KLEINFELDER
An employee owned company

March 12, 2007
File: 78578.02

Mr. Scott Nebesky, AICP
Planning Director
Reno-Sparks Indian Colony
1937 Prosperity Street
Reno, Nevada 89502

SUBJECT: Soil Remediation Workplan
Former Radiator Shop
2453 East 2nd Street
Reno, Nevada

Dear Mr. Nebesky,

Kleinfelder, Inc. prepared the attached soil remediation workplan for activities to be performed at the subject site (see Plate 1). We prepared this document for the Reno-Sparks Indian Colony to meet the requirements of the Washoe County District Health Department.

We appreciate the opportunity to be of service to the Reno-Sparks Indian Colony. If you have any questions or need additional information, please contact either of the undersigned in our Reno office at (775) 689-7800.

Sincerely,

KLEINFELDER, INC.

Joshua P. Fortmann, CEM
Project Geologist

Eric Hubbard, CEM
Geoscience Manager

Attachments: Soil Remediation Workplan

cc: Paul Donald, Washoe County District Health Department
Russell Brigham, Reno-Sparks Indian Colony
Carmen Gonzalez, Reno-Sparks Indian Colony
Lisa Johnson, Nevada Division of Environmental Protection
Martin Jones, Gust Rosenfeld P.L.C.

KLEINFELDER 4835 Longley Lane, Reno, NV 89502-5953 (775) 689-7800 (775) 689-7810 fax

Soil Remediation Workplan
Former Radiator Shop
2453 East 2nd Street
Reno, Nevada

File: 78578.02
March 12, 2007

Prepared by:

Kleinfelder, Inc.
4835 Longley Lane
Reno, Nevada 89502

Prepared for:

Reno-Sparks Indian Colony
1937 Prosperity Street
Reno, Nevada 89502

TABLE OF CONTENTS

1. INTRODUCTION

The subject site (see Plate 1) is currently vacant, but a radiator shop previously operated on the property. Based on available data, soil in the parking area adjacent to the north of the radiator shop contains lead in excess of the EPA Residential Preliminary Remediation Goal (PRG) of 400 milligrams per kilogram (mg/Kg).

Assessment and limited cleanup activities were performed in September 2005, and are documented in the referenced report (Universal Environmental, 2005). The assessment identified lead and petroleum hydrocarbons in soil, and included the collection of soil samples and soil excavation and stockpiling. The stockpiled soil remains onsite. In January 2007, additional assessment activities were performed at the site, and included the collection of an additional twenty surface and subsurface soil samples.

Based on the results of soil assessment activities, lead is present in site soil in excess of the PRG in the area of the excavation and adjacent to the north of the excavation. The soil samples contained lead at concentrations ranging from 6.4 mg/Kg to 2,200 mg/Kg. Plate 2 shows the soil sample locations and existing excavation.

The referenced Phase II Report of Findings recommends that soil containing lead in excess of the PRG be excavated and characterized for disposal.

2. SITE DESCRIPTION

The southern portion of the site is covered by the concrete pad of the building foundation. A smaller concrete pad extends north from the northern edge of the building pad, as shown on Plate 3. A dirt area is located to the east, west and north of the smaller slab. Excavation activities were previously performed adjacent to the east and west of the smaller slab to the property boundary. Excavation was also performed on the north side of the smaller slab.

2.1 Site Boundaries

The site boundaries are defined by the former fenceline. Based on available aerial photographs, site operations did not extend beyond the site boundaries. Remediation activities will be performed in the parking area located adjacent to the north of the former radiator shop, as shown on Plate 2. The parking lot area is approximately 96 feet by 30 feet in size.

2.2 Proposed Site Use

The proposed site use is a portion of the parking lot for a Wal-Mart Supercenter. The existing concrete slab will be demolished and the majority of the site, including the entire remediation area, will be paved with asphalt concrete.

3. SOIL EXCAVATION

3.1 Excavation Location

Based on assessment activities performed to date, site soil contains lead in excess of the residential PRG. Soil samples collected from a depth of 0.5 feet below ground surface (bgs) contained lead at concentrations ranging from 8.6 mg/Kg to 2,200 mg/Kg. Soil samples collected from a depth of 1.5 feet bgs contained lead ranging in concentration from 6.4 mg/Kg to 360 mg/Kg. Soil containing lead in excess of the PRG does not appear to extend deeper than 1.5 feet below ground surface (bgs).

Based on the analytical results, we plan to excavate the top two feet of soil from the existing excavation. Plate 2 shows the limits of the existing excavation. The top two feet of soil will also be excavated to the north of the existing excavation to the site boundary. Additional excavation will be performed in locations with relatively high lead concentration at 1.5 feet bgs. We anticipate excavation to a depth of approximately three feet bgs at these locations. These locations will include the soil sample locations LC-1, LC-2, LC-6 and LC-9. Excavated soil will be stockpiled with existing stockpiles generated during previous excavation activities.

3.2 Cleanup Concentration

Three referenced models were used to assess the risk of lead remaining in site soil at a concentration of 400 mg/Kg. The models are the Lead Risk Assessment Spreadsheet by the California Department of Toxic Substances Control, the USEPA Technical Review Workgroup for Lead, Adult Lead Committee, Calculations of Blood Lead Concentrations and the USEPA Integrated Exposure Uptake Biokinetic Model for predicting Blood Lead in Children (IEUBK) Lead Model Version 1.0 Build 263. Model output indicates that soil containing lead at 400 mg/Kg will not result in blood lead concentrations at or above 10 micrograms per deciliter (ug/dl) in adults, children or fetuses. Copies of the model outputs are included as Appendix A. To ensure with reasonable confidence that all soil in excess of the PRG has been removed, 90% of the PRG, or 360 mg/Kg, will be used as the cleanup concentration.

3.3 Dust Control and Monitoring

Air monitoring will be performed in the breathing zone of all onsite workers. Each site worker will wear a personal monitoring pump during all onsite activities. Site perimeter monitoring will also be performed using a portable particulate monitor. The monitor will be placed adjacent to the south of excavation activities, approximately 75 feet to the north of East 2nd Street. Applicable limits will be the OSHA permissible exposure limit (PEL) for lead of 5ug/cubic meter (ug/m^3), and 10 mg/m^3 for dust. Personal and fence-line air sampling methodology is further described in the Health and Safety Plan, Appendix B. Air sampling protocols are included in Appendix C.

Required personal protective (PPE) equipment includes tyvek suits, nitrile gloves and safety glasses. Additional information regarding PPE is included in the Health and Safety Plan (HASP), Appendix B. Prior to the start of excavation, all onsite workers will attend a Health and Safety meeting and review the HASP. In addition, all onsite personnel will have completed lead awareness training and OSHA 40 Hr Hazwoper.

