TA-72 (Sandia Canyon, R-11, Groundwater)

Department of Energy
National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544

NOV 2 0 2003

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John Young
Hazardous Materials Bureau
New Mexico Environmental Department
P.O. Box 26110
Santa Fe, NM 87502

Dear Mr. Young:

I am transmitting the analytical screening data from the sampling of Workplan well R-11 drilling and development water. Workplan well R-11 is located in Sandia Canyon across from the Laboratory's Live Fire Range. Approximately 30,000 gallons of drilling and development water was recently produced during the construction of R-11. The details are as follows:

Pit Water
Approximately 18,000 gallons of drilling and development water are being stored in a mud pit at the R-11 drill site. Screening analysis of the pit water produced the following results:

1. No PCBs, VOAs, or SVOA contaminants were detected at concentrations greater than Method Detection Limits.
2. Gross alpha and tritium activities are below EPA drinking water MCLs.
3. Perchlorate was detected at 5.2 ppb (MDL=4.0 ppb).
4. Screening results show that no contaminants exceeded NM WQCC Regulation 3103 ground water standards with the exception of the following:

    - Al=5.32 ppm (ground water std=5.0 ppm)
    - Fe=1.48 ppm (ground water std=1.0 ppm)
    - Mn=0.327 ppm (ground water std=0.2 ppm)

Frac Tank Water
Approximately 12,000 gallons of development water is being stored in a frac tank at the R-11 drill site. Screening analysis of the frac tank water produced the following results:

1. No PCBs, VOAs, or SVOA contaminants were detected at concentrations greater than Method Detection Limits with the exception of a VOA detection for acetone at 440 ppb.
2. Gross alpha and tritium activities are below EPA drinking water MCLs.

3786

3. No perchlorate was detected in the frac tank screening sample.
4. Screening results show that no contaminants exceeded NM WQCC Regulation 3103 ground water standards.

Robert D. Enz, DOE proposes to apply both the pit water and the frac tank water to a gravel road in Pueblo Canyon for dust suppression. The application will be conducted in accordance with the terms and conditions of the Hydrogeologic Workplan NOI.

If you have any questions regarding this notification, please contact Mr. Bob Beers at 667-7969 (office) or 699-2342 (cell).

Sincerely,

for

Mat Johansen
Ground Water Program
Compliance Manager

OPM:8BE-001

Enclosure

cc w/enclosure:
M. Leavitt
New Mexico Environmental Department
P.O. Box 26110
Santa Fe, NM 87502

J. Holt, ADO, LANL, MS-A104
B. Ramsey, RRES-DO, LANL, MS-J591
K. Hargis, RRES-DO, LANL, MS- J591
T. George, RRES-DO, LANL, MS-J591
D. Stavert, RRES-EP, LANL, MS-J591
C. Nylander, RRES-GP, LANL, MS-M992
S. Rae, RRES-WQH, LANL, MS-K497
M. Saladen, RRES-WQH, LANL, MS-K497
B. Beers, RRES-WQH, LANL, MS-K497
S. Pearson, RRES-WQH, LANL, MS-M992

NOV 2 0 2003

Hall Environmental Analysis Laboratory

COVER LETTER

November 04, 2003

Mark Everett
Kleinfelder
8300 Jefferson, NE Suite B
Albuquerque, NM 87113
TEL: (505) 344-7373
FAX (505) 344-1711

RE: R-4 Characterization Well

Order No.: 0310142

Dear Mark Everett:

Hall Environmental Analysis Laboratory received 3 samples on 10/20/2003 for the analyses presented in the following report.

This is a preliminary report that contains incomplete data or data that has not been fully validated. Caution should be exercised in the use of any data presented as final reported results may not reflect the values presented.

If you have any questions regarding these test results, please feel free to call.

