GW - 28

MONITORING REPORTS

DATE: 2000 - 2007

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, January 11, 2007 2:43 PM
To: Monzeglio, Hope, NMENV
Cc: Price, Wayne, EMNRD; Cobrain, Dave, NMENV; Bratcher, Mike, EMNRD
Subject: RE: 2006 Annual Groundwater Monitoring Report

Hope:

This is ok with OCD. Thank you.

From: Monzeglio, Hope, NMENV
Sent: Thursday, January 11, 2007 2:05 PM
To: Chavez, Carl J, EMNRD
Cc: Price, Wayne, EMNRD; Cobrain, Dave, NMENV
Subject: FW: 2006 Annual Groundwater Monitoring Report

Carl

See Navajo's email below. The 2006 Annual Groundwater Monitoring Report is due February 28, 2007. Navajo is asking for an extension until April 30, 2007. NMED is going to grant this with the condition that any changes to the 2005 Report must be applied to the 2006 Report. I want to make sure OCD is ok with this due date as the Feb 28 due date I think is a date that all parties agreed on before my time. This is a little confusing, if you have questions give me a call.

Navajo is starting to pass on some of the report writing to their consultant, in an email some of the extension requests are a result of the weather delays over the holidays and short-staffing.

On a side note, Navajo is tentatively looking at a March 1 date to implement further investigation and soil removal at Three Mile Ditch. This will include further investigation of the contamination found by PNM during the pipeline installation.

Let me know if OCD is ok with this.

Thanks

Hope

From: Byrd, Jeff [mailto:Jeff.Byrd@hollycorp.com]
Sent: Thursday, January 11, 2007 11:33 AM
To: Monzeglio, Hope, NMENV
Cc: Moore, Darrell; Price, Wayne, EMNRD
Subject: 2006 Annual Groundwater Monitoring Report

Hope:

After talking to our consultant currently working on the modification to the *2005 Annual Groundwater Monitoring Report*, Navajo would like to ask for an extension on the due date for the *2006 Annual Groundwater Monitoring Report*. Our justification is that it is necessary to have the 2005 Report completed in order to properly compare data to determine and assess trends and/or new areas of concern. It is my understanding that the 2005 Report is due March 15, 2007. I would like to post pone the due date from February 28, 2007 until April 30, 2007.

Please let me know if you have any questions.

Regards;

Jefferson L. Byrd

Senior Environmental Specialist

Environmental Department

Navajo Refining Company, L.P.

Artesia, NM

Off. 505-748-3311

Cell 505-703-5068

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

RECEIVED
NOV 29 2006
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

June 1, 2006

Darrell Moore
Environmental Manager
Water and Waste
Navajo Refining Company
P.O. Box 159
Artesia, New Mexico 88211-0159

SUBJECT: RESPONSE TO NAVAJO REFINING COMPANY'S MAY 2, 2006 LETTER REVISION 1 TO THE GROUNDWATER MONITORING SCHEDULE NAVAJO REFINING COMPANY, ARTESIA, REFINERY EPA ID No. 048918817 HWB-NRC-05-001

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has received Navajo's letter dated May 2, 2006 that proposed changes to the groundwater monitoring schedule. NMED hereby approves the changes outlined in the May 2, 2006 letter. These changes and changes discussed in the April 11, 2006 conference call between NMED, OCD, and Navajo refining Company have been incorporated in the attached Table 1 titled *Navajo Refinery Company Groundwater Monitoring Schedule.* Navajo Refining Company must submit a corrected Facility-wide Groundwater Monitoring Work Plan to NMED no later than July 3, 2006, which has been extended from the June 5, 2006 submittal date.

Please call this office at 505-428-2545 if you have questions regarding this letter.

Sincerely,

Hope Monzeglio

Hope Monzeglio
Project Leader
Permits Management Programs
Hazardous Waste Bureau

HM

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
W. Price, OCD
J. Byrd, NRC
D. Whaley, NRC

File: Reading File and NRC 2006 File

Table 1
Navajo Refinery Company Groundwater Monitoring Schedule

Monitoring Well ID	Sampling Frequency	Water Quality Parameters	Analytical Suite	Approximate Well location
MW-1R	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	W. of the EPs
MW-2A[1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	W. of the EPs
MW-3[1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	S. of EP 1 & 2
MW-4A[1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	S. of EP 1 & 2
MW-5A[1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	S. of EP 2
MW-6A[1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	S. of EP 1
MW-7A[1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	S. of EP 3 Replacement of MW-7
MW-8	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	TMD, S. of E. draw btw B and H Rd

The Analyte list for EPA Method 8260 must include MTBE

[1]= Wells requiring monitoring under the RCRA Post Closure Care Permit.
[2]= Recovery Wells must be sampled if they do not contain measurable phase-separated hydrocarbons.
[3] = Semi-Annual groundwater monitoring event must be completed no more than 30 days prior to the start of the irrigation season but no later than April 30 of each year. Monitoring must be conducted no later than 30 days after the conclusion of the irrigation season but no later than November 15 of each year.
[4] = Annual groundwater monitoring event must be conducted in the spring.
[5] = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation.

Note: All recovery trenches and all wells with phase-separated hydrocarbons (PSHs) must be checked at a minimum of once per month and recorded on a spreadsheet. The data must be presented in table form listing all of the recovery wells, date inspected, product thickness measured to 0.01 of a foot, and amount of product/water recovered. If PSHs are observed in a monitoring well, recovery well or trench, then appropriate steps must be taken to recover the PSHs using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Water Quality Parameters	Analytical Suite	Approximate Well location
MW-10 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	S. of EPs
MW-11A [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82 btw B & H Rd
MW-15 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	W. of EP 1
MW-16	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of H Rd and S. of E draw
MW-18 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (GRO, DRO), RCRA metals, major cations & anions, nitrates/nitrites	N. Portion of Refinery E. of the NCL
MW-18A [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of EPs
MW-20	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of B. Rd, S. of E. draw
MW-21	Semi - annual [3][3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of E. draw, btw B & H Rd.
MW-22A [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	S. of EPs

The Analyte list for EPA Method 8260 must include MTBE

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Monitoring Well ID	Sampling Frequency	Water Quality Parameters	Analytical Suite	Approximate Well location
MW-23	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	W. of TEL
MW-25	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of EP, W. of Pecos River, E. of H Rd.
MW-26	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of EP, W. of Pecos River, E. of H Rd.
MW-27	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of H Rd and S. of E. draw
MW-28	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of the SE. Tank Farm Area
MW-29	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	In refinery N. of TEL
MW-39	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	N. of the TEL
MW-41	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	N. of the TEL
MW-42	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	N. of the TEL
MW-43	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	NW. of the TEL

The Analyte list for EPA Method 8260 must include MTBE

[1]= Wells requiring monitoring under the RCRA Post Closure Care Permit.
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Monitoring Well ID	Sampling Frequency	Water Quality Parameters	Analytical Suite	Approximate Well location
MW-45 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of Refinery, S. of E draw
MW-46	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of Refinery, S. of E draw
MW-48	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of SE Tank farm Area
MW-49 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (GRO, DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of Refinery, midpoint btw E. draw and U.S. Hwy 82
MW-50	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	W. of Refinery, E. of U.S. Hwy 285 and N. of U.S. Hwy 82
MW-52	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of the Refinery, S. of U.S Hwy 82
MW-53 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	W. of Refinery btw U.S. Hwy 285 and RR tracks
MW-54A [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	NW. of NCL
MW-55 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of NCL

The Analyte list for EPA Method 8260 must include MTBE

[1]= Wells requiring monitoring under the RCRA Post Closure Care Permit.
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Monitoring Well ID	Sampling Frequency	Water Quality Parameters	Analytical Suite	Approximate Well location
MW-56 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	NE of the Refinery
MW-58	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of U.S. Hwy 82 and W. of B Rd
MW-61 [5]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (GRO, DRO), RCRA metals, major cations & anions, nitrates/nitrites	SW of TEL
MW-62 [5]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (GRO, DRO), RCRA metals, major cations & anions, nitrates/nitrites	SW of TEL
MW-63 [5]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (GRO, DRO), RCRA metals, major cations & anions, nitrates/nitrites	SW of TEL
MW-64 [5]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (GRO, DRO), RCRA metals, major cations & anions, nitrates/nitrites	In Refinery area, N. of U.S. HWY 82
MW-65 [5]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (GRO, DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of the SE Tank Farm Area

The Analyte list for EPA Method 8260 must include MTBE

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MW-66 [5]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (GRO, DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of the SE Tank Farm Area
MW-67 [5]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (GRO, DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of the Diesel Tank Farm Area
MW-68	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of E draw, btw D and H Rd.
MW-70 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	S. of Eps; Renamed from MW-19
KWB-1A	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of E draw, W. of B Rd.
KWB-1C	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, major cations & anions, nitrates/nitrites	S. of E draw, W. of B Rd.
KWB-P2	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of D Rd, N. of U.E. Hwy 82
KWB-2R	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of U.S. Hwy 82 on G.G. Armstrong & Son

The Analyte list for EPA Method 8260 must include MTBE

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Monitoring Well ID	Sampling Frequency	Water Quality Parameters	Analytical Suite	Approximate Well location
KWB-3R	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	Replacement well for KWB-3A. S. of U.S. Hwy 82 btw B & D Rd.
KWB-4	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82, W. of B Rd.
KWB-5	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82, W. of B Rd.
KWB-6	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82, W. of B Rd.
KWB-7	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82 btw B & D Rd
KWB-8	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82 btw B & D Rd.
KWB-9	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of U.S. Hwy 82, E. of B Rd.
KWB-10	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	E. of Refinery, S. of E. draw, N. of U.S. Hwy 82
KWB-11A	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82 btw B & D Rd

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KWB-12A	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of U.S. Hwy 82, E. of B Rd.
KWB-13	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of U.S. Hwy 82, W. of B Rd
NP-1	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs)	S. of E. draw, W. of B Rd.
NP-2	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs)	Directly E. of B Rd., S. of E draw
NP-3	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	Directly N. of E. draw, NE. of B Rd.
NP-5	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of Richey Rd, N. of E. Draw, W. of B Rd.
NP-6	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of E. draw, W. of B Rd.
NP-7	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of E draw, btw D & H Rd.
NP-9	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	S. of Richey Rd, N. of E. Draw, W. of B Rd.

The Analyte list for EPA Method 8260 must include MTBE

[1]= Wells requiring monitoring under the RCRA Post Closure Care Permit.
[2]= Recovery Wells must be sampled if they do not contain measurable phase-separated hydrocarbons.
[3]= Semi-Annual groundwater monitoring event must be completed no more than 30 days prior to the start of the irrigation season but no later than April 30 of each year. Monitoring must be conducted no later than 30 days after the conclusion of the irrigation season but no later than November 15 of each year.
[4] = Annual groundwater monitoring event must be conducted in the spring.
[5] = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation.

Note: All recovery trenches and all wells with phase-separated hydrocarbons (PSHs) must be checked at a minimum of once per month and recorded on a spreadsheet. The data must be presented in table form listing all of the recovery wells, date inspected, product thickness measured to 0.01 of a foot, and amount of product/water recovered. If PSHs are observed in a monitoring well, recovery well or trench, then appropriate steps must be taken to recover the PSHs using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Water Quality Parameters	Analytical Suite	Approximate Well location
OCD-1 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	NW. of EP 6
OCD-2A [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	N. of EP 6
OCD-3 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	NE. of EP 6
OCD-4 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	NE. of EP 6
OCD-5 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	NE of EP-6
OCD-6 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	E. of EP-6
OCD-7A [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	SE. of EP-6 Replacement well for OCD-7AR
OCD-8A [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	SE. of EP 3
NCL-32 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	NW. Portion of the Refinery
NCL-33 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	NW. Portion of the Refinery

The Analyte list for EPA Method 8260 must include MTBE

[1]= Wells requiring monitoring under the RCRA Post Closure Care Permit.
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[4] = Annual groundwater monitoring event must be conducted in the spring.
[5] = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation.

Note: All recovery trenches and all wells with phase-separated hydrocarbons (PSHs) must be checked at a minimum of once per month and recorded on a spreadsheet. The data must be presented in table form listing all of the recovery wells, date inspected, product thickness measured to 0.01 of a foot, and amount of product/water recovered. If PSHs are observed in a monitoring well, recovery well or trench, then appropriate steps must be taken to recover the PSHs using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Water Quality Parameters	Analytical Suite	Approximate Well location
NCL-34 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	NW. Portion of the Refinery
NCL-44 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	NW. Portion of the Refinery
NCL-49 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (DRO), RCRA metals, major cations & anions, nitrates/nitrites	NW. Portion of the Refinery
TEL-1 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	NE. Portion of the Refinery
TEL-2 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	NE. Portion of the Refinery
TEL-3 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, EPA Method 8015B (GRO, DRO), major cations & anions, nitrates/nitrites	NE. Portion of the Refinery
TEL-4 [1]	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), EPA Method 8015B (GRO, DRO), RCRA metals, major cations & anions, nitrates/nitrites	NE. Portion of the Refinery
RW-1 [2]	Annual [4] (Spring of each year)	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, major cations & anions, nitrates/nitrites	[3] North Portion of the Refinery
RW-18 [2]	Annual [4] (Spring of each year	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), RCRA metals, major cations & anions, nitrates/nitrites	[3] S. of E draw & W. of B Rd.

The Analyte list for EPA Method 8260 must include MTBE

[1]= Wells requiring monitoring under the RCRA Post Closure Care Permit.
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Monitoring Well ID	Sampling Frequency	Water Quality Parameters	Analytical Suite	Approximate Well location
RA 313	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82, W. of B Rd.
RA 314	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82, W. of B Rd.
RA 3723	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82, W. of B Rd.
RA 3156	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), major cations & anions, nitrates/nitrites	S. of U.S. Hwy 82 and E. of B Rd.
RA 3353	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), major cations & anions, nitrates/nitrites	S. of U.S. Hwy 82 and E. of B Rd
RA 4196	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), major cations & anions, nitrates/nitrites	N. of U.S. Hwy 82 and E. of B Rd
RA 4798	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), major cations & anions, nitrates/nitrites	E. of B Rd, N. of U. S. Hwy 82
Larue well	Semi - annual [3]	pH, Cond, Temp, ORP, DO	EPA Method 8260 (VOCs), major cations & anions, nitrates/nitrites	

Table date: May, 2006; Revision 1.

The Analyte list for EPA Method 8260 must include MTBE

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Acronym List

N = North; S = South; E = East; W = West; NE = Northeast; NW = Northwest; SW = Southwest; SE = Southeast; Btw = between

B Rd = Bolton Road; H Rd = Haldeman Road; D Rd = Dirt Road; Hwy = highway;

EP = Evaporation Ponds; TMD = Three Mile Ditch; E. draw = Eagle Draw;

NCL = North Colony Landfarm; TEL = Tetra Ethyl Lead Impoundment

DO = dissolved oxygen; ORP = oxygen reduction potential; temp = temperature; Cond = specific conductivity

VOCs – volatile organic compounds; SVOCs – semi volatile organic compounds; DRO – diesel-range organics,

BTEX – benzene, toluene, ethylbenzene, xylene; MTBE – Methyl Tertiary-Butyl Ether; GRO – gasoline-range organics

The Analyte list for EPA Method 8260 must include MTBE

[1]= Wells requiring monitoring under the RCRA Post Closure Care Permit.
[2]= Recovery Wells must be sampled if they do not contain measurable phase-separated hydrocarbons.
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Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Tuesday, May 23, 2006 7:24 AM
To: Chavez, Carl J, EMNRD
Subject: Tk 838

Carl,

Attached, please find the analysis for the Hydrotest Water from Tk 838. We have approx. 40,000 bbls of this water that we would like to discharge to our farm on the south side of Eagle Draw. If you will remember, this is one of the farms we discharge the RO reject onto. If you have any questions, please contact me at this e mail address or call me at 505-703-5058. Thank you for your attention to this matter.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
phone: 505.746.5281
cell: 505.703.5058
fax: 505.746.5451

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e-Lab Analytical, Inc.

10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 281-530-5656 Fax 281-530-5887

May 22, 2006

Darrell Moore
Navajo Refining Company
P.O. Box 159
Artesia, New Mexico 88211

Tel: (505) 746-5281
Fax: (505) 746-5421

Re: Ground Water Sampling

Work Order : **0605275**

Dear Darrell Moore,

e-Lab Analytical, Inc. received 2 samples on 5/19/2006 9:25:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by e-Lab Analytical, Inc. and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by e-Lab Analytical, Inc. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 26.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Jeffrey L Croston

Certificate No: LA 03087

e-Lab Analytical, Inc.

Date: *May 22, 2006*

CLIENT: Navajo Refining Company
Project: Ground Water Sampling
Work Order: **0605275**

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
0605275-01	TK 838	Water		5/18/2006 10:00	5/19/2006 09:25	☐
0605275-02	TB	Water		5/18/2006 10:00	5/19/2006 09:25	☐

e-Lab Analytical, Inc. **Date:** *May 22, 2006*

CLIENT: Navajo Refining Company
Project: Ground Water Sampling
Work Order: 0605275

Case Narrative

Batch 17923 PCB MS/MSD was an unrelated sample.

Batch 17928 Metals MS/MSD was an unrelated sample.

Batch R37977 Volatiles MSD was an unrelated sample.

e-Lab Analytical, Inc.

Date: *May 22, 2006*

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling
Lab ID: 0605275-01

Client Sample ID: TK 838
Collection Date: 5/18/2006 10:00:00 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS			**SW8082**		Prep Date: **5/19/2006**	Analyst: **JLJ**
Aroclor 1016	ND		0.50	µg/L	1	5/20/2006 4:01:00 AM
Aroclor 1221	ND		0.50	µg/L	1	5/20/2006 4:01:00 AM
Aroclor 1232	ND		0.50	µg/L	1	5/20/2006 4:01:00 AM
Aroclor 1242	ND		0.50	µg/L	1	5/20/2006 4:01:00 AM
Aroclor 1248	ND		0.50	µg/L	1	5/20/2006 4:01:00 AM
Aroclor 1254	ND		0.50	µg/L	1	5/20/2006 4:01:00 AM
Aroclor 1260	ND		0.50	µg/L	1	5/20/2006 4:01:00 AM
Surr: Decachlorobiphenyl	*90.8*		*52.2-138*	*%REC*	1	5/20/2006 4:01:00 AM
Surr: Tetrachloro-m-xylene	*83.9*		*50.5-143*	*%REC*	1	5/20/2006 4:01:00 AM
MERCURY, TOTAL			**SW7470**		Prep Date: **5/19/2006**	Analyst: **JCJ**
Mercury	ND		0.000200	mg/L	1	5/19/2006 4:17:32 PM
ICP METALS, TOTAL			**SW6020**		Prep Date: **5/19/2006**	Analyst: **ALR**
Aluminum	ND		0.0100	mg/L	1	5/22/2006 2:27:00 PM
Arsenic	ND		0.00500	mg/L	1	5/22/2006 2:27:00 PM
Barium	**0.0189**		**0.00500**	**mg/L**	1	5/22/2006 2:27:00 PM
Boron	**0.0534**		**0.0200**	**mg/L**	1	5/22/2006 2:27:00 PM
Cadmium	ND		0.00100	mg/L	1	5/22/2006 2:27:00 PM
Chromium	ND		0.00200	mg/L	1	5/22/2006 2:27:00 PM
Cobalt	ND		0.00200	mg/L	1	5/22/2006 2:27:00 PM
Copper	ND		0.00200	mg/L	1	5/22/2006 2:27:00 PM
Iron	**0.665**		**0.200**	**mg/L**	1	5/22/2006 2:27:00 PM
Lead	ND		0.00500	mg/L	1	5/22/2006 2:27:00 PM
Manganese	**0.0264**		**0.00500**	**mg/L**	1	5/22/2006 2:27:00 PM
Molybdenum	ND		0.00500	mg/L	1	5/22/2006 2:27:00 PM
Nickel	ND		0.00500	mg/L	1	5/22/2006 2:27:00 PM
Selenium	ND		0.00500	mg/L	1	5/22/2006 2:27:00 PM
Silver	ND		0.00500	mg/L	1	5/22/2006 2:27:00 PM
Zinc	ND		0.00500	mg/L	1	5/22/2006 2:27:00 PM
LOW-LEVEL SEMI-VOLATILES			**SW8270**		Prep Date: **5/19/2006**	Analyst: **HV**
1-Methylnaphthalene	ND		0.20	µg/L	1	5/22/2006 2:14:00 PM
2-Methylnaphthalene	ND		0.20	µg/L	1	5/22/2006 2:14:00 PM
Benzo(a)pyrene	ND		0.20	µg/L	1	5/22/2006 2:14:00 PM
Naphthalene	ND		0.20	µg/L	1	5/22/2006 2:14:00 PM
Surr: 2,4,6-Tribromophenol	*78.3*		*34-129*	*%REC*	1	5/22/2006 2:14:00 PM
Surr: 2-Fluorobiphenyl	*74.9*		*48-115*	*%REC*	1	5/22/2006 2:14:00 PM
Surr: 2-Fluorophenol	*56.4*		*32-115*	*%REC*	1	5/22/2006 2:14:00 PM
Surr: 4-Terphenyl-d14	*79.9*		*47-117*	*%REC*	1	5/22/2006 2:14:00 PM
Surr: Nitrobenzene-d5	*66.3*		*44-115*	*%REC*	1	5/22/2006 2:14:00 PM

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
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.

Date: *May 22, 2006*

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling
Lab ID: 0605275-01

Client Sample ID: TK 838
Collection Date: 5/18/2006 10:00:00 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: Phenol-d6	*60.1*		*21-119*	*%REC*	1	5/22/2006 2:14:00 PM
VOLATILES BY GC/MS			**SW8260**			Analyst: **PC**
1,1,1-Trichloroethane	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
1,1,2,2-Tetrachloroethane	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
1,1,2-Trichloroethane	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
1,1-Dichloroethane	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
1,1-Dichloroethene	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
1,2-Dibromoethane	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
1,2-Dichloroethane	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
Benzene	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
Carbon tetrachloride	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
Chloroform	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
Ethylbenzene	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
Methylene chloride	ND		10	µg/L	1	5/19/2006 2:43:00 PM
Tetrachloroethene	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
Toluene	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
Trichloroethene	ND		5.0	µg/L	1	5/19/2006 2:43:00 PM
Vinyl chloride	ND		2.0	µg/L	1	5/19/2006 2:43:00 PM
Xylenes, Total	ND		15	µg/L	1	5/19/2006 2:43:00 PM
Surr: 1,2-Dichloroethane-d4	*96.0*		*70-125*	*%REC*	1	5/19/2006 2:43:00 PM
Surr: 4-Bromofluorobenzene	*115*		*72.4-125*	*%REC*	1	5/19/2006 2:43:00 PM
Surr: Dibromofluoromethane	*106*		*71.2-125*	*%REC*	1	5/19/2006 2:43:00 PM
Surr: Toluene-d8	*115*		*75-125*	*%REC*	1	5/19/2006 2:43:00 PM
ANIONS BY ION CHROMATOGRAPHY			**E300**			Analyst: **LMD**
Chloride	**14.0**		**0.500**	**mg/L**	1	5/19/2006 8:25:00 PM
Fluoride	**0.890**		**0.100**	**mg/L**	1	5/19/2006 8:25:00 PM
Nitrogen, Nitrate (As N)	**0.610**		**0.100**	**mg/L**	1	5/19/2006 8:25:00 PM
Surr: Selenate (surr)	*102*		*80-120*	*%REC*	1	5/19/2006 8:25:00 PM
CYANIDE, TOTAL			**E335.3**			Analyst: **LMD**
Cyanide	ND		0.0200	mg/L	1	5/21/2006
PH			**E150.1**			Analyst: **RPM**
pH	**7.09**		**0.100**	**pH units**	1	5/19/2006
PHENOLICS			**E420.1**			Analyst: **IGF**
Phenolics, Total Recoverable	ND		0.0500	mg/L	1	5/19/2006
TOTAL DISSOLVED SOLIDS			**E160.1**			Analyst: **RPM**
Total Dissolved Solids (Residue, Filterable)	**788**		**10.0**	**mg/L**	1	5/20/2006

Qualifiers:

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J - Analyte detected below quantitation limits
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e-Lab Analytical, Inc.

Date: *May 22, 2006*

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling
Lab ID: 0605275-02

Client Sample ID: TB
Collection Date: 5/18/2006 10:00:00 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILES BY GC/MS			**SW8260**			Analyst: **PC**
1,1,1-Trichloroethane	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
1,1,2,2-Tetrachloroethane	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
1,1,2-Trichloroethane	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
1,1-Dichloroethane	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
1,1-Dichloroethene	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
1,2-Dichloroethane	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
2-Butanone	ND		10	µg/L	1	5/19/2006 3:24:00 PM
2-Chloroethyl vinyl ether	ND		10	µg/L	1	5/19/2006 3:24:00 PM
2-Hexanone	ND		10	µg/L	1	5/19/2006 3:24:00 PM
4-Methyl-2-pentanone	ND		10	µg/L	1	5/19/2006 3:24:00 PM
Acetone	ND		10	µg/L	1	5/19/2006 3:24:00 PM
Benzene	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Bromodichloromethane	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Bromoform	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Bromomethane	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Carbon disulfide	ND		10	µg/L	1	5/19/2006 3:24:00 PM
Carbon tetrachloride	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Chlorobenzene	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Chloroethane	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Chloroform	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Chloromethane	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
cis-1,3-Dichloropropene	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Dibromochloromethane	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Ethylbenzene	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
m,p-Xylene	ND		10	µg/L	1	5/19/2006 3:24:00 PM
Methylene chloride	ND		10	µg/L	1	5/19/2006 3:24:00 PM
Styrene	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Tetrachloroethene	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Toluene	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
trans-1,3-Dichloropropene	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Trichloroethene	ND		5.0	µg/L	1	5/19/2006 3:24:00 PM
Vinyl acetate	ND		10	µg/L	1	5/19/2006 3:24:00 PM
Vinyl chloride	ND		2.0	µg/L	1	5/19/2006 3:24:00 PM
Xylenes, Total	ND		15	µg/L	1	5/19/2006 3:24:00 PM
Surr: 1,2-Dichloroethane-d4	*102*		*70-125*	*%REC*	1	5/19/2006 3:24:00 PM
Surr: 4-Bromofluorobenzene	*117*		*72.4-125*	*%REC*	1	5/19/2006 3:24:00 PM
Surr: Dibromofluoromethane	*109*		*71.2-125*	*%REC*	1	5/19/2006 3:24:00 PM
Surr: Toluene-d8	*117*		*75-125*	*%REC*	1	5/19/2006 3:24:00 PM

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
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

Date: *May 22 2006*

QC BATCH REPORT

Batch ID: **17923** Instrument ID: **ECD_7** Method: **SW8082**

MBLK Sample ID: **PBLKW1-060519** Units: **µg/L** Analysis Date: **05/19/06 22:17**
Client ID: Run ID: **ECD_7_060517C** SeqNo: **866157** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	ND	0.50								
Aroclor 1221	ND	0.50								
Aroclor 1232	ND	0.50								
Aroclor 1242	ND	0.50								
Aroclor 1248	ND	0.50								
Aroclor 1254	ND	0.50								
Aroclor 1260	ND	0.50								
Surr: Decachlorobiphenyl	*0.2612*	0.050	*0.2*	0	*131*	*52.2-138*	0			
Surr: Tetrachloro-m-xylene	*0.2291*	0.050	*0.2*	0	*115*	*50.5-143*	0			

LCS Sample ID: **PLCSW1-060519** Units: **µg/L** Analysis Date: **05/19/06 22:51**
Client ID: Run ID: **ECD_7_060517C** SeqNo: **866158** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.526	0.50	5	0	90.5	52.4-135	0			
Aroclor 1260	5.204	0.50	5	0	104	52-129	0			
Surr: Decachlorobiphenyl	*0.2046*	0.050	*0.2*	0	*102*	*52.2-138*	0			
Surr: Tetrachloro-m-xylene	*0.1906*	0.050	*0.2*	0	*95.3*	*50.5-143*	0			

MS Sample ID: **0605263-06EMS** Units: **µg/L** Analysis Date: **05/20/06 2:52**
Client ID: Run ID: **ECD_7_060517C** SeqNo: **866165** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.612	0.50	5	0	92.2	52.4-135	0			
Aroclor 1260	5.28	0.50	5	0	106	52-129	0			
Surr: Decachlorobiphenyl	*0.2238*	0.050	*0.2*	0	*112*	*52.2-138*	0			
Surr: Tetrachloro-m-xylene	*0.2107*	0.050	0.2	0	*105*	*50.5-143*	0			

MSD Sample ID: **0605263-06EMSD** Units: **µg/L** Analysis Date: **05/20/06 3:26**
Client ID: Run ID: **ECD_7_060517C** SeqNo: **866166** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.061	0.50	5	0	81.2	52.4-135	4.612	12.7	20	
Aroclor 1260	4.47	0.50	5	0	89.4	52-129	5.28	16.6	20	
Surr: Decachlorobiphenyl	*0.1796*	0.050	*0.2*	0	*89.8*	*52.2-138*	0.2238	*21.9*	*20*	*R*
Surr: Tetrachloro-m-xylene	*0.1589*	0.050	*0.2*	0	*79.4*	*50.5-143*	0.2107	*28*	*20*	*R*

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **17923** Instrument ID: **ECD_7** Method: **SW8082**

The following samples were analyzed in this batch: 0605275-01D

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **17919** Instrument ID: **Mercury** Method: **SW7470**

MBLK Sample ID: **GBLKW2-051906** Units: **mg/L** Analysis Date: **05/19/06 15:44**
Client ID: Run ID: **MERCURY_060519C** SeqNo: **866003** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

LCS Sample ID: **GLCSW2-051906** Units: **mg/L** Analysis Date: **05/19/06 15:46**
Client ID: Run ID: **MERCURY_060519C** SeqNo: **866004** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00522	0.00020	0.005	0	104	83-115	0			

LCSD Sample ID: **GLCSDW2-051906** Units: **mg/L** Analysis Date: **05/19/06 15:47**
Client ID: Run ID: **MERCURY_060519C** SeqNo: **866005** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00529	0.00020	0.005	0	106	83-115	0.00522	1.33	20	

MS Sample ID: **0605203-08BMS** Units: **mg/L** Analysis Date: **05/19/06 15:53**
Client ID: Run ID: **MERCURY_060519C** SeqNo: **866008** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00521	0.00020	0.005	0.000005	104	83-115	0			

MSD Sample ID: **0605203-08BMSD** Units: **mg/L** Analysis Date: **05/19/06 15:55**
Client ID: Run ID: **MERCURY_060519C** SeqNo: **866029** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00531	0.00020	0.005	0.000005	106	83-115	0.00521	1.9	20	

DUP Sample ID: **0605203-08BDUP** Units: **mg/L** Analysis Date: **05/19/06 15:51**
Client ID: Run ID: **MERCURY_060519C** SeqNo: **866007** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020	0	0	0	0-0	0.000005	0	20	

The following samples were analyzed in this batch: 0605275-01B

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **17928** Instrument ID: **ICPMS02** Method: **SW6020**

MBLK Sample ID: **MBLKW2-051906** Units: **mg/L** Analysis Date: **05/22/06 14:16**

Client ID: Run ID: **ICPMS02_060522A** SeqNo: **866984** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	ND	0.010								
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Boron	ND	0.020								
Cadmium	0.0003716	0.0020								J
Chromium	0.0005423	0.0050								J
Cobalt	0.000371	0.0050								J
Copper	ND	0.0050								
Iron	0.04435	0.20								J
Lead	0.0003858	0.0050								J
Manganese	ND	0.0050								
Molybdenum	ND	0.0050								
Nickel	ND	0.0050								
Selenium	ND	0.0050								
Silver	ND	0.0050								
Zinc	0.003017	0.0050								J

LCS Sample ID: **MLCSW2-051906** Units: **mg/L** Analysis Date: **05/22/06 14:22**

Client ID: Run ID: **ICPMS02_060522A** SeqNo: **866985** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05031	0.0050	0.05	0	101	80-121	0			
Barium	0.05141	0.0050	0.05	0	103	79.8-119	0			
Boron	0.5101	0.020	0.5	0	102	80-120	0			
Cadmium	0.05219	0.0020	0.05	0	104	79.1-119	0			
Chromium	0.04748	0.0050	0.05	0	95	79.3-121	0			
Cobalt	0.05152	0.0050	0.05	0	103	82-121	0			
Copper	0.05187	0.0050	0.05	0	104	81-120	0			
Iron	5.082	0.20	5	0	102	80-120	0			
Lead	0.04953	0.0050	0.05	0	99.1	80-118	0			
Manganese	0.05105	0.0050	0.05	0	102	82-119	0			
Molybdenum	0.04972	0.0050	0.05	0	99.4	81-116	0			
Nickel	0.0524	0.0050	0.05	0	105	82-120	0			
Selenium	0.052	0.0050	0.05	0	104	79.2-118	0			
Silver	0.04572	0.0050	0.05	0	91.4	80-117	0			
Zinc	0.05519	0.0050	0.05	0	110	79-118	0			

ND - Not Detected at the Reporting Limit
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O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **17928** Instrument ID: **ICPMS02** Method: **SW6020**

LCS Sample ID: **MLCSW2-051906** Units: **mg/L** Analysis Date: **05/22/06 16:32**

Client ID: Run ID: **ICPMS02_060522A** SeqNo: **867126** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.04949	0.010	0.05	0	99	79-126	0			

MS Sample ID: **0605267-04DMS** Units: **mg/L** Analysis Date: **05/22/06 14:51**

Client ID: Run ID: **ICPMS02_060522A** SeqNo: **866990** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.7917	0.010	0.05	0.6324	319	79-126	0			SO
Arsenic	0.05492	0.0050	0.05	0.002371	105	80-121	0			
Barium	0.1849	0.0050	0.05	0.1342	101	79.8-119	0			
Boron	0.8455	0.020	0.5	0.3349	102	80-120	0			
Cadmium	0.05007	0.0020	0.05	0.0002717	99.6	79.1-119	0			
Chromium	0.04785	0.0050	0.05	0.001292	93.1	79.3-121	0			
Cobalt	0.05125	0.0050	0.05	0.002663	97.2	82-121	0			
Copper	0.04885	0.0050	0.05	0	97.7	80-120	0			
Iron	5.403	0.20	5	0.527	97.5	80-120	0			
Lead	0.05023	0.0050	0.05	0.0006314	99.2	80-118	0			
Manganese	0.6197	0.0050	0.05	0.5652	109	82-119	0			O
Molybdenum	0.05597	0.0050	0.05	0.006662	98.6	81-116	0			
Nickel	0.05093	0.0050	0.05	0.003024	95.8	82-120	0			
Selenium	0.05051	0.0050	0.05	0	101	79.2-118	0			
Silver	0.04218	0.0050	0.05	0	84.4	80-117	0			
Zinc	0.05358	0.0050	0.05	0.007411	92.3	79-118	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **17928** Instrument ID: **ICPMS02** Method: **SW6020**

MSD Sample ID: **0605267-04DMSD** Units: **mg/L** Analysis Date: **05/22/06 14:57**

Client ID: Run ID: **ICPMS02_060522A** SeqNo: **866991** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.8181	0.010	0.05	0.6324	371	79-126	0.7917	3.28	15	SO
Arsenic	0.05464	0.0050	0.05	0.002371	105	80-121	0.05492	0.511	15	
Barium	0.1835	0.0050	0.05	0.1342	98.6	79.8-119	0.1849	0.76	15	
Boron	0.8494	0.020	0.5	0.3349	103	80-120	0.8455	0.46	15	
Cadmium	0.05015	0.0020	0.05	0.0002717	99.8	79.1-119	0.05007	0.16	15	
Chromium	0.0469	0.0050	0.05	0.001292	91.2	79.3-121	0.04785	2.01	15	
Cobalt	0.05107	0.0050	0.05	0.002663	96.8	82-121	0.05125	0.352	15	
Copper	0.04881	0.0050	0.05	0	97.6	81-120	0.04885	0.0819	15	
Iron	5.345	0.20	5	0.527	96.4	80-120	5.403	1.08	15	
Lead	0.04956	0.0050	0.05	0.0006314	97.9	80-118	0.05023	1.34	15	
Manganese	0.6177	0.0050	0.05	0.5652	105	82-119	0.6197	0.323	15	O
Molybdenum	0.05559	0.0050	0.05	0.006662	97.9	81-116	0.05597	0.681	15	
Nickel	0.05126	0.0050	0.05	0.003024	96.5	82-120	0.05093	0.646	15	
Selenium	0.05061	0.0050	0.05	0	101	79.2-118	0.05051	0.198	15	
Silver	0.04216	0.0050	0.05	0	84.3	80-117	0.04218	0.0474	15	
Zinc	0.05231	0.0050	0.05	0.007411	89.8	79-118	0.05358	2.4	15	

DUP Sample ID: **0605267-04DDUP** Units: **mg/L** Analysis Date: **05/22/06 14:39**

Client ID: Run ID: **ICPMS02_060522A** SeqNo: **866988** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.6158	0.010	0	0	0	0-0	0.6324	2.66	25	
Arsenic	0.002505	0.0050	0	0	0	0-0	0.002371	0	25	J
Barium	0.134	0.0050	0	0	0	0-0	0.1342	0.149	25	
Boron	0.3424	0.020	0	0	0	0-0	0.3349	2.21	25	
Cadmium	0.0002524	0.0020	0	0	0	0-0	0.0002717	0	25	J
Chromium	0.00123	0.0050	0	0	0	0-0	0.001292	0	25	J
Cobalt	0.002609	0.0050	0	0	0	0-0	0.002663	0	25	J
Copper	ND	0.0050	0	0	0	0-0	-0.0003752	0	25	
Iron	0.5222	0.20	0	0	0	0-0	0.527	0.915	25	
Lead	0.0006038	0.0050	0	0	0	0-0	0.0006314	0	25	J
Manganese	0.5519	0.0050	0	0	0	0-0	0.5652	2.38	25	
Molybdenum	0.006605	0.0050	0	0	0	0-0	0.006662	0.859	25	
Nickel	0.002981	0.0050	0	0	0	0-0	0.003024	0	25	J
Selenium	ND	0.0050	0	0	0	0-0	0.001615	0	25	
Silver	ND	0.0050	0	0	0	0-0	-0.00004031	0	25	
Zinc	0.004393	0.0050	0	0	0	0-0	0.007411	0	25	J

The following samples were analyzed in this batch: 0605275-01B

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **17927** Instrument ID: **SV-2** Method: **SW8270**

MBLK Sample ID: **SBLKW1-060519** Units: **µg/L** Analysis Date: **05/22/06 11:14**

Client ID: Run ID: **SV-2_060522A** SeqNo: **866959** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Naphthalene	ND	0.20								
Surr: 2,4,6-Tribromophenol	*4.27*	0.20	*5*	0	*85.4*	*34-129*	0			
Surr: 2-Fluorobiphenyl	*4.163*	0.20	*5*	0	*83.3*	*48-115*	0			
Surr: 2-Fluorophenol	*3.301*	0.20	*5*	0	*66*	*32-115*	0			
Surr: 4-Terphenyl-d14	*4.465*	0.20	*5*	0	*89.3*	*47-117*	0			
Surr: Nitrobenzene-d5	*3.96*	0.20	*5*	0	*79.2*	*44-115*	0			
Surr: Phenol-d6	*3.444*	0.20	*5*	0	*68.9*	*21-119*	0			

LCS Sample ID: **SLCSW1-060519** Units: **µg/L** Analysis Date: **05/22/06 11:45**

Client ID: Run ID: **SV-2_060522A** SeqNo: **866960** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	4.368	0.20	5	0	87.4	48-115	0			
2-Methylnaphthalene	4.01	0.20	5	0	80.2	50-115	0			
Benzo(a)pyrene	4.205	0.20	5	0	84.1	46-121	0			
Naphthalene	3.757	0.20	5	0	75.1	51-115	0			
Surr: 2,4,6-Tribromophenol	*5.023*	0.20	*5*	0	*100*	*34-129*	0			
Surr: 2-Fluorobiphenyl	*4.282*	0.20	*5*	0	*85.6*	*48-115*	0			
Surr: 2-Fluorophenol	*3.503*	0.20	*5*	0	*70.1*	*32-115*	0			
Surr: 4-Terphenyl-d14	*4.154*	0.20	*5*	0	*83.1*	*47-117*	0			
Surr: Nitrobenzene-d5	*4.072*	0.20	*5*	0	*81.4*	*44-115*	0			
Surr: Phenol-d6	*4.146*	0.20	*5*	0	*82.9*	*21-119*	0			

ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **17927** Instrument ID: **SV-2** Method: **SW8270**

LCSD Sample ID: **SLCSDW1-060519** Units: **µg/L** Analysis Date: **05/22/06 12:16**

Client ID: Run ID: **SV-2_060522A** SeqNo: **866961** Prep Date: **5/19/2006** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	4.377	0.20	5	0	87.5	48-115	4.368	0.193	20	
2-Methylnaphthalene	3.956	0.20	5	0	79.1	50-115	4.01	1.37	20	
Benzo(a)pyrene	4.267	0.20	5	0	85.3	46-121	4.205	1.47	20	
Naphthalene	3.795	0.20	5	0	75.9	51-115	3.757	1.02	20	
Surr: 2,4,6-Tribromophenol	*4.233*	0.20	*5*	0	*84.7*	*34-129*	5.023	*17.1*	*20*	
Surr: 2-Fluorobiphenyl	*4.25*	0.20	*5*	0	*85*	*48-115*	4.282	*0.742*	*20*	
Surr: 2-Fluorophenol	*3.446*	0.20	*5*	0	*68.9*	*32-115*	3.503	*1.64*	*20*	
Surr: 4-Terphenyl-d14	*4.163*	0.20	*5*	0	*83.3*	*47-117*	4.154	*0.22*	*20*	
Surr: Nitrobenzene-d5	*3.93*	0.20	*5*	0	*78.6*	*44-115*	4.072	*3.56*	*20*	
Surr: Phenol-d6	*4.091*	0.20	*5*	0	*81.8*	*21-119*	4.146	*1.34*	*20*	

The following samples were analyzed in this batch: 0605275-01C

ND - Not Detected at the Reporting Limit
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P - Dual Column results percent difference > 40%
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CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **R37977** Instrument ID: **VOA1** Method: **SW8260**

MBLK Sample ID: **VBLKW-0519** Units: **µg/L** Analysis Date: **05/19/06 12:14**

Client ID: Run ID: **VOA1_060519A** SeqNo: **866692** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	ND	5.0								
1,1,2,2-Tetrachloroethane	ND	5.0								
1,1,2-Trichloroethane	ND	5.0								
1,1-Dichloroethane	ND	5.0								
1,1-Dichloroethene	ND	5.0								
1,2-Dibromoethane	ND	5.0								
1,2-Dichloroethane	ND	5.0								
2-Butanone	ND	10								
2-Chloroethyl vinyl ether	ND	10								
2-Hexanone	ND	10								
4-Methyl-2-pentanone	ND	10								
Acetone	ND	10								
Benzene	ND	5.0								
Bromodichloromethane	ND	5.0								
Bromoform	ND	5.0								
Bromomethane	ND	5.0								
Carbon disulfide	ND	10								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroethane	ND	5.0								
Chloroform	ND	5.0								
Chloromethane	ND	5.0								
cis-1,3-Dichloropropene	ND	5.0								
Dibromochloromethane	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
Methylene chloride	ND	10								
Styrene	ND	5.0								
Tetrachloroethene	ND	5.0								
Toluene	ND	5.0								
trans-1,3-Dichloropropene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl acetate	ND	10								
Vinyl chloride	ND	2.0								
Xylenes, Total	ND	15								
Surr: 1,2-Dichloroethane-d4	*48.19*	5.0	*50*	0	*96.4*	*70-125*		0		
Surr: 4-Bromofluorobenzene	*57.45*	5.0	*50*	0	*115*	*72.4-125*		0		
Surr: Dibromofluoromethane	*51.58*	5.0	*50*	0	*103*	*71.2-125*		0		
Surr: Toluene-d8	*57.94*	5.0	*50*	0	*116*	*75-125*		0		

ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
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U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **R37977** Instrument ID: **VOA1** Method: **SW8260**

LCS Sample ID: **VLCSW-0519** Units: **µg/L** Analysis Date: **05/19/06 10:45**

Client ID: Run ID: **VOA1_060519A** SeqNo: **866691** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	49.44	5.0	50	0	98.9	79.6-120	0			
1,1,2,2-Tetrachloroethane	49.49	5.0	50	0	99	78.9-121	0			
1,1,2-Trichloroethane	46.71	5.0	50	0	93.4	80-120	0			
1,1-Dichloroethane	49.35	5.0	50	0	98.7	74.2-122	0			
1,1-Dichloroethene	50.92	5.0	50	0	102	75.8-122	0			
1,2-Dibromoethane	50.9	5.0	50	0	102	80-120	0			
1,2-Dichloroethane	52.42	5.0	50	0	105	78.8-120	0			
2-Butanone	109.1	10	100	0	109	69.2-131	0			
2-Chloroethyl vinyl ether	106.8	10	100	0	107	60.6-128	0			
2-Hexanone	103.3	10	100	0	103	59.1-135	0			
4-Methyl-2-pentanone	102.6	10	100	0	103	71.6-124	0			
Acetone	99.24	10	100	0	99.2	60.1-141	0			
Benzene	50.91	5.0	50	0	102	80-120	0			
Bromodichloromethane	49.07	5.0	50	0	98.1	80-120	0			
Bromoform	50.15	5.0	50	0	100	78.1-120	0			
Bromomethane	50.4	5.0	50	0	101	52.8-147	0			
Carbon disulfide	100.4	10	100	0	100	78.8-120	0			
Carbon tetrachloride	49.73	5.0	50	0	99.5	76.8-120	0			
Chlorobenzene	47.42	5.0	50	0	94.8	80-120	0			
Chloroethane	50.23	5.0	50	0	100	74.2-120	0			
Chloroform	47.97	5.0	50	0	95.9	80-120	0			
Chloromethane	47.28	5.0	50	0	94.6	63.5-133	0			
cis-1,3-Dichloropropene	53.27	5.0	50	0	107	80-120	0			
Dibromochloromethane	46.62	5.0	50	0	93.2	80-120	0			
Ethylbenzene	48.3	5.0	50	0	96.6	80-120	0			
m,p-Xylene	98.64	10	100	0	98.6	80-120	0			
Methylene chloride	47.18	10	50	0	94.4	74.7-120	0			
Styrene	49.88	5.0	50	0	99.8	80-120	0			
Tetrachloroethene	50.71	5.0	50	0	101	80-120	0			
Toluene	48.87	5.0	50	0	97.7	80-120	0			
trans-1,3-Dichloropropene	51.82	5.0	50	0	104	80-120	0			
Trichloroethene	52.2	5.0	50	0	104	80-120	0			
Vinyl acetate	92.19	10	100	0	92.2	61.1-148	0			
Vinyl chloride	50.59	2.0	50	0	101	76.2-121	0			
Xylenes, Total	148.2	15	150	0	98.8	80-120	0			
Surr: 1,2-Dichloroethane-d4	*55.87*	5.0	*50*	0	*112*	*70-125*	0			
Surr: 4-Bromofluorobenzene	*56.46*	5.0	*50*	0	*113*	*72.4-125*	0			
Surr: Dibromofluoromethane	*54.81*	5.0	*50*	0	*110*	*71.2-125*	0			
Surr: Toluene-d8	*57.83*	5.0	*50*	0	*116*	*75-125*	0			

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CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **R37977** Instrument ID: **VOA1** Method: **SW8260**

MS Sample ID: **0605250-01AMS** Units: **µg/L** Analysis Date: **05/19/06 13:43**

Client ID: Run ID: **VOA1_060519A** SeqNo: **866695** Prep Date: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	1003	120	1250	0	80.2	79.6-120	0			
1,1,2,2-Tetrachloroethane	1279	120	1250	0	102	78.9-121	0			
1,1,2-Trichloroethane	1180	120	1250	0	94.4	80-120	0			
1,1-Dichloroethane	1139	120	1250	0	91.1	74.2-122	0			
1,1-Dichloroethene	1044	120	1250	0	83.5	75.8-122	0			
1,2-Dibromoethane	1305	120	1250	0	104	80-120	0			
1,2-Dichloroethane	1264	120	1250	0	101	78.8-120	0			
2-Butanone	2883	250	2500	0	115	69.2-131	0			
2-Chloroethyl vinyl ether	2595	250	2500	0	104	60.6-128	0			
2-Hexanone	2703	250	2500	0	108	59.1-135	0			
4-Methyl-2-pentanone	2688	250	2500	0	108	71.6-124	0			
Acetone	2685	250	2500	0	107	60.1-141	0			
Benzene	1155	120	1250	0	92.4	80-120	0			
Bromodichloromethane	1228	120	1250	0	98.2	80-120	0			
Bromoform	1339	120	1250	0	107	78.1-120	0			
Bromomethane	1112	120	1250	0	88.9	52.8-147	0			
Carbon disulfide	2067	250	2500	0	82.7	78.8-120	0			
Carbon tetrachloride	994.1	120	1250	0	79.5	76.8-120	0			
Chlorobenzene	1161	120	1250	0	92.9	80-120	0			
Chloroethane	1087	120	1250	0	86.9	74.2-120	0			
Chloroform	1659	120	1250	502.7	92.5	80-120	0			
Chloromethane	1091	120	1250	0	87.3	63.5-133	0			
cis-1,3-Dichloropropene	1275	120	1250	0	102	80-120	0			
Dibromochloromethane	1158	120	1250	0	92.7	80-120	0			
Ethylbenzene	1054	120	1250	0	84.3	80-120	0			
m,p-Xylene	2194	250	2500	0	87.8	80-120	0			
Methylene chloride	1212	250	1250	0	96.9	74.7-120	0			
Styrene	1171	120	1250	0	93.7	80-120	0			
Tetrachloroethene	1026	120	1250	0	82.1	80-120	0			
Toluene	1098	120	1250	0	87.8	80-120	0			
trans-1,3-Dichloropropene	1233	120	1250	0	98.6	80-120	0			
Trichloroethene	1154	120	1250	0	92.3	80-120	0			
Vinyl acetate	2333	250	2500	0	93.3	61.1-148	0			
Vinyl chloride	1027	50	1250	0	82.2	76.2-121	0			
Xylenes, Total	3327	380	3750	0	88.7	80-120	0			
Surr: 1,2-Dichloroethane-d4	*1375*	120	*1250*	0	*110*	*70-125*	0			
Surr: 4-Bromofluorobenzene	*1395*	120	*1250*	0	*112*	*72.4-125*	0			
Surr: Dibromofluoromethane	*1340*	120	*1250*	0	*107*	*71.2-125*	0			
Surr: Toluene-d8	*1461*	120	*1250*	0	*117*	*75-125*	0			

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CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **R37977** Instrument ID: **VOA1** Method: **SW8260**

MSD Sample ID: **0605250-01AMSD** Units: **µg/L** Analysis Date: **05/19/06 14:13**