4. CONFIRMATION SAMPLING

Following soil excavation and stockpiling, twenty-two discrete confirmation soil samples will be collected from the excavation area. The sample design is a simple random approach. A 10x10 foot grid will be mapped in the soil excavation area as shown on Plate 3. One soil sample will be collected from the center of eighteen of the grid squares. One soil sample will also be collected from the edge of four grid squares to confirm the lateral concentration of lead in soil. The lateral confirmation soil samples will be collected on the north, east and west sides of the excavation, and under the concrete pad on the south side of the excavation. The grid squares to be sampled will be selected using a random number generator.

To ensure with reasonable confidence that little or no soil remains onsite in excess of the PRG, the 90^{th} percentile of the PRG will be used. In accordance with the statistical procedures described in RCRA Waste Sampling Draft Technical Guidance (2002), and based on a 90% confidence that at least 90 percent of the samples are below 360 mg/Kg, twenty-two confirmation soil samples will be collected. Based on a simple exceedance rule if any of the confirmation samples indicate lead at a concentration above 360 mg/Kg, additional excavation and confirmation sampling will be performed. Confirmation samples will be analyzed for total lead by EPA Method 6010B, and TPH by EPA Method 8015B.

5. STOCKPILE CHARACTERIZATION

Prior to the start of excavation activities, the existing stockpiles will be consolidated. Existing stockpiles consist of approximately 60 cubic yards of soil. Soil excavated during remedial activities will be added to the consolidated stockpile.

Stockpiled soil will be placed in windrows and covered with plastic for dust control. The anticipated total volume of excavated soil is anticipated to be approximately 340 cubic yards. Including the existing stockpiles, the total soil volume for characterization will be approximately 400 cubic yards. The soil stockpile will be mapped with a 5x5 foot grid.

Characterization sampling will be performed to assess the need to dispose of the soil as a RCRA hazardous waste. All soil samples will be analyzed for soluble lead by the Toxicity Characteristic Leaching Procedure (TCLP). Based on a simple exceedance rule, if any of the characterization samples contain lead at a concentration above 90% of 5 milligrams per liter (mg/L), or 4.5 mg/L, TCLP lead, the soil will be characterized as hazardous. Twenty-two characterization samples are necessary to have 90% confidence that at least 90% of the samples are below 4.5 mg/L. The characterization soil samples will be collected from approximately two feet deep in the center of grid squares selected using a random number generator.

6. SOIL DISPOSAL

The disposal location will be dependant on the analytical results of characterization samples. If the soil is characterized as hazardous, the soil will be disposed at a permitted facility in Beatty, Nevada. If the soil is characterized as non-hazardous, it will be disposed at Lockwood Landfill, or thermally treated at Nevada Thermal Systems (NTS). If the soil is disposed at Lockwood or NTS, a waste release will be obtained from the WCDHD.

7. REPORTING

Kleinfelder will prepare a report of findings that will include a summary of field activities, analytical results, conclusions and recommendations. The report will also include a table of confirmation and characterization soil sample analytical results and copies of field documentation.

REFERENCES

California Department of Toxic Substances Control, Lead Risk Assessment Spreadsheet, Version 7, 1999

USEPA, Solid Waste and Emergency Response, "RCRA Waste Sampling Draft Technical Guidance, Planning, Implementation, and Assessment", August 2002

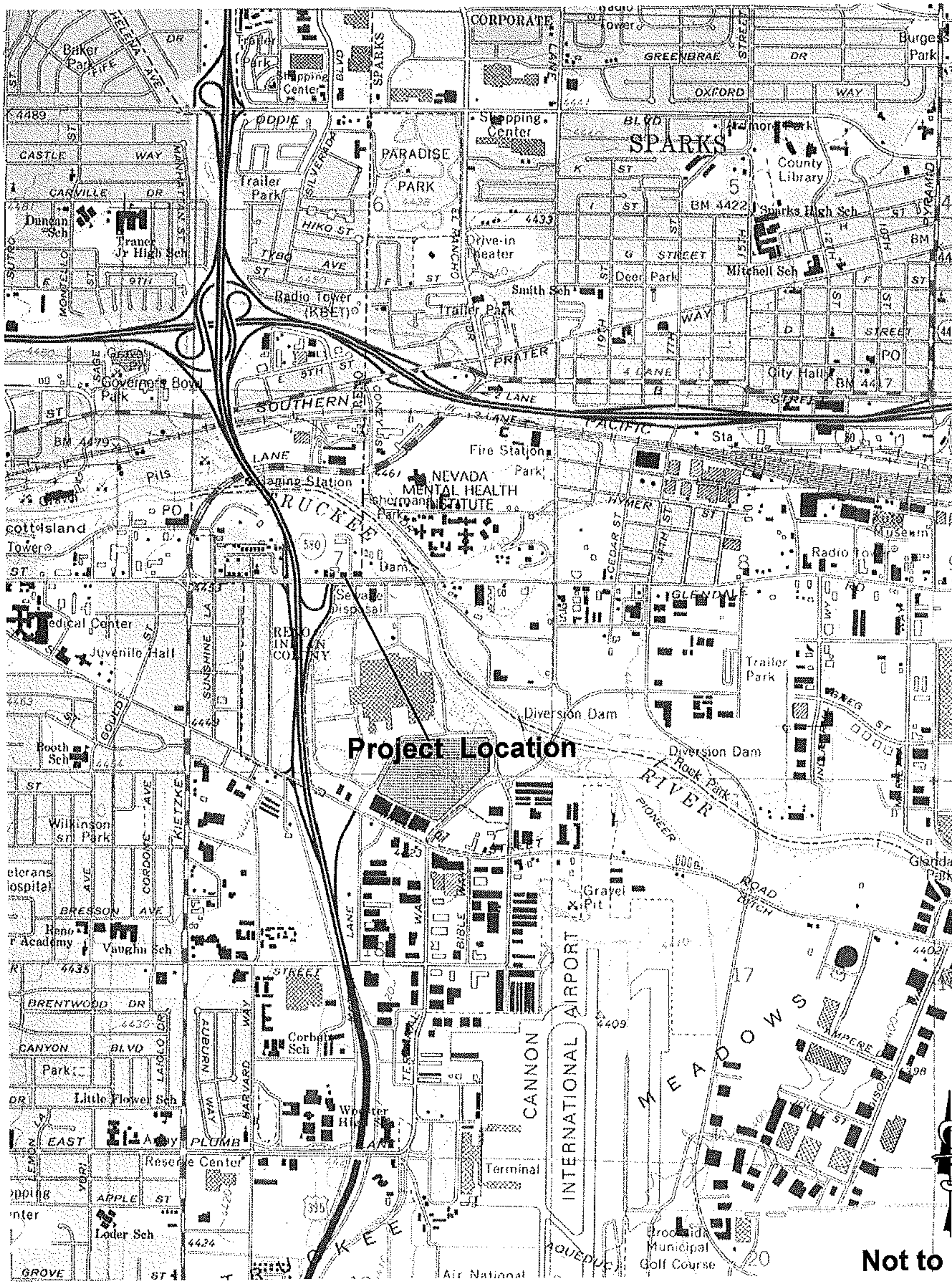
USEPA, Calculations of Blood Lead Concentrations (PbBs), Technical Review Workgroup for Lead, Adult Lead Committee, Version date 05/19/03

USEPA, Integrated Uptake, Exposure, and Biokinetic Model for Predicting Blood Lead in Children, Lead Model Version 1.0 Build 263, 2004

Universal Environmental Nevada, Inc., "Remediation recommendations at 2453, 2455, and 2457 East 2nd Street locations", dated October 10, 2005

Kleinfelder, Inc., "Report of Findings, Phase II Environmental Site Assessment, Proposed Wal-Mart Site 2106-03, Glendale Avenue at US 395, Reno, Nevada", file number 78578.01, dated February 27, 2007.

