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**SUMMARY OF GEOTECHNICAL SERVICES
FOR THE
PROPOSED ROUTE 24/580/980 INTERCHANGE IMPROVEMENT
IN OAKLAND, CALIFORNIA**

Prepared by

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Kleinfelder, Inc.**

Prepared for

**State of California
Department of Transportation
Division of Structures**

Under Contract to

**Lawrence Livermore National Laboratory
University of California
Livermore, California**

February 1996

MASTER

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November 20, 1995
File: 10-3001-93

University of California
Lawrence Livermore National Laboratory
P.O. Box 808, L-224
Livermore, CA 94551

Attention: Mr. Bob Murray

**SUBJECT: Summary of Geotechnical Services for the Proposed Route 24/580/980
Interchange Improvement, in Oakland, California**

Dear Mr. Murray:

This letter report presents a summary of our geotechnical services in connection with the proposed Route 24/580/980 Interchange Improvement in Oakland, California. Our work was coordinated by Mr. Bob Murray of Lawrence Livermore National Laboratory, and by Mr. Mike Marquez and Mrs. Rosalie Wu of CALTRANS.

The purpose of our work was to provide drilling equipment and personnel to log test borings, collect soils samples, testing of excess soil cutting for environmental concerns and disposal of excess soils cutting.

PROJECT UNDERSTANDING

The Lawrence Livermore National Laboratory is involved in assisting CALTRANS with a study of the proposed improvement to the interchange for Route 24/580/980 in Oakland, California. The purpose of this phase of the project is to evaluate the subsurface conditions by drilling test borings, collecting soil samples for characterization and laboratory testings, and to perform in-situ shear wave velocity measurements.

GEOLOGY

Based on available geological information in the general vicinity of the project site, the area is underlain by older alluvial deposits which includes weakly consolidated silt sand and gravel. The maximum thickness of the alluvial deposits is unknown but is estimated to be at least several hundred feet thick. At some areas this older alluvial is overlapped by younger deposits or incised by channels that are partially filled with younger deposits.

EXISTING SITE CONDITIONS

The project site is that of the existing Route 24/580/980 Interchange located in Oakland, California. The proposed project site in general is sloping from southwest to northeast and is part of older and highly developed area of the City of Oakland. The general project site is occupied by existing Route 24/580/980 Separation structures, commercial and residential buildings, city streets, parking lots, curbs, gutters, and landscaping. Elevations of the project site vary approximately from +50 to +65 feet (Mean Sea Level).

SCOPE OF WORK

As outlined in our proposal dated August 9, 1995 and the Addendum dated September 19, 1995, our services for this phase included project management and coordination, drilling seven exploratory borings to a depth of about 200 feet below the ground surface, soil sampling, soil logging, grouting the bore holes, environmental laboratory testing of the soil cuttings, and disposal of excess soil cuttings.

FIELD EXPLORATION

A field investigation was conducted from September 7 through September 26, 1995. The field work consisted of drilling 7 borings (B-1 through B-7) at the approximate locations shown on the Boring Location Map provided by CALTRANS. These borings extended to approximately 200 feet below the ground surface. Boring B-7 was originally planned to extend to a depth of approximately 420 feet below the ground surface, but its depth was changed to 200 feet during the course of our work per your request.

All of the test borings (B-1 through B-7) were drilled using rotary wash drilling method with a Failing Holmaster drill rig. Pitcher Drilling Company of Palo Alto, California, was subcontracted to drill the soil borings. CALTRANS personnel specified the boring locations, boring depths, and sampling intervals. Kleinfelder personnel coordinated the field work and observed the drilling operations. The borings were logged by our field engineer on a full-time basis.

Disturbed soil samples were taken at the direction of the field engineer during drilling.

Disturbed soil samples were obtained from the borings using a 2-inch outside-diameter and 1-3/8-inch inside diameter split-spoon sampler driven as described for the Standard Penetration Test (SPT), ASTM Standard D 1586. The SPT sampler was driven using a 140-pound hammer falling 30 inches, and blow counts for successive 6-inch penetration intervals were recorded.

Soil classifications were made in the field from auger cuttings and samples in accordance with the Unified Soil Classification System. Consistency classifications of soil samples were made in accordance with CALTRANS log of test borings (LOTB) sheet.

With the exception of boring B-4 which was located on a city street all borings were located within CALTRANS right-of-way. Prior to the start of drilling, Underground Services Alert (USA) was contacted to clear the boring locations for existing utilities. To drill boring B-4, an encroachment permit was obtained by CALTRANS from the City of Oakland. Upon completion of drilling, all bore holes were grouted with neat cement and patched with asphaltic material where necessary.

Excess soil cuttings and drilling mud were placed in 55-gallon steel drums, which were then sealed and labeled and left in the area until the results of the environmental laboratory tests were obtained.

- The groundwater table could not be measured at the location of the borings due to mud rotary wash method used for drilling.

Sample descriptions, blow counts recorded during SPT sampling, and other related information were recorded on the soil boring logs. These logs (B-1 through B-7), are presented in Appendix A to this letter report.

DISPOSAL OF SOILS CUTTING AND LABORATORY TESTING

Samples of soil cuttings and mud were obtained from the sealed drums by Kleinfelder personnel for testing for the presence of ICP metals (Cadmium, Chromium, Lead, Nickel and Zinc) (Method EPA 6010), TPH as Diesel and Motor Oil (Method 3515/M8015), TPH as Gasoline (Method 5030/M8015), TRPH for Oil and Grease (Method 5520C/E/F), Volatile Organics (Method 8260) and Semi Volatile (Method 8270). These tests were selected since they are required by the Altamont Landfill for disposal. NET environmental laboratory of Santa Rosa, California was subcontracted to test these samples. The result of these tests are presented as Appendix B to this letter report.

Based on the results of the laboratory tests the soil and drilling mud was acceptable to the Altamont Landfill. Caballero Trucking Company of San Jose, California was subcontracted to remove and dispose the excess soils cutting and drilling mud at the Altamont Landfill on November 15, 1995.

We hope the above is suitable for your needs. We appreciate the opportunity of providing geotechnical engineering services to you on this project. If you should have any questions or require additional information, please contact us.

Sincerely,

KLEINFELDER, INC.

Amir Tabatabaie, Ph.D.
Project Engineer

Michael Majchrzak, C.E., G.E.
Senior Geotechnical Engineer

AT/MM/mjt

Plate 1 - Test Boring Location (Rev. 9-7-95)
Appendix A - Field Boring Logs
Appendix B - Results of Laboratory Tests

cc: Barbara Larsen - Lawrence Livermore National Laboratory
Mike Marquez - CALTRANS DOS

transmittal

Date February 1, 1996

File 10-3001-93/GEO

Copies 1

To Mr. Bob Murry

Lawrence Livermore National Lab.

P.O. Box 808, L-224

Livermore, CA 94551

Subject Geotechnical Field Investigation, Route 24/580/980 Interchange Improvement

We are sending

☒ Attached

☐ Under Separate Cover

The following: A copy of drafted boring logs as requested by Caltrans for the field investigation performed for the subject project.

Via:

- ☐ Messenger
- ☐ First Class Mail
- ☐ Air
- ☐ Express
- ☐ United Parcel
- ☐ Air Freight
- ☐ Transbox
- ☐ _____

Transmitted:

- ☒ As Requested
- ☐ For Approval
- ☒ For Your Use
- ☐ For Review & Comment

Remarks

By

Amir Tabatabaie, Ph.D.
Project Engineer

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		LTR	ID	DESCRIPTION	MAJOR DIVISIONS		LTR	ID	DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	G W		Well-graded gravels or gravel sand mixtures, little or no fines.	FINE GRAINED SOILS	SILTS AND CLAYS LL < 50	M L		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		G P		Poorly-graded gravels or gravel sand mixture, little or no fines.			C L		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		G M		Silty gravels, gravel-sand-silt mixtures.			O L		Organic silts and organic silt-clays of low plasticity.
		G C		Clayey gravels, gravel-sand-clay mixtures.					
	SAND AND SANDY SOILS	S W		Well-graded sands or gravelly sands, little or no fines.	SOILS	SILTS AND CLAYS LL > 50	M H		Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts.
		S P		Poorly-graded sands or gravelly sands, little or no fines.			C H		Inorganic clays of high plasticity, fat clays.
		S M		Silty sands, sand, and silt mixtures.			O H		Organic clays of medium to high plasticity.
		S C		Clayey sands, and clay mixtures.					
				HIGHLY ORGANIC SOILS	P t		Peat and other highly organic soils.

Standard Penetration Split Spoon Sampler, 2.0 inch O.D., 1.4 inch I.D.

Modified California Sampler, 2.5 inch O.D., 2.0 inch I.D.

Shelby Tube Sampler, 3.0 inch I.D.

No Recovery

Approximate water level first observed in boring

Approximate water level observed in boring following drilling

Pen = Pocket penetrometer reading, in tsf

TV:Su = Torvane shear strength, in tsf

NOTES: Blow counts represent the number of blows of a 140-pound hammer falling 30 inches required to drive a sampler through the last 12 inches of an 18-inch penetration, unless otherwise noted.

The lines separating strata on the logs represent approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

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BORING LOG LEGEND
24/580/980 Interchange
Oakland, California

PLATE

A-1

PROJECT NO. 10-3001-93 1/96

Date Completed: 9/18/95

Sampler: Standard Split Spoon Sampler - 2.0 in. O.D.
1.4 in. I.D.

Logged By: A. Argyriou

Total Depth: 201.5 ft

Hammer Wt: 140 lbs., 30" drop

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other	Tests		
									Surface Elevation: Estimated feet (MSLD)
		27							Very stiff dark brown silty clay (CL-CH), medium to high plasticity, trace fine sand, occasionally gravelly, dry to damp (very dark brown when wet)
5		35							Olive brown with yellowish red and black staining at root holes (CL), fine sandy (<10%) clay with occasional gravel, medium plasticity, damp to moist
									Olive yellow with reddish yellow sandy clay (CL), sand fine with some medium and coarse
10		30							Dense brownish yellow gravelly sand with silt (10%) (SP-SM), sand is coarse to fine, gravel is fine, coarse particles angular and subangular with some rounded, silt is slightly clayey, low plasticity -transitions to more clayey at 8 feet
15		13							Compact yellowish brown clayey (25%) sand with gravel (5-10%), sand fine to coarse, angular to subrounded, gravel to 1 inch, clay low to medium plasticity, moist
20		37							Stiff varicolored fine (30%) to coarse (5%) sandy clay with trace (<5%) gravel (CL), medium plasticity, moist to wet -intermittent chatter, 1/2 feet thick zones -gravel to 1 inch at 18 feet
25		11							Dense yellowish brown slightly silty (10%) fine to coarse sand with occasional gravel (SP-SM), sand and gravel angular to subangular, silt low plasticity, moist to wet -less gravelly at 23 feet
									Yellowish brown slightly silty (10%) sand and gravel, sand fine to coarse (SP-SM), gravel to 1 inch, silt low plasticity, moist to wet
30		33							Varved gray and reddish yellow silty clay (CL-CH), medium to high plasticity, moist -more clayey at 27.5 feet
									Light olive reddish yellow and dark brown fine sandy (10%) clay (CL), medium plasticity, very dark brown nodules (1mm), moist to wet
35									Brown clayey (15-20%) sand and gravel, fine

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PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-1

24/580/980 Interchange
Oakland, California

PLATE

A-2

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								(Continued from previous plate)
		20						-sample may be contaminated with slough, blow count may be invalid
80		23						Brown silty clay with trace fine sand (CL), medium plasticity -easier drilling Very stiff mottled brownish yellow and light gray slightly sandy (10%) silty clay with black decayed vegetable matter (CL), medium plasticity, moist
85		21						Very stiff brownish yellow with light gray mottling silty clay (CL-CH), medium to high plasticity, moist
90		21						Grayish green silty clay (CL), medium plasticity, moist Very stiff dark grayish brown fine sandy (40%) silt (ML), low to medium plasticity, moist to wet
95		36						Very stiff olive gray fine sandy (15%) silty clay (CL), medium plasticity, damp
100		19						Stiff mottled olive and gray fine sandy (10-25%) silty clay (CL), medium plasticity, damp to moist -drilling varies
110		44						Dense reddish yellow to olive yellow fine to medium sand with trace silt (5%) (SP-SM)

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PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-1

**24/580/980 Interchange
Oakland, California**

PLATE

A-4

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests			
									(Continued from previous plate)
									-brown clay lens at 115 to 116 feet
									-brown clay lens at 118 to 118.5 feet
120	87								Sandy Clay Very hard light brownish gray fine sandy, (30%) silt (ML), low plasticity, with interbeds of very dense slightly (10%) silty coarse to fine sand (SP-SM), light brownish gray -yellow brown
125									Grayish green silty clay (CL)
130	38								Hard green with gray green mottling fine sandy clay with medium to coarse sand, and fine gravel (5-10%) (CL), veins of brownish gray cementation and decayed vegetation matter, medium plasticity, damp -sandy at 133 to 136 feet
135									
140	36								Hard green silty clay with trace veins of weakly cemented fine sand (CL/CH), medium to high plasticity, damp to moist
145									-sandy, easier drilling at 148 feet
150	30								Very stiff interlayered green to olive medium plasticity silty clay (CL/CH) with veins of cemented fine sand and light olive brown medium to high plasticity silty clay with trace (~5%) fine sand and cemented nodules

KLEINFELDER	LOG OF BORING NO. B-1	PLATE
PROJECT NO. 10-3001-93 1/96	24/580/980 Interchange Oakland, California	A-5

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other	Tests		(Continued from previous plate)	
160	33									Very stiff olive green silty clay (CL/CH), medium to high plasticity, damp -drilling varies with depth
165										
170	65/9									Very dense olive moderate cemented clayey (20%) gravelly sand (SC), sand is fine to coarse some highly cemented nodules -rough drilling at 172 feet
175										-smoother drilling, very stiff
180	91									Very hard brown to dark brown silty clay with trace (<5%) nodules of yellow and red-yellow sandy clay (CL) to 2 mm size, medium plasticity, damp. Intermixed with silty fine to coarse sand at top of sample
185										-easier drilling
190	44									Hard olive green clay (CL/CH), medium to high plasticity with 30% pale green to white caliche, clay is damp, caliche dry, occasional slickensides
KLEINFELDER									LOG OF BORING NO. B-1	
PROJECT NO. 10-3001-93 1/96									24/580/980 Interchange Oakland, California	
									PLATE A-6	

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		(Continued from previous plate)	
200	61
205									Hard dark grayish brown silty clay (ML), medium plasticity, damp to moist, intermixed with light gray cemented sand/Caliche (20-40%)
210									End of Boring Groundwater obscured by drilling method Boring backfilled with neat cement grout
215									
220									
225									
230

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PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-1

**24/580/980 Interchange
Oakland, California**

PLATE

A-7

Date Completed: 9/8/95

Logged By: A. Argyriou

Total Depth: 201.5 ft

Sampler: Standard Split Spoon Sampler - 2.0 in. O.D.
1.4 in. I.D.