Hall Environmental Analysis Laboratory

Date: *04-Nov-03*

CLIENT:	Kleinfelder	**Client Sample ID:**	R-4 Tank
Lab Order:	0310142	**Tag Number:**	
Project:	R-4 Characterization Well	**Collection Date:**	10/20/2003 3:30:00 PM
Lab ID:	0310142-01A	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: JDC
Benzene	ND	100		µg/L	100	10/21/2003
Toluene	ND	100		µg/L	100	10/21/2003
Ethylbenzene	ND	100		µg/L	100	10/21/2003
Methyl tert-butyl ether (MTBE)	ND	100		µg/L	100	10/21/2003
1,2,4-Trimethylbenzene	ND	100		µg/L	100	10/21/2003
1,3,5-Trimethylbenzene	ND	100		µg/L	100	10/21/2003
1,2-Dichloroethane (EDC)	ND	100		µg/L	100	10/21/2003
1,2-Dibromoethane (EDB)	ND	100		µg/L	100	10/21/2003
Naphthalene	ND	200		µg/L	100	10/21/2003
1-Methylnaphthalene	ND	400		µg/L	100	10/21/2003
2-Methylnaphthalene	ND	400		µg/L	100	10/21/2003
Acetone	3100	1000		µg/L	100	10/21/2003
Bromobenzene	ND	100		µg/L	100	10/21/2003
Bromochloromethane	ND	100		µg/L	100	10/21/2003
Bromodichloromethane	ND	100		µg/L	100	10/21/2003
Bromoform	ND	100		µg/L	100	10/21/2003
Bromomethane	ND	200		µg/L	100	10/21/2003
2-Butanone	ND	1000		µg/L	100	10/21/2003
Carbon disulfide	ND	1000		µg/L	100	10/21/2003
Carbon Tetrachloride	ND	100		µg/L	100	10/21/2003
Chlorobenzene	ND	100		µg/L	100	10/21/2003
Chloroethane	ND	200		µg/L	100	10/21/2003
Chloroform	ND	100		µg/L	100	10/21/2003
Chloromethane	ND	100		µg/L	100	10/21/2003
2-Chlorotoluene	ND	100		µg/L	100	10/21/2003
4-Chlorotoluene	ND	100		µg/L	100	10/21/2003
cis-1,2-DCE	ND	100		µg/L	100	10/21/2003
cis-1,3-Dichloropropene	ND	100		µg/L	100	10/21/2003
1,2-Dibromo-3-chloropropane	ND	200		µg/L	100	10/21/2003
Dibromochloromethane	ND	100		µg/L	100	10/21/2003
Dibromomethane	ND	200		µg/L	100	10/21/2003
1,2-Dichlorobenzene	ND	100		µg/L	100	10/21/2003
1,3-Dichlorobenzene	ND	100		µg/L	100	10/21/2003
1,4-Dichlorobenzene	ND	100		µg/L	100	10/21/2003
Dichlorodifluoromethane	ND	100		µg/L	100	10/21/2003
1,1-Dichloroethane	ND	100		µg/L	100	10/21/2003
1,1-Dichloroethene	ND	100		µg/L	100	10/21/2003
1,2-Dichloropropane	ND	100		µg/L	100	10/21/2003
1,3-Dichloropropane	ND	100		µg/L	100	10/21/2003
2,2-Dichloropropane	ND	100		µg/L	100	10/21/2003