Client ID: Run ID: **VOA1_060519A** SeqNo: **866696** Prep Date: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	1016	120	1250	0	81.3	79.6-120	1003	1.28	20	
1,1,2,2-Tetrachloroethane	1293	120	1250	0	103	78.9-121	1279	1.14	20	
1,1,2-Trichloroethane	1213	120	1250	0	97	80-120	1180	2.75	20	
1,1-Dichloroethane	1191	120	1250	0	95.2	74.2-122	1139	4.4	20	
1,1-Dichloroethene	1032	120	1250	0	82.6	75.8-122	1044	1.12	20	
1,2-Dibromoethane	1334	120	1250	0	107	80-120	1305	2.24	20	
1,2-Dichloroethane	1313	120	1250	0	105	78.8-120	1264	3.81	20	
2-Butanone	2892	250	2500	0	116	69.2-131	2883	0.303	20	
2-Chloroethyl vinyl ether	2820	250	2500	0	113	60.6-128	2595	8.31	20	
2-Hexanone	2828	250	2500	0	113	59.1-135	2703	4.5	20	
4-Methyl-2-pentanone	2872	250	2500	0	115	71.6-124	2688	6.62	20	
Acetone	2901	250	2500	0	116	60.1-141	2685	7.73	20	
Benzene	1170	120	1250	0	93.6	80-120	1155	1.34	20	
Bromodichloromethane	1288	120	1250	0	103	80-120	1228	4.83	20	
Bromoform	1360	120	1250	0	109	78.1-120	1339	1.58	20	
Bromomethane	1149	120	1250	0	92	52.8-147	1112	3.33	20	
Carbon disulfide	2047	250	2500	0	81.9	78.8-120	2067	0.999	20	
Carbon tetrachloride	983.5	120	1250	0	78.7	76.8-120	994.1	1.08	20	
Chlorobenzene	1183	120	1250	0	94.7	80-120	1161	1.91	20	
Chloroethane	1049	120	1250	0	83.9	74.2-120	1087	3.49	20	
Chloroform	1719	120	1250	502.7	97.3	80-120	1659	3.53	20	
Chloromethane	1073	120	1250	0	85.9	63.5-133	1091	1.66	20	
cis-1,3-Dichloropropene	1280	120	1250	0	102	80-120	1275	0.418	20	
Dibromochloromethane	1192	120	1250	0	95.4	80-120	1158	2.85	20	
Ethylbenzene	1064	120	1250	0	85.1	80-120	1054	0.896	20	
m,p-Xylene	2139	250	2500	0	85.6	80-120	2194	2.53	20	
Methylene chloride	1161	250	1250	0	92.9	74.7-120	1212	4.29	20	
Styrene	1159	120	1250	0	92.7	80-120	1171	1.02	20	
Tetrachloroethene	989.7	120	1250	0	79.2	80-120	1026	3.62	20	S
Toluene	1100	120	1250	0	88	80-120	1098	0.25	20	
trans-1,3-Dichloropropene	1318	120	1250	0	105	80-120	1233	6.7	20	
Trichloroethene	1162	120	1250	0	93	80-120	1154	0.736	20	
Vinyl acetate	2287	250	2500	0	91.5	61.1-148	2333	1.99	20	
Vinyl chloride	1031	50	1250	0	82.5	76.2-121	1027	0.438	20	
Xylenes, Total	3245	380	3750	0	86.5	80-120	3327	2.52	20	
Surr: 1,2-Dichloroethane-d4	*1450*	120	*1250*	0	*116*	*70-125*	1375	*5.36*		
Surr: 4-Bromofluorobenzene	*1428*	120	*1250*	0	*114*	*72.4-125*	1395	*2.36*		
Surr: Dibromofluoromethane	*1404*	120	*1250*	0	*112*	*71.2-125*	1340	*4.68*		
Surr: Toluene-d8	*1477*	120	*1250*	0	*118*	*75-125*	1461	*1.06*		

The following samples were analyzed in this batch: 0605275-01A 0605275-02A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
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R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
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E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **R37918** Instrument ID: **WetChem** Method: **E150.1**

LCS Sample ID: **WLCSW1-051906** Units: **pH units** Analysis Date: **05/19/06 0:00**

Client ID: Run ID: **WETCHEM_060519A** SeqNo: **865617** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.01	0.10	6	0	100	85-115	0			

DUP Sample ID: **0605275-01HDUP** Units: **pH units** Analysis Date: **05/19/06 0:00**

Client ID: **TK 838** Run ID: **WETCHEM_060519A** SeqNo: **865626** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.1	0.10	0	0	0	0-0	7.09	0.141	20	

The following samples were analyzed in this batch: 0605275-01H

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R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
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E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **R37942** Instrument ID: **UV-2450** Method: **E420.1**

MBLK Sample ID: **WBLKW1-060519** Units: **mg/L** Analysis Date: **05/19/06 0:00**
Client ID: Run ID: **UV-2450_060519D** SeqNo: **866070** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	ND	0.050								

LCS Sample ID: **WLCSW1-060519** Units: **mg/L** Analysis Date: **05/19/06 0:00**
Client ID: Run ID: **UV-2450_060519D** SeqNo: **866071** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.489	0.050	0.5	0	97.8	80-120		0		

MS Sample ID: **0605275-01GMS** Units: **mg/L** Analysis Date: **05/19/06 0:00**
Client ID: **TK 838** Run ID: **UV-2450_060519D** SeqNo: **866076** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.481	0.050	0.5	0.009	94.4	80-120		0		

MSD Sample ID: **0605275-01GMSD** Units: **mg/L** Analysis Date: **05/19/06 0:00**
Client ID: **TK 838** Run ID: **UV-2450_060519D** SeqNo: **866077** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.5	0.050	0.5	0.009	98.2	80-120	0.481	3.87	20	

DUP Sample ID: **0605275-01GDUP** Units: **mg/L** Analysis Date: **05/19/06 0:00**
Client ID: **TK 838** Run ID: **UV-2450_060519D** SeqNo: **866075** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	ND	0.050	0	0	0	0-0	0.009	0	20	

The following samples were analyzed in this batch: 0605275-01G

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **R37953** Instrument ID: **IC201** Method: **E300**

MBLK Sample ID: **WBLKW1-051906** Units: **mg/L** Analysis Date: **05/19/06 19:19**
Client ID: Run ID: **IC201_060519A** SeqNo: **866226** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	0.50								
Fluoride	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Surr: Selenate (surr)	*4.549*	0.10	*5*	0	*91*	*85-115*	0			

LCS Sample ID: **WLCSW1-060-16-5** Units: **mg/L** Analysis Date: **05/19/06 19:41**
Client ID: Run ID: **IC201_060519A** SeqNo: **866227** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.02	0.50	20	0	100	90-110	0			
Fluoride	4.057	0.10	4	0	101	90-110	0			
Nitrogen, Nitrate (As N)	3.989	0.10	4	0	99.7	90-110	0			
Surr: Selenate (surr)	*4.975*	0.10	*5*	0	*99.5*	*85-115*	0			

LCSD Sample ID: **WLCSDW1-060-16-** Units: **mg/L** Analysis Date: **05/19/06 20:03**
Client ID: Run ID: **IC201_060519A** SeqNo: **866228** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20	0.50	20	0	100	90-110	20.02	0.115	20	
Fluoride	4.058	0.10	4	0	101	90-110	4.057	0.0246	20	
Nitrogen, Nitrate (As N)	3.984	0.10	4	0	99.6	90-110	3.989	0.125	20	
Surr: Selenate (surr)	*4.97*	0.10	*5*	0	*99.4*	*85-115*	4.975	*0.101*	*20*	

MS Sample ID: **0605275-01EMS** Units: **mg/L** Analysis Date: **05/19/06 21:09**
Client ID: **TK 838** Run ID: **IC201_060519A** SeqNo: **866231** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	23.71	0.50	10	14.02	97	75-125	0			
Fluoride	2.971	0.10	2	0.89	104	75-125	0			
Nitrogen, Nitrate (As N)	2.613	0.10	2	0.61	100	75-125	0			
Surr: Selenate (surr)	*4.995*	0.10	*5*	0	*99.9*	*80-120*	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **R37953** Instrument ID: **IC201** Method: **E300**

MSD Sample ID: **0605275-01EMSD** Units: **mg/L** Analysis Date: **05/19/06 21:31**

Client ID: **TK 838** Run ID: **IC201_060519A** SeqNo: **866232** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	23.72	0.50	10	14.02	97.1	75-125	23.71	0.0464	20	
Fluoride	2.977	0.10	2	0.89	104	75-125	2.971	0.202	20	
Nitrogen, Nitrate (As N)	2.616	0.10	2	0.61	100	75-125	2.613	0.115	20	
Surr: Selenate (surr)	*4.886*	0.10	*5*	0	*97.7*	*80-120*	4.995	*2.21*	*20*	

DUP Sample ID: **0605275-01EDUP** Units: **mg/L** Analysis Date: **05/19/06 20:47**

Client ID: **TK 838** Run ID: **IC201_060519A** SeqNo: **866230** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	14.02	0.50	0	0	0	0-0	14.02	0.0428	20	
Fluoride	0.9	0.10	0	0	0	0-0	0.89	1.12	20	
Nitrogen, Nitrate (As N)	0.61	0.10	0	0	0	0-0	0.61	0	20	
Surr: Selenate (surr)	*5.006*	0.10	*5*	0	*100*	*80-120*	5.119	*2.23*	*20*	

The following samples were analyzed in this batch: 0605275-01E

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **R37961** Instrument ID: **Balance1** Method: **E160.1**

MBLK Sample ID: **WBLKW1-052006** Units: **mg/L** Analysis Date: **05/20/06 0:00**
Client ID: Run ID: **BALANCE1_060520A** SeqNo: **866382** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	ND	10								

LCS Sample ID: **WLCSW1-052006** Units: **mg/L** Analysis Date: **05/20/06 0:00**
Client ID: Run ID: **BALANCE1_060520A** SeqNo: **866383** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	996	10	1000	0	99.6	85-115	0			

DUP Sample ID: **0605246-01F DUP** Units: **mg/L** Analysis Date: **05/20/06 0:00**
Client ID: Run ID: **BALANCE1_060520A** SeqNo: **866373** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	14530	10	0	0	0	0-0	14440	0.566	20	

DUP Sample ID: **0605267-04C DUP** Units: **mg/L** Analysis Date: **05/20/06 0:00**
Client ID: Run ID: **BALANCE1_060520A** SeqNo: **866380** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	1671	10	0	0	0	0-0	1672	0.0598	20	

The following samples were analyzed in this batch: 0605275-01H

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0605275
Project: Ground Water Sampling

QC BATCH REPORT

Batch ID: **R37964** Instrument ID: **UV-2450** Method: **E335.3**

MBLK Sample ID: **WBLKW1-052006** Units: **mg/L** Analysis Date: **05/21/06 0:00**
Client ID: Run ID: **UV-2450_060521A** SeqNo: **866399** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	ND	0.020								

LCS Sample ID: **WLCSW1-052006** Units: **mg/L** Analysis Date: **05/21/06 0:00**
Client ID: Run ID: **UV-2450_060521A** SeqNo: **866400** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.208	0.020	0.2	0	104	80-120	0			

MS Sample ID: **0605275-01FMS** Units: **mg/L** Analysis Date: **05/21/06 0:00**
Client ID: **TK 838** Run ID: **UV-2450_060521A** SeqNo: **866409** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.212	0.020	0.2	0	106	80-120	0			

MSD Sample ID: **0605275-01FMSD** Units: **mg/L** Analysis Date: **05/21/06 0:00**
Client ID: **TK 838** Run ID: **UV-2450_060521A** SeqNo: **866410** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.21	0.020	0.2	0	105	80-120	0.212	0.948	20	

DUP Sample ID: **0605275-01FDUP** Units: **mg/L** Analysis Date: **05/21/06 0:00**
Client ID: **TK 838** Run ID: **UV-2450_060521A** SeqNo: **866408** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	ND	0.020	0	0	0	0-0	0	0	20	

The following samples were analyzed in this batch: 0605275-01F

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

e-Lab Analytical
QUALITY • INTEGRITY • SERVICE

10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

Page 1 of 1

e-Lab Analytical, Inc.
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

e-Lab Project Manager:

e-Lab Work Order #: 6605215

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Ground Water Sampling	A	VOC (8260) Select
Work Order		Project Number		B	Total Metals (6020/7000)
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company	C	PAH (8270) Low Level
Send Report To	Darrell Moore	Invoice Attn	Darrell Moore	D	PCBs (8082)
Address	PO Box 159	Address	PO Box 159	E	Anions: Cl,Fl,NO3
				F	Total Cyanide
City/State/Zip	Artesia, NM 88211	City/State/Zip	Artesia, NM 88211	G	Phenolics
Phone	(505) 748-3311	Phone	(505) 748-3311	H	pH TDS
Fax	(505) 746-5421	Fax	(505) 746-5421	I	Uranium
e-Mail Address		e-Mail Address		J	Radium (226 & 228)

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	TK 838	5/18/06	1000	L	4	Bench	X	X	X	X	X	X	X	X			
2	Trip blank						X										
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Floyd

Shipment Method: FedEx

Required Turnaround Time: (Check Box) ☑ Std 10 WK Days ☐ 5 WK Days ☒ Other ASAP ☐ 2 WK Days ☐ 24 Hour

Results Due Date: ASAP

Relinquished by: Floyd — Date: 5/18/06 — Time: 1615 — Received by:

Relinquished by: — Date: — Time: — Received by (Laboratory): 5.19.06 0925

Logged by (Laboratory): — Date: — Time: — Checked by (Laboratory):

Notes: 10 Work Day TAT. Metals List: Al.As.Ba.B.Cd.Cr.Co.Fe.Pb.Mn.Mo.Ni.Se.Ag.Zn.Hg. & Cu

e-lab Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☑ Level II Std QC ☐ TRRP CheckList
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other _____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to e-Lab Analytical, Inc.
2. Unless otherwise agreed in a formal contract, services provided by e-Lab Analytical, Inc. are expressly limited to the terms and conditions stated on the reverse.

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e-Lab Analytical, Inc.

Sample Receipt Checklist

Client Name NAVAJO REFINING | Date/Time Received: 5/19/2006 9:25:00 AM

Work Order Number 0605275 | Received by: RSZ

Checklist completed by [signature] Signature 5/19/06 Date | Reviewed by [initials] Initials 5/19/06 Date

Matrix: W | Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.8c	002	
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐

Adjusted? _____ Checked by [signature]

Login Notes:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

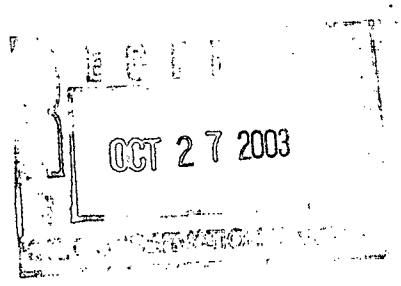
REFINING COMPANY

FAX
(505) 746-5283 DIV. ORDERS
(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET ◦ P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX
(505) 746-5419 ACCOUNTING
(505) 746-5451 EXEC/MKTG
(505) 746-5421 ENGINEERING
(505) 746-5480 PIPELINE

October 23 2003



Mr. Roger Anderson
Environmental Bureau
Oil Conservation Division
1220 S. St. Francis
Santa Fe, NM 87505-5472

RE: 3rd Quarter 2003 Report on RO Reject Water, Navajo Refining Co., Eddy County, NM

Dear Roger:

This letter is sent in regard to Navajo Refining's permit modification of our discharge plan GW-28 which allows us to put our Reverse Osmosis (RO) reject water on our farm. This permit is administered by OCD and the parameters we sample for were set up by OCD. We are sending these results for your files. We are required by OCD to sample this stream every quarter and once annually. This is the quarterly report and analysis for the first quarter of 2003.

For this quarter we discharged a total of 37,909,000 gallons to the farm for irrigation. Since we started discharging the RO reject water, we have discharged a total of 1,196,351,000 gallons. This is broken down as follows: 196,713,498 gallons have been put into Eagle Draw (stopped in December 1999) and 999,538,000 gallons have been put on our farms.

The RO unit was in full operation for the entire quarter. If you have any questions concerning this matter, please call me at 505-748-3311. Thank you for your time.

Regards,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Environmental Mgr. for Water and Waste
encl.
cc: USEPA
New Mexico Environment Dept.- Water Quality

e-Lab, Inc.

10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 281-530-5656 Fax 281-530-5

October 21, 2003

Jeff Byrd
Navajo Refining Company
P.O. Box 159
Artesia, New Mexico 88211

Tel: (505) 746-5468
Fax: (505) 746-5421

Re: RO Reject-Qtrly Work Order : **0309292**

Dear Jeff Byrd,

e-Lab, Inc. received 1 sample on 9/30/2003 8:45:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by e-Lab, Inc. and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by e-Lab Inc. The total number of pages in this report is 17.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Lora Terrill

Electronically approved by: Lora Terrill

Lora Terrill
VP Lab Operations

e-Lab, Inc.

Date: *October 20, 2003*

CLIENT: Navajo Refining Company
Project: RO Reject-Qtrly
Work Order: **0309292**

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
0309292-01	RO Reject	Water		9/29/2003 10:15	9/30/2003 08:45	☐

e-Lab, Inc.

Date: *October 20, 2003*

CLIENT: Navajo Refining Company
Project: RO Reject-Qtrly
Work Order: 0309292

Case Narrative

The analysis for Uranium was subcontracted to American Radiation Services in Baton Rouge, LA.

e-Lab, Inc.

Date: *October 21, 2003*

CLIENT:	Navajo Refining Company	**Client Sample ID:**	RO Reject
Work Order:	0309292	**Collection Date:**	9/29/2003 10:15:00 AM
Project:	RO Reject-Qtrly		
Lab ID:	0309292-01	**Matrix:**	WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
MERCURY, TOTAL		**SW7470**			Prep Date: **10/8/2003**	Analyst: **JCJ**
Mercury	ND	0.000200		mg/L	1	10/8/2003 6:06:40 PM
ICP METALS, TOTAL		**SW6020**			Prep Date: **10/3/2003**	Analyst: **ALR**
Aluminum	ND	0.0100		mg/L	1	10/16/2003 11:53:00 PM
Arsenic	ND	0.00500		mg/L	1	10/16/2003 11:53:00 PM
Barium	0.0517	0.00500		mg/L	1	10/16/2003 11:53:00 PM
Beryllium	ND	0.00200		mg/L	1	10/16/2003 11:53:00 PM
Boron	0.0826	0.0200		mg/L	1	10/17/2003 3:06:00 PM
Cadmium	ND	0.00100		mg/L	1	10/16/2003 11:53:00 PM
Calcium	492	25.0		mg/L	50	10/16/2003 7:20:00 PM
Chromium	ND	0.00200		mg/L	1	10/16/2003 11:53:00 PM
Cobalt	ND	0.00200		mg/L	1	10/16/2003 11:53:00 PM
Copper	0.00463	0.00200		mg/L	1	10/16/2003 11:53:00 PM
Iron	1.98	0.200		mg/L	1	10/16/2003 11:53:00 PM
Lead	ND	0.00500		mg/L	1	10/16/2003 11:53:00 PM
Magnesium	127	2.00		mg/L	10	10/17/2003 12:50:00 PM
Manganese	ND	0.00500		mg/L	1	10/16/2003 11:53:00 PM
Nickel	0.00860	0.00500		mg/L	1	10/16/2003 11:53:00 PM
Potassium	3.68	0.200		mg/L	1	10/16/2003 11:53:00 PM
Selenium	ND	0.00500		mg/L	1	10/16/2003 11:53:00 PM
Silver	ND	0.00500		mg/L	1	10/16/2003 11:53:00 PM
Sodium	99.3	2.00		mg/L	10	10/17/2003 12:50:00 PM
Vanadium	0.00802	0.00500		mg/L	1	10/16/2003 11:53:00 PM
Zinc	0.00891	0.00500		mg/L	1	10/16/2003 11:53:00 PM
ANIONS BY ION CHROMATOGRAPHY		**E300**				Analyst: **MG**
Chloride	423	5.00		mg/L	10	10/7/2003 10:15:00 PM
Fluoride	2.29	0.100		mg/L	1	10/4/2003 12:09:00 AM
Sulfate	66.7	5.00		mg/L	5	10/7/2003 9:42:00 PM
Surr: Dichloroacetic acid (surr)	103	80-120		%REC	10	10/7/2003 10:15:00 PM
Surr: Dichloroacetic acid (surr)	106	80-120		%REC	5	10/7/2003 9:42:00 PM
Surr: Dichloroacetic acid (surr)	94.4	80-120		%REC	1	10/4/2003 12:09:00 AM
ALKALINITY		**E310.1**				Analyst: **LMD**
Alkalinity, Bicarbonate (As CaCO3)	460	5.00		mg/L	1	10/7/2003
Alkalinity, Carbonate (As CaCO3)	ND	5.00		mg/L	1	10/7/2003
Alkalinity, Hydroxide (As CaCO3)	ND	5.00		mg/L	1	10/7/2003
Alkalinity, Total (As CaCO3)	460	5.00		mg/L	1	10/7/2003

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
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

Date: *Oct 20 2003*

CLIENT: Navajo Refining Company

Work Order: 0309292

Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **6823** InstrumentID: **ICP4500**

MBLK Sample ID: **MBLKW2-100303** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/06/03 15:35**

Client ID: Run ID: **ICP4500_031006A** SeqNo: **376093** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.003049	0.010								J
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Beryllium	ND	0.0020								
Cadmium	ND	0.0010								
Calcium	ND	0.50								
Chromium	ND	0.0020								
Cobalt	0.0001557	0.0020								J
Copper	0.0006768	0.0020								J
Iron	ND	0.20								
Lead	ND	0.0050								
Magnesium	ND	0.20								
Manganese	ND	0.0050								
Nickel	ND	0.0050								
Potassium	ND	0.20								
Selenium	ND	0.0050								
Silver	0.0005001	0.0050								J
Vanadium	ND	0.0050								
Zinc	ND	0.0050								

MBLK Sample ID: **MBLKW2-100303** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 12:41**

Client ID: Run ID: **ICP4500_031017A** SeqNo: **381166** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	ND	0.20								

MBLK Sample ID: **MBLKW2-100303** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 14:57**

Client ID: Run ID: **ICP4500_031017A** SeqNo: **381236** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	ND	0.020								

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0309292
Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **6823** InstrumentID: **ICP4500**

LCS Sample ID: **MLCSW2-100303** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/06/03 15:39**
Client ID: Run ID: **ICP4500_031006A** SeqNo: **376094** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09935	0.010	0.1	0	99.4	80-120	0			
Arsenic	0.1003	0.0050	0.1	0	100	80-120	0			
Barium	0.09866	0.0050	0.1	0	98.7	80-120	0			
Beryllium	0.1073	0.0020	0.1	0	107	80-120	0			
Cadmium	0.1009	0.0010	0.1	0	101	80-120	0			
Calcium	9.392	0.50	10	0	93.9	80-120	0			
Chromium	0.09727	0.0020	0.1	0	97.3	80-120	0			
Cobalt	0.09852	0.0020	0.1	0	98.5	80-120	0			
Copper	0.09667	0.0020	0.1	0	96.7	80-120	0			
Iron	9.664	0.20	10	0	96.6	80-120	0			
Lead	0.09997	0.0050	0.1	0	100	80-120	0			
Magnesium	9.571	0.20	10	0	95.7	80-120	0			
Manganese	0.09946	0.0050	0.1	0	99.5	80-120	0			
Nickel	0.09793	0.0050	0.1	0	97.9	80-120	0			
Potassium	9.38	0.20	10	0	93.8	80-120	0			
Selenium	0.101	0.0050	0.1	0	101	80-120	0			
Silver	0.09838	0.0050	0.1	0	98.4	80-120	0			
Vanadium	0.09803	0.0050	0.1	0	98	80-120	0			
Zinc	0.1014	0.0050	0.1	0	101	80-120	0			

LCS Sample ID: **MLCSW2-100303** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 12:45**
Client ID: Run ID: **ICP4500_031017A** SeqNo: **381167** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	8.539	0.20	10	0	85.4	80-120	0			

LCS Sample ID: **MLCSW2-100303** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 15:02**
Client ID: Run ID: **ICP4500_031017A** SeqNo: **381237** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4819	0.020	0.5	0	96.4	80-120	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0309292
Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **6823** InstrumentID: **ICP4500**

MS Sample ID: **0309293-03BMS** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/06/03 15:57**
Client ID: Run ID: **ICP4500_031006A** SeqNo: **376098** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1004	0.010	0.1	0.009971	90.4	75-125	0			
Arsenic	0.09743	0.0050	0.1	-0.002367	99.8	75-125	0			
Barium	0.1107	0.0050	0.1	0.009906	101	75-125	0			
Beryllium	0.1032	0.0020	0.1	0.00002777	103	75-125	0			
Cadmium	0.09068	0.0010	0.1	0.0001024	90.6	75-125	0			
Calcium	362.7	0.50	10	355.6	71	75-125	0			SEO
Chromium	0.09268	0.0020	0.1	-0.0001404	92.8	75-125	0			
Cobalt	0.09126	0.0020	0.1	0.0005618	90.7	75-125	0			
Copper	0.08587	0.0020	0.1	0.003196	82.7	75-125	0			
Iron	11.03	0.20	10	1.886	91.4	75-125	0			
Lead	0.1039	0.0050	0.1	0.0006829	103	75-125	0			
Magnesium	109.8	0.20	10	101	88	75-125	0			EO
Manganese	0.1015	0.0050	0.1	0.008384	93.1	75-125	0			
Nickel	0.09145	0.0050	0.1	0.006495	85	75-125	0			
Potassium	10.93	0.20	10	1.89	90.4	75-125	0			
Selenium	0.1046	0.0050	0.1	0.01079	93.8	75-125	0			
Silver	0.08594	0.0050	0.1	0.0003342	85.6	75-125	0			
Vanadium	0.1028	0.0050	0.1	0.00415	98.6	75-125	0			
Zinc	0.5278	0.0050	0.1	0.4535	74.3	75-125	0			SEO

MS Sample ID: **0309293-03BMS** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 0:16**
Client ID: Run ID: **ICP4500_031016A** SeqNo: **380982** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	ND	0.20	10	0	0	75-125	0			S

MS Sample ID: **0309293-03BMS** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 15:29**
Client ID: Run ID: **ICP4500_031017A** SeqNo: **381243** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5648	0.020	0.5	0.1074	91.5	75-125	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0309292
Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **6823** InstrumentID: **ICP4500**

MSD Sample ID: **0309293-03BMSD** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/06/03 16:02**
Client ID: Run ID: **ICP4500_031006A** SeqNo: **376099** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1041	0.010	0.1	0.009971	94.1	75-125	0.1004	3.62	25	
Arsenic	0.09772	0.0050	0.1	-0.002367	100	75-125	0.09743	0.297	25	
Barium	0.1134	0.0050	0.1	0.009906	103	75-125	0.1107	2.41	25	
Beryllium	0.104	0.0020	0.1	0.00002777	104	75-125	0.1032	0.772	25	
Cadmium	0.09318	0.0010	0.1	0.0001024	93.1	75-125	0.09068	2.72	25	
Calcium	372	0.50	10	355.6	164	75-125	362.7	2.53	25	SEO
Chromium	0.09485	0.0020	0.1	-0.0001404	95	75-125	0.09268	2.31	25	
Cobalt	0.09361	0.0020	0.1	0.0005618	93	75-125	0.09126	2.54	25	
Copper	0.08823	0.0020	0.1	0.003196	85	75-125	0.08587	2.71	25	
Iron	11.39	0.20	10	1.886	95	75-125	11.03	3.21	25	
Lead	0.1051	0.0050	0.1	0.0006829	104	75-125	0.1039	1.15	25	
Magnesium	111.2	0.20	10	101	102	75-125	109.8	1.27	25	EO
Manganese	0.1038	0.0050	0.1	0.008384	95.4	75-125	0.1015	2.24	25	
Nickel	0.09446	0.0050	0.1	0.006495	88	75-125	0.09145	3.24	25	
Potassium	11.2	0.20	10	1.89	93.1	75-125	10.93	2.44	25	
Selenium	0.1082	0.0050	0.1	0.01079	97.4	75-125	0.1046	3.38	25	
Silver	0.08938	0.0050	0.1	0.0003342	89	75-125	0.08594	3.92	25	
Vanadium	0.1058	0.0050	0.1	0.00415	102	75-125	0.1028	2.88	25	
Zinc	0.5361	0.0050	0.1	0.4535	82.6	75-125	0.5278	1.56	25	EO

MSD Sample ID: **0309293-03BMSD** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 0:21**
Client ID: Run ID: **ICP4500_031016A** SeqNo: **380983** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	ND	0.20	10	0	0	75-125	0	0	25	S

MSD Sample ID: **0309293-03BMSD** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 15:43**
Client ID: Run ID: **ICP4500_031017A** SeqNo: **381246** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5956	0.020	0.5	0.1074	97.6	75-125	0.5648	5.31	25	

ND - Not Detected at the Reporting Limit
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P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0309292
Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **6823** InstrumentID: **ICP4500**

DUP Sample ID: **0309293-03BDUP** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/06/03 15:53**
Client ID: Run ID: **ICP4500_031006A** SeqNo: **376097** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.009883	0.010	0	0	0	0-0	0.009971	0	25	J
Arsenic	ND	0.0050	0	0	0	0-0	-0.002367	0	25	
Barium	0.009881	0.0050	0	0	0	0-0	0.009906	0.253	25	
Beryllium	ND	0.0020	0	0	0	0-0	0.00002777	0	25	
Cadmium	ND	0.0010	0	0	0	0-0	0.0001024	0	25	
Chromium	ND	0.0020	0	0	0	0-0	-0.0001404	0	25	
Cobalt	0.0005294	0.0020	0	0	0	0-0	0.0005618	0	25	J
Copper	0.002953	0.0020	0	0	0	0-0	0.003196	7.9	25	
Iron	1.81	0.20	0	0	0	0-0	1.886	4.11	25	
Lead	0.0005939	0.0050	0	0	0	0-0	0.0006829	0	25	J
Manganese	0.008036	0.0050	0	0	0	0-0	0.008384	4.24	25	
Nickel	0.006111	0.0050	0	0	0	0-0	0.006495	6.09	25	
Potassium	1.867	0.20	0	0	0	0-0	1.89	1.22	25	
Selenium	0.01296	0.0050	0	0	0	0-0	0.01079	18.3	25	
Silver	0.0003211	0.0050	0	0	0	0-0	0.0003342	0	25	J
Vanadium	0.004432	0.0050	0	0	0	0-0	0.00415	0	25	J

DUP Sample ID: **0309293-03BDUP** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 14:05**
Client ID: Run ID: **ICP4500_031017A** SeqNo: **381176** Prep Date: **10/3/2003** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	360.8	10	0	0	0	0-0	401.7	10.7	25	
Magnesium	110	4.0	0	0	0	0-0	123.1	11.2	25	
Sodium	84.38	4.0	0	0	0	0-0	94.22	11	25	

DUP Sample ID: **0309293-03BDUP** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 14:13**
Client ID: Run ID: **ICP4500_031017A** SeqNo: **381191** Prep Date: **10/3/2003** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Zinc	0.5346	0.050	0	0	0	0-0	0.5297	0.921	25	

DUP Sample ID: **0309293-03BDUP** Test Code: **SW6020** Units: **mg/L** Analysis Date: **10/17/03 15:25**
Client ID: Run ID: **ICP4500_031017A** SeqNo: **381242** Prep Date: **10/3/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.1055	0.020	0	0	0	0-0	0.1074	1.78	25	

Thefollowingsampleswereanalyzedinthisbatch: 0309292-01B

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0309292
Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **6859** InstrumentID: **Mercury**

MBLK Sample ID: **GBLKW1-100803** Test Code: **SW7470** Units: **mg/L** Analysis Date: **10/08/03 16:38**
Client ID: Run ID: **MERCURY_031008C** SeqNo: **377205** Prep Date: **10/8/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

LCS Sample ID: **GLCSW1-100803** Test Code: **SW7470** Units: **mg/L** Analysis Date: **10/08/03 16:45**
Client ID: Run ID: **MERCURY_031008C** SeqNo: **377206** Prep Date: **10/8/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00518	0.00020	0.005	0	104	83-115	0			

LCSD Sample ID: **GLCSDW1-100803** Test Code: **SW7470** Units: **mg/L** Analysis Date: **10/08/03 16:55**
Client ID: Run ID: **MERCURY_031008C** SeqNo: **377207** Prep Date: **10/8/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00494	0.00020	0.005	0	98.8	83-115	0.00518	4.74	20	

MS Sample ID: **0310040-02AMS** Test Code: **SW7470** Units: **mg/L** Analysis Date: **10/08/03 17:10**
Client ID: Run ID: **MERCURY_031008C** SeqNo: **377214** Prep Date: **10/8/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00498	0.00020	0.005	-0.000057	101	70-124	0			

MSD Sample ID: **0310040-02AMSD** Test Code: **SW7470** Units: **mg/L** Analysis Date: **10/08/03 17:15**
Client ID: Run ID: **MERCURY_031008C** SeqNo: **377215** Prep Date: **10/8/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00515	0.00020	0.005	-0.000057	104	70-124	0.00498	3.36	20	

DUP Sample ID: **0310040-02ADUP** Test Code: **SW7470** Units: **mg/L** Analysis Date: **10/08/03 17:03**
Client ID: Run ID: **MERCURY_031008C** SeqNo: **377211** Prep Date: **10/8/2003** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020	0	0	0	0-0	-0.000057	0	20	

Thefollowingsampleswereanalyzedinthisbatch: 0309292-01B

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0309292
Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **R16517** InstrumentID: **IC201**

MBLK Sample ID: **WBLKW1-100302** Test Code: **E300** Units: **mg/L** Analysis Date: **10/03/03 17:39**
Client ID: Run ID: **IC201_031003A** SeqNo: **376367** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	0.50								
Fluoride	ND	0.10								
Sulfate	ND	1.0								
Surr: Dichloroacetic acid (surr)	ND	0.10								

LCS Sample ID: **WLCSW1-100302** Test Code: **E300** Units: **mg/L** Analysis Date: **10/03/03 18:12**
Client ID: Run ID: **IC201_031003A** SeqNo: **376368** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.89	0.50	10	0	98.9	80-120	0			
Fluoride	2	0.10	2	0	100	80-120	0			
Sulfate	10.52	1.0	10	0	105	80-120	0			
Surr: Dichloroacetic acid (surr)	2.15	0.10	2	0	108	80-120	0			

LCSD Sample ID: **WLCSDW1-10030** Test Code: **E300** Units: **mg/L** Analysis Date: **10/03/03 18:44**
Client ID: Run ID: **IC201_031003A** SeqNo: **376369** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.94	0.50	10	0	99.4	80-120	9.89	0.504	20	
Fluoride	1.99	0.10	2	0	99.5	80-120	2	0.501	20	
Sulfate	10.56	1.0	10	0	106	80-120	10.52	0.38	20	
Surr: Dichloroacetic acid (surr)	2.11	0.10	2	0	106	80-120	2.15	1.88	20	

MS Sample ID: **0309267-01CMS** Test Code: **E300** Units: **mg/L** Analysis Date: **10/03/03 20:22**
Client ID: Run ID: **IC201_031003A** SeqNo: **376372** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	57.38	0.50	10	47.03	103	75-125	0			EO
Fluoride	2.47	0.10	2	0.54	96.5	75-125	0			
Sulfate	182	1.0	10	171.3	107	75-125	0			EO
Surr: Dichloroacetic acid (surr)	4.88	0.10	5	0	97.6	80-120	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
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R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0309292
Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **R16517** InstrumentID: **IC201**

MSD Sample ID: **0309267-01CMSD** Test Code: **E300** Units: **mg/L** Analysis Date: **10/03/03 20:54**
Client ID: Run ID: **IC201_031003A** SeqNo: **376373** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	58.04	0.50	10	47.03	110	75-125	57.38	1.14	20	EO
Fluoride	2.47	0.10	2	0.54	96.5	75-125	2.47	0	20	
Sulfate	180.2	1.0	10	171.3	89.5	75-125	182	0.955	20	EO
Surr: Dichloroacetic acid (surr)	5.14	0.10	5	0	103	80-120	4.88	5.19	20	

DUP Sample ID: **0309267-01CDUP** Test Code: **E300** Units: **mg/L** Analysis Date: **10/03/03 19:49**
Client ID: Run ID: **IC201_031003A** SeqNo: **376371** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	46.25	0.50	0	0	0	0-0	47.03	1.67	20	
Fluoride	0.65	0.10	0	0	0	0-0	0.54	18.5	20	
Sulfate	171.6	1.0	0	0	0	0-0	171.3	0.198	20	E
Surr: Dichloroacetic acid (surr)	5.63	0.10	5	0	113	80-120	5.62	0.178	20	

DUP Sample ID: **0310016-07CDUP** Test Code: **E300** Units: **mg/L** Analysis Date: **10/04/03 6:07**
Client ID: Run ID: **IC201_031003A** SeqNo: **376394** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	88.6	5.0	0	0	0	0-0	88.7	0.113	20	
Fluoride	2.4	1.0	0	0	0	0-0	0	200	20	R
Sulfate	257.9	10	0	0	0	0-0	257.9	0	20	
Surr: Dichloroacetic acid (surr)	50	1.0	50	0	100	80-120	53	5.83	20	

DUP Sample ID: **0310018-03ADUP** Test Code: **E300** Units: **mg/L** Analysis Date: **10/04/03 9:55**
Client ID: Run ID: **IC201_031003A** SeqNo: **376399** Prep Date: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	302.6	2.5	0	0	0	0-0	299.4	1.06	20	E
Fluoride	ND	0.50	0	0	0	0-0	0	0	20	
Sulfate	134.8	5.0	0	0	0	0-0	132.9	1.46	20	
Surr: Dichloroacetic acid (surr)	26.85	0.50	25	0	107	80-120	27	0.557	20	

Thefollowingsampleswereanalyzedinthisbatch: 0309292-01A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0309292
Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **R16533** InstrumentID: **WetChemistry**

MBLK Sample ID: **WMBW1-100703** Test Code: **E310.1** Units: **mg/L** Analysis Date: **10/07/03 0:00**
Client ID: Run ID: **WET CHEMISTRY_0310** SeqNo: **376751** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0								
Alkalinity, Carbonate (As CaCO3)	ND	5.0								
Alkalinity, Hydroxide (As CaCO3)	ND	5.0								
Alkalinity, Total (As CaCO3)	ND	5.0								

LCS Sample ID: **WLCSW1-100703** Test Code: **E310.1** Units: **mg/L** Analysis Date: **10/07/03 0:00**
Client ID: Run ID: **WET CHEMISTRY_0310** SeqNo: **376752** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1000	5.0	1000	0	100	80-120	0			

DUP Sample ID: **0309293-03D DUP** Test Code: **E310.1** Units: **mg/L** Analysis Date: **10/07/03 0:00**
Client ID: Run ID: **WET CHEMISTRY_0310** SeqNo: **376766** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	175	5.0	0	0	0	0-0	180	2.82	20	
Alkalinity, Carbonate (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Total (As CaCO3)	175	5.0	0	0	0	0-0	180	2.82	20	

Thefollowingsampleswereanalyzedinthisbatch: 0309292-01A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0309292
Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **R16550** InstrumentID: **IC201**

LCS Sample ID: **WLCSW-100703** Test Code: **E300** Units: **mg/L** Analysis Date: **10/08/03 9:05**
Client ID: Run ID: **IC201_031007A** SeqNo: **377111** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.88	0.50	10	0	98.8	80-120	0			
Fluoride	2.01	0.10	2	0	100	80-120	0			
Sulfate	10.63	1.0	10	0	106	80-120	0			
Surr: Dichloroacetic acid (surr)	2.14	0.10	2	0	107	80-120	0			

LCSD Sample ID: **WLCSDW1-10070** Test Code: **E300** Units: **mg/L** Analysis Date: **10/08/03 9:38**
Client ID: Run ID: **IC201_031007A** SeqNo: **377112** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	10	0.50	10	0	100	80-120	9.88	1.21	20	
Fluoride	1.96	0.10	2	0	98	80-120	2.01	2.52	20	
Sulfate	10.67	1.0	10	0	107	80-120	10.63	0.376	20	
Surr: Dichloroacetic acid (surr)	2.17	0.10	2	0	108	80-120	2.14	1.39	20	

MS Sample ID: **0310040-02BMS** Test Code: **E300** Units: **mg/L** Analysis Date: **10/07/03 18:27**
Client ID: Run ID: **IC201_031007A** SeqNo: **377085** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.46	0.50	10	0	94.6	75-125	0			
Fluoride	1.94	0.10	2	0	97	75-125	0			
Sulfate	10.31	1.0	10	0	103	75-125	0			
Surr: Dichloroacetic acid (surr)	4.4	0.10	5	0	88	80-120	0			

MSD Sample ID: **0310040-02BMSD** Test Code: **E300** Units: **mg/L** Analysis Date: **10/07/03 19:00**
Client ID: Run ID: **IC201_031007A** SeqNo: **377086** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.72	0.50	10	0	97.2	75-125	9.46	2.71	20	
Fluoride	1.95	0.10	2	0	97.5	75-125	1.94	0.514	20	
Sulfate	10.49	1.0	10	0	105	75-125	10.31	1.73	20	
Surr: Dichloroacetic acid (surr)	4.97	0.10	5	0	99.4	80-120	4.4	12.2	20	

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0309292
Project: RO Reject-Qtrly

QC BATCH REPORT

Batch ID: **R16550** InstrumentID: **IC201**

DUP Sample ID: **0310040-02BDUP** Test Code: **E300** Units: **mg/L** Analysis Date: **10/07/03 17:55**
Client ID: Run ID: **IC201_031007A** SeqNo: **377084** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	0.50	0	0	0	0-0	0	0	20	
Fluoride	ND	0.10	0	0	0	0-0	0	0	20	
Sulfate	ND	1.0	0	0	0	0-0	0	0	20	
Surr: Dichloroacetic acid (surr)	5.3	0.10	5	0	106	80-120	5.45	2.79	20	

DUP Sample ID: **0310072-01DDUP** Test Code: **E300** Units: **mg/L** Analysis Date: **10/08/03 4:12**
Client ID: Run ID: **IC201_031007A** SeqNo: **377107** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	729.8	0.50	0	0	0	0-0	737.1	0.998	20	E
Fluoride	*0.63*	*0.10*	*0*	*0*	*0*	*0-0*	*0.62*	*1.6*	*20*	
Sulfate	440.4	1.0	0	0	0	0-0	440.4	0.00908	20	E
Surr: Dichloroacetic acid (surr)	5.47	0.10	5	0	109	80-120	5.15	6.03	20	

Thefollowingsampleswereanalyzedinthisbatch: 0309292-01A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

e-Lab, Inc.
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

Page 1 of 1

e-Lab, Inc.
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

e-Lab Project Manager: G Jones | e-Lab Work Order #: 30942

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	RO Reject-Qrtly	A	Metals (WQCC 18+Cations 6020/7000)
Work Order		Project Number		B	Anions: Chloride,Flouride,sulfate
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company	C	Uranium
Send Report To	Jeff Byrd / Charlie Plymale	Invoice Attn	~~Jeff Byrd~~ Charlie Plymale	D	
Address	P.O. Box 159	Address	P.O. Box 159	E	
				F	
City/State/Zip	Artesia, NM 88211	City/State/Zip	Artesia, NM 88211	G	
Phone	505-748-3311	Phone	505-748-3311	H	
Fax	505-746-5421	Fax	505-746-5421	I	
e-Mail Address				J	

No.	Sample Description	Date	Time	Matrix	Pres	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	RO REJECT	9/29/03	1015			4	X	X	X								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign: Charlie Plymale

Shipment Method: FedEx

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Notes:
Charlie Plymale	9/29/03	1615		
Relinquished by:	Date:	Time:	Received by (Laboratory): RICHARDSON CH2 9-30-03 0845	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

e-Lab Cooler ID:	Cooler Temp.

QC Package: (Check Box Below)
- ☐ Level II: Standard QC
- ☐ Level III: Standard QC + Raw Data
- ☐ Level IV: SW846 Methods/CLP
- ☐ Other: _____

Preservative Key: 1- HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to e-Lab, Inc.

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e-Lab, Inc.

Sample Receipt Checklist

Client Name NAVAJO REFINING

Date/Time Received: 9/30/2003 8:45:00 AM

Work Order Number 0309292

Received by: RSZ

Checklist completed by _____ 9/30/03. _____ Reviewed by LT 10/2/03

Signature / Date / Initials / Date

Matrix: W

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.2c	003	
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - *pH acceptable upon receipt?*	Yes ☑	No ☐	N/A ☐

Adjusted? _____ Checked by _____

Login Notes:

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

ARS AMERICAN RADIATION SERVICES, INC.

1726 Woodale Court Baton Rouge, Louisiana 70806

1 (800) 401-4277 FAX (225) 927-6822

American Radiation Services, Inc.

Laboratory Analysis Report

Prepared For :

E-Lab, Inc.
Lora Terrill
10450 Stancliff Rd, Suite 210
Houston, Texas 77099-4338

Phone: 281-530-5656
FAX: 281-530-5887

Quality Assurance Review

Technical Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

LELAP Cert# 30858

NELAP Cert# E87558

ARS AMERICAN RADIATION SERVICES, INC.

1726 Wooddale Court • Baton Rouge, Louisiana 70806
1 (800) 401-4277 • Fax (225) 927-6822

ARS Tracking Number:	ARS-031770	**P.O. Number:**	NA
Client I.D.:	0309292-01C (RO Reject)	**ARS Sample I.D.:**	ARS-031770-7051
Date Sampled:	9/29/03	**Date Received:**	10/03/03
Time Sample:	1015	**Time Received:**	1200
Type of Sample:	Liquid	**Date of Report:**	10/09/03
NELAP Certification #:	E87558	**L. A. Agency Interest #:**	30658

Analysis Description	Analysis Result	Analysis Error +/-	Detection Limit	Analysis Unit	Analysis Test Method	Analysis Date & Time	Analysis Technician
Total Uranium	0.003	0.0001	0.0003	mg/L	KPA	10/07/03 01:55	SM

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

AMERICAN RADIATION SERVICES, INC.
1726 Wooddale Court • Baton Rouge, Louisiana 70806
1 (800) 401-4277 • Fax (225) 927-6822

Notes:

Comments:

1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
2.0) The data in this report are within the limits of uncertainty specified in the reference method unless specified.
3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix.
4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B
5.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only)
7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only)
8.0) All Gamma spectroscopy was performed utilizing high purity germanium detectors (HPGe).

Method References:

1.0) EPA 600/4-80-032, Prescribed Procedures for the Measurement of Radioactivity in Drinking Water, August 1980.
2.0) Standard Methods for the Examination of Water and Waste Water, 18th, 1992
3.0) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995)
4.0) EPA 600/4/79-020, Methods for Chemical Analysis of Water and Waste, March 1983.
5.0) HASL 300

Definitions:

1.0)	BDL	Analyte not detected because the value was below the detection limit.
2.0)	ND	Not detected above the detection limit.
3.0)	Detection Limit	The minimum amount of the analyte that ARS can detect utilizing the specific analysis.
4.0)	B	Method Blank.
5.0)	D	Method Duplicate.
6.0)	MS	Matrix Spike
7.0)	S	Spike
8.0)	RS	Reference Spike
9.0)	*SC	Subcontracted out to another qualified laboratory
10.0)	NR	Not Referenced
11.0)	N/A	Not Applicable

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

NAVAJO REFINING COMPANY, L.P.

FAX
(505) 746-5283 DIV. ORDERS
(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET ° P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX
(505) 746-5419 ACCOUNTING
(505) 746-5451 EXEC/MKTG
(505) 746-5421 ENGINEERING
(505) 746-5480 PIPELINE

July 11, 2003

Mr. Roger Anderson
Environmental Bureau
Oil Conservation Division
1220 S. St. Francis
Santa Fe, NM 87505-5472

RE: 2nd Quarter 2003 Report on RO Reject Water, Navajo Refining Co., Eddy County, NM

Dear Roger:

This letter is sent in regard to Navajo Refining's permit modification of our discharge plan GW-28 which allows us to put our Reverse Osmosis (RO) reject water on our farm. This permit is administered by OCD and the parameters we sample for were set up by OCD. We are sending these results for your files. We are required by OCD to sample this stream every quarter and once annually. This is the quarterly report and analysis for the first quarter of 2003.

For this quarter we discharged a total of 29,096,000 gallons to the farm for irrigation. Since we started discharging the RO reject water, we have discharged a total of 1,158,342,000 gallons. This is broken down as follows: 196,713,498 gallons have been put into Eagle Draw (stopped in December 1999) and 961,629,000 gallons have been put on our farms.

The RO unit was in full operation for the entire quarter. If you have any questions concerning this matter, please call me at 505-748-3311. Thank you for your time.

Regards,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Environmental Mgr. for Water and Waste
encl.
cc: USEPA
New Mexico Environment Dept.- Water Quality

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: June 23, 2003

Work Order: 3061106

Project Location: Artesia
Project Name: Reverse Osmosis Reject Water
Project Number: Reverse Osmosis Reject Water
Quarterly:

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
9457	RO Reject	water	2003-06-10	10:00	2003-06-11

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 9 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 9457 - RO Reject

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	2284	Date Analyzed:	2003-06-18	Analyzed By:	RS
Prep Batch:	2078	Date Prepared:	2003-06-17	Prepared By:	RS

Parameter	Flag	RL Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		602	mg/L as CaCo3	1	4.00
Total Alkalinity		602	mg/L as CaCo3	1	4.00

Sample: 9457 - RO Reject

Analysis:	Cations	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	2372	Date Analyzed:	2003-06-18	Analyzed By:	BC
Prep Batch:	2057	Date Prepared:	2003-06-16	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Calcium		555	mg/L	1	0.500
Dissolved Potassium		4.59	mg/L	1	0.500
Dissolved Magnesium		176	mg/L	1	0.500
Dissolved Sodium		53.3	mg/L	1	0.500

Sample: 9457 - RO Reject

Analysis:	Hg, Total	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	2244	Date Analyzed:	2003-06-13	Analyzed By:	BC
Prep Batch:	2041	Date Prepared:	2003-06-13	Prepared By:	BC

Parameter	Flag	RL Result	Units	Dilution	RL
Total Mercury		<0.000200	mg/L	1	0.000200

Sample: 9457 - RO Reject

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	2192	Date Analyzed:	2003-06-13	Analyzed By:	JSW
Prep Batch:	1985	Date Prepared:	2003-06-12	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		45.0	mg/L	5	0.500
Fluoride		3.29	mg/L	5	0.200
Nitrate-N		2.44	mg/L	5	0.200
Sulfate		1480	mg/L	50	0.500

Sample: 9457 - RO Reject

Analysis:	Total Metals	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	2229	Date Analyzed:	2003-06-13	Analyzed By:	BC
Prep Batch:	1980	Date Prepared:	2003-06-12	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Silver		<0.0125		mg/L	1	0.0125
Total Aluminum		<0.100		mg/L	1	0.100
Total Arsenic		<0.0100		mg/L	1	0.0100
Total Boron		0.0970		mg/L	1	0.00500
Total Barium		0.0850		mg/L	1	0.0100
Total Beryllium		<0.00250		mg/L	1	0.00250
Total Cadmium		<0.00500		mg/L	1	0.00500
Total Cobalt		<0.0200		mg/L	1	0.0200
Total Chromium		<0.0100		mg/L	1	0.0100
Total Copper		<0.0250		mg/L	1	0.0250
Total Iron		0.0910		mg/L	1	0.0500
Total Manganese		<0.0250		mg/L	1	0.0250
Total Molybdenum		<0.0500		mg/L	1	0.0500
Total Nickel		<0.0250		mg/L	1	0.0250
Total Lead		0.483		mg/L	1	0.0100
Total Selenium		<0.0100		mg/L	1	0.0100
Total Uranium		0.0200		mg/L	1	0.0200
Total Vanadium		<0.0250		mg/L	1	0.0250
Total Zinc		<0.0250		mg/L	1	0.0250

Method Blank (1) QC Batch: 2192

Parameter	Flag	Result	Units	RL
Chloride		<0.500	mg/L	0.5
Fluoride		<0.200	mg/L	0.2
Nitrate-N		<0.200	mg/L	0.2
Sulfate		<0.500	mg/L	0.5

Method Blank (1) QC Batch: 2229

Parameter	Flag	Result	Units	RL
Total Silver		<0.0125	mg/L	0.0125
Total Aluminum		<0.100	mg/L	0.1
Total Arsenic		<0.0100	mg/L	0.01
Total Boron		<0.00500	mg/L	0.005
Total Barium		<0.0100	mg/L	0.01
Total Beryllium		<0.00250	mg/L	0.0025
Total Cadmium		<0.00500	mg/L	0.005
Total Cobalt		<0.0200	mg/L	0.02
Total Chromium		<0.0100	mg/L	0.01
Total Copper		<0.0250	mg/L	0.025
Total Iron		<0.0500	mg/L	0.05

continued ...

method blank continued ...