Hammer Wt: 140 lbs., 30" drop

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other	Tests		
									Surface Elevation: Estimated feet (MSLD)
5	12								Stiff medium brown with dark brown and yellow brown mottling clay with trace very fine sand (CL/CH), dry to damp, medium to high plasticity, trace roots -less dark brown, more yellow brown at 2.5 feet
	27								Very stiff yellow to yellow brown sandy clay with occasional gravel (CL/CH), moist -grades to fine sand with some clay (SC) at 6.5 feet, moist -gravelly
10	15								Stiff gray clay (CH) with veins of red brown very fine sandy clay and occasional gravel (5-10%), clay is high plasticity, moist -grades with 15% very fine sand
15	12								Stiff yellow brown with gray veining silty, fine sandy (40%) clay (CH), high plasticity, moist -grades more gray, more sandy
20	28								-drilling mud came out at surface, casing installed after sample #5 to 20 feet depth Very stiff gray with brown veining fine sandy (20%) clay (CH) grading to compact gray clayey fine sand (SP/SC), clay is medium to high plasticity, sample damp to moist -gravelly at 23 feet
25	17								Interbedded stiff gray with 20% brown fine sandy (20%) clay and slightly compact gray with 20% brown clayey (20%) fine sand (SC/CL), clay is medium to high plasticity, moist
30	26								Compact yellowish brown slightly silty (10%) (SP-SM) fine to medium grained sand, moist -gravelly at 33 feet
35

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PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-2

24/580/980 Interchange
Oakland, California

PLATE

A-8

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests			
		38							(Continued from previous plate)
									Dense yellowish brown slightly (10%) silty fine to medium grained sand (SP-SM), grading with more medium to coarse sand at bottom -irregular drilling, indicative of interbedding with clayey soil at 37 feet
40		16							Stiff varved light brownish gray with ~15% yellowish brown silty clay (CL/CH), medium to high plasticity, moist
45		15							Stiff light brownish gray fine sandy (10-20%) clay (CL/CH), medium to high plasticity, moist
50		52							Dense yellowish brown fine to medium (10-20%) sand with trace (5%) silt (SP) -drilling indicates interbedding of sandy and clayey layers
55		25							Very stiff pale olive with olive and yellowish red veins (5-20%) fine sandy (20%) silty clay (CL), medium plasticity, damp to moist
60		45							-gravelly Dense pale olive gravelly (30%) clayey (10%) fine to coarse sand (SW-SC), moist, clay is medium to high plasticity Hard pale olive gray silty (20%) very fine to fine sand (SM), medium plasticity, damp
65		80							Very dense brown, olive gray and red brown gravelly (10%) clayey (15%) fine to coarse sand, clay is medium to high plasticity, sand and gravel subangular to subrounded Sandy clay (CL)
70		29							Very stiff light olive gray clay with fine (10%) and medium (1%) sand (CL), medium to high plasticity, moist to wet

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PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-2

**24/580/980 Interchange
Oakland, California**

PLATE

A-9

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								(Continued from previous plate)
30		30						Very stiff olive gray silty clay (CL-CH), medium to high plasticity, damp, pale olive mottling at top, trace fine sand at bottom
80		58						Dense green fine sand (70%) with clay (SC), medium plasticity, trace fine gravel, damp
85		27						Very stiff green silty clay with trace (<5%) very fine sand (CH), high plasticity, moist -trace (<5%) veins of pale olive clay <2mm wide
90		29						Very stiff green silty clay with trace (<5%) very fine sand (CH), high plasticity, moist
95		25						Very stiff light grayish green with pale olive and green mottling clay with trace (<5%) fine and medium sand (CH), high plasticity, moist -sandy
100		44						Hard mottled green olive and pale green silty clay with trace fine and medium sand (SM), high plasticity, moist, rock in shoe, sample very disturbed
105								Green silty clay with interbedded with sandy clay and gravelly clay zones
110		48						Olive green and dark red sandy (30%) clay with gravel (10%), medium plasticity, sand fine to coarse
								Hard olive gray to green silty clay with trace (5-10%) fine to medium sand (CL/CH), high plasticity, moist, intermixing of pale greenish white sandy (20%) clay, medium plasticity at

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PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-2

24/580/980 Interchange
Oakland, California

PLATE

A-10

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								(Continued from previous plate)
200	44							clay with trace (<5%) fine gravel (CH), high plasticity, moist
205								Light green very silty clay (CL/MH) with trace fine sandy (<5%), medium to high plasticity, damp to moist End of Boring Groundwater obscured by drilling method. Backfilled with neat cement grout.
210								
215								
220								
225								
230

KLEINFELDER	LOG OF BORING NO. B-2	PLATE
	24/580/980 Interchange Oakland, California	A-13
PROJECT NO. 10-3001-93 1/96		

Date Completed: 9/12/95

Logged By: A. Argyriou

Total Depth: 201.5 ft

Sampler: Standard Split Spoon Sampler - 2.0 in. O.D.
1.4 in. I.D.

Hammer Wt: 140 lbs., 30" drop

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other	Tests		
									Surface Elevation: Estimated feet (MSLD)
	13								Stiff yellow brown sandy (20%) gravelly (5%) silt (ML), low plasticity, coarse to fine sand, fine gravel, some roots, dry (FILL)
5	18								Dark brown coarse and fine sandy (10-15%) clay (CH), high plasticity, dry (FILL) Stiff light brownish gray fine gravelly (25%) sandy (15%) clay (CH), high plasticity, coarse to medium sand, dry to damp (FILL)
10	14								Light brownish gray silty clay with trace (<5%) fine sand (CH), high plasticity, moist Coarse and medium sand and fine gravel at 7.5 - 9 feet (FILL)
15	19								Stiff mottled gray and reddish yellow fine sandy (5-15%) clay (CH/CL), medium to high plasticity, moist (FILL?) -sandier at 13 feet
20	8								Stiff mottled gray and reddish yellow silty clay (CL/CH), medium to high plasticity (FILL?)
25	9								Soft mottled gray and reddish yellow silty clay with trace fine sand (CL/CH), medium to high plasticity, moist (FILL?)
30	11								Soft mottled gray and reddish yellow silty clay with trace (<5%) fine sand (CL/CH), medium to high plasticity, moist to wet -some sand and gravel in clay
35									Stiff mottled gray and reddish yellow silty clay with increasing amount of fine sand (5%-15%) (CL/CH), medium to high plasticity, moist

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LOG OF BORING NO. B-3

PLATE

24/580/980 Interchange
Oakland, California

A-14

PROJECT NO. 10-3001-93 1/96

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
7		7						Soft dark gray (N 4/0) silty clay with trace fine sand (<3%) (ML), high plasticity, moist to wet
40		16						-stiffer greenish gray clay, harder drilling, slightly sandy Stiff gray/green with olive mottling (5-10%) silty clay (CH), high plasticity, moist
45		5						Soft gray with green mottling (5-10%) silty clay (CH), high plasticity with trace black speckling and roots, moist
50		7						Soft dark greenish gray silty clay with trace (<5%) fine sand (CH), roots, high plasticity, moist -with gravel and coarse sand at 52 feet
55		10						Stiff dark grayish green sandy (20%) silty clay (CH), high plasticity, moist -less sandy -more sandy
60		12						Stiff grayish green sandy (30%) silty clay (CH/CL), medium to high plasticity, moist Coarse sand and fine gravel present 62 to 63 feet
65		13						Stiff grayish green sandy (40%) clay (CL/CH), medium plasticity, moist to wet
70		54						Gravel present 69.5 feet Dense dark green clayey (20%) gravel and fine to coarse sand (GC), clay is medium plasticity -less gravelly

KLEINFELDER	LOG OF BORING NO. B-3	PLATE
PROJECT NO. 10-3001-93 1/96	24/580/980 Interchange Oakland, California	A-15

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		(Continued from previous plate)
76.5	27							Very stiff green with olive mottling silty clay (CH/CL), medium to high plasticity, damp to moist -green, sandy at 76.5 feet
80	20							Very stiff green silty clay (CH/CL), medium to high plasticity, moist
85	36							Hard green silty clay with ~20% fine to coarse sand (CL), medium plasticity, damp
90	26							Very stiff grayish green silty clay with ~15-25% fine to medium sand (CL/CH), medium to high plasticity, moist to wet
95	29							-less sandy (10-20%), moist
100	34							-as above
110	33							Very stiff dark green with olive mottling silty clay with trace sand (5-10%) (CL/CH), medium to high plasticity, damp to moist -drilling slowed at 112 feet

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PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-3

**24/580/980 Interchange
Oakland, California**

PLATE

A-16

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		(Continued from previous plate)	
120	63							-color changes to light grayish brown	
125								Hard olive brown clay with 10% sand (coarse to fine grained) and extensive (30-50%) zones of pale brown cementation (weakly cemented) (CL), medium plasticity, moist	
130	37							-gravelly at 127 feet	
135								Hard olive brown to brown clay with ~10% sand (medium to fine grained) with extensive (30%-50%) zones of very pale brown cementation (CL), medium plasticity, moist	
140	80							-easier drilling	
145								-gravelly	
150	67							-as at 130 feet, with some coarse sand and fine gravel	
								-stiff drilling, faster	
								-slower drilling, occasional chatter	
								Hard olive brown to brown clay with nodules of varicolored clayey sand and 15% gravel (CL), medium plasticity, moist
KLEINFELDER								LOG OF BORING NO. B-3	
PROJECT NO. 10-3001-93 1/96								24/580/980 Interchange Oakland, California	
								PLATE A-17	

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION (Continued from previous plate)
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests			
200		43							-as at 190, except hard with interbedding of green with olive mottling silty clay (CL/CH), high plasticity, moist End of Boring Groundwater obscured by drilling method Boring backfilled with cement grout
205									
210									
215									
220									
225									
230

KLEINFELDER

LOG OF BORING NO. B-3

PLATE

PROJECT NO. 10-3001-93 1/96

**24/580/980 Interchange
Oakland, California**

A-19

Date Completed: 9/26/95

Sampler: Standard Split Spoon Sampler - 2.0 in. O.D.
1.4 in. I.D.

Logged By: A. Argyriou

Total Depth: 201.5 ft

Hammer Wt: 140 lbs., 30" drop

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other	Tests		
									Surface Elevation: Estimated feet (MSLD)
									Approximately 5 inches asphaltic concrete
									Approximately 9 inches gray brown aggregate base
5	68								Yellowish brown sandy silty clay (CL), medium plasticity, dry -moist, less silty at 2.5 feet -dry, siltier at 4 feet Hard yellowish brown sandy silty clay (CL), dry to damp
10	12								Stiff dark yellowish brown fine sandy (10%) silty clay (CL), medium plasticity, moist to wet, occasional inclusions of coarse sand and fine gravel
15	20								Sand and gravel Brown clayey (10%) gravel and coarse sand (SC), wet
									Yellow brown sandy (fine) clay (CL), low to medium plasticity, moist
20	12								Variable sand silt and clay (ML) Stiff reddish yellow fine sandy (10%) clayey silt (ML), low plasticity, moist, occasional coarse sand -variable clay, silt and sand
25	18								Stiff reddish yellow and yellow fine sandy (20%) clayey silt (ML), low plasticity, moist to wet, frequent thin sand lenses -variable clay, silt and sand
30	22								Compact pale brown fine to coarse sand with trace (~5%) silt (SP) -coarser with subrounded gravel to 3/4 inch
35

KLEINFELDER

LOG OF BORING NO. B-4

PLATE

24/580/980 Interchange
Oakland, California

A-20

PROJECT NO. 10-3001-93 1/96

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	(Continued from previous plate)			
		44							Dense varicolored clayey and weakly cemented sand and gravel (SC), clay content variable 15-35% occasional zones of weakly cemented fine sand, wet	
40		17							Clay/silt (ML) Stiff brownish yellow and light gray clayey silt with trace (<2%) fine sand (ML), low to medium plasticity, moist	
45		24							-sample apparently in slough	
									Sandy clay (CL) -smoother drilling	
50		18							Very stiff gray clay (CL/CH), medium to high plasticity, moist -easier drilling	
55		22							Very stiff pale olive silty clay with variable (0-10%) fine sand (CL), low to medium plasticity, damp to moist	
60		21							Very stiff mottled light gray and reddish yellow fine sandy (20%) clay (CL), medium plasticity, trace coarse sand at tip, moist -drilling more sandy	
65		50							Dense brown to dark brown slightly silty (5-10%) fine sand with beds containing medium and coarse sand and fine gravel (SP-SM)	
70		23							Clayey Very stiff olive with black veining silty clay with trace fine to coarse sand (CL/CH), medium to high plasticity, occasional siltier zones, moist

KLEINFELDER	LOG OF BORING NO. B-4	PLATE
	24/580/980 Interchange Oakland, California	A-21
PROJECT NO. 10-3001-93 1/96		

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								(Continued from previous plate)
75	16							Stiff olive clay with extensive white veins (CL/CH), medium to high plasticity, moist Sandy clay
80	20							Very stiff mixed olive and gray clay with trace <3% fine sand (CL/CH), medium high plasticity, moist
85	22							Very stiff olive brown and gray clay with trace fine sand (CL), medium to high plasticity, moist
90	26							Very stiff olive brown and gray sandy clay (CL), ~15-20% fine sand, moist Very stiff light olive brown and gray sandy clay (CL), 30-40% very fine to medium grained sand, moist -driller said sand and clay content varies every several inches in depth during drilling
95	26							Very stiff dark gray clay with trace (3-5%) fine sand (CL), high plasticity, moist
100	18							Very stiff dark gray clay with trace fine sand, high plasticity, damp
105								
110	47							Hard gray fine to medium sandy clay (~15-30%) sand (CL), ~10% gravel sized nodules of calcium carbonate to 10 mm in diameter, damp

KLEINFELDER

PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-4

**24/580/980 Interchange
Oakland, California**

PLATE

A-22

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		(Continued from previous plate)	
								156 feet	
								-156 to 158 feet smooth drilling	
								- "chattering" sand or small gravels	
160	30							-smoother drilling	
								Very stiff bluish gray clay with ~10% very fine to fine grained sand (CL), medium to high plasticity, slightly moist, orange brown (rust) specks	
165								- "chattering" 166 to 167.5 feet	
170	52							Hard dark yellowish brown and gray mottled sandy clay ~20-30% fine grained sand (CL), low to medium plasticity, damp	
175								-driller says 170-180 feet interval is fairly sandy	
180	50							Hard yellow brown sandy clay ~40% very fine to medium grained sand (CL), moist, top 3 to 4 inches had light gray clay "caliche"	
								-drilling is harder and slower small gravels in soil	
185								-at 185 and 187 feet each for 6 inches in depth the driller had to use hydraulic pressure to drill through hard "caliche" soils	
190	77							Hard to very hard yellowish brown and bluish gray mottled clay with trace fine sand (CL), moist, low plasticity, some layers of cemented rock - gravel size	
								-drilling quick and easy between 192 to 200
KLEINFELDER								LOG OF BORING NO. B-4	
PROJECT NO. 10-3001-93 1/96								24/580/980 Interchange Oakland, California	
								PLATE	
								A-24	

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		(Continued from previous plate)	
								<div style="border-left: 3px double black; padding-left: 5px;"> feet </div>	
200	98							Hard greenish gray silt (ML), moist	
205								End of Boring Groundwater obscured by drilling method. Backfilled with neat cement grout.	
210									
215									
220									
225									
230

KLEINFELDER PROJECT NO. 10-3001-93 1/96	LOG OF BORING NO. B-4 24/580/980 Interchange Oakland, California	PLATE A-25
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Date Completed: 9/20/95

Sampler: Standard Split Spoon Sampler - 2.0 in. O.D.
1.4 in. I.D.

