly (nalysis: TPH	4.0 3.9 4.0 3.7 3.7 3.6 nes Remo Tank Tre	9.5 -5.9 -7.0 -13.3 -17.6 -17.1 -18.1 -18.0 ved: NA atment Sy 5/8021); T umber of	0.71 0.47 0.44 0.37 0.39 0.39 0.38 vstem Other	4.31 4.31 4.31 4.31 4.31 4.31 4.31	61 61 61 61 61 61	
Tota Met Data and	al Dis hod o e/Tin TDS QC:	14:02 14:04 14:06 14:08 14:10 14:16 14:16 scharge: of disposal ne Sampled	0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  4.9  Li of discharge	6.78 6.95 7.07 7.20 7.29 7.36 7.42 7.44 iters d water: (5	19.83 19.97 19.90 19.91 19.88 19.82 19.83 5 Gallon Di	678  648  637  632  632  618  616  616 Casing Volumerums) Poly	4.0 3.9 4.0 3.7 3.7 3.6 nes Remo Tank Tre	9.5 -5.9 -7.0 -13.3 -17.6 -17.1 -18.1 -18.0 ved: NA atment Sy 5/8021); T umber of	0.71 0.47 0.44 0.37 0.39 0.39 0.38 vstem Other	4.31 4.31 4.31 4.31 4.31 4.31 4.31	61 61 61 61 61 61	
Tota Met Data and	al Dis hod o e/Tin TDS QC:	14:02 14:04 14:06 14:08 14:18 14:18 14:16 scharge: of disposal ne Sampled	0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  4.9  Li of discharge	6.78 6.95 7.07 7.20 7.29 7.36 7.42 7.44 iters d water: (5	19.83 19.97 19.90 19.91 19.88 19.82 19.83 5 Gallon Di	678  648  637  632  632  618  616  1615  Casing Volumerumbs) Poly (nalysis: TPH	4.0 3.9 4.0 3.7 3.7 3.6 nes Remo Tank Tre	9.5 -5.9 -7.0 -13.3 -17.6 -17.1 -18.1 -18.0 ved: NA atment Sy 5/8021); T umber of	0.71 0.47 0.44 0.37 0.39 0.39 0.38 vstem Other	4.31 4.31 4.31 4.31 4.31 4.31 4.31	61 61 61 61 61 61	
Tota Met Data and	al Dis hod o e/Tin TDS QC:	14:02 14:04 14:06 14:08 14:10 14:16 14:16 scharge: of disposal ne Sampled	0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  4.9  Li of discharge	6.78 6.95 7.07 7.20 7.29 7.36 7.42 7.44 iters d water: (5	19.83 19.97 19.90 19.91 19.88 19.82 19.83 5 Gallon Di	678  648  637  632  632  618  616  1615  Casing Volumerumbs) Poly (nalysis: TPH	4.0 3.9 4.0 3.7 3.7 3.6 nes Remo Tank Tre	9.5 -5.9 -7.0 -13.3 -17.6 -17.1 -18.1 -18.0 ved: NA atment Sy 5/8021); T umber of	0.71 0.47 0.44 0.37 0.39 0.39 0.38 vstem Other	4.31 4.31 4.31 4.31 4.31 4.31 4.31	61 61 61 61 61 61	
Tota Met Data and QA/ Cor	al Dis hod de/Tim TDS QC:	14:02 14:04 14:06 14:08 14:10 14:16	0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  4.9  Li of discharge	6.78 6.95 7.07 7.20 7.29 7.36 7.42 7.44 iters d water: (5	20.01 19.83 19.97 19.90 19.91 19.88 19.82 19.83 5 Gallon Di 1:18 A	IG78 IG48 IG48 IG32 IG32 IG32 IG32 IG18 IGI6 IGI6 IGI6 IGI6 IGI6 IGI6 IGI6 IGI	4.0 3.9 4.0 3.7 3.7 3.6 nes Remo Tank Tre	9.5 -5.9 -7.0 -13.3 -17.6 -17.1 -18.1 -18.0 ved: NA atment Sy 5/8021); T umber of	0.71 0.47 0.44 0.37 0.39 0.39 0.38 vstem Other	4.31 4.31 4.31 4.31 4.31 4.31 4.31	61 61 61 61 61 61	



WATER QUALITY SAMPLE LOG SHEET WELL IDENTIFICATION MP-5 DATE 2/9/06												
Project Name: Former General Mills Site Project No.: 2626-008 Project Manager: Todd Miller												
Laboratory: Curtis & Tompkins - Berkeley, CA Weather Conditions: Clear, breeze 4 Coo												
Well Description: 3/4" 1" 2" 4" 6" Other: Well Type: PVC Stainless Steel Other:												
Is Well Secured? (Yes) No Bolt Size: 9/16" Type of lock / Lock number: No lock												
Observations / Comments: set pump intake @ 11.23 ft.(BTOC) Screen Interval:												
Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump Peristaltic Pump Other:												
Pump Lines: NA New / Cleaned / Dedicated Bailer Line: NA New / Cleaned / Dedicated												
Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other:												
Method of Cleaning Bailer No Alconox Liqui-nox Tap Water DI Rinse Other:  Sampling Method: Disp. Teflon Bailer Disp. PE Bailer Peristaltic Pump Other:												
2		-										
			erial No.: 🝕			Multiparamete	er Probe S	erial No.	00K0300/	00C1522	2	
Equ	ipme	ent Calibrati	on: See Da	ily Equipm	ent Calibrat	tion Sheet						
Met	hod t	to Measure	Water Leve	I: Slope In	dicator Ser	ial No.: 25083	25742	P.I.D. F	Reading: NA	ppm		
Wat	er Le	evel at Star	t (DTW):	6.40	Wat	er Level Prior	To Sampl	ing:	6.42			
TD :						ter) x "K" =					s.)	
	"K"=	= 0 002 (3/4"	well) "K" =			163 (2" well)		4" well)	"k" = 1.46 (6'	' well)		
				FIELD WA	ATER QUA	LITY PARAME	ETERS					
						Specific			Dissolved	1 1		
D	ate	Time	Discharge	pН	Temp.	Conductance			Oxygen	Level	Color	
	,		(Liters)		(°C)	mS (uS)	(NTU's)	(mV)	(mg/L)	(BTOC)		
2/9	-	11/10/	1-141-1	201	10 35	0 7.	91	1 / 4	1 3 50	( J)	Clear	
	106		Initial	10.8	18.35		8.6	64.1	3,54	6.42		
	06	16:53	0.5	7.47	18.18	1950	8.0	68.3	3.16	6.42	17	
	06					1950				6.42	11	
	06	16:53	0.5	7.47	18.18	1950	8.0	68.3	3.16	6.42	17	
	06	16:53 16:55 16:57	0.5 1.0	7.47 7.29	18.18	1950	8.0 7.9	68.3 68.9	3.16 3.20	6.42	11	
	06	16:53 16:55 16:57 16:59	0.5 1.0 1.5	7.47 7.29 7.20	18.18 18.11 18.03 19.71	1950 1895 1728 1714	8.0 7.9 7.3	68.3 68.9 70.8	3.16 3.20 3.22	6.42 6.42	61 61	
		16:53 16:55 16:57	0.5 1.0 1.5 2.0	7.47 7.29 7.20 7.10	81.81 11.31 50.81	1950 1895 1728	8.0 7.9 7.3 7.3	68.3 68.9 70.8 74.0	3.16 3.20 3.22 3.26	6.42 6.42 6.42	61 61	
		16:53 16:55 16:57 16:59 17:01	0.5 1.0 1.5 2.0 2.5	7.47 7.29 7.20 7.10 7.07	18.18 18.03 17.91 17.93 17.89	1950 1895 1728 1714 1717	8.0 7.9 7.3 7.3 7.0	68.3 68.9 70.8 74.0 74.4	3.16 3.20 3.22 3.26 3.27	6.42 6.42 6.42 6.42	61 61 61	
		16:53 16:55 16:57 16:59 17:01 17:03	0.5 1.0 1.5 2.0 2.5 3.0 3.5	7.47 7.29 7.20 7.10 7.07 7.04	18.18 18.11 18.03 17.91 17.93	1950 1895 1728 1714 1717	8.0 7.9 7.3 7.3 7.0 6.8	68.3 68.9 70.8 74.0 74.4 75.a	3.16 3.20 3.22 3.26 3.27 3.27	6.42 6.42 6.42 6.42 6.42	61 61 61 61	
		16:53 16:55 16:57 16:59 17:01 17:03 17:06	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0	7.47 7.29 7.20 7.10 7.07 7.04 7.01	18.18 18.03 17.91 17.93 17.89	1950 1895 1728 1714 1717 1724 1726	8.0 7.9 7.3 7.0 6.8 6.6	68.3 68.9 70.8 74.0 74.4 75.2 75.4	3.16 3.20 3.22 3.26 3.27 3.27	6.42 6.42 6.42 6.42 6.42	61 61 61 61	
Total	al Dis	16:53 16:55 16:57 16:59 17:01 17:03 17:06	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0	7,47 7,29 7,20 7,10 7,07 7,04 7,01	18.18 18.03 17.91 17.93 17.89 17.89	1950 1895 1728 1714 1717 1724 1726	8.0 7.9 7.3 7.0 6.8 6.6	68.3 68.9 70.8 74.0 74.4 75.2 75.4 ved: NA	3.16 3.20 3.22 3.26 3.27 3.27 3.31	6.42 6.42 6.42 6.42 6.42	61 61 61 11	
Tota	al Dis	16:53 16:55 16:57 16:59 17:01 17:03 17:06	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 3.7 Li of discharge	7.47 7.29 7.20 7.10 7.07 7.04 7.01	18.18 18.11 18.03 17.91 17.93 17.89 17.91	1950 1895 1728 1714 1717 1724 1726 Casing Volum	8.0 7.9 7.3 7.0 6.8 6.6	68.3 68.9 70.8 74.0 74.4 75.2 75.4 ved: NA atment S	3.16 3.20 3.22 3.26 3.27 3.27 3.31	6.42 6.42 6.42 6.42 6.42	61 61 61 61 11	
Total Met	al Dis	16:53 16:55 16:57 16:59 17:01 17:03 17:06 scharge: of disposal ne Sampled	0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  3.9  of discharge	7.47 7.29 7.20 7.10 7.07 7.04 7.01	18.18 18.03 17.91 17.93 17.89 17.91 5 Gallon Di	1950 1895 1728 1714 1717 1724 1726 Casing Volum rumps) Poly	8.0 7.9 7.3 7.0 6.8 6.6	68.3 68.9 70.8 74.0 74.4 75.2 75.4 ved: NA atment Sy	3.16 3.20 3.22 3.27 3.27 3.31 stem Other	6.42 6.42 6.42 6.42 6.42 6.42	11 11 11	
Tota Met Dat Die	al Dishod (e/Tin sel; 1	16:53 16:55 16:57 16:59 17:01 17:03 17:06 scharge:of disposal ne Sampled TDS and Le	0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  3.9  cliptorial discharge in 2-/9/00 ad.	7,47 7,29 7,20 7,10 7,07 7,04 7,01 iters ed water: 6	18.18 18.03 17.91 17.93 17.89 17.91 5 Gallon Directive(s):	1950 1895 1728 1714 1717 1724 1726 Casing Volum rumbs) Poly	8.0 7.9 7.3 7.0 6.8 6.6 mes Remo Tank Tre	68.3 68.9 70.8 74.0 74.4 75.2 75.4 ved: NA atment Sy EX, EDC umber of	3.16 3.20 3.22 3.27 3.27 3.27 3.31 vstem Other EDB (8015) sample con	6.42 6.42 6.42 6.42 6.42 6.42 6.82): Tainers:	11 11 11	
Tota Met Dat Die	al Dishhod (e/Tinsel; 1)	16:53 16:55 16:57 16:59 17:01 17:03 17:06 scharge:of disposal ne Sampled TDS and Le	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 3.9 Light of discharge in 2/9/00 ad.	7,47 7,29 7,20 7,10 7,07 7,04 7,01 iters ed water: 6	18.18 18.03 17.91 17.93 17.89 17.91 5 Gallon Directive(s):	1950 1895 1728 1714 1717 1724 1726 Casing Volum rumps) Poly	8.0 7.9 7.3 7.0 6.8 6.6 mes Remo Tank Tre	68.3 68.9 70.8 74.0 74.4 75.2 75.4 ved: NA atment Sy EX, EDC umber of	3.16 3.20 3.22 3.27 3.27 3.27 3.31 vstem Other EDB (8015) sample con	6.42 6.42 6.42 6.42 6.42 6.42 6.82): Tainers:	11 11 11	
Tota Met Dat Die	al Dishhod (e/Tinsel; 1)	16:53 16:55 16:57 16:59 17:01 17:03 17:06 scharge:of disposal ne Sampled TDS and Le	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 3.9 Light of discharge in 2/9/00 ad.	7,47 7,29 7,20 7,10 7,07 7,04 7,01 iters ed water: 6	18.18 18.03 17.91 17.93 17.89 17.91 5 Gallon Directive(s):	1950 1895 1728 1714 1717 1724 1726 Casing Volum rumbs) Poly	8.0 7.9 7.3 7.0 6.8 6.6 mes Remo Tank Tre	68.3 68.9 70.8 74.0 74.4 75.2 75.4 ved: NA atment Sy EX, EDC umber of	3.16 3.20 3.22 3.27 3.27 3.27 3.31 vstem Other EDB (8015) sample con	6.42 6.42 6.42 6.42 6.42 6.42 6.82): Tainers:	11 11 11	
Tota Met Dat Die	al Dishhod (e/Tinsel; 1)	16:53 16:55 16:57 16:59 17:01 17:03 17:06 scharge:of disposal ne Sampled TDS and Le	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 3.9 Light of discharge in 2/9/00 ad.	7,47 7,29 7,20 7,10 7,07 7,04 7,01 iters ed water: 6	18.18 18.03 17.91 17.93 17.89 17.91 5 Gallon Directive(s):	1950 1895 1728 1714 1717 1724 1726 Casing Volum rumbs) Poly	8.0 7.9 7.3 7.0 6.8 6.6 mes Remo Tank Tre	68.3 68.9 70.8 74.0 74.4 75.2 75.4 ved: NA atment Sy EX, EDC umber of	3.16 3.20 3.22 3.27 3.27 3.27 3.31 vstem Other EDB (8015) sample con	6.42 6.42 6.42 6.42 6.42 6.42 6.82): Tainers:	11 11 11	
Tota Met Dat Die QA Cor	al Dishod (e/Tinsel; 1)	16:53 16:55 16:55 16:57 16:59 17:01 17:03 17:06 scharge:of disposal ne Sampled TDS and Le None nts:	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 3.9 Light of discharge in 2/9/00 ad.	7,47 7,29 7,20 7,10 7,07 7,04 7,01 iters ed water: 6	18.18 18.03 17.91 17.93 17.89 17.91 5 Gallon Di rvative(s): an Equipment	1950 1895 1728 1714 1717 1724 1726 Casing Volumorumis) Polymalysis: TPHHCI HNO3	8.0 7.9 7.3 7.0 6.8 6.6 mes Remo Tank Tre	68.3 68.9 70.8 74.0 74.4 75.2 75.4 ved: NA atment Sy EX, EDC umber of	3.16 3.20 3.22 3.27 3.27 3.27 3.31 vstem Other EDB (8015) sample con	6.42 6.42 6.42 6.42 6.42 6.42 6.82): Tainers:	11 11 11	