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-03*

CLIENT:	Kleinfelder	**Client Sample ID:**	R-4 Tank
Lab Order:	0310142	**Tag Number:**	
Project:	R-4 Characterization Well	**Collection Date:**	10/20/2003 3:30:00 PM
Lab ID:	0310142-01A	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,1-Dichloropropene	ND	100		µg/L	100	10/21/2003
Hexachlorobutadiene	ND	100		µg/L	100	10/21/2003
2-Hexanone	ND	1000		µg/L	100	10/21/2003
Isopropylbenzene	ND	100		µg/L	100	10/21/2003
4-Isopropyltoluene	ND	100		µg/L	100	10/21/2003
4-Methyl-2-pentanone	ND	1000		µg/L	100	10/21/2003
Methylene Chloride	ND	300		µg/L	100	10/21/2003
n-Butylbenzene	ND	100		µg/L	100	10/21/2003
n-Propylbenzene	ND	100		µg/L	100	10/21/2003
sec-Butylbenzene	ND	100		µg/L	100	10/21/2003
Styrene	ND	100		µg/L	100	10/21/2003
tert-Butylbenzene	ND	100		µg/L	100	10/21/2003
1,1,1,2-Tetrachloroethane	ND	100		µg/L	100	10/21/2003
1,1,2,2-Tetrachloroethane	ND	100		µg/L	100	10/21/2003
Tetrachloroethene (PCE)	ND	100		µg/L	100	10/21/2003
trans-1,2-DCE	ND	100		µg/L	100	10/21/2003
trans-1,3-Dichloropropene	ND	100		µg/L	100	10/21/2003
1,2,3-Trichlorobenzene	ND	100		µg/L	100	10/21/2003
1,2,4-Trichlorobenzene	ND	100		µg/L	100	10/21/2003
1,1,1-Trichloroethane	ND	100		µg/L	100	10/21/2003
1,1,2-Trichloroethane	ND	100		µg/L	100	10/21/2003
Trichloroethene (TCE)	ND	100		µg/L	100	10/21/2003
Trichlorofluoromethane	ND	100		µg/L	100	10/21/2003
1,2,3-Trichloropropane	ND	200		µg/L	100	10/21/2003
Vinyl chloride	ND	200		µg/L	100	10/21/2003
Xylenes, Total	ND	100		µg/L	100	10/21/2003
Surr: 1,2-Dichloroethane-d4	91.9	70.6-124		%REC	100	10/21/2003
Surr: 4-Bromofluorobenzene	95.1	76.2-122		%REC	100	10/21/2003
Surr: Dibromofluoromethane	94.4	67.2-131		%REC	100	10/21/2003
Surr: Toluene-d8	104	82.1-123		%REC	100	10/21/2003

Qualifiers:

ND - Not Det[illegible] Re[illegible]ortin[illegible] Limit

J - Analyte de[illegible]cted be[illegible]w [illegible]ant[illegible]ion limi[illegible]

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

[illegible] Sp[illegible] Re[illegible]ery outsid[illegible] accep[illegible] re[illegible]ver[illegible] limits

[illegible] RF outside [illegible]cept[illegible] over li[illegible]s

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-03*

CLIENT:	Kleinfelder	**Client Sample ID:**	R-4 Tank
Lab Order:	0310142	**Tag Number:**	
Project:	R-4 Characterization Well	**Collection Date:**	10/20/2003 3:30:00 AM
Lab ID:	0310142-01B	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8082: PCB'S						Analyst: **GT**
Aroclor 1016	ND	10		µg/L	1	11/4/2003 12:47:57 AM
Aroclor 1221	ND	50		µg/L	1	11/4/2003 12:47:57 AM
Aroclor 1232	ND	10		µg/L	1	11/4/2003 12:47:57 AM
Aroclor 1242	ND	10		µg/L	1	11/4/2003 12:47:57 AM
Aroclor 1248	ND	10		µg/L	1	11/4/2003 12:47:57 AM
Aroclor 1254	ND	10		µg/L	1	11/4/2003 12:47:57 AM
Aroclor 1260	ND	10		µg/L	1	11/4/2003 12:47:57 AM
Surr: Decachlorobiphenyl	34.8	76-111	S	%REC	1	11/4/2003 12:47:57 AM
Surr: Tetrachloro-m-xylene	48.4	47-94		%REC	1	11/4/2003 12:47:57 AM

Qualifiers:

ND - Not Det[illegible] Re[illegible]rti[illegible] Limit

J - Analyte de[illegible]cted be[illegible]w [illegible]anti[illegible]ion limi[illegible]

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

[illegible] Sp[illegible] Re[illegible]ery outsid[illegible] accep[illegible] re[illegible]ver[illegible] limits

[illegible] RF outside [illegible]cept[illegible] [illegible]over [illegible]

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-03*

CLIENT:	Kleinfelder	**Client Sample ID:**	R-4 Tank
Lab Order:	0310142	**Tag Number:**	
Project:	R-4 Characterization Well	**Collection Date:**	10/20/2003 3:30:00 PM
Lab ID:	0310142-01C	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BL
Fluoride	1.1	0.10		mg/L	1	10/21/2003 10:45:27 AM
Chloride	21	0.10		mg/L	1	10/21/2003 10:45:27 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	10/21/2003 10:45:27 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	10/21/2003 10:45:27 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	10/21/2003 10:45:27 AM
Sulfate	330	5.0		mg/L	10	10/21/2003 12:34:52 PM