Logged By: A. Argyriou

Total Depth: 201.5 ft

Hammer Wt: 140 lbs., 30" drop

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: Estimated feet (MSLD)
		20						Very stiff brown gravelly (15%) clay (CL), medium plasticity, root holes and roots, dry to damp -grades to dark brown, ~20% gravel
5		19						Stiff dark brown gravelly clay with sand (CL/CH), medium to high plasticity, dry to damp -more sand and gravel, poor mud circulation
10		15						Stiff brown gravelly (20%) fine to coarse sandy (10%) clay with inclusions of black organic clay (CL), medium plasticity, moist
15		20						Compact dark yellowish brown slightly silty (5%) gravelly (10-15%) fine to coarse sand (SP-SM), moist to wet -sandy gravel to 1 1/2 inches -as 15 feet sample, more gravelly, wet
20		31						
25		12						Clay Stiff light yellowish brown sandy clay (CL), medium plasticity -No Recovery
								Gray silty clay (ML)
30		21						Red brown sandy clay (CL) Very stiff yellowish red and gray fine sandy clay (CL), sand content varies (<5-30%), medium plasticity, damp to moist -more sand and some gravel 33.5-34.5 feet
35

KLEINFELDER

PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-5

24/580/980 Interchange
Oakland, California

PLATE

A-26

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	(Continued from previous plate)		
		19							Stiff pale olive to olive silty clay (CL/CH), medium to high plasticity, damp to moist
80		26							Very stiff mottled light green and gray brown silty clay with trace (<5%) fine sand and light gray veining (CL), medium plasticity, damp
85		26							Very stiff olive with light olive gray mottling fine sandy (20-40%) silt (ML/MH), medium to high plasticity, moist
90		60							Dense varicolored slightly silty (5-10%) sand and fine gravel, gravel and coarse sand is angular to subangular (SP-SM), wet -sand lenses -sand
95		69							Dense light olive brown slightly silty (5-10%) fine to coarse sand and fine gravel
100		31							Very stiff olive clayey silt with trace fine sand (<5%) (ML), medium plasticity, damp Sandy -clay lens
105									
110		70							Sand and gravel Grayish green very dense slightly silty (10%) fine to coarse sand with trace fine gravel (SP-SM), wet Light greenish gray clay (CH), high plasticity

<div> KLEINFELDER</div> <div>PROJECT NO. 10-3001-93 1/96</div>	<div>LOG OF BORING NO. B-5</div> <div>24/580/980 Interchange Oakland, California</div>	<div>PLATE</div> <div>A-28</div>
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Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	(Continued from previous plate)		
120		31							Very stiff green clay with trace white cemented sandy clay (CH), high plasticity, damp to moist
125									
130		57							Hard olive gray silty clay with trace sand (CL/CH), medium to high plasticity, damp
135									
140		45							Hard dark brown silty clay with fine and medium (10%) sand and extensive zones of white cemented fine to medium sand (10-30%) (CL), medium plasticity, moist -color change to brown
145									
150		45							-same as above

PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-5

24/580/980 Interchange
Oakland, California

PLATE

A-29

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	(Continued from previous plate)			
160	52								-color change to pale green -drilling chatter	
165									Dense pale green and light brown in gray moderately cemented fine to medium sandy (10-20%) clay and trace (<3%) gravels (SC)	
170	64								-sandier Dense "strong" brown slightly (10-20%) silty fine to medium sand with gravel at 171 feet (SP-SM), wet	
175									Hard dark yellowish brown clay with gray-green veining and occasional gravel (0-20%) (CL), medium plasticity, damp to moist -no gravel at 173 feet -with medium to fine sand	
180	39								Hard dark yellowish brown silty clay (CL), low plasticity, some fine sand. No recovery -more clayey	
185									-drilling chatter, clay with cemented sands	
190	35								-no chatter Very stiff/hard gray green clayey silt with trace (<5%) fine sand (ML), trace cemented zones, low to medium plasticity -occasional sandy lenses

KLEINFELDER

PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-5

**24/580/980 Interchange
Oakland, California**

PLATE

A-30

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		(Continued from previous plate)
200	56							<p>Hard bluish green with olive mottling clayey silt with trace (<3%) fine sand (ML), low to medium plasticity, damp to moist</p> <p>End of Boring Groundwater obscured by drilling method S- and P- wave velocity tests run Backfilled with neat cement grout</p>
205								
210								
215								
220								
225								
230

KLEINFELDER	LOG OF BORING NO. B-5	PLATE
	24/580/980 Interchange Oakland, California	A-31
PROJECT NO. 10-3001-93 1/96		

Date Completed: 9/14/95

Logged By: A. Argyriou

Total Depth: 201.5 ft

Sampler: Standard Split Spoon Sampler - 2.0 in. O.D.
1.4 in. I.D.

Hammer Wt: 140 lbs., 30" drop

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other	Tests		
		38							Surface Elevation: Estimated feet (MSLD)
									Hard very dark brown gravelly (20%) clay (CL/CH) with red yellow crushed gravel (GP) from approximately 0.5-1 feet, dry to damp
5		26							Very dark brown clay with gravel (~20%) and coarse sand (~10%) (CL/CH), high plasticity, damp to moist at 2 feet
									Gravel with sand (30%) and clay (30%) (GC) varicolored, medium to high plasticity, damp
10		19							Very stiff mottled brown and gray brown fine to coarse sandy (20%) fine gravelly (5%) clay (CL/CH), medium to high plasticity, sand predominantly angular, damp to moist
									-less gravel and coarse sand 7.5 feet
									-more gravel and coarse sand at 9 feet
15		20							Stiff gray clay (20%) and mottled gray and reddish yellow fine sandy clay (CL) with coarse sand, medium plasticity, moist
									-drilling chatter, more gravelly
20		17							Compact yellowish brown and dark brown clayey (20-30%) coarse to fine sandy (30%) angular gravel (GC), clay is medium to high plasticity, gravel is varicolored, sample is moist to wet
									Stiff light gray with reddish yellow mottling fine sandy (20%) clay with trace (<5%) coarse sand (CL/CH) and trace dark brown organic fragments, clay is medium to high plasticity, sample is moist
25		26							Very stiff light gray with reddish yellow streaking sandy (20-30%) clay (CL/CH), medium to high plasticity, moist
									-occasional zones of rough drilling 27 to 30 feet
30		23							Stiff light gray to pale olive sandy clay sand predominantly fine grained with some medium to coarse (CL/CH), sand content varies, clay medium to high plasticity, moist
35									-gravel present

KLEINFELDER

PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-6

24/580/980 Interchange
Oakland, California

PLATE

A-32

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
15		15						Stiff "strong" brown with minor gray streaking sandy (40%) silty clay (CL), low to medium plasticity, wet
40		17						Stiff reddish brown to "strong" brown sandy (30%) silty clay at top to clay with trace (<5%) sand at bottom (CL), top medium plasticity, bottom, medium to high plasticity, moist
45		22						Compact red brown clayey sand and gravel (SP) Very stiff pale olive and grayish brown clay (CL/CH), medium to high plasticity with varying amount of fine sand (0-10%) and 5% black spotting -drills gravelly at 47.5 feet
50		21						Very stiff pale olive clay with fine sand (~5%) and trace medium sand (<2%) (CL/CH), medium to high plasticity, moist
55		36						Hard pale olive (60%) with red yellow (20%) brown (15%) and dark brown (5%) streaking silty clay with fine sand (10%) (CL) -easier drilling
60		19						Stiff mottled reddish brown and olive yellow fine sandy (5-10%) silty clay (CL/CH), medium to high plasticity, damp to moist -easy drilling
65		15						Stiff light yellowish brown sandy clayey silt ~15% very fine sand (ML/MH), medium plasticity, moist
70		17						Stiff brownish yellow to yellowish brown silty clay with fine sand (10%) (CL)

KLEINFELDER	LOG OF BORING NO. B-6	PLATE
PROJECT NO. 10-3001-93 1/96	24/580/980 Interchange Oakland, California	A-33

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								(Continued from previous plate)
		26						Very stiff olive with black 1 mm nodules silty clay with trace (<5%) sand, medium to high plasticity
80		76						-sandier Very dense yellowish brown to "strong" brown fine with medium and coarse sand with trace silt and and ~5% fine gravel (SP), coarse sand and fine gravel angular to subrounded
85		22						Very stiff pale olive with 10% reddish yellow staining silty clay with ~10% fine sand (CL/MH), medium plasticity, moist
90		27						-stiffer drilling, clayier Very stiff yellowish brown with occasional pale olive mottling sandy clay (CL/CH), medium to high plasticity, sand content varies from 0-30%
95		21						-drilling consistency variable indicating frequent changes in sand content Very stiff reddish yellow and pale olive silty clay (CL/CH), medium to high plasticity
100		25						-as above
105								-sand and small gravels 103.5 to 105.5 feet
								Pale olive and red yellow silty clay (CH/CL), high plasticity
110		31						Very stiff olive yellow silty clay (CL/CH), medium to high plasticity

KLEINFELDER

PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-6

**24/580/980 Interchange
Oakland, California**

PLATE

A-34

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	(Continued from previous plate)			
									Sandy	
120	23								Very stiff pale olive silty clay/clayey silt (CL/MH), medium plasticity -darker color at 121.5 to 122.5 feet	
125									-sandier	
130	40								Hard pale olive fine sandy (20%) clayey silt (ML), low to medium plasticity	
135									-very sandy -green, clayey	
140	32								Very stiff olive green silty clay with trace (<5%) sand (CH), high plasticity	
145									-siltier -clayier	
150	46								Hard greenish gray fine sandy (20%) silty clay with trace medium sand (<5%) (CH/CL) and minor zones of whitish cementation, medium to high plasticity, moist

KLEINFELDER	LOG OF BORING NO. B-6	PLATE
PROJECT NO. 10-3001-93 1/96	24/580/980 Interchange Oakland, California	A-35

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								(Continued from previous plate)
								-drill chatter
160	69							Very dense gray clayey (40%) gravelly (20%) sand (SC), clay has medium to high plasticity, gravel fine, rounded to subangular, sand fine with some medium to coarse gravel and sand varicolored -drilling intermittent chatter 162.5 to 170 feet
165								
170	66							Hard dark brown fine to medium sandy (20%) clay with trace (<5%) gravel (CL/CH), minor slickensides, medium to high plasticity, damp to moist
175								
180	74							Very hard brown to dark brown, medium to high plasticity, clay intermixed with strong brown sandy (30%) clay (CL/CH) with occasional nodules of yellow and red sandy clay and ~10% medium to coarse sand and trace (<3%) fine gravel -easier drilling
185								
190	93							Very hard gray and brown fine to coarse sandy (30%) gravelly (10%) clay (CL/CH), sand and gravel varicolored, rounded to subangular gravel to 3/4 inch, clay medium to high plasticity, damp to moist

KLEINFELDER	LOG OF BORING NO. B-6	PLATE
	24/580/980 Interchange Oakland, California	A-36
PROJECT NO. 10-3001-93 1/96		

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		(Continued from previous plate)
200	52							<div style="border: 1px solid black; padding: 5px;"> Hard "strong" brown clay with fine to medium sand (20%) and varicolored nodules of fine clayey sand (10%) clay (CL/CH) is medium to high plasticity, moist </div>
205								End of Boring Groundwater obscured by drilling method Backfilled with tremied grout
210								
215								
220								
225								
230

KLEINFELDER
PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-6
24/580/980 Interchange
Oakland, California

PLATE
A-37

Date Completed: 9/22/95

Logged By: A. Argyriou

Total Depth: 201.5 ft

Sampler: Standard Split Spoon Sampler - 2.0 in. O.D.
1.4 in. I.D.

Hammer Wt: 140 lbs., 30" drop

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: Estimated feet (MSLD)
	13							Stiff brown to dark brown clay with sand and angular gravel (CL/CH), medium to high plasticity, damp Yellow brown and brown sandy clay with fine gravel (CL), medium plasticity, damp Yellow brown sandy clay with fine gravel
5	12							Stiff dark gray brown and green clay with fine gravel (<10%) and trace sand (<5%) (CH/CL), medium to high plasticity moist
								Yellow brown sandy clay and gray sandy clay
10	12							Stiff yellow brown and gray sandy (10-20%) clay with ~5% fine gravel (CL/CH), medium to high plasticity, moist to wet
15	19							-as above with some black and trace green clay
								-more gray
20	8							Soft black with gray green mottling organic clay with trace fine gravel (<5%) (CL/OH), high plasticity, moist to wet
								-loss of water, gravel
25	19							Stiff gray green and olive fine sandy (~10%) clay with occasional gravel inclusions (CL/CH), medium to high plasticity, moist
30	16							Stiff green and olive fine sandy (10-20%) clay with gravel (5-10%) (CL), medium plasticity, moist Intermixed with yellow brown sandy clay (CL), medium plasticity, moist -smoother drilling
35

KLEINFELDER

PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-7

24/580/980 Interchange
Oakland, California

PLATE

A-38

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests			
		20							(Continued from previous plate)
									Stiff pale olive clay, high plasticity, moist -rock in bottom of sampler caused disturbance
									-color change from olive to yellow brown
80		37							Dark yellowish brown sandy silt (ML), low plasticity, wet Dense dark yellowish brown silty fine sand, silt ~20% (SM), wet
85		14							Stiff pale yellow with yellowish red staining silty clay (CL), medium plasticity, moist -drilling changes frequently
90		21							Very stiff light olive gray with trace (<1%) reddish yellow and black speckling (CL), silty clay with increasing amount of fine sand toward bottom of sample, medium plasticity, moist -drilling changes frequently
95		47							Hard light olive gray fine sandy (30%) silt (ML), low plasticity, moist to wet, sand content variable with depth Silty clay (CL) at 96.5 -drilling changes frequently
100		21							Very stiff pale olive with 5% black flecks silty clay (CL/CH), medium to high plasticity
105									
110		25							Very stiff pale olive with reddish yellow staining silt clay with trace fine sand, low plasticity, moist to wet

KLEINFELDER	LOG OF BORING NO. B-7	PLATE
PROJECT NO. 10-3001-93 1/96	24/580/980 Interchange Oakland, California	A-40

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests			
									(Continued from previous plate)
									-sandy, fast drilling 115 to 117 feet
120		50							Hard olive silty clay with trace (<3%) fine sand (CL), medium plasticity, moist
125									
130		81/10"							-very sandy Very dense, light gray brown, clayey fine to coarse sand and gravel (SC) to 1 inch, moist to wet, clay ~20-30%
135									-less sandy (smoother drilling) -more sandy
140		60							Hard light olive brown clayey silt with variable amount of fine sand (ML), low plasticity, moist to wet -fine to coarse sand with silt (SM)
145									
150		45							Hard grayish green fine sandy clayey silt (ML), low plasticity, damp with frequent silty fine sand lenses

KLEINFELDER	LOG OF BORING NO. B-7	PLATE
PROJECT NO. 10-3001-93 1/96	24/580/980 Interchange Oakland, California	A-41

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		(Continued from previous plate)
								Varicolored sand (SP), fine to coarse, maybe silty
160	41								Hard pale green silty clay (CL/CH), medium to high plasticity with trace small cemented nodules -faster drilling -slower drilling
165									
170	47								Hard brown silty clay with trace (<5%) fine sand (CL), medium plasticity, moist -stiffer drilling
175									
180	67								-as above with more fine sand
185									
190	63								Hard dark brown silty clay with varying amounts of fine to medium sand (CL), medium plasticity, damp to moist

KLEINFELDER	LOG OF BORING NO. B-7 24/580/980 Interchange Oakland, California	PLATE A-42
PROJECT NO. 10-3001-93 1/96		

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		(Continued from previous plate)
200	82							<p>Very hard brown with gray and yellow brown mottling silty clay with variable fine sand (CL/CH), medium to high plasticity, moist</p>
205								<p>End of Boring Groundwater obscured by drilling method Backfilled with grout</p>
210								
215								
220								
225								
230

KLEINFELDER

PROJECT NO. 10-3001-93 1/96

LOG OF BORING NO. B-7

24/580/980 Interchange
Oakland, California

PLATE

A-43

NATIONAL
ENVIRONMENTAL
TESTING, INC.®

Santa Rosa Division
3636 North Laughlin Road
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Date: 11/01/1995
NET Client Acct. No: 30002
NET Job No: 95.03821
Received: 09/30/1995

Client Reference Information

24/580/980 Interchange/Proj. No. 10-300193

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel free to call me at (707) 541-2307.