MA.	TER	QUALITY	SAMPLE	LOG SHE		WELL IDEN						
Project Name: Former General Mills Site Project No.: 2626-008 Project Manager: Todd Miller												
Labo	rato	ry: <u>Curtis &amp;</u>	& Tompkins	- Berkeley	<u>CA</u> Weat	ther Conditions	Class	breez	4 + Coc			
Well	Des	scription: 3	/4" 1" (2")	4" 6" Otl	her:	Well Type: (F	VC) Sta	inless Ste	el Other:			
ls W	ell S	Secured?	es No Bo	olt Size:	9/16"	Type of lock	/ Lock nur	nber: 🔥	lock			
Obse	ervat	tions / Com	ments: set	pump intal	(e @ 10.37	Fit.(BTOC)	Screen Ir	terval: _				
Purg	е М	ethod: Tefl	on / PE Dis	posable Ba	iler Centri	fugal Pump 🧲	eristaltic	o Qmu	ther:			
Pum	p Lir	nes: NA 🕅	ew Cleane	d Dedicat	ted	Bailer Line:	New /	Cleaned /	Dedicated			
						ap Water DI F						
						ap Water DIF						
						er Peristaltic						
YSI	(00 <del>0</del>	KL Meter Se	erial No.: 😘	9340R 20	08541R	Multiparamete	er Probe S	erial No.:	00K0300/	00C152	2	
			on: See Da									
						ial No. 25083				ppm 2		
Wate	er Le	evel at Star	(DTW): _	5.20	Wat	er Level Prior	To Sampl	ing:	41			
TD =						ater) x "K" = 1.					ls.)	
<u> </u>	"K"=	= 0.002 (3/4"	well) "K" =		AMERICAN CONTRACTOR OF THE PARTY OF THE PART	163 (2" well) '		4" well)	"k" = 1.46 (6	" well)		
				FIELD WA	ATER QUA	LITY PARAME	ETERS					
						Specific			Dissolved			
Da	te	Time	Discharge	pН	Temp.	Conductance mS US	Turbidity (NTU's)		Oxygen	Level	Color	
21.			(Liters)		(°C)			(mV)	(mg/L)	(BTOC)		
2/10/	06	11:24	Initial	7.25	19.86	0121411 TEXAL PRODUCE	4.0	-55,9		5.39	Cleor	
		11:28	0.5	7.16	19.93	2155	64.1	<del>-74</del> ,3	0.63	5.41	Liney Bin.	
		11:35	1.0	7.13	19.93	2139	49.3	-70.8	0.61	5.41	• •	
		11:37	1.5	7.14	20.18	2117	5.0	-67.0	0.58	5.41	clear	
		11:42	2.0	7.15	20.15	2109	3.0	-65.2	0.57	5.41	4.1	
		11:47	2.5	7.14	20.09	2114	3.1	5-1	0.50		8.1	
								36.5	0.53	15.71	1	
	٠, ١	11:52	3.0					-56.5 -59.1	0.53	5.41	17	
4		11:52	3.0 3.5	7.14	20.30	2113	3.0	-59.1			11	
4	/		3.5	7.14	20.30		3.0	_	0.49	5.41		
Total	/	11:57	3.5 4.0	7.14	20.30	2113	3.0	-59.1 -56,4	0.49	5.41		
	l Dis	11:57 charge:	3.5 4.0 <b>3.9</b> L	7,14 7,14	20.15	2113 2110 Casing Volum	3.0 2.9	-59.1 -56.4 ved: <u>NA</u>	0.49	5.41		
Meth	I Dis	II:\$7 scharge: of disposal	3.5 4.0 <b>3.9</b> Li	7.14 7.14 iters	20.15 5 Gallon Di	2113 2120 Casing Volumerum (5) Poly T	3.0 2.9 nes Remo	-59.1 -56,4 ved: <u>NA</u>	0.49 0.49	5.41	***	
Meth Date	I Dis	charge: of disposal	3.5 4.0 3.9 Li of discharge	7.14 7,14 iters d water: 6	20.15 5 Gallon Di	Casing Volum	3.0 2.9 nes Remor Fank Tre	-59.1 -56.4 ved: <u>NA</u> atment Sy EX (8015)	0.49 0.49 estem Other 8021); TPH	5.41 5.41 r:	end TPH-	
Meth Date	I Dis	charge: of disposal	3.5  4.0  3.9  Light of discharge in 2/10/06	7.14 7.14 iters ed water: 6	20.15 5 Gallon Di 58 A	Casing Volumerum S Poly Tanalysis: TPH	a.8 a.9 nes Remor Tank Tre	-59.1 -56.4 ved: NA atment Sy EX (8015)	o.+9 O.+9 estem Other 8021); TPH sample conf	5.41 5.41 Fr:  H-Diesel attainers:	and TPH-	
Meth Date <u>Moto</u>	I Dis	charge: of disposal	3.5  4.0  3.9 Li of discharge in 2/16/06  270) and TD	7.14 7,14 iters ed water: 6 as a	20.15  5 Gallon Di  5 R  Preservation Equipment	Casing Volum rum(s) Poly T analysis: TPH ves: HCI ent Blank Du	a.8 a.9 nes Remor Tank Tre	-59.1 -56.4 ved: NA atment Sy EX (8015)	o.+9 O.+9 estem Other 8021); TPH sample conf	5.41 5.41 Fr:  H-Diesel attainers:	and TPH-	
Meth Date <u>Moto</u> QA/0	I Dis	charge: of disposal ne Sampled l; PNA's (82	3.5  4.0  3.9 Li of discharge in 2/16/06  270) and TD	7.14 7,14 iters ed water: 6 as a	20.15 5 Gallon Di 58 A	Casing Volum rum(s) Poly T analysis: TPH ves: HCI ent Blank Du	a.8 a.9 nes Remor Tank Tre	-59.1 -56.4 ved: NA atment Sy EX (8015)	o.+9 O.+9 estem Other 8021); TPH sample conf	5.41 5.41 Fr:  H-Diesel attainers:	and TPH-	
Meth Date <u>Moto</u> QA/0	I Dis	charge: of disposal ne Sampled I; PNA's (82	3.5  4.0  3.9 Li of discharge in 2/16/06  270) and TD	7.14 7,14 iters ed water: 6 as a	20.15  5 Gallon Di  5 R  Preservation Equipment	Casing Volum rum(s) Poly T analysis: TPH ves: HCI ent Blank Du	a.8 a.9 nes Remor Tank Tre	-59.1 -56.4 ved: NA atment Sy EX (8015)	o.+9 O.+9 estem Other 8021); TPH sample conf	5.41 5.41 Fr:  H-Diesel attainers:	and TPH-	
Meth Date <u>Moto</u> QA/0 Com	I Dis	charge: of disposal one Sampled I; PNA's (8:	3.5  4.0  3.9 Li of discharge in 2/16/06  270) and TD	7.14 7,14 iters of water: (5	5 Gallon Di 5 T8 A Preservation Equipments	Casing Volum rum(s) Poly T analysis: TPH ves: HCI ent Blank Du	a.8 a.9 nes Remor Tank Tre	-59.1 -56.4 ved: NA atment Sy EX (8015)	o.+9 O.+9 estem Other 8021); TPH sample conf	5.41 5.41 Fr:  H-Diesel attainers:	and TPH-	



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WAT	ER	QUALITY	SAMPLE	LOG SHE	ЕТ	WELL IDEN							
Project Name: Former General Mills Site Project No.: 2626-008 Project Manager: Todd Miller													
Laboratory: Curtis & Tompkins - Berkeley, CA Weather Conditions: Cler Conditions: Well Description: 3/4" 1" 2" 4" 6" Other: Well Type PVC Stainless Steel Other:													
		•	_			-			_				
		_	_			Type of lock							
					_	ft.(BTOC)		The state of the s					
						fugal Pump							
						Bailer Line							
		_				ap Water DIF							
						ap Water DIF							
Samp	มเมย กกร	Motor Sc	orial No. 21	Dallel DI	5p. P.C. Dall 18541D	er Peristaltic Multiparamete	r Probe	Carial No. 7	0080300/	0001522	<del></del>		
			on: See Da				si Fiobe s	ociiai inu.	00/(030)	0001322	-		
						ial No.: 25083	1 25742	PIDE	eading: NA	mag			
\\/ater	rle	vel at Stari	OTIMA	4 96	Wat	er Level Prior	To Sampl	ina <sup>.</sup>	4.98	PPI			
						ater) x "K" = 1.				= NA (Gal	s)		
						163 (2" well)							
			,			LITY PARAME							
						Specific			Dissolved	Water			
Date	e	Time	Discharge	pН	Temp.	Conductance			Oxygen	Level	Color		
	_		(Liters)		(°C)	mS (uS)	(NTU's)	(mV)	(mg/L)	(BTOC)			
2/10/2		10:02	Initial	6.61	17.39	3757	8.5		1.85	4.97	Clear		
$\vdash \vdash$	_	10:12	0.5	6.73	18.16	3937	6.7	-130.4		4.98	89		
	_	10:14	1.0	6.77	18.50	4430	7.7	-134.7	0.49	4.98	11		
		D:16	1.5	6.86	18.65	5235	4.9	145.3	0.41	4.98	44		
		10:18	2.0	6.96	18.68	5413	4.7	-147.9	0.38	4.98	V		
		10:20	2.5	7.03	18.78	9563	4.3	-155.7	0.35	89.4	W		
		10:22	3.0	7.09	18.78	5599	4.2	-157.2	0.34	4.98	e t		
	-	10:24	3.5	7.12	18.74	5614	4.0	-158.1	0.32	4.98	1 6		
V		25:01	4.0	7.16	18.79	5637	4.0	-160.8	0.31	4.98	e1		
Total	Disc	charge:	4,4 Li	iters		Casing Volum	nes Remo	ved: <u>NA</u>		\			
Metho	o bo	f disposal	of discharge	ed water: 🌜	5 Gallon Di	rum(s) Poly	Tank Tre	atment Sy	stem Othe	r:\			
Date/	Tim	e Sampled	= 2/10/01	@ 10	: <b>28</b> A	nalysis: <u>TP</u>	lgas & BT	EX (8015)	/8021); TPF	l-Diesel a	ind TPH-		
1			' '								_		
	Motor Oil; PNA's (8270) and TDS. Preservatives: HCL Total number of sample containers: 12												
QA/QC: MP-7-DVP@ [0:28] as an Equipment Blank (Duplicate) MS/MSD Lab Split Field Blank													
1			<b>№</b> ® 10:3	as a	an Equipme	one Blank Du				icia bia:			
QA/Q Comn				as a		JII BIGIIK (BG				····			
			<b>№</b> 10:3	as a		·							
Comn	nen	ts:	nen Penmar					)					



WATER QUALITY SAMPLE LOG SHEET WELL IDENTIFICATION MP-8 DATE 2/9/06													
Project Name: Former General Mills Site Project No.: 2626-008 Project Manager: Todd Miller													
Laboratory: Curtis & Tompkins - Berkeley, CA Weather Conditions: Clear brees + Warm													
Well Description: 3/4" 1" 2" 4" 6" Other: Well Type: PVC Stainless Steel Other:													
ls V	/ell S	Secured?	es No Bo	It Size:	9/16"	Type of lock	/ Lock nur	mber: 📈	o lock				
Observations / Comments: set pump intake @ 9.75 ft.(BTOC) Screen Interval:													
Purge Method: Teflon / PE Disposable Bailer Centrifugal Punip Peristaltic Pump Other:													
Pump Lines: NA New Cleaned / Dedicated Bailer Line: NA New / Cleaned / Dedicated													
Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other:													
Method of Cleaning Bailer No Alconox Liqui-nox Tap Water DI Rinse Other:													
						er Péristaltic							
YSI	600)	XL Meter S	erial No.: (31	9340RV 20	08541R	Multiparamet	er Probe S	Serial No.:	00K0300/	00C1522	2		
			on: See Da										
						ial No. 25083				ppm			
						er Level Prior							
TD =	= _1	3.75 - 5	(D) <b>DO.</b>	rw) = <b>7.7</b>	(ft.of wa	ater) x "K" = 1	(Gals	./CV) x <u>NA</u>	(No. of CV)	= <u>NA</u> (Ga	is.)		
_	"K":	= 0.002 (3/4"	well) "K" =			163 (2" well)	- THE COURT NAME OF	(4" well)	"k" = 1.46 (6'	' well)	- 11200		
				FIELD WA	ATER QUA	LITY PAF:AME	ETERS						
		100			_	Specific			Dissolved				
Di	ate	Time	Discharge	pН	Temp.	Conductance mS			Oxygen	Level	Color		
26	,	4	(Liters)		(°C)	1113 (3)	(NTU's)	(mV)	(mg/L)	(BTOC)	& Cauday		
149/	06	16:03	Initial	7.35	17.89	10671	39.8	-106.5	1.93	6.02	ecoudy it. Born.		
		16:05	0.5	7.09	17.45	10885	37.2	-104.7	1.53	6.02	.,		
		16:07	1.0	7.01	17.45	18801	30.5	-103.8	1.39	6.00	11		
		16:09	1.5	6.95	17.48	11215	15.1	4.801-	1.30	6.00	Clear		
		16:11	2.0	6.93	17.46	11201	13.3	-107.9	1.23	6.00	ş t		
		16:13	2.5	6.92	17.46	11160	10,6	-107.8	1.16	6.00	l e		
		16:15	3.0	6.91	17.45	11198	10.2	-108.3	1.10	6.00	61		
J		16:17	3.5	6.90	17.44	11250	9.8	-108.4	1.06	6.00	И		
			4.0										
Tota	ıl Dis	scharge:		ters		Casing Volum	nes Remo	ved: NA					
				_	5 Gallon Dr	rum(s) Poly			stem Othe	r:			
1		-	: 2/9/06			nalysis: TPF							
1													
			270) and TD			ves: HCl	•		·				
			@		an Equipme	ent Blank Du	plicate M	IS/MSD I	_ab Split F	ield Blar	ık		
Con	nmer	nts:											
<u> </u>													
<u> </u>													
Rec	orde	d by: Stepl	nen Penman	<b>≱</b> Jacki Le	e Signati	ure: Strol	~=\d-\						