Plates



Not to Scale

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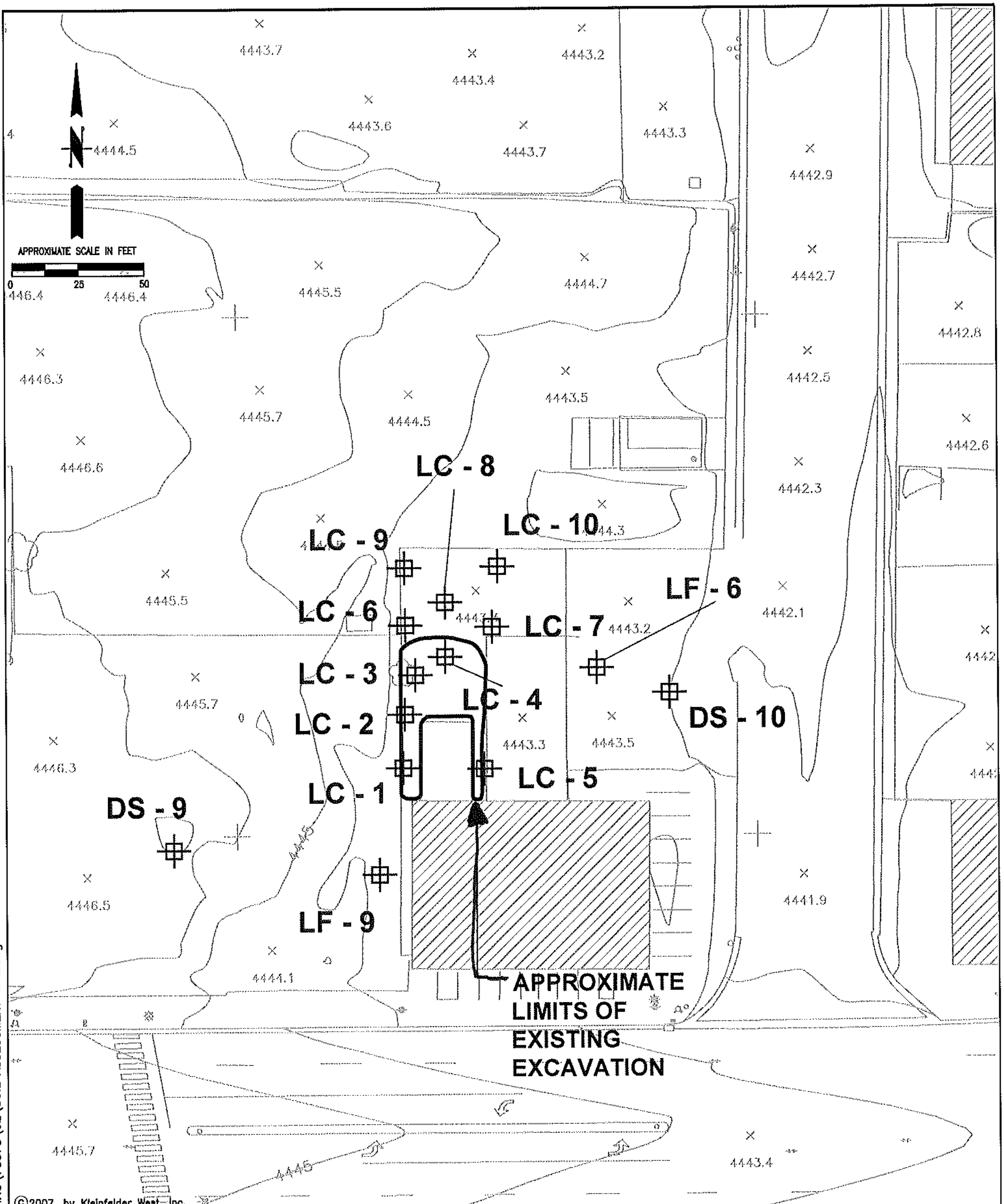
KLEINFELDER 4835 LONGLEY LANE RENO, NEVADA 89502 Tel. (775) 689-7800	**SITE VICINITY MAP** FORMER RADIATOR SHOP 2453 E. 2ND STREET RENO, NEVADA	PLATE **1**
PROJECT NO. 78578.02		



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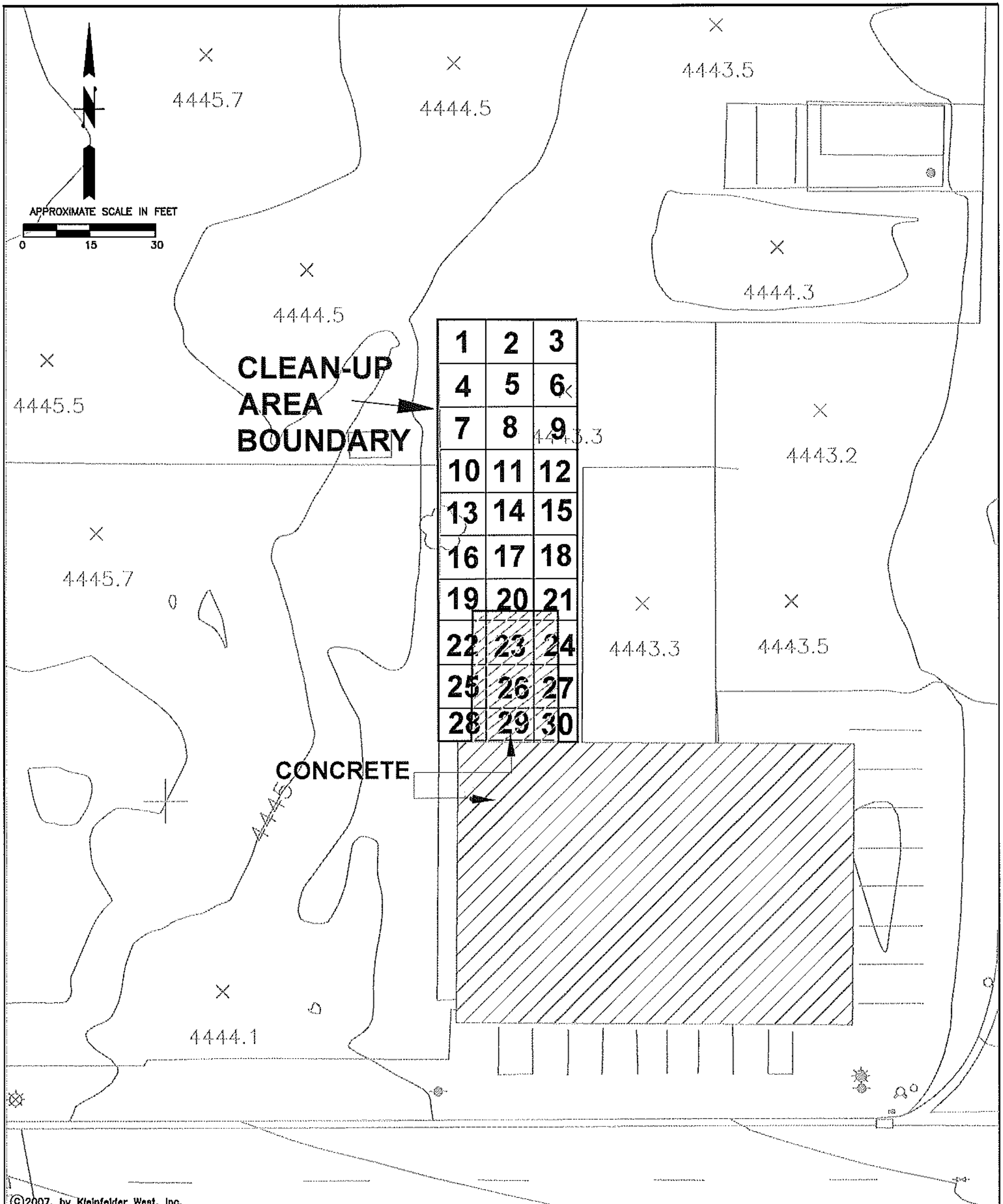
KLEINFELDER
4835 LONGLEY LANE
RENO, NEVADA 89502
Tel. (775) 689-7800