Parameter	Flag	Result	Units	RL
Total Manganese		<0.0250	mg/L	0.025
Total Molybdenum		<0.0500	mg/L	0.05
Total Nickel		<0.0250	mg/L	0.025
Total Lead		<0.0100	mg/L	0.01
Total Selenium		<0.0100	mg/L	0.01
Total Uranium		0.00	mg/L	
Total Vanadium		<0.0250	mg/L	0.025
Total Zinc		<0.0250	mg/L	0.025

Method Blank (1) QC Batch: 2244

Parameter	Flag	Result	Units	RL
Total Mercury		<0.000200	mg/L	0.0002

Method Blank (1) QC Batch: 2284

Parameter	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.00	mg/L as CaCo3	4
Total Alkalinity		<4.00	mg/L as CaCo3	4

Method Blank (1) QC Batch: 2372

Parameter	Flag	Result	Units	RL
Dissolved Calcium		<0.500	mg/L	0.5
Dissolved Potassium		<0.500	mg/L	0.5
Dissolved Magnesium		<0.500	mg/L	0.5
Dissolved Sodium		<0.500	mg/L	0.5

Duplicate (1) QC Batch: 2284

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	5.81
Carbonate Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	5.81
Bicarbonate Alkalinity	220	216	mg/L as CaCo3	1	2	5.81
Total Alkalinity	220	216	mg/L as CaCo3	1	2	5.81

Laboratory Control Spike (LCS-1) QC Batch: 2192

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	12.1	12.2	mg/L	1	12.5	<1.49	97	1	90 - 110	20
Fluoride	2.52	2.52	mg/L	1	2.50	<0.0153	101	0	90 - 110	20
Nitrate-N	2.42	2.42	mg/L	1	2.50	<0.630	97	0	90 - 110	20
Sulfate	12.0	12.0	mg/L	1	12.5	<0.171	96	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 2229

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Silver	0.128	0.127	mg/L	1	0.125	<0.00120	102	1	80 - 120	20
Total Aluminum	0.910	1.00	mg/L	1	1.00	<0.0227	91	9	85 - 115	20
Total Arsenic	0.530	0.550	mg/L	1	0.500	<0.00593	106	4	80 - 120	20
Total Boron	0.0540	0.0540	mg/L	1	0.0500	<0.000728	108	0	75 - 125	20
Total Barium	0.975	0.933	mg/L	1	1.00	<0.000343	98	4	85 - 115	20
Total Beryllium	0.0260	0.0250	mg/L	1	0.0250	<0.000138	104	4	85 - 115	20
Total Cadmium	0.277	0.271	mg/L	1	0.250	<0.000268	111	2	85 - 115	20
Total Cobalt	0.241	0.270	mg/L	1	0.250	<0.000705	96	11	85 - 115	20
Total Chromium	0.110	0.0920	mg/L	1	0.100	<0.000660	110	18	85 - 115	20
Total Copper	0.122	0.120	mg/L	1	0.125	<0.0177	98	2	85 - 115	20
Total Iron	0.513	0.515	mg/L	1	0.500	<0.00220	103	0	85 - 115	20
Total Manganese	0.252	0.251	mg/L	1	0.250	<0.000275	101	0	85 - 115	20
Total Molybdenum	0.497	0.423	mg/L	1	0.500	<0.00136	99	16	85 - 115	20
Total Nickel	0.263	0.280	mg/L	1	0.250	<0.00269	105	6	85 - 115	20
Total Lead	0.520	0.480	mg/L	1	0.500	<0.00367	104	8	75 - 125	20
Total Selenium	0.480	0.517	mg/L	1	0.500	<0.00650	96	7	75 - 125	20
Total Uranium	0.547	0.456	mg/L	1	0.500	0	109	18	85 - 115	20
Total Vanadium	0.221	0.250	mg/L	1	0.250	<0.00105	88	12	85 - 115	20
Total Zinc	0.270	0.280	mg/L	1	0.250	<0.00907	108	4	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 2244

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Mercury	0.000840	0.000890	mg/L	1	0.00100	<0.0000360	84	6	80 - 120	20
Total Mercury	0.000840	0.000890	mg/L	1	0.00100	<0.0000360	84	6	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 2372

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Calcium	97.8	102	mg/L	1	100	<0.183	98	4	85 - 115	20
Dissolved Potassium	99.6	101	mg/L	1	100	<0.135	100	1	85 - 115	20
Dissolved Magnesium	89.2	93.9	mg/L	1	100	<0.183	89	5	85 - 115	20
Dissolved Sodium	97.1	98.2	mg/L	1	100	<0.105	97	1	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 2192

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	569	570	mg/L	50	12.5	<74.7	80	0	32.7 - 136	20
Fluoride	119	119	mg/L	50	2.50	7.34	89	0	30.1 - 187	20
Nitrate-N	123	122	mg/L	50	2.50	<31.5	90	1	62.2 - 121	20
Sulfate	1990	1990	mg/L	50	12.5	1480	82	0	69.9 - 114	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 2229

Param		MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Silver	[12]	0.185	0.199	mg/L	1	0.125	<0.00120	148	7	75 - 125	20
Total Aluminum	[34]	1.60	1.60	mg/L	1	1.00	<0.0227	160	0	75 - 125	20
Total Arsenic		0.381	0.400	mg/L	1	0.500	<0.00593	76	5	75 - 125	20
Total Boron		0.144	0.152	mg/L	1	0.0500	0.097	94	5	75 - 125	20
Total Barium	[56]	1.47	1.47	mg/L	1	1.00	0.085	138	0	75 - 125	20
Total Beryllium		0.0260	0.0250	mg/L	1	0.0250	<0.000138	104	4	75 - 125	20
Total Cadmium	[78]	0.349	0.335	mg/L	1	0.250	<0.000268	140	4	75 - 125	20
Total Cobalt	[910]	0.336	0.377	mg/L	1	0.250	0.009	131	12	75 - 125	20
Total Chromium		0.118	0.118	mg/L	1	0.100	<0.000660	118	0	75 - 125	20
Total Copper	[1112]	0.209	0.208	mg/L	1	0.125	<0.0177	167	0	75 - 125	20
Total Iron	[1314]	0.729	0.729	mg/L	1	0.500	0.091	128	0	75 - 125	20
Total Manganese		0.309	0.313	mg/L	1	0.250	0.012	119	1	75 - 125	20
Total Molybdenum	[15]	0.576	0.642	mg/L	1	0.500	<0.00136	115	11	75 - 125	20
Total Nickel	[1617]	0.358	0.414	mg/L	1	0.250	0.02	135	14	75 - 125	20
Total Lead		1.04	0.922	mg/L	1	0.500	0.483	111	12	75 - 125	20
Total Selenium		0.448	0.442	mg/L	1	0.500	<0.00650	90	1	75 - 125	20
Total Uranium		0.456	0.481	mg/L	1	0.500	0	91	5	75 - 125	20
Total Vanadium		0.282	0.292	mg/L	1	0.250	0.008	110	3	75 - 125	20
Total Zinc	[18]	0.330	0.322	mg/L	1	0.250	0.01	128	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 2244

[1]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[2]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[3]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[4]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[5]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[6]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[7]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[8]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[9]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[10]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[11]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[12]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[13]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[14]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[15]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[16]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[17]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.
[18]Matrix spike recovery appears high due to matrix effects. LCS demonstrates process under control.

Param		MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Mercury	[19][20]	0.00485	0.00478	mg/L	1	0.00100	<0.0000360	485	1	80 - 120	20
Total Mercury	[21][22]	0.00485	0.00478	mg/L	1	0.00100	<0.0000360	485	1	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 2372

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Calcium	120	129	mg/L	1	100	39.3	81	7	75 - 125	20
Dissolved Potassium	92.2	99.4	mg/L	1	100	2.27	90	8	75 - 125	20
Dissolved Magnesium	116	90.8	mg/L	1	100	8.49	108	24	75 - 125	20
Dissolved Sodium	108	107	mg/L	1	100	26.3	82	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1) QC Batch: 2192

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.3	90	90 - 110	2003-06-13
Fluoride		mg/L	2.50	2.35	94	90 - 110	2003-06-13
Nitrate-N		mg/L	2.50	2.30	92	90 - 110	2003-06-13
Sulfate		mg/L	12.5	11.2	90	90 - 110	2003-06-13

Standard (CCV-1) QC Batch: 2192

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.6	93	90 - 110	2003-06-13
Fluoride		mg/L	2.50	2.51	100	90 - 110	2003-06-13
Nitrate-N		mg/L	2.50	2.42	97	90 - 110	2003-06-13
Sulfate		mg/L	12.5	11.9	95	90 - 110	2003-06-13

Standard (ICV-1) QC Batch: 2229

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Silver		mg/L	0.125	0.128	102	90 - 110	2003-06-13
Total Aluminum		mg/L	1.00	0.957	96	90 - 110	2003-06-13
Total Arsenic		mg/L	1.00	1.01	101	90 - 110	2003-06-13
Total Boron		mg/L	1.00	0.990	99	90 - 110	2003-06-13
Total Barium		mg/L	1.00	0.993	99	90 - 110	2003-06-13
Total Beryllium		mg/L	1.00	1.01	101	90 - 110	2003-06-13
Total Cadmium		mg/L	1.00	0.984	98	90 - 110	2003-06-13

continued ...

[19]ms recovery invalid due to spiking error, use lcs/lcsd to control the run
[20]ms recovery invalid due to spiking error, use lcs/lcsd to control the run
[21]ms recovery invalid due to spiking error, use lcs/lcsd to control the run
[22]ms recovery invalid due to spiking error, use lcs/lcsd to control the run

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Cobalt		mg/L	1.00	0.994	99	90 - 110	2003-06-13
Total Chromium		mg/L	1.00	0.984	98	90 - 110	2003-06-13
Total Copper		mg/L	1.00	1.01	101	90 - 110	2003-06-13
Total Iron		mg/L	1.00	0.991	99	90 - 110	2003-06-13
Total Manganese		mg/L	1.00	1.05	105	90 - 110	2003-06-13
Total Molybdenum		mg/L	1.00	1.01	101	90 - 110	2003-06-13
Total Nickel		mg/L	1.00	1.02	102	90 - 110	2003-06-13
Total Lead		mg/L	1.00	0.952	95	90 - 110	2003-06-13
Total Selenium		mg/L	1.00	0.977	98	90 - 110	2003-06-13
Total Uranium		mg/L	2.50	2.47	99	90 - 110	2003-06-13
Total Vanadium		mg/L	1.00	0.996	100	90 - 110	2003-06-13
Total Zinc		mg/L	1.00	1.00	100	90 - 110	2003-06-13

Standard (CCV-1) QC Batch: 2229

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Silver		mg/L	0.125	0.119	95	90 - 110	2003-06-13
Total Aluminum		mg/L	1.00	1.05	105	90 - 110	2003-06-13
Total Arsenic		mg/L	1.00	1.06	106	90 - 110	2003-06-13
Total Boron		mg/L	1.00	1.05	105	90 - 110	2003-06-13
Total Barium		mg/L	1.00	0.978	98	90 - 110	2003-06-13
Total Beryllium		mg/L	1.00	1.03	103	90 - 110	2003-06-13
Total Cadmium		mg/L	1.00	1.00	100	90 - 110	2003-06-13
Total Cobalt		mg/L	1.00	0.963	96	90 - 110	2003-06-13
Total Chromium		mg/L	1.00	0.981	98	90 - 110	2003-06-13
Total Copper		mg/L	1.00	0.990	99	90 - 110	2003-06-13
Total Iron		mg/L	1.00	1.02	102	90 - 110	2003-06-13
Total Manganese		mg/L	1.00	0.968	97	90 - 110	2003-06-13
Total Molybdenum		mg/L	1.00	0.999	100	90 - 110	2003-06-13
Total Nickel		mg/L	1.00	0.979	98	90 - 110	2003-06-13
Total Lead		mg/L	1.00	1.03	103	90 - 110	2003-06-13
Total Selenium		mg/L	1.00	1.02	102	90 - 110	2003-06-13
Total Uranium		mg/L	2.50	2.48	99	90 - 110	2003-06-13
Total Vanadium		mg/L	1.00	0.997	100	90 - 110	2003-06-13
Total Zinc		mg/L	1.00	1.06	106	90 - 110	2003-06-13

Standard (ICV-1) QC Batch: 2244

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.00100	0.00100	100	80 - 120	2003-06-13

Standard (CCV-1) QC Batch: 2244

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.00100	0.000840	84	80 - 120	2003-06-13

Standard (ICV-1) QC Batch: 2284

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 200	2003-06-18
Carbonate Alkalinity		mg/L as CaCo3	0.00	224		0 - 200	2003-06-18
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	24.0		0 - 200	2003-06-18
Total Alkalinity		mg/L as CaCo3	250	248	99	90 - 110	2003-06-18

Standard (CCV-1) QC Batch: 2284

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 200	2003-06-18
Carbonate Alkalinity		mg/L as CaCo3	0.00	220		0 - 200	2003-06-18
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	24.0		0 - 200	2003-06-18
Total Alkalinity		mg/L as CaCo3	250	244	98	90 - 110	2003-06-18

Standard (CCV-1) QC Batch: 2372

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25.0	24.7	99	90 - 110	2003-06-18
Dissolved Potassium		mg/L	25.0	24.9	100	90 - 110	2003-06-18
Dissolved Magnesium		mg/L	25.0	23.8	95	90 - 110	2003-06-18
Dissolved Sodium		mg/L	25.0	24.9	100	90 - 110	2003-06-18

Standard (CCV-2) QC Batch: 2372

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25.0	24.1	96	90 - 110	2003-06-18
Dissolved Potassium		mg/L	25.0	24.1	96	90 - 110	2003-06-18
Dissolved Magnesium		mg/L	25.0	22.7	91	90 - 110	2003-06-18
Dissolved Sodium		mg/L	25.0	23.8	95	90 - 110	2003-06-18

Summary Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: Not Approved
Work Order: 3061106

Project Location: Artesia
Project Name: Reverse Osmosis Reject Water
Quarterly:

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
9457	RO Reject	water	2003-06-10	10:00	2003-06-11

Sample: 9457 - RO Reject

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1.00
Bicarbonate Alkalinity		602	mg/L as CaCo3	4.00
Total Alkalinity		602	mg/L as CaCo3	4.00
Dissolved Calcium		555	mg/L	0.500
Dissolved Potassium		4.59	mg/L	0.500
Dissolved Magnesium		176	mg/L	0.500
Dissolved Sodium		53.3	mg/L	0.500
Total Mercury		<0.000200	mg/L	0.000200
Chloride		45.0	mg/L	0.500
Fluoride		3.29	mg/L	0.200
Nitrate-N		2.44	mg/L	0.200
Sulfate		1480	mg/L	0.500
Total Silver		<0.0125	mg/L	0.0125
Total Aluminum		<0.100	mg/L	0.100
Total Arsenic		<0.0100	mg/L	0.0100
Total Boron		0.0970	mg/L	0.00500
Total Barium		0.0850	mg/L	0.0100
Total Beryllium		<0.00250	mg/L	0.00250
Total Cadmium		<0.00500	mg/L	0.00500
Total Cobalt		<0.0200	mg/L	0.0200
Total Chromium		<0.0100	mg/L	0.0100
Total Copper		<0.0250	mg/L	0.0250
Total Iron		0.0910	mg/L	0.0500
Total Manganese		<0.0250	mg/L	0.0250
Total Molybdenum		<0.0500	mg/L	0.0500
Total Nickel		<0.0250	mg/L	0.0250
Total Lead		0.483	mg/L	0.0100
Total Selenium		<0.0100	mg/L	0.0100
Total Uranium		0.0200	mg/L	0.0200
Total Vanadium		<0.0250	mg/L	0.0250

continued ...

sample 9457 continued ...

Param	Flag	Result	Units	RL
Total Zinc		<0.0250	mg/L	0.0250

9457

Page____of____

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TraceAnalysis, Inc.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 3061106

Company Name: Navajo
Phone #: (505)748-3311
Address: (Street, City, Zip) 501 E. Main
Fax #: 505-746-5421
Contact Person: Darrell Moore
Invoice to: (If different from above)
Project #:
Project Name: RO REJECT
Project Location: Artesia
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
9457	RO REJECT	1	1L	X								X	X	6/10/03	1000
	" "	1	500ml	X					X			X		6/10/03	1000

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
			See List													

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	6/10/03	1615			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Brenda Ward	6/11/03	9:57

LAB USE ONLY
Intact (Y) / N
Headspace Y / N
Temp 1.6 °
Log-in Review

REMARKS:
PF 6/24/03

☐ Check If Special Reporting Limits Are Needed

Carrier # Fed Ex 7914-0656-4545

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

TraceAnalysis , Inc.
General Terms and Conditions

Article 1: General

1.1 The words "we", "us", and "our" refer to TraceAnalysis. You will deliver samples to us for analysis, accompanied, or preceded by, a signed Chain of Custody/Analysis Request defining the scope and timing of our work and stating either the testing criteria you require or identifying the agency to which the results will be submitted.

Article 2: Our General Responsibilities

2.1 We agree to provide the professional services described in this agreement. We will provide you with written reports containing analytical results. In performing our service, we will use that degree of care and skill ordinarily exercised under similar circumstances by reputable members of our profession practicing in the same locality.

2.2 Test and observations will be conducted using test proceoures and laboratory protocols as specified in accepted Chain of Custody/Analysis Request. If you direct a manner of making tests that varies from our standard or recommended procedures, you agree to hold us harmless from all claims, damages, and expenses arising out of your direction.

2.3 We will not release information regarding our services for you or any information that we receive from you, except for information that is in the public domain and except as we are required by law.

Article 3: Your General Responsibilities

3.1 On each Chain of Custody/Analysis Request you will designate a representative who has authority to transmit instructions, receive information, and make decisions relative to our work.

3.2 You will respond in a reasonable time to our request for decisions, authorization for changes, additional compensation, or schedule extensions.

3.3 For each Chain of Custody/Analysis Request you will either provide us with the exact methods for analysis of each fraction or you will identify the regulations and agency under which or for which the analysis are to be prepared. If permits, consent orders, work plans, quality assurance plans, or correspondence with regulatory agencies address laboratory requirements, you will provide us with copies of the relevant provisions prior to our initiation of the analyses.

Article 4: Reports and Records

4.1 We will furnish copies of each report to you as specified in the Chain of Custody and Analysis Request. We will retain analytical data for seven years and financial data for three years relating to the services performed following transmittal of our final report.

4.2 If you do not pay for our services as agreed, you agree that we may retain all reports and work not yet delivered to you. You also agree that our work will not be used by you for any purpose unless paid for.

Article 5: Delivery and Acceptance of Samples

5.1 Until we accept delivery of samples by notation on chain of custody documents or otherwise in writing accept the samples, you are responsible for loss of or damage to samples. Until so accepted, we have no responsibility as to samples.

5.2 As to any samples that are suspected of containing hazardous substances or radioactive material, such that would make special handling required, you will specify the suspected or known substances and level and type of radioactive activity. This information will be given to us in writing as a part of the Chain of Custody/Analysis Request and will precede or accompany samples suspected of containing hazardous substances.

5.3 Samples accepted by us remain your property while in our custody. We will retain samples for a period of 14 days following the date of submission of our report. We will extend the retention period if you so direct. Following the retention period we will dispose of non-hazardous samples. We may return highly hazardous, acutely toxic, or radioactive samples and samples containers and residues to you. You agree to accept them.

5.4 Regardless of a prior acceptance, we may refuse acceptance or revoke acceptance of samples if we determine that the samples present a risk to health, safety, or the environment, or that we are not authorized to accept them. If we revoke acceptance of any sample, you will have it removed from our facilities promptly.

Article 6: Changes to Task Orders

6.1 No persons other than the designated representatives for each Chain of Custody/Analysis Request are authorized to act regarding changes to a Chain of Custody/Analysis Request. We will notify you promptly if we identify any activity that we regard as a change to the terms and conditions of a Chain of Custody/Analysis Request. Our notice will include the date, nature, circumstance, and cause of the activity regarded as a change. We will specify the particular elements of project performance for which we may seek an equitable adjustment.

6.2 You will respond to the notice provided for in paragraph 6.1 promptly. Changes may be made to a Chain of Custody/Analysis Request through issuance of an amendment. The amendment will specify the reason for the change and, as appropriate, include any modified budgets, schedules, scope of work, and other necessary provisions.

6.3 Until agreement is reached concerning the proposed change, we may regard the situation as a suspension directed by you.

Article 7: Compensation

7.1 Our pricing for the work is predicated upon your acceptance of the conditions and allocations of risks and responsibilities described in this agreement. You agree to pay for services as stated in our proposal and accepted by you or according to our then current standard pricing documents if there is no other written agreement as to price. An estimate or statement of probable cost is not a firm figure unless stated as such.

7.2 Unless otherwise agreed to elsewhere, you agree to pay invoices within 30 days of receipt unless, within 15 days from receipt of the invoice, you notify us in writing of a particular item that is alleged to be incorrect. You agree to pay the uncontested portions of the invoices within 30 days of receipt. You agree to pay interest on unpaid balances beginning 60 days after receipt of invoice at the rate of 1.5% per month, but not to exceed the maximum rate allowed by law.

7.3 If you direct us to invoice another, we will do so, but you agree to be ultimately responsible for our compensation until you provide us with that third party's written acceptance of all terms of our agreement and until we agree to the substitution.

7.4 You agree to compensate us for our services and expenses if we are required to respond to legal process related to our services for you. Compensable services include hourly charges for all personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, the preparation of the testifier, and appearances related to the legal process.

7.5 If we are delayed by, or the period of performance is materially extended because of, factors beyond our control, or if project condition or the scope or amount of work change, or if the standards or methods of testing change, we will give you timely notice of the change and we will receive an equitable adjustment of our compensation.

Article 8: Risk Allocation, Disputes, and Damages

8.1 Neither we nor you will be liable to the other for special, incidental, consequential or punitive losses or damages, including but not limited to those arising from delay, loss of use, loss of profits or revenue, or the cost of capital.

8.2 We will not be liable to you for damages unless suit is commenced within two years of injury or loss or within two years of the date of the completion of our services, whichever is earlier. In no event will we be liable to you unless you have notified us of the discovery of the negligent act, error, omission or breach within 30 days of the date of its discovery and unless you have given us an opportunity to investigate and to recommend ways of mitigating your damages.

8.3 In the event you fail to pay us within 90 days following the invoice date, we may consider the default a total breach of our agreement and we may, at our option, terminate all of our duties without liability to you or to others.

8.4 **If it is claimed by a third party that we did not complete an acceptable analysis, at your request we will seek further review and acceptance of the completed work by the third party and use your best efforts to obtain that acceptance. We will assist you as directed.**

8.5 You and we agree that disputes will be submitted to "Alternative Dispute Resolution" (ADR) as a condition precedent to litigation and other remedies provided by law. Each of us agrees to exercise good faith efforts to resolve disputes through mediation unless we both agree upon another ADR procedure. All disputes will be governed by the law of the place where our services are rendered, or if our services are rendered in more than one state, you and we agree that the law of the place that services were first rendered will govern.

8.6 If either of us makes a claim against the other as to issues out of the performance of this agreement, the prevailing party will be entitled to recover its reasonable expenses of litigation, including reasonable attorney's fees. If we bring lawsuit against you to collect our invoiced fees and expenses, you agree to pay our reasonable collection expenses including attorney fees.

Article 9: Indemnities

9.1 We will indemnify and hold you harmless from and against demands, damages, and expenses caused by our negligent acts and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom we are legally responsible. You will indemnify and hold us harmless from and against demands, damages, and expenses caused by your negligent act and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom you are legally responsible. These indemnities are subject to specific limitations provided for in this agreement.

Article 10: Miscellaneous Provisions

10.1 This agreement constitutes the entire agreement between you and us, and it supersedes all prior agreements. Any term, condition, prior course of dealing, course of performance, usage of trade, understanding, purchase order conditions, or other agreement purporting to modify, vary, supplement, or explain any provision of this agreement is of no effect until placed in writing and signed by both parties subsequent to the date of this agreement. In no event will the printed terms or conditions stated in a purchase or work order, other than an agreed upon Chain of Custody/Analysis Request, be considered a part of this agreement, even if the document is signed by both of us.

10.2 Neither party will assign this agreement without the express written approval of the other, but we may subcontract laboratory procedures with your approval as we deem necessary to meet our obligations to you.

10.3 If any of the provisions of this agreement are held to be invalid or unenforceable in any respect, the remaining terms will be in full effect and the agreement will be construed as if the invalid or unenforceable matters were never included in it. No waiver of any default will be waiver of any future default.

10.4 Neither you or we will have any liability for nonperformance caused in whole or in part by causes beyond our reasonable control. Such causes include but are not limited to Acts of God, civil unrest and war, labor unrest and strikes, equipment failures, matrix interference, acts of authorities, and failures of subcontractors that could not be reasonably anticipated.

10.5 You may stop our work by giving a written suspension or termination directive, but once work has been suspended, we need not resume work until we agree to change in scope, schedule, and compensation. Upon suspension or termination, we will use reasonable care to preserve samples provided that you agree to compensate us for any additional effort, but we will have no responsibility for meeting holding time limitations after the effective time of a suspension or termination directive. We will be compensated for service rendered and expenses incurred prior to termination that cannot reasonably be avoided.

REFINING COMPANY

FAX
(505) 746-5283 DIV. ORDERS
(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET ◦ P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX
(505) 746-5419 ACCOUNTING
(505) 746-5451 EXECUTIVE
(505) 746-5421 ENGINEERING
(505) 746-5480 P / L

February 28, 2002

RECEIVED
MAR 03 2003
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Mr. Bill Olson
Hydrogeologist
Environmental Bureau
Oil Conservation Division
1220 South St. Francis
Santa Fe, NM 87505-5472

RE: 2002 Annual Ground Water and Treatment System Monitoring Report, Navajo Refining

Dear Bill,

The referenced report is enclosed. It consists of the following:

- four ground water potentiometric maps,
- four product thickness maps,
- one graph depicting product thickness vs. time,
- printouts showing hits on wells,
- the analysis from monitor, residential, and irrigation wells relating to the Ground Water and Treatment System Monitoring

Per your agency's letter of June 14, 1996, the reporting frequency of this report was changed from quarterly to yearly.

For 2002, Navajo pumped approximately 16,187,474 gallons of water out of our recovery wells and 83,362 gallons of product. The amount that came from each well is detailed as follows:

	Total Gal. Product	Total Gal. Water
Well #1	6,756	241,920
Well #2	2,078	143,880
Well #3	820	0
Well #4	6,396	100,560
Well #5	17,478	0
Well #6	6,921	0
Well #7	12	1,126,680
Well #8	2,969	958,440
Well #9	0	0
Well #10	0	0
Well #11	1100	0
Well #12	0	0
Well #13	5,420	3,218,156
Well #14	30,100	10,397,838
ToolPushers	3,312	0

All water that is pumped out of these wells is sent to our waste water plant to be treated and then to the Injection Wells to be disposed. Product is taken to the various API oil/water separators and is eventually introduced back into the refinery for reprocessing. In 2002, the amount of product that was recovered fell as the amount of water that was pumped increased from 2001. Also, due to the relatively thin layer of product on the surface of the wells, a portion of the product volume is also recovered water. This trend has occurred for the last few years. This is attributed to the fact that there is just not as much product left to be recovered and we are pumping more water to get that product. Several of the trenches (#'s 9, 10, and 11) were shut down for most of 2001 and all of 2002 because there is not any product in them to recover. The Bolton Road Trenches are run continuously, except for maintenance, to ensure no potential product plume gets past these trenches. We check all trenches once a week. If product is found, the pumps will be turned on. We also let the water pumps create a cone of depression to help any product to migrate to the pumps. Recovery well 6, located near the South Plant Flare, has had a recent increase in product thickness. We are currently continuously removing product from this well. There is no substantial water in this well for removal. It is believed that this product is a result of a storage tank found to be leaking early in 2002 and to a leak in an underground product line we had tested as a result of the increases. The tank and product line have since been repaired. We believe that we will be seeing a decline in the amount of product recovered from recovery well 6 shortly.

In the water analysis spreadsheets which show hits in the offsite wells, you will notice that several wells had very minor hits of BTEX. However, none of the wells showed a consistent or increasing pattern of contamination. It is believed that the contamination is from laboratory or sampling error and is not a true indication of any contamination in the water supply.

We also continue to see the leading edge of the plume reaching KWB-7 and KWB-11. These monitor wells are both east of Bolton Road. If you remember, we sited the recovery wells on Bolton Road knowing that part of the plume was past this point. We believe what we are seeing in KWB-7 and KWB-11 is that part of the plume that was already east of Bolton Road.

Monitor wells KWB-4 and KWB-6 continue to show hydrocarbons. We have installed passive bailers into each of these wells to remove the product as needed. As shown on the graph, they have proved to be effective at removing the product. Initially the bailers were being emptied daily. Now, the bailers are emptied every two to three months and the hydrocarbon layer has been reduced to a sheen.

Finally, the three new trenches that were installed at the same time as the ToolPushers Trench, have never accumulated any product. These trenches are located as follows: 1) on the northeast corner of the refinery property on our farm, 2) along Eagle Draw just east of the North Colony Landfarm, and 3) just west of our former trickling filter. The latter two were installed as part of the North Colony Landfarm clean-up. These trenches are checked quarterly for any accumulation of product. At this time, no product has been measured in these trenchs. If product is found, they will be pumped, and if warranted, hard piped into our recovery system.

The recovery of product and remediation of groundwater under the refinery is progressing favorably. The drop in thickness of product around the North Colony Landfarm and Tetra-Ethyl Lead Impoundment are testament to the recovery system's effectiveness.

If you have any questions concerning this submission, please call me at 505-748-3311.

Sincerely,
Navajo Refining Co.

Darrell Moore

Darrell Moore
Environmental Mgr. for Water and Waste

Encl.

Price, Wayne

From: Darrell Moore [darrell@navajo-refining.com]
Sent: Tuesday, January 28, 2003 8:20 AM
To: Price, Wayne
Subject: newer wells

Wayne,

The newer wells are as follows:

KWB-13	this well is the replacement well for KWB-2A and KWB-2B on the Armstrong farm. This well was moved at the farmers request and is now about 1000 feet south of where KWB-2A was.
MW-53	Took the place of NCL 31
MW-50	Upgradient well requested by Bill Olson
MW-51	Upgradient well requested by Bill Olson
MW-52	Downgradient well requested by Bill Olson
MW-48	Downgradient well requested by Bill Olson
MW-49	Requested by Bill Olson

These are the "new" wells although the 48-53 series were put in sometime like 1995. KWB-13 was installed in 2001 I think.

Darrell

SITE	SCHEDULE	ANALYS	# SAMPLE WELLS	CONTAINERS	PRESE. TIVES
ABT-Influent	Monthly	Bod,Cod,Phenols,TKN	3 in	1L Plastic	None+Ice
		Bod,Cod,Phenols,TKN		1L Glass	H2SO4+Ice
		Bod,Cod,Phenols,TKN		1 500 ml Plastic	H2SO4+Ice
ABT-Outfluent	Monthly	Bod,Cod,Phenols,TKN	3 out	1L Plastic	None+Ice
		Bod,Cod,Phenols,TKN		1L Glass	H2SO4+Ice
				1 500 ml Plastic	H2SO4+Ice
Alkylation Cooling Tower	Monthly	Purgeable Organics (modified 602)		2 VOA's	HCL+Ice
		Purgeable Organics (modified 602)	2in/2out		
Monitor Farm Wells (Mar.-Oct.)	Monthly	BTEX + MTBE (602)	7 wells	2 VOA's	HCL+Ice
Injection Wells (Jan, Apr, July, Oct.)	Quarterly	Aromatic & Halogenate Volatile Hydrocarbon Scan (8260c)	1out	2 VOA's	HCL+Ice
		GC/MS 8270B inc. 1+2 methylnaphthalene	1out	1L Glass - Amber	None+Ice
		Ca,K,MS,NA,bicarbonate,carbonate,chloride,sulfate(TDS)	1out	1L Plastic	None+Ice
		PH+Cond., Mercury using cold vapor (7470) EPA RCRA cha.	1out		
		Ignitability,corrosivity+reactivity	1out		
		Heavy metals using I CAP scan (6010/ICPMS)	1out	500ml Plastic	HNO3+Ice
		Metals-By AA*--Al*,As,Be,Ba,B,Cd,Cr,Co,Cu,Fe,Mn,Pb*, Hg,Ni,Se*,Ag*,V,Zn,U,Mo	1out		
Offsite Sample/Measure Wells	Quarterly	MTBE+VOC (624)	22	2 VOA's	HCL+Ice
Reverse Osmosis Reject Water	Quarterly	Cations/Anions	1	500ml Plastic	HNO3+Ice
		Metals-By AA*--Al*,As,Be,Ba,B,Cd,Cr,Co,Cu,Fe,Mn,Pb*, Hg,Ni,Se*,Ag*,V,Zn,U,Mo	1	1L Plastic	None+Ice
Evaporation Ponds	Semi-Annual	BTEX (8020)	15	2 VOA's	HCL+Ice
		Naphthalene+Monomethyl,Naphthalene on MW-4+MW-6 by 8270	2	1L Glass	None+Ice
		Cations-Na,K,Ca,Mg			
		Metals-By AA*--Al*,As,Be,Ba,B,Cd,Cr,Co,Cu,Fe,Mn,Pb*, Hg,Ni,Se*,Ag*,V,Zn,U,Mo			
		Anions (Ci,SO4,CO3,HCO3,F-), Nitrates	15	1L Plastic	None+Ice
Artesia & Lovington Effluent to POTW	Semi-Annual	O and G, NH3, Cr	1	1L Glass	HCL or H2SO4+Ice
		O and G, NH3, Cr		250 ml Plastic	H2SO4+Ice
			1	250 ml Plastic	HNO3+Ice
Reverse Osmosis Reject Water	Annual	VOC, EDB (624)	1	2 VOA's	HCL+Ice
		Phenol, NO3, Cod, Ammonia	1	1L Glass	H2SO4+Ice
		BNA(625)	1	500ml Plastic	H2SO4+Ice
			2	1L Glass	None+Ice
		Organo Pest/Chlor/Tox/PCB (608)	1	1L Glass	None+Ice
		Cations-Na,K,Ca,Mg	2	500ml Plastic	H2SO4+Ice
		Metals-By AA*-Al*,As,Be,Ba,B,Cd,Cr,Co,	1	1L Glass	None+Ice
		Cu, Fe, Mn, Pb*, Hg,Ni,Se*,Ag*,V,Zn,U,Mo	4	1L Plastic	None+Ice
		Anions-(Ci,SO4,CO3,HCO3,F-)	2	500ml Plastic	HNO3+Ice
		Radium (226+228)	1	1L Plastic	HN03+Ice
		Cyanide	1	1L Plastic	NaOH+Ice
		Bod, TSS, Ph, TDS, Ec, Chlorine		1L Plastic	None+Ice
		Fecol Coliform		125 ml Bottle	
Offsite Wells	Annual	PAH	12	1L Glass	None+Ice
		Cations-Na,K,Ca,Mg	12	1L Plastic	None+Ice
		Anions-(Ci,SO4,CO3,HCO3,F-)	12	500ml Plastic	HNO3+Ice
		Metals-By AA*-Al*,As,Be,Ba,B,Cd,Cr,Co,Cu,Fe,Mn,Pb*, Hg,Ni,Se*,Ag*,V,Zn,U,Mo			

- Quarterly Offsite Wells sampled

KWB-12A, KWB-9, KWB-11a, KWB-7, KWB-3a
KWB-1A, +1C, MW-18, NP-2, NP-1, KWB-13,
29, 28, MW-45, RA 3156, RA 1331, RA 3332,
RA 3353
Analysis: VOAs

- Ponds Wells Sampled November 2002

OCD-2, OCD-4, OCD-8, MW-2, OCD-6, MW-3,
MW-4, MW-5

- Ponds Wells Sampled May 2002

OCD-3, OCD-1, OCD-5, MW-5A, MW-7A, MW-4A,
OCD-7A, MW-3
Analysis: metals + cations; 8020 VOAs; PAHs

-NCL/TEL Wells Sampled Quarterly

NCL-49, MW-53, NCL-32, MW-54A, MW-55, NCL-44,
NCL-33, MW-56, NCL-34, TEL-4, TEL-3, TEL-2, TEL-1
Analysis semi-VOAs; VOAs; phenols, sulfides; metals w/chromium

acA

Price, Wayne

From: Price, Wayne
Sent: Friday, May 10, 2002 11:51 AM
To: 'darrell@navajo-refining.com'
Cc: 'david_cobrain@nmenv.state.nm.us'
Subject: Navajo Artesia Old API

Contacts: Darrell Moore

Dear Mr. Moore:

Pursuant to our conversation today please collect a representative soil sample a minimum of three below the bottom of the old API. Please analyze this sample for 8260 volatile organics, WQCC metals, and general chemistry. Please submit the results with your May 31, 2002 addendum.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

Navajo REFINING COMPANY

FAX
(505) 746-5283 DIV. ORDERS
(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

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(505) 746-5451 EXECUTIVE
(505) 746-5421 ENGINEERING
(505) 746-5480 P / L

February 28, 2002

RECEIVED
MAR 03 2003
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Mr. Bill Olson
Hydrogeologist
Environmental Bureau
Oil Conservation Division
1220 South St. Francis
Santa Fe, NM 87505-5472

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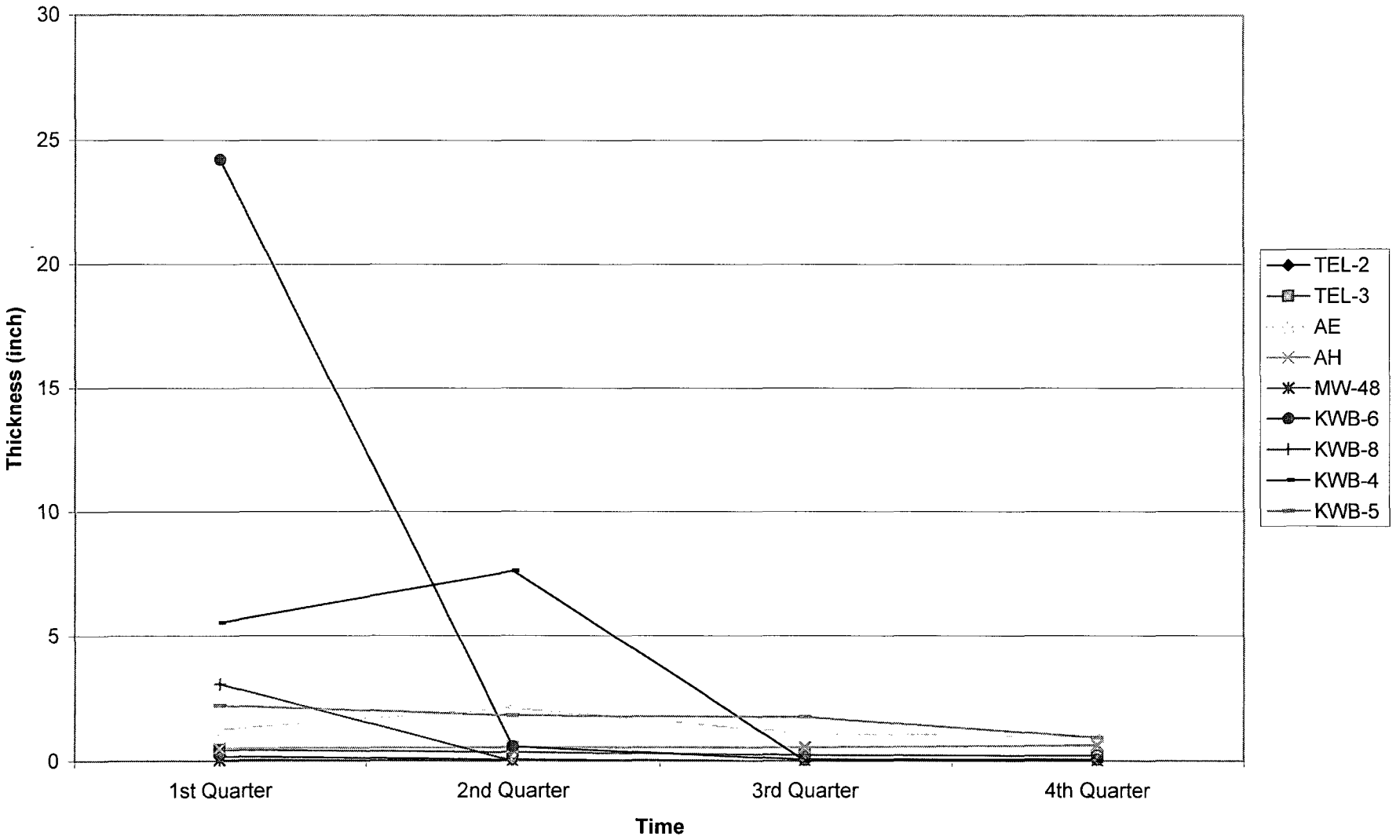
Sincerely,
Navajo Refining Co.

Darrell Moore

Darrell Moore
Environmental Mgr. for Water and Waste

Encl.

QUARTERLY PRODUCT THICKNESS



2002 FIRST QUARTER GROUNDWATER ANALYTCAL TABLE

Constituent (µg/L)	RA 4798 3/7/02	KWB-1A 3/13/02	KWB-1C 3/13/02	KWB-11A 3/13/02	KWB-2R 3/14/02	KWB-7 3/13/02	NP-2 3/13/02	NP-1 3/14/02	MW-45 3/14/02	MW-29 3/14/2002	MW-28 3/14/2002
Acetone	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
MTBE	**2.7**	**17.7**	**22.8**	**10**	BSDL	**22.5**	**1.49**	**24.7**	**8.32**	**2.62**	**11100**
1,2-Dichloroethane	**2.5**	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
Benzene	BSDL	BSDL	BSDL	BSDL	**7200**	BSDL	BSDL	**6.58**	**6.71**	BSDL	**1800**
Toluene	BSDL	BSDL	BSDL	BSDL	**5400**	BSDL	BSDL	BSDL	**2.94**	BSDL	BSDL
Ethylbenzene	BSDL	BSDL	BSDL	BSDL	**5800**	BSDL	BSDL	**1.36**	**3.72**	BSDL	**185**
m,p-Xylene	BSDL	BSDL	BSDL	BSDL	**9100**	BSDL	BSDL	**1.07**	**3.52**	BSDL	**154**
o-Xylene	BSDL	BSDL	BSDL	BSDL	**3600**	BSDL	BSDL	BSDL	**12.3**	BSDL	BSDL
Isopropylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**9.59**	**13.3**	BSDL
n-Propylbenzene	BSDL	BSDL	BSDL	BSDL	**1030**	BSDL	BSDL	BSDL	**1.52**	BSDL	BSDL
1,3,5-Trimethylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**3.1**	BSDL	BSDL
1,2,4-Trymethylbenzen	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**4.4**	BSDL	BSDL
sec-Butylbenzene	BSDL	**1.39**	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**4.1**	**8.32**	BSDL

Notes:

BSDL: Below Sample Detection Limit

Only wells with analytes above the detection limit noted here.

Monitoring wells with free phase liquid are not sampled and, as a result, are not shown here.

2002 SECOND QUARTER GROUNDWATER ANALYTCAL TABLE

Constituent (µg/L)	RA 3156 7/15/2002	RA 4798 7/2/2002	KWB-1A 7/10/2002	KWB-1C 7/10/2002	KWB-11A 7/9/2002	KWB-2R 7/15/2002	KWB-7 7/9/2002	NP-2 7/10/2002	NP-1 7/10/2002	MW-45 7/15/2002	MW-29 7/15/2002	MW-28 7/15/2002	KWB-12a 7/9/2002	KWB-10 7/10/2002
Acetone	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
MTBE	**1.16**	**3.45**	**14.6**	**12.8**	**14.6**	BSDL	**18.5**	**1.29**	**25.4**	**9.03**	**2.04**	**12900**	BSDL	**1812**
1,2-Dichloroethane	BSDL	**2.31**	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
Benzene	BSDL	BSDL	BSDL	BSDL	**1.24**	**6900**	**53.1**	BSDL	BSDL	**10.3**	BSDL	**1760**	**1.94**	BSDL
Toluene	BSDL	BSDL	BSDL	BSDL	BSDL	**2800**	BSDL	BSDL	BSDL	**1.37**	BSDL	BSDL	BSDL	BSDL
Ethylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	**9800**	BSDL	BSDL	BSDL	**2.67**	BSDL	**143**	BSDL	BSDL
m,p-Xylene	BSDL	BSDL	BSDL	BSDL	BSDL	**11000**	BSDL	BSDL	BSDL	**1.49**	BSDL	BSDL	BSDL	BSDL
o-Xylene	BSDL	BSDL	BSDL	BSDL	BSDL	**1900**	BSDL	BSDL	BSDL	**3.44**	BSDL	BSDL	BSDL	BSDL
Isopropylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	**860**	BSDL	BSDL	BSDL	**3.27**	**17.4**	BSDL	BSDL	BSDL
n-Propylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	**2200**	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
1,3,5-Trimethylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	**2600**	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
1,2,4-Trimethylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	**9500**	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
sec-Butylbenzene	BSDL	BSDL	BSDL	**1.27**	BSDL	BSDL	BSDL	BSDL	BSDL	**1.78**	**8.67**	BSDL	BSDL	BSDL
n-Butylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	**590**	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL

Notes:

BSDL: Below Sample Detection Limit

Only wells with analytes above the detection limit noted here.

Monitoring wells with free phase liquid are not sampled and, as a result, are not shown here.

2002 THIRD QUARTER GROUNDWATER ANALYTCAL TABLE

Constituent (µg/L)	RA 3156 9/25/2002	KWB-1A 9/23/2002	KWB-1C 9/23/2001	KWB-11A 9/25/2002	KWB-7 9/23/2001	NP-2 9/23/2002	NP-1 9/23/2002	MW-45 9/25/2002	MW-18 9/25/2002	MW-28 9/25/2002	KWB-12a 9/25/2002	MW-29 9/23/2002
Acetone	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
MTBE	**1.45**	**18.5**	**22.9**	**19.8**	**32.1**	**1.58**	**56.3**	**6.04**	BSDL	**4840**	BSDL	BSDL
1,2-Dichloroethane	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
Benzene	BSDL	BSDL	BSDL	BSDL	**1.86**	BSDL	BSDL	**11.8**	**3.93**	**982**	**6.35**	BSDL
Toluene	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
Ethylbenzene	BSDL	BSDL	BSDL	**2.17**	BSDL	BSDL	BSDL	BSDL	**4.24**	BSDL	**2.31**	BSDL
m,p-Xylene	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**5.84**	BSDL	**238**	BSDL	BSDL
o-Xylene	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**11.2**	BSDL	BSDL	BSDL	BSDL
n-Propylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**94.2**	BSDL	BSDL
Isopropylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**6.16**	BSDL	**66.3**	BSDL	**6.45**
1,2,4-Trimethylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**202**	BSDL	BSDL
sec-Butylbenzene	BSDL	**1.64**	**1.08**	BSDL	**1.96**	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL

Notes:

BSDL: Below Sample Detection Limit

Only wells with analytes above the detection limit noted here.

Monitoring wells with free phase liquid are not sampled and, as a result, are not shown here.

2002 FOURTH QUARTER GROUNDWATER ANALYTCAL TABLE

Constituent (µg/L)	KWB-1A 12/16/02	KWB-1C 12/16/02	KWB-11A 12/16/02	KWB-7 12/16/02	KWB-9 12/17/02	KWB-13 12/18/02	NP-2 12/17/02	NP-1 12/17/02	MW-45 12/18/02	MW-28 12/19/02	MW-29 12/18/02
Chloromethane	BSDL	BSDL	BSDL	BSDL	BSDL	**1.02**	BSDL	BSDL	BSDL	BSDL	BSDL
Acetone	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
MTBE	**25.6**	**38.7**	**21.7**	**63.7**	BSDL	BSDL	**1.34**	**60.4**	**9.96**	**8550**	BSDL
1,2-Dichloroethane	BSDL	BSDL	BSDL	BSDL	**1.09**	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL
Benzene	BSDL	BSDL	BSDL	BSDL	BSDL	**8.62**	BSDL	BSDL	**21.7**	**1750**	BSDL
Toluene	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**2.03**	BSDL	BSDL
Ethylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	**1.94**	BSDL	BSDL	**4.67**	BSDL	BSDL
m,p-Xylene	BSDL	BSDL	BSDL	BSDL	BSDL	**3.65**	BSDL	BSDL	**6.58**	BSDL	BSDL
o-Xylene	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	**7.95**	BSDL	BSDL
n-Propylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	**1.03**	BSDL	BSDL	**1.74**	BSDL	BSDL
Isopropylbenzene	BSDL	BSDL	BSDL	BSDL	BSDL	**1.12**	BSDL	BSDL	**3.11**	BSDL	**10.8**
1,2,4-Trimethylbenzen	BSDL	BSDL	BSDL	BSDL	BSDL	**2.18**	BSDL	BSDL	**3.99**	BSDL	BSDL
sec-Butylbenzene	BSDL	**1.08**	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL	BSDL

Notes:

BSDL: Below Sample Detection Limit

Only wells with analytes above the detection limit noted here.

Monitoring wells with free phase liquid are not sampled and, as a result, are not shown here.

Summary Report

Jeff Byrd
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: July 19, 2002

Order ID Number: A02071027

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
201171	KWB-12A	Water	7/9/02	11:00	7/10/02
201172	KWB-11A	Water	7/9/02	11:15	7/10/02
201173	KWB-7	Water	7/9/02	14:00	7/10/02
201174	KWB-3A	Water	7/9/02	14:10	7/10/02

0 This report consists of a total of 7 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 201171 - KWB-12A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L

Continued on next page ...

Sample 201171 continued ...

Param	Flag	Result	Units
Benzene		1.94	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201172 - KWB-11A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L

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Sample 201172 continued ...