SITE NAME: Former General Mills Site

SITE LOCATION: 800 Derr Avenue, Vallejo, CA

TASK: February 2006 Monitoring Well Sampling Event

# DAILY EQUIPMENT CALIBRATION SHEET

				Dissolved		pН		Specific Conductance	ORP	TURBIDITY
DATE	TIME	Instrument	Probe	Oxygen	4	7	10	1,000 or 10,000	237	0.02/0.0
		Serial Number	Serial Number	(%)				uS/cm	mV	NTU
2/9/06	14:00	319340R	0040300AB	100	3.99	7.00	18,00	1000	237.0	0.0
2/10/06	09:30	319340R	00K0300AB	100	4.00	6.99	10.01	1,000	337.0	0.0
		<u> </u>	}		<del> </del>	1				
	<del> </del>					-				

# Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0932 Fay

# **CHAIN OF CUSTODY**

Page \_\_\_\_of\_\_\_

**Analysis** 

	510) 486-0900 Phone (510) 486-0532 Fax		C&TL	.OG	IN #	<u> </u>																	
			Sample	r: S	Ster	) her	Frenmon (E	DU.	Suy	المتجدي	ny object.												
Project	No.: 2626-008		Report	To:		- 13	Millar							4						ļ.			
Project	Name: Former Entracol	Mills site	Compa	ny:	M	nlce	dm Pirnie		Jose .					1		d							
Project	P.O.:		Telepho	one	15	10	596-3060				-			7.00		40							
	· · · · · · · · · · · · · · · · · · ·						6-88 <b>6</b> 8						BTEX	RTEX /EDC/EDB	· v Page de	CIT Motor	3						
					Ma	trix		1	Pres	erv	ative		1000	17500	- Diese	Tasic	7						
Lab No.	Sample ID.	Samplir Tir	ng Date ne	Soil	Water	Waste	# of Containers	HCL	H2SO4	HNO3	ICE		ST HOL	1			Y Y	2 2					
	Trip Blank	2/2/00	14:40		X		2	X			X		X	Ť									
	me-4	2/1/06	14:18		X		5	X			X	$\geq$	<u> </u>		`	$\times$	<b>&gt;</b>	1					
	m9-2	4/06	15:31		X		5	X				L	X				X	1_					
	mp-8	2/9/06	16:18		X		10	X			$\times$		X			$\mathbb{Z}$		1_					
	mp-5	- 24/06	17:06		X		6	X		JAK.				X	X	[_	X	X					
	MP-7	2/10/26	10:28		X		6	X					X			$\times \times$	$\bigcirc$	_			$\perp$		
	MO-7-DUP	3/10/06	10:28		X		6	X		_		_	X			$\times \mathbb{X}$	$\bigcirc$						
	MP-6	2/10/06	11:58		X		6	X		1	X		X			$\times\!\!\!/\!$	X				$\rightarrow$	+	-
	MP-3	2/10/06	13:02		X		7	X	<u></u>	X	X -	$\vdash$		X,	$\times$	X	$\mathbb{X}$	X	$\sqcup$		$\rightarrow$	$\perp$	-
	me-I	2/15/06	13:48		X		6	X					X			X		-			-		-
Notes:		SAMPLE	RECEIPT	DE			SHED BY:			<u> </u>		P	ECE	WED	DV	<u> </u>			<u></u>				-
Motes.		V Intact	Cold	RE	LIN	WUI	SHED BY:			1 1	· · · · · · · · · · · · · · · · · · ·		ECE	IVEL	וסי	<u> </u>			1	1		, and a d	
		On Ice	Ambient	址	ADAL-		The same of the sa		-W	in kot	. 15;24 DATE / TIN	NE C		e P		المنابعة	5;"LaL,		-110	) ( ) ( C	⇒ DATE	TIME	4 60 E
		Preservativ	re Correct?	1	4							-					()						
		Yes	No N/A	_							DATE / TIM	1E									ATE	/: TIME	
										_	ΔTE / TIM	1E		٠						Г	ATF	/ TIME	=

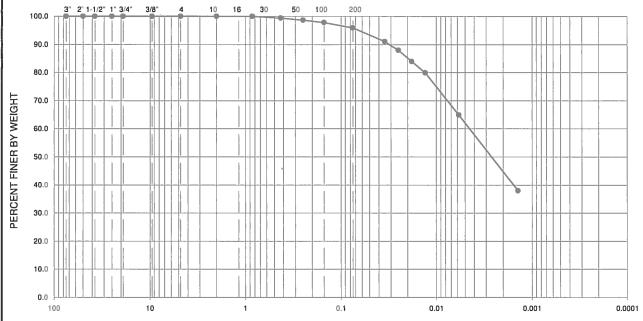
# APPENDIX J

Geotechnical Test Laboratory Reports



GRA	GRAVEL SAND				FINES				
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY			





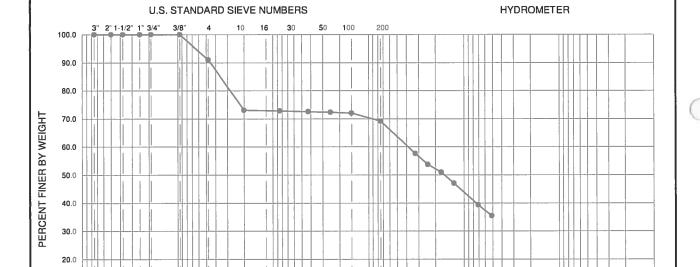
#### GRAIN SIZE IN MILLIMETERS

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	Cu	C <sub>c</sub>	Passing No. 200 (%)	U.S.C.S
•	GB-1	11.0-13.5					0.00	0.00	-	-	96	СН-ОН

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422-63 (02)

Ninyo &	Woore	GRADATION TEST RESULTS	FIGURE
PROJECT NO.	DATE	General Mills	
2626008	2/06		

GRAV	/EL	SAND			FINES				
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY			



#### **GRAIN SIZE IN MILLIMETERS**

0.01

0.1

0.0001

0.001

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	Cu	C <sub>c</sub>	Passing No. 200 (%)	U.S.C.S
•	GB-1	5.0-7.5					0.00	0.04	1	-	69	ML

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422-63 (02)

1

10

Ninyo &	Woore	GRADATION TEST RESULTS	FIGURE
PROJECT NO.	DATE	General Mills	
2626008	2/06		

10.0

0.0

100

MOISTURE - DENSITY TEST DATA (ASTM D 2937)	Page No.	Date:																		
TY TES		nes .																		
- DENSITY (ASTM D 2937)		Technician:											3							
JRE - I		2626008																		
IOISTI		262																		
2		Project No.:	GB-1	11.0-13.5	H (* )		2.755													
0		Ø	GB-1	11.0-13.5			2.687	1526.2	6.37	490.1	1036.1		163.8	107.2	32.0	95.4	75.3	54.4	97.8	
ore		General Mills	GB-1	5.7-0.3			2.732													
3	^		GB-1	5.0-7.5			2.696	2036.7	7.82	606.2	1430.5		158.1	128.1	31.5	107.3	31.1	81.8	9.08	
Vingo & Mo		Project Name:	Sample Location	Sample Depth (ft)	Тор	Bottom	Specific Gravity	Weight of Moist Soil + Rings (g)	Sample Height (in)	Weight of Rings (g)	Weight of Moist Soil (g)	Dish Number	Weight of Moist Soil + Tare (g)	Weight of Dry Soil + Tare (g)	Weight of Tare (g)	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Degree of Saturation (%)	Remarks
Nin	<b>\</b>				Visual Soil	Classification		Weight of N						Weight						
										5.	LH	リゴ	/V\			,	ST.	1118	<b>BE</b>	l

SAMPLE LOCATION	SAMPLE DEPTH (FT)	U.S.C.S. SOIL TYPE	ORGANIC MATTER (% by dry weight)
GB-1	5.0-7.5	ML	4.9
GB-1	5.0-7.5	ML	5.3
GB-1	11.0-13.5	CH-OH	6.2
GB-1	11.0-13.5	CH-OH	6.5

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 2974-00

Ninyo	Moore	ORGANIC MATTER TEST RESULTS	FIGURE
PROJECT NO.	DATE	General Mills	
2626008	2/06		

# APPENDIX K

Groundwater Analytical Laboratory Reports



# **ANALYTICAL REPORT**

Job Number: 720-1445-1

Job Description: General Mills Site

For:

Malcolm Pirnie, Inc. 2000 Powell St, Suite 1180 Emeryville, CA 94608

Attention: Ms. Maryline Laugier

Survider Sidhu

Surinder Sidhu Project Manager I ssidhu@stl-inc.com 01/23/2006

### **METHOD SUMMARY**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Description	Lab Location	Method	<b>Preparation Method</b>
Matrix: Water			
Volatile Organic Compounds by GC/MS	STL-SF	SW846 8260I	В
Purge-and-Trap	STL-SF		SW846 5030B
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	STL-SF	SW846 8270	C
Separatory Funnel Liquid-Liquid Extraction	STL-SF		SW846 3510C
Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	STL-SF	SW846 8015	3
Separatory Funnel Liquid-Liquid Extraction	STL-SF		SW846 3510C

#### LAB REFERENCES:

STL-SF = STL-San Francisco

#### **METHOD REFERENCES:**

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

# **SAMPLE SUMMARY**

Client: Malcolm Pirnie, Inc. Job Number: 720-1445-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-1445-1TB	TRIP BLANK	Water	01/12/2006 0000	01/13/2006 1600
720-1445-2	MP-4	Water	01/12/2006 1432	01/13/2006 1600
720-1445-3	MP-2	Water	01/12/2006 1447	01/13/2006 1600
720-1445-4	MP-5	Water	01/12/2006 1554	01/13/2006 1600
720-1445-5	MP-3	Water	01/12/2006 1635	01/13/2006 1600
720-1445-6	MP-1	Water	01/12/2006 1718	01/13/2006 1600
720-1445-7FD	MP-1-DUP	Water	01/12/2006 1718	01/13/2006 1600

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

TRIP BLANK

Lab Sample ID:

720-1445-1TB

Client Matrix:

Water

Date Sampled:

01/12/2006 0000

Date Received:

01/13/2006 1600

### 8260B Volatile Organic Compounds by GC/MS

Method:

8260B

Analysis Batch: 720-4608

Instrument ID:

Saturn 3900B

Preparation:

5030B

Lab File ID:

c:\saturnws\data\200601\01

73 - 130

Dilution:

1.0

Initial Weight/Volume: Final Weight/Volume:

10 mL 10 mL

Date Analyzed: Date Prepared:

1,2-Dichloroethane-d4

01/20/2006 0112 01/20/2006 0112

Analyte	Result (ug/L)	Qualifier	RL
1,2-Dichloroethane	0.52		0.50
Benzene	ND		0.50
Ethylbenzene	ND		0.50
MTBE	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
EDB	ND		0.50
Gasoline Range Organics (GRO)-C5-C12	ND		50
Surrogate	%Rec		Acceptance Limits
Toluene-d8	91		77 - 121

90

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-4

Lab Sample ID:

720-1445-2

Client Matrix:

Water

Date Sampled:

01/12/2006 1432

Date Received: 01/13/2006 1600

#### 8260B Volatile Organic Compounds by GC/MS

Method:

8260B

Analysis Batch: 720-4608

Instrument ID:

Saturn 3900B

Preparation:

5030B

Lab File ID:

c:\saturnws\data\200601\01

Dilution:

1.0

Initial Weight/Volume:

10 mL

Date Analyzed: Date Prepared: 01/20/2006 0138 01/20/2006 0138 Final Weight/Volume:

10 mL

Analyte	Result (ug/L)	Qualifier	RL
1,2-Dichloroethane	ND		0.50
Benzene	ND		0.50
Ethylbenzene	ND		0.50
MTBE	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
EDB	ND		0.50
Gasoline Range Organics (GRO)-C5-C12	ND		50
Surrogate	%Rec		Acceptance Limits
Toluene-d8	98		77 - 121
1,2-Dichloroethane-d4	81		73 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-2

Lab Sample ID:

720-1445-3

Client Matrix:

Water

Date Sampled:

01/12/2006 1447

Date Received:

01/13/2006 1600

#### 8260B Volatile Organic Compounds by GC/MS

Method:

8260B

Analysis Batch: 720-4608

Instrument ID:

Saturn 3900B

Preparation:

5030B

7313 Baton: 720 4000

Lab File ID:

c:\saturnws\data\200601\01

Dilution:

1.0

Initial Weight/Volume: Final Weight/Volume:

10 mL 10 mL

Date Analyzed: Date Prepared: 01/20/2006 0203 01/20/2006 0203

Analyte	Result (ug/L)	Qualifier	RL
1,2-Dichloroethane	ND		0.50
Benzene	ND		0.50
Ethylbenzene	ND		0.50
MTBE	ND		0.50
Toluene	2.1		0.50
Xylenes, Total	ND		1.0
EDB	ND		0.50
Gasoline Range Organics (GRO)-C5-C12	ND		50

Surrogate	%Rec	Acceptance Limits
Toluene-d8	96	77 - 121
1.2-Dichloroethane-d4	84	73 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-5

Lab Sample ID:

720-1445-4

Client Matrix:

Water

Date Sampled:

01/12/2006 1554

Date Received: 01/13/2006 1600

#### 8260B Volatile Organic Compounds by GC/MS

Method:

8260B

Analysis Batch: 720-4608

Instrument ID: Saturn 3900B

Preparation:

5030B

Lab File ID:

c:\saturnws\data\200601\01

Dilution:

1.0

Initial Weight/Volume: Final Weight/Volume:

10 mL 10 mL

Date Analyzed: Date Prepared: 01/20/2006 0229 01/20/2006 0229

Analyte	Result (ug/L)	Qualifier	RL
1,2-Dichloroethane	ND		0.50
Benzene	ND		0.50
Ethylbenzene	ND		0.50
MTBE	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
EDB	ND		0.50
Gasoline Range Organics (GRO)-C5-C12	ND		50
Surrogate	%Rec		Acceptance Limits
Toluene-d8	97		77 - 121
1,2-Dichloroethane-d4	79		73 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-3

Lab Sample ID:

720-1445-5

Client Matrix:

Water

Date Sampled:

01/12/2006 1635

Date Received:

01/13/2006 1600

#### 8260B Volatile Organic Compounds by GC/MS

Method:

8260B

Analysis Batch: 720-4608

Instrument ID:

Saturn 3900B

Preparation:

5030B

Lab File ID:

c:\saturnws\data\200601\01

Dilution:

1.0

Initial Weight/Volume: Final Weight/Volume:

10 mL 10 mL

Date Analyzed: Date Prepared: 01/20/2006 0255 01/20/2006 0255

Analyte	Result (ug/L)	Qualifier	RL
1,2-Dichloroethane	ND		0.50
Benzene	ND		0.50
Ethylbenzene	ND		0.50
MTBE	ND		0.50
Toluene	0.74		0.50
Xylenes, Total	1.5		1.0
EDB	ND		0.50
Gasoline Range Organics (GRO)-C5-C12	ND		50
Surrogate	%Rec		Acceptance Limits
Toluene-d8	95		77 - 121
1,2-Dichloroethane-d4	82		73 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-1

Lab Sample ID:

720-1445-6

Client Matrix:

Water

Date Sampled:

01/12/2006 1718

Date Received: 01/13/2006 1600

### 8260B Volatile Organic Compounds by GC/MS

Method:

8260B

Analysis Batch: 720-4619

Instrument ID:

Varian 3900A

Preparation:

5030B

Lab File ID:

c:\saturnws\data\200601\01

Dilution:

1.0

Initial Weight/Volume:

10 mL

Date Analyzed: Date Prepared: 01/21/2006 1224 01/21/2006 1224

Final Weight/Volume:

10 mL

Analyte	Result (ug/L)	Qualifier	RL
1,2-Dichloroethane	ND		0.50
Benzene	ND		0.50
Ethylbenzene	ND		0.50
MTBE	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
EDB	ND		0.50
Gasoline Range Organics (GRO)-C5-C12	100		50
Surrogate	%Rec		Acceptance Limits
Toluene-d8	88		77 - 121
1,2-Dichloroethane-d4	95		73 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-1-DUP

Lab Sample ID:

720-1445-7FD

Client Matrix:

Water

Date Sampled:

01/12/2006 1718

Date Received:

01/13/2006 1600

#### 8260B Volatile Organic Compounds by GC/MS

Method:

8260B

Analysis Batch: 720-4619

Instrument ID:

Varian 3900A

Preparation:

5030B

. . \_ . . . . . .

Lab File ID:

c:\saturnws\data\200601\01

Dilution:

1.0

Initial Weight/Volume:

10 mL

Date Analyzed: Date Prepared: 01/21/2006 1246 01/21/2006 1246 Final Weight/Volume:

10 mL

Analyte	Result (ug/L)	Qualifier	RL
1,2-Dichloroethane	ND		0.50
Benzene	ND		0.50
Ethylbenzene	ND		0.50
MTBE	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
EDB	ND		0.50
Gasoline Range Organics (GRO)-C5-C12	130		50
Surrogate	%Rec		Acceptance Limits
Toluene-d8	88		77 - 121
1,2-Dichloroethane-d4	97		73 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-4

Lab Sample ID:

720-1445-2

Client Matrix:

Water

Date Sampled:

01/12/2006 1432

Date Received:

01/13/2006 1600

#### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

8270C

Analysis Batch: 720-4414

Instrument ID:

Sat 2K1

Preparation:

3510C

Prep Batch: 720-4321

Lab File ID:

d:\data\200601\011706\720-

Dilution:

1.0

Initial Weight/Volume:

960 mL

Date Analyzed:

Final Weight/Volume:

1 mL

Date Prepared:

01/17/2006 1653 01/16/2006 0757

Injection Volume:

Analyte	Result (ug/L)	Qualifier	RL
Naphthalene	ND		2.1
Acenaphthylene	ND		2.1
Acenaphthene	ND		2.1
Fluorene	ND		2.1
Phenanthrene	ND		2.1
Anthracene	ND		2.1
Fluoranthene	ND		2.1
Pyrene	ND		2.1
Benzo[a]anthracene	ND		2.1
Chrysene	ND		2.1
Benzo[b]fluoranthene	ND		2.1
Benzo[k]fluoranthene	ND		2.1
Benzojajpyrene	ND		2.1
Indeno[1,2,3-cd]pyrene	ND		2.1
Benzo[g,h,i]perylene	ND		2.1
2-Methylnaphthalene	ND		2.1
Dibenz(a,h)anthracene	ND		2.1
Surrogate	%Rec		Acceptance Limits
Nitrobenzene-d5	29	*	35 - 114
2-Fluorobiphenyl	26	*	43 - 116
Terphenyl-d14	71		33 - 141

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-2

Lab Sample ID:

720-1445-3

Client Matrix:

Water

Date Sampled:

01/12/2006 1447

Date Received:

01/13/2006 1600

#### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

3510C

Analysis Batch: 720-4414

Instrument ID:

Preparation:

Prep Batch: 720-4321

Lab File ID:

d:\data\200601\011706\720-

Dilution:

1.0

Initial Weight/Volume:

960 mL 1 mL

Date Analyzed: Date Prepared:

01/17/2006 1720 01/16/2006 0757

Injection Volume:

Final Weight/Volume:

Analyte	Result (ug/L)	Qualifier	RL
Naphthalene	ND		2.1
Acenaphthylene	ND		2.1
Acenaphthene	ND		2.1
Fluorene	ND		2.1
Phenanthrene	ND		2.1
Anthracene	ND		2.1
Fluoranthene	ND		2.1
Pyrene	ŇD		2.1
Benzo[a]anthracene	ND		2.1
Chrysene	ND		2.1
Benzo[b]fluoranthene	ND		2.1
Benzo[k]fluoranthene	ND		2.1
Benzo[a]pyrene	ND		2.1
Indeno[1,2,3-cd]pyrene	ND		2.1
Benzo[g,h,i]perylene	ND		2.1
2-Methylnaphthalene	ND		2.1
Dibenz(a,h)anthracene	ND		2.1
Surrogate	%Rec		Acceptance Limits
Nitrobenzene-d5	24	*	35 - 114
2-Fluorobiphenyl	26	*	43 - 116
Terphenyl-d14	70		33 - 141

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-5

Lab Sample ID:

720-1445-4

Client Matrix:

Water

Date Sampled:

01/12/2006 1554

Date Received:

01/13/2006 1600

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

8270C

Analysis Batch: 720-4414

Instrument ID:

Sat 2K1

Preparation:

3510C

Prep Batch: 720-4321

d:\data\200601\011706\720-

Dilution:

Lab File ID: Initial Weight/Volume:

960 mL

Date Analyzed:

1.0

01/17/2006 1747

Final Weight/Volume:

1 mL

Date Prepared:

01/16/2006 0757

Injection Volume:

Analyte	Result (ug/L)	Qualifier	RL
Naphthalene	ND		2.1
Acenaphthylene	ND		2.1
Acenaphthene	ND		2.1
Fluorene	ND		2.1
Phenanthrene	ND		2.1
Anthracene	ND		2.1
Fluoranthene	ND		2.1
Pyrene	ND		2.1
Benzo[a]anthracene	ND		2.1
Chrysene	ND		2.1
Benzo[b]fluoranthene	ND		2.1
Benzo[k]fluoranthene	ND		2.1
Benzo[a]pyrene	ND		2.1
Indeno[1,2,3-cd]pyrene	ND		2.1
Benzo[g,h,i]perylene	ND		2.1
2-Methylnaphthalene	ND		2.1
Dibenz(a,h)anthracene	ND		2.1
Surrogate	%Rec		Acceptance Limits
Nitrobenzene-d5	37		35 - 114
2-Fluorobiphenyl	49		43 - 116
Terphenyl-d14	74		33 - 141

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-3

Lab Sample ID:

720-1445-5

Client Matrix:

Water

Date Sampled:

01/12/2006 1635

Date Received: 01/13/2006 1600

#### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

8270C

Analysis Batch: 720-4414

Instrument ID:

Sat 2K1

Preparation:

3510C

Lab File ID:

d:\data\200601\011706\720-

Dilution:

1.0

Prep Batch: 720-4321

Initial Weight/Volume:

970 mL

Final Weight/Volume:

1 mL

Date Analyzed: Date Prepared: 01/17/2006 1814 01/16/2006 0757

Injection Volume:

Analyte	Result (ug/L)	Qualifier	RL
Naphthalene	17		2.1
Acenaphthylene	ND		2.1
Acenaphthene	2.1		2.1
Fluorene	4.7		2.1
Phenanthrene	10		2.1
Anthracene	ND		2.1
Fluoranthene	2.3		2.1
Pyrene	ND		2.1
Benzo[a]anthracene	ND		2.1
Chrysene	ND		2.1
Benzo[b]fluoranthene	ND		2.1
Benzo[k]fluoranthene	ND		2.1
Benzo[a]pyrene	ND		2.1
Indeno[1,2,3-cd]pyrene	ND		2.1
Benzo[g,h,i]perylene	ND		2.1
2-Methylnaphthalene	ND		2.1
Dibenz(a,h)anthracene	ND		2.1
Surrogate	%Rec		Acceptance Limits
Nitrobenzene-d5	49		35 - 114
2-Fluorobiphenyl	55		43 - 116
Terphenyl-d14	82		33 - 141

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-1

Lab Sample ID:

720-1445-6

Client Matrix:

Water

Date Sampled:

01/12/2006 1718

Date Received:

01/13/2006 1600

#### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

8270C

Analysis Batch: 720-4414

Instrument ID:

Sat 2K1

Preparation:

3510C

Prep Batch: 720-4321

Dilution:

1.0

Lab File ID:

d:\data\200601\011706\720-

Initial Weight/Volume:

970 mL

Final Weight/Volume: Injection Volume:

1 mL

01/17/2006 1841 Date Analyzed: Date Prepared: 01/16/2006 0757

Analyte	Result (ug/L)	Qualifier	RL
Naphthalene	ND		2.1
Acenaphthylene	ND		2.1
Acenaphthene	ND		2.1
Fluorene	3.2		2.1
Phenanthrene	3.7		2.1
Anthracene	ND		2.1
Fluoranthene	ND		2.1
Pyrene	ND		2.1
Benzo[a]anthracene	ND		2.1
Chrysene	ND		2.1
Benzo[b]fluoranthene	ND		2.1
Benzo[k]fluoranthene	ND		2.1
Benzo[a]pyrene	ND		2.1
Indeno[1,2,3-cd]pyrene	ND		2.1
Benzo[g,h,i]perylene	ND		2.1
2-Methylnaphthalene	ND		2.1
Dibenz(a,h)anthracene	ND		2.1
Surrogate	%Rec		Acceptance Limits
Nitrobenzene-d5	58		35 - 114
2-Fluorobiphenyl	63		43 - 116
Terphenyl-d14	69		33 - 141

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-1-DUP

Lab Sample ID:

720-1445-7FD

Client Matrix:

Water

Date Sampled:

01/12/2006 1718

Date Received:

01/13/2006 1600

#### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:

8270C

Analysis Batch: 720-4414

Instrument ID:

Preparation:

3510C

Prep Batch: 720-4321

Lab File ID:

d:\data\200601\011706\720-

Dilution:

1.0

Initial Weight/Volume: Final Weight/Volume:

950 mL 1 mL

Date Analyzed: Date Prepared: 01/17/2006 1910 01/16/2006 0757

Injection Volume:

Analyte	Result (ug/L)	Qualifier	RL
Naphthalene	ND ·		2.1
Acenaphthylene	ND		2.1
Acenaphthene	ND		2.1
Fluorene	3.7		2.1
Phenanthrene	3.5		2.1
Anthracene	ND		2.1
Fluoranthene	ND		2.1
Pyrene	ND		2.1
Benzo[a]anthracene	ND		2.1
Chrysene	ND		2.1
Benzo[b]fluoranthene	ND		2.1
Benzo[k]fluoranthene	ND		2.1
Benzo[a]pyrene	ND		2.1
Indeno[1,2,3-cd]pyrene	ND		2.1
Benzo[g,h,i]perylene	ND		2.1
2-Methylnaphthalene	ND		2.1
Dibenz(a,h)anthracene	ND		2.1
Surrogate	%Rec		Acceptance Limits
Nitrobenzene-d5	63		35 - 114
2-Fluorobiphenyl	64		43 - 116
Terphenyl-d14	79		33 - 141

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-4

Lab Sample ID:

720-1445-2

01/16/2006 1258

Client Matrix:

Water

Date Sampled:

01/12/2006 1432

Date Received:

01/13/2006 1600

# 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:

8015B

Analysis Batch: 720-4463

Instrument ID:

HP DRO3

Preparation:

Date Analyzed:

Date Prepared:

3510C

Prep Batch: 720-4344

N/A

Dilution:

1.0 01/16/2006 1749

Lab File ID:

Initial Weight/Volume: Final Weight/Volume:

250 mL 1 mL

Injection Volume:

Column 1D:

Analyte	Result (ug/L)	Qualifier	RL
Diesel Range Organics [C10-C28]	ND		50
Motor Oil Range Organics [C24-C36]	ND		500
Surrogate	%Rec		Acceptance Limits
o-Ternhenyl	67		60 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-2

Lab Sample ID:

720-1445-3

01/16/2006 1816

01/16/2006 1258

Client Matrix:

Water

Date Sampled:

01/12/2006 1447

Date Received: 01/13/2006 1600

#### 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:

Analysis Batch: 720-4463

Instrument ID:

HP DRO3

Preparation:

3510C

N/A

Dilution:

1.0

Prep Batch: 720-4344

Lab File ID:

Date Analyzed:

Date Prepared:

Initial Weight/Volume:

250 mL

Final Weight/Volume:

1 mL

Injection Volume:

Column ID:

Analyte	Result (ug/L)	Qualifier	RL
Diesel Range Organics [C10-C28]	ND		50
Motor Oil Range Organics [C24-C36]	ND		500
Surrogate	%Rec		Acceptance Limits
o-Terphenyl	75		60 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-5

Lab Sample ID:

720-1445-4

01/16/2006 1258

Client Matrix:

Water

Date Sampled:

01/12/2006 1554

Date Received: 01/13/2006 1600

#### 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:

8015B

Analysis Batch: 720-4463

Instrument ID:

HP DRO3

Preparation:

3510C

Prep Batch: 720-4344

Dilution:

Lab File ID:

N/A

Date Analyzed: Date Prepared: 1.0 01/16/2006 1843

Initial Weight/Volume:

250 mL 1 mL

Final Weight/Volume: Injection Volume:

Column ID:

Analyte	Result (ug/L)	Qualifier	RL
Diesel Range Organics [C10-C28]	86		50
Motor Oil Range Organics [C24-C36]	ND		500
Surrogate	%Rec		Acceptance Limits
o-Terphenyl	78		60 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-3

Lab Sample ID:

720-1445-5

Client Matrix:

Water

Date Sampled:

01/12/2006 1635

Date Received:

01/13/2006 1600

#### 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:

Analysis Batch: 720-4463

Instrument ID:

HP DRO3

Preparation:

3510C

N/A

Dilution:

1.0

Prep Batch: 720-4344

Lab File ID:

250 mL

Date Analyzed:

Initial Weight/Volume: Final Weight/Volume:

1 mL

Date Prepared:

01/16/2006 1911 01/16/2006 1258

Injection Volume: Column ID:

Analyte	Result (ug/L)	Qualifier	RL
Diesel Range Organics [C10-C28]	290		50
Motor Oil Range Organics [C24-C36]	ND		500
Surrogate	%Rec Acceptance Limi		Acceptance Limits
o-Terphenyl	73 60 - 130		60 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Client Sample ID:

MP-1

Lab Sample ID:

720-1445-6

Client Matrix:

Water

Date Sampled:

01/12/2006 1718

Date Received: 01/13/2006 1600

### 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:

8015B

Analysis Batch: 720-4463

Instrument ID:

HP DRO3

Preparation:

3510C

N/A

Dilution:

1.0

Prep Batch: 720-4344

Lab File ID: Initial Weight/Volume:

250 mL

Date Analyzed: Date Prepared:

Final Weight/Volume:

1 mL

01/16/2006 1938 01/16/2006 1258

Injection Volume: Column ID:

Analyte	Result (ug/L)	Qualifier	RL
Diesel Range Organics [C10-C28]	3100		50
Motor Oil Range Organics [C24-C36]	1500		500
Surrogate	%Rec		Acceptance Limits
o-Terphenyl	77		60 - 130

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

**Client Sample ID:** 

MP-1-DUP

Lab Sample ID:

720-1445-7FD

Client Matrix:

Water

Date Sampled:

01/12/2006 1718

Date Received:

01/13/2006 1600

#### 8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method: Preparation:

Dilution:

3510C

1.0

Date Analyzed: Date Prepared:

01/16/2006 2006 01/16/2006 1258 Analysis Batch: 720-4463

Prep Batch: 720-4344

Instrument ID:

HP DRO3

Lab File ID:

N/A

Initial Weight/Volume: 250 mL Final Weight/Volume: 1 mL

Injection Volume:

Column ID:

Analyte	Result (ug/L)	Qualifier	RL
Diesel Range Organics [C10-C28]	3300		50
Motor Oil Range Organics [C24-C36]	1800		500
Surrogate	%Rec	Acceptance Limits	
o-Terphenyl	80		60 - 130

# **DATA REPORTING QUALIFIERS**

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

# **QC Association Summary**

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC/MS VOA				
Analysis Batch:720-4	608			
LCS 720-4608/7	Lab Control Spike	Water	8260B	
LCSD 720-4608/6	Lab Control Spike Duplicate	Water	8260B	
MB 720-4608/8	Method Blank	Water	8260B	
720-1445-1TB	TRIP BLANK	Water	8260B	
720-1445-2	MP-4	Water	8260B	
720-1445-3	MP-2	Water	8260B	
720-1445-4	MP-5	Water	8260B	
720-1445-5	MP-3	Water	8260B	
Analysis Batch:720-4	619			
LCS 720-4619/4	Lab Control Spike	Water	8260B	
LCSD 720-4619/3	Lab Control Spike Duplicate	Water	8260B	
MB 720-4619/5	Method Blank	Water	8260B	
720-1445-6	MP-1	Water	8260B	
720-1445-7FD	MP-1-DUP	Water	8260B	
GC/MS Semi VOA				
Prep Batch: 720-4321				
LCS 720-4321/2-A	Lab Control Spike	Water	3510C	
LCSD 720-4321/3-A	Lab Control Spike Duplicate	Water	3510C	
MB 720-4321/1-A	Method Blank	Water	3510C	
720-1445-2	MP-4	Water	3510C	
720-1445-3	MP-2	Water	3510C	
720-1445-4	MP-5	Water	3510C	
720-1445-5	MP-3	Water	3510C	
720-1445-6	MP-1	Water	3510C	
720-1445-7FD	MP-1-DUP	Water	3510C	
Analysis Batch:720-4	414			
LCS 720-4321/2-A	Lab Control Spike	Water	8270C	720-4321
LCSD 720-4321/3-A	Lab Control Spike Duplicate	Water	8270C	720-4321
MB 720-4321/1-A	Method Blank	Water	8270C	720-4321
720-1445-2	MP-4	Water	8270C	720-4321
720-1445-3	MP-2	Water	8270C	720-4321
720-1445-4	MP-5	Water	8270C	720-4321
720-1445-5	MP-3	Water	8270C	720-4321
720-1445-6	MP-1	Water	8270C	720-4321
720-1445-7FD	MP-1-DUP	Water	8270C	720-4321

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

# **QC Association Summary**

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC Semi VOA				
Prep Batch: 720-4344				
LCS 720-4344/2-A	Lab Control Spike	Water	3510C	
LCSD 720-4344/3-A	Lab Control Spike Duplicate	Water	3510C	
MB 720-4344/1-A	Method Blank	Water	3510C	
720-1445-2	MP-4	Water	3510C	
720-1445-3	MP-2	Water	3510C	
720-1445-4	MP-5	Water	3510C	
720-1445-5	MP-3	Water	3510C	
720-1445-6	MP-1	Water	3510C	
720-1445-7FD	MP-1-DUP	Water	3510C	
Analysis Batch:720-4	463			
LCS 720-4344/2-A	Lab Control Spike	Water	8015B	720-4344
LCSD 720-4344/3-A	Lab Control Spike Duplicate	Water	8015B	720-4344
MB 720-4344/1-A	Method Blank	Water	8015B	720-4344
720-1445-2	MP-4	Water	8015B	720-4344
720-1445-3	MP-2	Water	8015B	720-4344
720-1445-4	MP-5	Water	8015B	720-4344
720-1445-5	MP-3	Water	8015B	720-4344
720-1445-6	MP-1	Water	8015B	720-4344
720-1445-7FD	MP-1-DUP	Water	8015B	720-4344

Client: Malcolm Pirnie, Inc. Job Number: 720-1445-1

Method Blank - Batch: 720-4608 Method: 8260B Preparation: 5030B

Lab Sample ID: MB 720-4608/8 Analysis Batch: 720-4608 Instrument ID: Saturn 3900B

Client Matrix: Water Prep Batch: N/A Lab File ID: c:\saturnws\data\200601\01

Dilution: 1.0 Units: ug/L Initial Weight/Volume: 10 mL Date Analyzed: 01/20/2006 0020 Final Weight/Volume: 10 mL

Analyte Result Qual RL 1,2-Dichloroethane ND 0.50 Benzene ND 0.50 Ethylbenzene ND 0.50 MTBE ND 0.50 Toluene ND 0.50 Xylenes, Total ND 1.0 0.50 EDB ND Gasoline Range Organics (GRO)-C5-C12 ND50 % Rec Acceptance Limits Surrogate Toluene-d8 91 77 - 121 1,2-Dichloroethane-d4 73 - 130 90

Date Prepared: 01/20/2006 0020

Client: Malcolm Pirnie, Inc. Job Number: 720-1445-1

**Laboratory Control**/

Laboratory Control Duplicate Recovery Report - Batch: 720-4608

Method: 8260B Preparation: 5030B

LCS Lab Sample ID: LCS 720-4608/7

Client Matrix:

Water

1.0

Dilution: 1

Date Analyzed: Date Prepared: 01/19/2006 2328 01/19/2006 2328 Analysis Batch: 720-4608

Prep Batch: N/A

Units: ug/L

Instrument ID: Saturn 3900B

Lab File ID: c:\saturnws\data\200601\0

Initial Weight/Volume: 10 mL

Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 720-4608/6

Client Matrix:

Date Prepared:

Water

Dilution: 1.0

Date Analyzed:

01/20/2006 0046 01/20/2006 0046 Analysis Batch: 720-4608

Prep Batch: N/A

Units: ug/L

Instrument ID: Saturn 3900B

Lab File ID: c:\saturnws\data\200601\011

Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL

	9	<u> 6 Rec.</u>					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	107	94	69 - 129	14	25		
MTBE	77	79	65 - 165	3	25		
Toluene	106	92	70 - 130	14	25		
Surrogate	L	.CS % Rec	LCSD %	Rec	Accep	tance Limits	i
Toluene-d8	9	1	94		7	7 - 121	
1,2-Dichloroethane-d4	7	4	80		7	3 - 130	

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Method Blank - Batch: 720-4619

Method: 8260B Preparation: 5030B

Lab Sample ID: MB 720-4619/5

Client Matrix: Water

Dilution: 1.0

Date Analyzed: 01/21/2006 1149 Date Prepared: 01/21/2006 1149 Analysis Batch: 720-4619

Prep Batch: N/A

Units: ug/L

Instrument ID: Varian 3900A

Lab File ID: c:\saturnws\data\200601\01

Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
1,2-Dichloroethane	ND		0.50
Benzene	ND		0.50
Ethylbenzene	ND		0.50
MTBE	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
EDB	ND		0.50
Gasoline Range Organics (GRO)-C5-C12	ND		50
Surrogate	% Rec	Acceptance I	Limits
Toluene-d8	88	77 - 121	
1,2-Dichloroethane-d4	90	73 - 130	

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Laboratory Control/

Laboratory Control Duplicate Recovery Report - Batch: 720-4619

Method: 8260B Preparation: 5030B

LCS Lab Sample ID: LCS 720-4619/4

Client Matrix:

Dilution:

Water

1.0

Date Analyzed:

Date Prepared:

01/21/2006 1105 01/21/2006 1105 Analysis Batch: 720-4619

Prep Batch: N/A

Units: ug/L

Instrument ID: Varian 3900A

c:\saturnws\data\200601\01 Lab File ID:

Initial Weight/Volume: Final Weight/Volume:

10 mL 10 mL

LCSD Lab Sample ID: LCSD 720-4619/3

Client Matrix:

Water

Dilution:

Date Analyzed: Date Prepared:

01/21/2006 1127 01/21/2006 1127 Analysis Batch: 720-4619

Prep Batch: N/A

Units: ug/L

Instrument ID: Varian 3900A

Lab File ID: c:\saturnws\data\200601\012

Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL

	9	% Rec.					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	97	92	69 - 129	5	25		
MTBE	110	96	65 - 165	14	25		
Toluene	109	104	70 - 130	5	25		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Toluene-d8	91		88		77 - 121		
1,2-Dichloroethane-d4	93		84		73 - 130		

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Method Blank - Batch: 720-4321

Method: 8270C Preparation: 3510C

Lab Sample ID: MB 720-4321/1-A

Client Matrix: Water

Dilution: 1.0

Date Analyzed: 01/17/2006 1342 Date Prepared: 01/16/2006 0757 Analysis Batch: 720-4414

Prep Batch: 720-4321

Units: ug/L

Instrument ID: Sat 2K1

Lab File ID: d:\data\200601\011706\MB

Initial Weight/Volume: 1000 mL Final Weight/Volume: 1 mL

Injection Volume:

Analyte	Result	Qual	RL
Naphthalene	ND		2.0
Acenaphthylene	ND		2.0
Acenaphthene	ND		2.0
Fluorene	ND		2.0
Phenanthrene	ND		2.0
Anthracene	ND		2.0
Fluoranthene	ND		2.0
Pyrene	ND		2.0
Benzo[a]anthracene	ND		2.0
Chrysene	ND		2.0
Benzo[b]fluoranthene	ND		2.0
Benzo[k]fluoranthene	ND		2.0
Benzo[a]pyrene	ND		2.0
Indeno[1,2,3-cd]pyrene	ND		2.0
Benzo[g,h,i]perylene	ND		2.0
2-Methylnaphthalene	ND		2.0
Dibenz(a,h)anthracene	ND		2.0
Surrogate	% Rec	Acceptance Limi	ts
Nitrobenzene-d5	54	35 - 114	
2-Fluorobiphenyl	54	43 - 116	
Terphenyl-d14	72	33 - 141	

Client: Malcolm Pirnie, Inc. Job Number: 720-1445-1

**Laboratory Control/** 

Laboratory Control Duplicate Recovery Report - Batch: 720-4321

Method: 8270C Preparation: 3510C

LCS Lab Sample ID: LCS 720-4321/2-A

Client Matrix:

Water

Dilution:

1.0

Date Analyzed: Date Prepared: 01/17/2006 1436 01/16/2006 0757 Analysis Batch: 720-4414

Prep Batch: 720-4321

Units: ug/L

Instrument ID: Sat 2K1

Lab File ID: d:\data\200601\011706\LC

Initial Weight/Volume: 1000 mL Final Weight/Volume: 1 mL

Injection Volume:

LCSD Lab Sample ID: LCSD 720-4321/3-A

Client Matrix:

Water

Dilution:

1.0

Date Analyzed: 01/17/2006 1504 Date Prepared: 01/16/2006 0757 Analysis Batch: 720-4414 Prep Batch: 720-4321

Units: ug/L

Instrument ID: Sat 2K1

Lab File ID: d:\data\200601\011706\LCS

Initial Weight/Volume: 1000 mL Final Weight/Volume: 1 mL

Injection Volume:

	0	<u>% Rec.</u>					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Naphthalene	83	82	36 - 119	1	35		
Acenaphthylene	94	83	54 - 126	12	35		
Acenaphthene	76	76	56 - 118	0	30		
Fluorene	88	84	72 - 108	5	35		
Phenanthrene	100	91	44 - 125	9	35		
Anthracene	90	86	44 - 118	5	35		
Fluoranthene	90	86	43 - 121	4	35		
Pyrene	110	108	52 - 115	2	35		
Benzo[a]anthracene	102	88	42 - 133	15	35		
Chrysene	112	102	42 - 139	10	35		
Benzo[b]fluoranthene	110	115	42 - 140	4	35		
Benzo[k]fluoranthene	99	88	26 - 145	11	35		
Benzo[a]pyrene	103	108	32 - 148	5	35		
Indeno[1,2,3-cd]pyrene	108	106	10 - 150	2	35		
Benzo[g,h,i]perylene	106	110	10 - 140	3	35		
2-Methylnaphthalene	92	101	10 - 130	9	35		
Dibenz(a,h)anthracene	117	109	10 - 130	7	35		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Nitrobenzene-d5	75		80		35 - 114		
2-Fluorobiphenyl	7	<b>'</b> 8	70		4	3 - 116	
Terphenyl-d14	8	37	84		3	3 - 141	

### **Quality Control Results**

Job Number: 720-1445-1 Client: Malcolm Pirnie, Inc.