PROJECT NO. 78578.02

2007 SOIL ASSESSMENT LOCATIONS

FORMER RADIATOR SHOP
2453 E. 2ND STREET
RENO, NEVADA

PLATE
2



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KLEINFELDER
4835 LONGLEY LANE
RENO, NEVADA 89502
Tel. (775) 689-7800

PROJECT NO. 78578.02

CONFIRMATION SOIL SAMPLING GRID

FORMER RADIATOR SHOP
2453 E. 2ND STREET
RENO, NEVADA

PLATE
3

Appendix A

Blood Lead Concentration Model Output

LEAD RISK ASSESSMENT SPREADSHEET
CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

USER'S GUIDE to version 7

INPUT	
MEDIUM	LEVEL
Lead in Air (ug/m^3)	0.028
(ug/g)	400.0
Lead in Water (ug/l)	15
% Home-grown Produ	7%
(ug/m^3)	1.5

OUTPUT							
	Percentile Estimate of Blood Pb (ug/dl)					PRG-99	PRG-95
	50th	90th	95th	98th	99th	(ug/g)	(ug/g)
BLOOD Pb, ADULT	2.4	4.4	5.2	6.4	7.3	676	1063
BLOOD Pb, CHILD	6.6	12.0	14.2	17.2	19.6	146	247
BLOOD Pb, PICA CHILD	9.4	17.1	20.3	24.6	28.0	94	159
BLOOD Pb, OCCUPATION.	1.4	2.5	2.9	3.6	4.1	3475	5464

EXPOSURE PARAMETERS			
	units	adults	children
Days per week	days/wk	7	
Days per week, occupational		5	
Geometric Standard Deviation		1.6	
Blood lead level of concern (ug/dl)		10	
Skin area, residential	cm^2	5700	2900
Skin area occupationa	cm^2	2900	
Soil adherence	ug/cm^2	70	200
Dermal uptake consta	(ug/dl)/(ug/day)	0.0001	
Soil ingestion	mg/day	50	100
Soil ingestion, pica	mg/day		200
Ingestion constant	(ug/dl)/(ug/day)	0.04	0.16
Bioavailability	unitless	0.44	
Breathing rate	m^3/day	20	6.8
Inhalation constant	(ug/dl)/(ug/day)	0.08	0.192
Water ingestion	l/day	1.4	0.4
Food ingestion	kg/day	1.9	1.1
Lead in market basket	ug/kg	3.1	
Lead in home-grown produc	ug/kg	180.0	

Click here for REFERENCES

PATHWAYS

ADULTS	Residential			Occupational		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	3.8E-5	0.02	1%	1.4E-5	0.01	0%
Soil Ingestion	8.8E-4	0.35	14%	6.3E-4	0.25	18%
Inhalation, bkgrnd		0.05	2%		0.03	2%
Inhalation	2.5E-6	0.00	0%	1.8E-6	0.00	0%
Water Ingestion		0.84	35%		0.84	62%
Food Ingestion, bkgrnd		0.22	9%		0.23	17%
Food Ingestion	2.4E-3	0.96	39%			0%

CHILDREN	typical			with pica		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	5.6E-5	0.02	0%		0.02	0%
Soil Ingestion	7.0E-3	2.82	43%	1.4E-2	5.63	60%
Inhalation	2.0E-6	0.00	0%		0.00	0%
Inhalation, bkgrnd		0.04	1%		0.04	0%
Water Ingestion		0.96	15%		0.96	10%
Food Ingestion, bkgrnd		0.50	8%		0.50	5%
Food Ingestion	5.5E-3	2.22	34%		2.22	24%

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 05/19/03

Exposure Variable	PbB Equation[1] 1*	PbB Equation[1] 2**	Description of Exposure Variable	Units	Values for Non-Residential Exposure Scenario: Using Equation 1, GSDi = Hom	Using Equation 1, GSDi = Het	Using Equation 2, GSDi = Hom	Using Equation 2, GSDi = Het
PbS	X	X	Soil lead concentration	ug/g or ppm	400	400	400	400
$R_{fetal/maternal}$	X	X	Fetal/maternal PbB ratio	--	0.9	0.9	0.9	0.9
BKSF	X	X	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4	0.4	0.4
GSD_i	X	X	Geometric standard deviation PbB	--	2.1	2.3	2.1	2.3
PbB_0	X	X	Baseline PbB	ug/dL	1.5	1.7	1.5	1.7
IR_S	X		Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050	--	--
IR_{S+D}		X	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	0.050	0.050
W_S		X	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--	1.0	1.0
K_{SD}		X	Mass fraction of soil in dust	--	--	--	0.7	0.7
$AF_{S,D}$	X	X	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12
$EF_{S,D}$	X	X	Exposure frequency (same for soil and dust)	days/yr	219	219	219	219
$AT_{S,D}$	X	X	Averaging time (same for soil and dust)	days/yr	365	365	365	365
PbB_{adult}			PbB of adult worker, geometric mean	ug/dL	2.1	2.3	2.1	2.3
$PbB_{fetal,0.95}$			95th percentile PbB among fetuses of adult workers	ug/dL	6.3	8.1	6.3	8.1
PbB_t			Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	10.0	10.0	10.0	10.0
$P(PbB_{fetal} > PbB_t)$			Probability that fetal PbB > PbB_t, assuming lognormal distribution	%	1.2%	2.8%	1.2%	2.8%

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

*Equation 1, based on Eq. 1, 2 in USEPA (1996).