Param	Flag	Result	Units
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		14.6	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		1.24	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L

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Sample 201172 continued ...

Param	Flag	Result	Units
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201173 - KWB-7

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		18.5	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		53.1	µg/L
Carbon Tetrachloride		<1.00	µg/L

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Sample 201173 continued ...

Param	Flag	Result	Units
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201174 - KWB-3A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L

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Sample 201174 continued ...

Param	Flag	Result	Units
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L

Continued on next page ...

Sample 201174 continued ...

Param	Flag	Result	Units
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

TRACEANALYSIS, INC.

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Analytical and Quality Control Report

Jeff Byrd
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: July 19, 2002

Order ID Number: A02071027

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
201171	KWB-12A	Water	7/9/02	11:00	7/10/02
201172	KWB-11A	Water	7/9/02	11:15	7/10/02
201173	KWB-7	Water	7/9/02	14:00	7/10/02
201174	KWB-3A	Water	7/9/02	14:10	7/10/02

These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 11 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 201171 - KWB-12A

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC21961	Date Analyzed:	7/16/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20780	Date Prepared:	7/16/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		1.94	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201171 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.7	µg/L	1	50	101	77 - 122
Toluene-d8		54.9	µg/L	1	50	110	96 - 111
4-Bromofluorobenzene		46.0	µg/L	1	50	92	87 - 113

Sample: 201172 - KWB-11A

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC21961	Date Analyzed:	7/16/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20780	Date Prepared:	7/16/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10

Continued ...

... *Continued* Sample: 201172 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		14.6	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		1.24	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5

Continued ...

... *Continued* Sample: 201172 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.4	µg/L	1	50	101	77 - 122
Toluene-d8		54.9	µg/L	1	50	110	96 - 111
4-Bromofluorobenzene		44.6	µg/L	1	50	89	87 - 113

Sample: 201173 - KWB-7

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC21961	Date Analyzed:	7/16/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20780	Date Prepared:	7/16/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		18.5	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		53.1	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201173 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.6	µg/L	1	50	103	77 - 122
Toluene-d8		54.6	µg/L	1	50	109	96 - 111
4-Bromofluorobenzene		44.9	µg/L	1	50	90	87 - 113

Sample: 201174 - KWB-3A

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC21961	Date Analyzed:	7/16/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20780	Date Prepared:	7/16/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201174 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201174 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.7	µg/L	1	50	101	77 - 122
Toluene-d8		54.6	µg/L	1	50	109	96 - 111
4-Bromofluorobenzene		45.0	µg/L	1	50	90	87 - 113

Quality Control Report
Method Blank

Method Blank QCBatch: QC21961

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1

Continued ...

... *Continued*

Param	Flag	Results	Units	Reporting Limit
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC21961

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	105	106	µg/L	1	100	<1.00	105	0	84 - 124	20
Benzene	98	100	µg/L	1	100	<1.00	98	2	87 - 112	20
Trichloroethene (TCE)	90	90	µg/L	1	100	<1.00	90	0	81 - 105	20
Toluene	95	96	µg/L	1	100	<1.00	95	1	90 - 108	20
Chlorobenzene	94	96	µg/L	1	100	<1.00	94	2	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	49.3	50.5	µg/L	1	50	98	101	77 - 122
Toluene-d8	52.4	52.7	µg/L	1	50	104	105	96 - 111
4-Bromofluorobenzene	45.9	46.0	µg/L	1	50	91	92	87 - 113

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC21961

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	49	98	80 - 120	7/16/02
1,1-Dichloroethene		µg/L	50	49	98	80 - 120	7/16/02
Chloroform		µg/L	50	49	98	80 - 120	7/16/02
1,2-Dichloropropane		µg/L	50	52	104	80 - 120	7/16/02
Toluene		µg/L	50	51	102	80 - 120	7/16/02
Chlorobenzene		µg/L	50	51	102	80 - 120	7/16/02
Ethylbenzene		µg/L	50	52	104	80 - 120	7/16/02
Dibromofluoromethane		µg/L	50	48.7	97	80 - 120	7/16/02
Toluene-d8		µg/L	50	51.1	102	80 - 120	7/16/02
4-Bromofluorobenzene		µg/L	50	50.4	100	80 - 120	7/16/02

201171-74

Page____of____

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon,Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A0207027

Company Name: Navajo
Phone #:
Address: (Street, City, Zip)
Fax #:
Contact Person: Jeff Byrd
Invoice to: (If different from above)
Project #:
Project Name: Quarterly Offsite
Project Location: Artesia
Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
201171	KWB-12a	2	VOA	X				X				X		7/9	1100
72	KWB-11a	1	1	1				1				1		1	1115
73	KWB-7	1	1	1				1				1		1	1400
74	KWB-3a	1	1	1				1				1		1	1410

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	see List (Quarterly Offsite)							Turn Around Time if different from standard	Hold
														X	X								
														X	X								
														X	X								
														X	X								

Relinquished by: Date: 7/9/02 Time: 1615
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received at Laboratory by: Vicki Newman Date: 7/10/02 Time: 10:10

LAB USE ONLY
Intact (Y) / N
Headspace Y / N
Temp 4 °
Log-in Review MM

REMARKS:
7/19 p

☐ Check If Special Reporting Limits Are Needed

Carrier # Fed Ex 836346674273

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

Summary Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: July 26, 2002

Order ID Number: A02071607

Project Number: N/A
Project Name: Mo Off -Site
Project Location: Artesia,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
201685	MW-29	Water	7/15/02	10:00	7/16/02
201686	MW-28	Water	7/15/02	10:15	7/16/02
201687	MW-45	Water	7/15/02	10:40	7/16/02
201688	RA 3156	Water	7/15/02	11:05	7/16/02
201689	KWB-2R	Water	7/15/02	11:00	7/16/02

0 This report consists of a total of 8 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 201685 - MW-29

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		2.04	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L

Continued on next page ...

Sample 201685 continued ...

Param	Flag	Result	Units
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		17.4	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		8.67	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201686 - MW-28

Param	Flag	Result	Units
Bromochloromethane		<100	µg/L

Continued on next page ...

Sample 201686 continued ...

Param	Flag	Result	Units
Dichlorodifluoromethane		<100	µg/L
Chloromethane (methyl chloride)		<100	µg/L
Vinyl Chloride		<100	µg/L
Bromomethane (methyl bromide)		<500	µg/L
Chloroethane		<100	µg/L
Trichlorofluoromethane		<100	µg/L
Acetone		<1000	µg/L
Iodomethane (methyl iodide)		<500	µg/L
Carbon Disulfide		<100	µg/L
Acrylonitrile		<100	µg/L
2-Butanone (MEK)		<500	µg/L
4-methyl-2-pentanone (MIBK)		<500	µg/L
2-hexanone		<500	µg/L
trans 1,4-Dichloro-2-butene		<1000	µg/L
1,1-Dichloroethene		<100	µg/L
Methylene chloride		<500	µg/L
MTBE		12900	µg/L
trans-1,2-Dichloroethene		<100	µg/L
1,1-Dichloroethane		<100	µg/L
cis-1,2-Dichloroethene		<100	µg/L
2,2-Dichloropropane		<100	µg/L
1,2-Dichloroethane (EDC)		<100	µg/L
Chloroform		<100	µg/L
1,1,1-Trichloroethane		<100	µg/L
1,1-Dichloropropene		<100	µg/L
Benzene		1760	µg/L
Carbon Tetrachloride		<100	µg/L
1,2-Dichloropropane		<100	µg/L
Trichloroethene (TCE)		<100	µg/L
Dibromomethane (methylene bromide)		<100	µg/L
Bromodichloromethane		<100	µg/L
2-Chloroethyl vinyl ether		<500	µg/L
cis-1,3-Dichloropropene		<100	µg/L
trans-1,3-Dichloropropene		<100	µg/L
Toluene		<100	µg/L
1,1,2-Trichloroethane		<100	µg/L
1,3-Dichloropropane		<100	µg/L
Dibromochloromethane		<100	µg/L
1,2-Dibromoethane (EDB)		<100	µg/L
Tetrachloroethene (PCE)		<100	µg/L
Chlorobenzene		<100	µg/L
1,1,1,2-Tetrachloroethane		<100	µg/L
Ethylbenzene		143	µg/L
m,p-Xylene		<100	µg/L
Bromoform		<100	µg/L
Styrene		<100	µg/L
o-Xylene		<100	µg/L
1,1,2,2-Tetrachloroethane		<100	µg/L
2-Chlorotoluene		<100	µg/L
1,2,3-Trichloropropane		<100	µg/L

Continued on next page ...

Sample 201686 continued ...

Param	Flag	Result	Units
Isopropylbenzene		<100	µg/L
Bromobenzene		<100	µg/L
n-Propylbenzene		<100	µg/L
1,3,5-Trimethylbenzene		<100	µg/L
tert-Butylbenzene		<100	µg/L
1,2,4-Trimethylbenzene		<100	µg/L
1,4-Dichlorobenzene (para)		<100	µg/L
sec-Butylbenzene		<100	µg/L
1,3-Dichlorobenzene (meta)		<100	µg/L
p-Isopropyltoluene		<100	µg/L
4-Chlorotoluene		<100	µg/L
1,2-Dichlorobenzene (ortho)		<100	µg/L
n-Butylbenzene		<100	µg/L
1,2-Dibromo-3-chloropropane		<500	µg/L
1,2,3-Trichlorobenzene		<500	µg/L
1,2,4-Trichlorobenzene		<500	µg/L
Naphthalene		<500	µg/L
Hexachlorobutadiene		<500	µg/L

Sample: 201687 - MW-45

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		9.03	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		10.3	µg/L

Continued on next page ...

Sample 201687 continued ...

Param	Flag	Result	Units
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		1.37	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		2.67	µg/L
m,p-Xylene		1.49	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		3.44	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		3.27	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		1.78	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201688 - RA 3156

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L

Continued on next page ...

Sample 201688 continued ...

Param	Flag	Result	Units
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		1.16	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L

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Sample 201688 continued ...

Param	Flag	Result	Units
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201689 - KWB-2R

Param	Flag	Result	Units
Bromochloromethane		<500	µg/L
Dichlorodifluoromethane		<500	µg/L
Chloromethane (methyl chloride)		<500	µg/L
Vinyl Chloride		<500	µg/L
Bromomethane (methyl bromide)		<2500	µg/L
Chloroethane		<500	µg/L
Trichlorofluoromethane		<500	µg/L
Acetone		<5000	µg/L
Iodomethane (methyl iodide)		<2500	µg/L
Carbon Disulfide		<500	µg/L
Acrylonitrile		<500	µg/L
2-Butanone (MEK)		<2500	µg/L
4-methyl-2-pentanone (MIBK)		<2500	µg/L
2-hexanone		<2500	µg/L
trans 1,4-Dichloro-2-butene		<5000	µg/L
1,1-Dichloroethene		<500	µg/L
Methylene chloride		<2500	µg/L
MTBE		<500	µg/L
trans-1,2-Dichloroethene		<500	µg/L
1,1-Dichloroethane		<500	µg/L
cis-1,2-Dichloroethene		<500	µg/L
2,2-Dichloropropane		<500	µg/L
1,2-Dichloroethane (EDC)		<500	µg/L
Chloroform		<500	µg/L
1,1,1-Trichloroethane		<500	µg/L
1,1-Dichloropropene		<500	µg/L
Benzene		6900	µg/L
Carbon Tetrachloride		<500	µg/L
1,2-Dichloropropane		<500	µg/L

Continued on next page ...

Sample 201689 continued ...

Param	Flag	Result	Units
Trichloroethene (TCE)		<500	µg/L
Dibromomethane (methylene bromide)		<500	µg/L
Bromodichloromethane		<500	µg/L
2-Chloroethyl vinyl ether		<2500	µg/L
cis-1,3-Dichloropropene		<500	µg/L
trans-1,3-Dichloropropene		<500	µg/L
Toluene		2800	µg/L
1,1,2-Trichloroethane		<500	µg/L
1,3-Dichloropropane		<500	µg/L
Dibromochloromethane		<500	µg/L
1,2-Dibromoethane (EDB)		<500	µg/L
Tetrachloroethene (PCE)		<500	µg/L
Chlorobenzene		<500	µg/L
1,1,1,2-Tetrachloroethane		<500	µg/L
Ethylbenzene		9800	µg/L
m,p-Xylene		11000	µg/L
Bromoform		<500	µg/L
Styrene		<500	µg/L
o-Xylene		1900	µg/L
1,1,2,2-Tetrachloroethane		<500	µg/L
2-Chlorotoluene		<500	µg/L
1,2,3-Trichloropropane		<500	µg/L
Isopropylbenzene		860	µg/L
Bromobenzene		<500	µg/L
n-Propylbenzene		2200	µg/L
1,3,5-Trimethylbenzene		2600	µg/L
tert-Butylbenzene		<500	µg/L
1,2,4-Trimethylbenzene		9500	µg/L
1,4-Dichlorobenzene (para)		<500	µg/L
sec-Butylbenzene		<500	µg/L
1,3-Dichlorobenzene (meta)		<500	µg/L
p-Isopropyltoluene		<500	µg/L
4-Chlorotoluene		<500	µg/L
1,2-Dichlorobenzene (ortho)		<500	µg/L
n-Butylbenzene		590	µg/L
1,2-Dibromo-3-chloropropane		<2500	µg/L
1,2,3-Trichlorobenzene		<2500	µg/L
1,2,4-Trichlorobenzene		<2500	µg/L
Naphthalene		<2500	µg/L
Hexachlorobutadiene		<2500	µg/L

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Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: July 26, 2002

Order ID Number: A02071607

Project Number: N/A
Project Name: Mo Off -Site
Project Location: Artesia,NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
201685	MW-29	Water	7/15/02	10:00	7/16/02
201686	MW-28	Water	7/15/02	10:15	7/16/02
201687	MW-45	Water	7/15/02	10:40	7/16/02
201688	RA 3156	Water	7/15/02	11:05	7/16/02
201689	KWB-2R	Water	7/15/02	11:00	7/16/02

These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 15 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 201685 - MW-29

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22186	Date Analyzed:	7/24/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20968	Date Prepared:	7/24/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		2.04	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201685 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		17.4	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		8.67	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.5	µg/L	1	50	99	77 - 122
Toluene-d8		53.2	µg/L	1	50	106	96 - 111
4-Bromofluorobenzene		47.3	µg/L	1	50	95	87 - 113

Sample: 201686 - MW-28

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22186	Date Analyzed:	7/24/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20968	Date Prepared:	7/24/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<100	µg/L	100	1
Dichlorodifluoromethane		<100	µg/L	100	1
Chloromethane (methyl chloride)		<100	µg/L	100	1
Vinyl Chloride		<100	µg/L	100	1
Bromomethane (methyl bromide)		<500	µg/L	100	5
Chloroethane		<100	µg/L	100	1
Trichlorofluoromethane		<100	µg/L	100	1
Acetone		<1000	µg/L	100	10
Iodomethane (methyl iodide)		<500	µg/L	100	5
Carbon Disulfide		<100	µg/L	100	1
Acrylonitrile		<100	µg/L	100	1
2-Butanone (MEK)		<500	µg/L	100	5
4-methyl-2-pentanone (MIBK)		<500	µg/L	100	5
2-hexanone		<500	µg/L	100	5
trans 1,4-Dichloro-2-butene		<1000	µg/L	100	10

Continued ...

... *Continued* Sample: 201686 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,1-Dichloroethene		<100	µg/L	100	1
Methylene chloride		<500	µg/L	100	5
MTBE		12900	µg/L	100	1
trans-1,2-Dichloroethene		<100	µg/L	100	1
1,1-Dichloroethane		<100	µg/L	100	1
cis-1,2-Dichloroethene		<100	µg/L	100	1
2,2-Dichloropropane		<100	µg/L	100	1
1,2-Dichloroethane (EDC)		<100	µg/L	100	1
Chloroform		<100	µg/L	100	1
1,1,1-Trichloroethane		<100	µg/L	100	1
1,1-Dichloropropene		<100	µg/L	100	1
Benzene		1760	µg/L	100	1
Carbon Tetrachloride		<100	µg/L	100	1
1,2-Dichloropropane		<100	µg/L	100	1
Trichloroethene (TCE)		<100	µg/L	100	1
Dibromomethane (methylene bromide)		<100	µg/L	100	1
Bromodichloromethane		<100	µg/L	100	1
2-Chloroethyl vinyl ether		<500	µg/L	100	5
cis-1,3-Dichloropropene		<100	µg/L	100	1
trans-1,3-Dichloropropene		<100	µg/L	100	1
Toluene		<100	µg/L	100	1
1,1,2-Trichloroethane		<100	µg/L	100	1
1,3-Dichloropropane		<100	µg/L	100	1
Dibromochloromethane		<100	µg/L	100	1
1,2-Dibromoethane (EDB)		<100	µg/L	100	1
Tetrachloroethene (PCE)		<100	µg/L	100	1
Chlorobenzene		<100	µg/L	100	1
1,1,1,2-Tetrachloroethane		<100	µg/L	100	1
Ethylbenzene		143	µg/L	100	1
m,p-Xylene		<100	µg/L	100	1
Bromoform		<100	µg/L	100	1
Styrene		<100	µg/L	100	1
o-Xylene		<100	µg/L	100	1
1,1,2,2-Tetrachloroethane		<100	µg/L	100	1
2-Chlorotoluene		<100	µg/L	100	1
1,2,3-Trichloropropane		<100	µg/L	100	1
Isopropylbenzene		<100	µg/L	100	1
Bromobenzene		<100	µg/L	100	1
n-Propylbenzene		<100	µg/L	100	1
1,3,5-Trimethylbenzene		<100	µg/L	100	1
tert-Butylbenzene		<100	µg/L	100	1
1,2,4-Trimethylbenzene		<100	µg/L	100	1
1,4-Dichlorobenzene (para)		<100	µg/L	100	1
sec-Butylbenzene		<100	µg/L	100	1
1,3-Dichlorobenzene (meta)		<100	µg/L	100	1
p-Isopropyltoluene		<100	µg/L	100	1
4-Chlorotoluene		<100	µg/L	100	1
1,2-Dichlorobenzene (ortho)		<100	µg/L	100	1
n-Butylbenzene		<100	µg/L	100	1
1,2-Dibromo-3-chloropropane		<500	µg/L	100	5
1,2,3-Trichlorobenzene		<500	µg/L	100	5
1,2,4-Trichlorobenzene		<500	µg/L	100	5
Naphthalene		<500	µg/L	100	5

Continued ...

... *Continued* Sample: 201686 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Hexachlorobutadiene		<500	µg/L	100	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.8	µg/L	100	50	97	77 - 122
Toluene-d8		53.2	µg/L	100	50	106	96 - 111
4-Bromofluorobenzene		45.3	µg/L	100	50	90	87 - 113

Sample: 201687 - MW-45

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22166	Date Analyzed:	7/23/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20956	Date Prepared:	7/23/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		9.03	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		10.3	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		1.37	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 201687 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		2.67	µg/L	1	1
m,p-Xylene		1.49	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		3.44	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		3.27	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		1.78	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.5	µg/L	1	50	95	77 - 122
Toluene-d8		52.3	µg/L	1	50	105	96 - 111
4-Bromofluorobenzene		47.9	µg/L	1	50	96	87 - 113

Sample: 201688 - RA 3156

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22166	Date Analyzed:	7/23/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20956	Date Prepared:	7/23/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201688 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		1.16	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201688 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.7	µg/L	1	50	95	77 - 122
Toluene-d8		52.9	µg/L	1	50	106	96 - 111
4-Bromofluorobenzene		46.2	µg/L	1	50	92	87 - 113

Sample: 201689 - KWB-2R

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22166	Date Analyzed:	7/23/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20956	Date Prepared:	7/23/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<500	µg/L	500	1
Dichlorodifluoromethane		<500	µg/L	500	1
Chloromethane (methyl chloride)		<500	µg/L	500	1
Vinyl Chloride		<500	µg/L	500	1
Bromomethane (methyl bromide)		<2500	µg/L	500	5
Chloroethane		<500	µg/L	500	1
Trichlorofluoromethane		<500	µg/L	500	1
Acetone		<5000	µg/L	500	10
Iodomethane (methyl iodide)		<2500	µg/L	500	5
Carbon Disulfide		<500	µg/L	500	1
Acrylonitrile		<500	µg/L	500	1
2-Butanone (MEK)		<2500	µg/L	500	5
4-methyl-2-pentanone (MIBK)		<2500	µg/L	500	5
2-hexanone		<2500	µg/L	500	5
trans 1,4-Dichloro-2-butene		<5000	µg/L	500	10
1,1-Dichloroethene		<500	µg/L	500	1
Methylene chloride		<2500	µg/L	500	5
MTBE		<500	µg/L	500	1
trans-1,2-Dichloroethene		<500	µg/L	500	1
1,1-Dichloroethane		<500	µg/L	500	1
cis-1,2-Dichloroethene		<500	µg/L	500	1
2,2-Dichloropropane		<500	µg/L	500	1
1,2-Dichloroethane (EDC)		<500	µg/L	500	1
Chloroform		<500	µg/L	500	1
1,1,1-Trichloroethane		<500	µg/L	500	1
1,1-Dichloropropene		<500	µg/L	500	1
Benzene		6900	µg/L	500	1
Carbon Tetrachloride		<500	µg/L	500	1

Continued ...

... *Continued* Sample: 201689 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,2-Dichloropropane		<500	µg/L	500	1
Trichloroethene (TCE)		<500	µg/L	500	1
Dibromomethane (methylene bromide)		<500	µg/L	500	1
Bromodichloromethane		<500	µg/L	500	1
2-Chloroethyl vinyl ether		<2500	µg/L	500	5
cis-1,3-Dichloropropene		<500	µg/L	500	1
trans-1,3-Dichloropropene		<500	µg/L	500	1
Toluene		2800	µg/L	500	1
1,1,2-Trichloroethane		<500	µg/L	500	1
1,3-Dichloropropane		<500	µg/L	500	1
Dibromochloromethane		<500	µg/L	500	1
1,2-Dibromoethane (EDB)		<500	µg/L	500	1
Tetrachloroethene (PCE)		<500	µg/L	500	1
Chlorobenzene		<500	µg/L	500	1
1,1,1,2-Tetrachloroethane		<500	µg/L	500	1
Ethylbenzene		9800	µg/L	500	1
m,p-Xylene		11000	µg/L	500	1
Bromoform		<500	µg/L	500	1
Styrene		<500	µg/L	500	1
o-Xylene		1900	µg/L	500	1
1,1,2,2-Tetrachloroethane		<500	µg/L	500	1
2-Chlorotoluene		<500	µg/L	500	1
1,2,3-Trichloropropane		<500	µg/L	500	1
Isopropylbenzene		860	µg/L	500	1
Bromobenzene		<500	µg/L	500	1
n-Propylbenzene		2200	µg/L	500	1
1,3,5-Trimethylbenzene		2600	µg/L	500	1
tert-Butylbenzene		<500	µg/L	500	1
1,2,4-Trimethylbenzene		9500	µg/L	500	1
1,4-Dichlorobenzene (para)		<500	µg/L	500	1
sec-Butylbenzene		<500	µg/L	500	1
1,3-Dichlorobenzene (meta)		<500	µg/L	500	1
p-Isopropyltoluene		<500	µg/L	500	1
4-Chlorotoluene		<500	µg/L	500	1
1,2-Dichlorobenzene (ortho)		<500	µg/L	500	1
n-Butylbenzene		590	µg/L	500	1
1,2-Dibromo-3-chloropropane		<2500	µg/L	500	5
1,2,3-Trichlorobenzene		<2500	µg/L	500	5
1,2,4-Trichlorobenzene		<2500	µg/L	500	5
Naphthalene		<2500	µg/L	500	5
Hexachlorobutadiene		<2500	µg/L	500	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.2	µg/L	500	50	94	77 - 122
Toluene-d8		53.0	µg/L	500	50	106	96 - 111
4-Bromofluorobenzene		48.7	µg/L	500	50	97	87 - 113

Quality Control Report
Method Blank

Method Blank QCBatch: QC22166

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1

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Param	Flag	Results	Units	Reporting Limit
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.2	µg/L	1	50	94	77 - 122
Toluene-d8		52.7	µg/L	1	50	105	96 - 111
4-Bromofluorobenzene		45.5	µg/L	1	50	91	87 - 113

Method Blank

QCBatch: QC22186

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10

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Param	Flag	Results	Units	Reporting Limit
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5

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Param	Flag	Results	Units	Reporting Limit
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.7	µg/L	1	50	95	77 - 122
Toluene-d8		54.0	µg/L	1	50	108	96 - 111
4-Bromofluorobenzene		45.0	µg/L	1	50	90	87 - 113

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC22166

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	101	102	µg/L	1	100	<1.00	101	0	84 - 124	20
Benzene	95	95	µg/L	1	100	<1.00	95	0	87 - 112	20
Trichloroethene (TCE)	90	91	µg/L	1	100	<1.00	90	1	81 - 105	20
Toluene	94	94	µg/L	1	100	<1.00	94	0	90 - 108	20
Chlorobenzene	95	96	µg/L	1	100	<1.00	95	1	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	47.6	46.8	µg/L	1	50	95	93	77 - 122
Toluene-d8	52.5	52.3	µg/L	1	50	105	104	96 - 111
4-Bromofluorobenzene	47.3	46.7	µg/L	1	50	94	93	87 - 113

Laboratory Control Spikes

QCBatch: QC22186

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	107	106	µg/L	1	100	<1.00	107	0	84 - 124	20
Benzene	97	99	µg/L	1	100	<1.00	97	2	87 - 112	20
Trichloroethene (TCE)	90	91	µg/L	1	100	<1.00	90	1	81 - 105	20
Toluene	95	96	µg/L	1	100	<1.00	95	1	90 - 108	20
Chlorobenzene	97	96	µg/L	1	100	<1.00	97	1	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	47.0	46.1	µg/L	1	50	94	92	77 - 122
Toluene-d8	53.2	51.6	µg/L	1	50	106	103	96 - 111

Continued ...

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
4-Bromofluorobenzene	47.1	46.0	µg/L	1	50	94	92	87 - 113

Quality Control Report
Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC22186

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	103	100	µg/L	1	100	<1.00	103	3	85 - 122	20
Benzene	97.8	98.5	µg/L	1	100	2.23	98	1	80 - 120	20
Trichloroethene (TCE)	88.2	89.3	µg/L	1	100	<1.00	88	1	80 - 120	20
Toluene	94.6	95.0	µg/L	1	100	<1.00	95	0	87 - 110	20
Chlorobenzene	94.3	94.6	µg/L	1	100	<1.00	94	0	86 - 117	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
Dibromofluoromethane	47.1	46.6	µg/L	1	50	94	93	77 - 122
Toluene-d8	51.2	52.0	µg/L	1	50	102	104	96 - 111
4-Bromofluorobenzene	50.1	51.2	µg/L	1	50	100	102	87 - 113

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC22166

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	45	90	80 - 120	7/23/02
1,1-Dichloroethene		µg/L	50	47	94	80 - 120	7/23/02
Chloroform		µg/L	50	46	92	80 - 120	7/23/02
1,2-Dichloropropane		µg/L	50	48	96	80 - 120	7/23/02
Toluene		µg/L	50	47	94	80 - 120	7/23/02
Chlorobenzene		µg/L	50	49	98	80 - 120	7/23/02
Ethylbenzene		µg/L	50	50	100	80 - 120	7/23/02
Dibromofluoromethane		µg/L	50	47.3	94	80 - 120	7/23/02
Toluene-d8		µg/L	50	51.6	103	80 - 120	7/23/02
4-Bromofluorobenzene		µg/L	50	50.8	101	80 - 120	7/23/02

CCV (1)

QCBatch: QC22186

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	47.0	94	80 - 120	7/24/02
1,1-Dichloroethene		µg/L	50	49.0	98	80 - 120	7/24/02
Chloroform		µg/L	50	49.0	98	80 - 120	7/24/02
1,2-Dichloropropane		µg/L	50	50.0	100	80 - 120	7/24/02
Toluene		µg/L	50	49.0	98	80 - 120	7/24/02
Chlorobenzene		µg/L	50	50.0	100	80 - 120	7/24/02
Ethylbenzene		µg/L	50	52.0	104	80 - 120	7/24/02
Dibromofluoromethane		µg/L	50	46.2	92	80 - 120	7/24/02
Toluene-d8		µg/L	50	52.0	104	80 - 120	7/24/02
4-Bromofluorobenzene		µg/L	50	50.7	101	80 - 120	7/24/02

201685-89

Page ____ of ____

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TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A020716007

Company Name: Navajo — Phone #:

Address: (Street, City, Zip) — Fax #:

Contact Person: Darrell Moore

Invoice to: (If different from above)

Project #: — Project Name: Monthly Offsite

Project Location: Artesia — Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
201685	MW-29	2	VOA	X				X				X		7/15	1000
86	MW-28	"	"	"				"				"			1015
87	MW-45	"	"	"				"				"			1040
88	RA3156	"	"	"				"				"			1105
89	KWB-2R	"	"	"				"				"			1100

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	See List (Monthly Offsite)	Turn Around Time if different from standard	Hold
															X		
															X		
															X		
															X		
															X		

Relinquished by: — Date: 7/15/02 — Time: 1615 — Received by: — Date: — Time:

Relinquished by: — Date: — Time: — Received by: — Date: — Time:

Relinquished by: — Date: — Time: — Received at Laboratory by: Vicki Reed — Date: 7-16-02 — Time: 1000

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

LAB USE ONLY

Intact (Y) / N

Headspace Y / N

Temp -1° °

Log-in Review MA

REMARKS:

7/24 FIP

☐ Check If Special Reporting Limits Are Needed

Carrier # Fed 7911.9595-5144

TRACE ANALYSIS, INC.

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155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Bill To: **Navajo Refining**
501 E. Main
Artesia, NM 88210

Attn: **Darrell Moore**

Invoice # 53923

Invoice Date: **Jul 29, 2002**

Order ID: **A02072222**

Project #:	**N/A**
Project Name:	**TAB**
Project Location:	**Artesia**

Test	Quantity	Matrix	Description	Price	SubTotal
Benzene	2	Water	202371 - 202372	$45.00	$90.00
Payment Terms: Net 30 Days				**Total**	$90.00

Director, Dr. Blair Leftwich

Summary Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: July 26, 2002

Order ID Number: A02072222

Project Number: N/A
Project Name: TAB
Project Location: Artesia

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
202371	TK 211 TAB	Water	7/19/02	12:10	7/22/02
202372	JP/8/S.P. API	Water	7/19/02	14:00	7/22/02

0 This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 202371 - TK 211 TAB

Param	Flag	Result	Units
Benzene		9.48	mg/L

Sample: 202372 - JP/8/S.P. API

Param	Flag	Result	Units
Benzene		9.3	mg/L

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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: July 26, 2002

Order ID Number: A02072222

Project Number: N/A
Project Name: TAB
Project Location: Artesia

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
202371	TK 211 TAB	Water	7/19/02	12:10	7/22/02
202372	JP/8/S.P. API	Water	7/19/02	14:00	7/22/02

These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 4 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 202371 - TK 211 TAB

Analysis:	Benzene	Analytical Method:	S 8021B	QC Batch:	QC22236	Date Analyzed:	7/24/02
Analyst:	CG	Preparation Method:	E 5030B	Prep Batch:	PB21005	Date Prepared:	7/24/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		9.48	mg/L	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.096	mg/L	50	0.10	95	70 - 130
4-BFB		0.105	mg/L	50	0.10	105	70 - 130

Sample: 202372 - JP/8/S.P. API

Analysis:	Benzene	Analytical Method:	S 8021B	QC Batch:	QC22134	Date Analyzed:	7/23/02
Analyst:	CG	Preparation Method:	E 5030B	Prep Batch:	PB20930	Date Prepared:	7/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		9.3	mg/L	500	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.112	mg/L	500	0.10	112	70 - 130
4-BFB		0.111	mg/L	500	0.10	111	70 - 130

Quality Control Report
Method Blank

Method Blank

QCBatch: QC22134

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.001	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.106	mg/L	1	0.10	106	70 - 130
4-BFB		0.104	mg/L	1	0.10	104	70 - 130

Method Blank

QCBatch: QC22236

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.001	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.0877	mg/L	1	0.10	87	70 - 130
4-BFB		0.0813	mg/L	1	0.10	81	70 - 130

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC22134

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	0.102	0.103	mg/L	1	0.10	<0.001	102	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.101	0.102	mg/L	1	0.10	101	102	70 - 130
4-BFB	0.102	0.107	mg/L	1	0.10	102	107	70 - 130

Laboratory Control Spikes

QCBatch: QC22236

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	0.103	0.103	mg/L	1	0.10	<0.001	103	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.0991	0.0957	mg/L	1	0.10	99	95	70 - 130
4-BFB	0.0973	0.0955	mg/L	1	0.10	97	95	70 - 130

Quality Control Report
Continuing Calibration Verification Standards

CCV (1) QCBatch: QC22134

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.10	0.102	102	85 - 115	7/23/02

ICV (1) QCBatch: QC22134

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.10	0.103	103	85 - 115	7/23/02

CCV (1) QCBatch: QC22236

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.10	0.0984	98	85 - 115	7/24/02

ICV (1) QCBatch: QC22236

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.10	0.102	102	85 - 115	7/24/02

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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A0207222

Company Name: Navajo
Phone #: 5057483311
Address: (Street, City, Zip) 501 E. Main
Fax #: 5057465421
Contact Person: Darrell Moore
Invoice to: (If different from above)
Project #:
Project Name: TAB
Project Location: Artesia
Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
20237	TC211 TAB	2	40ml	X								X	X	7/19/02	1210
22	DP/8 / S.P. API	2	40ml	X								X	X	7/19/02	1400

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	benzene					Turn Around Time if different from standard	Hold
															X						
															X						

Relinquished by: Date: 7/19/02 Time: 1615
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:
Submittal of sample Date: Time:
Received at Laboratory by: Vicki Reeves 7-22-02 1000

Attachment to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

LAB USE ONLY

Intact (Y) / N
Headspace Y / N
Temp 15° °
Log-in Review MS

REMARKS:

72hTAT

☐ Check If Special Reporting Limits Are Needed

Carrier # FedEx 7907 9209 8969

Summary Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: March 22, 2002

Order ID Number: A02031516

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
193023	KWB-2R	Water	3/14/02	14:25	3/15/02
193024	29	Water	3/14/02	10:30	3/15/02
193025	28	Water	3/14/02	11:15	3/15/02
193026	NP-1	Water	3/14/02	13:50	3/15/02
193027	MW-45	Water	3/14/02	14:10	3/15/02

0 This report consists of a total of 8 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 193023 - KWB-2R

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1000	µg/L
Chloromethane (methyl chloride)		<1000	µg/L
Vinyl Chloride		<1000	µg/L
Bromomethane (methyl bromide)		<5000	µg/L
Chloroethane		<1000	µg/L
Trichlorofluoromethane		<1000	µg/L
Acetone		<10000	µg/L
Iodomethane (methyl iodide)		<5000	µg/L
Carbon Disulfide		<1000	µg/L
Acrylonitrile		<1000	µg/L
2-Butanone (MEK)		<5000	µg/L
4-methyl-2-pentanone (MIBK)		<5000	µg/L
2-hexanone		<5000	µg/L
trans 1,4-Dichloro-2-butene		<10000	µg/L
1,1-Dichloroethene		<1000	µg/L
Methylene chloride		<5000	µg/L
MTBE		<1000	µg/L
trans-1,2-Dichloroethene		<1000	µg/L
1,1-Dichloroethane		<1000	µg/L
cis-1,2-Dichloroethene		<1000	µg/L
2,2-Dichloropropane		<1000	µg/L
1,2-Dichloroethane (EDC)		<1000	µg/L
Chloroform		<1000	µg/L
1,1,1-Trichloroethane		<1000	µg/L
1,1-Dichloropropene		<1000	µg/L
Benzene		7200	µg/L
Carbon Tetrachloride		<1000	µg/L

Continued on next page ...

Sample 193023 continued ...

Param	Flag	Result	Units
1,2-Dichloropropane		<1000	µg/L
Trichloroethene (TCE)		<1000	µg/L
Dibromomethane (methylene bromide)		<1000	µg/L
Bromodichloromethane		<1000	µg/L
2-Chloroethyl vinyl ether		<5000	µg/L
cis-1,3-Dichloropropene		<1000	µg/L
trans-1,3-Dichloropropene		<1000	µg/L
Toluene		5400	µg/L
1,1,2-Trichloroethane		<1000	µg/L
1,3-Dichloropropane		<1000	µg/L
Dibromochloromethane		<1000	µg/L
1,2-Dibromoethane (EDB)		<1000	µg/L
Tetrachloroethene (PCE)		<1000	µg/L
Chlorobenzene		<1000	µg/L
1,1,1,2-Tetrachloroethane		<1000	µg/L
Ethylbenzene		5800	µg/L
m,p-Xylene		9100	µg/L
Bromoform		<1000	µg/L
Styrene		<1000	µg/L
o-Xylene		3600	µg/L
1,1,2,2-Tetrachloroethane		<1000	µg/L
2-Chlorotoluene		<1000	µg/L
1,2,3-Trichloropropane		<1000	µg/L
Isopropylbenzene		<1000	µg/L
Bromobenzene		<1000	µg/L
n-Propylbenzene		1030	µg/L
1,3,5-Trimethylbenzene		1400	µg/L
tert-Butylbenzene		<1000	µg/L
1,2,4-Trimethylbenzene		4300	µg/L
1,4-Dichlorobenzene (para)		<1000	µg/L
sec-Butylbenzene		<1000	µg/L
1,3-Dichlorobenzene (meta)		<1000	µg/L
p-Isopropyltoluene		<1000	µg/L
4-Chlorotoluene		<1000	µg/L
1,2-Dichlorobenzene (ortho)		<1000	µg/L
n-Butylbenzene		<1000	µg/L
1,2-Dibromo-3-chloropropane		<5000	µg/L
1,2,3-Trichlorobenzene		<5000	µg/L
1,2,4-Trichlorobenzene		<5000	µg/L
Naphthalene		<5000	µg/L
Hexachlorobutadiene		<5000	µg/L

Sample: 193024 - 29

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L

Continued on next page ...

Sample 193024 continued ...

Param	Flag	Result	Units
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		3.47	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		2.62	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		13.3	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		1.06	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		8.32	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L

Continued on next page ...

Sample 193024 continued ...

Param	Flag	Result	Units
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 193025 - 28

Param	Flag	Result	Units
Bromochloromethane		<100	µg/L
Dichlorodifluoromethane		<100	µg/L
Chloromethane (methyl chloride)		<100	µg/L
Vinyl Chloride		<100	µg/L
Bromomethane (methyl bromide)		<500	µg/L
Chloroethane		<100	µg/L
Trichlorofluoromethane		<100	µg/L
Acetone		<1000	µg/L
Iodomethane (methyl iodide)		<500	µg/L
Carbon Disulfide		170	µg/L
Acrylonitrile		<100	µg/L
2-Butanone (MEK)		<500	µg/L
4-methyl-2-pentanone (MIBK)		<500	µg/L
2-hexanone		<500	µg/L
trans 1,4-Dichloro-2-butene		<500	µg/L
1,1-Dichloroethene		<100	µg/L
Methylene chloride		<500	µg/L
MTBE		11100	µg/L
trans-1,2-Dichloroethene		<100	µg/L
1,1-Dichloroethane		<100	µg/L
cis-1,2-Dichloroethene		<100	µg/L
2,2-Dichloropropane		<100	µg/L
1,2-Dichloroethane (EDC)		<100	µg/L
Chloroform		<100	µg/L
1,1,1-Trichloroethane		<100	µg/L
1,1-Dichloropropene		<100	µg/L
Benzene		1800	µg/L
Carbon Tetrachloride		<100	µg/L
1,2-Dichloropropane		<100	µg/L
Trichloroethene (TCE)		<100	µg/L
Dibromomethane (methylene bromide)		<100	µg/L
Bromodichloromethane		<100	µg/L
2-Chloroethyl vinyl ether		<500	µg/L
cis-1,3-Dichloropropene		<100	µg/L
trans-1,3-Dichloropropene		<100	µg/L
Toluene		<100	µg/L
1,1,2-Trichloroethane		<100	µg/L
1,3-Dichloropropane		<100	µg/L
Dibromochloromethane		<100	µg/L

Continued on next page ...

Sample 193025 continued ...

Param	Flag	Result	Units
1,2-Dibromoethane (EDB)		<100	µg/L
Tetrachloroethene (PCE)		<100	µg/L
Chlorobenzene		<100	µg/L
1,1,1,2-Tetrachloroethane		<100	µg/L
Ethylbenzene		185	µg/L
m,p-Xylene		154	µg/L
Bromoform		<100	µg/L
Styrene		<100	µg/L
o-Xylene		<100	µg/L
1,1,2,2-Tetrachloroethane		<100	µg/L
2-Chlorotoluene		<100	µg/L
1,2,3-Trichloropropane		<100	µg/L
Isopropylbenzene		<100	µg/L
Bromobenzene		<100	µg/L
n-Propylbenzene		<100	µg/L
1,3,5-Trimethylbenzene		<100	µg/L
tert-Butylbenzene		<100	µg/L
1,2,4-Trimethylbenzene		<100	µg/L
1,4-Dichlorobenzene (para)		<100	µg/L
sec-Butylbenzene		<100	µg/L
1,3-Dichlorobenzene (meta)		<100	µg/L
p-Isopropyltoluene		<100	µg/L
4-Chlorotoluene		<100	µg/L
1,2-Dichlorobenzene (ortho)		<100	µg/L
n-Butylbenzene		<100	µg/L
1,2-Dibromo-3-chloropropane		<500	µg/L
1,2,3-Trichlorobenzene		<500	µg/L
1,2,4-Trichlorobenzene		<500	µg/L
Naphthalene		<500	µg/L
Hexachlorobutadiene		<500	µg/L

Sample: 193026 - NP-1

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		24.7	µg/L

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Sample 193026 continued ...

Param	Flag	Result	Units
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		6.58	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		1.36	µg/L
m,p-Xylene		1.07	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 193027 - MW-45

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		3.41	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		8.32	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		6.71	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		2.94	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		3.72	µg/L
m,p-Xylene		3.52	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		12.3	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		9.59	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		1.52	µg/L

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Sample 193027 continued ...

Param	Flag	Result	Units
1,3,5-Trimethylbenzene		3.10	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		4.40	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		4.10	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

TRACEANALYSIS, INC.

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Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: March 22, 2002

Order ID Number: A02031516

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
193023	KWB-2R	Water	3/14/02	14:25	3/15/02
193024	29	Water	3/14/02	10:30	3/15/02
193025	28	Water	3/14/02	11:15	3/15/02
193026	NP-1	Water	3/14/02	13:50	3/15/02
193027	MW-45	Water	3/14/02	14:10	3/15/02

0
These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.

This report consists of a total of 14 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 193023 - KWB-2R

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18986	Date Analyzed:	3/20/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18377	Date Prepared:	3/20/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1000	1
Dichlorodifluoromethane		<1000	µg/L	1000	1
Chloromethane (methyl chloride)		<1000	µg/L	1000	1
Vinyl Chloride		<1000	µg/L	1000	1
Bromomethane (methyl bromide)		<5000	µg/L	1000	5
Chloroethane		<1000	µg/L	1000	1
Trichlorofluoromethane		<1000	µg/L	1000	1
Acetone		<10000	µg/L	1000	10
Iodomethane (methyl iodide)		<5000	µg/L	1000	5
Carbon Disulfide		<1000	µg/L	1000	1
Acrylonitrile		<1000	µg/L	1000	1
2-Butanone (MEK)		<5000	µg/L	1000	5
4-methyl-2-pentanone (MIBK)		<5000	µg/L	1000	5
2-hexanone		<5000	µg/L	1000	5
trans 1,4-Dichloro-2-butene		<10000	µg/L	1000	10
1,1-Dichloroethene		<1000	µg/L	1000	1
Methylene chloride		<5000	µg/L	1000	5
MTBE		<1000	µg/L	1000	1
trans-1,2-Dichloroethene		<1000	µg/L	1000	1
1,1-Dichloroethane		<1000	µg/L	1000	1
cis-1,2-Dichloroethene		<1000	µg/L	1000	1
2,2-Dichloropropane		<1000	µg/L	1000	1
1,2-Dichloroethane (EDC)		<1000	µg/L	1000	1
Chloroform		<1000	µg/L	1000	1
1,1,1-Trichloroethane		<1000	µg/L	1000	1
1,1-Dichloropropene		<1000	µg/L	1000	1
Benzene		7200	µg/L	1000	1
Carbon Tetrachloride		<1000	µg/L	1000	1
1,2-Dichloropropane		<1000	µg/L	1000	1
Trichloroethene (TCE)		<1000	µg/L	1000	1
Dibromomethane (methylene bromide)		<1000	µg/L	1000	1
Bromodichloromethane		<1000	µg/L	1000	1
2-Chloroethyl vinyl ether		<5000	µg/L	1000	5
cis-1,3-Dichloropropene		<1000	µg/L	1000	1
trans-1,3-Dichloropropene		<1000	µg/L	1000	1
Toluene		5400	µg/L	1000	1
1,1,2-Trichloroethane		<1000	µg/L	1000	1
1,3-Dichloropropane		<1000	µg/L	1000	1
Dibromochloromethane		<1000	µg/L	1000	1
1,2-Dibromoethane (EDB)		<1000	µg/L	1000	1
Tetrachloroethene (PCE)		<1000	µg/L	1000	1
Chlorobenzene		<1000	µg/L	1000	1
1,1,1,2-Tetrachloroethane		<1000	µg/L	1000	1
Ethylbenzene		5800	µg/L	1000	1
m,p-Xylene		9100	µg/L	1000	1
Bromoform		<1000	µg/L	1000	1
Styrene		<1000	µg/L	1000	1
o-Xylene		3600	µg/L	1000	1

Continued ...

... Continued Sample: 193023 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
1,1,2,2-Tetrachloroethane		<1000	µg/L	1000	1
2-Chlorotoluene		<1000	µg/L	1000	1
1,2,3-Trichloropropane		<1000	µg/L	1000	1
Isopropylbenzene		<1000	µg/L	1000	1
Bromobenzene		<1000	µg/L	1000	1
n-Propylbenzene		1030	µg/L	1000	1
1,3,5-Trimethylbenzene		1400	µg/L	1000	1
tert-Butylbenzene		<1000	µg/L	1000	1
1,2,4-Trimethylbenzene		4300	µg/L	1000	1
1,4-Dichlorobenzene (para)		<1000	µg/L	1000	1
sec-Butylbenzene		<1000	µg/L	1000	1
1,3-Dichlorobenzene (meta)		<1000	µg/L	1000	1
p-Isopropyltoluene		<1000	µg/L	1000	1
4-Chlorotoluene		<1000	µg/L	1000	1
1,2-Dichlorobenzene (ortho)		<1000	µg/L	1000	1
n-Butylbenzene		<1000	µg/L	1000	1
1,2-Dibromo-3-chloropropane		<5000	µg/L	1000	5
1,2,3-Trichlorobenzene		<5000	µg/L	1000	5
1,2,4-Trichlorobenzene		<5000	µg/L	1000	5
Naphthalene		<5000	µg/L	1000	1
Hexachlorobutadiene		<5000	µg/L	1000	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.4	µg/L	1	50	100	85 - 111
Toluene-d8		49.8	µg/L	1	50	99	93 - 107
4-Bromofluorobenzene		48.0	µg/L	1	50	96	86 - 106

Sample: 193024 - 29

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC19003	Date Analyzed:	3/21/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18393	Date Prepared:	3/21/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		3.47	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		2.62	µg/L	1	1

Continued ...

... *Continued* Sample: 193024 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		13.3	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		1.06	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		8.32	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.1	µg/L	1	50	102	85 - 111
Toluene-d8		50.5	µg/L	1	50	101	93 - 107
4-Bromofluorobenzene		47.4	µg/L	1	50	95	86 - 106

Sample: 193025 - 28

Analysis: 624 Analytical Method: E 624 QC Batch: QC18986 Date Analyzed: 3/20/02
Analyst: JG Preparation Method: N/A Prep Batch: PB18377 Date Prepared: 3/20/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<100	µg/L	100	1
Dichlorodifluoromethane		<100	µg/L	100	1
Chloromethane (methyl chloride)		<100	µg/L	100	1
Vinyl Chloride		<100	µg/L	100	1
Bromomethane (methyl bromide)		<500	µg/L	100	5
Chloroethane		<100	µg/L	100	1
Trichlorofluoromethane		<100	µg/L	100	1
Acetone		<1000	µg/L	100	10
Iodomethane (methyl iodide)		<500	µg/L	100	5
Carbon Disulfide		170	µg/L	100	1
Acrylonitrile		<100	µg/L	100	1
2-Butanone (MEK)		<500	µg/L	100	5
4-methyl-2-pentanone (MIBK)		<500	µg/L	100	5
2-hexanone		<500	µg/L	100	5
trans 1,4-Dichloro-2-butene		<500	µg/L	100	10
1,1-Dichloroethene		<100	µg/L	100	1
Methylene chloride		<500	µg/L	100	5
MTBE		11100	µg/L	100	1
trans-1,2-Dichloroethene		<100	µg/L	100	1
1,1-Dichloroethane		<100	µg/L	100	1
cis-1,2-Dichloroethene		<100	µg/L	100	1
2,2-Dichloropropane		<100	µg/L	100	1
1,2-Dichloroethane (EDC)		<100	µg/L	100	1
Chloroform		<100	µg/L	100	1
1,1,1-Trichloroethane		<100	µg/L	100	1
1,1-Dichloropropene		<100	µg/L	100	1
Benzene		1800	µg/L	100	1
Carbon Tetrachloride		<100	µg/L	100	1
1,2-Dichloropropane		<100	µg/L	100	1
Trichloroethene (TCE)		<100	µg/L	100	1
Dibromomethane (methylene bromide)		<100	µg/L	100	1
Bromodichloromethane		<100	µg/L	100	1
2-Chloroethyl vinyl ether		<500	µg/L	100	5
cis-1,3-Dichloropropene		<100	µg/L	100	1
trans-1,3-Dichloropropene		<100	µg/L	100	1
Toluene		<100	µg/L	100	1
1,1,2-Trichloroethane		<100	µg/L	100	1
1,3-Dichloropropane		<100	µg/L	100	1
Dibromochloromethane		<100	µg/L	100	1
1,2-Dibromoethane (EDB)		<100	µg/L	100	1
Tetrachloroethene (PCE)		<100	µg/L	100	1
Chlorobenzene		<100	µg/L	100	1
1,1,1,2-Tetrachloroethane		<100	µg/L	100	1

Continued ...