Qualifiers:

ND - Not Det[illegible] Re[illegible]rtin[illegible] Limit

J - Analyte de[illegible]cted be[illegible]w [illegible]anti[illegible]ion limi[illegible]

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

[illegible] Sp[illegible] Re[illegible]very outsid[illegible] accep[illegible] re[illegible]ver[illegible] limits

I - RF outside [illegible]cepted [illegible] over [illegible]

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-03*

CLIENT:	Kleinfelder	**Client Sample ID:**	R-4 Pit
Lab Order:	0310142	**Tag Number:**	
Project:	R-4 Characterization Well	**Collection Date:**	10/20/2003 3:00:00 PM
Lab ID:	0310142-02A	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: JDC
Benzene	ND	100		µg/L	100	10/21/2003
Toluene	ND	100		µg/L	100	10/21/2003
Ethylbenzene	ND	100		µg/L	100	10/21/2003
Methyl tert-butyl ether (MTBE)	ND	100		µg/L	100	10/21/2003
1,2,4-Trimethylbenzene	ND	100		µg/L	100	10/21/2003
1,3,5-Trimethylbenzene	ND	100		µg/L	100	10/21/2003
1,2-Dichloroethane (EDC)	ND	100		µg/L	100	10/21/2003
1,2-Dibromoethane (EDB)	ND	100		µg/L	100	10/21/2003
Naphthalene	ND	200		µg/L	100	10/21/2003
1-Methylnaphthalene	ND	400		µg/L	100	10/21/2003
2-Methylnaphthalene	ND	400		µg/L	100	10/21/2003
Acetone	4800	1000		µg/L	100	10/21/2003
Bromobenzene	ND	100		µg/L	100	10/21/2003
Bromochloromethane	ND	100		µg/L	100	10/21/2003
Bromodichloromethane	ND	100		µg/L	100	10/21/2003
Bromoform	ND	100		µg/L	100	10/21/2003
Bromomethane	ND	200		µg/L	100	10/21/2003
2-Butanone	ND	1000		µg/L	100	10/21/2003
Carbon disulfide	ND	1000		µg/L	100	10/21/2003
Carbon Tetrachloride	ND	100		µg/L	100	10/21/2003
Chlorobenzene	ND	100		µg/L	100	10/21/2003
Chloroethane	ND	200		µg/L	100	10/21/2003
Chloroform	ND	100		µg/L	100	10/21/2003
Chloromethane	ND	100		µg/L	100	10/21/2003
2-Chlorotoluene	ND	100		µg/L	100	10/21/2003
4-Chlorotoluene	ND	100		µg/L	100	10/21/2003
cis-1,2-DCE	ND	100		µg/L	100	10/21/2003
cis-1,3-Dichloropropene	ND	100		µg/L	100	10/21/2003
1,2-Dibromo-3-chloropropane	ND	200		µg/L	100	10/21/2003
Dibromochloromethane	ND	100		µg/L	100	10/21/2003
Dibromomethane	ND	200		µg/L	100	10/21/2003
1,2-Dichlorobenzene	ND	100		µg/L	100	10/21/2003
1,3-Dichlorobenzene	ND	100		µg/L	100	10/21/2003
1,4-Dichlorobenzene	ND	100		µg/L	100	10/21/2003
Dichlorodifluoromethane	ND	100		µg/L	100	10/21/2003
1,1-Dichloroethane	ND	100		µg/L	100	10/21/2003
1,1-Dichloroethene	ND	100		µg/L	100	10/21/2003
1,2-Dichloropropane	ND	100		µg/L	100	10/21/2003
1,3-Dichloropropane	ND	100		µg/L	100	10/21/2003
2,2-Dichloropropane	ND	100		µg/L	100	10/21/2003