Submitted by:

Judy Ridley
Project Coordinator

Enclosure(s)

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 2 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-1, B4, B6

Date Taken: 09/26/1995

Time Taken: 13:00

NET Sample No: 252073

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
Oil & Grease (IR,TRPH)	93		50	mg/kg	5520C/E/F		10/05/1995	582
ICP METALS SOLID							10/06/1995	702
Cadmium (ICP)	ND	RSC	2.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	625
Chromium (ICP)	37		2.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	636
Lead (ICP)	5.1		20	mg/kg	EPA 6010	10/06/1995	10/06/1995	497
Nickel (ICP)	57		5.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	529
Zinc (ICP)	69		5.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	574
METHOD 5030/M8015								
DILUTION FACTOR*	1						10/09/1995	1850
as Gasoline	ND		1	mg/kg	5030		10/09/1995	1850
SURROGATE RESULTS	--						10/09/1995	1850
Bromofluorobenzene (SURR)	83			% Rec.	5030		10/09/1995	1850
METHOD M8015 (EXT., Solid)						10/04/1995		
DILUTION FACTOR*	1						10/04/1995	1086
as Diesel	4.5	DL	1	mg/kg	3550		10/04/1995	1086
as Motor Oil	ND		10	mg/kg	3550		10/04/1995	1086

DL : The positive result appears to be a lighter hydrocarbon than Diesel.
RSC : Refer to subcontract laboratory report for QA data.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 3 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-1, B4, B6

Date Taken: 09/26/1995

Time Taken: 13:00

NET Sample No: 252073

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
METHOD 8260 (GCMS, Solid)								
DILUTION FACTOR*	1						10/03/1995	197
Acetone	ND		10	ug/kg	8260		10/03/1995	197
Benzene	ND		5.0	ug/kg	8260		10/03/1995	197
Bromobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Bromochloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
Bromodichloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
Bromoform	ND		5.0	ug/kg	8260		10/03/1995	197
Bromomethane	ND		5.0	ug/kg	8260		10/03/1995	197
2-Butanone	ND		10	ug/kg	8260		10/03/1995	197
n-Butylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
sec-Butylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
tert-Butylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Carbon Tetrachloride	ND		5.0	ug/kg	8260		10/03/1995	197
Chlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Chloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
Chloroform	7.0		5.0	ug/kg	8260		10/03/1995	197
Chloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
2-Chlorotoluene	ND		5.0	ug/kg	8260		10/03/1995	197
4-Chlorotoluene	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dibromo-3-chloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dibromoethane	ND		5.0	ug/kg	8260		10/03/1995	197
Dibromochloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
Dibromomethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,3-Dichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,4-Dichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Dichlorodifluoromethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1-Dichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1-Dichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
cis-1,2-Dichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
trans-1,2-Dichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
1,3-Dichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
2,2-Dichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
trans-1,3-Dichloropropene	ND		5.0	ug/kg	8260		10/03/1995	197
1,1-Dichloropropene	ND		5.0	ug/kg	8260		10/03/1995	197
cis-1,3-Dichloropropene	ND		5.0	ug/kg	8260		10/03/1995	197
Ethyl benzene	ND		5.0	ug/kg	8260		10/03/1995	197
Hexachlorobutadiene	ND		5.0	ug/kg	8260		10/03/1995	197
Isopropylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
p-Isopropyltoluene	ND		5.0	ug/kg	8260		10/03/1995	197
Methylene chloride	ND		5.0	ug/kg	8260		10/03/1995	197

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 4 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-1, B4, B6

Date Taken: 09/26/1995

Time Taken: 13:00

NET Sample No: 252073

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
Naphthalene	ND		5.0	ug/kg	8260		10/03/1995	197
n-Propylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Styrene	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,1,2-Tetrachloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,2,2-Tetrachloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
Tetrachloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,3-Trichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,4-Trichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,1-Trichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,2-Trichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
Trichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
Trichlorofluoromethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,3-Trichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,4-Trimethylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,3,5-Trimethylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Toluene	ND		5.0	ug/kg	8260		10/03/1995	197
Vinyl chloride	ND		5.0	ug/kg	8260		10/03/1995	197
o-Xylene	ND		5.0	ug/kg	8260		10/03/1995	197
m & p-Xylene	ND		5.0	ug/kg	8260		10/03/1995	197
SURROGATE RESULTS	--						10/03/1995	197
4-Bromofluorobenzene (SURR)	96			µ Rec.	8260		10/03/1995	197
Toluene-d8 (SURR)	98			µ Rec.	8260		10/03/1995	197
1,2-Dichloroethane-d4 (SURR)	93			µ Rec.	8260		10/03/1995	197

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
KLAP Cert: 1386
Page: 5 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-1, B4, B6

Date Taken: 09/26/1995

Time Taken: 13:00

NET Sample No: 252073

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
METHOD 8270 (GCMS, Solid)						10/18/1995		
DILUTION FACTOR*	1						10/17/1995	699
Acenaphthene	ND		330	ug/kg	8270		10/17/1995	699
Acenaphthylene	ND		330	ug/kg	8270		10/17/1995	699
Aldrin	ND		1600	ug/kg	8270		10/17/1995	699
Anthracene	ND		330	ug/kg	8270		10/17/1995	699
Benzidine	ND		1600	ug/kg	8270		10/17/1995	699
Benzo(a)anthracene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(b)fluoranthene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(k)fluoranthene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(a)pyrene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(g,h,i)perylene	ND		330	ug/kg	8270		10/17/1995	699
Benzoic acid	ND		1600	ug/kg	8270		10/17/1995	699
Benzyl alcohol	ND		330	ug/kg	8270		10/17/1995	699
Butyl benzyl phthalate	ND		330	ug/kg	8270		10/17/1995	699
delta-BHC	ND		1600	ug/kg	8270		10/17/1995	699
gamma-BHC	ND		1600	ug/kg	8270		10/17/1995	699
bis(2-Chloroethyl)ether	ND		330	ug/kg	8270		10/17/1995	699
bis(2-Chloroethoxy)methane	ND		330	ug/kg	8270		10/17/1995	699
bis(2-Chloroisopropyl)ether	ND		330	ug/kg	8270		10/17/1995	699
bis(2-Ethylhexyl)phthalate	ND		330	ug/kg	8270		10/17/1995	699
4-Bromophenyl phenyl ether	ND		330	ug/kg	8270		10/17/1995	699
4-Chloroaniline	ND		330	ug/kg	8270		10/17/1995	699
2-Chloronaphthalene	ND		330	ug/kg	8270		10/17/1995	699
4-Chlorophenyl phenyl ether	ND		330	ug/kg	8270		10/17/1995	699
Chrysene	ND		330	ug/kg	8270		10/17/1995	699
4,4'-DDD	ND		1600	ug/kg	8270		10/17/1995	699
4,4'-DDE	ND		1600	ug/kg	8270		10/17/1995	699
4,4'-DDT	ND		1600	ug/kg	8270		10/17/1995	699
Dibenzo(a,h)anthracene	ND		330	ug/kg	8270		10/17/1995	699
Dibenzofuran	ND		330	ug/kg	8270		10/17/1995	699
Di-n-butylphthalate	ND		330	ug/kg	8270		10/17/1995	699
1,2-Dichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
1,3-Dichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
1,4-Dichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
3,3'-Dichlorobenzidine	ND		660	ug/kg	8270		10/17/1995	699
Dieldrin	ND		1600	ug/kg	8270		10/17/1995	699
Diethylphthalate	ND		330	ug/kg	8270		10/17/1995	699
Dimethyl phthalate	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dinitrotoluene	ND		330	ug/kg	8270		10/17/1995	699
2,6-Dinitrotoluene	ND		330	ug/kg	8270		10/17/1995	699
Di-n-octyl phthalate	ND		330	ug/kg	8270		10/17/1995	699
Endrin aldehyde	ND		1600	ug/kg	8270		10/17/1995	699
Fluoranthene	ND		330	ug/kg	8270		10/17/1995	699

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
KLAP Cert: 1386
Page: 6 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-1, B4, B6

Date Taken: 09/26/1995

Time Taken: 13:00

NET Sample No: 252073

Parameter	Results	Flags	Reporting			Date Extracted	Date Analyzed	Run Batch No.
			Limit	Units	Method			
Fluorene	ND		330	ug/kg	8270		10/17/1995	699
Heptachlor	ND		1600	ug/kg	8270		10/17/1995	699
Heptachlor epoxide	ND		1600	ug/kg	8270		10/17/1995	699
Hexachlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
Hexachlorobutadiene	ND		330	ug/kg	8270		10/17/1995	699
Hexachlorocyclopentadiene	ND		330	ug/kg	8270		10/17/1995	699
Hexachloroethane	ND		330	ug/kg	8270		10/17/1995	699
Indeno(1,2,3-cd)pyrene	ND		330	ug/kg	8270		10/17/1995	699
Isophorone	ND		330	ug/kg	8270		10/17/1995	699
2-Methylnaphthalene	ND		330	ug/kg	8270		10/17/1995	699
Naphthalene	ND		330	ug/kg	8270		10/17/1995	699
2-Nitroaniline	ND		1600	ug/kg	8270		10/17/1995	699
3-Nitroaniline	ND		1600	ug/kg	8270		10/17/1995	699
4-Nitroaniline	ND		1600	ug/kg	8270		10/17/1995	699
Nitrobenzene	ND		330	ug/kg	8270		10/17/1995	699
N-Nitroso-Di-N-propylamine	ND		330	ug/kg	8270		10/17/1995	699
N-Nitrosodiphenylamine	ND		330	ug/kg	8270		10/17/1995	699
Phenanthrene	ND		330	ug/kg	8270		10/17/1995	699
Pyrene	ND		330	ug/kg	8270		10/17/1995	699
1,2,4-Trichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
ACID EXTRACTABLES	--						10/17/1995	699
4-Chloro-3-methylphenol	ND		330	ug/kg	8270	--	10/17/1995	699
2-Chlorophenol	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dichlorophenol	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dimethylphenol	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dinitrophenol	ND		1600	ug/kg	8270		10/17/1995	699
4,6-Dinitro-2-methylphenol	ND		1600	ug/kg	8270		10/17/1995	699
2-Nitrophenol	ND		330	ug/kg	8270		10/17/1995	699
4-Nitrophenol	ND		1600	ug/kg	8270		10/17/1995	699
Pentachlorophenol	ND		1600	ug/kg	8270		10/17/1995	699
Phenol	ND		330	ug/kg	8270		10/17/1995	699
2,4,6-Trichlorophenol	ND		330	ug/kg	8270		10/17/1995	699
2-Methylphenol	ND		330	ug/kg	8270		10/17/1995	699
4-Methylphenol	ND		330	ug/kg	8270		10/17/1995	699
2,4,5-Trichlorophenol	ND		1600	ug/kg	8270		10/17/1995	699
SURROGATE RESULTS	--						10/17/1995	699
Nitrobenzene-d5 (SURR)	78			% Rec.	8270		10/17/1995	699
2-Fluorobiphenyl (SURR)	64			% Rec.	8270		10/17/1995	699
p-Terphenyl-d14 (SURR)	117			% Rec.	8270		10/17/1995	699
Phenol-d5 (SURR)	49			% Rec.	8270		10/17/1995	699
2-Fluorophenol (SURR)	19	*		% Rec.	8270		10/17/1995	699
2,4,6-Tribromophenol (SURR)	8	*		% Rec.	8270		10/17/1995	699

* : Outside of acceptance limits, sample was reextracted and reanalyzed with similar results indicating possible matrix interference.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 7 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-2
Date Taken: 09/28/1995
Time Taken: 09:47
NET Sample No: 252074

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
Oil & Grease (IR,TRPH)	ND		50	mg/kg	5520C/E/F		10/05/1995	582
ICP METALS SOLID							10/06/1995	702
Cadmium (ICP)	ND	RSC	2.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	625
Chromium (ICP)	58		2.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	636
Lead (ICP)	3.9		20	mg/kg	EPA 6010	10/06/1995	10/06/1995	497
Nickel (ICP)	95		5.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	529
Zinc (ICP)	63		5.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	574
METHOD 5030/M8015								
DILUTION FACTOR*	1						10/09/1995	1850
as Gasoline	ND		1	mg/kg	5030		10/09/1995	1850
SURROGATE RESULTS	--						10/09/1995	1850
Bromofluorobenzene (SURR)	83			% Rec.	5030		10/09/1995	1850
METHOD M8015 (EXT., Solid)						10/04/1995		
DILUTION FACTOR*	1						10/04/1995	1086
as Diesel	1.4	DH	1	mg/kg	3550		10/04/1995	1086
as Motor Oil	ND		10	mg/kg	3550		10/04/1995	1086

DH : The positive result appears to be a heavier hydrocarbon than Diesel.
RSC : Refer to subcontract laboratory report for QA data.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 8 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-2
Date Taken: 09/28/1995
Time Taken: 09:47
NET Sample No: 252074

NET Sample No: 252074			Reporting			Date	Date	Run
Parameter	Results	Flags	Limit	Units	Method	Extracted	Analyzed	Batch
								No.
METHOD 8260 (GC/MS, Solid)								
DILUTION FACTOR*	1						10/03/1995	197
Acetone	ND		10	ug/kg	8260		10/03/1995	197
Benzene	ND		5.0	ug/kg	8260		10/03/1995	197
Bromobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Bromochloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
Bromodichloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
Bromoform	ND		5.0	ug/kg	8260		10/03/1995	197
Bromomethane	ND		5.0	ug/kg	8260		10/03/1995	197
2-Butanone	ND		10	ug/kg	8260		10/03/1995	197
n-Butylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
sec-Butylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
tert-Butylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Carbon Tetrachloride	ND		5.0	ug/kg	8260		10/03/1995	197
Chlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Chloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
Chloroform	ND		5.0	ug/kg	8260		10/03/1995	197
Chloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
2-Chlorotoluene	ND		5.0	ug/kg	8260		10/03/1995	197
4-Chlorotoluene	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dibromo-3-chloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dibromoethane	ND		5.0	ug/kg	8260		10/03/1995	197
Dibromochloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
Dibromomethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,3-Dichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,4-Dichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Dichlorodifluoromethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1-Dichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1-Dichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
cis-1,2-Dichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
trans-1,2-Dichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
1,3-Dichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
2,2-Dichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
trans-1,3-Dichloropropene	ND		5.0	ug/kg	8260		10/03/1995	197
1,1-Dichloropropene	ND		5.0	ug/kg	8260		10/03/1995	197
cis-1,3-Dichloropropene	ND		5.0	ug/kg	8260		10/03/1995	197
Ethyl benzene	ND		5.0	ug/kg	8260		10/03/1995	197
Hexachlorobutadiene	ND		5.0	ug/kg	8260		10/03/1995	197
Isopropylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
p-Isopropyltoluene	ND		5.0	ug/kg	8260		10/03/1995	197
Methylene chloride	ND		5.0	ug/kg	8260		10/03/1995	197

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
KLAP Cert: 1386
Page: 9 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-2
Date Taken: 09/28/1995
Time Taken: 09:47
NET Sample No: 252074

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
Naphthalene	ND		5.0	ug/kg	8260		10/03/1995	197
n-Propylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Styrene	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,1,2-Tetrachloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,2,2-Tetrachloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
Tetrachloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,3-Trichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,4-Trichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,1-Trichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,2-Trichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
Trichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
Trichlorofluoromethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,3-Trichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,4-Trimethylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,3,5-Trimethylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Toluene	ND		5.0	ug/kg	8260		10/03/1995	197
Vinyl chloride	ND		5.0	ug/kg	8260		10/03/1995	197
o-Xylene	ND		5.0	ug/kg	8260		10/03/1995	197
m & p-Xylene	ND		5.0	ug/kg	8260		10/03/1995	197
SURROGATE RESULTS	--						10/03/1995	197
4-Bromofluorobenzene (SURR)	95			% Rec.	8260		10/03/1995	197
Toluene-d8 (SURR)	94			% Rec.	8260		10/03/1995	197
1,2-Dichloroethane-d4 (SURR)	79			% Rec.	8260		10/03/1995	197

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 10 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-2
Date Taken: 09/28/1995
Time Taken: 09:47
NET Sample No: 252074