... *Continued* Sample: 193025 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
Ethylbenzene		185	µg/L	100	1
m,p-Xylene		154	µg/L	100	1
Bromoform		<100	µg/L	100	1
Styrene		<100	µg/L	100	1
o-Xylene		<100	µg/L	100	1
1,1,2,2-Tetrachloroethane		<100	µg/L	100	1
2-Chlorotoluene		<100	µg/L	100	1
1,2,3-Trichloropropane		<100	µg/L	100	1
Isopropylbenzene		<100	µg/L	100	1
Bromobenzene		<100	µg/L	100	1
n-Propylbenzene		<100	µg/L	100	1
1,3,5-Trimethylbenzene		<100	µg/L	100	1
tert-Butylbenzene		<100	µg/L	100	1
1,2,4-Trimethylbenzene		<100	µg/L	100	1
1,4-Dichlorobenzene (para)		<100	µg/L	100	1
sec-Butylbenzene		<100	µg/L	100	1
1,3-Dichlorobenzene (meta)		<100	µg/L	100	1
p-Isopropyltoluene		<100	µg/L	100	1
4-Chlorotoluene		<100	µg/L	100	1
1,2-Dichlorobenzene (ortho)		<100	µg/L	100	1
n-Butylbenzene		<100	µg/L	100	1
1,2-Dibromo-3-chloropropane		<500	µg/L	100	5
1,2,3-Trichlorobenzene		<500	µg/L	100	5
1,2,4-Trichlorobenzene		<500	µg/L	100	5
Naphthalene		<500	µg/L	100	1
Hexachlorobutadiene		<500	µg/L	100	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.1	µg/L	1	50	102	85 - 111
Toluene-d8		50.2	µg/L	1	50	100	93 - 107
4-Bromofluorobenzene		47.9	µg/L	1	50	95	86 - 106

Sample: 193026 - NP-1

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18986	Date Analyzed:	3/20/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18377	Date Prepared:	3/20/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5

Continued ...

... *Continued* Sample: 193026 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		24.7	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		6.58	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		1.36	µg/L	1	1
m,p-Xylene		1.07	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5

Continued ...

... *Continued* Sample: 193026 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.6	µg/L	1	50	103	85 - 111
Toluene-d8		50.3	µg/L	1	50	101	93 - 107
4-Bromofluorobenzene		47.8	µg/L	1	50	96	86 - 106

Sample: 193027 - MW-45

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18986	Date Analyzed:	3/20/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18377	Date Prepared:	3/20/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		3.41	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		8.32	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		6.71	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		2.94	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1

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... *Continued* Sample: 193027 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		3.72	µg/L	1	1
m,p-Xylene		3.52	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		12.3	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		9.59	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		1.52	µg/L	1	1
1,3,5-Trimethylbenzene		3.10	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		4.40	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		4.10	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.5	µg/L	1	50	103	85 - 111
Toluene-d8		49.4	µg/L	1	50	99	93 - 107
4-Bromofluorobenzene		50.9	µg/L	1	50	102	86 - 106

Quality Control Report
Method Blank

Method Blank

QCBatch: QC18986

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone	[1]	15.4	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1

Continued ...

[1] concentration due to instrument contamination.

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Param	Flag	Results	Units	Reporting Limit
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	1
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.9	µg/L	1	50	100	85 - 111
Toluene-d8		50.2	µg/L	1	50	100	93 - 107
4-Bromofluorobenzene		48.6	µg/L	1	50	97	86 - 106

Method Blank

QCBatch: QC19003

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1

Continued ...

... Continued

Param	Flag	Results	Units	Reporting Limit
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	1
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.1	µg/L	1	50	100	85 - 111
Toluene-d8		49.5	µg/L	1	50	99	93 - 107
4-Bromofluorobenzene		48.3	µg/L	1	50	97	86 - 106

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC18986

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	87.5	89.0	µg/L	1	100	<1.00	88	2	85 - 122	20
Benzene	98.1	98.5	µg/L	1	100	<1.00	98	0	95 - 108	20
Trichloroethene (TCE)	86.3	87.1	µg/L	1	100	<1.00	86	1	81 - 116	20
Toluene	94.7	96.2	µg/L	1	100	<1.00	95	2	80 - 120	20
Chlorobenzene	99.9	100	µg/L	1	100	<1.00	100	0	86 - 117	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	49.0	49.2	µg/L	1	50	98	98	85 - 111
Toluene-d8	49.6	49.8	µg/L	1	50	99	100	93 - 107
4-Bromofluorobenzene	48.5	49.1	µg/L	1	50	97	98	86 - 106

Laboratory Control Spikes

QCBatch: QC19003

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	92.0	93.0	µg/L	1	100	<1.00	92	1	85 - 122	20
Benzene	101	102	µg/L	1	100	<1.00	101	1	95 - 108	20
Trichloroethene (TCE)	88.3	88.7	µg/L	1	100	<1.00	88	0	81 - 116	20
Toluene	97.9	99.0	µg/L	1	100	<1.00	98	1	80 - 120	20
Chlorobenzene	101	101	µg/L	1	100	<1.00	101	0	86 - 117	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	50.5	50.1	µg/L	1	50	101	100	85 - 111
Toluene-d8	49.3	49.6	µg/L	1	50	99	99	93 - 107
4-Bromofluorobenzene	49.1	48.1	µg/L	1	50	98	96	86 - 106

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC18986

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	100	94.0	94	80 - 120	3/20/02
1,1-Dichloroethene		µg/L	100	99.0	99	80 - 120	3/20/02
Chloroform		µg/L	100	100	100	80 - 120	3/20/02
1,2-Dichloropropane		µg/L	100	101	101	80 - 120	3/20/02
Toluene		µg/L	100	98.0	98	80 - 120	3/20/02
Chlorobenzene		µg/L	100	102	102	80 - 120	3/20/02
Ethylbenzene		µg/L	100	104	104	80 - 120	3/20/02
Dibromofluoromethane		µg/L	50	49.9	100	80 - 120	3/20/02
Toluene-d8		µg/L	50	49.6	99	80 - 120	3/20/02
4-Bromofluorobenzene		µg/L	50	50.6	101	80 - 120	3/20/02

CCV (1)

QCBatch: QC19003

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	100	94.0	94	80 - 120	3/21/02
1,1-Dichloroethene		µg/L	100	98.0	98	80 - 120	3/21/02
Chloroform		µg/L	100	101	101	80 - 120	3/21/02
1,2-Dichloropropane		µg/L	100	105	105	80 - 120	3/21/02
Toluene		µg/L	100	100	100	80 - 120	3/21/02
Chlorobenzene		µg/L	100	102	102	80 - 120	3/21/02
Ethylbenzene		µg/L	100	105	105	80 - 120	3/21/02
Dibromofluoromethane		µg/L	50	51.0	102	80 - 120	3/21/02
Toluene-d8		µg/L	50	49.4	99	80 - 120	3/21/02
4-Bromofluorobenzene		µg/L	50	51.4	103	80 - 120	3/21/02

193023-21

Page ____ of ____

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 102031516

Company Name: Navajo
Phone #:
Address: (Street, City, Zip)
Fax #:
Contact Person: Darrell Moore
Invoice to: (If different from above)
Project #:
Project Name: Quarterly Offsite
Project Location: Artesia
Sampler Signature:

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
193023	KW13-2R	2	VOA	X				X				X		3/14	1425
24	29														1030
25	28														1115
26	NP-1														1350
27	MW-45														1410

MTBE 8021B/602
BTEX 8021B/602
TPH 418.1/TX1005
PAH 8270C
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7
TCLP Metals Ag As Ba Cd Cr Pb Se Hg
TCLP Volatiles
TCLP Semi Volatiles
TCLP Pesticides
RCI
GC/MS Vol. 8260B/624
GC/MS Semi. Vol. 8270C/625
PCB's 8082/608
Pesticides 8081A/608
BOD, TSS, pH
X X X X * See List Quarterly Offsite
Turn Around Time if different from standard
Hold

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Vicki Dewey	Date: 3-15-02	Time: 10:00

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

LAB USE ONLY

Intact Y / N
Headspace Y / N
Temp 1° C
Log-in Review AM

REMARKS:

P&F 3/22/02

☐ Check If Special Reporting Limits Are Needed

Carrier # Fed Ex 344-5809 1161
PP 5209

Summary Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: March 19, 2002

Order ID Number: A02031408

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
192764	KWB-12A	Water	3/13/02	8:40	3/14/02
192765	KWB-11A	Water	3/13/02	8:50	3/14/02
192766	KWB-7	Water	3/13/02	9:20	3/14/02
192767	KWB-3A	Water	3/13/02	10:00	3/14/02
192768	KWB-1A	Water	3/13/02	10:50	3/14/02
192769	KWB-1C	Water	3/13/02	10:40	3/14/02
192770	MW-18	Water	3/13/02	14:45	3/14/02
192771	NP-2	Water	3/13/02	11:15	3/14/02
192772	RA-3332	Water	3/13/02	10:05	3/14/02

0 This report consists of a total of 14 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 192764 - KWB-12A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L

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Sample 192764 continued ...

Param	Flag	Result	Units
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 192765 - KWB-11A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L

Continued on next page ...

Sample 192765 continued ...

Param	Flag	Result	Units
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		10.0	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L

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Sample 192765 continued ...

Param	Flag	Result	Units
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 192766 - KWB-7

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		22.5	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L

Continued on next page ...

Sample 192766 continued ...

Param	Flag	Result	Units
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 192767 - KWB-3A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L

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Sample 192767 continued ...

Param	Flag	Result	Units
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L

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Sample 192767 continued ...

Param	Flag	Result	Units
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 192768 - KWB-1A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		17.7	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L

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Sample 192768 continued ...

Param	Flag	Result	Units
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		1.39	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 192769 - KWB-1C

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		22.9	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L

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Sample 192769 continued ...

Param	Flag	Result	Units
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 192770 - MW-18

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L

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Sample 192770 continued ...

Param	Flag	Result	Units
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L

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Sample 192770 continued ...

Param	Flag	Result	Units
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 192771 - NP-2

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		1.49	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L

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Sample 192771 continued ...

Param	Flag	Result	Units
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 192772 - RA-3332

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L

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Sample 192772 continued ...

Param	Flag	Result	Units
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L

Continued on next page ...

Sample 192772 continued . . .

Param	Flag	Result	Units
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

TRACEANALYSIS, INC.

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Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: March 19, 2002

Order ID Number: A02031408

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
192764	KWB-12A	Water	3/13/02	8:40	3/14/02
192765	KWB-11A	Water	3/13/02	8:50	3/14/02
192766	KWB-7	Water	3/13/02	9:20	3/14/02
192767	KWB-3A	Water	3/13/02	10:00	3/14/02
192768	KWB-1A	Water	3/13/02	10:50	3/14/02
192769	KWB-1C	Water	3/13/02	10:40	3/14/02
192770	MW-18	Water	3/13/02	14:45	3/14/02
192771	NP-2	Water	3/13/02	11:15	3/14/02
192772	RA-3332	Water	3/13/02	10:05	3/14/02

0
These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.

This report consists of a total of 18 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 192764 - KWB-12A

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18877	Date Analyzed:	3/15/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18280	Date Prepared:	3/15/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 192764 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.3	µg/L	1	50	103	85 - 111
Toluene-d8		52.7	µg/L	1	50	105	93 - 107
4-Bromofluorobenzene		47.1	µg/L	1	50	94	86 - 106

Sample: 192765 - KWB-11A

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18877	Date Analyzed:	3/15/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18280	Date Prepared:	3/15/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		10.0	µg/L	1	1

Continued ...

... *Continued* Sample: 192765 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.5	µg/L	1	50	103	85 - 111
Toluene-d8		52.4	µg/L	1	50	105	93 - 107
4-Bromofluorobenzene		47.3	µg/L	1	50	95	86 - 106

Sample: 192766 - KWB-7

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18877	Date Analyzed:	3/15/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18280	Date Prepared:	3/15/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		22.5	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 192766 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.3	µg/L	1	50	103	85 - 111
Toluene-d8		52.5	µg/L	1	50	105	93 - 107
4-Bromofluorobenzene		47.4	µg/L	1	50	95	86 - 106

Sample: 192767 - KWB-3A

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18877	Date Analyzed:	3/15/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18280	Date Prepared:	3/15/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5

Continued ...

... *Continued* Sample: 192767 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5

Continued ...

... *Continued* Sample: 192767 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.0	µg/L	1	50	104	85 - 111
Toluene-d8		52.6	µg/L	1	50	105	93 - 107
4-Bromofluorobenzene		47.9	µg/L	1	50	96	86 - 106

Sample: 192768 - KWB-1A

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18877	Date Analyzed:	3/15/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18280	Date Prepared:	3/15/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		17.7	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 192768 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		1.39	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.1	µg/L	1	50	104	85 - 111
Toluene-d8		52.8	µg/L	1	50	106	93 - 107
4-Bromofluorobenzene		48.1	µg/L	1	50	96	86 - 106

Sample: 192769 - KWB-1C

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18877	Date Analyzed:	3/15/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18280	Date Prepared:	3/15/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 192769 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		22.9	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 192769 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.2	µg/L	1	50	102	85 - 111
Toluene-d8		52.0	µg/L	1	50	104	93 - 107
4-Bromofluorobenzene		48.1	µg/L	1	50	96	86 - 106

Sample: 192770 - MW-18

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18877	Date Analyzed:	3/15/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18280	Date Prepared:	3/15/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 192770 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.2	µg/L	1	50	102	85 - 111
Toluene-d8		52.2	µg/L	1	50	104	93 - 107
4-Bromofluorobenzene		47.9	µg/L	1	50	96	86 - 106

Sample: 192771 - NP-2

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18877	Date Analyzed:	3/15/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18280	Date Prepared:	3/15/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 192771 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		1.49	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 192771 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.5	µg/L	1	50	103	85 - 111
Toluene-d8		52.5	µg/L	1	50	105	93 - 107
4-Bromofluorobenzene		47.2	µg/L	1	50	94	86 - 106

Sample: 192772 - RA-3332

Analysis:	624	Analytical Method:	E 624	QC Batch:	QC18877	Date Analyzed:	3/15/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB18280	Date Prepared:	3/15/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 192772 Analysis: 624

Param	Flag	Result	Units	Dilution	RDL
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	1
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.6	µg/L	1	50	103	85 - 111
Toluene-d8		52.5	µg/L	1	50	105	93 - 107
4-Bromofluorobenzene		47.2	µg/L	1	50	94	86 - 106

Quality Control Report
Method Blank

Method Blank

QCBatch: QC18877

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1

Continued ...

... *Continued*

Param	Flag	Results	Units	Reporting Limit
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	1
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.2	µg/L	1	50	102	85 - 111
Toluene-d8		52.2	µg/L	1	50	104	93 - 107
4-Bromofluorobenzene		48.1	µg/L	1	50	96	86 - 106

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC18877

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	101	101	µg/L	1	100	<1.00	101	0	85 - 122	20
Benzene	105	104	µg/L	1	100	<1.00	105	1	95 - 108	20
Trichloroethene (TCE)	97.6	97.3	µg/L	1	100	<1.00	98	0	81 - 116	20
Toluene	105	104	µg/L	1	100	<1.00	105	1	87 - 110	20
Chlorobenzene	107	106	µg/L	1	100	<1.00	107	1	86 - 117	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	50.9	51.2	µg/L	1	50	102	102	85 - 111
Toluene-d8	50.9	51.3	µg/L	1	50	102	103	93 - 107
4-Bromofluorobenzene	48.5	49.3	µg/L	1	50	97	99	86 - 106

Quality Control Report

Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC18877

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	100	98.0	98	80 - 120	3/15/02
1,1-Dichloroethene		µg/L	100	99.0	99	80 - 120	3/15/02
Chloroform		µg/L	100	102	102	80 - 120	3/15/02
1,2-Dichloropropane		µg/L	100	103	103	80 - 120	3/15/02
Toluene		µg/L	100	100	100	80 - 120	3/15/02
Chlorobenzene		µg/L	100	100	100	80 - 120	3/15/02
Ethylbenzene		µg/L	100	102	102	80 - 120	3/15/02
Dibromofluoromethane		µg/L	50	51.6	103	80 - 120	3/15/02
Toluene-d8		µg/L	50	50.9	102	80 - 120	3/15/02
4-Bromofluorobenzene		µg/L	50	51.1	102	80 - 120	3/15/02

192764-1C

Page____of____

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # H02031408

Company Name: Navajo — Phone #:

Address: (Street, City, Zip) — Fax #:

Contact Person: Darrell Moore

Invoice to: (If different from above)

Project #: — Project Name: Quarterly Offsite

Project Location: Artesia — Sampler Signature:

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
192764	KWB-12A	2	VOA	X				X				X		3/13	0840
65	KWB-11A														0850
66	KWB-7														0900
67	KWB-3A														1000
68	KWB-1A														1050
69	KWB-1C														1040
70	MW-1B														1445
71	NP-2														1115
72	RA-3332	2	VOA	X				X				X		3/13	1005

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	X Quarterly Offsite See List	Turn Around Time if different from standard	Hold
															X		

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]	3/13/02	1615			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
			Vicki Crosley	3/14/02	1000

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

LAB USE ONLY

Intact Y / N

Headspace Y (N)

Temp 1.0 °

Log-in Review [initials]

REMARKS:

☐ Check If Special Reporting Limits Are Needed

Carrier # FedEx 3745-9927-255

Summary Report

Jeff Byrd
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: October 8, 2002

Order ID Number: A02092416

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
208659	KWB-7	Water	9/23/02	9:15	9/24/02
208660	KWB-3A	Water	9/23/02	13:50	9/24/02
208661	KWB-1A	Water	9/23/02	14:20	9/24/02
208662	KWB-1C	Water	9/23/02	14:10	9/24/02
208663	NP-2	Water	9/23/02	14:40	9/24/02
208664	NP-1	Water	9/23/02	14:50	9/24/02
208665	MW-29	Water	9/23/02	15:10	9/24/02
208666	A3353	Water	9/23/02	14:30	9/24/02

0 This report consists of a total of 13 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 208659 - KWB-7

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		32.1	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L

Continued on next page ...

Sample 208659 continued ...

Param	Flag	Result	Units
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		1.96	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 208660 - KWB-3A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L

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Sample 208660 continued ...

Param	Flag	Result	Units
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 208661 - KWB-1A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		18.5	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L

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Sample 208661 continued ...

Param	Flag	Result	Units
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 208662 - KWB-1C

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L

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Sample 208662 continued ...

Param	Flag	Result	Units
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		22.9	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L

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Sample 208662 continued ...

Param	Flag	Result	Units
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		1.08	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 208663 - NP-2

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		1.58	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L

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Sample 208663 continued ...

Param	Flag	Result	Units
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 208664 - NP-1

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L

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Sample 208664 continued ...

Param	Flag	Result	Units
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		56.3	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L

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Sample 208664 continued ...

Param	Flag	Result	Units
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 208665 - MW-29

Param	Flag	Result	Units
Bromochloromethane		<5.00	µg/L
Dichlorodifluoromethane		<5.00	µg/L
Chloromethane (methyl chloride)		<5.00	µg/L
Vinyl Chloride		<5.00	µg/L
Bromomethane (methyl bromide)		<25.0	µg/L
Chloroethane		<5.00	µg/L
Trichlorofluoromethane		<5.00	µg/L
Acetone		<50.0	µg/L
Iodomethane (methyl iodide)		<25.0	µg/L
Carbon Disulfide		<5.00	µg/L
Acrylonitrile		<5.00	µg/L
2-Butanone (MEK)		<25.0	µg/L
4-methyl-2-pentanone (MIBK)		<25.0	µg/L
2-hexanone		<25.0	µg/L
trans 1,4-Dichloro-2-butene		<50.0	µg/L
1,1-Dichloroethene		<5.00	µg/L
Methylene chloride		<25.0	µg/L
MTBE		<5.00	µg/L
trans-1,2-Dichloroethene		<5.00	µg/L
1,1-Dichloroethane		<5.00	µg/L
cis-1,2-Dichloroethene		<5.00	µg/L
2,2-Dichloropropane		<5.00	µg/L
1,2-Dichloroethane (EDC)		<5.00	µg/L
Chloroform		<5.00	µg/L
1,1,1-Trichloroethane		<5.00	µg/L
1,1-Dichloropropene		<5.00	µg/L
Benzene		<5.00	µg/L
Carbon Tetrachloride		<5.00	µg/L
1,2-Dichloropropane		<5.00	µg/L
Trichloroethene (TCE)		<5.00	µg/L
Dibromomethane (methylene bromide)		<5.00	µg/L

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Sample 208665 continued ...

Param	Flag	Result	Units
Bromodichloromethane		<5.00	µg/L
2-Chloroethyl vinyl ether		<25.0	µg/L
cis-1,3-Dichloropropene		<5.00	µg/L
trans-1,3-Dichloropropene		<5.00	µg/L
Toluene		<5.00	µg/L
1,1,2-Trichloroethane		<5.00	µg/L
1,3-Dichloropropane		<5.00	µg/L
Dibromochloromethane		<5.00	µg/L
1,2-Dibromoethane (EDB)		<5.00	µg/L
Tetrachloroethene (PCE)		<5.00	µg/L
Chlorobenzene		<5.00	µg/L
1,1,1,2-Tetrachloroethane		<5.00	µg/L
Ethylbenzene		<5.00	µg/L
m,p-Xylene		<5.00	µg/L
Bromoform		<5.00	µg/L
Styrene		<5.00	µg/L
o-Xylene		<5.00	µg/L
1,1,2,2-Tetrachloroethane		<5.00	µg/L
2-Chlorotoluene		<5.00	µg/L
1,2,3-Trichloropropane		<5.00	µg/L
Isopropylbenzene		6.45	µg/L
Bromobenzene		<5.00	µg/L
n-Propylbenzene		<5.00	µg/L
1,3,5-Trimethylbenzene		<5.00	µg/L
tert-Butylbenzene		<5.00	µg/L
1,2,4-Trimethylbenzene		<5.00	µg/L
1,4-Dichlorobenzene (para)		<5.00	µg/L
sec-Butylbenzene		<5.00	µg/L
1,3-Dichlorobenzene (meta)		<5.00	µg/L
p-Isopropyltoluene		<5.00	µg/L
4-Chlorotoluene		<5.00	µg/L
1,2-Dichlorobenzene (ortho)		<5.00	µg/L
n-Butylbenzene		<5.00	µg/L
1,2-Dibromo-3-chloropropane		<25.0	µg/L
1,2,3-Trichlorobenzene		<25.0	µg/L
1,2,4-Trichlorobenzene		<25.0	µg/L
Naphthalene		<25.0	µg/L
Hexachlorobutadiene		<25.0	µg/L

Sample: 208666 - A3353

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L

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Sample 208666 continued ...

Param	Flag	Result	Units
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		1.28	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		1.48	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L

Continued on next page ...

Sample 208666 continued ...

Param	Flag	Result	Units
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

TRACEANALYSIS, INC.

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Analytical and Quality Control Report

Jeff Byrd
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: October 8, 2002

Order ID Number: A02092416

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
208659	KWB-7	Water	9/23/02	9:15	9/24/02
208660	KWB-3A	Water	9/23/02	13:50	9/24/02
208661	KWB-1A	Water	9/23/02	14:20	9/24/02
208662	KWB-1C	Water	9/23/02	14:10	9/24/02
208663	NP-2	Water	9/23/02	14:40	9/24/02
208664	NP-1	Water	9/23/02	14:50	9/24/02
208665	MW-29	Water	9/23/02	15:10	9/24/02
208666	A3353	Water	9/23/02	14:30	9/24/02

These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 20 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 208659 - KWB-7

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23827	Date Analyzed:	9/26/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22273	Date Prepared:	9/26/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		32.1	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 208659 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		1.96	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		44.2	µg/L	1	50	88	77 - 122
Toluene-d8		48.4	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		48.1	µg/L	1	50	96	87 - 113

Sample: 208660 - KWB-3A

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23827	Date Analyzed:	9/26/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22273	Date Prepared:	9/26/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10

Continued ...

... *Continued* Sample: 208660 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5

Continued ...

... *Continued* Sample: 208660 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		43.6	µg/L	1	50	87	77 - 122
Toluene-d8		48.5	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		47.6	µg/L	1	50	95	87 - 113

Sample: 208661 - KWB-1A

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23827	Date Analyzed:	9/26/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22273	Date Prepared:	9/26/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		18.5	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 208661 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		44.1	µg/L	1	50	88	77 - 122
Toluene-d8		48.6	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		48.4	µg/L	1	50	97	87 - 113

Sample: 208662 - KWB-1C

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23827	Date Analyzed:	9/26/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22273	Date Prepared:	9/26/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 208662 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		22.9	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		1.08	µg/L	1	1

Continued ...

... *Continued* Sample: 208662 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		44.2	µg/L	1	50	88	77 - 122
Toluene-d8		48.7	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		47.6	µg/L	1	50	95	87 - 113

Sample: 208663 - NP-2

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23972	Date Analyzed:	10/3/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22398	Date Prepared:	10/3/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		1.58	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 208663 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		44.5	µg/L	1	50	89	77 - 122
Toluene-d8		47.9	µg/L	1	50	96	96 - 111
4-Bromofluorobenzene		46.6	µg/L	1	50	93	87 - 113

Sample: 208664 - NP-1

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23972	Date Analyzed:	10/3/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22398	Date Prepared:	10/3/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		56.3	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 208664 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		43.8	µg/L	1	50	88	77 - 122
Toluene-d8		49.2	µg/L	1	50	98	96 - 111
4-Bromofluorobenzene		45.6	µg/L	1	50	91	87 - 113

Sample: 208665 - MW-29

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23972	Date Analyzed:	10/3/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22398	Date Prepared:	10/3/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<5.00	µg/L	5	1
Dichlorodifluoromethane		<5.00	µg/L	5	1
Chloromethane (methyl chloride)		<5.00	µg/L	5	1
Vinyl Chloride		<5.00	µg/L	5	1
Bromomethane (methyl bromide)		<25.0	µg/L	5	5
Chloroethane		<5.00	µg/L	5	1
Trichlorofluoromethane		<5.00	µg/L	5	1
Acetone		<50.0	µg/L	5	10
Iodomethane (methyl iodide)		<25.0	µg/L	5	5
Carbon Disulfide		<5.00	µg/L	5	1
Acrylonitrile		<5.00	µg/L	5	1
2-Butanone (MEK)		<25.0	µg/L	5	5
4-methyl-2-pentanone (MIBK)		<25.0	µg/L	5	5
2-hexanone		<25.0	µg/L	5	5
trans 1,4-Dichloro-2-butene		<50.0	µg/L	5	10
1,1-Dichloroethene		<5.00	µg/L	5	1
Methylene chloride		<25.0	µg/L	5	5
MTBE		<5.00	µg/L	5	1
trans-1,2-Dichloroethene		<5.00	µg/L	5	1
1,1-Dichloroethane		<5.00	µg/L	5	1
cis-1,2-Dichloroethene		<5.00	µg/L	5	1
2,2-Dichloropropane		<5.00	µg/L	5	1

Continued ...

... *Continued* Sample: 208665 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,2-Dichloroethane (EDC)		<5.00	µg/L	5	1
Chloroform		<5.00	µg/L	5	1
1,1,1-Trichloroethane		<5.00	µg/L	5	1
1,1-Dichloropropene		<5.00	µg/L	5	1
Benzene		<5.00	µg/L	5	1
Carbon Tetrachloride		<5.00	µg/L	5	1
1,2-Dichloropropane		<5.00	µg/L	5	1
Trichloroethene (TCE)		<5.00	µg/L	5	1
Dibromomethane (methylene bromide)		<5.00	µg/L	5	1
Bromodichloromethane		<5.00	µg/L	5	1
2-Chloroethyl vinyl ether		<25.0	µg/L	5	5
cis-1,3-Dichloropropene		<5.00	µg/L	5	1
trans-1,3-Dichloropropene		<5.00	µg/L	5	1
Toluene		<5.00	µg/L	5	1
1,1,2-Trichloroethane		<5.00	µg/L	5	1
1,3-Dichloropropane		<5.00	µg/L	5	1
Dibromochloromethane		<5.00	µg/L	5	1
1,2-Dibromoethane (EDB)		<5.00	µg/L	5	1
Tetrachloroethene (PCE)		<5.00	µg/L	5	1
Chlorobenzene		<5.00	µg/L	5	1
1,1,1,2-Tetrachloroethane		<5.00	µg/L	5	1
Ethylbenzene		<5.00	µg/L	5	1
m,p-Xylene		<5.00	µg/L	5	1
Bromoform		<5.00	µg/L	5	1
Styrene		<5.00	µg/L	5	1
o-Xylene		<5.00	µg/L	5	1
1,1,2,2-Tetrachloroethane		<5.00	µg/L	5	1
2-Chlorotoluene		<5.00	µg/L	5	1
1,2,3-Trichloropropane		<5.00	µg/L	5	1
Isopropylbenzene		6.45	µg/L	5	1
Bromobenzene		<5.00	µg/L	5	1
n-Propylbenzene		<5.00	µg/L	5	1
1,3,5-Trimethylbenzene		<5.00	µg/L	5	1
tert-Butylbenzene		<5.00	µg/L	5	1
1,2,4-Trimethylbenzene		<5.00	µg/L	5	1
1,4-Dichlorobenzene (para)		<5.00	µg/L	5	1
sec-Butylbenzene		<5.00	µg/L	5	1
1,3-Dichlorobenzene (meta)		<5.00	µg/L	5	1
p-Isopropyltoluene		<5.00	µg/L	5	1
4-Chlorotoluene		<5.00	µg/L	5	1
1,2-Dichlorobenzene (ortho)		<5.00	µg/L	5	1
n-Butylbenzene		<5.00	µg/L	5	1
1,2-Dibromo-3-chloropropane		<25.0	µg/L	5	5
1,2,3-Trichlorobenzene		<25.0	µg/L	5	5
1,2,4-Trichlorobenzene		<25.0	µg/L	5	5
Naphthalene		<25.0	µg/L	5	5
Hexachlorobutadiene		<25.0	µg/L	5	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		54.2	µg/L	1	50	108	77 - 122
Toluene-d8		47.9	µg/L	1	50	95	96 - 111

Continued ...

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene		49.4	µg/L	1	50	98	87 - 113

Sample: 208666 - A3353

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23972	Date Analyzed:	10/3/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22398	Date Prepared:	10/3/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		1.28	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 208666 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		1.48	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		42.8	µg/L	1	50	86	77 - 122
Toluene-d8		49.6	µg/L	1	50	99	96 - 111
4-Bromofluorobenzene		46.1	µg/L	1	50	92	87 - 113

Quality Control Report
Method Blank

Method Blank

QCBatch: QC23827

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1

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Param	Flag	Results	Units	Reporting Limit
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		44.3	µg/L	1	50	89	77 - 122
Toluene-d8		49.1	µg/L	1	50	98	96 - 111
4-Bromofluorobenzene		49.0	µg/L	1	50	98	87 - 113

Method Blank

QCBatch: QC23972

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10

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Param	Flag	Results	Units	Reporting Limit
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5

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Param	Flag	Results	Units	Reporting Limit
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.1	µg/L	1	50	92	77 - 122
Toluene-d8		47.9	µg/L	1	50	96	96 - 111
4-Bromofluorobenzene		48.3	µg/L	1	50	97	87 - 113

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC23827

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	87	87	µg/L	1	100	<1.00	87	0	84 - 124	20
Benzene	93	93	µg/L	1	100	<1.00	93	0	87 - 112	20
Trichloroethene (TCE)	89	90	µg/L	1	100	<1.00	89	1	81 - 105	20
Toluene	91	91	µg/L	1	100	<1.00	91	0	90 - 108	20
Chlorobenzene	99	97	µg/L	1	100	<1.00	99	2	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	44.0	43.6	µg/L	1	50	88	87	77 - 122
Toluene-d8	48.8	48.7	µg/L	1	50	97	97	96 - 111
4-Bromofluorobenzene	49.0	48.7	µg/L	1	50	98	97	87 - 113

Laboratory Control Spikes

QCBatch: QC23972

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	96.2	95.4	µg/L	1	100	<1.00	96	1	84 - 124	20
Benzene	106	106	µg/L	1	100	<1.00	106	0	87 - 112	20
Trichloroethene (TCE)	84.6	84.5	µg/L	1	100	<1.00	85	0	81 - 105	20
Toluene	107	106	µg/L	1	100	<1.00	107	1	90 - 108	20
Chlorobenzene	102	103	µg/L	1	100	<1.00	102	1	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	52.1	52.9	µg/L	1	50	104	106	77 - 122
Toluene-d8	48.1	48.2	µg/L	1	50	96	96	96 - 111

Continued ...

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
4-Bromofluorobenzene	49.7	49.8	µg/L	1	50	99	100	87 - 113

Quality Control Report
Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC23827

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	88.4	87.9	µg/L	1	100	<1.00	88	0	85 - 122	20
Benzene	94.2	93.6	µg/L	1	100		94	1	80 - 120	20
Trichloroethene (TCE)	89.6	88.9	µg/L	1	100	<1.00	90	1	80 - 120	20
Toluene	91.1	90.6	µg/L	1	100	<1.00	91	0	87 - 110	20
Chlorobenzene	97.8	97.2	µg/L	1	100	<1.00	98	1	86 - 117	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
Dibromofluoromethane	42.7	42.8	µg/L	1	50	85	86	77 - 122
Toluene-d8	48.0	48.0	µg/L	1	50	96	96	96 - 111
4-Bromofluorobenzene	46.4	46.4	µg/L	1	50	93	93	87 - 113

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC23827

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	41.0	82	80 - 120	9/26/02
1,1-Dichloroethene		µg/L	50	45.0	90	80 - 120	9/26/02
Chloroform		µg/L	50	46.0	92	80 - 120	9/26/02
1,2-Dichloropropane		µg/L	50	48.0	96	80 - 120	9/26/02
Toluene		µg/L	50	49.0	98	80 - 120	9/26/02
Chlorobenzene		µg/L	50	53.0	106	80 - 120	9/26/02
Ethylbenzene		µg/L	50	52.0	104	80 - 120	9/26/02
Dibromofluoromethane		µg/L	50	42.6	85	80 - 120	9/26/02
Toluene-d8		µg/L	50	49.1	98	80 - 120	9/26/02
4-Bromofluorobenzene		µg/L	50	49.2	98	80 - 120	9/26/02

CCV (1)

QCBatch: QC23972

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	47.0	94	80 - 120	10/3/02
1,1-Dichloroethene		µg/L	50	49.0	98	80 - 120	10/3/02
Chloroform		µg/L	50	49.0	98	80 - 120	10/3/02
1,2-Dichloropropane		µg/L	50	51.0	102	80 - 120	10/3/02
Toluene		µg/L	50	50.0	100	80 - 120	10/3/02
Chlorobenzene		µg/L	50	50.0	100	80 - 120	10/3/02
Ethylbenzene		µg/L	50	52.0	104	80 - 120	10/3/02
Dibromofluoromethane		µg/L	50	45.6	91	80 - 120	10/3/02
Toluene-d8		µg/L	50	47.4	95	80 - 120	10/3/02
4-Bromofluorobenzene		µg/L	50	49.0	98	80 - 120	10/3/02

208659-66

Page____of____

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon,Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A0209241 6

Company Name: Navajo — Phone #:

Address: (Street, City, Zip) — Fax #:

Contact Person: Jeff Byrd

Invoice to: (If different from above) Same

Project #: — Project Name: Quarterly offsite

Project Location: Artesia — Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
208659	KWB-7	2	VOA	X				X				X		9/23	915
60	KWB-3a														1350
61	KWB-1a														1420
62	KWB-1c														1410
63	NP-2														1440
64	NP-1														1450
65	MW-29														1510
66	A3353	2													1430

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	See Offsite List	Turn Around Time if different from standard	Hold
															X		
															X		
															X		
															X		
															X		
															X		
															X		
															X		

Relinquished by: — Date: 9/23 — Time: 1615 — Received by: — Date: — Time:

Relinquished by: — Date: — Time: — Received by: — Date: — Time:

Relinquished by: — Date: — Time: — Received at Laboratory by: Vicki Dewey — Date: 9-24-02 — Time: 10:00

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp -1° C

Log-in Review MM

REMARKS: PAF 10/8/02

☐ Check If Special Reporting Limits Are Needed

Carrier # FedEx 7906 0291 3641

Summary Report

Jeff Byrd
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: October 8, 2002

Order ID Number: A02092716

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
209008	KWB-12A	Water	9/25/02	10:10	9/27/02
209009	KWB-11A	Water	9/25/02	10:30	9/27/02
209010	MW-18	Water	9/25/02	8:45	9/27/02
209011	MW-28	Water	9/25/02	9:00	9/27/02
209012	MW-45	Water	9/25/02	9:20	9/27/02
209013	RA-3156	Water	9/25/02	9:45	9/27/02

0 This report consists of a total of 10 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 209008 - KWB-12A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L

Continued on next page ...

Sample 209008 continued ...

Param	Flag	Result	Units
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		6.35	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		2.31	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 209009 - KWB-11A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		19.8	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		4.64	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		2.17	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L

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Sample 209009 continued ...

Param	Flag	Result	Units
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		1.16	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 209010 - MW-18

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L

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Sample 209010 continued ...

Param	Flag	Result	Units
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 209011 - MW-28

Param	Flag	Result	Units
Bromochloromethane		<50.0	µg/L
Dichlorodifluoromethane		<50.0	µg/L
Chloromethane (methyl chloride)		<50.0	µg/L

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Sample 209011 continued ...

Param	Flag	Result	Units
Vinyl Chloride		<50.0	µg/L
Bromomethane (methyl bromide)		<250	µg/L
Chloroethane		<50.0	µg/L
Trichlorofluoromethane		<50.0	µg/L
Acetone		<500	µg/L
Iodomethane (methyl iodide)		<250	µg/L
Carbon Disulfide		<50.0	µg/L
Acrylonitrile		<50.0	µg/L
2-Butanone (MEK)		<250	µg/L
4-methyl-2-pentanone (MIBK)		<250	µg/L
2-hexanone		<250	µg/L
trans 1,4-Dichloro-2-butene		<500	µg/L
1,1-Dichloroethene		<50.0	µg/L
Methylene chloride		<250	µg/L
MTBE		4840	µg/L
trans-1,2-Dichloroethene		<50.0	µg/L
1,1-Dichloroethane		<50.0	µg/L
cis-1,2-Dichloroethene		<50.0	µg/L
2,2-Dichloropropane		<50.0	µg/L
1,2-Dichloroethane (EDC)		<50.0	µg/L
Chloroform		<50.0	µg/L
1,1,1-Trichloroethane		<50.0	µg/L
1,1-Dichloropropene		<50.0	µg/L
Benzene		982	µg/L
Carbon Tetrachloride		<50.0	µg/L
1,2-Dichloropropane		<50.0	µg/L
Trichloroethene (TCE)		<50.0	µg/L
Dibromomethane (methylene bromide)		<50.0	µg/L
Bromodichloromethane		<50.0	µg/L
2-Chloroethyl vinyl ether		<250	µg/L
cis-1,3-Dichloropropene		<50.0	µg/L
trans-1,3-Dichloropropene		<50.0	µg/L
Toluene		<50.0	µg/L
1,1,2-Trichloroethane		<50.0	µg/L
1,3-Dichloropropane		<50.0	µg/L
Dibromochloromethane		<50.0	µg/L
1,2-Dibromoethane (EDB)		<50.0	µg/L
Tetrachloroethene (PCE)		<50.0	µg/L
Chlorobenzene		<50.0	µg/L
1,1,1,2-Tetrachloroethane		<50.0	µg/L
Ethylbenzene		<50.0	µg/L
m,p-Xylene		238	µg/L
Bromoform		<50.0	µg/L
Styrene		<50.0	µg/L
o-Xylene		<50.0	µg/L
1,1,2,2-Tetrachloroethane		<50.0	µg/L
2-Chlorotoluene		<50.0	µg/L
1,2,3-Trichloropropane		<50.0	µg/L
Isopropylbenzene		66.3	µg/L
Bromobenzene		<50.0	µg/L

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Sample 209011 continued ...

Param	Flag	Result	Units
n-Propylbenzene		94.2	µg/L
1,3,5-Trimethylbenzene		<50.0	µg/L
tert-Butylbenzene		<50.0	µg/L
1,2,4-Trimethylbenzene		202	µg/L
1,4-Dichlorobenzene (para)		<50.0	µg/L
sec-Butylbenzene		<50.0	µg/L
1,3-Dichlorobenzene (meta)		<50.0	µg/L
p-Isopropyltoluene		<50.0	µg/L
4-Chlorotoluene		<50.0	µg/L
1,2-Dichlorobenzene (ortho)		<50.0	µg/L
n-Butylbenzene		<50.0	µg/L
1,2-Dibromo-3-chloropropane		<250	µg/L
1,2,3-Trichlorobenzene		<250	µg/L
1,2,4-Trichlorobenzene		<250	µg/L
Naphthalene		<250	µg/L
Hexachlorobutadiene		<250	µg/L

Sample: 209012 - MW-45

Param	Flag	Result	Units
Bromochloromethane		<5.00	µg/L
Dichlorodifluoromethane		<5.00	µg/L
Chloromethane (methyl chloride)		<5.00	µg/L
Vinyl Chloride		<5.00	µg/L
Bromomethane (methyl bromide)		<25.0	µg/L
Chloroethane		<5.00	µg/L
Trichlorofluoromethane		<5.00	µg/L
Acetone		<50.0	µg/L
Iodomethane (methyl iodide)		<25.0	µg/L
Carbon Disulfide		<5.00	µg/L
Acrylonitrile		<5.00	µg/L
2-Butanone (MEK)		<25.0	µg/L
4-methyl-2-pentanone (MIBK)		<25.0	µg/L
2-hexanone		<25.0	µg/L
trans 1,4-Dichloro-2-butene		<50.0	µg/L
1,1-Dichloroethene		<5.00	µg/L
Methylene chloride		<25.0	µg/L
MTBE		6.04	µg/L
trans-1,2-Dichloroethene		<5.00	µg/L
1,1-Dichloroethane		<5.00	µg/L
cis-1,2-Dichloroethene		<5.00	µg/L
2,2-Dichloropropane		<5.00	µg/L
1,2-Dichloroethane (EDC)		<5.00	µg/L
Chloroform		<5.00	µg/L
1,1,1-Trichloroethane		<5.00	µg/L
1,1-Dichloropropene		<5.00	µg/L
Benzene		11.8	µg/L
Carbon Tetrachloride		<5.00	µg/L
1,2-Dichloropropane		<5.00	µg/L

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Sample 209012 continued ...

Param	Flag	Result	Units
Trichloroethene (TCE)		<5.00	µg/L
Dibromomethane (methylene bromide)		<5.00	µg/L
Bromodichloromethane		<5.00	µg/L
2-Chloroethyl vinyl ether		<25.0	µg/L
cis-1,3-Dichloropropene		<5.00	µg/L
trans-1,3-Dichloropropene		<5.00	µg/L
Toluene		<5.00	µg/L
1,1,2-Trichloroethane		<5.00	µg/L
1,3-Dichloropropane		<5.00	µg/L
Dibromochloromethane		<5.00	µg/L
1,2-Dibromoethane (EDB)		<5.00	µg/L
Tetrachloroethene (PCE)		<5.00	µg/L
Chlorobenzene		<5.00	µg/L
1,1,1,2-Tetrachloroethane		<5.00	µg/L
Ethylbenzene		<5.00	µg/L
m,p-Xylene		5.84	µg/L
Bromoform		<5.00	µg/L
Styrene		<5.00	µg/L
o-Xylene		11.2	µg/L
1,1,2,2-Tetrachloroethane		<5.00	µg/L
2-Chlorotoluene		<5.00	µg/L
1,2,3-Trichloropropane		<5.00	µg/L
Isopropylbenzene		6.16	µg/L
Bromobenzene		<5.00	µg/L
n-Propylbenzene		<5.00	µg/L
1,3,5-Trimethylbenzene		<5.00	µg/L
tert-Butylbenzene		<5.00	µg/L
1,2,4-Trimethylbenzene		<5.00	µg/L
1,4-Dichlorobenzene (para)		<5.00	µg/L
sec-Butylbenzene		<5.00	µg/L
1,3-Dichlorobenzene (meta)		<5.00	µg/L
p-Isopropyltoluene		<5.00	µg/L
4-Chlorotoluene		<5.00	µg/L
1,2-Dichlorobenzene (ortho)		<5.00	µg/L
n-Butylbenzene		<5.00	µg/L
1,2-Dibromo-3-chloropropane		<25.0	µg/L
1,2,3-Trichlorobenzene		<25.0	µg/L
1,2,4-Trichlorobenzene		<25.0	µg/L
Naphthalene		<25.0	µg/L
Hexachlorobutadiene		<25.0	µg/L

Sample: 209013 - RA-3156

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L

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Sample 209013 continued ...

Param	Flag	Result	Units
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		1.45	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L

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Sample 209013 continued ...

Param	Flag	Result	Units
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

TRACEANALYSIS, INC.

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Analytical and Quality Control Report

Jeff Byrd
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: October 8, 2002

Order ID Number: A02092716

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
209008	KWB-12A	Water	9/25/02	10:10	9/27/02
209009	KWB-11A	Water	9/25/02	10:30	9/27/02
209010	MW-18	Water	9/25/02	8:45	9/27/02
209011	MW-28	Water	9/25/02	9:00	9/27/02
209012	MW-45	Water	9/25/02	9:20	9/27/02
209013	RA-3156	Water	9/25/02	9:45	9/27/02

These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 14 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.

Michael T. Arnold
Dr. Blair Leftwich, Director

Analytical Report

Sample: 209008 - KWB-12A

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23972	Date Analyzed:	10/3/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22398	Date Prepared:	10/3/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		6.35	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		2.31	µg/L	1	1
Bromoform		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 209008 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		43.7	µg/L	1	50	87	77 - 122
Toluene-d8		49.6	µg/L	1	50	99	96 - 111
4-Bromofluorobenzene		44.5	µg/L	1	50	89	87 - 113

Sample: 209009 - KWB-11A

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23972	Date Analyzed:	10/3/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22398	Date Prepared:	10/3/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10

Continued ...

... *Continued* Sample: 209009 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		19.8	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		4.64	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		2.17	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		1.16	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5

Continued ...

... Continued Sample: 209009 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.5	µg/L	1	50	93	77 - 122
Toluene-d8		49.2	µg/L	1	50	98	96 - 111
4-Bromofluorobenzene		43.3	µg/L	1	50	86	87 - 113

Sample: 209010 - MW-18

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23972	Date Analyzed:	10/3/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22398	Date Prepared:	10/3/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 209010 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.5	µg/L	1	50	95	77 - 122
Toluene-d8		48.2	µg/L	1	50	96	96 - 111
4-Bromofluorobenzene		43.4	µg/L	1	50	87	87 - 113

Sample: 209011 - MW-28

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23972	Date Analyzed:	10/3/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22398	Date Prepared:	10/3/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<50.0	µg/L	50	1
Dichlorodifluoromethane		<50.0	µg/L	50	1
Chloromethane (methyl chloride)		<50.0	µg/L	50	1
Vinyl Chloride		<50.0	µg/L	50	1
Bromomethane (methyl bromide)		<250	µg/L	50	5
Chloroethane		<50.0	µg/L	50	1

Continued ...

... *Continued* Sample: 209011 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Trichlorofluoromethane		<50.0	µg/L	50	1
Acetone		<500	µg/L	50	10
Iodomethane (methyl iodide)		<250	µg/L	50	5
Carbon Disulfide		<50.0	µg/L	50	1
Acrylonitrile		<50.0	µg/L	50	1
2-Butanone (MEK)		<250	µg/L	50	5
4-methyl-2-pentanone (MIBK)		<250	µg/L	50	5
2-hexanone		<250	µg/L	50	5
trans 1,4-Dichloro-2-butene		<500	µg/L	50	10
1,1-Dichloroethene		<50.0	µg/L	50	1
Methylene chloride		<250	µg/L	50	5
MTBE		4840	µg/L	50	1
trans-1,2-Dichloroethene		<50.0	µg/L	50	1
1,1-Dichloroethane		<50.0	µg/L	50	1
cis-1,2-Dichloroethene		<50.0	µg/L	50	1
2,2-Dichloropropane		<50.0	µg/L	50	1
1,2-Dichloroethane (EDC)		<50.0	µg/L	50	1
Chloroform		<50.0	µg/L	50	1
1,1,1-Trichloroethane		<50.0	µg/L	50	1
1,1-Dichloropropene		<50.0	µg/L	50	1
Benzene		982	µg/L	50	1
Carbon Tetrachloride		<50.0	µg/L	50	1
1,2-Dichloropropane		<50.0	µg/L	50	1
Trichloroethene (TCE)		<50.0	µg/L	50	1
Dibromomethane (methylene bromide)		<50.0	µg/L	50	1
Bromodichloromethane		<50.0	µg/L	50	1
2-Chloroethyl vinyl ether		<250	µg/L	50	5
cis-1,3-Dichloropropene		<50.0	µg/L	50	1
trans-1,3-Dichloropropene		<50.0	µg/L	50	1
Toluene		<50.0	µg/L	50	1
1,1,2-Trichloroethane		<50.0	µg/L	50	1
1,3-Dichloropropane		<50.0	µg/L	50	1
Dibromochloromethane		<50.0	µg/L	50	1
1,2-Dibromoethane (EDB)		<50.0	µg/L	50	1
Tetrachloroethene (PCE)		<50.0	µg/L	50	1
Chlorobenzene		<50.0	µg/L	50	1
1,1,1,2-Tetrachloroethane		<50.0	µg/L	50	1
Ethylbenzene		<50.0	µg/L	50	1
m,p-Xylene		238	µg/L	50	1
Bromoform		<50.0	µg/L	50	1
Styrene		<50.0	µg/L	50	1
o-Xylene		<50.0	µg/L	50	1
1,1,2,2-Tetrachloroethane		<50.0	µg/L	50	1
2-Chlorotoluene		<50.0	µg/L	50	1
1,2,3-Trichloropropane		<50.0	µg/L	50	1
Isopropylbenzene		66.3	µg/L	50	1
Bromobenzene		<50.0	µg/L	50	1
n-Propylbenzene		94.2	µg/L	50	1
1,3,5-Trimethylbenzene		<50.0	µg/L	50	1
tert-Butylbenzene		<50.0	µg/L	50	1
1,2,4-Trimethylbenzene		202	µg/L	50	1
1,4-Dichlorobenzene (para)		<50.0	µg/L	50	1
sec-Butylbenzene		<50.0	µg/L	50	1

Continued ...

... *Continued* Sample: 209011 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichlorobenzene (meta)		<50.0	µg/L	50	1
p-Isopropyltoluene		<50.0	µg/L	50	1
4-Chlorotoluene		<50.0	µg/L	50	1
1,2-Dichlorobenzene (ortho)		<50.0	µg/L	50	1
n-Butylbenzene		<50.0	µg/L	50	1
1,2-Dibromo-3-chloropropane		<250	µg/L	50	5
1,2,3-Trichlorobenzene		<250	µg/L	50	5
1,2,4-Trichlorobenzene		<250	µg/L	50	5
Naphthalene		<250	µg/L	50	5
Hexachlorobutadiene		<250	µg/L	50	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		54.8	µg/L	1	50	109	77 - 122
Toluene-d8		48.4	µg/L	1	50	96	96 - 111
4-Bromofluorobenzene		50.0	µg/L	1	50	100	87 - 113

Sample: 209012 - MW-45

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23972	Date Analyzed:	10/3/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22398	Date Prepared:	10/3/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<5.00	µg/L	5	1
Dichlorodifluoromethane		<5.00	µg/L	5	1
Chloromethane (methyl chloride)		<5.00	µg/L	5	1
Vinyl Chloride		<5.00	µg/L	5	1
Bromomethane (methyl bromide)		<25.0	µg/L	5	5
Chloroethane		<5.00	µg/L	5	1
Trichlorofluoromethane		<5.00	µg/L	5	1
Acetone		<50.0	µg/L	5	10
Iodomethane (methyl iodide)		<25.0	µg/L	5	5
Carbon Disulfide		<5.00	µg/L	5	1
Acrylonitrile		<5.00	µg/L	5	1
2-Butanone (MEK)		<25.0	µg/L	5	5
4-methyl-2-pentanone (MIBK)		<25.0	µg/L	5	5
2-hexanone		<25.0	µg/L	5	5
trans 1,4-Dichloro-2-butene		<50.0	µg/L	5	10
1,1-Dichloroethene		<5.00	µg/L	5	1
Methylene chloride		<25.0	µg/L	5	5
MTBE		6.04	µg/L	5	1
trans-1,2-Dichloroethene		<5.00	µg/L	5	1
1,1-Dichloroethane		<5.00	µg/L	5	1
cis-1,2-Dichloroethene		<5.00	µg/L	5	1
2,2-Dichloropropane		<5.00	µg/L	5	1
1,2-Dichloroethane (EDC)		<5.00	µg/L	5	1
Chloroform		<5.00	µg/L	5	1
1,1,1-Trichloroethane		<5.00	µg/L	5	1
1,1-Dichloropropene		<5.00	µg/L	5	1
Benzene		11.8	µg/L	5	1
Carbon Tetrachloride		<5.00	µg/L	5	1

Continued ...