PbB_{adult} =	$(PbS*BKSF*IR_{S+D}*AF_{S,D}*EF_S/AT_{S,D}) + PbB_0$
$PbB_{fetal,0.95}$ =	$PbB_{adult} * (GSD_i^{1.645} * R)$

**Equation 2, alternate approach based on Eq. 1, 2, and A-19 in USEPA (1996).

PbB_{adult} =	$PbS*BKSF*([(IR_{S+D})*AF_S*EF_S*W_S]+[K_{SD}*(IR_{S+D})*(1-W_S)*AF_D*EF_D])/365+PbB_0$
$PbB_{fetal,0.95}$ =	$PbB_{adult} * (GSD_i^{1.645} * R)$

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

LEAD MODEL FOR WINDOWS Version 1.0

==

Model Version: 1.0 Build 263
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==

The time step used in this model run: 1 - Every 4 Hours (6 times a day).

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (ug Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(ug/day)
.5-1	5.530
1-2	5.780
2-3	6.490
3-4	6.240
4-5	6.010
5-6	6.340
6-7	7.000

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.000 ug Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 290.000 ug/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)

.5-1	400.000	290.000
1-2	400.000	290.000
2-3	400.000	290.000
3-4	400.000	290.000
4-5	400.000	290.000
5-6	400.000	290.000
6-7	400.000	290.000

****** Alternate Intake ******

Age	Alternate (ug Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 2.500 ug Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (ug/day)	Diet (ug/day)	Alternate (ug/day)	Water (ug/day)
.5-1	0.021	2.451	0.000	0.355
1-2	0.034	2.520	0.000	0.872
2-3	0.062	2.876	0.000	0.922
3-4	0.067	2.812	0.000	0.955
4-5	0.067	2.793	0.000	1.022
5-6	0.093	2.980	0.000	1.090
6-7	0.093	3.308	0.000	1.115

Year	Soil+Dust (ug/day)	Total (ug/day)	Blood (ug/dL)
.5-1	7.673	10.499	5.6
1-2	11.991	15.418	6.4
2-3	12.188	16.048	5.9
3-4	12.394	16.228	5.7
4-5	9.466	13.348	4.7
5-6	8.616	12.780	4.0
6-7	8.183	12.700	3.6

LEAD MODEL FOR WINDOWS Version 1.0

==

Model Version: 1.0 Build 263
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==

The time step used in this model run: 4 - Every 15 Minutes (96 times a day).

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (ug Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(ug/day)
.5-1	5.530
1-2	5.780
2-3	6.490
3-4	6.240
4-5	6.010
5-6	6.340
6-7	7.000

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.000 ug Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 290.000 ug/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)

.5-1	400.000	290.000
1-2	400.000	290.000
2-3	400.000	290.000
3-4	400.000	290.000
4-5	400.000	290.000
5-6	400.000	290.000
6-7	400.000	290.000

****** Alternate Intake ******

Age	Alternate (ug Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 2.500 ug Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (ug/day)	Diet (ug/day)	Alternate (ug/day)	Water (ug/day)
.5-1	0.021	2.451	0.000	0.355
1-2	0.034	2.520	0.000	0.872
2-3	0.062	2.876	0.000	0.922
3-4	0.067	2.812	0.000	0.955
4-5	0.067	2.793	0.000	1.022
5-6	0.093	2.980	0.000	1.090
6-7	0.093	3.308	0.000	1.115

Year	Soil+Dust (ug/day)	Total (ug/day)	Blood (ug/dL)
.5-1	7.673	10.499	5.6
1-2	11.991	15.418	6.4
2-3	12.188	16.048	5.9
3-4	12.394	16.228	5.7
4-5	9.466	13.348	4.7
5-6	8.616	12.780	4.0
6-7	8.183	12.700	3.6

Appendix B

Health and Safety Plan

SITE HEALTH AND SAFETY PLAN
Former Radiator Shop
2453 East 2nd Street
Reno, Nevada

File: 78578.02
March 9, 2007

Prepared by:

Kleinfelder, Inc.
4835 Longley Lane
Reno, Nevada 89502

Prepared for:

Reno-Sparks Indian Colony
1937 Prosperity Street
Reno, Nevada 89502

TABLE OF CONTENTS

SECTION **PAGE**

FIGURES

1. INTRODUCTION

1.1 PROJECT OVERVIEW

The subject site (see Plate 1) is currently vacant, but a radiator shop previously operated on the property. Based on available data, soil in the parking area adjacent to the north of the radiator shop contains lead in excess of the EPA Residential Preliminary Remediation Goal (PRG) of 400 milligrams per kilogram (mg/Kg). Soil remediation activities will be performed to address lead in soil, and will include soil excavation, stockpiling, hauling and disposal.

This document represents the Health and Safety Plan (HASP) required in order to provide environmental services and monitoring at the site.

1.2 SITE HISTORY

Assessment and limited cleanup activities performed in September 2005 included the collection of soil samples and soil excavation and stockpiling. The stockpiled soil remains onsite. In January 2007, additional assessment activities were performed at the site, and included the collection of an additional twenty surface and subsurface soil samples.

Based on the results of soil assessment activities, lead is present in site soil in excess of the PRG in the area of the excavation and adjacent to the north of the excavation. The soil samples contained lead at concentrations ranging from 6.4 mg/Kg to 2,200 mg/Kg. Plate 2 shows the soil sample locations and existing excavation.

The referenced Phase II Report of Findings recommends that soil containing lead in excess of the PRG be excavated and characterized for disposal.

1.3 SCOPE OF HEALTH AND SAFETY PLAN

This HASP identifies known hazards related specifically to lead exposures that are unique to this construction site. This plan identifies the minimum requirements that will be implemented by the subcontractor. This plan does not address specific safety requirements related to individual subcontractor operations; the subcontractor performing work on the site must maintain a company health and safety plan. These individual company plans will outline specifically how the subcontractor intends to perform work safely and provide protection for workers in their employ. The subcontractor remains responsible for protecting their workers against environmental hazards at the site, and as such, may elect to implement additional safety measures beyond those in this plan.

2. GENERAL REQUIREMENTS

2.1 CONTRACTOR/SUBCONTRACTOR SAFETY OBLIGATION

It shall be the responsibility of the subcontractor to provide a safe place of employment which is free from recognized hazards by providing employees with safe tools and equipment and other items as may be necessary to perform the work in a safe manner with high regard for the safety of employees and others. It is the responsibility of the contractor/ subcontractor to initiate and maintain such programs as may be necessary to comply with OSHA regulations or other prevailing safety regulations, whether federal, state, local, or otherwise imposed.