Method Blank - Batch: 720-4344 Method: 8015B Preparation: 3510C

Instrument ID: HP DRO3 Lab Sample ID: MB 720-4344/1-A Analysis Batch: 720-4463

Prep Batch: 720-4344 Lab File ID: Client Matrix: Water N/A Initial Weight/Volume: 250 mL Units: ug/L Dilution: 1.0

Date Analyzed: 01/16/2006 1626 Final Weight/Volume: 1 mL

Injection Volume: Date Prepared: 01/16/2006 1258 Column ID: **PRIMARY** 

Qual RL Analyte Result 50 Diesel Range Organics [C10-C28] ND ND 500 Motor Oil Range Organics [C24-C36] Surrogate % Rec Acceptance Limits o-Terphenyl 71 60 - 130

Method: 8015B Laboratory Control/ Laboratory Control Duplicate Recovery Report - Batch: 720-4344 Preparation: 3510C

Analysis Batch: 720-4463 Instrument ID: HP DRO3 LCS Lab Sample ID: LCS 720-4344/2-A

Water Client Matrix: Prep Batch: 720-4344 Lab File ID: N/A

Dilution: 1.0 Units: ug/L Initial Weight/Volume: 250 mL Final Weight/Volume: Date Analyzed: 01/16/2006 1653 1 mL

Injection Volume: 01/16/2006 1258 Date Prepared: Column ID: **PRIMARY** 

HP DRO3

LCSD Lab Sample ID: LCSD 720-4344/3-A Analysis Batch: 720-4463 Instrument ID: Prep Batch: 720-4344 Lab File ID: N/A Client Matrix: Water

Initial Weight/Volume: 250 mL Dilution: 1.0 Units: ug/L 01/16/2006 1721 Final Weight/Volume: Date Analyzed: 1 mL

Date Prepared: 01/16/2006 1258 Injection Volume: Column ID: **PRIMARY** 

<u>% Rec.</u> RPD Limit LCS Qual LCSD Qual LCS **RPD** LCSD Analyte Limit 71 60 - 130 2 30 Diesel Range Organics [C10-C28] 70

LCSD % Rec Acceptance Limits Surrogate LCS % Rec 79 77 60 - 130 o-Terphenyl

STL San Francisco Chain of Custody
1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 484-1096
Email: info@chromalab.com

Reference #: 300213

N. C. C. C. C. C. C. C. C. C. C. C. C. C.	76	07	414	1/5		E	mail:	info@	Ochro	malab	com				- 1	Date g	2413	106	_ Pag	e_1	of	
Report To						de la				W. Aller	An	alysis	Requ	lest								
Alln: Maryline Company: Malcolm Address: Erney Ville Phone (510) 735-303 Bill To: Malcolm Picz White Plains, N Alln: Accts Payal Sample 10	Email Maylere	מאמיו	BPA X	Purgeable Aromatics BTEX EPA - 🖂 8021 🗆 83568	TEPH EPA 8015M D Slica Gel	Fleet Texts EPA 82608; ID GBS ID BTEX ID Fint Organistes ID DCA, EDS ID Ethand	Purgeable Halocarbons {HVOCs} EPA 8021	Volasile Organică GC/MS (VOCs) D EPA 82608 D 624	Semivolalites GC/MS D' EPA 8270 D 625	Oil and Grease   Petroleum (EPA 1664)   D Total	Pestuddes CI EPA apa1 CI 608 PCBs CI EPA 8082 CI 606	PNAs by X 8270 🗆 8310	CAM17 Metals (EPA 601077470771)	Metals: O Lead D LUFT D RCRA O Other.	O WET (STLC)	D Hexavalent Chromium D pH (24h hold lime for H <sub>2</sub> O)	D Spec Cond D Alkalinity D TSS D TDS	Anlans DCI CI SO, DNO, DF CBr CINO, CPO,				
Trip Blank MP-4 MP-2 BP-5 BP-3	1/12/06 1932 W 1/12/06 1932 W 1/12/06 19:47 W 1/12/06 15:54 W 1/12/06 16:35 W	ter HCI ter HCI ter HCI ter HCI	XXXXX		XXXX							XXXX										96.000
1-9/18 1-1-Dop 2	1/2/06/17:18 W	FALTICITY OF THE PROPERTY OF T	×		××							\$\frac{1}{2}								1/2		6
Project Info. Project Name: Former General Mill Project#: 2 (62 (6 - 00) PO#:	# of Conta		ot .		Signa	lure d Name	Rem	Mon.	Tim	3/00	Sign	naturé led Nam	ne	26	D	ale	Si	Relinqu gnature inted Na	ished by:		Time	
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Report: Require O Lev Special Instructions / Comme 3 - 40 m   H 3 - 4 m B R	c	D □State 1 □Global	Tank FuryJ	EOF	n n	1U(I	4	06	150	ev la	Print	ature Ted Nan	3.11 10 14 C	for		ne / No 6	Pri	onature  nted Na	mė		Time	-
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### LOGIN SAMPLE RECEIPT CHECK LIST

Client: Malcolm Pirnie, Inc.

Job Number: 720-1445-1

Login Number: 1445

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present, is intact.	NA	
The cooler or samples do not appear to have been compromised or tampered with	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	



Total Extractable Hydrocarbons Location: Former General Mills Site 184870 Lab #: EPA 3520C Client: Malcolm Pirnie, Inc. Prep: EPA 8015B Project#: 2626-008 Analysis: Batch#: 110421 Water Matrix: 02/10/06 Units: ug/L Received: 1.000 Prepared: 02/13/06 Diln Fac:

Field ID:

MP-5

Sampled:

02/09/06

Type: Lab ID: SAMPLE 184870-005 Analyzed:

02/14/06

Analyte

Result

RL

Diesel C10-C24

50

RL

Surrogate Hexacosane

%REC Limits 106 60-135

Field ID:

MP-3

SAMPLE

Sampled:

02/10/06

Type: Lab ID:

184870-009

Analyzed:

02/15/06

Analyte Diesel C10-C24

Result

210 Y

Surrogate	%REC	Limits

109 60-135 Hexacosane

Type:

BLANK

Analyzed:

02/14/06

Lab ID:

QC327920

Analyte	Result	RL	Marian Control of the
Diesel C10-C24	ND	50	

Surrogate	%REC	Limits	
Hexacosane	120	60-135	

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

Page 1 of 1

9.0



	Total Extr	actable Hydrocar	rbons
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 352 <b>0</b> C
Project#:	2626-008	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	110421
Units:	ug/L	Prepared:	02/13/06
Diln Fac:	1.000	Analyzed:	02/14/06

BS

Lab ID: QC327921

Analyte	Spiked	Result	%REC	Limits	
Diesel C10-C24	2,500	2,525	101	53-138	

Surrogate	%REC	Limits	
Hexacosane	109	60-135	

Type:

BSD

Lab ID:

QC327922

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,628	105	53-138	4	36

Surrogate	%REC	Limits	
Hexacosane	113	60-135	



Total Extractable Hydrocarbons Former General Mills Site EPA 3520C EPA 8015B 184870 Location: Lab #: Malcolm Pirnie, Inc. 2626-008 Prep: Analysis: Client: Project#: Matrix: Water 110421 Batch#: Received: 02/10/06 ug/L 1.000 Units: Diln Fac: Prepared: 02/13/06

Field ID:

MP-4

SAMPLE

Sampled: Analyzed:

02/09/06

Type: Lab ID:

184870-002

02/14/06

Analyte	Result	RL	
Diesel C10-C24	ND	50	-
Diesel C10-C24 Motor Oil C24-C36	ND	300	

Surrogate **%REC** Limits 114 60-135 Hexacosane

Field ID:

MP-2 SAMPLE Sampled: Analyzed:

02/09/06 02/14/06

Type: Lab ID:

184870-003

Analyte	Result	RL	
Diesel C10-C24	87 Y	50	-
Motor Oil C24-C36	ND	300	

П	Surrogate	%REC	Limits	
ľ	Hexacosane	109	60-135	

Field ID:

MP-8

SAMPLE

Type: Lab ID:

184870-004

02/09/06 02/14/06 Sampled: Analyzed:

Analyte	Result	RL	
Diesel C10-C24	320 H Y	50	
Motor Oil C24-C36	460	300	
Surrogate	%REC Limits		

Hexacosane 104 60-135

Field ID:

MP-7

Sampled: Analyzed:

Type: Lab ID:

SAMPLE 184870-006

02/10/06 02/14/06

Analyte	Result	RL	
Diesel C10-C24	690 н ү	50	
Motor Oil C24-C36	550	300	

Surrogate	%REC	Limits		
Hexacosane	103	60-135		

 $H\!=\!$  Heavier hydrocarbons contributed to the quantitation  $L\!=\!$  Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

Page 1 of 2

11.0



	Total Extra	actable Hydrocar	rbons
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3520C
Project#:	2626-008	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	110421
Units:	ug/L	Received:	02/10/06
Diln Fac:	1.000	Prepared:	02/13/06

Field ID:

MP-7-DUP

SAMPLE 184870-007 Type: Lab ID:

Sampled: Analyzed:

02/10/06 02/15/06

Analyte	Result	RL	
Diesel C10-C24	790 н Ү	50	
Motor Oil C24-C36	640	300	

Surrogate	%REC	Limits	
Housesans	115	60 135	
nexacosane	112	00-133	

Field ID:

MP-6 Type: Lab ID: SAMPLE Sampled: Analyzed:

02/10/06 02/15/06

184870-008

Result	RL	
9,600 H Y	50	
630 L	300	

Analyte	Result	RL	
Diesel C10-C24	9,600 H Y	50	
Motor Oil C24-C36	630 L	300	
Surrogate	%REC Limits		
Hexacosane	117 60-135		

Field ID: Type: Lab ID:

MP-1

SAMPLE 184870-010 Sampled: Analyzed:

02/10/06 02/15/06

Analyte
Diesel C10-C24
Motor Oil C24-C36 Result 5,800 H 3,800 300

-	Surrogate	%REC	Limits	W TO SE	31,0263
	Hexacosane	115	60-135		

Type: Lab ID:

BLANK QC32792**0** 

Analyzed:

02/14/06

Analyte	Result	RL	
Diesel C10-C24	ND	50	
Motor Oil C24-C36	ND	300	

·			
Surrogate	%REC	Limits	
Hexacosane	120	60-135	

11.0

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit
Page 2 of 2



	Total Extr	actable Hydrocar	rbons		
Lab #:	184870	Location:	Former General Mills Site		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3520C		
Project#:	2626- <b>00</b> 8	Analysis:	EPA 8015B		
Matrix:	Water	Batch#:	110421		
Units:	${ t ug/L}$	Prepared:	02/13/06		
Diln Fac:	1.000	Analyzed:	02/14/06		

Type:

BS

Lab ID:

QC327921

Analyte	Spiked	Result	%REC	Limits	
Diesel C10-C24	2,500	2,525	101	53-138	

Surrogate	%REC	Limits	
Hexacosane	109	60-135	

Type:

BSD

Lab ID: QC327922

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,628	105	53-138	4	36

Surrogate	%REC	Limits	
Hexacosane	113	60-135	



Gasoline by GC/MS						
Lab #:	184870	Location:	Former General Mills Site			
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B			
Project#:	2626-008	Analysis:	EPA 8260B			
Matrix:	Water	Diln Fac:	1.000			
Units:	ug/L	Received:	02/10/06			

Field ID: Type: Lab ID:

MP-4 SAMPLE 184870-002

Batch#: 110402 Sampled: 02/09/06 Analyzed: 02/13/06

Analyte	Result	RL	
Gasoline C7-C12	ND	50	
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	
Toluene	ND	0.50	
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits	
Dibromofluoromethane	100	80-121	
1,2-Dichloroethane-d4	103	80-125	
Toluene-d8	101	80-120	
Bromofluorobenzene	117	80-124	

Field ID: Type: Lab ID:

MP-2 SAMPLE 184870-003

Batch#: 110402 Sampled: 02/09/06 Analyzed: 02/13/06

Analyte	Result	RL
Gasoline C7-C12	ND	50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	2.5	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits	
Dibromofluoromethane	99	80-121	
1,2-Dichloroethane-d4	105	80-125	
Toluene-d8	103	80-120	
Bromofluorobenzene	119	80-124	



Gasoline by GC/MS						
Lab #:	184870	Location:	Former General Mills Site			
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B			
Project#:	2626-008	Analysis:	EPA 8260B			
Matrix:	Water	Diln Fac:	1.000			
Units:	ug/L	Received:	02/10/06			

Field ID: MP-8 Type: SAMPLE Lab ID: 184870-004

Batch#: 110402 Sampled: 02/09/06 Analyzed: 02/14/06

Analyte	Result	RL	
Gasoline C7-C12	ND	50	
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	
Toluene	0.69	0.50	1.0
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	0.68	0.50	
o-Xvlene	ND	0.50	

Surrogate	%REC	Limits	
Dibromofluoromethane	101	80-121	
1,2-Dichloroethane-d4	105	80-125	
Toluene-d8	102	80-120	
Bromofluorobenzene	118	80-124	

Field ID: Type: Lab ID:

MP-5 SAMPLE 184870-005

Batch#: Sampled: Analyzed:

110402 02/09/06 02/14/06

Analyte	Result	RL	
Gasoline C7-C12	ND	50	-
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	
Toluene	ND	0.50	
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	(

Surrogate	%REC	Limits	
Dibromofluoromethane	99	80-121	
1,2-Dichloroethane-d4	105	80-125	
Toluene-d8	102	80-120	
Bromofluorobenzene	115	80-124	



Gasoline by GC/MS						
Lab #:	184870	Location:	Former General Mills Site			
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B			
Project#:	2626-008	Analysis:	EPA 8260B			
Matrix:	Water	Diln Fac:	1.000			
Units:	ug/L	Received:	02/10/06			

Field ID: MP-7 Batch#: 110402
Type: SAMPLE Sampled: 02/10/06
Lab ID: 184870-006 Analyzed: 02/14/06

Analyte	Result	RL	
Gasoline C7-C12	ND	50	
1,2-Dichloroethane	ND	0.50	-
Benzene	ND	0.50	-
Toluene	0.80	0.50	-
1,2-Dibromoethane	ND	0.50	-
Ethylbenzene	ND	0.50	-
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits	
Dibromofluoromethane	100	80-121	
1,2-Dichloroethane-d4	105	80-125	
Toluene-d8	102	80-120	
Bromofluorobenzene	114	80-124	