... *Continued* Sample: 209012 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,2-Dichloropropane		<5.00	µg/L	5	1
Trichloroethene (TCE)		<5.00	µg/L	5	1
Dibromomethane (methylene bromide)		<5.00	µg/L	5	1
Bromodichloromethane		<5.00	µg/L	5	1
2-Chloroethyl vinyl ether		<25.0	µg/L	5	5
cis-1,3-Dichloropropene		<5.00	µg/L	5	1
trans-1,3-Dichloropropene		<5.00	µg/L	5	1
Toluene		<5.00	µg/L	5	1
1,1,2-Trichloroethane		<5.00	µg/L	5	1
1,3-Dichloropropane		<5.00	µg/L	5	1
Dibromochloromethane		<5.00	µg/L	5	1
1,2-Dibromoethane (EDB)		<5.00	µg/L	5	1
Tetrachloroethene (PCE)		<5.00	µg/L	5	1
Chlorobenzene		<5.00	µg/L	5	1
1,1,1,2-Tetrachloroethane		<5.00	µg/L	5	1
Ethylbenzene		<5.00	µg/L	5	1
m,p-Xylene		5.84	µg/L	5	1
Bromoform		<5.00	µg/L	5	1
Styrene		<5.00	µg/L	5	1
o-Xylene		11.2	µg/L	5	1
1,1,2,2-Tetrachloroethane		<5.00	µg/L	5	1
2-Chlorotoluene		<5.00	µg/L	5	1
1,2,3-Trichloropropane		<5.00	µg/L	5	1
Isopropylbenzene		6.16	µg/L	5	1
Bromobenzene		<5.00	µg/L	5	1
n-Propylbenzene		<5.00	µg/L	5	1
1,3,5-Trimethylbenzene		<5.00	µg/L	5	1
tert-Butylbenzene		<5.00	µg/L	5	1
1,2,4-Trimethylbenzene		<5.00	µg/L	5	1
1,4-Dichlorobenzene (para)		<5.00	µg/L	5	1
sec-Butylbenzene		<5.00	µg/L	5	1
1,3-Dichlorobenzene (meta)		<5.00	µg/L	5	1
p-Isopropyltoluene		<5.00	µg/L	5	1
4-Chlorotoluene		<5.00	µg/L	5	1
1,2-Dichlorobenzene (ortho)		<5.00	µg/L	5	1
n-Butylbenzene		<5.00	µg/L	5	1
1,2-Dibromo-3-chloropropane		<25.0	µg/L	5	5
1,2,3-Trichlorobenzene		<25.0	µg/L	5	5
1,2,4-Trichlorobenzene		<25.0	µg/L	5	5
Naphthalene		<25.0	µg/L	5	5
Hexachlorobutadiene		<25.0	µg/L	5	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		54.7	µg/L	1	50	109	77 - 122
Toluene-d8		48.8	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		50.2	µg/L	1	50	100	87 - 113

Sample: 209013 - RA-3156

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC23972	Date Analyzed:	10/3/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22398	Date Prepared:	10/3/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		1.45	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 209013 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.4	µg/L	1	50	95	77 - 122
Toluene-d8		48.4	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		45.5	µg/L	1	50	91	87 - 113

Quality Control Report
Method Blank

Method Blank

QCBatch: QC23972

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1

Continued ...

... Continued

Param	Flag	Results	Units	Reporting Limit
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.1	µg/L	1	50	92	77 - 122
Toluene-d8		47.9	µg/L	1	50	96	96 - 111
4-Bromofluorobenzene		48.3	µg/L	1	50	97	87 - 113

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC23972

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	96.2	95.4	µg/L	1	100	<1.00	96	1	84 - 124	20
Benzene	106	106	µg/L	1	100	<1.00	106	0	87 - 112	20
Trichloroethene (TCE)	84.6	84.5	µg/L	1	100	<1.00	85	0	81 - 105	20
Toluene	107	106	µg/L	1	100	<1.00	107	1	90 - 108	20
Chlorobenzene	102	103	µg/L	1	100	<1.00	102	1	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	52.1	52.9	µg/L	1	50	104	106	77 - 122

Continued ...

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Toluene-d8	48.1	48.2	µg/L	1	50	96	96	96 - 111
4-Bromofluorobenzene	49.7	49.8	µg/L	1	50	99	100	87 - 113

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC23972

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	47.0	94	80 - 120	10/3/02
1,1-Dichloroethene		µg/L	50	49.0	98	80 - 120	10/3/02
Chloroform		µg/L	50	49.0	98	80 - 120	10/3/02
1,2-Dichloropropane		µg/L	50	51.0	102	80 - 120	10/3/02
Toluene		µg/L	50	50.0	100	80 - 120	10/3/02
Chlorobenzene		µg/L	50	50.0	100	80 - 120	10/3/02
Ethylbenzene		µg/L	50	52.0	104	80 - 120	10/3/02
Dibromofluoromethane		µg/L	50	45.6	91	80 - 120	10/3/02
Toluene-d8		µg/L	50	47.4	95	80 - 120	10/3/02
4-Bromofluorobenzene		µg/L	50	49.0	98	80 - 120	10/3/02

209008-13

Page ____ of ____

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A0209716

Company Name: Navajo
Phone #:
Address: (Street, City, Zip)
Fax #:
Contact Person: Jeff Byrd
Invoice to: (If different from above)
Project #:
Project Name: Quarterly Offsite
Project Location: Artesia
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
209008	KWB-12a	2	VOA	X				X				X		9/25	1010
09	KWB-11a														1030
10	MW-18														0845
11	MW-28														0900
12	MW-45														0920
13	RA 3156														0945

MTBE 8021B/602
BTEX 8021B/602
TPH 418.1/TX1005
PAH 8270C
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7
TCLP Metals Ag As Ba Cd Cr Pb Se Hg
TCLP Volatiles
TCLP Semi Volatiles
TCLP Pesticides
RCI
GC/MS Vol. 8260B/624
GC/MS Semi. Vol. 8270C/625
PCB's 8082/608
Pesticides 8081A/608
BOD, TSS, pH
624 See List
Turn Around Time if different from standard
Hold

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]	9/26/02	1615			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: [signature]	9-27-02	10:20

LAB USE ONLY
Intact Y / N
Headspace Y / N
Temp 4° C
Log-in Review MF

REMARKS:

☐ Check If Special Reporting Limits Are Needed

PB&P

Carrier # FedEx 7900 8396 3919

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

Summary Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: July 24, 2002

Order ID Number: A02071212

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
201412	KWB-1A	Water	7/10/02	8:15	7/12/02
201413	KWB-1C	Water	7/10/02	8:25	7/12/02
201414	MW-18	Water	7/10/02	9:00	7/12/02
201415	MP-2	Water	7/10/02	10:00	7/12/02
201416	MP-1	Water	7/10/02	10:10	7/12/02
201417	KWB-10	Water	7/10/02	11:10	7/12/02

0 This report consists of a total of 10 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 201412 - KWB-1A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		14.6	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L

Continued on next page ...

Sample 201412 continued ...

Param	Flag	Result	Units
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201413 - KWB-1C

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		12.8	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L

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Sample 201413 continued ...

Param	Flag	Result	Units
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201414 - MW-18

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L

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Sample 201414 continued ...

Param	Flag	Result	Units
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201415 - MP-2

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L

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Sample 201415 continued ...

Param	Flag	Result	Units
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		1.29	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L

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Sample 201415 continued ...

Param	Flag	Result	Units
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201416 - MP-1

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		25.4	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L

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Sample 201416 continued ...

Param	Flag	Result	Units
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 201417 - KWB-10

Param	Flag	Result	Units
Bromochloromethane		<50.0	µg/L
Dichlorodifluoromethane		<50.0	µg/L
Chloromethane (methyl chloride)		<50.0	µg/L
Vinyl Chloride		<50.0	µg/L
Bromomethane (methyl bromide)		<250	µg/L

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Sample 201417 continued ...

Param	Flag	Result	Units
Chloroethane		<50.0	µg/L
Trichlorofluoromethane		<50.0	µg/L
Acetone		<500	µg/L
Iodomethane (methyl iodide)		<250	µg/L
Carbon Disulfide		<50.0	µg/L
Acrylonitrile		<50.0	µg/L
2-Butanone (MEK)		<250	µg/L
4-methyl-2-pentanone (MIBK)		<250	µg/L
2-hexanone		<250	µg/L
trans 1,4-Dichloro-2-butene		<500	µg/L
1,1-Dichloroethene		<50.0	µg/L
Methylene chloride		<250	µg/L
MTBE		1812	µg/L
trans-1,2-Dichloroethene		<50.0	µg/L
1,1-Dichloroethane		<50.0	µg/L
cis-1,2-Dichloroethene		<50.0	µg/L
2,2-Dichloropropane		<50.0	µg/L
1,2-Dichloroethane (EDC)		<50.0	µg/L
Chloroform		<50.0	µg/L
1,1,1-Trichloroethane		<50.0	µg/L
1,1-Dichloropropene		<50.0	µg/L
Benzene		<50.0	µg/L
Carbon Tetrachloride		<50.0	µg/L
1,2-Dichloropropane		<50.0	µg/L
Trichloroethene (TCE)		<50.0	µg/L
Dibromomethane (methylene bromide)		<50.0	µg/L
Bromodichloromethane		<50.0	µg/L
2-Chloroethyl vinyl ether		<250	µg/L
cis-1,3-Dichloropropene		<50.0	µg/L
trans-1,3-Dichloropropene		<50.0	µg/L
Toluene		<50.0	µg/L
1,1,2-Trichloroethane		<50.0	µg/L
1,3-Dichloropropane		<50.0	µg/L
Dibromochloromethane		<50.0	µg/L
1,2-Dibromoethane (EDB)		<50.0	µg/L
Tetrachloroethene (PCE)		<50.0	µg/L
Chlorobenzene		<50.0	µg/L
1,1,1,2-Tetrachloroethane		<50.0	µg/L
Ethylbenzene		<50.0	µg/L
m,p-Xylene		<50.0	µg/L
Bromoform		<50.0	µg/L
Styrene		<50.0	µg/L
o-Xylene		<50.0	µg/L
1,1,2,2-Tetrachloroethane		<50.0	µg/L
2-Chlorotoluene		<50.0	µg/L
1,2,3-Trichloropropane		<50.0	µg/L
Isopropylbenzene		<50.0	µg/L
Bromobenzene		<50.0	µg/L
n-Propylbenzene		<50.0	µg/L
1,3,5-Trimethylbenzene		<50.0	µg/L

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Sample 201417 continued ...

Param	Flag	Result	Units
tert-Butylbenzene		<50.0	µg/L
1,2,4-Trimethylbenzene		<50.0	µg/L
1,4-Dichlorobenzene (para)		<50.0	µg/L
sec-Butylbenzene		<50.0	µg/L
1,3-Dichlorobenzene (meta)		<50.0	µg/L
p-Isopropyltoluene		<50.0	µg/L
4-Chlorotoluene		<50.0	µg/L
1,2-Dichlorobenzene (ortho)		<50.0	µg/L
n-Butylbenzene		<50.0	µg/L
1,2-Dibromo-3-chloropropane		<250	µg/L
1,2,3-Trichlorobenzene		<250	µg/L
1,2,4-Trichlorobenzene		<250	µg/L
Naphthalene		<250	µg/L
Hexachlorobutadiene		<250	µg/L

TRACEANALYSIS, INC.

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Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: July 24, 2002

Order ID Number: A02071212

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
201412	KWB-1A	Water	7/10/02	8:15	7/12/02
201413	KWB-1C	Water	7/10/02	8:25	7/12/02
201414	MW-18	Water	7/10/02	9:00	7/12/02
201415	MP-2	Water	7/10/02	10:00	7/12/02
201416	MP-1	Water	7/10/02	10:10	7/12/02
201417	KWB-10	Water	7/10/02	11:10	7/12/02

These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 16 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 201412 - KWB-1A

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22002	Date Analyzed:	7/17/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20818	Date Prepared:	7/17/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		14.6	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201412 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.4	µg/L	1	50	103	77 - 122
Toluene-d8		55.3	µg/L	1	50	111	96 - 111
4-Bromofluorobenzene		44.4	µg/L	1	50	89	87 - 113

Sample: 201413 - KWB-1C

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22002	Date Analyzed:	7/17/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20818	Date Prepared:	7/17/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10

Continued ...

... *Continued* Sample: 201413 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		12.8	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5

Continued ...

... *Continued* Sample: 201413 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.5	µg/L	1	50	103	77 - 122
Toluene-d8		55.1	µg/L	1	50	110	96 - 111
4-Bromofluorobenzene		45.2	µg/L	1	50	90	87 - 113

Sample: 201414 - MW-18

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22002	Date Analyzed:	7/17/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20818	Date Prepared:	7/17/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201414 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.1	µg/L	1	50	104	77 - 122
Toluene-d8		55.4	µg/L	1	50	111	96 - 111
4-Bromofluorobenzene		43.9	µg/L	1	50	88	87 - 113

Sample: 201415 - MP-2

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22002	Date Analyzed:	7/17/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20818	Date Prepared:	7/17/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201415 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		1.29	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201415 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.7	µg/L	1	50	105	77 - 122
Toluene-d8		54.8	µg/L	1	50	110	96 - 111
4-Bromofluorobenzene		44.2	µg/L	1	50	88	87 - 113

Sample: 201416 - MP-1

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22002	Date Analyzed:	7/17/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20818	Date Prepared:	7/17/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		25.4	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 201416 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.4	µg/L	1	50	103	77 - 122
Toluene-d8		55.4	µg/L	1	50	111	96 - 111
4-Bromofluorobenzene		44.0	µg/L	1	50	88	87 - 113

Sample: 201417 - KWB-10

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC22043	Date Analyzed:	7/18/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB20852	Date Prepared:	7/18/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<50.0	µg/L	50	1
Dichlorodifluoromethane		<50.0	µg/L	50	1
Chloromethane (methyl chloride)		<50.0	µg/L	50	1
Vinyl Chloride		<50.0	µg/L	50	1
Bromomethane (methyl bromide)		<250	µg/L	50	5
Chloroethane		<50.0	µg/L	50	1
Trichlorofluoromethane		<50.0	µg/L	50	1
Acetone		<500	µg/L	50	10
Iodomethane (methyl iodide)		<250	µg/L	50	5
Carbon Disulfide		<50.0	µg/L	50	1
Acrylonitrile		<50.0	µg/L	50	1
2-Butanone (MEK)		<250	µg/L	50	5
4-methyl-2-pentanone (MIBK)		<250	µg/L	50	5
2-hexanone		<250	µg/L	50	5
trans 1,4-Dichloro-2-butene		<500	µg/L	50	10
1,1-Dichloroethene		<50.0	µg/L	50	1
Methylene chloride		<250	µg/L	50	5
MTBE		1812	µg/L	50	1
trans-1,2-Dichloroethene		<50.0	µg/L	50	1
1,1-Dichloroethane		<50.0	µg/L	50	1
cis-1,2-Dichloroethene		<50.0	µg/L	50	1
2,2-Dichloropropane		<50.0	µg/L	50	1
1,2-Dichloroethane (EDC)		<50.0	µg/L	50	1
Chloroform		<50.0	µg/L	50	1
1,1,1-Trichloroethane		<50.0	µg/L	50	1
1,1-Dichloropropene		<50.0	µg/L	50	1
Benzene		<50.0	µg/L	50	1
Carbon Tetrachloride		<50.0	µg/L	50	1
1,2-Dichloropropane		<50.0	µg/L	50	1
Trichloroethene (TCE)		<50.0	µg/L	50	1
Dibromomethane (methylene bromide)		<50.0	µg/L	50	1
Bromodichloromethane		<50.0	µg/L	50	1
2-Chloroethyl vinyl ether		<250	µg/L	50	5
cis-1,3-Dichloropropene		<50.0	µg/L	50	1
trans-1,3-Dichloropropene		<50.0	µg/L	50	1
Toluene		<50.0	µg/L	50	1
1,1,2-Trichloroethane		<50.0	µg/L	50	1
1,3-Dichloropropane		<50.0	µg/L	50	1
Dibromochloromethane		<50.0	µg/L	50	1
1,2-Dibromoethane (EDB)		<50.0	µg/L	50	1
Tetrachloroethene (PCE)		<50.0	µg/L	50	1
Chlorobenzene		<50.0	µg/L	50	1
1,1,1,2-Tetrachloroethane		<50.0	µg/L	50	1
Ethylbenzene		<50.0	µg/L	50	1
m,p-Xylene		<50.0	µg/L	50	1
Bromoform		<50.0	µg/L	50	1
Styrene		<50.0	µg/L	50	1
o-Xylene		<50.0	µg/L	50	1
1,1,2,2-Tetrachloroethane		<50.0	µg/L	50	1
2-Chlorotoluene		<50.0	µg/L	50	1
1,2,3-Trichloropropane		<50.0	µg/L	50	1
Isopropylbenzene		<50.0	µg/L	50	1
Bromobenzene		<50.0	µg/L	50	1

Continued ...

... *Continued* Sample: 201417 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
n-Propylbenzene		<50.0	µg/L	50	1
1,3,5-Trimethylbenzene		<50.0	µg/L	50	1
tert-Butylbenzene		<50.0	µg/L	50	1
1,2,4-Trimethylbenzene		<50.0	µg/L	50	1
1,4-Dichlorobenzene (para)		<50.0	µg/L	50	1
sec-Butylbenzene		<50.0	µg/L	50	1
1,3-Dichlorobenzene (meta)		<50.0	µg/L	50	1
p-Isopropyltoluene		<50.0	µg/L	50	1
4-Chlorotoluene		<50.0	µg/L	50	1
1,2-Dichlorobenzene (ortho)		<50.0	µg/L	50	1
n-Butylbenzene		<50.0	µg/L	50	1
1,2-Dibromo-3-chloropropane		<250	µg/L	50	5
1,2,3-Trichlorobenzene		<250	µg/L	50	5
1,2,4-Trichlorobenzene		<250	µg/L	50	5
Naphthalene		<250	µg/L	50	5
Hexachlorobutadiene		<250	µg/L	50	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.9	µg/L	50	50	95	77 - 122
Toluene-d8		51.8	µg/L	50	50	103	96 - 111
4-Bromofluorobenzene		46.2	µg/L	50	50	92	87 - 113

Quality Control Report
Method Blank

Method Blank

QCBatch: QC22002

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1

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Param	Flag	Results	Units	Reporting Limit
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.7	µg/L	1	50	101	77 - 122
Toluene-d8		54.7	µg/L	1	50	109	96 - 111
4-Bromofluorobenzene		43.4	µg/L	1	50	86	87 - 113

Method Blank

QCBatch: QC22043

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10

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Param	Flag	Results	Units	Reporting Limit
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5

Continued ...

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Param	Flag	Results	Units	Reporting Limit
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.6	µg/L	1	50	99	77 - 122
Toluene-d8		53.2	µg/L	1	50	106	96 - 111
4-Bromofluorobenzene		47.8	µg/L	1	50	96	87 - 113

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC22002

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	110	111	µg/L	1	100	<1.00	110	0	84 - 124	20
Benzene	100	101	µg/L	1	100	<1.00	100	0	87 - 112	20
Trichloroethene (TCE)	91	92	µg/L	1	100	<1.00	91	1	81 - 105	20
Toluene	98	98	µg/L	1	100	<1.00	98	0	90 - 108	20
Chlorobenzene	98	97	µg/L	1	100	<1.00	98	1	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	50.4	50.0	µg/L	1	50	100	100	77 - 122
Toluene-d8	53.3	52.4	µg/L	1	50	106	104	96 - 111
4-Bromofluorobenzene	46.3	44.6	µg/L	1	50	92	89	87 - 113

Laboratory Control Spikes

QCBatch: QC22043

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	111	111	µg/L	1	100	<1.00	111	0	84 - 124	20
Benzene	101	102	µg/L	1	100	<1.00	101	1	87 - 112	20
Trichloroethene (TCE)	92.1	92.6	µg/L	1	100	<1.00	92	0	81 - 105	20
Toluene	99.4	101	µg/L	1	100	<1.00	99	2	90 - 108	20
Chlorobenzene	96.7	97.5	µg/L	1	100	<1.00	97	1	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	49.1	49.3	µg/L	1	50	98	99	77 - 122
Toluene-d8	52.4	52.3	µg/L	1	50	105	105	96 - 111

Continued ...

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
4-Bromofluorobenzene	49.3	49.2	µg/L	1	50	99	98	87 - 113

Quality Control Report
Continuing Calibration Verification Standards

CCV (1) QCBatch: QC22002

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	51	102	80 - 120	7/17/02
1,1-Dichloroethene		µg/L	50	50	100	80 - 120	7/17/02
Chloroform		µg/L	50	50	100	80 - 120	7/17/02
1,2-Dichloropropane		µg/L	50	52	104	80 - 120	7/17/02
Toluene		µg/L	50	50	100	80 - 120	7/17/02
Chlorobenzene		µg/L	50	50	100	80 - 120	7/17/02
Ethylbenzene		µg/L	50	51	102	80 - 120	7/17/02
Dibromofluoromethane		µg/L	50	49.9	99	80 - 120	7/17/02
Toluene-d8		µg/L	50	52.0	104	80 - 120	7/17/02
4-Bromofluorobenzene		µg/L	50	50.9	101	80 - 120	7/17/02

CCV (1) QCBatch: QC22043

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	53.0	106	80 - 120	7/18/02
1,1-Dichloroethene		µg/L	50	56.0	112	80 - 120	7/18/02
Chloroform		µg/L	50	51.0	102	80 - 120	7/18/02
1,2-Dichloropropane		µg/L	50	52.0	104	80 - 120	7/18/02
Toluene		µg/L	50	52.0	104	80 - 120	7/18/02
Chlorobenzene		µg/L	50	51.0	102	80 - 120	7/18/02
Ethylbenzene		µg/L	50	52.0	104	80 - 120	7/18/02
Dibromofluoromethane		µg/L	50	51.9	104	80 - 120	7/18/02
Toluene-d8		µg/L	50	52.3	105	80 - 120	7/18/02
4-Bromofluorobenzene		µg/L	50	52.9	106	80 - 120	7/18/02

201412-17

Page ____ of ____

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 20071212

Company Name: Navajo
Phone #:
Address: (Street, City, Zip)
Fax #:
Contact Person: Darrell Moore
Invoice to: (If different from above)
Project #:
Project Name: Quarterly offsite
Project Location: Artesia
Sampler Signature:

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
201412	KWB-1a	2	VOA	X				X				X		7/10	0815
13	KWB-1c														825
14	MW-18														900
15	NP-2														1000
16	NP-1														1010
17	KWB-10														1110

MTBE 8021B/602
BTEX 8021B/602
TPH 418.1/TX1005
PAH 8270C
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7
TCLP Metals Ag As Ba Cd Cr Pb Se Hg
TCLP Volatiles
TCLP Semi Volatiles
TCLP Pesticides
RCI
GC/MS Vol. 8260B/624
GC/MS Semi. Vol. 8270C/625
PCB's 8082/608
Pesticides 8081A/608
BOD, TSS, pH
See list (Quarterly Offsite)
Turn Around Time if different from standard
Hold

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	7/11	1615			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Vicki Neuse	Date: 7/12/02	Time: 1010

constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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LAB USE ONLY

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Headspace Y / N
Temp -1°
Log-in Review MM

REMARKS:

7/25 FLP

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TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: October 18, 2002

Order ID Number: A02101011

Project Number: N/A
Project Name: Mo Off -Site
Project Location: Artesia,NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
210037	RA 307	Water	10/9/02	:	10/10/02
210038	RA 4798	Water	10/9/02	:	10/10/02

These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 8 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 210037 - RA 307

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC24165	Date Analyzed:	10/14/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22550	Date Prepared:	10/14/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		3.34	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		1.80	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 210037 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		45.5	µg/L	1	50	91	77 - 122
Toluene-d8		50.8	µg/L	1	50	102	96 - 111
4-Bromofluorobenzene		51.3	µg/L	1	50	103	87 - 113

Sample: 210038 - RA 4798

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC24165	Date Analyzed:	10/14/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22550	Date Prepared:	10/14/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10

Continued ...

... *Continued* Sample: 210038 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5

Continued ...

... *Continued* Sample: 210038 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		45.5	µg/L	1	50	91	77 - 122
Toluene-d8		50.1	µg/L	1	50	100	96 - 111
4-Bromofluorobenzene		49.9	µg/L	1	50	100	87 - 113

Quality Control Report
Method Blank

Method Blank

QCBatch: QC24165

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1

Continued ...

... Continued

Param	Flag	Results	Units	Reporting Limit
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.8	µg/L	1	50	94	77 - 122
Toluene-d8		50.7	µg/L	1	50	101	96 - 111
4-Bromofluorobenzene		51.0	µg/L	1	50	102	87 - 113

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC24165

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	100	96.6	µg/L	1	100	<1.00	100	3	84 - 124	20
Benzene	103	103	µg/L	1	100	<1.00	103	0	87 - 112	20
Trichloroethene (TCE)	95.2	96.2	µg/L	1	100	<1.00	95	1	81 - 105	20
Toluene	103	102	µg/L	1	100	<1.00	103	1	90 - 108	20
Chlorobenzene	105	104	µg/L	1	100	<1.00	105	1	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	45.9	45.5	µg/L	1	50	92	91	77 - 122

Continued ...

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Toluene-d8	50.1	48.8	µg/L	1	50	100	98	96 - 111
4-Bromofluorobenzene	50.8	49.9	µg/L	1	50	102	100	87 - 113

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC24165

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	46.0	92	80 - 120	10/14/02
1,1-Dichloroethene		µg/L	50	49.0	98	80 - 120	10/14/02
Chloroform		µg/L	50	49.0	98	80 - 120	10/14/02
1,2-Dichloropropane		µg/L	50	51.0	102	80 - 120	10/14/02
Toluene		µg/L	50	52.0	104	80 - 120	10/14/02
Chlorobenzene		µg/L	50	54.0	108	80 - 120	10/14/02
Ethylbenzene		µg/L	50	55.0	110	80 - 120	10/14/02
Dibromofluoromethane		µg/L	50	44.8	90	80 - 120	10/14/02
Toluene-d8		µg/L	50	49.7	99	80 - 120	10/14/02
4-Bromofluorobenzene		µg/L	50	53.5	107	80 - 120	10/14/02

210037-38

Page ____ of ____

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TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A0010101011

Company Name: Navajo
Address: (Street, City, Zip)
Phone #:
Fax #:
Contact Person: Darrell Moore
Invoice to: (If different from above)
Project #:
Project Name: Monthly Offsite
Project Location: Artesia
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
210037	~~RA 507~~ RA 1331	2	VOA	X				X				X		10/9	1130
38	RA 4798	2	1	1				1				1		1	1440

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	X Sub List	Turn Around Time if different from standard	Hold
															X		

	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	10/9	1615			
Relinquished by:			Received by:		
Relinquished by:			Received at Laboratory by: Vicki Ornelas	10-10-02	10:00

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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LAB USE ONLY

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Headspace Y / N
Temp 4° C
Log-in Review MA

REMARKS:

10/18 FP

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155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: October 15, 2002

Order ID Number: A02100905

Project Number: N/A
Project Name: Mo Off -Site
Project Location: Artesia,NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
209966	RA 307	Water	10/8/02	10:00	10/9/02
209967	RA 4196	Water	10/8/02	10:15	10/9/02

These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 8 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 209966 - RA 307

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC24106	Date Analyzed:	10/12/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22509	Date Prepared:	10/12/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 209966 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.9	µg/L	1	50	94	77 - 122
Toluene-d8		48.5	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		49.2	µg/L	1	50	98	87 - 113

Sample: 209967 - RA 4196

Analysis:	Volatiles	Analytical Method:	E 624	QC Batch:	QC24106	Date Analyzed:	10/12/02
Analyst:	JG	Preparation Method:	N/A	Prep Batch:	PB22509	Date Prepared:	10/12/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		1.38	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10

Continued ...

... *Continued* Sample: 209967 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5

Continued ...

... *Continued* Sample: 209967 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.6	µg/L	1	50	93	77 - 122
Toluene-d8		48.7	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		48.8	µg/L	1	50	98	87 - 113

Quality Control Report
Method Blank

Method Blank QCBatch: QC24106

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1

Continued ...

... Continued

Param	Flag	Results	Units	Reporting Limit
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		44.5	µg/L	1	50	89	77 - 122
Toluene-d8		48.8	µg/L	1	50	98	96 - 111
4-Bromofluorobenzene		50.4	µg/L	1	50	101	87 - 113

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC24106

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	99.3	96.6	µg/L	1	100	<1.00	99	3	84 - 124	20
Benzene	99.4	98.7	µg/L	1	100	<1.00	99	1	87 - 112	20
Trichloroethene (TCE)	92.2	91.3	µg/L	1	100	<1.00	92	1	81 - 105	20
Toluene	99.1	98.9	µg/L	1	100	<1.00	99	0	90 - 108	20
Chlorobenzene	102	101	µg/L	1	100	<1.00	102	1	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	45.7	45.5	µg/L	1	50	91	91	77 - 122

Continued ...

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Toluene-d8	49.0	49.3	µg/L	1	50	98	99	96 - 111
4-Bromofluorobenzene	50.9	50.6	µg/L	1	50	102	101	87 - 113

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC24106

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	46.0	92	80 - 120	10/12/02
1,1-Dichloroethene		µg/L	50	46.0	92	80 - 120	10/12/02
Chloroform		µg/L	50	49.0	98	80 - 120	10/12/02
1,2-Dichloropropane		µg/L	50	51.0	102	80 - 120	10/12/02
Toluene		µg/L	50	50.0	100	80 - 120	10/12/02
Chlorobenzene		µg/L	50	53.0	106	80 - 120	10/12/02
Ethylbenzene		µg/L	50	54.0	108	80 - 120	10/12/02
Dibromofluoromethane		µg/L	50	44.3	89	80 - 120	10/12/02
Toluene-d8		µg/L	50	49.5	99	80 - 120	10/12/02
4-Bromofluorobenzene		µg/L	50	51.5	103	80 - 120	10/12/02

209966-67

A0210985 Page 1 of 1

TraceAnalysis, Inc.

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El Paso, Texas 79932
Tel (915) 585-3443
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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Navajo
Address: (Street, City, Zip)
Phone #:
Fax #:
Contact Person: Darrell Moore
Invoice to: (If different from above)
Project #:
Project Name: Monthly Effl
Project Location: Artesia
Sampler Signature:
LAB Order ID #:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO3	H2SO4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
209966	RA307	2	VOA	X				X				X		10/8	1000
67	RA496	2	1	1				1				1		X	1015

ANALYSIS REQUEST (Circle or Specify Method No.)

- MTBE 8021B/602
- BTEX 8021B/602
- TPH 418.1/TX1005
- PAH 8270C
- Total Metals Ag As Ba Cd Cr Pb Se Hg
- TCLP Metals Ag As Ba Cd Cr Pb Se Hg
- TCLP Volatiles
- TCLP Semi Volatiles
- TCLP Pesticides
- RCI
- GC/MS Vol. 8260B/624
- GC/MS Semi. Vol. 8270C/625
- PCB's 8082/608
- Pesticides 8081A/608
- BOD, TSS, pH

Turn Around Time if different from standard
Hold

Relinquished by: Date: 10/8 Time: 1615
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: 10/9/02 Time: 10:
Relinquished by: Date: Time:
Received at Laboratory by: Date: Time:

LAB USE ONLY
Intact Y / N
Headspace Y / N
Temp °C
Log-in Review

REMARKS:
19156

☐ Check if Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of COC

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: June 24, 2002

Order ID Number: A02061319

Project Number: Artesia
Project Name: N/A
Project Location: Artesia,NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
199198	MW-53	Water	6/12/02	9:15	6/13/02
199199	MW-50	Water	6/12/02	9:30	6/13/02
199200	KWB-1A	Water	6/12/02	10:30	6/13/02
199201	KWB-10	Water	6/12/02	10:45	6/13/02
199202	RW-15	Water	6/12/02	13:00	6/13/02

These results represent only the samples received in the laboratory. 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. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 13 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 199198 - MW-53

Analysis:	Dissolved Metals	Analytical Method:	S 6010B	QC Batch:	QC21152	Date Analyzed:	6/18/02
Analyst:	RR	Preparation Method:	E 3005A	Prep Batch:	PB20091	Date Prepared:	6/17/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Boron		0.500	mg/L	11	0.005

Sample: 199198 - MW-53

Analysis:	Ion Chromatography (IC)	Analytical Method:	E 300.0	QC Batch:	QC21131	Date Analyzed:	6/14/02
Analyst:	JSW	Preparation Method:	N/A	Prep Batch:	PB20110	Date Prepared:	6/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		55.9	mg/L	5	1
Fluoride		1.64	mg/L	5	0.20
Sulfate		1270	mg/L	50	1

Sample: 199198 - MW-53

Analysis:	Salts	Analytical Method:	S 6010B	QC Batch:	QC21205	Date Analyzed:	6/19/02
Analyst:	BC	Preparation Method:	S 3005A	Prep Batch:	PB20091	Date Prepared:	6/17/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		287	mg/L	1	0.50
Dissolved Magnesium		164	mg/L	1	0.50
Dissolved Potassium		2.10	mg/L	1	0.50
Dissolved Sodium		122	mg/L	1	0.50

Sample: 199198 - MW-53

Analysis:	TDS	Analytical Method:	E 160.1	QC Batch:	QC21139	Date Analyzed:	6/14/02
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB20117	Date Prepared:	6/13/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		2340	mg/L	2	10

Sample: 199198 - MW-53

Analysis:	pH	Analytical Method:	E 150.1	QC Batch:	QC21127	Date Analyzed:	6/13/02
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB20106	Date Prepared:	6/13/02

Param	Flag	Result	Units	Dilution	RDL
pH	[1]	7.2	s.u.	1	1

[1]The sample was received out of holding time

Sample: 199199 - MW-50

Analysis: Dissolved Metals | Analytical Method: S 6010B | QC Batch: QC21152 | Date Analyzed: 6/18/02
Analyst: RR | Preparation Method: E 3005A | Prep Batch: PB20091 | Date Prepared: 6/17/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Boron		0.264	mg/L	11	0.005

Sample: 199199 - MW-50

Analysis: Ion Chromatography (IC) | Analytical Method: E 300.0 | QC Batch: QC21131 | Date Analyzed: 6/14/02
Analyst: JSW | Preparation Method: N/A | Prep Batch: PB20110 | Date Prepared: 6/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		159	mg/L	5	1
Fluoride		1.62	mg/L	5	0.20
Sulfate		1160	mg/L	50	1

Sample: 199199 - MW-50

Analysis: Salts | Analytical Method: S 6010B | QC Batch: QC21205 | Date Analyzed: 6/19/02
Analyst: BC | Preparation Method: S 3005A | Prep Batch: PB20091 | Date Prepared: 6/17/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		372	mg/L	1	0.50
Dissolved Magnesium		157	mg/L	1	0.50
Dissolved Potassium		3.34	mg/L	1	0.50
Dissolved Sodium		102	mg/L	1	0.50

Sample: 199199 - MW-50

Analysis: TDS | Analytical Method: E 160.1 | QC Batch: QC21139 | Date Analyzed: 6/14/02
Analyst: RS | Preparation Method: N/A | Prep Batch: PB20117 | Date Prepared: 6/13/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		2460	mg/L	2	10

Sample: 199199 - MW-50

Analysis: pH | Analytical Method: E 150.1 | QC Batch: QC21127 | Date Analyzed: 6/13/02
Analyst: RS | Preparation Method: N/A | Prep Batch: PB20106 | Date Prepared: 6/13/02

Param	Flag	Result	Units	Dilution	RDL
pH	[2]	7.2	s.u.	1	1

Sample: 199200 - KWB-1A

Analysis: Dissolved Metals | Analytical Method: S 6010B | QC Batch: QC21152 | Date Analyzed: 6/18/02
Analyst: RR | Preparation Method: E 3005A | Prep Batch: PB20091 | Date Prepared: 6/17/02

[2]The sample was received out of holding time

Param	Flag	Result	Units	Dilution	RDL
Dissolved Boron		1.01	mg/L	11	0.005

Sample: 199200 - KWB-1A

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC21132 Date Analyzed: 6/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB20111 Date Prepared: 6/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		262	mg/L	50	1
Fluoride		1.96	mg/L	5	0.20
Sulfate		2000	mg/L	50	1

Sample: 199200 - KWB-1A

Analysis: Salts Analytical Method: S 6010B QC Batch: QC21205 Date Analyzed: 6/19/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB20091 Date Prepared: 6/17/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		444	mg/L	1	0.50
Dissolved Magnesium		324	mg/L	1	0.50
Dissolved Potassium		2.85	mg/L	1	0.50
Dissolved Sodium		204	mg/L	1	0.50

Sample: 199200 - KWB-1A

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC21139 Date Analyzed: 6/14/02
Analyst: RS Preparation Method: N/A Prep Batch: PB20117 Date Prepared: 6/13/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		3840	mg/L	5	10

Sample: 199200 - KWB-1A

Analysis: pH Analytical Method: E 150.1 QC Batch: QC21127 Date Analyzed: 6/13/02
Analyst: RS Preparation Method: N/A Prep Batch: PB20106 Date Prepared: 6/13/02

Param	Flag	Result	Units	Dilution	RDL
pH	[3]	7.3	s.u.	1	1

Sample: 199201 - KWB-10

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC21152 Date Analyzed: 6/18/02
Analyst: RR Preparation Method: E 3005A Prep Batch: PB20091 Date Prepared: 6/17/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Boron		0.315	mg/L	11	0.005

[3]The sample was received out of holding time

Sample: 199201 - KWB-10

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC21131 Date Analyzed: 6/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB20110 Date Prepared: 6/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		185	mg/L	5	1
Fluoride		1.40	mg/L	5	0.20
Sulfate		26.3	mg/L	5	1

Sample: 199201 - KWB-10

Analysis: Salts Analytical Method: S 6010B QC Batch: QC21205 Date Analyzed: 6/19/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB20091 Date Prepared: 6/17/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		45.7	mg/L	1	0.50
Dissolved Magnesium		77.1	mg/L	1	0.50
Dissolved Potassium		25.4	mg/L	1	0.50
Dissolved Sodium		111	mg/L	1	0.50

Sample: 199201 - KWB-10

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC21139 Date Analyzed: 6/14/02
Analyst: RS Preparation Method: N/A Prep Batch: PB20117 Date Prepared: 6/13/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		834	mg/L	2	10

Sample: 199201 - KWB-10

Analysis: pH Analytical Method: E 150.1 QC Batch: QC21127 Date Analyzed: 6/13/02
Analyst: RS Preparation Method: N/A Prep Batch: PB20106 Date Prepared: 6/13/02

Param	Flag	Result	Units	Dilution	RDL
pH	[4]	8.1	s.u.	1	1

Sample: 199202 - RW-15

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC21132 Date Analyzed: 6/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB20111 Date Prepared: 6/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		323	mg/L	50	1
Fluoride		3.17	mg/L	5	0.20
Sulfate		3140	mg/L	100	1

[4]The sample was received out of holding time

Sample: 199202 - RW-15

Analysis:	Salts	Analytical Method:	S 6010B	QC Batch:	QC21205	Date Analyzed:	6/19/02
Analyst:	BC	Preparation Method:	S 3005A	Prep Batch:	PB20091	Date Prepared:	6/17/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		475	mg/L	1	0.50
Dissolved Magnesium		521	mg/L	1	0.50
Dissolved Potassium		3.27	mg/L	1	0.50
Dissolved Sodium		321	mg/L	1	0.50

Sample: 199202 - RW-15

Analysis:	TDS	Analytical Method:	E 160.1	QC Batch:	QC21139	Date Analyzed:	6/14/02
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB20117	Date Prepared:	6/13/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		5550	mg/L	5	10

Sample: 199202 - RW-15

Analysis:	pH	Analytical Method:	E 150.1	QC Batch:	QC21127	Date Analyzed:	6/13/02
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB20106	Date Prepared:	6/13/02

Param	Flag	Result	Units	Dilution	RDL
pH	[5]	7.5	s.u.	1	1

[5]The sample was received out of holding time

Quality Control Report
Method Blank

Method Blank

QCBatch: QC21131

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1
Fluoride		<0.2	mg/L	0.20
Sulfate		<1.0	mg/L	1

Method Blank

QCBatch: QC21132

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1
Fluoride		<0.2	mg/L	0.20
Sulfate		<1.0	mg/L	1

Method Blank

QCBatch: QC21139

Param	Flag	Results	Units	Reporting Limit
Total Dissolved Solids		<10	mg/L	10

Method Blank

QCBatch: QC21152

Param	Flag	Results	Units	Reporting Limit
Dissolved Boron		<0.0055	mg/L	0.005

Method Blank

QCBatch: QC21205

Param	Flag	Results	Units	Reporting Limit
Dissolved Calcium		<0.5	mg/L	0.50
Dissolved Magnesium		<0.5	mg/L	0.50
Dissolved Potassium		<0.5	mg/L	0.50
Dissolved Sodium		<0.5	mg/L	0.50

Quality Control Report
Duplicate Samples

Duplicate

QCBatch: QC21127

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		7.8	7.8	s.u.	1	0	0

Duplicate

QCBatch: QC21139

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		2432	2340	mg/L	1	3	9.7

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC21131

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	11.33	11.26	mg/L	1	12.50	<1.0	90	0	90 - 110	20
Fluoride	2.45	2.45	mg/L	1	2.50	<0.2	98	0	90 - 110	20
Sulfate	11.88	11.87	mg/L	1	12.50	<1.0	95	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC21132

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	11.29	11.32	mg/L	1	12.50	<1.0	90	0	90 - 110	20
Fluoride	2.43	2.44	mg/L	1	2.50	<0.2	97	0	90 - 110	20
Sulfate	11.60	11.85	mg/L	1	12.50	<1.0	92	2	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC21152

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Aluminum	0.921	0.934	mg/L	1.20	1	<0.110	92	1	85 - 115	20
Dissolved Arsenic	0.467	0.466	mg/L	1.20	0.50	<0.055	93	0	85 - 115	20
Dissolved Barium	1.01	1.02	mg/L	1.20	1	<0.110	101	0	85 - 115	20
Dissolved Boron	0.0495	0.0485	mg/L	1.20	0.05	<0.0055	99	2	85 - 115	20
Dissolved Cadmium	0.253	0.252	mg/L	1.20	0.25	<0.0055	101	0	85 - 115	20
Dissolved Chromium	0.100	0.101	mg/L	1.20	0.10	<0.011	100	0	85 - 115	20
Dissolved Cobalt	0.252	0.253	mg/L	1.20	0.25	<0.0275	100	0	85 - 115	20
Dissolved Copper	0.132	0.134	mg/L	1.20	0.12	0.0147	105	1	85 - 115	20
Dissolved Iron	0.486	0.490	mg/L	1.20	0.50	<0.055	97	0	85 - 115	20

Continued ...

... Continued

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Lead	0.495	0.499	mg/L	1.20	0.50	<0.011	99	0	85 - 115	20
Dissolved Manganese	0.250	0.257	mg/L	1.20	0.25	<0.0275	100	2	85 - 115	20
Dissolved Molybdenum	0.537	0.542	mg/L	1.20	0.50	<0.055	107	0	85 - 115	20
Dissolved Nickel	0.247	0.245	mg/L	1.20	0.25	<0.0275	98	0	85 - 115	20
Dissolved Selenium	0.441	0.432	mg/L	1.20	0.50	<0.055	88	2	85 - 115	20
Dissolved Silver	0.122	0.123	mg/L	1.20	0.12	<0.0138	97	0	85 - 115	20
Dissolved Uranium	0.514	0.524	mg/L	1.20	0.50	<0.022	102	1	85 - 115	20
Dissolved Zinc	0.254	0.256	mg/L	1.20	0.25	<0.0275	101	0	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC21205

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	96.2	99.2	mg/L	1	100	<0.5	96	3	75 - 125	20
Dissolved Magnesium	94.4	98.1	mg/L	1	100	<0.5	94	3	75 - 125	20
Dissolved Potassium	94.3	96.5	mg/L	1	100	<0.5	94	2	75 - 125	20
Dissolved Sodium	97.2	102	mg/L	1	100	<0.5	97	4	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report
Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC21131

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	[6] 736	740	mg/L	1	625	185	88	0	48 - 127	20
Fluoride	[7] 123	124	mg/L	1	125	1.40	97	0	82 - 101	20
Sulfate	[8] 603	597	mg/L	1	625	26.3	92	1	59 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC21132

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	[9] 1450	1450	mg/L	1	1250	323	90	0	48 - 127	20
Fluoride	[10] 241	249	mg/L	1	250	3.17	95	3	82 - 101	20

Continued ...

[6]This sample was spiked at a *50, but the *5 was reported. The %EA = 83 and RPD = 1 for chloride
[7]This sample was spiked at a *50, but the *5 was reported. The %EA = 98 and RPD = 1 for flouride.
[8]This sample was spiked at a *50, but the *5 was reported. The %EA = 90 and RPD = 1 for sulfate.
[9]This sample was spiked at a *100, but was reported at a *50. The %EA = 88 and RPD = 0 for Chloride.
[10]This sample was spiked at a *100, but was reported at a *50. The %EA = 90 and RPD = 3 for Flouride.

... Continued

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Sulfate	4300	4270	mg/L	1	1250	3140	92	2	59 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC21152

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Boron	0.0636	0.0652	mg/L	1.20	0.05	0.0189	89	3	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC21205

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	137	144	mg/L	1	100	50.8	86	7	75 - 125	20
Dissolved Magnesium	95.8	107	mg/L	1	100	7.60	88	11	75 - 125	20
Dissolved Potassium	126	128	mg/L	1	100	3.56	122	1	75 - 125	20
Dissolved Sodium	132	137	mg/L	1	100	23.5	108	4	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC21127

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	6/13/02

ICV (1)

QCBatch: QC21127

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	6/13/02

CCV (1) QCBatch: QC21131

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.29	90	90 - 110	6/14/02
Fluoride		mg/L	2.50	2.49	99	90 - 110	6/14/02
Sulfate		mg/L	12.50	11.95	95	90 - 110	6/14/02

ICV (1) QCBatch: QC21131

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.29	90	90 - 110	6/14/02
Fluoride		mg/L	2.50	2.49	99	90 - 110	6/14/02
Sulfate		mg/L	12.50	12.04	96	90 - 110	6/14/02

CCV (1) QCBatch: QC21132

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.26	90	90 - 110	6/14/02
Fluoride		mg/L	2.50	2.45	98	90 - 110	6/14/02
Sulfate		mg/L	12.50	11.86	94	90 - 110	6/14/02

ICV (1) QCBatch: QC21132

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.29	90	90 - 110	6/14/02
Fluoride		mg/L	2.50	2.49	99	90 - 110	6/14/02
Sulfate		mg/L	12.50	11.95	95	90 - 110	6/14/02

CCV (1) QCBatch: QC21139

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	986	98	90 - 110	6/14/02

ICV (1) QCBatch: QC21139

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	984	98	90 - 110	6/14/02

CCV (1)

QCBatch: QC21152

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Aluminum		mg/L	2	1.85	92	90 - 110	6/18/02
Dissolved Arsenic		mg/L	1	1.02	102	90 - 110	6/18/02
Dissolved Barium		mg/L	2	1.94	97	90 - 110	6/18/02
Dissolved Boron		mg/L	0.10	0.102	102	90 - 110	6/18/02
Dissolved Cadmium		mg/L	0.50	0.508	101	90 - 110	6/18/02
Dissolved Chromium		mg/L	0.20	0.197	98	90 - 110	6/18/02
Dissolved Cobalt		mg/L	0.50	0.488	97	90 - 110	6/18/02
Dissolved Copper		mg/L	0.25	0.234	93	90 - 110	6/18/02
Dissolved Iron		mg/L	1	0.968	96	90 - 110	6/18/02
Dissolved Lead		mg/L	1	0.973	97	90 - 110	6/18/02
Dissolved Manganese		mg/L	0.50	0.484	96	90 - 110	6/18/02
Dissolved Molybdenum		mg/L	1	1.00	100	90 - 110	6/18/02
Dissolved Nickel		mg/L	0.50	0.480	96	90 - 110	6/18/02
Dissolved Selenium		mg/L	1	1.04	104	90 - 110	6/18/02
Dissolved Silver		mg/L	0.25	0.241	96	90 - 110	6/18/02
Dissolved Uranium		mg/L	1	0.965	96	90 - 110	6/18/02
Dissolved Zinc		mg/L	0.50	0.488	97	90 - 110	6/18/02

ICV (1)

QCBatch: QC21152

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Aluminum		mg/L	2	1.91	95	90 - 110	6/18/02
Dissolved Arsenic		mg/L	1	0.999	99	90 - 110	6/18/02
Dissolved Barium		mg/L	2	1.97	98	90 - 110	6/18/02
Dissolved Boron		mg/L	0.10	0.101	101	90 - 110	6/18/02
Dissolved Cadmium		mg/L	0.50	0.495	99	90 - 110	6/18/02
Dissolved Chromium		mg/L	0.20	0.200	100	90 - 110	6/18/02
Dissolved Cobalt		mg/L	0.50	0.503	100	90 - 110	6/18/02
Dissolved Copper		mg/L	0.25	0.243	97	90 - 110	6/18/02
Dissolved Iron		mg/L	1	0.978	97	90 - 110	6/18/02
Dissolved Lead		mg/L	1	1.00	100	90 - 110	6/18/02
Dissolved Manganese		mg/L	0.50	0.492	98	90 - 110	6/18/02
Dissolved Molybdenum		mg/L	1	1.01	101	90 - 110	6/18/02
Dissolved Nickel		mg/L	0.50	0.491	98	90 - 110	6/18/02
Dissolved Selenium		mg/L	1	0.990	99	90 - 110	6/18/02
Dissolved Silver		mg/L	0.25	0.243	97	90 - 110	6/18/02
Dissolved Uranium		mg/L	1	0.971	97	90 - 110	6/18/02
Dissolved Zinc		mg/L	0.50	0.495	99	90 - 110	6/18/02

CCV (1) QCBatch: QC21205

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	22.8	91	90 - 110	6/19/02
Dissolved Magnesium		mg/L	25	22.5	90	90 - 110	6/19/02
Dissolved Potassium		mg/L	25	23.6	94	90 - 110	6/19/02
Dissolved Sodium		mg/L	25	23.4	93	90 - 110	6/19/02

ICV (1) QCBatch: QC21205

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	25.9	103	95 - 105	6/19/02
Dissolved Magnesium		mg/L	25	25.5	102	95 - 105	6/19/02
Dissolved Potassium		mg/L	25	24.7	98	95 - 105	6/19/02
Dissolved Sodium		mg/L	25	25.5	102	95 - 105	6/19/02

199198-202

Page ____ of ____

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A020611319

Company Name: Navajo Phone #:

Address: (Street, City, Zip) Fax #:

Contact Person: Darrell Moore

Invoice to: (If different from above)

Project #: Project Name:

Project Location: Artesia Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
199198	MW-53	1	L	X								X		6/13	0915
99	MW-50	"	"	"								"		6/12	0930
200	KWB-1A	"	"	"								"		"	1030
201	KWB-10	"	"	"								"		"	1045
202	RW-15	"	"	"								"		"	1300

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	See Below					Turn Around Time if different from standard	Hold
															X						
															X						
															X						
															X						
															X						

Relinquished by: Date: 6/13/02 Time: 1615 Received by: Date: Time:

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received at Laboratory by: Mell Green Date: 6-13-02 Time: 10:00am

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp 4 °

Log-in Review MW

REMARKS: TDS; Sulfate; Chloride; Fluoride; Sodium; Boron; Calcium pH

6/24 P

☐ Check If Special Reporting Limits Are Needed

Carrier # 7905 4357 5364

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

ENTERED

Navajo REFINING COMPANY

FAX
(505) 746-5283 DIV. ORDERS
(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX
(505) 746-5419 ACCOUNTING
(505) 746-5451 EXECUTIVE
(505) 746-5421 ENGINEERING
(505) 746-5480 P / L

KED NRCA 01

December 4, 2001

Mr. Dave Cobrain
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg 1
Santa Fe, NM 87505-6303

RE: Monitor Well Request

Dear Dave,

Enclosed, please find a list of all wells at this refinery. I have also included drawings of the wells that are available. Some of these wells were installed in the late 70's and early 80's and no drawings have been found. Therefore, the screening levels are not known exactly. However, based on Total Depth (TD), we know which zone they must be in.