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-03*

CLIENT:	Kleinfelder	**Client Sample ID:**	R-4 Pit
Lab Order:	0310142	**Tag Number:**	
Project:	R-4 Characterization Well	**Collection Date:**	10/20/2003 3:00:00 PM
Lab ID:	0310142-02A	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,1-Dichloropropene	ND	100		µg/L	100	10/21/2003
Hexachlorobutadiene	ND	100		µg/L	100	10/21/2003
2-Hexanone	ND	1000		µg/L	100	10/21/2003
Isopropylbenzene	ND	100		µg/L	100	10/21/2003
4-Isopropyltoluene	ND	100		µg/L	100	10/21/2003
4-Methyl-2-pentanone	ND	1000		µg/L	100	10/21/2003
Methylene Chloride	ND	300		µg/L	100	10/21/2003
n-Butylbenzene	ND	100		µg/L	100	10/21/2003
n-Propylbenzene	ND	100		µg/L	100	10/21/2003
sec-Butylbenzene	ND	100		µg/L	100	10/21/2003
Styrene	ND	100		µg/L	100	10/21/2003
tert-Butylbenzene	ND	100		µg/L	100	10/21/2003
1,1,1,2-Tetrachloroethane	ND	100		µg/L	100	10/21/2003
1,1,2,2-Tetrachloroethane	ND	100		µg/L	100	10/21/2003
Tetrachloroethene (PCE)	ND	100		µg/L	100	10/21/2003
trans-1,2-DCE	ND	100		µg/L	100	10/21/2003
trans-1,3-Dichloropropene	ND	100		µg/L	100	10/21/2003
1,2,3-Trichlorobenzene	ND	100		µg/L	100	10/21/2003
1,2,4-Trichlorobenzene	ND	100		µg/L	100	10/21/2003
1,1,1-Trichloroethane	ND	100		µg/L	100	10/21/2003
1,1,2-Trichloroethane	ND	100		µg/L	100	10/21/2003
Trichloroethene (TCE)	ND	100		µg/L	100	10/21/2003
Trichlorofluoromethane	ND	100		µg/L	100	10/21/2003
1,2,3-Trichloropropane	ND	200		µg/L	100	10/21/2003
Vinyl chloride	ND	200		µg/L	100	10/21/2003
Xylenes, Total	ND	100		µg/L	100	10/21/2003
Surr: 1,2-Dichloroethane-d4	93.6	70.6-124		%REC	100	10/21/2003
Surr: 4-Bromofluorobenzene	96.9	76.2-122		%REC	100	10/21/2003
Surr: Dibromofluoromethane	95.1	67.2-131		%REC	100	10/21/2003
Surr: Toluene-d8	108	82.1-123		%REC	100	10/21/2003

Qualifiers:

ND - Not Det[illegible] Re[illegible]rti[illegible] Limit

J - Analyte de[illegible]cted be[illegible]w [illegible]anti[illegible]ion limi[illegible]

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

[illegible] Sp[illegible] Re[illegible]very outsid[illegible] accep[illegible] re[illegible]ver[illegible] limits

[illegible] RF outside [illegible]cept[illegible] [illegible]over [illegible]

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-03*

CLIENT:	Kleinfelder	**Client Sample ID:**	R-4 Pit
Lab Order:	0310142	**Tag Number:**	
Project:	R-4 Characterization Well	**Collection Date:**	10/20/2003 3:00:00 PM
Lab ID:	0310142-02B	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8082: PCB'S						Analyst: **GT**
Aroclor 1016	ND	10		µg/L	1	11/4/2003 1:34:05 AM
Aroclor 1221	ND	50		µg/L	1	11/4/2003 1:34:05 AM
Aroclor 1232	ND	10		µg/L	1	11/4/2003 1:34:05 AM
Aroclor 1242	ND	10		µg/L	1	11/4/2003 1:34:05 AM
Aroclor 1248	ND	10		µg/L	1	11/4/2003 1:34:05 AM
Aroclor 1254	ND	10		µg/L	1	11/4/2003 1:34:05 AM
Aroclor 1260	ND	10		µg/L	1	11/4/2003 1:34:05 AM
Surr: Decachlorobiphenyl	43.0	76-111	S	%REC	1	11/4/2003 1:34:05 AM
Surr: Tetrachloro-m-xylene	42.0	47-94	S	%REC	1	11/4/2003 1:34:05 AM

Qualifiers:

ND - Not Det[illegible] Reporting Limit

J - Analyte de[illegible]cted be[illegible] quantitation limit

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-03*

CLIENT:	Kleinfelder	**Client Sample ID:**	R-4 Pit
Lab Order:	0310142	**Tag Number:**	
Project:	R-4 Characterization Well	**Collection Date:**	10/20/2003 3:00:00 PM
Lab ID:	0310142-02C	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BL
Fluoride	ND	1.0		mg/L	10	10/21/2003 11:02:12 AM
Chloride	10	1.0		mg/L	10	10/21/2003 11:02:12 AM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	10/21/2003 11:02:12 AM
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	10/21/2003 11:02:12 AM
Phosphorus, Orthophosphate (As P)	ND	5.0		mg/L	10	10/21/2003 11:02:12 AM
Sulfate	180	5.0		mg/L	10	10/21/2003 11:02:12 AM

Qualifiers:

ND - Not Det[illegible] Re[illegible]rti[illegible] Limit

J - Analyte de[illegible]cted be[illegible]w [illegible]anti[illegible]ion limi[illegible]

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

[illegible] Sp[illegible] Re[illegible]very outsid[illegible] accep[illegible] re[illegible]ver[illegible] limits

[illegible] RF[illegible] outside [illegible]cepted [illegible]over [illegible]li[illegible]s

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-03*

CLIENT:	Kleinfelder	**Client Sample ID:**	Trip Blank
Lab Order:	0310142	**Tag Number:**	
Project:	R-4 Characterization Well	**Collection Date:**	
Lab ID:	0310142-03A	**Matrix:**	TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: JDC
Benzene	ND	1.0		µg/L	1	10/21/2003
Toluene	ND	1.0		µg/L	1	10/21/2003
Ethylbenzene	ND	1.0		µg/L	1	10/21/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/21/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/21/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/21/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/21/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/21/2003
Naphthalene	ND	2.0		µg/L	1	10/21/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	10/21/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	10/21/2003
Acetone	ND	10		µg/L	1	10/21/2003
Bromobenzene	ND	1.0		µg/L	1	10/21/2003
Bromochloromethane	ND	1.0		µg/L	1	10/21/2003
Bromodichloromethane	ND	1.0		µg/L	1	10/21/2003
Bromoform	ND	1.0		µg/L	1	10/21/2003
Bromomethane	ND	2.0		µg/L	1	10/21/2003
2-Butanone	ND	10		µg/L	1	10/21/2003
Carbon disulfide	ND	10		µg/L	1	10/21/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	10/21/2003
Chlorobenzene	ND	1.0		µg/L	1	10/21/2003
Chloroethane	ND	2.0		µg/L	1	10/21/2003
Chloroform	ND	1.0		µg/L	1	10/21/2003
Chloromethane	ND	1.0		µg/L	1	10/21/2003
2-Chlorotoluene	ND	1.0		µg/L	1	10/21/2003
4-Chlorotoluene	ND	1.0		µg/L	1	10/21/2003
cis-1,2-DCE	ND	1.0		µg/L	1	10/21/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/21/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/21/2003
Dibromochloromethane	ND	1.0		µg/L	1	10/21/2003
Dibromomethane	ND	2.0		µg/L	1	10/21/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/21/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/21/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/21/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/21/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	10/21/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	10/21/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	10/21/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	10/21/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	10/21/2003