Field ID: MP-7-DUP Batch#: 110402
Type: SAMPLE Sampled: 02/10/06
Lab ID: 184870-007 Analyzed: 02/14/06

Analyte	Result	RL	
Gasoline C7-C12	ND	50	
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	
Toluene	0.75	0.50	
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	0.53	0.50	
o-Xylene	ND	0.50	
J*************************************			

Surrogate	%REC	Limits	
Dibromofluoromethane	102	80-121	
1,2-Dichloroethane-d4	106	80-125	
Toluene-d8	101	80-120	
Bromofluorobenzene	115	80-124	



Gasoline by GC/MS						
Lab #:	184870	Location:	Former General Mills Site			
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B			
Project#:	2626-008	Analysis:	EPA 8260B			
Matrix:	Water	Diln Fac:	1.000			
Units:	ug/L	Received:	02/10/06			

Field ID: MP-6 Type: SAMPLE Lab ID: 184870-008

Batch#: 110393 Sampled: 02/10/06 Analyzed: 02/13/06

Analyte	Result	RL	
Gasoline C7-C12	79	50	
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	(
Toluene	2.7	0.50	:1
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	1.1	0.50	
o-Xvlene	ND	0.50	

Surrogate	%REC	Limits		
Dibromofluoromethane	105	80-121		
1,2-Dichloroethane-d4	121	80-125		
Toluene-d8	101	80-120		
Bromofluorobenzene	106	80-124		

Field ID: MP-3 Type: SAMPLE Lab ID: 184870-009

Batch#: Sampled: Analyzed:

110393 02/10/06 02/13/06

Analyte	Result	RL	
Gasoline C7-C12	ND	50	
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	
Toluene	0.84	0.50	
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	0.93	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits		
Dibromofluoromethane	103	80-121		
1,2-Dichloroethane-d4	119	80-125		
Toluene-d8	100	80-120		
Bromofluorobenzene	111	80-124		



	Gasol	line by GC/MS	
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B
Project#:	2626-008	Analysis:	EPA 8260B
Matrix:	Water	Diln Fac:	1.000
Units:	uq/L	Received:	02/10/06

Field ID: Type: Lab ID:

MP-1 SAMPLE 184870-010

Batch#: Sampled: Analyzed:

110393 02/10/06 02/13/06

Analyte	Result	RL	
Gasoline C7-C12	83	50	
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	
Toluene	ND	0.50	
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits	
Dibromofluoromethane	103	80-121	
1,2-Dichloroethane-d4	121	80-125	
Toluene-d8	99	80-120	
Bromofluorobenzene	106	80-124	

Type: Lab ID:

BLANK QC327821

Batch#: 110393 Analyzed: 02/13/06

Analyte	Result	RL	
Gasoline C7-C12	ND	50	
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	
Toluene	ND	0.50	
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits	
Dibromofluoromethane	96	80-121	
1,2-Dichloroethane-d4	104	80-125	
Toluene-d8	96	80-120	
Bromofluorobenzene	107	80-124	



	Gaso	line by GC/MS	
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie,Inc.	Prep:	EPA 5030B
Project#:	2626-008	Analysis:	EPA 8260B
Matrix:	Water	Diln Fac:	1.000
Units:	uq/L	Received:	02/10/06

Type: Lab ID:

BLANK QC327847

Batch#: 110402 Analyzed: 02/13/06

Analyte	Result	RL	
Gasoline C7-C12	ND	50	
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	
Toluene	ND	0.50	
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xvlene	ND	0.50	

Surrogate	%REC	Limits	
Dibromofluoromethane	100	80-121	
1,2-Dichloroethane-d4	105	80-125	
Toluene-d8	101	80-120	
Bromofluorobenzene	115	80-124	



	Gaso	line by GC/MS	
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B
Project#:	2626-008	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	110393
Units:	ug/L	Analyzed:	02/13/06
Diln Fac:	1.000		

Type:

BS

Lab ID:

QC327817

Analyte	Spiked	Result	%REC	Limits
1,2-Dichloroethane	25.00	24.88	100	77-120
Benzene	25.00	23.95	96	80-120
Toluene	25.00	25.68	103	80-120
1,2-Dibromoethane	25.00	24.67	99	80-120
Ethylbenzene	25.00	26.64	107	80-120
m,p-Xylenes	50.00	52.87	106	80-121
o-Xylene	25.00	26.11	104	80-120

Surrogate	%REC	Limits	
Dibromofluoromethane	96	80-121	
1,2-Dichloroethane-d4	102	80-125	
Toluene-d8	97	80-120	
Bromofluorobenzene	98	80-124	

Type:

BSD

Lab ID:

QC327818

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,2-Dichloroethane	25.00	25.09	100	77-120	1	20
Benzene	25.00	23.90	96	80-120	0	20
Toluene	25.00	25.48	102	80-120	1	20
1,2-Dibromoethane	25.00	24.95	100	80-120	1	20
Ethylbenzene	25.00	24.92	100	80-120	7	20
m,p-Xylenes	50.00	51.00	102	80-121	4	20
o-Xylene	25.00	24.98	100	80-120	4	20

Surrogate	%REC	Limits	
Dibromofluoromethane	96	80-121	
1,2-Dichloroethane-d4	107	80-125	
Toluene-d8	100	80-120	
Bromofluorobenzene	97	80-124	



	Gaso	line by GC/MS	
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B
Project#:	2626-008	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	110393
Units:	ug/L	Analyzed:	02/13/06
Diln Fac:	1.000		

Type:

BS

Lab ID:

QC327819

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,500	1,438	96	70-130
1,2-Dichloroethane		NA		
Benzene		NA		
Toluene		NA		
1,2-Dibromoethane		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	%REC	Limits	
Dibromofluoromethane	97	80-121	
1,2-Dichloroethane-d4	105	80-125	
Toluene-d8	97	80-120	
Bromofluorobenzene	96	80-124	

Type:

BSD

Lab ID:

QC327820

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,500	1,441	96	70-130	0	20
1,2-Dichloroethane		NA				
Benzene		NA				
Toluene		NA				
1,2-Dibromoethane		NA				
Ethylbenzene		NA				
m,p-Xylenes		NA				
o-Xylene		NA				

Surrogate	%REC	Limits	
Dibromofluoromethane	96	80-121	
1,2-Dichloroethane-d4	104	80-125	
Toluene-d8	97	80-120	
Bromofluorobenzene	97	80-124	

NA= Not Analyzed

RPD= Relative Percent Difference

Page 1 of 1



	Gaso	line by GC/MS	
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B
Project#:	2626-008	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	110402
Units:	ug/L	Analyzed:	02/13/06
Diln Fac:	1.000	_	

Type:

BS

Lab ID: QC327843

Analyte	Spiked	Result	%REC	Limits
1,2-Dichloroethane	25.00	24.03	96	77-120
Benzene	25.00	22.32	89	80-120
Toluene	25.00	22.90	92	80-120
1,2-Dibromoethane	25.00	23.83	95	80-120
Ethylbenzene	25.00	22.21	89	80-120
m,p-Xylenes	50.00	43.27	87	80-121
o-Xylene	25.00	22.38	90	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-121
1,2-Dichloroethane-d4	104	80-125
Toluene-d8	101	80-120
Bromofluorobenzene	105	80-124

Type:

BSD

Lab ID: QC327844

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,2-Dichloroethane	25.00	24.07	96	77-120	0	20
Benzene	25.00	23.15	93	80-120	4	20
Toluene	25.00	23.19	93	80-120	1	20
1,2-Dibromoethane	25.00	25.44	102	80-120	7	20
Ethylbenzene	25.00	23.04	92	80-120	4	20
m,p-Xylenes	50.00	44.42	89	80-121	3	20
o-Xylene	25.00	23.20	93	80-120	4	20

Surrogate	%REC	Limits	
Dibromofluoromethane	102	80-121	
1,2-Dichloroethane-d4	106	80-125	
Toluene-d8	100	80-120	
Bromofluorobenzene	106	80-124	



Gasoline by GC/MS					
Lab #:	184870	Location:	Former General Mills Site		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 5030B		
Project#:	2626-008	Analysis:	EPA 8260B		
Matrix:	Water	Batch#:	110402		
Units:	ug/L	Analyzed:	02/13/06		
Diln Fac:	1.000	_			

Type:

BS

Lab ID:

QC327845

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	935.6	94	70-130
1,2-Dichloroethane		NA		
Benzene		NA		
Toluene		NA		
1,2-Dibromoethane		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	%REC	Limits	
Dibromofluoromethane	99	80-121	
1,2-Dichloroethane-d4	107	80-125	
Toluene-d8	102	80-120	
Bromofluorobenzene	108	80-124	

Type:

BSD

Lab ID:

QC327846

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	972.5	97	70-130	4	20
1,2-Dichloroethane		NA				
Benzene		NA				
Toluene		NA				
1,2-Dibromoethane		NA				
Ethylbenzene		NA				
m,p-Xylenes		NA				
o-Xylene		NA				

Surrogate	%REC	Limits	
Dibromofluoromethane	99	80-121	
1,2-Dichloroethane-d4	104	80-125	
Toluene-d8	101	80-120	
Bromofluorobenzene	106	80-124	

NA= Not Analyzed

RPD= Relative Percent Difference

Page 1 of 1

6.0



	Semivolatile	Organics by GC/	MS SIM
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3520C
Project#:	2626-008	Analysis:	EPA 8270C-SIM
Field ID:	MP-8	Batch#:	110419
Lab ID:	184870-004	Sampled:	02/09/06
Matrix:	Water	Received:	02/10/06
Units:	ug/L	Prepared:	02/13/06
Diln Fac:	1.000	Analyzed:	02/15/06

Analyte	Result	RL	
Naphthalene	ND	0.1	
Acenaphthylene	ND	0.1	
Acenaphthene	ND	0.1	
Fluorene	ND	0.1	
Phenanthrene	ND	0.1	
Anthracene	ND	0.1	
Fluoranthene	ND	0.1	
Pyrene	ND	0.1	
Benzo(a)anthracene	ND	0.1	
Chrysene	ND	0.1	
Benzo(b)fluoranthene	ND	0.1	
Benzo(k)fluoranthene	ND	0.1	
Benzo(a)pyrene	ND	0.1	1
Indeno(1,2,3-cd)pyrene	ND	0.1	
Dibenz(a,h)anthracene	ND	0.1	
Benzo(g,h,i)perylene	ND	0.1	

Surrogate	%REC	Limits	
Nitrobenzene-d5	86	39-135	
2-Fluorobiphenyl	67	41-120	
Terphenyl-d14	80	27-126	



Semivolatile Organics by GC/MS SIM				
Lab #:	184870	Location:	Former General Mills Site	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3520C	
Project#:	2626-008	Analysis:	EPA 8270C-SIM	
Field ID:	MP-7	Batch#:	110419	
Lab ID:	184870-006	Sampled:	02/10/06	
Matrix:	Water	Received:	02/10/06	
Units:	ug/L	Prepared:	02/13/06	
Diln Fac:	1.000	Analyzed:	02/15/06	

Analyte	Result	RL	
Naphthalene	4.5	0.1	4
Acenaphthylene	ND	0.1	
Acenaphthene	3.8	0.1	
Fluorene	1.8	0.1	
Phenanthrene	2.0	0.1	
Anthracene	0.3	0.1	
Fluoranthene	0.3	0.1	
Pyrene	0.3	0.1	
Benzo(a)anthracene	ND	0.1	
Chrysene	ND	0.1	
Benzo(b)fluoranthene	ND	0.1	
Benzo(k)fluoranthene	ND	0.1	
Benzo(a)pyrene	ND	0.1	
Indeno(1,2,3-cd)pyrene	ND	0.1	
Dibenz(a,h)anthracene	ND	0.1	
Benzo(g,h,i)perylene	ND	0.1	

Surrogate	%REC	Limits	
Nitrobenzene-d5	95	39-135	
2-Fluorobiphenyl	68	41-120	
Terphenyl-d14	76	27-126	



Semivolatile Organics by GC/MS SIM				
Lab #:	184870	Location:	Former General Mills Site	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3520C	
Project#:	2626-008	Analysis:	EPA 8270C-SIM	
Field ID:	MP-7-DUP	Batch#:	110419	
Lab ID:	184870-007	Sampled:	02/10/06	
Matrix:	Water	Received:	02/10/06	
Units:	ug/L	Prepared:	02/13/06	
Diln Fac:	1.000	Analyzed:	02/15/06	

Analyte	Result	RL	rbagi bizati - pii di Kashin B
Naphthalene	5.5	0.1	
Acenaphthylene	ND	0.1	
Acenaphthene	4.4	0.1	
Fluorene	2.0	0.1	
Phenanthrene	2.2	0.1	
Anthracene	0.3	0.1	
Fluoranthene	0.4	0.1	
Pyrene	0.3	0.1	
Benzo(a)anthracene	ND	0.1	
Chrysene	ND	0.1	
Benzo(b)fluoranthene	ND	0.1	
Benzo(k)fluoranthene	ND	0.1	
Benzo(a)pyrene	ND	0.1	
Indeno(1,2,3-cd)pyrene	ND	0.1	
Dibenz(a,h)anthracene	ND	0.1	
Benzo(g,h,i)perylene	ND	0.1	

Surrogate	%REC	Limits
Nitrobenzene-d5	112	39-135
2-Fluorobiphenyl	78	41-120
Terphenyl-d14	82	27-126



Semivolatile Organics by GC/MS SIM				
Lab #:	184870	Location:	Former General Mills Site	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3520C	
Project#:	2626-008	Analysis:	EPA 8270C-SIM	
Field ID:	MP-6	Batch#:	110419	
Lab ID:	184870-008	Sampled:	02/10/06	
Matrix:	Water	Received:	02/10/06	
Units:	ug/L	Prepared:	02/13/06	
Diln Fac:	5.000	Analyzed:	02/15/06	

Analyte	Result	RL	
Naphthalene	ND	0.5	8
Acenaphthylene	ND	0.5	
Acenaphthene	0.8	0.5	
Fluorene	1.3	0.5	
Phenanthrene	1.7	0.5	
Anthracene	ND	0.5	
Fluoranthene	ND	0.5	
Pyrene	ND	0.5	
Benzo(a)anthracene	ND	0.5	
Chrysene	ND	0.5	
Benzo(b) fluoranthene	ND	0.5	
Benzo(k)fluoranthene	ND	0.5	
Benzo(a)pyrene	ND	0.5	
Indeno(1,2,3-cd)pyrene	ND	0.5	
Dibenz(a,h)anthracene	ND	0.5	
Benzo(g,h,i)perylene	ND	0.5	