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		- Extracted	Analyzed	
METHOD 8270 (GCMS, Solid)						10/03/1995		
DILUTION FACTOR*	1						10/17/1995	699
Acenaphthene	ND		330	ug/kg	8270		10/17/1995	699
Acenaphthylene	ND		330	ug/kg	8270		10/17/1995	699
Aldrin	ND		1600	ug/kg	8270		10/17/1995	699
Anthracene	ND		330	ug/kg	8270		10/17/1995	699
Benzidine	ND		1600	ug/kg	8270		10/17/1995	699
Benzo(a)anthracene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(b)fluoranthene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(k)fluoranthene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(a)pyrene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(g,h,i)perylene	ND		330	ug/kg	8270		10/17/1995	699
Benzoic acid	ND		1600	ug/kg	8270		10/17/1995	699
Benzyl alcohol	ND		330	ug/kg	8270		10/17/1995	699
Butyl benzyl phthalate	ND		330	ug/kg	8270		10/17/1995	699
delta-BHC	ND		1600	ug/kg	8270		10/17/1995	699
gamma-BHC	ND		1600	ug/kg	8270		10/17/1995	699
bis(2-Chloroethyl)ether	ND		330	ug/kg	8270		10/17/1995	699
bis(2-Chloroethoxy)methane	ND		330	ug/kg	8270		10/17/1995	699
bis(2-Chloroisopropyl)ether	ND		330	ug/kg	8270		10/17/1995	699
bis(2-Ethylhexyl)phthalate	ND		330	ug/kg	8270		10/17/1995	699
4-Bromophenyl phenyl ether	ND		330	ug/kg	8270		10/17/1995	699
4-Chloroaniline	ND		330	ug/kg	8270		10/17/1995	699
2-Chloronaphthalene	ND		330	ug/kg	8270		10/17/1995	699
4-Chlorophenyl phenyl ether	ND		330	ug/kg	8270		10/17/1995	699
Chrysene	ND		330	ug/kg	8270		10/17/1995	699
4,4'-DDD	ND		1600	ug/kg	8270		10/17/1995	699
4,4'-DDE	ND		1600	ug/kg	8270		10/17/1995	699
4,4'-DDT	ND		1600	ug/kg	8270		10/17/1995	699
Dibenzo(a,h)anthracene	ND		330	ug/kg	8270		10/17/1995	699
Dibenzofuran	ND		330	ug/kg	8270		10/17/1995	699
Di-n-butylphthalate	ND		330	ug/kg	8270		10/17/1995	699
1,2-Dichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
1,3-Dichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
1,4-Dichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
3,3'-Dichlorobenzidine	ND		660	ug/kg	8270		10/17/1995	699
Dieldrin	ND		1600	ug/kg	8270		10/17/1995	699
Diethylphthalate	ND		330	ug/kg	8270		10/17/1995	699
Dimethyl phthalate	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dinitrotoluene	ND		330	ug/kg	8270		10/17/1995	699
2,6-Dinitrotoluene	ND		330	ug/kg	8270		10/17/1995	699
Di-n-octyl phthalate	ND		330	ug/kg	8270		10/17/1995	699
Endrin aldehyde	ND		1600	ug/kg	8270		10/17/1995	699
Fluoranthene	ND		330	ug/kg	8270		10/17/1995	699

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
KLAP Cert: 1386
Page: 11 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-2

Date Taken: 09/28/1995

Time Taken: 09:47

NET Sample No: 252074

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
Fluorene	ND		330	ug/kg	8270		10/17/1995	699
Heptachlor	ND		1600	ug/kg	8270		10/17/1995	699
Heptachlor epoxide	ND		1600	ug/kg	8270		10/17/1995	699
Hexachlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
Hexachlorobutadiene	ND		330	ug/kg	8270		10/17/1995	699
Hexachlorocyclopentadiene	ND		330	ug/kg	8270		10/17/1995	699
Hexachloroethane	ND		330	ug/kg	8270		10/17/1995	699
Indeno(1,2,3-cd)pyrene	ND		330	ug/kg	8270		10/17/1995	699
Isophorone	ND		330	ug/kg	8270		10/17/1995	699
2-Methylnaphthalene	ND		330	ug/kg	8270		10/17/1995	699
Naphthalene	ND		330	ug/kg	8270		10/17/1995	699
2-Nitroaniline	ND		1600	ug/kg	8270		10/17/1995	699
3-Nitroaniline	ND		1600	ug/kg	8270		10/17/1995	699
4-Nitroaniline	ND		1600	ug/kg	8270		10/17/1995	699
Nitrobenzene	ND		330	ug/kg	8270		10/17/1995	699
N-Nitroso-Di-N-propylamine	ND		330	ug/kg	8270		10/17/1995	699
N-Nitrosodiphenylamine	ND		330	ug/kg	8270		10/17/1995	699
Phenanthrene	ND		330	ug/kg	8270		10/17/1995	699
Pyrene	ND		330	ug/kg	8270		10/17/1995	699
1,2,4-Trichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
ACID EXTRACTABLES	--						10/17/1995	699
4-Chloro-3-methylphenol	ND		330	ug/kg	8270		10/17/1995	699
2-Chlorophenol	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dichlorophenol	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dimethylphenol	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dinitrophenol	ND		1600	ug/kg	8270		10/17/1995	699
4,6-Dinitro-2-methylphenol	ND		1600	ug/kg	8270		10/17/1995	699
2-Nitrophenol	ND		330	ug/kg	8270		10/17/1995	699
4-Nitrophenol	ND		1600	ug/kg	8270		10/17/1995	699
Pentachlorophenol	ND		1600	ug/kg	8270		10/17/1995	699
Phenol	ND		330	ug/kg	8270		10/17/1995	699
2,4,6-Trichlorophenol	ND		330	ug/kg	8270		10/17/1995	699
2-Methylphenol	ND		330	ug/kg	8270		10/17/1995	699
4-Methylphenol	ND		330	ug/kg	8270		10/17/1995	699
2,4,5-Trichlorophenol	ND		1600	ug/kg	8270		10/17/1995	699
SURROGATE RESULTS	--						10/17/1995	699
Nitrobenzene-d5 (SURR)	70			% Rec.	8270		10/17/1995	699
2-Fluorobiphenyl (SURR)	71			% Rec.	8270		10/17/1995	699
p-Terphenyl-d14 (SURR)	99			% Rec.	8270		10/17/1995	699
Phenol-d5 (SURR)	58			% Rec.	8270		10/17/1995	699
2-Fluorophenol (SURR)	68			% Rec.	8270		10/17/1995	699
2,4,6-Tribromophenol (SURR)	62			% Rec.	8270		10/17/1995	699

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 12 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-3,B-5,B-7

Date Taken: 09/28/1995

Time Taken: 09:15

NET Sample No: 252075

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
Oil & Grease (IR,TRPH)	54		50	mg/kg	5520C/E/F		10/05/1995	582
ICP METALS SOLID							10/06/1995	702
Cadmium (ICP)	ND	RSC	2.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	625
Chromium (ICP)	34		2.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	636
Lead (ICP)	2.7		20	mg/kg	EPA 6010	10/06/1995	10/06/1995	497
Nickel (ICP)	49		5.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	529
Zinc (ICP)	58		5.0	mg/kg	EPA 6010	10/06/1995	10/06/1995	574
METHOD 5030/M8015								
DILUTION FACTOR*	1						10/09/1995	1850
as Gasoline	ND		1	mg/kg	5030		10/09/1995	1850
SURROGATE RESULTS	--						10/09/1995	1850
Bromofluorobenzene (SURR)	85			% Rec.	5030		10/09/1995	1850
METHOD M8015 (EXT., Solid)						10/04/1995		
DILUTION FACTOR*	1						10/04/1995	1086
as Diesel	ND		1	mg/kg	3550		10/04/1995	1086
as Motor Oil	ND		10	mg/kg	3550		10/04/1995	1086

RSC : Refer to subcontract laboratory report for QA data.

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 13 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-3,B-5,B-7

Date Taken: 09/28/1995

Time Taken: 09:15

NET Sample No: 252075

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
METHOD 8260 (GCMS, Solid)								No.
DILUTION FACTOR*	1						10/03/1995	197
Acetone	ND		10	ug/kg	8260		10/03/1995	197
Benzene	ND		5.0	ug/kg	8260		10/03/1995	197
Bromobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Bromochloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
Bromodichloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
Bromoform	ND		5.0	ug/kg	8260		10/03/1995	197
Bromomethane	ND		5.0	ug/kg	8260		10/03/1995	197
2-Butanone	ND		10	ug/kg	8260		10/03/1995	197
n-Butylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
sec-Butylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
tert-Butylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Carbon Tetrachloride	ND		5.0	ug/kg	8260		10/03/1995	197
Chlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Chloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
Chloroform	ND		5.0	ug/kg	8260		10/03/1995	197
Chloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
2-Chlorotoluene	ND		5.0	ug/kg	8260		10/03/1995	197
4-Chlorotoluene	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dibromo-3-chloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dibromoethane	ND		5.0	ug/kg	8260		10/03/1995	197
Dibromochloromethane	ND		5.0	ug/kg	8260		10/03/1995	197
Dibromomethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,3-Dichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,4-Dichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Dichlorodifluoromethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1-Dichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1-Dichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
cis-1,2-Dichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
trans-1,2-Dichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
1,2-Dichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
1,3-Dichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
2,2-Dichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
trans-1,3-Dichloropropene	ND		5.0	ug/kg	8260		10/03/1995	197
1,1-Dichloropropene	ND		5.0	ug/kg	8260		10/03/1995	197
cis-1,3-Dichloropropene	ND		5.0	ug/kg	8260		10/03/1995	197
Ethyl benzene	ND		5.0	ug/kg	8260		10/03/1995	197
Hexachlorobutadiene	ND		5.0	ug/kg	8260		10/03/1995	197
Isopropylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
p-Isopropyltoluene	ND		5.0	ug/kg	8260		10/03/1995	197
Methylene chloride	ND		5.0	ug/kg	8260		10/03/1995	197

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder

Client Acct: 30002

NET Job No: 95.03821

Date: 11/01/1995

KLAP Cert: 1386

Page: 14 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-3,B-5,B-7

Date Taken: 09/28/1995

Time Taken: 09:15

NET Sample No: 252075

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
Naphthalene	ND		5.0	ug/kg	8260		10/03/1995	197
n-Propylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Styrene	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,1,2-Tetrachloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,2,2-Tetrachloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
Tetrachloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,3-Trichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,4-Trichlorobenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,1-Trichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,1,2-Trichloroethane	ND		5.0	ug/kg	8260		10/03/1995	197
Trichloroethene	ND		5.0	ug/kg	8260		10/03/1995	197
Trichlorofluoromethane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,3-Trichloropropane	ND		5.0	ug/kg	8260		10/03/1995	197
1,2,4-Trimethylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
1,3,5-Trimethylbenzene	ND		5.0	ug/kg	8260		10/03/1995	197
Toluene	ND		5.0	ug/kg	8260		10/03/1995	197
Vinyl chloride	ND		5.0	ug/kg	8260		10/03/1995	197
o-Xylene	ND		5.0	ug/kg	8260		10/03/1995	197
m & p-Xylene	ND		5.0	ug/kg	8260		10/03/1995	197
SURROGATE RESULTS	--						10/03/1995	197
4-Bromofluorobenzene (SURR)	95			% Rec.	8260		10/03/1995	197
Toluene-d8 (SURR)	96			% Rec.	8260		10/03/1995	197
1,2-Dichloroethane-d4 (SURR)	86			% Rec.	8260		10/03/1995	197

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
KLAP Cert: 1386
Page: 15 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-3,B-5,B-7
Date Taken: 09/28/1995
Time Taken: 09:15
NET Sample No: 252075

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
METHOD 8270 (GCMS, Solid)						10/03/1995		
DILUTION FACTOR*	1						10/17/1995	699
Acenaphthene	ND		330	ug/kg	8270		10/17/1995	699
Acenaphthylene	ND		330	ug/kg	8270		10/17/1995	699
Aldrin	ND		1600	ug/kg	8270		10/17/1995	699
Anthracene	ND		330	ug/kg	8270		10/17/1995	699
Benzidine	ND		1600	ug/kg	8270		10/17/1995	699
Benzo(a)anthracene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(b)fluoranthene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(k)fluoranthene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(a)pyrene	ND		330	ug/kg	8270		10/17/1995	699
Benzo(g,h,i)perylene	ND		330	ug/kg	8270		10/17/1995	699
Benzoic acid	ND		1600	ug/kg	8270		10/17/1995	699
Benzyl alcohol	ND		330	ug/kg	8270		10/17/1995	699
Butyl benzyl phthalate	ND		330	ug/kg	8270		10/17/1995	699
delta-BHC	ND		1600	ug/kg	8270		10/17/1995	699
gamma-BHC	ND		1600	ug/kg	8270		10/17/1995	699
bis(2-Chloroethyl)ether	ND		330	ug/kg	8270		10/17/1995	699
bis(2-Chloroethoxy)methane	ND		330	ug/kg	8270		10/17/1995	699
bis(2-Chloroisopropyl)ether	ND		330	ug/kg	8270		10/17/1995	699
bis(2-Ethylhexyl)phthalate	ND		330	ug/kg	8270		10/17/1995	699
4-Bromophenyl phenyl ether	ND		330	ug/kg	8270		10/17/1995	699
4-Chloroaniline	ND		330	ug/kg	8270		10/17/1995	699
2-Chloronaphthalene	ND		330	ug/kg	8270		10/17/1995	699
4-Chlorophenyl phenyl ether	ND		330	ug/kg	8270		10/17/1995	699
Chrysene	ND		330	ug/kg	8270		10/17/1995	699
4,4'-DDD	ND		1600	ug/kg	8270		10/17/1995	699
4,4'-DDE	ND		1600	ug/kg	8270		10/17/1995	699
4,4'-DDT	ND		1600	ug/kg	8270		10/17/1995	699
Dibenzo(a,h)anthracene	ND		330	ug/kg	8270		10/17/1995	699
Dibenzofuran	ND		330	ug/kg	8270		10/17/1995	699
Di-n-butylphthalate	ND		330	ug/kg	8270		10/17/1995	699
1,2-Dichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
1,3-Dichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
1,4-Dichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
3,3'-Dichlorobenzidine	ND		660	ug/kg	8270		10/17/1995	699
Dieldrin	ND		1600	ug/kg	8270		10/17/1995	699
Diethylphthalate	ND		330	ug/kg	8270		10/17/1995	699
Dimethyl phthalate	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dinitrotoluene	ND		330	ug/kg	8270		10/17/1995	699
2,6-Dinitrotoluene	ND		330	ug/kg	8270		10/17/1995	699
Di-n-octyl phthalate	ND		330	ug/kg	8270		10/17/1995	699
Endrin aldehyde	ND		1600	ug/kg	8270		10/17/1995	699
Fluoranthene	ND		330	ug/kg	8270		10/17/1995	699

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 16 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