2.2 ACCIDENT/INCIDENT REPORTING, INVESTIGATION, AND RECORDKEEPING.

All accidents or incidents that result in a work-related injury or illness, **regardless of severity**, or that result in property damage shall be reported to the Project Manager immediately. The subcontractor shall investigate any accident or incident that occurs on the project and prepare a written report as necessary.

Subcontractor shall maintain all records as required by OSHA and their individual company policies and HASPs.

2.3 INSPECTION POLICY

Subcontractor shall provide for frequent and regular self-inspections of their work area(s), materials, and equipment.

Subcontractor shall correct safety hazards and safety violations they observe that have the potential to affect any contractor/subcontractor employees on the site. Imminent danger situations shall be reported to Kleinfelder immediately. Additionally, employees shall be instructed to report all unsafe acts or conditions to their supervisor immediately.

2.4 EMERGENCY ACTION PLAN.

All job-related injuries and illnesses shall be immediately reported to the employee's supervisor. If it is determined that the injury or illness cannot be treated on site with basic first aid, the injured or ill worker shall be taken to an appropriate medical facility for treatment. The nearest, appropriate medical facility is Renown Health located at 155 Mill Street, Reno, Nevada (see attached map)

2.5 GOOD HOUSEKEEPING PRACTICES

The subcontractor shall ensure that good housekeeping and sanitation procedures are established and practiced throughout their work area on the project site. Proper receptacles for disposal of personal trash and litter must be used by all site personnel. Construction debris that may be windblown must be secured or covered to prevent it from littering the site. All personnel shall use designated toilet facilities as provided.

3. SITE HAZARD ANALYSIS AND CONTROL REQUIREMENTS

3.1 SITE HAZARD ANALYSIS

3.1.1 Chemical Hazards

Identified chemical hazards on the site consist of soil containing elevated concentrations of lead. Concentrations of lead in soil may be as high as 2,200 milligrams per kilogram (mg/kg). Exposure to airborne concentrations of this soil is not expected to create an exceedance of the OSHA standard for worker exposures (0.050 milligrams per cubic meter [mg/m^3] for lead) since fugitive dust will be closely controlled. Worker exposures, therefore, will be primarily controlled by strict control of fugitive dust at the site and by practicing good personal hygiene, including protection of food and drink sources from dust at the site, washing hands prior to eating on site, and keeping clothing clean.

Other possible chemical exposures may arise from chemicals brought on site by contractors in the course of their work, such as degreasing solvents, petroleum hydrocarbons, and cleaning agents. Safe handling procedures for all chemicals used on the site, including spill clean-up procedures, will be adhered to by all site personnel and must be addressed in contractor HASPs.

3.1.2 Physical Hazards

Physical hazards which may exist on site are typical of construction sites. These hazards may include slip/trip/fall hazards, operation of heavy machinery and hand tool usage. Mitigation of these hazards should be addressed by subcontractor HASPs.

3.1.3 Biological Hazards

Biological hazards (i.e., animals or microbes) are not anticipated to be encountered on this site; these hazards should be addressed in contractor/subcontractor HASPs.

3.1.4 Environmental Hazards

Environmental hazards that may exist on site include exposures to excessive noise, heat/cold exposure, and exposures to blowing dust. Construction-generated dust creates the greatest potential for exposure to lead in the soil; therefore, control of dust is vitally important on the project site.

3.2 ADMINISTRATIVE HAZARD CONTROLS

3.2.1 Training Requirements.

Site training as described in this section is limited to educating all site personnel to the hazards of lead contamination. This training is in no way a substitute for employee training as to general health and safety practices, or for safe work practices to be used on the site. It shall be the responsibility of each contractor/subcontractor to fully train their employees to work safely in the tasks assigned to them on the project site and to ensure their completion of OSHA 40-HR HAZWOPER.

Mandatory Lead Awareness Training

Prior to the start of field activities, all Kleinfelder and subcontractor personnel will complete lead awareness training.

Mandatory Tailgate Safety Meetings

During building construction at the site, Kleinfelder will conduct weekly tailgate meetings with subcontractor personnel to review and address safety concerns, warnings, problems or conflicts, and coordination of site activities related to safety and environmental concerns. Tailgate safety meetings will be documented, including the date of the meeting, subject(s) discussed, and signatures of the employees attending each meeting. For ease of scheduling, tailgate meetings will be held on the same day at the same time for the duration of the project.

3.2.2 Contamination Precautions

Potential lead contamination and exposure will be controlled by fugitive dust control and good personal hygiene. Dust control measures are described in the Section 3.3. The subcontractor employees must store food and drink in secure containers, and must store them in protected areas, i.e., the enclosed cabs of vehicles or under various protective covers. Lids on drinks must be kept tightly in place when not being used. All employees must wash hands prior to eating.

If elevated levels of lead are encountered during monitoring (see Section 4) that approach or exceed OSHA thresholds, subcontractor personnel will implement additional protective measures based on mitigatory measures outlined in the OSHA lead standard (29 CFR 1926.62). These additional protective measures may include establishing clothing change areas, designated eating areas, decontamination procedures, etc. In addition, contractors/subcontractors may initiate additional control measures as addressed by their individual HASPs.

3.3 ENGINEERING HAZARD CONTROLS

Engineering controls specific to fugitive dust control are discussed in section 5.2.

3.4 PERSONAL PROTECTIVE EQUIPMENT

3.4.1 Clothing Requirements

All site personnel will be required to wear Level D personal protective equipment (PPE) which includes an approved hardhat, sleeved shirt, long pants, and sturdy shoes or boots. More stringent requirements may be required by subcontractor HASPs. Sleeveless shirts, shorts, sweat pants, tennis shoes, sandals, and other clothing not meeting the basic guidelines above shall not be permitted. ***Contractor/subcontractor employees observed not wearing proper work attire will leave the project until such time as they comply with the project dress requirements.***

3.4.2 Respiratory Protection

Previous monitoring performed at the site has not indicated lead concentrations approaching threshold levels where respirator requirements are necessary (i.e., lead over 0.050 mg/m^3). Additionally, based on the maximum residual concentrations of lead expected to be present in site soils (lead = 2,200 mg/kg), good construction controls on fugitive dust are expected to prevent airborne lead levels from approaching these threshold levels. At a maximum, 0.2% of site soils are made up of lead. Only one-fourth to one-half of these soils are likely to be small enough to inhale (less than 10 micron particle size [USEPA AP 42]). Good dust control practices typically meet OSHA's limit for inhalable dust of 10 mg/m^3. Even if all the soil was small enough to inhale, 10 mg/m^3 dust would contain a maximum of 0.02 mg/m^3 lead. Therefore, it is not anticipated that respirators will be needed at the site, however, air monitoring will be performed by Kleinfelder on a continual basis to verify site exposure conditions (see Section 4).

All subcontractors must have respiratory protection addressed in their individual HASPs. If monitoring results determine that concentrations of lead are approaching

OSHA thresholds, then Kleinfelder will request that subcontractors initiate additional respiratory protection in adherence with their respective HASPs. Subcontractor personnel will be expected to comply with this request in accordance with respiratory protection requirements in their respective HASPs.