Surrogate	%REC	Limits	
Nitrobenzene-d5	85	39-135	
2-Fluorobiphenyl	8 4	41-120	
Terphenyl-d14	64	27-126	



Semivolatile Organics by GC/MS SIM				
Lab #:	184870	Location:	Former General Mills Site	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3520C	
Project#:	2626-008	Analysis:	EPA 8270C-SIM	
Field ID:	MP-3	Batch#:	110419	
Lab ID:	184870-009	Sampled:	02/10/06	
Matrix:	Water	Received:	02/10/06	
Units:	ug/L	Prepared:	02/13/06	
Diln Fac:	1.000	Analyzed:	02/14/06	

Analyte	Res	ult	RL	
Naphthalene		4.5	0.1	
Acenaphthylene		0.6	0.1	
Acenaphthene		0.7	0.1	
Fluorene		1.6	0.1	
Phenanthrene		3.8	0.1	
Anthracene		0.7	0.1	
Fluoranthene		1.2	0.1	
Pyrene		1.2	0.1	
Benzo(a)anthracene		0.2	0.1	
Chrysene		0.2	0.1	
Benzo(b)fluoranthene	ND		0.1	
Benzo(k)fluoranthene	ND		0.1	
Benzo(a)pyrene		0.1	0.1	
Indeno(1,2,3-cd)pyrene	ND		0.1	
Dibenz(a,h)anthracene	ND		0.1	
Benzo(g,h,i)perylene	ND		0.1	

Surrogate	%REC	Limits	
Nitrobenzene-d5	92	39-135	
2-Fluorobiphenyl	76	41-120	
Terphenyl-d14	100	27-126	



Semivolatile Organics by GC/MS SIM				
Lab #:	184870	Location:	Former General Mills Site	
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3520C	
Project#:	2626-008	Analysis:	EPA 8270C-SIM	
Field ID:	MP-1	Batch#:	110419	
Lab ID:	184870-010	Sampled:	02/10/06	
Matrix:	Water	Received:	02/10/06	
Units:	ug/L	Prepared:	02/13/06	
Diln Fac:	5.000	Analyzed:	02/15/06	

Analyte	Result	RL	
Naphthalene	ND	0.5	/
Acenaphthylene	ND	0.5	
Acenaphthene	1.4	0.5	
Fluorene	1.7	0.5	
Phenanthrene	1.3	0.5	
Anthracene	ND	0.5	
Fluoranthene	ND	0.5	
Pyrene	ND	0.5	
Benzo(a)anthracene	ND	0.5	
Chrysene	ND	0.5	
Benzo(b)fluoranthene	ND	0.5	
Benzo(k)fluoranthene	ND	0.5	
Benzo(a)pyrene	ND	0.5	
Indeno(1,2,3-cd)pyrene	ND	0.5	
Dibenz(a,h)anthracene	ND	0.5	
Benzo(g,h,i)perylene	ND	0.5	

Surrogate	%REC	Limits	
Nitrobenzene-d5	91	39-135	****
2-Fluorobiphenyl	71	41-120	
Terphenyl-d14	55	27-126	



	Semivolatile	Organics by GC/MS	SIM
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3520C
Project#:	2626-008	Analysis:	EPA 8270C-SIM
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC327914	Batch#:	110419
Matrix:	Water	Prepared:	02/13/06
Units:	ug/L	Analyzed:	02/14/06

Analyte	Result	RL	
Naphthalene	ND	0.1	
Acenaphthylene	ND	0.1	
Acenaphthene	ND	0.1	
Fluorene	ND	0.1	
Phenanthrene	ND	0.1	
Anthracene	ND	0.1	
Fluoranthene	ND	0.1	
Pyrene	ND	0.1	
Benzo(a)anthracene	ND	0.1	
Chrysene	ND	0.1	
Benzo(b)fluoranthene	ND	0.1	
Benzo(k)fluoranthene	ND	0.1	
Benzo(a)pyrene	ND	0.1	
Indeno(1,2,3-cd)pyrene	ND	0.1	
Dibenz(a,h)anthracene	ND	0.1	
Benzo(g,h,i)perylene	ND	0.1	

Surrogate	%REC	Limits		AND T
Nitrobenzene-d5	108	39-135		
2-Fluorobiphenyl	85	41-120		
Terphenyl-d14	106	27-126		



Semivolatile Organics by GC/MS SIM					
Lab #:	184870	Location:	Former General Mills Site		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3520C		
Project#:	2626-008	Analysis:	EPA 8270C-SIM		
Matrix:	Water	Batch#:	110419		
Units:	ug/L	Prepared:	02/13/06		
Diln Fac:	1.000	Analyzed:	02/14/06		

Type:

BS

Lab ID: QC327915

Analyte	Spiked	Result	%REC	Limits
Acenaphthene	1.000	0.8060	81	48-123
Pyrene	1.000	0.9851	99	47-129

Surrogate	%REC	Limits	
Nitrobenzene-d5	101	39-135	
2-Fluorobiphenyl	83	41-120	
Terphenyl-d14	100	27-126	

Type:

BSD

Lab ID: QC327916

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Acenaphthene	1.000	0.8484	85	48-123	5	37
Pyrene	1.000	1.020	102	47-129	4	37

Surrogate	%REC	Limits	
Nitrobenzene-d5	109	39-135	
2-Fluorobiphenyl	87	41-120	
Terphenyl-d14	104	27-126	



		Lead	
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3010A
Project#:	2626-008	Analysis:	EPA 6010B
Analyte:	Lead	Batch#:	110438
Matrix:	Water	Received:	02/10/06
Units:	ug/L	Prepared:	02/14/06
Diln Fac:	1.000	Analyzed:	02/14/06

	Field ID	Type	Lab ID	Result	RL	Sampled	1.0
MP-		SAMPLE	184870-005	ND	3.0	02/09/06	$\Box$
MP-	-3	SAMPLE	184870-009	ND	3.0	02/10/06	
		BLANK	QC327980	ND	3.0		



Lead					
Lab #:	184870	Location:	Former General Mills Site		
Client:	Malcolm Pirnie, Inc.	Prep:	EPA 3010A		
Project#:	2626-008	Analysis:	EPA 6010B		
Analyte:	Lead	Batch#:	110438		
Field ID:	MP-5	Sampled:	02/09/06		
MSS Lab ID:	184870-005	Received:	02/10/06		
Matrix:	Water	Prepared:	02/14/06		
Units:	ug/L	Analyzed:	02/14/06		
Diln Fac:	1.000	-			

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC327981		100.0	89.19	89	76-124		
BSD	QC327982		100.0	97.00	97	76-124	8	20
MS	QC327983	<0.5698	100.0	82.15	82	61-135		
MSD	QC327984		100.0	85.99	86	61-135	5	23



	Total Disso	olved Solids (T	DS)
Lab #:	184870	Location:	Former General Mills Site
Client:	Malcolm Pirnie, Inc.	Prep:	METHOD
Project#:	2626-008	Analysis:	EPA 160.1
Analyte:	Total Dissolved Solids	Batch#:	110453
Matrix:	Water	Received:	02/10/06
Units:	mg/L	Analyzed:	02/14/06

Field ID	Type	Lab ID	Result	RL	Diln Fac	Sampled
MP-4	SAMPLE	184870-002	410	50	5.000	02/09/06
MP-2	SAMPLE	184870-003	1,800	100	10.00	02/09/06
MP-8	SAMPLE	184870-004	13,300	100	10.00	02/09/06
MP-5	SAMPLE	184870-005	680	50	5.000	02/09/06
MP-7	SAMPLE	184870-006	4,170	50	5.000	02/10/06
MP-7-DUP	SAMPLE	184870-007	4,150	50	5.000	02/10/06
MP-6	SAMPLE	184870-008	1,280	50	5.000	02/10/06
MP-3	SAMPLE	184870-009	560	50	5.000	02/10/06
MP-1	SAMPLE	184870-010	2,660	50	5.000	02/10/06
	BLANK (	QC328042	ND	10	1.000	



	Total Dissolved Solids (TDS)														
Lab #:	184870	Location:	Former General Mills Site												
Client:	Malcolm Pirnie, Inc.	Prep:	METHOD												
Project#:	2626-008	Analysis:	EPA 160.1												
Analyte:	Total Dissolved Solids	Batch#:	110453												
Field ID:	MP-4	Sampled:	02/09/06												
MSS Lab ID:	184870-002	Received:	02/10/06												
Matrix:	Water	Analyzed:	02/14/06												
Units:	mg/L	2													

Type	Lab ID	MSS Result	Spiked	Result	RL	%REC	Limits	RPD	Lim	Diln Fac
BS	QC328043		100.0	84.00		84	79-123			1.000
BSD	QC328044		100.0	94.00		94	79-123	11	20	1.000
SDUP	QC328045	410.0		480.0	50.00			16	20	5.000

## Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878 2323 Fifth Street Berkeley. CA 94710 (510) 486-0900 Phone (510) 486-0532 Fax

Project No.: 2 (20 - 00€

Project P.O.:

**CHAIN OF CUSTODY** 

184870

Page

**Analysis** 

C & T LOGIN #:

Report To: Todd Miller

Company: Malcelm Pirnie. Project Name: Former General Mills Site

Telephone: (510) 596-3060

Turnaround Time: Standard (5 Day

Fax: (510) 596-88**65** 

				Ma	trix	UT-013	F	res	erv	ative	5			C		20	7	ľ	ľ			1		
Lab No.	Sample ID.	Sampling Date Time	Soil	Water	Waste	# of Containers	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO3	ICE	20-7-HUL	HOL	101	1-1101		1	C VCF	2 4	Q					
-1	Trip Blank			X		. 2	X			X					Ť									
- 2	me-4	2A/ce 14:18		X		5	X			X	$\geq$				$\geq$		$\geq$	<u> </u>	$\perp$	$\sqcup$				
-3	MP-2	2/9/06 15:31		X		5	ĮX			X		X		<u> </u>	$\geq$		X		_					
-4	MP-8	2/9/06 16:18		X		6	X			$\times$		X			$\times$	$\searrow$	$\searrow$			$\vdash$				
-5	mp-5	2/9/06 17:06		X		6	$\triangleright$		$\mathbf{X}$	$\mathbf{X}$			X	X	$\downarrow$		X	X	4	$\perp$		-		
	MP-7	2/10/06 10:28	-	X	$\downarrow \downarrow \downarrow$	(0	X					X	+	$\vdash$	X	X	X	+	-	1				
	MP-7-DUP	2/10/06 10:28	<u> </u>	X		6	X			$\mathbf{X}$	-	X		$\vdash$	X	X	×	+	+	+		-		
-8	MP-6	2/10/06 11:58	-	X		6	X			$\mathbf{X}$		×			X	X	×			-	-	-	ĺ	
	MP-3	2/10/06 13:02		X	+-+	7	X		×	$\sim$	-			X	1	X	×	×	-	1	-	-		
-10	MP-1	2/10/06 13:48	+	X	++	6	X			$\sim$	-		+	+		4	Y	+	+	+		+		
			1	+			-				-		-	+-	+	+-	+					1		
			$\dagger$									T	1	İ	1			1						
Notes:		SAMPLE RECEIPT	RE	ELIN	IQUIS	SHED BY:						ECE	EIVE	DE	BY:							•		
		Intact Intact Cold On Ice Ambient	Preservative Correct?						Jidos 15:26 DATE / TIME					Paul On						gun 2/10/06 15:				
																	U							
		Yes No N/A							0	ATE / TIM	1E										DATE	/ TIME	-	
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# Curtis & Tompkins, Ltd. Analytical Laboratory Since 1878 2323 Fifth Street Berkeley. CA 94710 (510) 486-0900 Phone (510) 486-0532 Fax Project No.: 2626-008 Project Name: Famer General Mills Site Project P.O.:

CHAIN (	OF CL	<b>JSTODY</b>
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Page

**Analysis** 

184870

Sampler: Stephen Pennin (End sampling Sic)

Report To: Todd Miller

C & T LOGIN #:

Company: Malcolm Pirnie Inc

Telephone: (510) 596-3060

Fax: (510) 596-88**65** Turnaround Time: Standard (5 Day

		•		Ma	trix	]	F	Prese	rvativ	е	١	4/2/2		- Dieta		20	Ö						
Lab No.	Sample ID.	Sampling Date Time	Soil	Water	Waste	# of Containers	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO IOE		1011	TOH CAS	1011101	(1-11aL	(1- MOH	ٽر ا		2 2	Q Q				
-1	Trip Blank			X		2	X		×						Ť								
- 3	me-4	2A/c6 14:18		X		5	X		$\bot$ X		$\geq$	1_			$\geq$	1_	$\geq$	⊈_					
- 3	MP-2	2/1/c6 15:31	Ш	X		5	ĮХ		$\bot X$			×			$\geq$	$\bot$	$\geq$		$\perp$				
-4	MP-8	2/9/06 16:18		X		6	X		$\bot$ $\times$			X			X	$\geq$	$\bigcirc$	ቧ_					
-5	mp-5	29/06 17:06		X		6	$\boxtimes$		$\langle \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$				×	X			$\geq$	$\bigcirc$	4				
-6	MP-7	2/0/06 10:28		X		6	X		$\times$			×			×	$\boxtimes$	$\bigcirc$	\$_	$\bot$				
-7	MP-7-DUP	2/10/06 10:28		X		6	X		$\perp \times$			X			$\nearrow$	$\boxtimes$	$ ot \sum$	$\subseteq$	$\perp$				
-8	MP-6	2/10/06 11:58	<u> </u>	X,		6	X		$\bot$ X	Щ	<u> </u>	×			X	$oldsymbol{X}$	$\geq$	$oldsymbol{oldsymbol{oldsymbol{oldsymbol{eta}}}$					
-9	MP-3	2/10/06 13:02	-	X		7	X		$\times\!\!\!\!/\!$		$\perp$		X	X		X		$\mathcal{Y}$	4	1	1		
-10	MP-1	2/10/06 13:48	igwdapprox	X		6	X		$\perp X$		-	X		-	X	$\bigvee$	4	<u> </u>	+		-		_
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Notes:		SAMPLE RECEIPT	RE	LIN	QUISH	ED BY:		1 1.			R	ECE	IVE	D B	Y:							LI	
		Intact Cold On Ice Ambient	JST:	d	$\overline{\mathcal{Q}}$			7/19	DATE	5;26 / TIMI	2	7	1			2, 4	Lang St.	m	21	iolo	) <del>L</del>	(5	126 IME
		Preservative Correct?	1-0	1	-				2		7	10	41			(	0	VV ~	-				
		Yes No N/A							DATE	/ TIME	=										DATE	E / TI	ME
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