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-03*

CLIENT:	Kleinfelder	**Client Sample ID:**	Trip Blank
Lab Order:	0310142	**Tag Number:**	
Project:	R-4 Characterization Well	**Collection Date:**	
Lab ID:	0310142-03A	**Matrix:**	TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,1-Dichloropropene	ND	1.0		µg/L	1	10/21/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	10/21/2003
2-Hexanone	ND	10		µg/L	1	10/21/2003
Isopropylbenzene	ND	1.0		µg/L	1	10/21/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	10/21/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	10/21/2003
Methylene Chloride	ND	3.0		µg/L	1	10/21/2003
n-Butylbenzene	ND	1.0		µg/L	1	10/21/2003
n-Propylbenzene	ND	1.0		µg/L	1	10/21/2003
sec-Butylbenzene	ND	1.0		µg/L	1	10/21/2003
Styrene	ND	1.0		µg/L	1	10/21/2003
tert-Butylbenzene	ND	1.0		µg/L	1	10/21/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/21/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	10/21/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/21/2003
trans-1,2-DCE	ND	1.0		µg/L	1	10/21/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/21/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/21/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/21/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/21/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/21/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/21/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	10/21/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/21/2003
Vinyl chloride	ND	2.0		µg/L	1	10/21/2003
Xylenes, Total	ND	1.0		µg/L	1	10/21/2003
Surr: 1,2-Dichloroethane-d4	92.9	70.6-124		%REC	1	10/21/2003
Surr: 4-Bromofluorobenzene	94.8	76.2-122		%REC	1	10/21/2003
Surr: Dibromofluoromethane	95.0	67.2-131		%REC	1	10/21/2003
Surr: Toluene-d8	104	82.1-123		%REC	1	10/21/2003

Qualifiers:

ND - Not Det[illegible] Re[illegible]rti[illegible] Limit

J - Analyte de[illegible]cted be[illegible] w[illegible]anti[illegible]ion limi

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

[illegible] Sp[illegible] Re[illegible]ery outsid[illegible] accep[illegible] re[illegible]ver[illegible] limits

I - RF[illegible] outside [illegible]cept[illegible] over li[illegible]s

E - Value above quantitation range

ENERGY LABORATORIES, INC. • 2393 Salt Creek Highway (82601) • P.O. Box 3258 • Casper, WY 82602
Toll Free 888.235.0515 • 307.235.0515 • Fax 307.234.1639 • casper@energylab.com • www.energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: R-4 Characterization Well
Lab ID: C03100848-001
Client Sample ID: R-4 Tank 0310142-01E

Report Date: 11/03/03
Collection Date: 10/20/03 15:30
Date Received: 10/22/03
Matrix: Aqueous

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Calcium	145	mg/L		1.0		E200.7	10/23/03 06:59 / cp
Magnesium	8.4	mg/L		1.0		E200.7	10/23/03 06:59 / cp
Potassium	6.6	mg/L		1.0		E200.7	10/23/03 06:59 / cp
Sodium	33.6	mg/L		1.0		E200.7	10/23/03 06:59 / cp
METALS - DISSOLVED							
Aluminum	0.056	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Antimony	ND	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Arsenic	0.003	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Barium	ND	mg/L		0.10		E200.7	10/23/03 06:59 / cp
Beryllium	ND	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Cadmium	ND	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Chromium	ND	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Cobalt	ND	mg/L		0.010		E200.7	10/23/03 06:59 / cp
Copper	0.038	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Iron	0.251	mg/L		0.030		E200.7	10/23/03 06:59 / cp
Lead	0.001	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Manganese	0.316	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Nickel	0.007	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Selenium	ND	mg/L	D	0.002		E200.8	10/24/03 00:51 / smd
Silver	ND	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Thallium	ND	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Vanadium	0.003	mg/L		0.001		E200.8	10/24/03 00:51 / smd
Zinc	0.074	mg/L		0.001		E200.8	10/24/03 00:51 / smd
METALS - TOTAL							
Mercury	ND	mg/L		0.0001		A3112 B	10/23/03 14:43 / sml
RADIONUCLIDES - TOTAL							
Gross Alpha	4.0	pCi/L		1.0		E900.0	10/24/03 09:00 / rs
Gross Alpha precision (±)	1.0	pCi/L				E900.0	10/24/03 09:00 / rs
Gross Gamma	ND	pCi/L		20.0		E901.1	10/28/03 17:25 / db
Tritium	ND	pCi/L		1200		E906.0	10/27/03 12:00 / db

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES
ENERGY LABORATORIES, INC. • 2393 Salt Creek Highway (82601) • P.O. Box 3258 • Casper, WY 82602
Toll Free 888.235.0515 • 307.235.0515 • Fax 307.234.1639 • casper@energylab.com • www.energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: R-4 Characterization Well
Lab ID: C03100848-002
Client Sample ID: R-4 Pit 0310142-02E

Report Date: 11/03/03
Collection Date: 10/20/03 15:00
Date Received: 10/22/03
Matrix: Aqueous