We are continuing to search our files for drawings and will forward if those are located. If there are any questions concerning this submission, please call me at 505-748-3311. Thank you for your time.

Sincerely,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Environmental Manager for Water and Waste

Encl.

NAVAJO REFINING WELLS

Well	Status	Purpose	Aquifer
OCD-1	Existing	Monitor	Shallow
OCD-2A	Existing	Monitor	Shallow
OCD-2B	Existing	Monitor	Intermediate
OCD-3	Existing	Monitor	Shallow
OCD-4	Existing	Monitor	Shallow
OCD-5	Existing	Monitor	Shallow
OCD-6	Existing	Monitor	Shallow
OCD-7A	Existing	Monitor	Shallow
OCD-7B	Existing	Monitor	Intermediate
OCD-7C	Existing	Monitor	Deep
OCD-8A	Existing	Monitor	Shallow
OCD-8B	Existing	Monitor	Intermediate
MW-1	Unusable		
MW-2A	Existing	Monitor	Shallow
MW-2B	Existing	Monitor	Shallow
MW-3	Existing	Monitor	Shallow
MW-4A	Existing	Monitor	Shallow
MW-4B	Existing	Monitor	Intermediate
MW-5A	Existing	Monitor	Shallow
MW-5B	Existing	Monitor	Intermediate
MW-5C	Existing	Monitor	Deep
MW-6A	Existing	Monitor	Shallow
MW-6B	Existing	Monitor	Intermediate
MW-7A	Existing	Monitor	Shallow
MW-7B	Existing	Monitor	Intermediate
MW-8	Existing, poor	Monitor	Shallow
MW-9	Existing, poor	Monitor	Shallow
MW-10	Existing	Monitor	Shallow
MW-11A	Existing	Monitor	Shallow
MW-11B	Existing	Monitor	Intermediate
MW-12	Existing	Monitor	Shallow
MW-13	Existing	Monitor	Shallow
MW-14	Existing	Monitor	Shallow
MW-15	Existing	Monitor	Shallow
MW-18A(ponds)	Existing	Monitor	Shallow
MW-18B(ponds)	Existing	Monitor	Intermediate
MW-18T(ponds)	Existing	Monitor	Deep
MW-18(Plant)	Existing	Monitor	Shallow
MW-19	Existing	Monitor	Shallow
MW-20	Existing, poor	Monitor	Shallow
MW-21	Existing, Poor	Monitor	Shallow
MW-22A	Existing	Monitor	Shallow
MW-22B	Existing	Monitor	Intermediate
MW-23	Poor	Monitor	Shallow
MW-24(Plant)	Poor	Monitor	Shallow
MW-24(ponds)	Existing	Monitor	Shallow
MW-25	Existing	Monitor	Shallow
MW-28	Existing	Monitor	Shallow

MW-29	Existing	Monitor	Shallow
MW-30	Existing,Poor	Monitor	Shallow
MW-39	Existing	Monitor	Shallow
MW-40	Abandoned	NA	NA
MW-41	Existing	Monitor	Shallow
MW-42	Existing	Monitor	Shallow
MW-43	Existing	Monitor	Shallow
MW-45	Existing, poor	Monitor	Shallow
MW-46	Existing, Poor	Monitor	Shallow
MW-47	Abandoned	NA	NA
MW-48	Existing	Monitor	Shallow
MW-49	Existing	Monitor	Shallow
MW-50	Existing	Monitor	Shallow
MW-51	Abandoned	NA	NA
MW-52	Existing	Monitor	Shallow
MW-53	Existing	Monitor	Shallow
MW-54A	Existing	Monitor	Shallow
MW-54B	Existing	Monitor	Intermediate
MW-55	Existing	Monitor	Shallow
MW-56	Existing	Monitor	Shallow
KWB-1A	Existing	Monitor	Shallow
KWB-1B	Existing	Monitor	Shallow
KWB-1C	Existing	Monitor	Intermediate
KWB-2A	Abandoned	NA	NA
KWB-2B	Abandoned	NA	NA
KWB-3A	Existing	Monitor	Shallow
KWB-3B	Existing	Monitor	Intermediate
KWB-4	Existing	Monitor	Shallow
KWB-5	Existing	Monitor	Shallow
KWB-6	Existing	Monitor	Shallow
KWB-7	Existing	Monitor	Shallow
KWB-8	Existing	Monitor	Shallow
KWB-9	Existing	Monitor	Shallow
KWB-10	Existing	Monitor	Shallow
KWB-11A	Existing	Monitor	Shallow
KWB-11B	Existing	Monitor	Intermediate
KWB-12A	Existing	Monitor	Shallow
KWB-12B	Existing	Monitor	Intermediate
E	Abandoned	NA	NA
F	Abandoned	NA	NA
I	Abandoned	NA	NA
S	Abandoned	NA	NA
AE	Existing, Poor	Monitor	Shallow
AH	Existing, Poor	Monitor	Shallow
TEL-1	Existing	Monitor	Shallow
TEL-2	Existing	Monitor	Shallow
TEL-3	Existing	Monitor	Shallow
TEL-4	Existing	Monitor	Shallow
NCL-31	Existing	Monitor	Shallow
NCL-32	Existing	Monitor	Shallow
NCL-33	Existing	Monitor	Shallow
NCL-34	Existing	Monitor	Shallow

NCL-49	Existing	Monitor	Shallow
NP-1	Existing	Monitor	Shallow
NP-2	Existing	Monitor	Shallow
NP-3	Existing	Monitor	Shallow
NP-4	Existing	Monitor	Shallow
RA-307	Existing	Irrigation	San Andres
RA-313	Existing	Irrigation	San Andres
RA-314	Existing	Irrigation	San Andres
RA-1227	Existing	Irrigation	San Andres
RA-1331	Existing	Irrigation	San Andres
RA-3156	Existing	Irrigation	San Andres
RA-3353	Existing	Irrigation	San Andres
RA-4196	Existing	Irrigation	San Andres
RA-4798	Existing	Irrigation	San Andres
RA-3723	Existing	Dry	San Andres

Sym	Samp	Loc	PI (ppm)	Depth (Feet)
				2
				4
				6
				8
				10
				12
				14
				16
				18
				20
				22
				24
				26
				28
				30
				32

Geologic Description

0-2' SANDY CLAY, dark brown, with roots.

2-14' SANDY CLAY, brown, dry to moist, lighter in color with increasing depth, white caliche pebbles showing up at 9-10 feet, occasional pockets of fine white sand.

14-20' CLAY, reddish brown, moist, some caliche pebbles and sand pockets.

20-22' SANDY CLAY, brown and white, saturated increasing pebble content.

22-23' GRAVEL, 1 to 2" rocks, saturated.

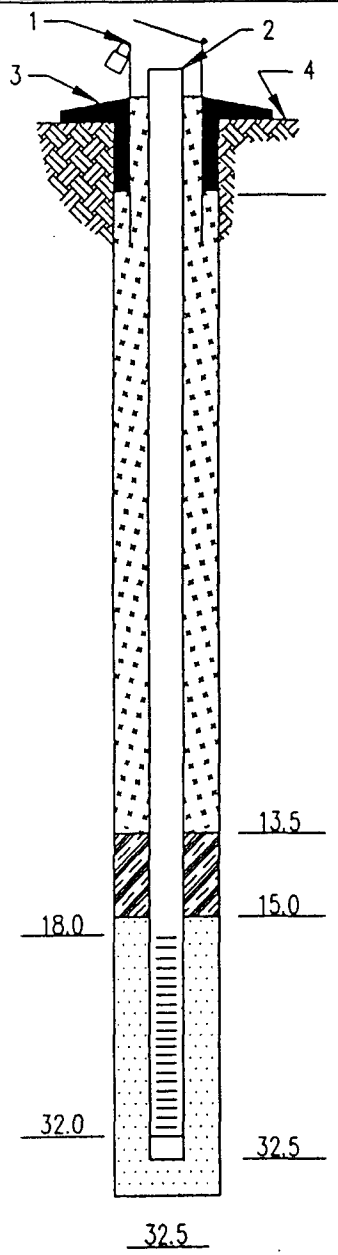
23-32.5' SANDY CLAY, brown and white, moist dry, pebble content decreasing with depth.

TD = 32.5'

NOTE: 5 foot core barrel recovery system used as sampling technique

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Mon Well
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specification

Elevations: (feet MSL) 1 3351.07 2 3350.87 3 3349.10 4 3348.7

Coordinates: X 5171.71 Y 5193.86

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐

Casing Diameter: ☒ 2" ☐ 3" ☐ 4" ☐ 6" ☐

Screen Slot: ☐ 0.008 ☒ 0.010 ☐

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐

Sand Pack: CSSI 16-40

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐

Grout Type: Portland Weight:

Bore Hole Diameter: 8"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐

Drilled By: PRECISION ENGINEERING

Logged By: PHILIP CADARETTE

Completion Date: FEBRUARY 11, 1992

Date	D-T-W	MSL	Date	Field pH	Field EC
2/19/92	14.7	3336.4			
3/10/92	14.5	3336.2			

Comments: Concrete with 5% bentonite used to grout from seal to surface.

KWBES

KWB1A

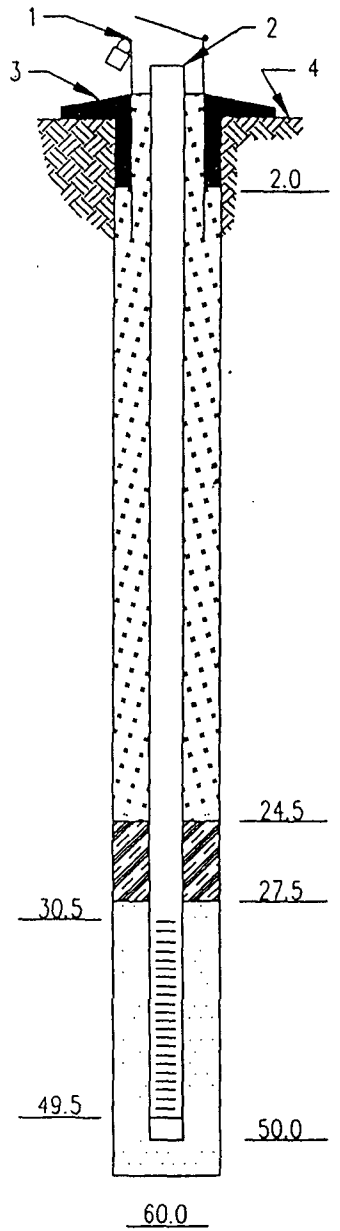
Project: 622092001-237 (1A)
Location: ARTESIA, NEW MEXICO

DRAFT

Sym	Samp Loc	PID (ppm)	Depth (Feet)	Geologic Description
			3	0-2' SANDY CLAY, dark brown to brown, moist, plastic.
			6	
			9	2-6' CLAYEY SAND, brown to tan, moist to slightly moist, friable.
			12	
			15	6-14' SANDY CLAY, brown, moist, friable to firm, occasioal fragments fo claiche gravel, angular
			18	
			21	14-20' CLAY, brown, moist, plastic, thin gravel seam @ 17', saturated, gypsum crystals throughout clay.
			24	
			27	20-25' SILTY CLAY, brown to white, saturated from 20-23', very moist to moist 23-25'.
			30	25-28' SILT, brown to white, saturated.
			33	
			36	28-32' SILTY CLAY, brown to white, moist with thin intermittent seams fo caliche pebbles, saturated.
			39	
			42	32-33' SANDY CLAY, brown, moist, plastic.
			45	33-44' GRAVEL, CLAY, SILT MIX, saturated clay lenses with saturated pebble seams throughout.
			48	
			51	44-45' SANDY CLAY, brown to white, slightly moist, stiff.
			54	
			57	45-59' CLAY, brown, moist with saturated pebble seams throughout
			60	59-60' CLAY, brown, slightly moist, stiff.
				TD = 60.0'
				CME 5' core barrel recovery system

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Monitoring Well ☒
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 _____ 2 _____ 3 _____ 4 _____

Coordinates: X _____ Y _____

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☐ 2" ☐ 3" ☒ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: Colorado Silica Sand 20/40

Bentonite Seal: ☒ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☐ 1/4" Pellets ☐ _____

Grout Type: Portland/5% Bentonite Weight: _____

Bore Hole Diameter: 13.5"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: Precision Engineering

Logged By: PWC

Completion Date: 09/29/92

Date	D-T-W	MSL	Date	Field pH	Field EC

Comments: Boring plugged back to 50 feet before well set

KWBES

Navajo Nation

KWB-1C

Project: Navajo 622092003-236
Location: Artesia, New Mexico

Sym	Samp	Loc	PID (ppm)	Depth (Feet)
				2
				4
				6
				8
				10
				12
				14
				16
				18
				20
				22
				24
				26
				28
				30
				32
				34
				36
				38
				40
				42
				44
				46
				48
				50

Geologic Description

0–16.5' SANDY CLAY, brown, moist to dry, becoming lighter in color with decreasing moisture, pockets of fine white caliche appearing at 14'.

16.5–23' CLAY, brown, moist, stiff to plastic, some black stippling.

23–29.5' SANDY CLAY, brown, moist, reaching saturation near 29'.

29.5–45' CLAYEY GRAVEL, saturated, fine sand, pebbles, rocks to 3" in diameter, gravel sand–clay mix.

45–47.5' SAND, fine grained, brown, saturated.

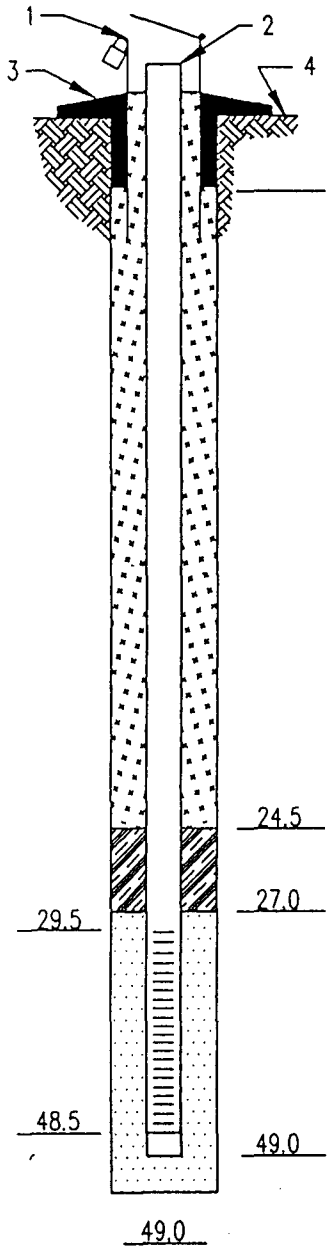
47.5–49' SANDY CLAY, brown, moist to dry.

TD = 49.0'

NOTE: 5 foot core barrel recovery system used as sampling technique

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Mon... Well ☒
Piezometer



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specification

Elevations: (feet MSL) 1 3366.18 2 3366.04 3 3364.03 4 3363.8

Coordinates: X 1659.24 Y 3905.78

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ ____

Casing Diameter: ☒ 2" ☐ 3" ☐ 4" ☐ 6" ☐ ____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ ____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ ____

Sand Pack: CSSI 16–40

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐ ____

Grout Type: Portland Weight: ____

Bore Hole Diameter: 8"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ ____

Drilled By: PRECISION ENGINEERING

Logged By: PHILIP CADARETTE

Completion Date: FEBRUARY 14, 1992

Date	D–T–W	MSL	Date	Field pH	Field EC
2/19/92	29.0	3337.0			
3/10/92	29.3	3336.7			

Comments: Concrete with 5% bentonite used to grout from seal to surface.

KWBES

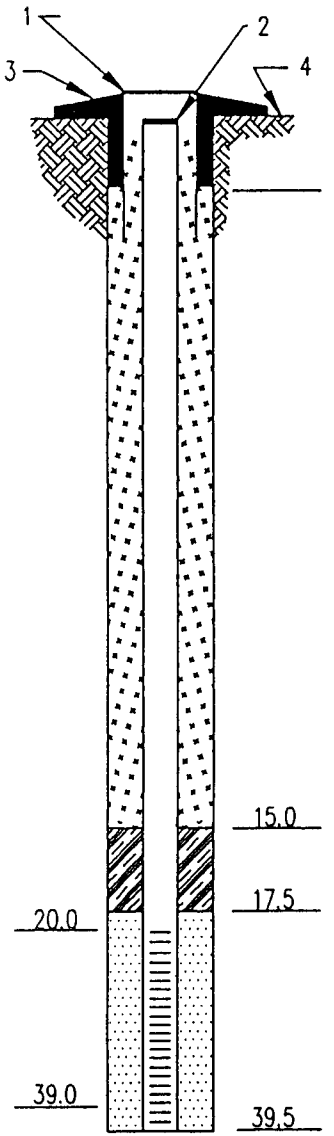
KWB2A

Project: 622092001–237 (2A)
Location: ARTESIA, NEW MEXICO

Sym	Samp Loc	PID (ppm)	Depth (Feet)	Geologic Description
			2	0-24' SANDY CLAY, brown, moist, becoming lighter in color with depth to @ 5'
			4	- dryer with depth
			6	- large pockets of white caliche starting around 8'.
			8	- small seam of pebbles @ 17.5'
			10	- intermittent thin seams
			12	- small seam of pebbles @ 17.5'
			14	- intermittent thin seams of fine sand from 17.5 to 20', moist
			16	- occasional small pebbles
			18	24-25' CLAY, brown, stiff, moist.
			20	25-29' SANDY CLAY, brown, interspersed with 6" seams of gravel, saturated.
			22	
			24	29-30' CLAYEY GRAVEL, saturated.
			26	30-35' CLAYEY SAND, brown, saturated with pebbles and rock.
			28	
			30	35-39.5' CLAY, brown, dry to moist, increasing sand and moisture with depth - gravel, dry at 39'.
			32	
			34	TD = 39.5'
			36	
			38	
			40	NOTE: 5 foot core recovery system used as sampling technique.
			42	
			44	
			46	
			48	
			50	

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Mon. g Well ☒
Piezometer



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 3345.49 2 3345.31 3 3345.49 4 3345.3

Coordinates: X 2183.45 Y 7907.17

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☒ 2" ☐ 3" ☐ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: 20/40 Colorado

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐ _____

Grout Type: Type I Portland Weight: _____

Bore Hole Diameter: 8"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: PRECISION ENGINEERING

Logged By: PHILLIP CADARETTE

Completion Date: FEBRUARY 14, 1992

Date	D-T-W	MSL	Date	Field pH	Field EC
2/19/92	20.7	3324.6			
3/10/92	21.0	3324.3			

Comments: Concrete with 5% bentonite used to grout from seal to surface.

KWBES

Navajo

KWB3A

Project: 622092001-237 (3A)
Location: ARTESIA, NEW MEXICO

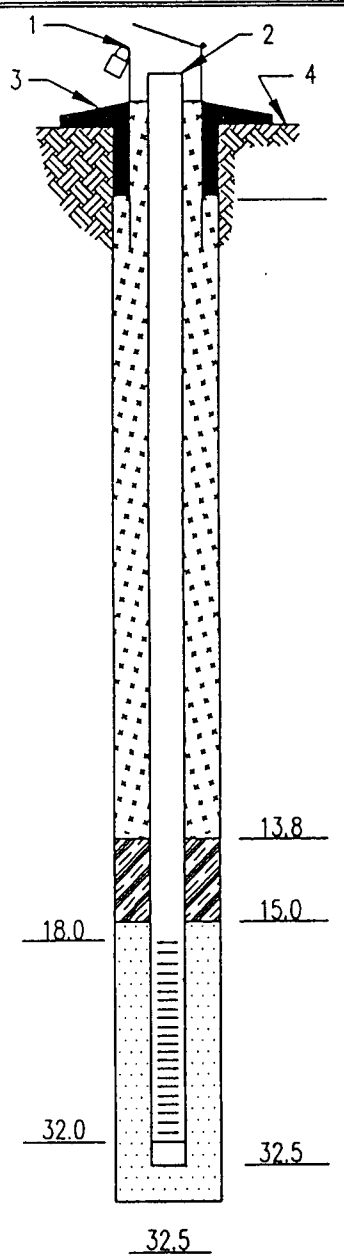
Sym	Samp	Loc	PID (ppm)	Depth (Feet)
				2
				4
				6
				8
				10
				12
				14
				16
				18
				20
				22
				24
				26
				28
				30
				32

Geologic Description

0–2'	SANDY CLAY, dark brown, with roots.
2–14'	SANDY CLAY, brown, dry to moist, lighter in color with increasing depth, white caliche pebbles showing up at 9–10 feet, occasional pockets of fine white sand.
14–20'	CLAY, reddish brown, moist, some caliche pebbles and sand pockets.
20–22'	SANDY CLAY, brown and white, saturated, increasing pebble content.
22–23'	GRAVEL, 1 to 2" rocks, saturated.
23–32.5'	SANDY CLAY, brown and white, moist to dry, pebble content decreasing with depth.
	TD = 32.5'

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Monitoring Well ☒
Piezometer ☐



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 3351.06 2 3350.83 3 3349.18 4 3348.8

Coordinates: X 5172.42 Y 5181.92

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☐ 2" ☐ 3" ☒ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: CSSI 16-40

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐ _____

Grout Type: Portland Weight: _____

Bore Hole Diameter: 12"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: PRECISION ENGINEERING

Logged By: PHILIP CADARETTE

Completion Date: FEBRUARY 15, 1992

Date	D-T-W	MSL	Date	Field pH	Field EC
2/19/92	14.4	3336.4			
3/10/92	14.5	3336.3			

Comments: Concrete with 5% bentonite used to grout from seal to surface.

KWBES

KWB1B

Project: 622092001-237 (1B)
Location: ARTESIA, NEW MEXICO

Sym	Samp	Loc	PID (ppm)	Depth (Feet)

Geologic Description

0–16.5' SANDY CLAY, brown, moist to dry, becoming lighter in color with decreasing moisture, pockets of fine white caliche (appearing at 14').

16.5–23' CLAY, brown, moist, stiff to plastic, some black stippling.

23–29.5' SANDY CLAY, brown, moist, reaching saturation near 29'.

29.5–45' CLAYEY GRAVEL, saturated, fine sand, pebbles, rocks to 3" in diameter, gravel sand–clay mix.

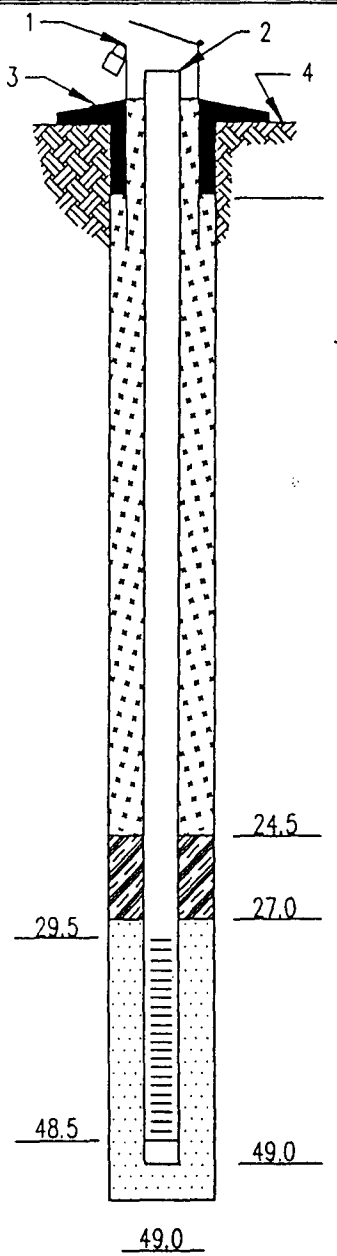
45–47.5' SAND, fine grained, brown, saturated.

47.5–49' SANDY CLAY, brown, moist to dry.

TD = 49.0'

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Mon...ing Well ☒
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 3366.40 2 3366.26 3 3364.12 4 3363.9

Coordinates: X 1646.63 Y 3905.71

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☐ 2" ☐ 3" ☒ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: CSSI 16–40

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐ _____

Grout Type: Portland Weight: _____

Bore Hole Diameter: 12"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: PRECISION ENGINEERING

Logged By: PHILIP CADARETTE

Completion Date: FEBRUARY 18, 1992

Date	D–T–W	MSL	Date	Field pH	Field EC
2/19/92	28.9	3337.4			
3/10/92	29.2	3337.1			

Comments: Concrete with 5% bentonite used to grout from seal to surface.

KWBES

KWB2B

Project: 622092001–237 (2B)
Location: ARTESIA, NEW MEXICO

Sym	Samp	Loc	PID (ppm)	Depth (Feet)
				2
				4
				6
				8
				10
				12
				14
				16
				18
				20
				22
				24
				26
				28
				30
				32
				34
				36
				38
				40
				42
				44
				46
				48
				50

Geologic Description

0–24' SANDY CLAY, brown, moist, becoming lighter in color with depth to @ 5'
- dryer with depth
- large pockets of white caliche starting around 8'.
- small seam of pebbles @ 17.5'
- intermittent thin seams
- small seam of pebbles @ 17.5'
- intermittent thin seams of fine sand from 17.5 to 20', moist
- occasional small pebbles

24–25' CLAY, brown, stiff, moist.

25–29' SANDY CLAY, brown, interspersed with 6" seams of gravel, saturated.

29–30' CLAYEY GRAVEL, saturated.

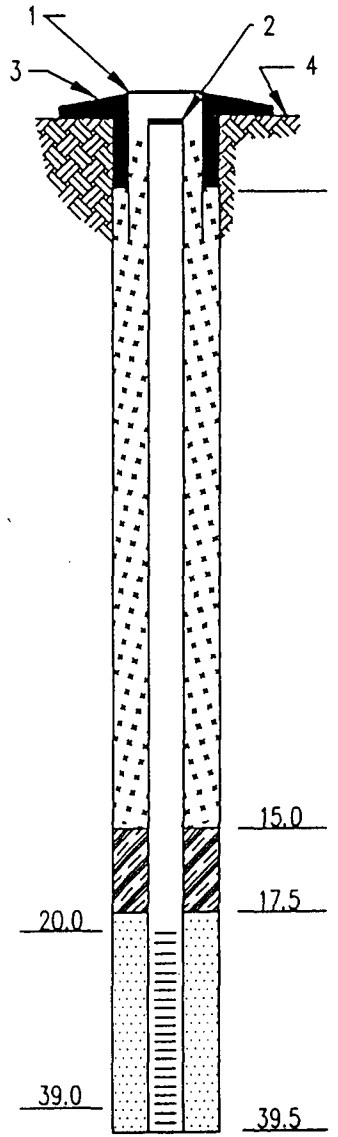
30–35' CLAYEY SAND, brown, saturated with pebbles and rock.

35–39.5' CLAY, brown, dry to moist, increasing sand and moisture with depth – gravel, dry at 39'.

TD = 39.5'

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Mon. ☒ g Well
Piezometer ☐



Depths in Feet from Ground Surface (Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 3345.52 2 3345.10 3 3345.52 4 3345.3

Coordinates: X 2193.17 Y 7905.71

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☒ 2" ☐ 3" ☐ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: 20/40 Colorado

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐ _____

Grout Type: Type I Portland Weight: _____

Bore Hole Diameter: 12"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: PRECISION ENGINEERING

Logged By: PHILLIP CADARETTE

Completion Date: FEBRUARY 15, 1992

Date	D-T-W	MSL	Date	Field pH	Field EC
2/19/92	21.0	3324.1			
3/10/92	21.2	3323.9			

Comments: Concrete with 5% bentonite used to grout from seal to surface.

KWBES

KWB3B

Project: 622092001-237 (3B)
Location: ARTESIA, NEW MEXICO

Sym	Samp	Loc	PID (ppm)	Det	Depth (Feet)
					3
					6
					9
					12
					15
					18
					21
					24
					27
					30
					33
					36
					39
					42
					45
					48
					51
					54
					57
					60
					63
					66
					69
					72
					75

Geologic Description

0–10' CLAYEY SAND, dark brown to brown, moist to slightly moist, plastiec to stiff.
–thin caliche pebble zone @ 9.0', dry.

10–15' CLAY, brown to white, moist, blocky, gypsum crystals appearing near 15.0'.

15–25' CLAYEY SAND, brown to white, moist, plastic.
–saturated at 20.5' with gravel and fine tan sand seams interbedded.

25–45' GRAVEL WITH CLAY AND SILT, saturated, ravel is caliche with angular fragments up to 2" in size.

45–48.5' RIVER ROCK, blue to gray, well rounded, saturated, 1/4" in diameter.

48.5–50' SANDY CLAY, reddish brown, slightly moist, very stiff.

50–55' CLAY WITH SAND, slightly moist to dry, very stiff, occassional rock fragments.

55–69' CLAY, reddish brown, moist, plastic to stiff.
–thin pebble beds, saturated, starting @ 58.0', occuring intermittently to 65.0'

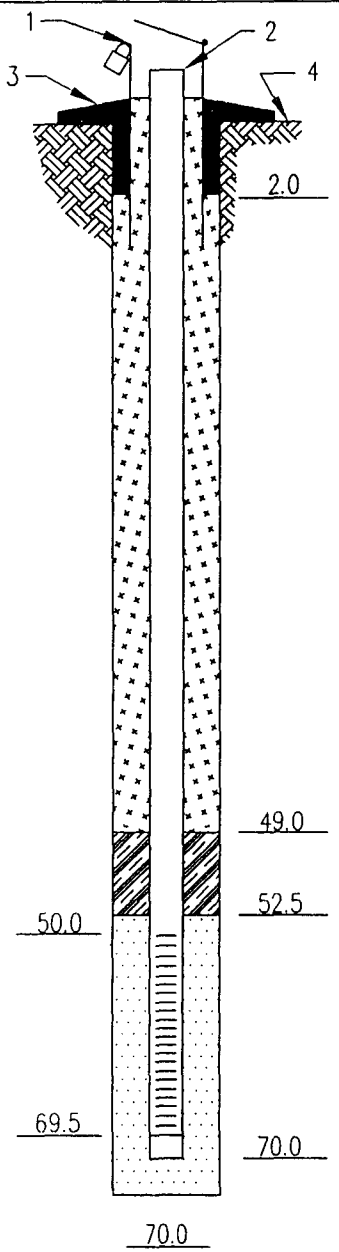
69–70' CLAY, reddish brown, moist to slightly, moist, very stiff.

TD = 70.0'

CME 5' core barrel recovery system

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Monito Well ☒
Piezometer



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 _____ 2 _____ 3 _____ 4 _____

Coordinates: X _____ Y _____

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☐ 2" ☐ 3" ☒ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: Colorado Silica Sand 20/40

Bentonite Seal: ☒ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☐ 1/4" Pellets ☐ _____

Grout Type: Portland/5% Bentonite Weight: _____

Bore Hole Diameter: 13.5"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: Precision Engineering

Logged By: PWC

Completion Date: 10/04/92

Date	D-T-W	MSL	Date	Field pH	Field EC

Comments: 10" PVC casing grouted in from 0–50.0' to seal off first saturated zone. After curing, well completed to 70.0'.

KWBES

Navajo

KWB–11B

Project: Navajo 622092003–236
Location: Artesia, New Mexico

Sym	Samp	Loc	PID (ppm)	Det (Feet)
				2
				4
				6
				8
				10
				12
				14
				16
				18
				20
				22
				24
				26
				28
				30
				32
				34
				36
				38
				40
				42
				44
				46
				48
				50

Geologic Description

0–4' SANDY CLAY, dark brown to brown, moist, plastic.

4–10' CLAYEY SAND, brown to tan, moist, plastic, occassional gypsum crystals.

10–13' SANDY CLAY, moist, plastic, thin bands of fine sand interbedded.

13–15' CLAYEY SAND, slightly moist, stiff.

15–20' CLAY, with gravel, sand, silt, brown, moist, thin saturated gravel seam @ 18.0'.

20–22' GRAVEL WITH CLAY AND SAND, saturated.

22–35' CLAY, brown, slightly moist, very stiff, occassional caliche rock fragments, dry.
–thin saturated seams of rock at 30.0', 32.0', 35.0'.

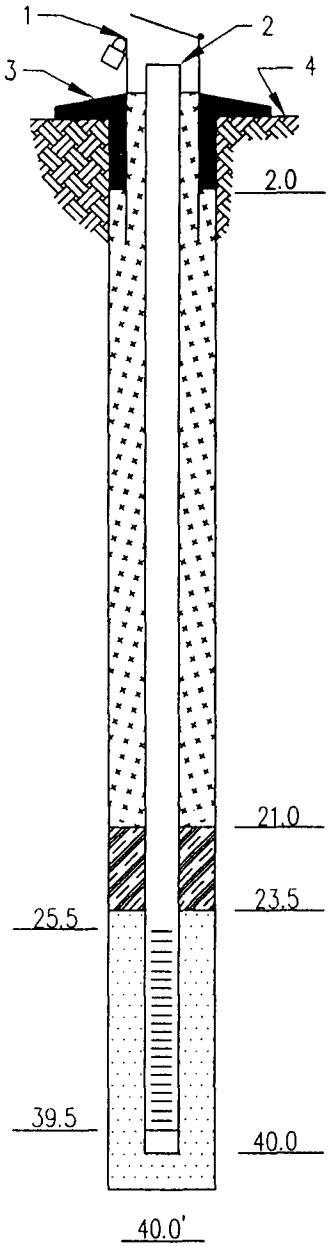
35–40' CLAY, reddish brown, moist with thin saturated caliche zones at 36.0' and 37.0'.
–slightly moist and stiff from 38–40.0'.

TD = 40.0'

CME 5' core barrel recovery system

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Monitor Well ☒
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 _____ 2 _____ 3 _____ 4 _____

Coordinates: X _____ Y _____

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☐ 2" ☐ 3" ☒ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: Colorado Silica Sand 20/40

Bentonite Seal: ☒ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☐ 1/4" Pellets ☐ _____

Grout Type: Portland/5% Bentonite Weight: _____

Bore Hole Diameter: 13.5"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: Precision Engineering

Logged By: PWC

Completion Date: 10/04/92

Date	D-T-W	MSL	Date	Field pH	Field EC

Comments: 10" PVC casing grouted in from 0–25.0' to seal off first saturated zone. After curing, well completed to 40.0'.

KWBES

KWB–12B

Project: Navajo 622092003–236
Location: Artesia, New Mexico

Samp. Meth.	Samp. Log	PID (ppm)	Depth (Feet)
RB			1–24

Geologic Description

0-1' SILTY SAND, brown, moist, medium to fine grained, many roots.

1-8.5' CLAYEY SAND, brown, changing to tan near 4', moist, friable, many roots and root channels, clay content increasing with depth.

8.5-13' CLAY, brown, moist, plastic, some gray mottling, gypsum crystals noted.

13-14' CLAYEY SAND, tan, moist, friable.

14-14.5' SAND with silt, tan, saturated, fine to medium grain.

14.5-20' CLAY, with gravel, clay is reddish/brown, very moist, plastic; gravel is < 1" dia. and saturated.

20-20.5 CLAYEY SAND, gray, saturated, some gravel fragments.

20.5-24' CLAY, reddish/brown, moist, plastic, blocky.
- thin zone of gravel near 23' is saturated (<4").

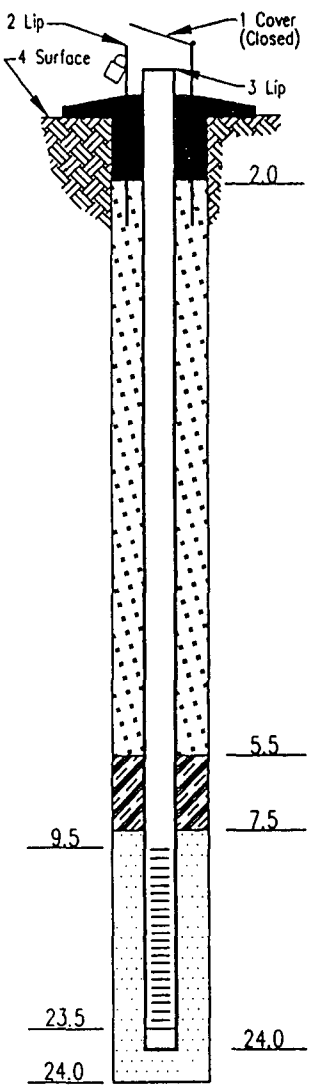
TD = 24'

Sample Method Symbols

RB=Recovery Barrel ☒ 5' ☐ ____

ST=Shelby Tube | SS=Split Spoon | C=Cutting

Monitoring Well	X
Piezometer	
Protective Casing	YES



Depths in Feet from Ground Surface (Not to Scale)

LOG-1

Design Specifications

Elevations: (feet MSL) 1 3340.69 2 3340.67 3 3340.00 4 3337.20

Coordinates: X 5606.12 Y 2420.80

Bore Hole Diameter: 12"

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ ____

Casing Diameter: ☐ 2" ☒ 4" ☐ 6" ☐ ____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ ____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ ____

Sand Pack: C.S.S.I. 20/40

Bentonite Seal: ☐ 1/4" Pellets ☒ 1/2" Pellets ☐ 1/2" Chips ☐ Hole Plug ☐ ____

Grout Type: Portland/Bentonite Weight: ____

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ ____

Drilled By: Pool Environmental Lic. #: WD 1266

Logged By: PWC

Completion Date: 01/21/93

Depth First Encountered Water: 14.0' BLS

Date	D-T-W	D-T-P	Prod Thick	Field pH	Field EC
1/26/93	10.18			6.93	7,600
2/10/93	10.41				

Comments: ____

KWBES

MW-20

Project: 622092005-110 (MW-20)
Location: Artesia, New Mexico

Samp. Meth.	Samp. Log	PID (ppm)	Depth (Feet)
RB			2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

Geologic Description

0-3.0' CLAYEY SAND, light brown, fine grained, white (carbonate nodules throughout, hard, dry, earthy odor.

3.0-7.5' SANDY CLAY, dark brown, color change to light gray at 6.0', fine grained sand, rust staining (dendritic) throughout, some clear crystals (gypsum?), soft, moist, earthy odor.

7.5-10.5' CALICHE (carbonate) GRAVEL, light gray, some clay throughout, hard, saturated at 10.0', no odor.

10.5-12.0' SANDY CLAY, light gray, fine grained sand, moist, no odor.

12.0-13.0' CALICHE (carbonate) GRAVEL, light gray, some clay throughout, hard, saturated, no odor.

13.0-23.0' CALICHE (carbonate) GRAVEL, reddish/brown, some clay throughout, hard, saturated at 13.0-13.5', 14.5-15.5', and 19.0-19.5', no odor.

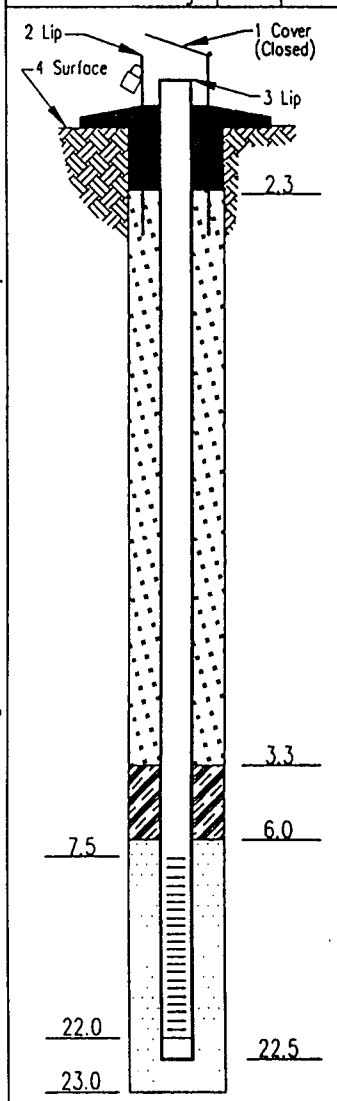
TD = 23.0'

Sample Method Symbols

☒ RB=Recovery Barrel ☒ 5' ☐ ____

ST=Shelby Tube | SS=Split Spoon | C=Cutting

Monitoring Well	X
Piezometer	
Protective Casing	YES



Depths in Feet from Ground Surface (Not to Scale)

LOG-1

Design Specifications

Elevations: (feet MSL) 1 3336.39 2 3336.37 3 3336.18 4 3333.50

Coordinates: X 6925.27 Y 1807.82

Bore Hole Diameter: 12"

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ ____

Casing Diameter: ☐ 2" ☒ 4" ☐ 6" ☐ ____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ ____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ ____

Sand Pack: Colorado Silica 20-40

Bentonite Seal: ☐ 1/4" Pellets ☒ 1/2" Pellets ☐ 1/2" Chips ☐ Hole Plug ☐ ____

Grout Type: None Weight: ____

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ ____

Drilled By: Precision Engineering Lic. #: ____

Logged By: WCZ

Completion Date: 1/23/93

Depth First Encountered Water: 10.0' BLS

Date	D-T-W	D-T-P	Prod Thick	Field pH	Field EC
1/27/93	10.65			6.85	5,200
2/10/93	10.92				

Comments: Replacement well between MW-8 and MW-9.

KWBES

MW-21

Project: 622092005-110 (MW-21)
Location: Artesia, New Mexico

Geologic Description

Depth (Feet)	Description
0-0.5'	Silt, roots, topsoil.
1-7'	Silty clay, light gray, dry 1-3', crystals (calcite?) 3-4', brown with some black, no odor, roots 4-4.5', brown olive brown mottling with crystals 5-6', less mottling 6-7'.
7-8'	Clay, light gray, fine gravel, crystals, very plastic, no odor.
8-10'	Missing.
10-13'	Clay, light gray, granular, saturated at 10', light gray brown, moist and plastic 10.5-13'.
13 -15.5'	Silty clay, light brown, moist, 2" piece of broken limestone gravel at 15'.
15.5-17'	Clay, light brown, plastic, slightly moist, platy caliche 16.5-17'.
17-17.5'	Gravely clay, light gray, 3/4" gravel, cemented, saturated.
17.5-20'	Silty clay, light brown, slightly moist and plastic.

Samp. Meth.: RB

Sample Method Symbols

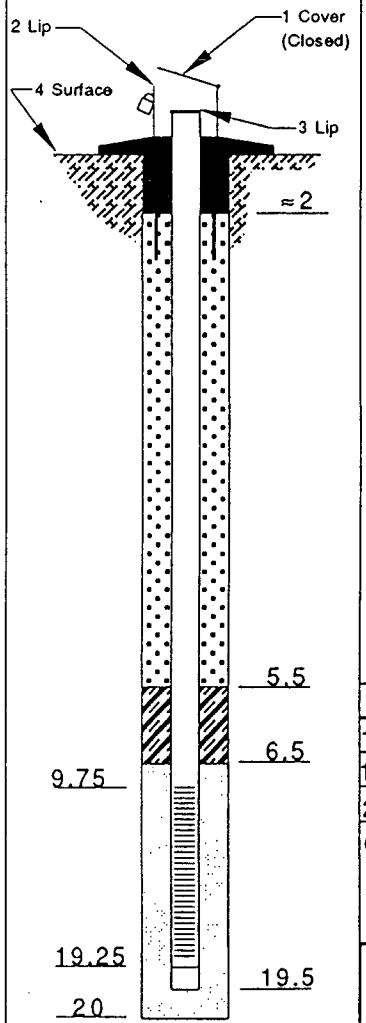
☒ RB=Recovery Barrel ☒ 5' ☐ _____

ST=Shelby Tube | SS=Split Spoon | C=Cutting

Monitoring Well ☒

Piezometer ☐

Protective Casing YES



Depths in Feet from Ground Surface (Not to Scale)

LOG - 1

Design Specifications

Elevations: (feet MSL) 1 3334.52 2 _____ 3 3334.29 4 3331.6

Coordinates: X 7336.58 Y 1645.21

Bore Hole Diameter: 8 1/4"

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☒ 2" ☐ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: CSSI 16-40 silica sand

Bentonite Seal: ☐ 1/4" Pellets ☒ 1/2" Pellets ☐ 1/2" Chips ☐ Hole Plug ☐ _____

Hydrated w/ 5 gallons water

Grout Type: 6% bentonite/Portland Weight: _____

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled by: Precision Engineering Lic.#: _____

Logged by: DGB

Completion Date: 1/10/95

Depth First Encountered Water: 10 ft. BLS

Date	D-T-W	D-T-P	Prod Thick	Field pH	Field EC
1/10/95	11.07				
1/12/95	11.05			6.5	6100
2/5/95	11.19				

Comments: D-T-W from casing lip.

RE/SPEC

MW-29

Project: 318/3.3

Location: Artesia, New Mexico

Samp. Meth.	Samp. Log	PID (ppm)	Depth (Feet)
RB			1
			2
			3
			4
			5
			6
			7
			8
			9
			10
			11
			12
			13
			14
			15
			16
			17
			18
			19
			20
			21
			22
			23
			24

Geologic Description

0-1.5' CLAYEY GRAVELS, brown clay, gray gravel, clay is dry, gravel is well rounded.

1.5-8' CLAYEY SAND, brown, moist, friable, clay content increasing with depth.

8-11.5' SILTY GRAVELS, tan silts and sand, gravel is well-rounded, saturated.

11.5-13' CLAYEY SAND, brown, very moist, friable.

13-16' CLAYEY GRAVELS, brown clay, gray gravel, saturated, gravel is well rounded.

16-19' SILTY SAND, tan, satruated, fine grained.

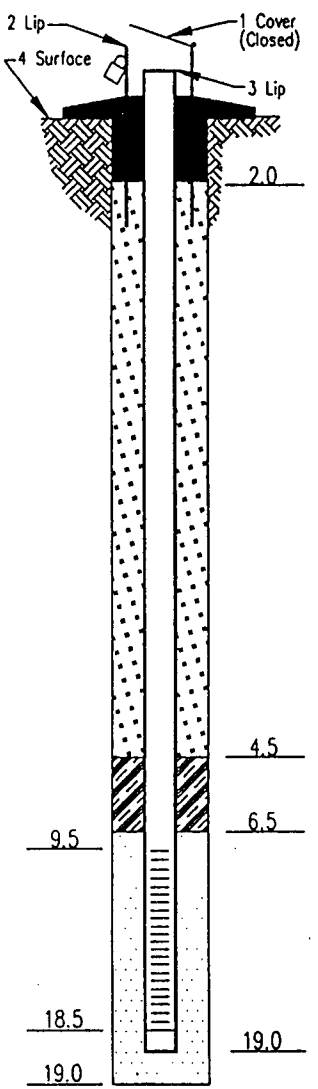
TD = 19.0'

Sample Method Symbols

RB=Recovery Barrel ☒ 5' ☐ ____

ST=Shelby Tube | SS=Split Spoon | C=Cutting

Monitoring Well	
Piezometer	X
Protective Casing	YES



Depths in Feet from Ground Surface (Not to Scale)

LOG-1

Design Specifications

Elevations: (feet MSL) 1 3342.24 2 3342.22 3 3342.05 4 3339.40

Coordinates: X 5790.02 Y 2612.22

Bore Hole Diameter: 8"

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ ____

Casing Diameter: ☒ 2" ☐ 4" ☐ 6" ☐ ____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ ____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ ____

Sand Pack: C.S.S.I. 20/40

Bentonite Seal: ☐ 1/4" Pellets ☒ 1/2" Pellets ☐ 1/2" Chips ☐ Hole Plug ☐ ____

Grout Type: Portland/Bentonite Weight: ____

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ ____

Drilled By: Pool Environmental Lic. #: WD 1266

Logged By: PWC

Completion Date: 01/22/93

Depth First Encountered Water: 8.0' BLS

Date	D-T-W	D-T-P	Prod Thick	Field pH	Field EC
2/10/93	13.32				

Comments: ____

KWBES

Navajo

EC-NP3

Project: 622092005-110 (EC-P3)
Location: Artesia, New Mexico

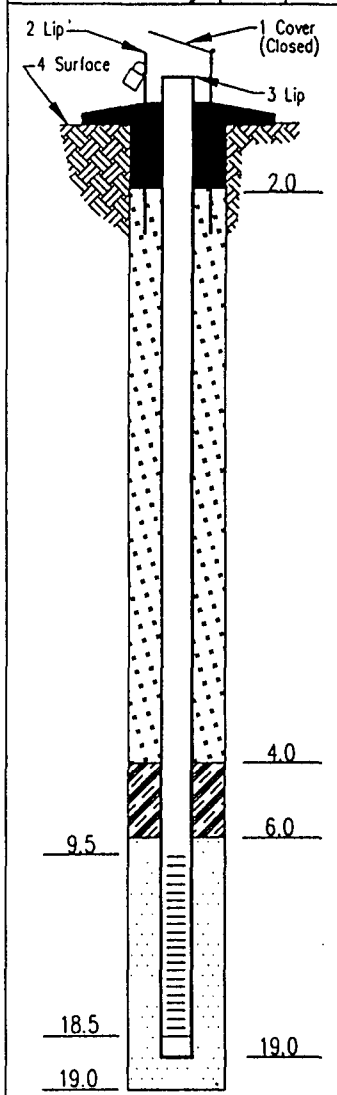
Samp. Meth.	Samp. Log	PID (ppm)	Depth (Feet)	Geologic Description
			1	0-8.5' CLAYEY SAND, brown to tan, dry to moist, friable, roots decreasing with depth.
			2	
			3	
			4	8.5-9' CLAYEY GRAVELS, brown and tan, dry, clay very stiff.
			5	
			6	9-10' GRAVEL, tan to white, up to 1-1/2" dia., dry.
			7	
			8	10-12' CLAYEY GRAVELS, brown and white, saturated.
RB			9	12-13.5' SILTY SAND, brown, saturated, fine grained, some small gravel fragements.
			10	
			11	13.5-17' CLAYEY SAND, brown, saturated to 16' then moist, clay content increasing with depth.
			12	
			13	
			14	17-18' CLAYEY GRAVEL, brown and white, saturated.
			15	
			16	18-19' SILTY SAND, saturated, fine grained.
			17	TD = 19.0'
			18	
			19	
			20	
			21	
			22	
			23	
			24	

Sample Method Symbols

☒ RB=Recovery Barrel ☒ 5' ☐ ____

ST=Shelby Tube | SS=Split Spoon | C=Cutting

Monitoring Well	
Piezometer	X
Protective Casing	YES



Depths in Feet from Ground Surface (Not to Scale)

LOG-1

Design Specifications

Elevations: (feet MSL) 1 3342.09 2 3342.07 3 3341.89 4 3339.10

Coordinates: X 5384.01 Y 2190.68

Bore Hole Diameter: 8"

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ ____

Casing Diameter: ☒ 2" ☐ 4" ☐ 6" ☐ ____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ ____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ ____

Sand Pack: C.S.S.I. 20/40

Bentonite Seal: ☐ 1/4" Pellets ☒ 1/2" Pellets ☐ 1/2" Chips ☐ Hole Plug ☐ ____

Grout Type: Portland/Bentonite Weight: ____

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ ____

Drilled By: Pool Environmental Lic. #: WD 1266

Logged By: PWC

Completion Date: 01/21/93

Depth First Encountered Water: 10.0' BLS

Date	D-T-W	D-T-P	Prod Thick	Field pH	Field EC
2/10/93	11.13				

Comments: ____

KWBES

Naval

EC-NP2

Project: 622092005-110 (EC-P2)

Location: Artesia, New Mexico

Samp. Meth.	Samp. Log	PID (ppm)	Depth (Feet)
RB			2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36

Geologic Description

0-11.5' SILTY GRAVELS, sand and silt are tan, dry, gravel is well rounded.