SAMPLE DESCRIPTION: B-3,B-5,B-7

Date Taken: 09/28/1995

Time Taken: 09:15

NET Sample No: 252075

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
Fluorene	ND		330	ug/kg	8270		10/17/1995	699
Heptachlor	ND		1600	ug/kg	8270		10/17/1995	699
Heptachlor epoxide	ND		1600	ug/kg	8270		10/17/1995	699
Hexachlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
Hexachlorobutadiene	ND		330	ug/kg	8270		10/17/1995	699
Hexachlorocyclopentadiene	ND		330	ug/kg	8270		10/17/1995	699
Hexachloroethane	ND		330	ug/kg	8270		10/17/1995	699
Indeno(1,2,3-cd)pyrene	ND		330	ug/kg	8270		10/17/1995	699
Isophorone	ND		330	ug/kg	8270		10/17/1995	699
2-Methylnaphthalene	ND		330	ug/kg	8270		10/17/1995	699
Naphthalene	ND		330	ug/kg	8270		10/17/1995	699
2-Nitroaniline	ND		1600	ug/kg	8270		10/17/1995	699
3-Nitroaniline	ND		1600	ug/kg	8270		10/17/1995	699
4-Nitroaniline	ND		1600	ug/kg	8270		10/17/1995	699
Nitrobenzene	ND		330	ug/kg	8270		10/17/1995	699
N-Nitroso-Di-N-propylamine	ND		330	ug/kg	8270		10/17/1995	699
N-Nitrosodiphenylamine	ND		330	ug/kg	8270		10/17/1995	699
Phenanthrene	ND		330	ug/kg	8270		10/17/1995	699
Pyrene	ND		330	ug/kg	8270		10/17/1995	699
1,2,4-Trichlorobenzene	ND		330	ug/kg	8270		10/17/1995	699
ACID EXTRACTABLES	--						10/17/1995	699
4-Chloro-3-methylphenol	ND		330	ug/kg	8270		10/17/1995	699
2-Chlorophenol	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dichlorophenol	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dimethylphenol	ND		330	ug/kg	8270		10/17/1995	699
2,4-Dinitrophenol	ND		1600	ug/kg	8270		10/17/1995	699
4,6-Dinitro-2-methylphenol	ND		1600	ug/kg	8270		10/17/1995	699
2-Nitrophenol	ND		330	ug/kg	8270		10/17/1995	699
4-Nitrophenol	ND		1600	ug/kg	8270		10/17/1995	699
Pentachlorophenol	ND		1600	ug/kg	8270		10/17/1995	699
Phenol	ND		330	ug/kg	8270		10/17/1995	699
2,4,6-Trichlorophenol	ND		330	ug/kg	8270		10/17/1995	699
2-Methylphenol	ND		330	ug/kg	8270		10/17/1995	699
4-Methylphenol	ND		330	ug/kg	8270		10/17/1995	699
2,4,5-Trichlorophenol	ND		1600	ug/kg	8270		10/17/1995	699
SURROGATE RESULTS	--						10/17/1995	699
Nitrobenzene-d5 (SURR)	76			† Rec.	8270		10/17/1995	699
2-Fluorobiphenyl (SURR)	70			† Rec.	8270		10/17/1995	699
p-Terphenyl-d14 (SURR)	79			† Rec.	8270		10/17/1995	699
Phenol-d5 (SURR)	55			† Rec.	8270		10/17/1995	699
2-Fluorophenol (SURR)	28			† Rec.	8270		10/17/1995	699
2,4,6-Tribromophenol (SURR)	15			† Rec.	8270		10/17/1995	699

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 17 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials	Run Batch Number
Oil & Grease (IR,TRPH)	99.9	15.98	16.00	mg/kg	10/05/1995	shr	582
METHOD 5030/M8015							
as Gasoline	94.4	2.36	2.50	mg/kg	10/09/1995	lss	1850
Bromofluorobenzene (SURR)	95.0	95	100	% Rec.	10/09/1995	lss	1850
METHOD M8015 (EXT., Solid)							
as Diesel	102.0	1020	1000	mg/kg	10/04/1995	tts	1086
as Motor Oil	100.0	1000	1000	mg/kg	10/04/1995	tts	1086

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 18 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV	CCV	CCV	Units	Date Analyzed	Analyst Initials	Run Batch Number
	Standard % Recovery	Standard Amount Found	Standard Amount Expected				
METHOD 8260 (GCMS, Solid)							
Chloroform	91.6	45.8	50.0	ug/kg	10/03/1995	klh	197
1,1-Dichloroethene	108.6	54.3	50.0	ug/kg	10/03/1995	klh	197
1,2-Dichloropropane	104.6	52.3	50.0	ug/kg	10/03/1995	klh	197
Ethyl benzene	97.6	48.8	50.0	ug/kg	10/03/1995	klh	197
Toluene	88.8	44.4	50.0	ug/kg	10/03/1995	klh	197
Vinyl chloride	100.4	50.2	50.0	ug/kg	10/03/1995	klh	197
4-Bromofluorobenzene (SURR)	100.0	100	100	% Rec.	10/03/1995	klh	197
Toluene-d8 (SURR)	88.0	88	100	% Rec.	10/03/1995	klh	197
1,2-Dichloroethane-d4 (SURR)	89.0	89	100	% Rec.	10/03/1995	klh	197

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Client Name: Kleinfelder
Client Acct: 30002
HET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 19 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV	CCV	CCV	Units	Date Analyzed	Analyst Initials	Run Batch Number
	Standard Amount Found	Standard Amount Expected	Standard Amount				
METHOD 8270 (GCMS, Solid)							
Acenaphthene	100.8	50.4	50.0	ug/kg	10/17/1995	gec	699
Benzo(a)pyrene	100.8	50.4	50.0	ug/kg	10/17/1995	gec	699
1,4-Dichlorobenzene	97.8	48.9	50.0	ug/kg	10/17/1995	gec	699
Di-n-octyl phthalate	114.2	57.1	50.0	ug/kg	10/17/1995	gec	699
Fluoranthene	102.6	51.3	50.0	ug/kg	10/17/1995	gec	699
Hexachlorobutadiene	93.4	46.7	50.0	ug/kg	10/17/1995	gec	699
N-Nitrosodiphenylamine	100.0	50.0	50.0	ug/kg	10/17/1995	gec	699
4-Chloro-3-methylphenol	106.8	53.4	50.0	ug/kg	10/17/1995	gec	699
2,4-Dichlorophenol	103.2	51.6	50.0	ug/kg	10/17/1995	gec	699
2-Nitrophenol	99.6	49.8	50.0	ug/kg	10/17/1995	gec	699
Pentachlorophenol	90.2	45.1	50.0	ug/kg	10/17/1995	gec	699
Phenol	103.2	51.6	50.0	ug/kg	10/17/1995	gec	699
2,4,6-Trichlorophenol	103.4	51.7	50.0	ug/kg	10/17/1995	gec	699
Nitrobenzene-d5 (SURR)	102.0	102	100	% Rec.	10/17/1995	gec	699
2-Fluorobiphenyl (SURR)	104.0	104	100	% Rec.	10/17/1995	gec	699
p-Terphenyl-d14 (SURR)	90.0	90	100	% Rec.	10/17/1995	gec	699
Phenol-d5 (SURR)	97.0	97	100	% Rec.	10/17/1995	gec	699
2-Fluorophenol (SURR)	118.0	118	100	% Rec.	10/17/1995	gec	699
2,4,6-Tribromophenol (SURR)	84.0	84	100	% Rec.	10/17/1995	gec	699

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 20 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials	Run Batch Number
Oil & Grease (IR,TRPH)	ND	50	mg/kg	10/05/1995	shr	582
METHOD 5030/M8015						
as Gasoline	ND	1	mg/kg	10/09/1995	lss	1850
Bromofluorobenzene (SURR)	99		% Rec.	10/09/1995	lss	1850
METHOD M8015 (EXT., Solid)						
as Diesel	ND	1	mg/kg	10/04/1995	tts	1086
as Motor Oil	ND	10	mg/kg	10/04/1995	tts	1086

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 21 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

METHOD BLANK REPORT

Parameter	Method Blank Amount Pound	Reporting Limit	Units	Date Analyzed	Analyst Initials	Run Batch Number
METHOD 8260 (GCMS, Solid)						
Acetone	ND	10	ug/kg	10/03/1995	klh	197
Benzene	ND	5.0	ug/kg	10/03/1995	klh	197
Bromobenzene	ND	5.0	ug/kg	10/03/1995	klh	197
Bromochloromethane	ND	5.0	ug/kg	10/03/1995	klh	197
Bromodichloromethane	ND	5.0	ug/kg	10/03/1995	klh	197
Bromoform	ND	5.0	ug/kg	10/03/1995	klh	197
Bromomethane	ND	5.0	ug/kg	10/03/1995	klh	197
2-Butanone	ND	10	ug/kg	10/03/1995	klh	197
n-Butylbenzene	ND	5.0	ug/kg	10/03/1995	klh	197
sec-Butylbenzene	ND	5.0	ug/kg	10/03/1995	klh	197
tert-Butylbenzene	ND	5.0	ug/kg	10/03/1995	klh	197
Carbon Tetrachloride	ND	5.0	ug/kg	10/03/1995	klh	197
Chlorobenzene	ND	5.0	ug/kg	10/03/1995	klh	197
Chloroethane	ND	5.0	ug/kg	10/03/1995	klh	197
Chloroform	ND	5.0	ug/kg	10/03/1995	klh	197
Chloromethane	ND	5.0	ug/kg	10/03/1995	klh	197
2-Chlorotoluene	ND	5.0	ug/kg	10/03/1995	klh	197
4-Chlorotoluene	ND	5.0	ug/kg	10/03/1995	klh	197
1,2-Dibromo-3-chloropropane	ND	5.0	ug/kg	10/03/1995	klh	197
1,2-Dibromoethane	ND	5.0	ug/kg	10/03/1995	klh	197
Dibromochloromethane	ND	5.0	ug/kg	10/03/1995	klh	197
Dibromomethane	ND	5.0	ug/kg	10/03/1995	klh	197
1,2-Dichlorobenzene	ND	5.0	ug/kg	10/03/1995	klh	197
1,3-Dichlorobenzene	ND	5.0	ug/kg	10/03/1995	klh	197
1,4-Dichlorobenzene	ND	5.0	ug/kg	10/03/1995	klh	197
Dichlorodifluoromethane	ND	5.0	ug/kg	10/03/1995	klh	197
1,1-Dichloroethane	ND	5.0	ug/kg	10/03/1995	klh	197
1,2-Dichloroethane	ND	5.0	ug/kg	10/03/1995	klh	197
1,1-Dichloroethene	ND	5.0	ug/kg	10/03/1995	klh	197
cis-1,2-Dichloroethene	ND	5.0	ug/kg	10/03/1995	klh	197
trans-1,2-Dichloroethene	ND	5.0	ug/kg	10/03/1995	klh	197
1,2-Dichloropropane	ND	5.0	ug/kg	10/03/1995	klh	197
1,3-Dichloropropane	ND	5.0	ug/kg	10/03/1995	klh	197
2,2-Dichloropropane	ND	5.0	ug/kg	10/03/1995	klh	197
trans-1,3-Dichloropropene	ND	5.0	ug/kg	10/03/1995	klh	197
1,1-Dichloropropene	ND	5.0	ug/kg	10/03/1995	klh	197
cis-1,3-Dichloropropene	ND	5.0	ug/kg	10/03/1995	klh	197
Ethyl benzene	ND	5.0	ug/kg	10/03/1995	klh	197
Hexachlorobutadiene	ND	5.0	ug/kg	10/03/1995	klh	197
Isopropylbenzene	ND	5.0	ug/kg	10/03/1995	klh	197
p-Isopropyltoluene	ND	5.0	ug/kg	10/03/1995	klh	197
Methylene chloride	ND	5.0	ug/kg	10/03/1995	klh	197

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 22 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

METHOD BLANK REPORT

Parameter	Method Blank	Reporting Limit	Units	Date	Analyst	Run Batch
	Amount Found			Analyzed	Initials	Number
Naphthalene	ND	5.0	ug/kg	10/03/1995	klh	197
n-Propylbenzene	ND	5.0	ug/kg	10/03/1995	klh	197
Styrene	ND	5.0	ug/kg	10/03/1995	klh	197
1,1,1,2-Tetrachloroethane	ND	5.0	ug/kg	10/03/1995	klh	197
1,1,2,2-Tetrachloroethane	ND	5.0	ug/kg	10/03/1995	klh	197
Tetrachloroethene	ND	5.0	ug/kg	10/03/1995	klh	197
1,2,3-Trichlorobenzene	ND	5.0	ug/kg	10/03/1995	klh	197
1,2,4-Trichlorobenzene	ND	5.0	ug/kg	10/03/1995	klh	197
1,1,1-Trichloroethane	ND	5.0	ug/kg	10/03/1995	klh	197
1,1,2-Trichloroethane	ND	5.0	ug/kg	10/03/1995	klh	197
Trichloroethene	ND	5.0	ug/kg	10/03/1995	klh	197
Trichlorofluoromethane	ND	5.0	ug/kg	10/03/1995	klh	197
1,2,3-Trichloropropane	ND	5.0	ug/kg	10/03/1995	klh	197
1,2,4-Trimethylbenzene	ND	5.0	ug/kg	10/03/1995	klh	197
1,3,5-Trimethylbenzene	ND	5.0	ug/kg	10/03/1995	klh	197
Toluene	ND	5.0	ug/kg	10/03/1995	klh	197
Vinyl chloride	ND	5.0	ug/kg	10/03/1995	klh	197
o-Xylene	ND	5.0	ug/kg	10/03/1995	klh	197
m & p-Xylene	ND	5.0	ug/kg	10/03/1995	klh	197
4-Bromofluorobenzene (SURR)	101		% Rec.	10/03/1995	klh	197
Toluene-d8 (SURR)	94		% Rec.	10/03/1995	klh	197
1,2-Dichloroethane-d4 (SURR)	85		% Rec.	10/03/1995	klh	197

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 23 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

METHOD BLANK REPORT

Parameter	Method	Reporting	Units	Date	Analyst	Run
	Blank					
	Amount	Limit			Initials	Batch
	Pound			Analyzed		Number
METHOD 8270 (GCMS, Solid)						
Acenaphthene	ND	330	ug/kg	10/17/1995	gec	699
Acenaphthylene	ND	330	ug/kg	10/17/1995	gec	699
Aldrin	ND	1600	ug/kg	10/17/1995	gec	699
Anthracene	ND	330	ug/kg	10/17/1995	gec	699
Benzidine	ND	1600	ug/kg	10/17/1995	gec	699
Benzo(a)anthracene	ND	330	ug/kg	10/17/1995	gec	699
Benzo(b)fluoranthene	ND	330	ug/kg	10/17/1995	gec	699
Benzo(k)fluoranthene	ND	330	ug/kg	10/17/1995	gec	699
Benzo(a)pyrene	ND	330	ug/kg	10/17/1995	gec	699
Benzo(g,h,i)perylene	ND	330	ug/kg	10/17/1995	gec	699
Benzoic acid	ND	1600	ug/kg	10/17/1995	gec	699
Benzyl alcohol	ND	330	ug/kg	10/17/1995	gec	699
Butyl benzyl phthalate	ND	330	ug/kg	10/17/1995	gec	699
delta-BHC	ND	1600	ug/kg	10/17/1995	gec	699
gamma-BHC	ND	1600	ug/kg	10/17/1995	gec	699
bis(2-Chloroethyl)ether	ND	330	ug/kg	10/17/1995	gec	699
bis(2-Chloroethoxy)methane	ND	330	ug/kg	10/17/1995	gec	699
bis(2-Chloroisopropyl)ether	ND	330	ug/kg	10/17/1995	gec	699
bis(2-Ethylhexyl)phthalate	ND	330	ug/kg	10/17/1995	gec	699
4-Bromophenyl phenyl ether	ND	330	ug/kg	10/17/1995	gec	699
4-Chloroaniline	ND	330	ug/kg	10/17/1995	gec	699
2-Chloronaphthalene	ND	330	ug/kg	10/17/1995	gec	699
4-Chlorophenyl phenyl ether	ND	330	ug/kg	10/17/1995	gec	699
Chrysene	ND	330	ug/kg	10/17/1995	gec	699
4,4'-DDD	ND	1600	ug/kg	10/17/1995	gec	699
4,4'-DDE	ND	1600	ug/kg	10/17/1995	gec	699
4,4'-DDT	ND	1600	ug/kg	10/17/1995	gec	699
Dibenzo(a,h)anthracene	ND	330	ug/kg	10/17/1995	gec	699
Dibenzofuran	ND	330	ug/kg	10/17/1995	gec	699
Di-n-butylphthalate	ND	330	ug/kg	10/17/1995	gec	699
1,2-Dichlorobenzene	ND	330	ug/kg	10/17/1995	gec	699
1,3-Dichlorobenzene	ND	330	ug/kg	10/17/1995	gec	699
1,4-Dichlorobenzene	ND	330	ug/kg	10/17/1995	gec	699
3,3'-Dichlorobenzidine	ND	660	ug/kg	10/17/1995	gec	699
Dieldrin	ND	1600	ug/kg	10/17/1995	gec	699
Diethylphthalate	ND	330	ug/kg	10/17/1995	gec	699
Dimethyl phthalate	ND	330	ug/kg	10/17/1995	gec	699
2,4-Dinitrotoluene	ND	330	ug/kg	10/17/1995	gec	699
2,6-Dinitrotoluene	ND	330	ug/kg	10/17/1995	gec	699
Di-n-octyl phthalate	ND	330	ug/kg	10/17/1995	gec	699
Endrin aldehyde	ND	1600	ug/kg	10/17/1995	gec	699
Fluoranthene	ND	330	ug/kg	10/17/1995	gec	699