3.4.3 Other Equipment

PPE specifically related to specific contractor/subcontractor working conditions (i.e., eye protection, hearing protection, welding protection, fall protection, etc.) should be addressed within contractor/subcontractor HASPs.

4. MONITORING PROGRAM

4.1 MONITORING APPROACH

Kleinfelder will perform monitoring activities to identify potential exposures to lead of all personnel working on the project site. The goal of monitoring is to provide a safe working environment for all personnel on the project site and to reduce the potential for exposures to the neighborhoods surrounding the site. Active fugitive dust control measures will be implemented on the site, which will protect the National Ambient Air Quality Standards (NAAQS) as regulated by EPA. Therefore, monitoring actively will be focused on site personnel safety in accordance with OSHA standards for particulate and lead exposures.

4.2 MONITORING ACTIVITIES

4.2.1 Fence Line Monitoring.

Kleinfelder will perform fence line monitoring to establish if fugitive dust blowing from the site contains levels of airborne lead in exceedance of established thresholds. This measure will verify the efficacy of the fugitive dust control program, as well as define the potential exposure to the surrounding community. The monitoring will be performed using a particulate monitor.

4.2.2 Personnel Monitoring

Monitoring will be performed using sampling equipment meeting OSHA requirements and will use personal pumps which draw a measured volume of air across a filter media. Sampling will be conducted using an approved OSHA or NIOSH test method as practicable. At least one upwind sample will be taken with every set to establish a background level. One field blank will be submitted with each sampling set. Samples will be submitted to a local OSHA-approved laboratory for analysis.

4.2.2 Monitoring Frequency

The frequency of fence-line and personal monitoring will be full-time during site activities.

4.3 REPORTING OF MONITORING RESULTS

4.3.1 Kleinfelder Monitoring Results

Kleinfelder will summarize monitoring results in a final report, unless data indicates immediate need for notification of affected personnel.

5. ENVIRONMENTAL REQUIREMENTS

5.1 ENVIRONMENTAL CONTAMNATION

Hazardous substances such as gasoline, lubricants, solvents, acids, etc., that are brought on site by the subcontractor shall be controlled by proper storage, transfer, and use of such substances on the site, and by prompt cleanup and disposal of any spills or leaks onto the native soils. The subcontractor should avoid potential spills through proper maintenance and inspection of machinery and proper handling of potentially harmful substances.

5.2 DUST CONTROL.

Dust control measures shall be implemented at all times when subcontractor personnel are working on the site. Based on the size of the proposed excavation, a dust control plan is not required by the Washoe County District Health Department Air Quality Management District.

Dust control measures will include the following:

- Water truck present onsite exclusively for dust control purposes during all potentially dust generating activities;
- Cover all stockpiled soil;
- Limit vehicle traffic to paved surfaces where possible, and limit vehicle speed to 5 miles per hour.


E 9th St
E 8th St
E 7th St
E 6th St
E 5th St
E 4th St
Trident Way
Morrill Ave
Quincy St
Sutro St
Montello St
Spokane St
Toano St
Sage St
Line Dr
Depaoli St
Tacchino St
Field St
E St
D St
View St
El Rancho Dr
Victorian Ave
Fenian St
Barnett Way
Galletti Way
N Kietzke Ln
N Wells Ave
North St
Kuenzli St
Giroux St
Sunshine Ln
Colony Rd
Jensen St
E 2nd St
Manuel St
S Kietzke Ln
Golden Ln
Reservation Rd
Locust St
Kirman Ave
Washoe
Medical Center
Lewis St
Maine St
Gould St
S Wells Ave
Mill St
Willow St
Pickett
Park
Ryland St
Prosperity St
Curti Dr
Yori Ave
Stewart
Park
Stewart St
Ballentyne Way
Dayton Way
Moran St
Wilson Ave
Roberts St
Market St
Thoma St
Edelweiss St
Helvetia St
Wilkinson Ave
Lester Ave
Wilkinson
Park
Cheney St
Automotive Way
Greg St
Taylor St
E Taylor St
Cordone Ave
Melrose
Belli Dr
Bates Ave
Belgrave
395
80
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Appendix C

Air Sampling Protocol

Proposed Wal-Mart Site - Air Sampling Protocol

This Air Sampling Protocol should be read and understood by any personnel performing air sampling in accordance with the Site Health and Safety Plan (HASP) prepared for this project.

SECTION 1: SAMPLING EQUIPMENT, PREPARATION, AND CALIBRATION PROCEDURES

A. Equipment

- Personal sampling pump(s);
- Pump battery charger;
- Electronic bubble-flow calibrator;
- Soap bubble container/dispenser;
- Mini screwdriver set;
- Lapel cassette holder;
- Assorted tubing and connectors;
- Duct tape, baling wire, bungee cords;
- Tripod, T-posts, or similar sampling platform (as needed); and
- Flagging tape, visual barrier material.

B. Sampling Media

- 0.8µ mixed-cellulose ester (MCE) cassette filter, pre-tared with unique serial number.

C. Forms & Paperwork

- Daily Air and Water Quality Monitoring Summary;
- Air Monitoring Calibration and Sampling Log; and
- Kleinfelder Chain of Custody Form.

D. Calibration Procedure

Pre-test Procedure

1. Fill calibrator chamber with soap solution to indicator line.

2. Attach pump to be calibrated. Pump line should lead to calibration blank cassette, after which it is attached to the calibrator overflow chamber.

3. Turn on calibrator and sampling pump.

4. Initiate soap bubble travel up the calibration tube. Note the flow reading on the digital readout of the calibrator. Adjust pump to desired range with

mini screwdriver. <u>Note: the flow rate target range for this project should be approximately **1.5l/min**.</u>

5. Record on the Calibration Log sheet at least three consecutive readings that agree within 0.10 liters with each other. Average the three readings for the final pre-test calibration number. Record this data on Calibration and Sampling log sheet.

   Example: *Three readings = 1.64, 1.58, 1.57. They agree to within 0.10 l/min with each other. Average is 1.59 l/min.*

Post-test Procedure

1. Repeat steps 1-5 above, but ***do not*** adjust pump flow rate with mini screwdriver as specified in step 4; rather, record three readings of the pump without adjustment. Record data on the log sheet as appropriate.

2. *Time-saving tip:* Post-test flow rates will usually be similar to the initial flow rates. If flow rates are near the target range of 1.5 l/min, time may be saved by using post-test calibration numbers as pre-test calibration numbers for the next sampling event for the specific pump being calibrated.

SECTION 2: SAMPLING PROCEDURE

A. General Information

1. Sampling will be conducted for the following analytes by the corresponding method:

   a. Lead - NIOSH Method 7300; and
   c. Total particulate - NIOSH Method 0500.

2. The *minimum* sample volume required for these analyses is 50 liters, and the *maximum* is 2,000 liters. At approximately 1.5 liters per minute, the absolute minimum sampling time required is 34 minutes. However, the initial target goal for this project is to obtain 350–720 liters per sample, or approximately 4.5 to 8.0 hours. This target may be refined as necessary based on sampling results and practicality.