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Calcium	18.9	mg/L		1.0		E200.7	10/23/03 07:01 / cp
Magnesium	3.9	mg/L		1.0		E200.7	10/23/03 07:01 / cp
Potassium	8.1	mg/L		1.0		E200.7	10/23/03 07:01 / cp
Sodium	202	mg/L		1.0		E200.7	10/23/03 07:01 / cp
METALS - DISSOLVED							
Aluminum	6.92	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Antimony	0.005	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Arsenic	0.037	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Barium	ND	mg/L		0.10		E200.7	10/23/03 07:01 / cp
Beryllium	ND	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Cadmium	0.001	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Chromium	0.002	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Cobalt	ND	mg/L		0.010		E200.7	10/23/03 07:01 / cp
Copper	0.385	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Iron	0.106	mg/L		0.030		E200.7	10/23/03 07:01 / cp
Lead	0.008	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Manganese	0.140	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Nickel	0.015	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Selenium	ND	mg/L	D	0.002		E200.8	10/24/03 00:57 / smd
Silver	0.002	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Thallium	ND	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Vanadium	0.005	mg/L		0.001		E200.8	10/24/03 00:57 / smd
Zinc	0.057	mg/L		0.001		E200.8	10/24/03 00:57 / smd
METALS - TOTAL							
Mercury	ND	mg/L		0.0001		A3112 B	10/23/03 14:45 / smi
RADIONUCLIDES - TOTAL							
Gross Alpha	16.3	pCi/L		1.0		E900.0	10/24/03 09:00 / rs
Gross Alpha precision (±)	1.2	pCi/L				E900.0	10/24/03 09:00 / rs
Gross Gamma	ND	pCi/L		20.0		E901.1	10/28/03 17:25 / db
Tritium	ND	pCi/L		1200		E906.0	10/27/03 12:00 / db

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

Environmental Health Laboratories
The Nation's Drinking Water Laboratory

110 S. Hill Street
South Bend, IN 46617
574.233.4777
800.332.4345
Fax: 574.233.8207
www.ehl.cc

LABORATORY REPORT

Client: Hall Environmental
Attn: Andy Freeman
4901 Hawkins NE
Suite A
Albuquerque, NM 87109

Report#: 958092-93

Priority: Standard Written

Status: Final

Project/Site: R-4 Characterization Well

Samples Submitted: Two drinking water samples

Copies to: None

Collected: 10/20/03 By: Client Received: 10/22/03

REPORT SUMMARY

Two drinking water samples were submitted for perchlorate analysis.

Note: Sample containers were provided by the client.

Detailed quantitative results are presented on the following page.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call us at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from Environmental Health Laboratories (EHL). EHL is accredited by the National Environmental Laboratory Accreditation Program (NELAP). This report satisfies the requirements of your project but has not been prepared to comply with NELAP reporting requirements.

REVIEWED BY: Kepo-ter DATE: 10/29/03

FINALIZED BY: P.M DATE: 10-30-03

A Division of Underwriters Laboratories Inc.

Client: Hall Environmental

Report#: 958092-93

PERCHLORATE —Drinking Water

Lab#	Sampling Point	MRL	Results	
958092	0310142-01 / R-4 Tank	4.0	< 40 †	ug/L
958093	0310144-02 / R-4 Pit	4.0	< 40 †	ug/L

† Result presented is based upon a dilution factor of 10.

Analyzed: 10/27/03 Analyst: NB Method: 314.0

A Division of Underwriters Laboratories Inc.

REFERENCES AND DEFINITIONS OF TERMS

General Chemistry

References: 1. EPA-600/4-79-020
Methods for Chemical Analysis of Water and Wastes
2. Standard Methods For the Examination of Water and Wastewater
Vol. 19, 1995

MRL = EHL's Minimum Reporting Limit

Results: Values presented in the result column represent the lowest reportable value for a parameter after correcting for all sample dilutions.

< = "less than." This number is the lowest reportable value by the procedure used for analysis after factoring in all dilutions.

1 ug/L = 1 microgram per liter (ug/L) = 1 part per billion

A Division of Underwriters Laboratories Inc.