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Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 24 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

METHOD BLANK REPORT

Parameter	Method Blank	Reporting Limit	Units	Date	Analyst	Run Batch
	Amount Found			Analyzed	Initials	Number
Fluorene	ND	330	ug/kg	10/17/1995	gec	699
Heptachlor	ND	1600	ug/kg	10/17/1995	gec	699
Heptachlor epoxide	ND	1600	ug/kg	10/17/1995	gec	699
Hexachlorobenzene	ND	330	ug/kg	10/17/1995	gec	699
Hexachlorobutadiene	ND	330	ug/kg	10/17/1995	gec	699
Hexachlorocyclopentadiene	ND	330	ug/kg	10/17/1995	gec	699
Hexachloroethane	ND	330	ug/kg	10/17/1995	gec	699
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg	10/17/1995	gec	699
Isophorone	ND	330	ug/kg	10/17/1995	gec	699
2-Methylnaphthalene	ND	330	ug/kg	10/17/1995	gec	699
Naphthalene	ND	330	ug/kg	10/17/1995	gec	699
2-Nitroaniline	ND	1600	ug/kg	10/17/1995	gec	699
3-Nitroaniline	ND	1600	ug/kg	10/17/1995	gec	699
4-Nitroaniline	ND	1600	ug/kg	10/17/1995	gec	699
Nitrobenzene	ND	330	ug/kg	10/17/1995	gec	699
N-Nitroso-Di-N-propylamine	ND	330	ug/kg	10/17/1995	gec	699
N-Nitrosodiphenylamine	ND	330	ug/kg	10/17/1995	gec	699
Phenanthrene	ND	330	ug/kg	10/17/1995	gec	699
Pyrene	ND	330	ug/kg	10/17/1995	gec	699
1,2,4-Trichlorobenzene	ND	330	ug/kg	10/17/1995	gec	699
4-Chloro-3-methylphenol	ND	330	ug/kg	10/17/1995	gec	699
2-Chlorophenol	ND	330	ug/kg	10/17/1995	gec	699
2,4-Dichlorophenol	ND	330	ug/kg	10/17/1995	gec	699
2,4-Dimethylphenol	ND	330	ug/kg	10/17/1995	gec	699
2,4-Dinitrophenol	ND	1600	ug/kg	10/17/1995	gec	699
4,6-Dinitro-2-methylphenol	ND	1600	ug/kg	10/17/1995	gec	699
2-Nitrophenol	ND	330	ug/kg	10/17/1995	gec	699
4-Nitrophenol	ND	1600	ug/kg	10/17/1995	gec	699
Pentachlorophenol	ND	1600	ug/kg	10/17/1995	gec	699
Phenol	ND	330	ug/kg	10/17/1995	gec	699
2,4,6-Trichlorophenol	ND	330	ug/kg	10/17/1995	gec	699
2-Methylphenol	ND	330	ug/kg	10/17/1995	gec	699
4-Methylphenol	ND	330	ug/kg	10/17/1995	gec	699
2,4,5-Trichlorophenol	ND	1600	ug/kg	10/17/1995	gec	699
Nitrobenzene-d5 (SURR)	73		† Rec.	10/17/1995	gec	699
2-Fluorobiphenyl (SURR)	67		† Rec.	10/17/1995	gec	699
p-Terphenyl-d14 (SURR)	63		† Rec.	10/17/1995	gec	699
Phenol-d5 (SURR)	64		† Rec.	10/17/1995	gec	699
2-Fluorophenol (SURR)	74		† Rec.	10/17/1995	gec	699
2,4,6-Tribromophenol (SURR)	57		† Rec.	10/17/1995	gec	699

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 25 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix					Matrix						
	Matrix	Spike				Matrix	Spike					
	Spike	Dup		Spike	Sample	Spike	Dup.		Date	Run	Sample	
	% Rec.	% Rec.	RPD	Amount	Conc.	Conc.	Conc.	Units	Analyzed	Batch	Spiked	
Oil & Grease (IR,TRPH)	104.2	108.1	3.7	159.33	ND	166.1	175.53	mg/kg	10/05/1995	582	252032	
METHOD 5030/M8015											252179	
as Gasoline	109.6	104.4	4.9	2.50	ND	2.74	2.61	mg/kg	10/09/1995	1850	252179	
METHOD M8015 (EXT., Solid)											252028	
as Diesel	58.9	62.5	5.9	33.3	ND	19.6	20.8	mg/kg	10/04/1995	1086	252028	

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95,03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 26 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix			Spike	Sample	Matrix			Date	Run	Sample
	Matrix	Spike				Matrix	Spike				
	Spike	Dup		Amount	Conc.	Spike	Dup.		Analyzed	Batch	Spiked
	% Rec.	% Rec.	RPD			Conc.	Conc.	Units			
METHOD 8260 (GCMS, Solid)											251846
Benzene	96.4	98.6	2.3	82.9	ND	79.9	81.8	ug/kg	10/03/1995	197	251846
Chlorobenzene	95.6	98.4	2.9	82.9	ND	79.3	81.6	ug/kg	10/03/1995	197	251846
1,1-Dichloroethene	114.2	116.0	1.6	82.9	ND	94.7	96.2	ug/kg	10/03/1995	197	251846
Trichloroethene	96.2	92.0	4.5	82.9	ND	79.8	76.3	ug/kg	10/03/1995	197	251846
Toluene	95.6	102.6	7.0	82.9	ND	79.3	85.1	ug/kg	10/03/1995	197	251846

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 27 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix			Spike Amount	Sample Conc.	Matrix			Date Analyzed	Run Batch	Sample Spiked
	Matrix Spike % Rec.	Spike Dup % Rec.	RPD			Matrix Spike Conc.	Spike Dup. Conc.	Units			
METHOD 8270 (GCMS, Solid)											252074
Acenaphthene	71.0	71.0	0.0	100	ND	71	71	ug/kg	10/17/1995	699	252074
1,4-Dichlorobenzene	74.0	77.0	4.0	100	ND	74	77	ug/kg	10/17/1995	699	252074
2,4-Dinitrotoluene	85.0	84.0	1.2	100	ND	85	84	ug/kg	10/17/1995	699	252074
N-Nitroso-Di-N-propylamine	79.0	78.0	1.3	100	ND	79	78	ug/kg	10/17/1995	699	252074
Pyrene	76.0	78.0	2.6	100	ND	76	78	ug/kg	10/17/1995	699	252074
1,2,4-Trichlorobenzene	73.0	83.0	12.8	100	ND	73	83	ug/kg	10/17/1995	699	252074
4-Chloro-3-methylphenol	67.0	73.0	8.6	200	ND	134	146	ug/kg	10/17/1995	699	252074
2-Chlorophenol	70.0	71.5	2.1	200	ND	140	143	ug/kg	10/17/1995	699	252074
4-Nitrophenol	72.0	75.0	4.1	200	ND	144	150	ug/kg	10/17/1995	699	252074
Pentachlorophenol	74.0	79.5	7.2	200	ND	148	159	ug/kg	10/17/1995	699	252074
Phenol	71.0	78.0	9.4	200	ND	142	156	ug/kg	10/17/1995	699	252074

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 28 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

LABORATORY CONTROL SAMPLE REPORT

Parameter	Duplicate			Duplicate			Units	Date Analyzed	Analyst Initials	Run Batch
	LCS % Recovery	Duplicate LCS % Recovery	RPD	LCS Amount Found	LCS Amount Found	LCS Amount Expected				
Oil & Grease (IR,TRPH)	104.3			166.9		160.0	mg/kg	10/05/1995	shr	582
METHOD M8015 (EXT., Solid)	.									
as Diesel	94.6	96.4	1.9	31.5	32.1	33.3	mg/kg	10/04/1995	tts	1086

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Kleinfelder
Client Acct: 30002
NET Job No: 95.03821

Date: 11/01/1995
ELAP Cert: 1386
Page: 29 of 29

Ref: 24/580/980 Interchange/Proj. No. 10-300193

LABORATORY CONTROL SAMPLE REPORT

Parameter				Duplicate			Units	Date	Analyst	Run
	LCS	Duplicate	LCS	LCS	LCS					
	% Recovery	% Recovery	RPD	Amount	Amount	Amount				
Method 8270 (GCMS, Solid)				Pound	Pound	Expected		Analyzed	Initials	Batch
Acenaphthene	71.0	68.0	4.3	71	68	100	ug/kg	10/17/1995	gec	699
1,4-Dichlorobenzene	72.0	70.0	2.8	72	70	100	ug/kg	10/17/1995	gec	699
2,4-Dinitrotoluene	83.0	78.0	6.2	83	78	100	ug/kg	10/17/1995	gec	699
N-Nitroso-Di-N-propylamine	78.0	81.0	3.8	78	81	100	ug/kg	10/17/1995	gec	699
Pyrene	76.0	79.0	3.9	76	79	100	ug/kg	10/17/1995	gec	699
1,2,4-Trichlorobenzene	72.0	73.0	1.4	72	73	100	ug/kg	10/17/1995	gec	699
4-Chloro-3-methylphenol	66.0	68.5	3.7	132	137	200	ug/kg	10/17/1995	gec	699
2-Chlorophenol	68.0	72.0	5.7	136	144	200	ug/kg	10/17/1995	gec	699
4-Nitrophenol	72.5	70.0	3.5	145	140	200	ug/kg	10/17/1995	gec	699
Pentachlorophenol	76.0	75.0	1.3	152	150	200	ug/kg	10/17/1995	gec	699
Phenol	70.0	79.0	12.1	140	158	200	ug/kg	10/17/1995	gec	699
Nitrobenzene-d5 (SURR)	68.0	71.0	4.3	68	71	100	% Rec.	10/17/1995	gec	699
2-Fluorobiphenyl (SURR)	66.0	71.0	7.3	66	71	100	% Rec.	10/17/1995	gec	699
p-Terphenyl-d14 (SURR)	97.0	76.0	24.3	97	76	100	% Rec.	10/17/1995	gec	699
Phenol-d5 (SURR)	65.0	68.0	4.5	65	68	100	% Rec.	10/17/1995	gec	699
2-Fluorophenol (SURR)	77.0	76.0	1.3	77	76	100	% Rec.	10/17/1995	gec	699
2,4,6-Tribromophenol (SURR)	61.0	59.0	3.3	61	59	100	% Rec.	10/17/1995	gec	699

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

**NATIONAL
ENVIRONMENTAL
TESTING, INC.
ANALYTICAL AND QUALITY CONTROL REPORT**

Portland Division
17400 SW Upper Boones Ferry Rd.
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Portland, OR 97224
Tel: (503) 624-5449
Fax: (503) 639-6889

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Enclosed is the Analytical and Quality Control reports for the following samples submitted to the Portland Division of NET, Inc. for analysis:

<u>Sample Number</u>	<u>Sample Description</u>	<u>Date Taken</u>	<u>Date Received</u>
48673	252073	09/26/1995	10/06/1995
48674	252074	09/28/1995	10/06/1995
48675	252075	09/28/1995	10/06/1995

JOB # 95.03821

The Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

National Environmental Testing, Inc. certifies that the analytical results contained herein apply only to the specific samples analyzed.

Reproduction of this analytical report is permitted only in its entirety.

Tabatha Brochu
Project Manager

ANALYTICAL REPORT

Judy Ridley
 NET - Santa Rosa
 3636 N. Laughlin Road
 Suite 110
 Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Client Project ID: 95.03821

Analyte	Result	Flag	Units	Reporting	Date	Analyst	Prep	Run	Method Reference
				Limit	Analyzed	Initials	Batch	Batch	
SAMPLE NO.	SAMPLE DESCRIPTION					DATE-TIME TAKEN			
48673	252073					09/26/1995 13:00			
CP/AA Digestion - Soil	-			-	10/06/1995	mkz	289		ICP
ICP HEADER	-				10/06/1995	mkz		690	
Cadmium, ICP	ND		mg/Kg	1.0	10/06/1995	mkz	289	620	6010
Chromium, ICP	37		mg/Kg	1.0	10/06/1995	mkz	289	615	6010
Lead, ICP	5.1		mg/kg	1.0	10/06/1995	mkz	289	615	6010
Nickel, ICP	57		mg/Kg	1.0	10/06/1995	mkz	289	614	6010
inc, ICP	69		mg/Kg	1.0	10/06/1995	mkz	289	571	6010

SAMPLE NO.	SAMPLE DESCRIPTION					DATE-TIME TAKEN			
48674	252074					09/28/1995 09:47			
ICP/AA Digestion - Soil	-			-	10/06/1995	mkz	289		ICP
ICP HEADER	-				10/06/1995	mkz		690	
Cadmium, ICP	ND		mg/Kg	1.0	10/06/1995	mkz	289	620	6010
Chromium, ICP	58		mg/Kg	1.0	10/06/1995	mkz	289	615	6010
Lead, ICP	3.9		mg/kg	1.0	10/06/1995	mkz	289	615	6010
Nickel, ICP	95		mg/Kg	1.0	10/06/1995	mkz	289	614	6010
inc, ICP	63		mg/Kg	1.0	10/06/1995	mkz	289	571	6010

ANALYTICAL REPORT

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Client Project ID: 95.03821

Analyte	Result	Flag	Units	Reporting Limit	Date Analyzed	Analyst Initials	Prep Batch No.	Run Batch No.	Method Reference
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SAMPLE NO.	SAMPLE DESCRIPTION
48675	252075

DATE-TIME TAKEN
09/28/1995 09:15

.CP/AA Digestion - Soil	-			-	10/06/1995	mkz	289		ICP
ICP HEADER	-				10/06/1995	mkz		690	
Cadmium, ICP	ND		mg/Kg	1.0	10/06/1995	mkz	289	620	6010
Chromium, ICP	34		mg/Kg	1.0	10/06/1995	mkz	289	615	6010
Lead, ICP	2.7		mg/kg	1.0	10/06/1995	mkz	289	615	6010
Nickel, ICP	49		mg/Kg	1.0	10/06/1995	mkz	289	614	6010
Zinc, ICP	58		mg/Kg	1.0	10/06/1995	mkz	289	571	6010

QUALITY CONTROL REPORT CONTINUING CALIBRATION VERIFICATION

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Analyte	Prep Batch No.	Run Batch No.	CCV True Value	Units	CCV Conc Found	CCV % Rec	Flag	Date Analyzed
Cadmium, ICP		620	50.0	mg/Kg	49.0	98		10/06/1995
Cadmium, ICP		620	50.0	mg/Kg	48.0	96		10/06/1995
Chromium, ICP		615	50.0	mg/Kg	49.0	98		10/06/1995
Chromium, ICP		615	50.0	mg/Kg	48.0	96		10/06/1995
Lead, ICP		615	50.0	mg/kg	50.0	100		10/06/1995
Lead, ICP		615	50.0	mg/kg	49.0	98		10/06/1995
Nickel, ICP		614	50.0	mg/Kg	50.0	100		10/06/1995
Nickel, ICP		614	50.0	mg/Kg	49.0	98		10/06/1995
Zinc, ICP		571	50.0	mg/Kg	50.0	100		10/06/1995
Zinc, ICP		571	50.0	mg/Kg	49.0	98		10/06/1995

QUALITY CONTROL REPORT BLANKS

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Analyte	Prep Batch No.	Run Batch No.	Blank Value	Flag	Units	Reporting Limit	Date Analyzed
Cadmium, ICP	289	620	ND		mg/Kg	1.0	10/06/1995
Chromium, ICP	289	615	ND		mg/Kg	1.0	10/06/1995
Lead, ICP	289	615	ND		mg/kg	1.0	10/06/1995
Nickel, ICP	289	614	ND		mg/Kg	1.0	10/06/1995
Zinc, ICP	289	571	ND		mg/Kg	1.0	10/06/1995

QUALITY CONTROL REPORT LABORATORY CONTROL STANDARD

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Analyte	Prep Batch No.	Run Batch No.	LCS True Conc	Units	LCS Conc Found	LCS % Rec.	Flag	Date Analyzed
Cadmium, ICP	289	620	50.0	mg/Kg	50.0	100		10/06/1995
Chromium, ICP	289	615	50.0	mg/Kg	51.0	102		10/06/1995
Lead, ICP	289	615	50.0	mg/kg	50.0	100		10/06/1995
Nickel, ICP	289	614	50.0	mg/Kg	50.0	100		10/06/1995
Zinc, ICP	289	571	50.0	mg/Kg	49.0	98		10/06/1995

QUALITY CONTROL REPORT MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Analyte	Prep Batch No.	Run Batch No.	Conc. Spike Added	Units	Sample Result	Conc. MS Result	MS % Rec.	Conc. MSD Result	MSD % Rec.	RPD	Flag	Date Analyzed
Cadmium, ICP	289	620	50.0	mg/Kg	ND	42	84	41	82	2.4		10/06/1995
Chromium, ICP	289	615	50.0	mg/Kg	12	56	88	57	90	2.2		10/06/1995
Lead, ICP	289	615	50.0	mg/kg	5.9	48	84	48	84	0		10/06/1995
Nickel, ICP	289	614	50.0	mg/Kg	11	53	84	53	84	0		10/06/1995
Zinc, ICP	289	571	50.0	mg/Kg	48	104	112	107	118	5.2		10/06/1995

A This sample does not have a typical gasoline pattern.