3. Detailed field notes of sampling events are to be recorded on the Daily Air and Water Quality Monitoring Summary logsheet. Notes specific to perimeter monitoring vs. health and safety sampling are included in the appropriate sections below; however, general information that should be recorded includes:

   - Meteorological conditions;

- Reasons for sampling at the chosen location or on the chosen individual(s);
- Clock time of when sample was started and stopped; and
- Any anomalies that may have affected the sample, i.e., tampering with the sample, pump mechanical problems, wet weather, etc.

4. Sample Nomenclature. Sample IDs should be derived as follows:

   a. Personal Samples

   PS – JDB – 082602 - 01

   Where: PS = personal sample,
   JDB = initials of sampling subject,
   082602 = date,
   01 = sample number (in case the same individual is sampled more than once in one day).

   b. Perimeter Samples

   PM - N1 - 082602 – 01

   Where PM = perimeter monitoring,
   N = compass side of site (i.e., 'north'),
   01 = sampler subsite,
   082602 = date.

5. Samples are extremely stable and do not have hold times. Samples should be submitted to the laboratory on a timely basis.

B. Health & Safety Monitoring

1. All workers performing soil remediation tasks will use personal sampling pumps.
2. Set up sampling pump with sampling cassette in-line. Record cassette serial number and Kleinfelder sample number on Sampling Log.
3. Hook sampling pump onto belt and clip cassette holder to the subject's shirt collar. Run connecting tubing under arm and duct tape to subjects clothing for greater comfort.
4. Start sampling pump, noting clock time.

5. Instruct the subject not to tamper, turn off, or otherwise change work habits in any fashion that will affect sample. Remind him/her to leave the sample inlet near his/her breathing area. If the subject is leaving the site for lunch, make arrangements for him/her to remove and re-attach equipment (use standby mode) before and after lunch. If subject eats lunch on the site, the pump may be left attached and running.

6. Following the end of sampling period, note the elapsed time on the digital display of the pump _before_ turning pump off. Note ending clock time.

7. Recover sampling cassette and place plastic plugs in each end. Avoid excessive jostling or impacts to cassette so material will not get knocked off of filter surface. Clearly mark sample ID on cassette with a permanent marker, being careful not to obscure the cassette serial number. Place in clean Ziploc bag with other samples.

C. Perimeter Monitoring

The concept behind perimeter sampling is to protect those who may be near the perimeter of the site, such as someone walking on the sidewalk. Sample collection and analyses are performed with the same equipment and methods as described above. Perimeter monitoring may also be useful in determining the efficacy of the fugitive dust control being performed on site; however, this is not the primary intent of the monitoring. Remember that our air quality plan for the site is based on dust control and opacity observation, not sampling results. Keeping the dust controlled is of primary importance throughout the project.

1. Siting Concerns. For this project, the perimeter bordering East 2nd Street will be considered the most critical monitoring area. Specifically, the site perimeter along East 2nd Street adjacent to 2453 East 2nd Street will be monitored.

2. Attach pump to appropriate sampling location (i.e., pole, tree, sign, fence, T-post, tripod, etc.) using secure means. Cassette lapel holder clips are not necessary for this type of sampling event. If the sampling site is near construction activity, visibly mark the sampling area with flagging tape, traffic cones, antenna with flag, or other means to ensure that equipment operators do not destroy the sampler. Pump security should also be considered: make sure that pumps near or on fences are not targets for larcenous individuals who may be walking on the sidewalks. Remember that the inlet tube must be in the area of general breathing height, approximately 4–6 feet from the ground.

3. Carefully note meteorological conditions that exist at the start and end of sampling, to include:

a. Wind speed and direction. Note if wind speed and direction change during the test. Typical wind patterns involve the wind blowing from the west. If the constant wind direction reverses or shifts dramatically during the test, note the time of change and consider your sample volume. If you have a reasonably good sample volume, it is prudent to end the test.

b. Precipitation events. Precipitation events are especially important if they occur during the test event. It is not necessary to stop the test during wet weather unless the pumps will be damaged. Prevent this by covering the pump with a plastic bag (leaving the inlet tube exposed) if weather threatens.

c. Temperature. Record the temperature average during the sampling event.

4. Documentation. Maintain adequate field notes that describe sampling locations and any unusual site conditions, i.e., dust drifting onto the site from adjacent sites, dust controls on the site which are and are not being implemented, etc. Clearly illustrate on the site map where sampling equipment is located, including the sample ID of each location. Also, include wind vectors, date, and any other information you think may be important.

D. Analyses of Samples.

1. A Kleinfelder chain-of-custody form must be completed by the person performing the sampling event. The chain-of-custody form must include:

   a. Kleinfelder mailing address,

   b. Project Manager name and phone number,

   c. Site address,

   d. Kleinfelder Sample ID,

   e. Cassette serial number,

   f. Analytical methods requested (i.e., NIOSH 7300), and

   g. The total volume of air drawn for <u>each</u> sample. Completing the Air Monitoring Calibration and Sampling Log will provide this information.

   h. Samples should be submitted for normal turn-around time (TAT). Do not rush samples unless directed by Project Manager.

SECTION 3: QUALITY ASSURANCE

1. Documentation. Both personal and perimeter sampling must be documented on the field forms mentioned above. Additionally, a site map must be illustrated for all perimeter sampling events. Adequate notes should be maintained in order to reconstruct sampling conditions, if this should become necessary.

2. <u>Trip Blanks.</u> At least one trip blank should be obtained for each sampling event. Trip blanks must be carried and stored with all sampling media on the site. Trip blanks <u>should not</u> be submitted for analysis unless directed by the Project Manager; the Project Manager will ensure that approximately one trip blank is submitted for every five sampling events. Trip blanks should be given an appropriate sample ID number, logged, and archived onsite for the duration of the construction period.

3. <u>Field Blanks.</u> Field blanks will not be obtained for this sampling program as meaningful information will not be obtained since lead, and particulate concentrations are expected to be observed in every sample submitted.

4. <u>Calibrations.</u> Sampling pumps will be calibrated prior to and after each sampling event. Pre- and post-test flow averages will be combined to determine the flow rate for the test event.

5. <u>Invalidation of Sampling.</u> The Project Manager may, upon his discretion, invalidate any sampling or test results based on, but not limited to, the following conditions:

   a. The sample or pump has been tampered with or the sample has intentionally been biased;

   b. The sampling volumes are not sufficient to comply with the NIOSH analytical methods;

   c. Improper or non-calibration of sampling pumps prior to and after a sampling event;

   d. If pre-test and post-test pump calibrations differ by greater than 25 percent, indicating potential sample bias;

   e. Fenceline sampling pumps are moved from their original sited locations;

   f. Poor documentation of the sampling event where confidence in procedure is lost; or

   g. Any type of event that is deemed a violation of the approved Air Sampling Protocol.