B1 This sample does not have a typical diesel pattern.

B The blank exhibited a positive result greater than the reporting limit for this compound.

C The sample appears to contain a lighter hydrocarbon than gasoline.

D The sample appears to extend to a heavier hydrocarbon range than gasoline.

E The sample appears to extend to a lighter hydrocarbon range than diesel.

F The sample appears to extend to a heavier hydrocarbon range than diesel.

G The positive result for gasoline is due to single component contamination.

H The gasoline elution pattern for the sample is not typical.

I The oil pattern for this sample is not typical.

J The result for this compound is an estimated concentration.

L The LCS recovery exceeded control limits. See the LCS page of this report.

M MS and/or MSD percent recovery exceeds control limits.

MR The MS/MSD RPD is greater than 20%. The sample was re-extracted and re-analyzed with similar results. This is due to a matrix interference, likely a non-homogeneity of the sample.

P A post digestion spike was analyzed, and recoveries are within control limits.

Q Detection limits elevated due to sample matrix.

R The duplicate RPD was greater than 20%. The sample was re-extracted and re-analyzed with similar results. This indicates a matrix interference in the sample, likely a non-homogeneity of the sample.

SR Surrogate recovery outside control limits. See the surrogate page of the report.

W The duplicate RPD was greater than 20%. Due to insufficient sample, re-analysis was not possible.

X Sample was analyzed outside recommended holding times.

Y The result for this parameter was greater than the TCLP regulatory limit.

Z The pattern seen for the parameter being analyzed is not typical.

KEY TO ABBREVIATIONS and METHOD REFERENCES

- < : Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
- * : Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
- ICVS : Initial Calibration Verification Standard (External Standard).
- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than applicable listed reporting limit.
- NTU : - Nephelometric turbidity units.
- RPD : Relative percent difference, $100 \text{ [Value 1 - Value 2] / mean value}$.
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- umhos/cm : Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

NATIONAL
ENVIRONMENTAL
TESTING, INC.

ANALYTICAL AND QUALITY CONTROL REPORT

Portland Division
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3821

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Enclosed is the Analytical and Quality Control reports for the following samples submitted to the Portland Division of NET, Inc. for analysis:

<u>Sample Number</u>	<u>Sample Description</u>	<u>Date Taken</u>	<u>Date Received</u>
48673	252073	09/26/1995	10/06/1995
48674	252074	09/28/1995	10/06/1995
48675	252075	09/28/1995	10/06/1995

The Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

National Environmental Testing, Inc. certifies that the analytical results contained herein apply only to the specific samples analyzed.

Reproduction of this analytical report is permitted only in its entirety.

Tabatha Brochu
Project Manager

ANALYTICAL REPORT

Judy Ridley
 NET - Santa Rosa
 3636 N. Laughlin Road
 Suite 110
 Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Client Project ID: 95.03821

Analyte	Result	Flag	Units	Reporting Limit	Date Analyzed	Analyst Initials	Prep Batch No.	Run Batch No.	Method Reference
---------	--------	------	-------	-----------------	---------------	------------------	----------------	---------------	------------------

SAMPLE NO. 48673
 SAMPLE DESCRIPTION 252073

DATE-TIME TAKEN
 09/26/1995 13:00

ICP/AA Digestion - Soil	-			-	10/06/1995	mkz	289		ICP
ICP HEADER	-				10/06/1995	mkz		690	
Cadmium, ICP	ND		mg/Kg	1.0	10/06/1995	mkz	289	620	6010
Chromium, ICP	37		mg/Kg	1.0	10/06/1995	mkz	289	615	6010
Lead, ICP	5.1		mg/Kg	1.0	10/06/1995	mkz	289	615	6010
Nickel, ICP	57		mg/Kg	1.0	10/06/1995	mkz	289	614	6010
Inc, ICP	69		mg/Kg	1.0	10/06/1995	mkz	289	571	6010

SAMPLE NO. 48674
 SAMPLE DESCRIPTION 252074

DATE-TIME TAKEN
 09/28/1995 09:47

ICP/AA Digestion - Soil	-			-	10/06/1995	mkz	289		ICP
ICP HEADER	-				10/06/1995	mkz		690	
Cadmium, ICP	ND		mg/Kg	1.0	10/06/1995	mkz	289	620	6010
Chromium, ICP	58		mg/Kg	1.0	10/06/1995	mkz	289	615	6010
Lead, ICP	1.9		mg/Kg	1.0	10/06/1995	mkz	289	615	6010
Nickel, ICP	95		mg/Kg	1.0	10/06/1995	mkz	289	614	6010
Inc, ICP	63		mg/Kg	1.0	10/06/1995	mkz	289	571	6010

ANALYTICAL REPORT

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Client Project ID: 95.03821

Analyte	Result	Flag	Units	Reporting Limit	Date Analyzed	Analyst Initials	Prep Batch No.	Run Batch No.	Method Reference
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SAMPLE NO.	SAMPLE DESCRIPTION
48675	252075

DATE-TIME TAKEN
09/28/1995 09:15

CP/AA Digestion - Soil	-		-	10/06/1995	mkz	289		ICP
ICP HEADER	-			10/06/1995	mkz		690	
Cadmium, ICP	ND		mg/Kg	1.0	10/06/1995	mkz	289	620 6010
Ironium, ICP	34		mg/Kg	1.0	10/06/1995	mkz	289	615 6010
Lead, ICP	2.7		mg/Kg	1.0	10/06/1995	mkz	289	615 6010
Nickel, ICP	49		mg/Kg	1.0	10/06/1995	mkz	289	614 6010
Zinc, ICP	58		mg/Kg	1.0	10/06/1995	mkz	289	571 6010

**QUALITY CONTROL REPORT
CONTINUING CALIBRATION VERIFICATION**

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Analyte	Prep Batch No.	Run Batch No.	CCV True Value	Units	CCV Conc Found	CCV t Rec	Flag	Date Analyzed
Cadmium, ICP		620	50.0	mg/Kg	49.0	98		10/06/1995
Cadmium, ICP		620	50.0	mg/Kg	48.0	96		10/06/1995
Chromium, ICP		615	50.0	mg/Kg	49.0	98		10/06/1995
Chromium, ICP		615	50.0	mg/Kg	48.0	96		10/06/1995
Lead, ICP		615	50.0	mg/Kg	50.0	100		10/06/1995
Lead, ICP		615	50.0	mg/Kg	49.0	98		10/06/1995
Nickel, ICP		614	50.0	mg/Kg	50.0	100		10/06/1995
Nickel, ICP		614	50.0	mg/Kg	49.0	98		10/06/1995
Zinc, ICP		571	50.0	mg/Kg	50.0	100		10/06/1995
Zinc, ICP		571	50.0	mg/Kg	49.0	98		10/06/1995

**QUALITY CONTROL REPORT
BLANKS**

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Analyte	Prep Batch No.	Run Batch No.	Blank Value	Flag	Units	Reporting Limit	Date Analyzed
Cadmium, ICP	289	620	ND		ng/Kg	1.0	10/06/1995
Chromium, ICP	289	615	ND		ng/Kg	1.0	10/06/1995
Lead, ICP	289	615	ND		ng/kg	1.0	10/06/1995
Nickel, ICP	289	614	ND		ng/Kg	1.0	10/06/1995
Zinc, ICP	289	571	ND		ng/Kg	1.0	10/06/1995

**QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD**

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Analyte	Prep Batch No.	Run Batch No.	LCS True Conc	Units	LCS Conc Found	LCS t Rec.	Flag	Date Analysed
Cadmium, ICP	289	620	50.0	mg/Kg	50.0	100		10/06/1995
Chromium, ICP	289	615	50.0	mg/Kg	51.0	102		10/06/1995
Lead, ICP	289	615	50.0	mg/kg	50.0	100		10/06/1995
Nickel, ICP	289	614	50.0	mg/Kg	50.0	100		10/06/1995
Zinc, ICP	289	671	50.0	mg/Kg	49.0	98		10/06/1995

**QUALITY CONTROL REPORT
MATRIX SPIKE/MATRIX SPIKE DUPLICATE**

Judy Ridley
NET - Santa Rosa
3636 N. Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226

10/09/1995

NET Job Number: 95.03323

Analyte	Prep Batch No.	Run Batch No.	Conc. Spike Added	Units	Sample Result	Conc. MS Result	MS t Rec.	Conc. MSD Result	MSD t Rec.	RPD	Flag	Date Analyzed
Cadmium, ICP	289	620	50.0	mg/Kg	MD	42	84	41	82	2.4		10/06/1995
Chromium, ICP	289	613	50.0	mg/Kg	12	56	88	57	90	2.2		10/06/1995
Lead, ICP	289	615	50.0	mg/Kg	5.9	48	84	48	84	0		10/06/1995
Nickel, ICP	289	614	50.0	mg/Kg	11	53	84	53	84	0		10/06/1995
Zinc, ICP	289	571	50.0	mg/Kg	48	104	112	107	113	5.2		10/06/1995

PURCHASE ORDER FOR INTERLAB ANALYSIS

PURCHASE ORDER # 95.13821

DATE SHIPPED 10/5/95

SENDING DIVISION SP.

RECEIVING DIVISION PT

NEGOTIATED BY J. L. [Signature]

APPROVED BY Mike

TELEPHONE # _____

TELEPHONE # _____

SAMPLE DUE DATE 10/10/95

HOLDING TIME _____

Sample #	Matrix	Sample Vol.	Parameter	Price	Comments
262073-075	SD		Cd, Cr, Pb, Ni, Zn		
			by ICP		

Additional Comments & Special Requests

Circle QC Deliverable Level Required: **II (no cost)**

III (up to 10%)

IV (up to 15%)

Price

Per Sample 50 # of Samples 3 Rush Charge _____ QA Charge _____ Sub Total 150

Discount 5%

TOTAL PURCHASE ORDER 74.17

Reporting Limits _____ (if necessary, provide attachment)

Digested: Y or N, if no, does the receiving division need to digest the sample? Y or N

CHAIN OF CUSTODY

1. Relinquished By:

SIGNATURES

DATE/TIME

2. Received By:

3. Relinquished By:

4. Received By:

Cooler Temperature:

PLEASE SIGN, DATE AND TIME THIS CUSTODY FORM AND RETURN THE ORIGINAL WITH THE FINAL REPORT. THE INVOICE MUST NOT EXCEED THE PURCHASE ORDER AMOUNT WITHOUT PRIOR APPROVAL AND AMENDMENT TO THIS PURCHASE ORDER.

LEFF DE

US

PROJECT NAME		PROJECT NO		PROJECT ID		PROJECT NO	
24/580/980 Interchange		10-300193		24/580/980		10-300193	
SAMPLES: (Signature/Number)		2928		2928		2928	
DATE		MM DD YY		TIME		TIME	
MM DD YY		HH MM SS		MM DD YY		HH MM SS	
092895	1035	B-1	D318	Composite	1	1	Please Composite All samples B-1, B-4 & B-6 & Run One Test
092895	1040	B-1	D718				
092695	1300	B-4					
092695	1300	B-4					
092895	1108	B-6	D417				
092895	1110	B-6	D717	Composite	1	1	Please Composite B-2 samples & Run one Test
092895	0947	B-2	D117				
092895	0950	B-2	D247				
092895	1010	B-3	D517				
092895	1012	B-3	D717				
092895	0915	B-5	D316	Composite	1	1	Please Composite All samples B-3 B-5 & B-7 Run One Test
092895	0918	B-5	D616				
092895	1158	B-7	D416				
092895	1155	B-7	D516				
CUSTODY SEALED							
Date 9/29/95 Time 1522 Initials JH							
SEAL INTACT? ☒							
Send Results To ☒ No ☐ Initials JH							
KLEINFELDER 7133 KOLL CENTER PARKWAY SUITE 100 PLEASANTON, CA 94566 (510) 484-1700							

TPH Diesel, for Motor Oil

TPH Gas (8015 Mod)

TPH (418.1)

Semi Volat. (8270)

Metals (8270)

Zinc & Nickel

Remarks

Most samples nearly liquid

All containers 3" dia., 6" long

Brass tubes

Please call Amir at (510) 484-1700 Ext. 216 if Question

Received by: (Signature) Betty Harvey

Received by: (Signature) Betty Harvey

Received for Laboratory by: (Signature) Betty Harvey

DATE TIME

9/29/95 1445

9/29/95 1522

9/30/95 0830

White - Sampler

VIA AIRS

Temp 40

Print - Lab Copy No 1340

A This sample does not have a typical gasoline pattern.

B1 This sample does not have a typical diesel pattern.

B The blank exhibited a positive result greater than the reporting limit for this compound.

C The sample appears to contain a lighter hydrocarbon than gasoline.

D The sample appears to extend to a heavier hydrocarbon range than gasoline.

E The sample appears to extend to a lighter hydrocarbon range than diesel.

F The sample appears to extend to a heavier hydrocarbon range than diesel.

G The positive result for gasoline is due to single component contamination.

H The gasoline elution pattern for the sample is not typical.

I The oil pattern for this sample is not typical.

J The result for this compound is an estimated concentration.

L The LCS recovery exceeded control limits. See the LCS page of this report.

M MS and/or MSD percent recovery exceeds control limits.

MR The MS/MSD RPD is greater than 20%. The sample was re-extracted and re-analyzed with similar results. This is due to a matrix interference, likely a non-homogeneity of the sample.

P A post digestion spike was analyzed, and recoveries are within control limits.

Q Detection limits elevated due to sample matrix.

R The duplicate RPD was greater than 20%. The sample was re-extracted and re-analyzed with similar results. This indicates a matrix interference in the sample, likely a non-homogeneity of the sample.

RR Surrogate recovery outside control limits. See the surrogate page of the report.

W The duplicate RPD was greater than 20%. Due to insufficient sample, re-analysis was not possible.

X Sample was analyzed outside recommended holding times.

Y The result for this parameter was greater than the TCLP regulatory limit.

Z The pattern seen for the parameter being analyzed is not typical.