11.5-19' SANDY CLAY, reddish/brown, moist, plastic, clay content increasing with depth.

19-25' CLAY, brown, moist, plastic.

25-29' SANDY CLAY, brown, saturated.

29-34' SILTY SAND, brown, saturated, fine grained.

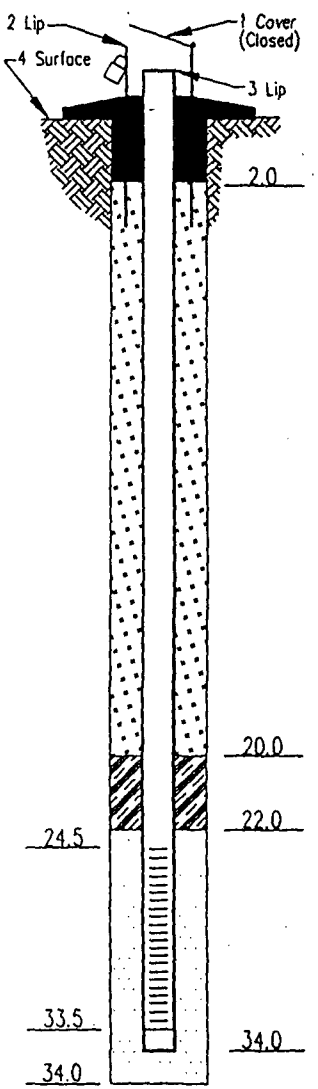
TD = 34.0'

Sample Method Symbols

RB=Recovery Borrel ☒ 5' ☐ ____

ST=Shelby Tube | SS=Split Spoon | C=Cutting

Monitoring Well	
Piezometer	X
Protective Casing	NO



Depths in Feet from Ground Surface (Not to Scale)

LOG-1

Design Specifications

Elevations: (feet MSL) 1 3345.01 2 3344.99 3 3344.84 4 3342.10

Coordinates: X 6120.29 Y 2960.65

Bore Hole Diameter: 8"

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ ____

Casing Diameter: ☒ 2" ☐ 4" ☐ 6" ☐ ____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ ____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ ____

Sand Pack: C.S.S.I. 20/40

Bentonite Seal: ☐ 1/4" Pellets ☒ 1/2" Pellets ☐ 1/2" Chips ☐ Hole Plug ☐ ____

Grout Type: Portland/Bentonite Weight: ____

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ ____

Drilled By: Pool Environmental Lic. #: WD 1266

Logged By: PWC

Completion Date: 01/23/93

Depth First Encountered Water: 25.0' BLS

Date	D-T-W	D-T-P	Prod Thick	Field pH	Field EC
2/10/93	18.58				

Comments: ____

KWBES

EC-NP4

Project: 622093001-115 (EC-P4)
Location: Artesia, New Mexico

Sym	Samp	Loc	PID (ppm)	Depth (Feet)
				2
				4
				6
				8
				10
				12
				14
				16
				18
				20
				22
				24
				26
				28
				30
				32
				34
				36
				38
				40
				42
				44
				46
				48
				50

Geologic Description

0–5' SANDY CLAY, brown, moist to dry, becoming lighter in color with decreasing moisture.

5–13' SANDY CLAY, light brown, dry to moist, showing white streaks of caliche at 10'.

13–15' CLAY, dark brown, dry to moist.

15–29' CLAYEY SAND, brown, moist, slight gray discoloration starting at 16.5', black and gray hydrocarbon staining from 17–20', thin gravel layers at 18', discoloration lessening with depth, brown clayey sand alternating with thin bands of gravel starting at 20'.

29–35' CLAYEY SILT, brown to tan, saturated.

35–38' SAND with GRAVEL, tan, saturated.

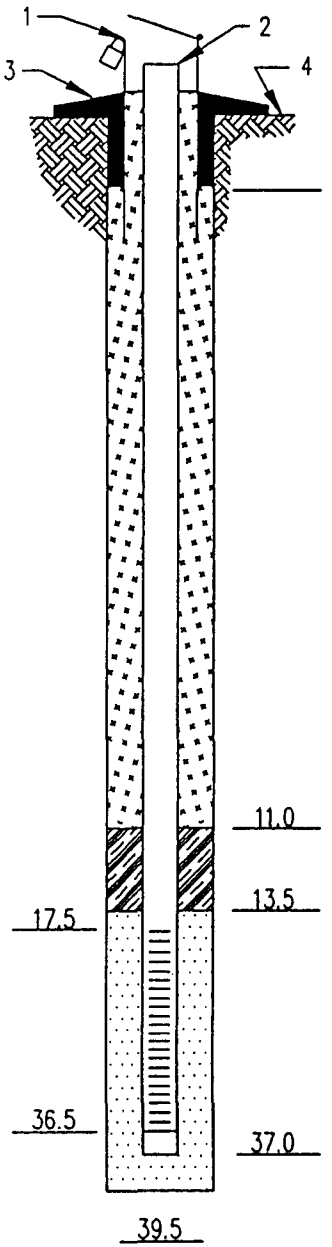
38–39.5' CLAY, brown, stiff, dry.

TD = 39.5'

NOTE: 5 foot core barrel recovery system used as sampling technique

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Monitoring Well ☒
Piezometer ☐



Depths in Feet from Ground Surface (Not to Scale)

Design Specification

Elevations: (feet MSL) 1 3358.71 2 3358.55 3 3356.41 4 3356.1

Coordinates: X 2652.58 Y 5161.82

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☒ 2" ☐ 3" ☐ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: CSSI 16–40

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐ _____

Grout Type: Portland Weight: _____

Bore Hole Diameter: 8"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: PRECISION ENGINEERING

Logged By: PHILIP CADARETTE

Completion Date: FEBRUARY 12, 1992

Date	D-T-P	MSL	D-T-W	Field pH	Field EC
2/19/92	21.6	3337.0	24.8		
3/10/92	21.8	3336.8	25.1		

Comments: Concrete with 5% bentonite used to grout from seal to ground surface.

KWBES

Navajo Nation

KWB6

Project: 622092001-237 (KWB6)
Location: ARTESIA, NEW MEXICO

Sym	Samp Loc	PID (ppm)	Depth (Feet)
			2
			4
			6
			8
			10
			12
			14
			16
			18
			20
			22
			24
			26
			28
			30
			32
			34
			36
			38
			40
			42
			44
			46
			48
			50

Geologic Description

0-2' CLAYEY SAND, brown, moist, becoming lighter colored with depth.

2-25' SANDY CLAY, brown, moist to dry, becoming lighter in color with depth to 5', thin banding of caliche nodules noted at various depths, banding becoming thicker with depth, slight gray hydrocarbon staining evident at 15', darker gray hydrocarbon staining with depth, odor increasing, 2" gravel seam, saturated at 23'.

25-28' CLAYEY SAND, dark gray, from 23-26', strong hydrocarbon odor, saturated.

28-33' SILTY SAND, brown, saturated, slight staining, decreased odor.

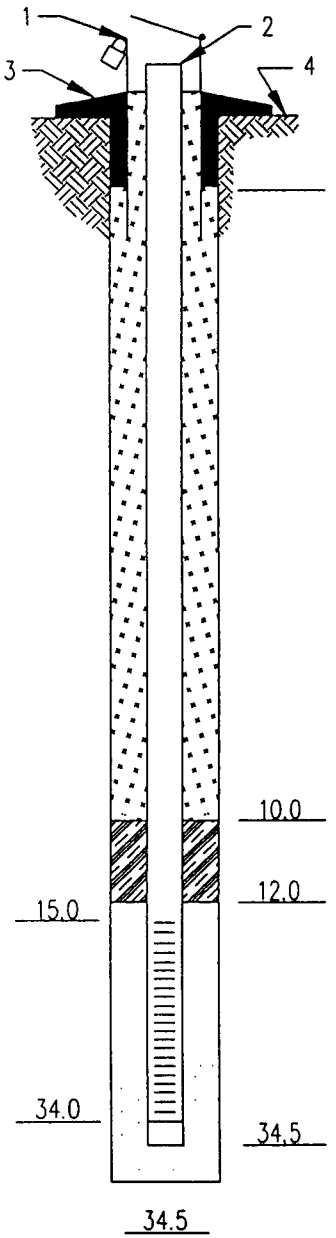
33-35' CLAYEY SAND, brown, moist.

TD = 34.5'

NOTE: 5 foot core barrel recovery system used as sampling technique

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Monitoring Well ☒
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 3348.59 2 3348.39 3 3346.22 4 3345.8

Coordinates: X 3211.93 Y 6875.69

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☒ 2" ☐ 3" ☐ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: CSSI 16-40

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐ _____

Grout Type: Portland Weight: _____

Bore Hole Diameter: 8"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: PRECISION ENGINEERING

Logged By: PHILIP CADARETTE

Completion Date: FEBRUARY 12, 1992

Date	D-T-W	MSL	Date	Field pH	Field EC
2/19/92	20.6	3327.79			
3/10/92	21.0	3327.39			

Comments: Concrete with 5% bentonite used to grout from seal to ground surface.

KWBES

Navajo

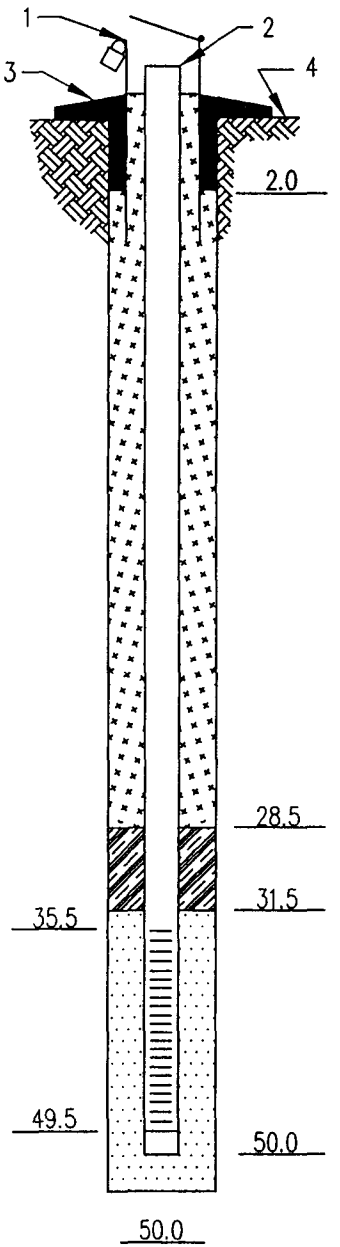
KWB8

Project: 622092001-237 (KWB8)
Location: ARTESIA, NEW MEXICO

Sym	Samp Loc	PID (pr)	Depth (Feet)	Geologic Description
			2	0–10' SANDY CLAY, dark brown to brown, moist to slightly moist, plastic to friable.
			4	–hydrocarbon odor apparent at 8.0'
			6	–gray hydrocarbon staining apparent starting at 9.0'
			8	
			10	10–12' CLAY, gray hydrocarbon staining, strong odor, occasional pockets of fine sand, moist.
			12	
			14	12–20' SANDY CLAY, gray hydrocarbon staining, strong hydrocarbon odor, occasional pockets of fine sand, moist.
			16	–color darkens to black from 17–19.5'
			18	–saturated thin pebble seams at 17' and 18.5'.
			20	–hydrocarbon staining becomes lighter at 19.5'.
			22	
			24	20–29' CLAYEY SAND, gray hydrocarbon staining, strong odor, very moist to saturated at 25–28'.
			26	
			28	29–32' CLAY WITH SAND, light brown, slightly moist to dry, very stiff, no hydrocarbon staining or odor.
			30	
			32	32–45' SANDY CLAY, hydrocarbon starinin and strong odor, moist to saturated at 33 feet with thin gravel zone
			34	–saturated from 42.5–45.0'
			36	
			38	45–46' GRAVEL WITH SAND AND CLAY, saturated hydrocarbon staining and strong odor.
			40	
			42	46–50' SANDY CLAY, brown, slightly moist, stiff, no hydrocarbon stain or odor.
			44	
			46	TD = 50.0'
			48	CME 5' core barrel recovery system
			50	

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Monit Well ☒
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 _____ 2 _____ 3 _____ 4 _____

Coordinates: X _____ Y _____

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☐ 2" ☐ 3" ☒ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: Colorado Silica Sand 20/40

Bentonite Seal: ☒ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☐ 1/4" Pellets ☐ _____

Grout Type: Portland/5% Bentonite Weight: _____

Bore Hole Diameter: 13.5"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: Precision Engineering

Logged By: PWC

Completion Date: 10/02/92

Date	D-T-W	MSL	Date	Field pH	Field EC

Comments: 10" PVC casing grouted in from 0–30'. After curing, well completed.

KWBES

Navajo Refining

KWB-10

Project: Navajo 622092003-236
Location: Artesia, New Mexico

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

FIELD ENGR. LOG

Section 1. GENERAL INFORMATION

(A) Owner of well NAVAJO REFINING COMPANY Owner's Well No. 18

Street or Post Office Address Box 159

City and State Artesia, N M 88210

Well was drilled under Permit No. RA 6969 and is located in the: Observation/Monitor well

a. NW ¼ SW ¼ NW ¼ ¼ of Section 9 Township 17S Range 26 E N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor Hughes Drilling Company License No. WD 749

Address Box 199A, Route 1, Artesia, N M 88210

Drilling Began 6/8/82 Completed 6/8/82 Type tools Air rotary Size of hole 7- 7/8 in.

Elevation of land surface or casing at well is 3364 ft. Total depth of well 19 ft.

Completed well is [X] shallow [ ] artesian. Depth to water upon completion of well 10 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
16	19	3	fine anhydritic sand and red shale	NA

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
6	PVC				20		15	19

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
0	12			3	hand

Section 5. PLUGGING RECORD

Plugging Contractor _____

Address _____

Plugging Method _____

Date Well Plugged _____

Plugging approved by:

_____
State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received June 22, 1982

Quad _____ FWL _____ FSL _____

File No. A-6969 Use Obs./Mo. ring Location No. 17.26.9.13111

Section 6. LOG OF WELL:

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	2	2	Red soil
2	8	6	gyp (weathered anhy) with red shale
8	14	6	gyp white and anhydritic sand
14	19	5	Fine red shale and anhyritic sand - water @ 16'

Section 7. REMARKS AND ADDITIONAL INFORMATION

observation/monitoring well

JUN 27 2 03 PM '82

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Dale Hughes
Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All questions, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

FIELD ENGR. LOG ✓

Section 1. GENERAL INFORMATION

(A) Owner of well NAVAJO REFINING COMPANY Owner's Well No. 23

Street or Post Office Address Drawer 159

City and State Artesia, N M 88210

Well was drilled under Permit No. RA 6975 X and is located in the:

a. NE ¼ NW ¼ NW ¼ SW ¼ of Section 9 Township 17 S Range 26 E N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____ Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor S. Dale Hughes License No. WD 749

Address Route 1, Box 199 A, Artesia, N M 88210

Drilling Began 6/28/82 Completed 6/28/82 Type tools Air Rotary Size of hole 7 7/8 in.

Elevation of land surface or _____ at well is 3363 ft. Total depth of well 20 ft.

Completed well is ☒ shallow ☐ artesian. Monitor Depth to water upon completion of well 9 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
15	17	2	Anhyritic sand	na

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
6	PVC				20		15	20

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
0	7	8		3	Hand

Section 5. PLUGGING RECORD

Plugging Contractor _____

Address _____

Plugging Method _____

Date Well Plugged _____

Plugging approved by:

_____ State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received August 19, 1982

Quad _____ FWL _____ FSL _____

File No. RA-6975 x Use Observation Location No. 17.26.9.31122

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	5	5	gyp with anhydrite crystals
	10	5	" " " "
	12	2	gyp and granular anhydrite
	15	3	anhydritic sand and clay
	17	2	" " " "
	20	3	anhy sand with limestone gravel

Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Dale Hughes
Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section need be completed.

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

FIELD ENGR. LC

Section 1. GENERAL INFORMATION

(A) Owner of well NAVAJO REFINING COMPANY Owner's Well No. 24

Street or Post Office Address Drawer 159

City and State Artesia, N M 88210

Well was drilled under Permit No. RA 6975 X 2 and is located in the:

a. E ¼ SW ¼ SW ¼ NW ¼ of Section 9 Township 17 S Range 26 E N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor S. Dale Hughes License No. WD 749

Address Route 1, Box 199A, Artesia, N M 88210

Drilling Began 7/5/82 Completed 7/5/82 Type tools Air rotary Size of hole 8 in.

Elevation of land surface or _____ at well is 3362 ft. Total depth of well 19 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 8 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
16	18	2	Anhy sand	na

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
6	PVC				20		15	20

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
0	7	8		3	hand

Section 5. PLUGGING RECORD

Plugging Contractor _____

Address _____

Plugging Method _____

Date Well Plugged _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received August 19, 1982 Quad _____ FWL _____ FSL _____

File No. RA-6975 X 2 Use Observation Location No. 17.26.9.13322

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	5	5	gyp & gran. anhydrite
	10	5	" " " "
	16	6	gyp & clay
	18	2	anhydritic sand and gravel
	19	1	gyp and gravel

Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above-described hole.

Dale Hughes
Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 6 need be completed.

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

FIELD ENGR. LOG

Section 1. GENERAL INFORMATION

(A) Owner of well NAVAJO REFINING COMPANY Owner's Well No. 28

Street or Post Office Address Drawer 159

City and State Artesia, N M 88210

Well was drilled under Permit No. RA 6975 X 6 and is located in the:

a. NE ¼ NE ¼ SE ¼ SW ¼ of Section 9 Township 17 S Range 28 26 E. N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor S. Dale Hughes License No. WD 749

Address Route 1, Box 199 A, Artesia, N M. 88210

Drilling Began 7/7/82 Completed 7/8/82 Type tools Air Rotary Size of hole 8 in.

Elevation of land surface or _____ at well is 3361 ft. Total depth of well 30 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 10 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
10	12	2	anhydritic sand	na

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
6	PVC				30		25	30

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
0	10	8		4	hand

Section 5. PLUGGING RECORD

Plugging Contractor _____

Address _____

Plugging Method _____

Date Well Plugged _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received August 19, 1982

Quad _____ FWL _____ FSL _____

File No. RA-6975 X 6 Use _____ Location No. 17.26.9.34223

Section 6. LOG OF HOLE

Depth in Feet From	To	Thickness in Feet	Color and Type of Material Encountered
0	5	5	gyp & red clay
	10	5	" " "
	10	2	anhydritic sand & gravel
	25	13	gyp & gravel
	30	5	gyp

Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above-described hole.

Dale Hughes
Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered completely and accurately as is possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 7 need be completed.

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

FIELD ENGR. LOG

Section 1. GENERAL INFORMATION

(A) Owner of well NAVAJO REFINING COMPANY Owner's Well No. 29

Street or Post Office Address Drawer 159

City and State Artesia, N M 88210

Well was drilled under Permit No. RA 6975 X 7 and is located in the:

a. NE ¼ ~~NE~~ ¼ SW ¼ NW ¼ of Section 9 Township 17 S Range 26 E N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor S. Dale Hughes License No. WD 749

Address Route 1, Box 199 A, Artesia, N M 88210

Drilling Began 7/20/82 Completed 7/21/82 Type tools Air rotary Size of hole 8 in.

Elevation of land surface or _____ at well is 3363 ft. Total depth of well 21.5 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 11 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
20	21.5	1.5	Anhydritic sand	na

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
6	PVC				22		19	22

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
0	8	8		6	hand

Section 5. PLUGGING RECORD

Plugging Contractor _____

Address _____

Plugging Method _____

Date Well Plugged _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received August 19, 1982 Quad _____ FWL _____ FSL _____

File No. RA-6975 X 7 Use Observa. Location No. 17.26.9.13422

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	5	5	miscellaneous fill
	10	5	oil stained gyp
	15	5	gyp
	20	5	gyp
	21.5	1.5	anhydritic sand & gravel

Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the described hole.

Dale Hughes
Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section need be completed.

Well # 39 Navajo Refining Company - Monitor Wells

Drilling Contractor - D. Anderson, El Paso

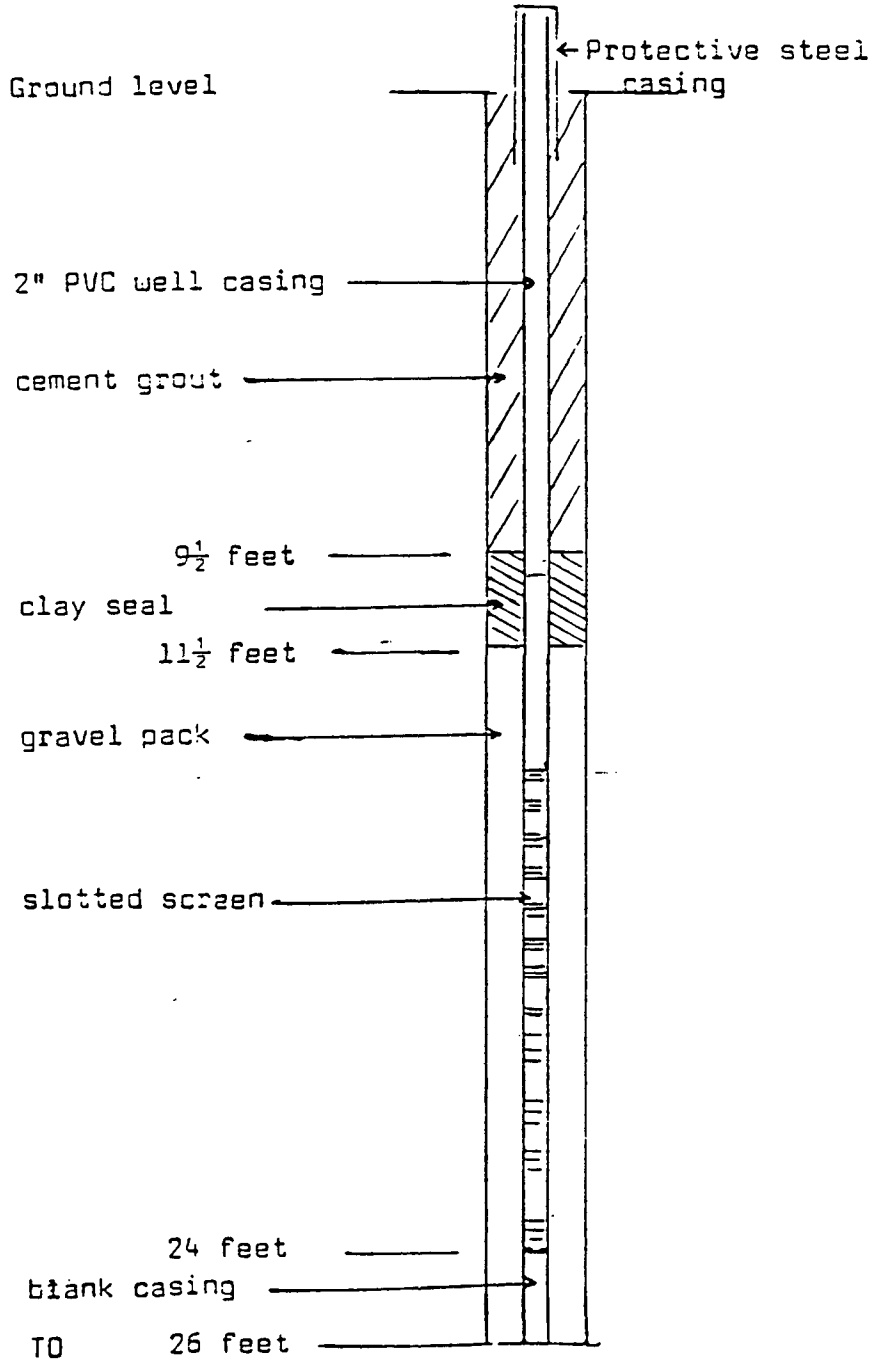
Rig - Hollow stem auger 8" diameter Split spoon core barrel 18"

Date 6/13/84 Richard Fasio & Jim Chaney

Depth	Sample description
0 - 6	Lt. red clayey soil
7½	6.8' mixed soil with gyp pebbles. 7½' white gyp
9¼	8.7' wht gyp - soft. 9¼' gry clay & gyp
10¾	10' wht & gry gyp. 10¾ gyp laminated. odor gas dry at bottom
12¼	10.95' gry gyp. 12¼' dk gry gyp. gyp odor gas
14	gry clay with pebbles, gyp. good oil stain and odor
15½	14½ wht gyp & anhy. 15½ dk gry gyp & anhy. oil stain & odor
17	15¾ dk gry anhy saturated. 17 wht anhy, gyp, rd clay
18½	17½ gry anhy. oil stn. 18½ anhy w rd & gry shale sli odor. rd shale at bottom
20	18.8 gry anhy w anhy pebbles water 20' sdy red clay
21½	red clay & anhy mixed w pebbles - water
23	mixed rd & wht anhy w gran to gravelly material - wtr
24¾	mixed wht & rd anhy sli clay wtr
26	fine rd & wht anhy with clay dry

DETAILS OF WELL CONSTRUCTION

Well # 39 Date 6/13/84 Navajo Refining Company



Measurements from land surface

Well # 41 Navajo Refining Company - Monitor Wells

Drilling Contractor - D. Anderson, El Paso

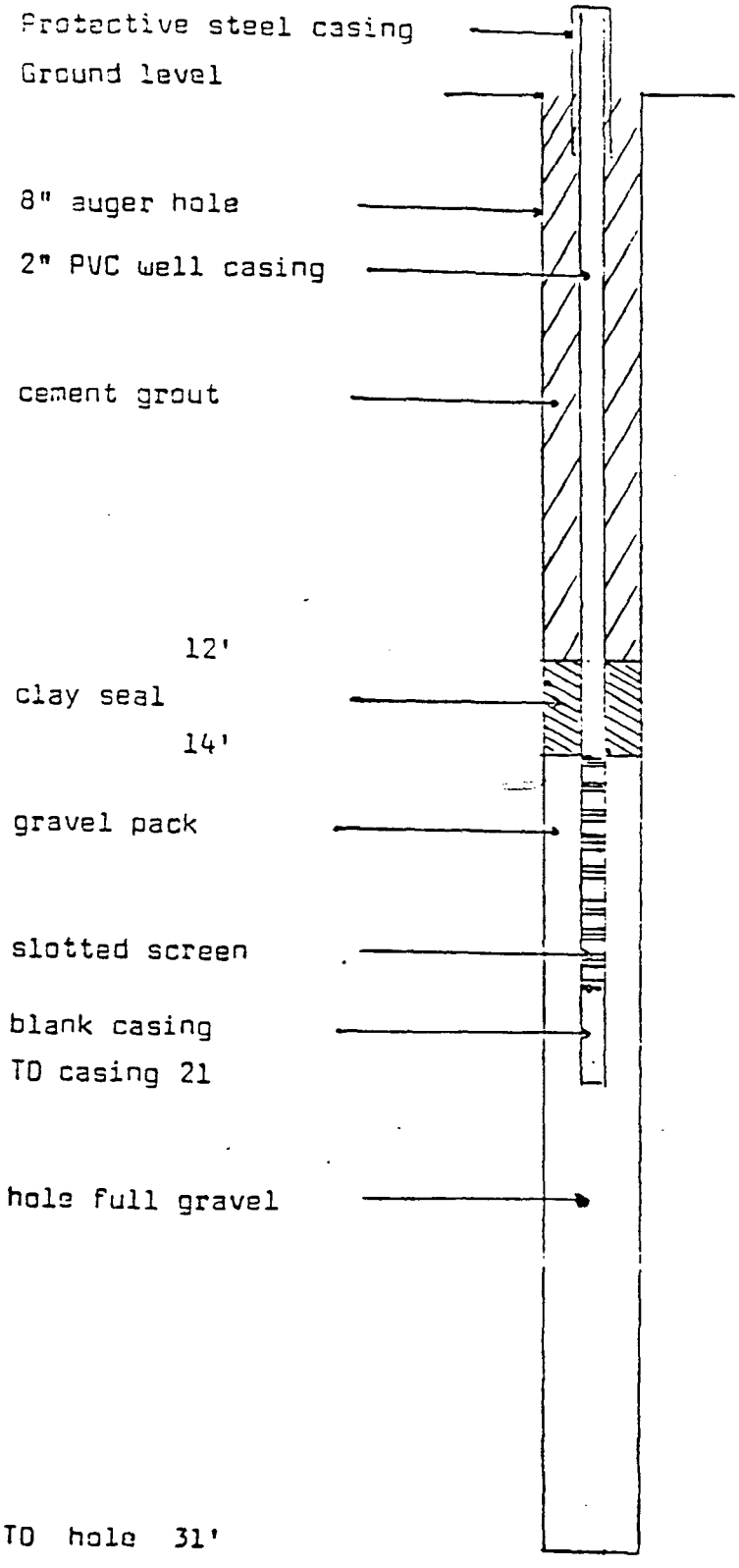
Rig - Hollow stem auger 3" diameter Split spoon core barrel 18"

Date 6/15/84 Richard Fasio & Jim Chaney

Depth	Sample description
0 - 15	Soil. Wet @ 13½' (old Eagle Draw Channel fill)
16½	Wht, tan anhy & gyp - water
18	Wht gyp & anhy (fn xln)
19½	Wht gyp with anhy pieces - gravelly
21	Wht gyp w anhy pcs
22½	Wht, gry gyp w anhy pcs - dense
24	Gry anhy & gyp - dense
25½	Gry anhy & gyp w clay - dense - what at bottom
26 - 27½	Gry sdy clay - tight Tr. red at bottom
29	Red & gry sdy clay
31	Rd sdy shale TD

DETAILS OF WELL CONSTRUCTION

Well # 41 Date 6/19/84 Navajo Refining Company



SAMPLE LOG

Well # 43 Navajo Refining Company - Monitor wells

Drilling Contractor - D. Anderson, El Paso

Rig - Hollow stem auger 8" diameter Split spoon core barrel 18"

Date 7/17/84 Jim Chaney - Stroud

RECEIVED
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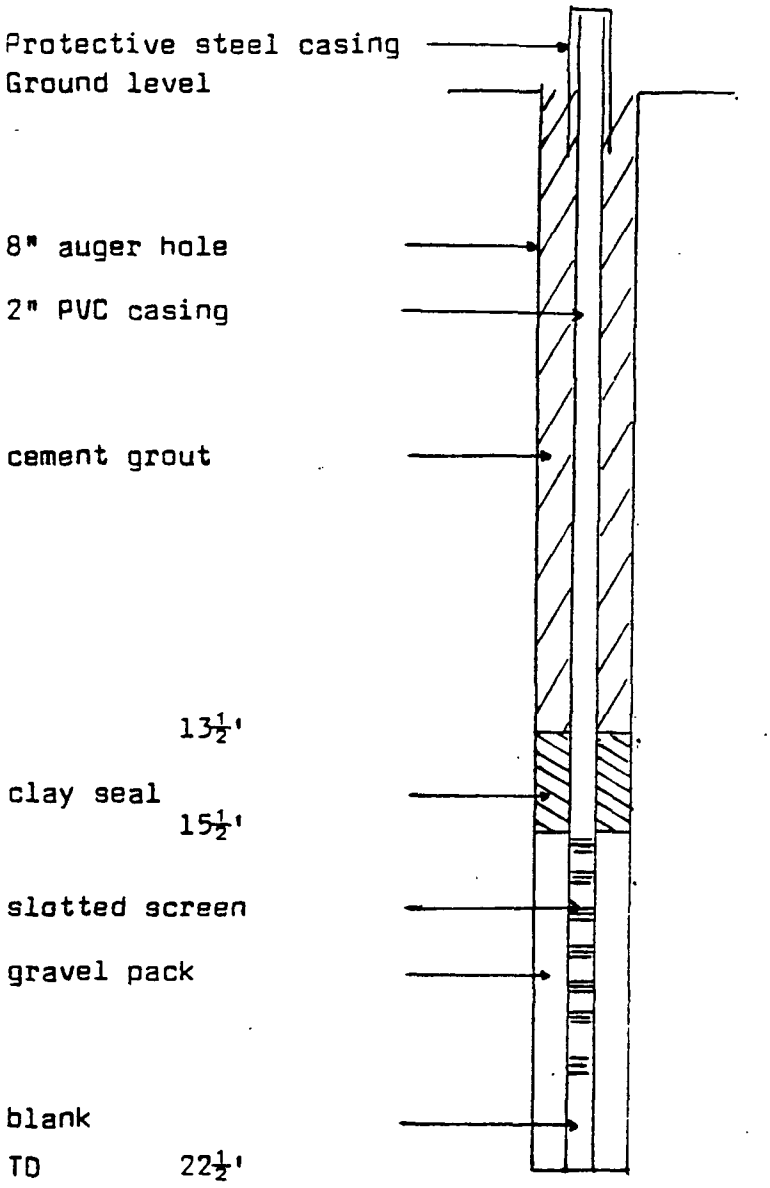
IT CORP.-ALBUQUERQUE

Depth	Sample description
0 - 4½	Soil
6	Mixed soil (red) & gyp damp
7½	Mixed red shale & gyp. Vy rd shale @ bottom
9	8.17' mixed soil & gyp. 9' gyp, pebbles, anhy, HCR odor gas
10½	Gyp w anhy pebbles - HCR odor gas. No bldg. oil
12	11¼ Gyp w lst. & anhy pebbles HCR 12' Wht gyp
13½	13 gyp w pebbles, gas stn & odor. 13½ gyp slightly wet
15	13.8 gyp & gravel - oil & water. 15' gyp, gravel, wet free water
16½	15¼ gyp & gravel, wtr. 16½ gry gyp - tight - wet
18	16¾ gyp & loose gravel, wtr. 17½ gyp w anhy & dolo pcs 18' red silty sand
19½	18.6 rd silty sand w pebbles. 19½ rd fn silty sand
22½	Drill - rd silty sand TD

DETAILS OF WELL CONSTRUCTION

Well # 43 Date 7/17/84 Navajo Refining Company



SAMPLE LOG

Well # 45 Navajo Refining Company - Monitor wells

Drilling Contractor - O. Anderson, El Paso

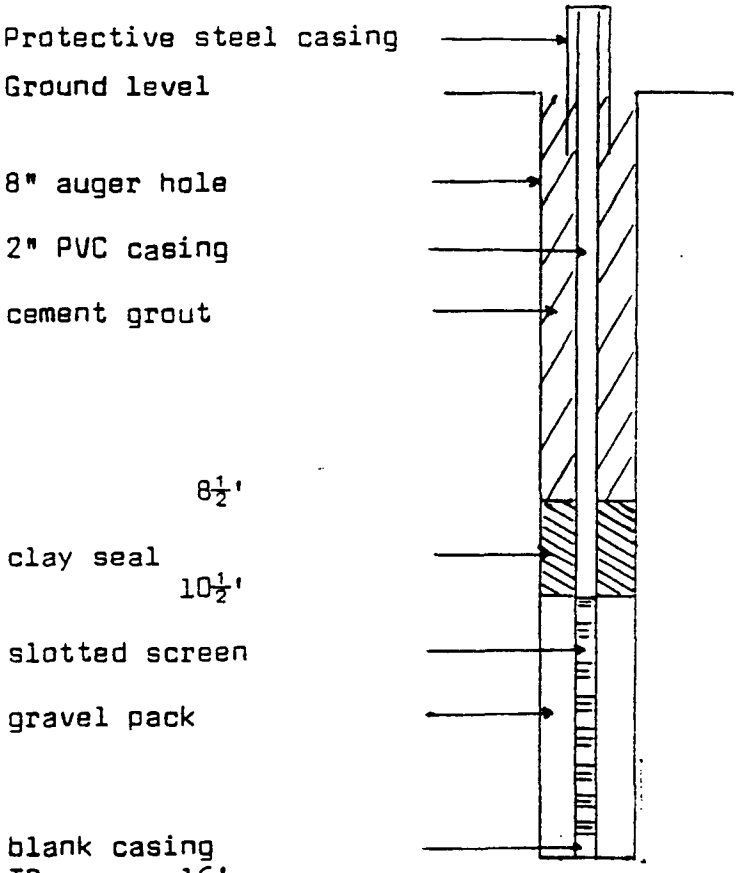
Rig - Hollow stem auger 8" diameter Split spoon core barrel 18"

Date 8/22/84 Stroud & Ledesma

Depth	Sample description
0 - 4½	Red soil dry
5	Gyp dry
6½	6.3 wht gyp - dry. 6½ gry shale - dry
8	Gry sdy shale w very lge anhy pcs - dry
9½	8.8 gry shale & gyp. 9.3 anhy gravel 9½ gry shale & anhy - dry
10	drill
11½	10.8 gry shale w anhy pcs. 11.3 anhy gravel. 11½ gry shale sli damp to dry
13	gry shale w gyp & anhy pcs - damp. Tr rd shale 11½-12.3
14½	14' gravel. 14½ gry shale w gravel streaks - water
16	14.7-15 gry shale & gravel. 15-16 drk gry shale water TD

DETAILS OF WELL CONSTRUCTION

Well # 45 Date 8/22/84 Navajo Refining Company



SAMPLE LOG

Well # 47 Navajo Refining Company - Monitor wells

Drilling Contractor - O. Anderson, El Paso

Rig - Hollow stem auger 8" diameter Split spoon core barrel 18"

Date 8/22/84 Stroud & Ledesma

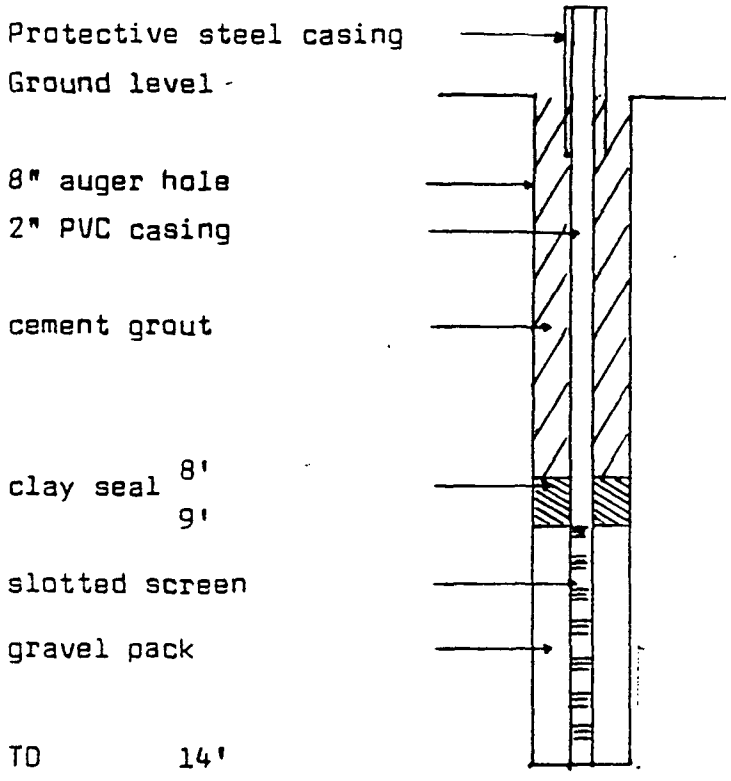
0 - 5	Dark red soil	damp
10	Lite red soil	damp
11½	Red shale	
13	Orange-red shale	damp
14	Orange-red shale	damp

TD

DRAFT

DETAILS OF WELL CONSTRUCTION

Well # 47 Oate 8/22/84 Navajo Refining Company



Sym	Samp	Loc	PI	(ppm)	Depth (Feet)

Geologic Description

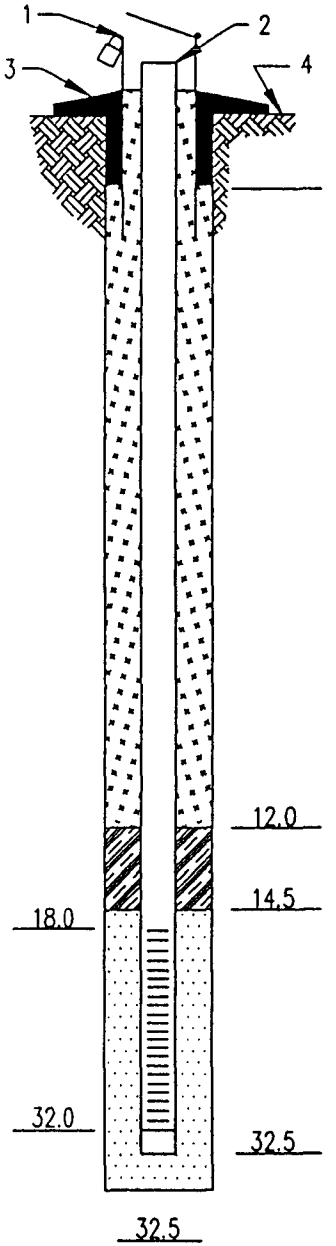
0–4'	CLAYEY SAND, brown, moist, becoming lighter colored with depth.
4–15'	SANDY CLAY, brown, moist to dry, occasional small pebbles of caliche, white bands of fine grain caliche increasing in frequency to 10', gravel content increasing with depth, 2" diameter rocks encountered at 14.5'.
15–17'	GRAVEL, silty, moist.
17–20'	CLAYEY SAND, brown, saturated.
20–22'	SILTY SAND, brown, saturated, some gravel.
22–30'	CLAYEY GRAVEL, saturated, increasing clay content with depth.
30–32.5'	CLAY, brown, stiff, moist to dry.

TD = 32.5'

NOTE: 5 foot core barrel recovery system used as sampling technique

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Mon. Well ☒
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specification

Elevations: (feet MSL) 1 3344.14 2 3344.00 3 3341.80 4 3341.6

Coordinates: X 3484.17 Y 8055.72

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☒ 2" ☐ 3" ☐ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: CSSI 16-40

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐ _____

Grout Type: Portland Weight: _____

Bore Hole Diameter: 8"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: PRECISION ENGINEERING

Logged By: PHILIP CADARETTE

Completion Date: FEBRUARY 13, 1992

Date	D-T-W	MSL	Date	Field pH	Field EC
2/19/92	19.5	3324.5			
3/10/92	20.8	3323.2			

Comments: Concrete with 5% bentonite used to grout from seal to ground surface.

KWBES

Navajo Nation

KWB7

Project: 622092001-237 (KWB7)
Location: ARTESIA, NEW MEXICO

Sym	Samp	Loc	PI (ppm)	Depth (Feet)
				2
				4
				6
				8
				10
				12
				14
				16
				18
				20
				22
				24
				26
				28
				30
				32
				34
				36
				38
				40
				42
				44
				46
				48
				50

Geologic Description

0-22.5' SANDY CLAY, brown, dry, caliche nodules throughout, color lighter with depth, increasing sand content and caliche inclusions with depth white caliche banding starting at 10', thin gravel seam at 13', sandy clay exhibiting increasing moisture near 15'.

22.5-23' CLAYEY GRAVEL, saturated.

23-25' SILTY SAND, brown, saturated.

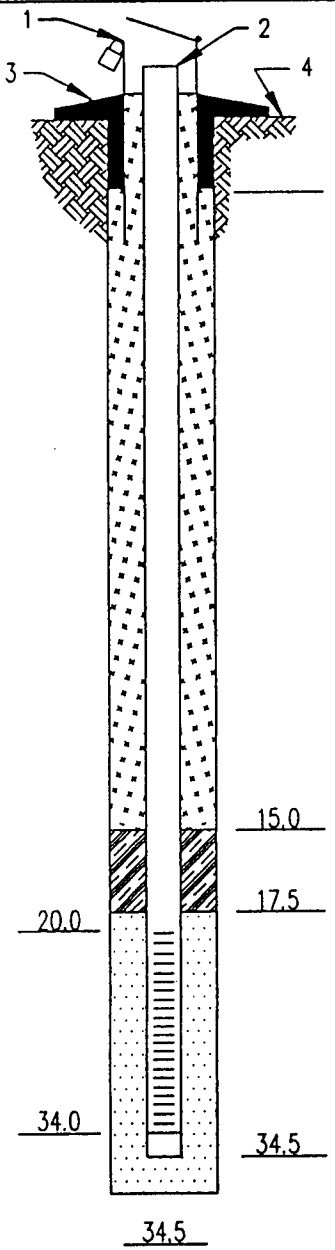
25-34.5' SANDY CLAY, brown, saturated to 26' then moist, dry near 34'.

TD = 34.5'

NOTE: 5 foot core barrel recovery system used as sampling technique

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Mon ; Well ☒
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specification

Elevations: (feet MSL) 1 3352.67 2 3352.53 3 3349.90 4 3349.8

Coordinates: X 1838.15 Y 6600.55

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐

Casing Diameter: ☒ 2" ☐ 3" ☐ 4" ☐ 6" ☐

Screen Slot: ☐ 0.008 ☒ 0.010 ☐

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐

Sand Pack: CSSI 16-40

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐

Grout Type: Portland Weight:

Bore Hole Diameter: 8"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐

Drilled By: PRECISION ENGINEERING
Logged By: PHILIP CADARETTE
Completion Date: FEBRUARY 13, 1992

Date	D-T-W	MSL	Date	Field pH	Field EC
2/19/92	24.9	3327.6			
3/10/92	25.2	3327.3			

Comments: Concrete with 5% bentonite used to grout from seal to ground surface.

KWBES

Navajo

KWB9

Project: 622092001-237 (KWB9)
Location: ARTESIA, NEW MEXICO

Sym	Samp Loc	PID (ppm)	Det (Feet)
			2
			4
			6
			8
			10
			12
			14
			16
			18
			20
			22
			24
			26
			28
			30
			32
			34
			36
			38
			40
			42
			44
			46
			48
			50

Geologic Description

0–10' CLAYEY SAND, dark brown to brown, moist to slightly miist, plastic to stiff.
–thin caliche pebble ozne @ 9.0', dry.

10–15' CLAY, brown to white, moist, blocky, gypsum crystals appearing near 15.0'.

15–25' CLAYEY SAND, brown to white, moist, plastic.
–saturated @ 20.5' with gravel and fine tan sand seams interbedded.

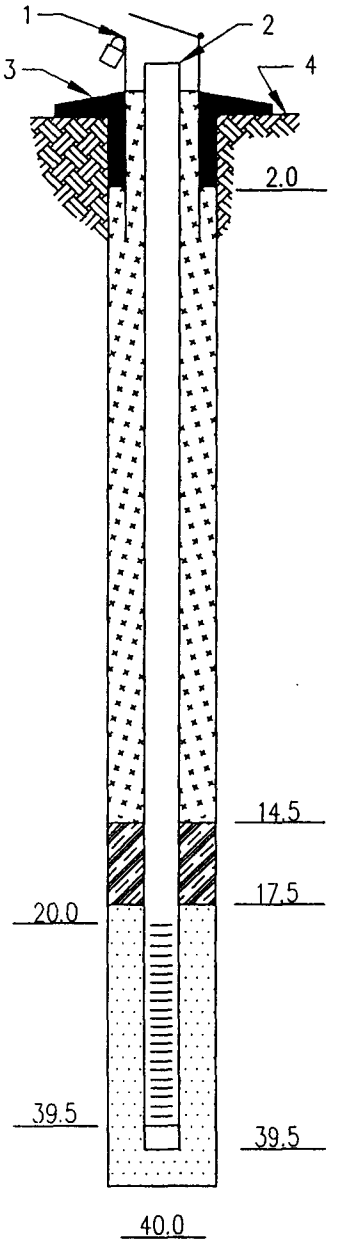
25–40' GRAVEL WITH CLAY AND SILT, saturated, gravel is calich with angular fragments up to 2" in size.

TD = 40.0'

CME 5' core barrel recovery system

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Monit. Well ☒
Piezometer



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 _____ 2 _____ 3 _____ 4 _____

Coordinates: X _____ Y _____

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☐ 2" ☐ 3" ☒ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: Colorado Silica Sand 20/40

Bentonite Seal: ☒ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☐ 1/4" Pellets ☐ _____

Grout Type: Portland/5% Bentonite Weight: _____

Bore Hole Diameter: 13.5"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: Precision Engineering

Logged By: PWC

Completion Date: 10/04/92

Date	D–T–W	MSL	Date	Field pH	Field EC

Comments: _____

KWBES

Navajo Nation

KWB–11A

Project: Navajo 622092003–236
Location: Artesia, New Mexico

Sym	Samp Loc	PID (ppm)	Det (Feet)
			2
			4
			6
			8
			10
			12
			14
			16
			18
			20
			22
			24
			26
			28
			30
			32
			34
			36
			38
			40
			42
			44
			46
			48
			50

Geologic Description

0–4' SANDY CLAY, dark brown to brown, moist, plastic.

4–10' CLAYEY SAND, brown to tan, moist, plastic, occasional gypsum crystals.

10–13' SANDY CLAY, moist, plastic, thin bands of fine sand interbedded.

13–15' CLAYEY SNAD, slightly moist, stiff.

15–20' CLAY WITH GRAVEL, sand and silt brown, moist, thin saturated gravel seam @ 18.0'.

20–22' GRAVEL WITH CLAY AND SAND, saturated.

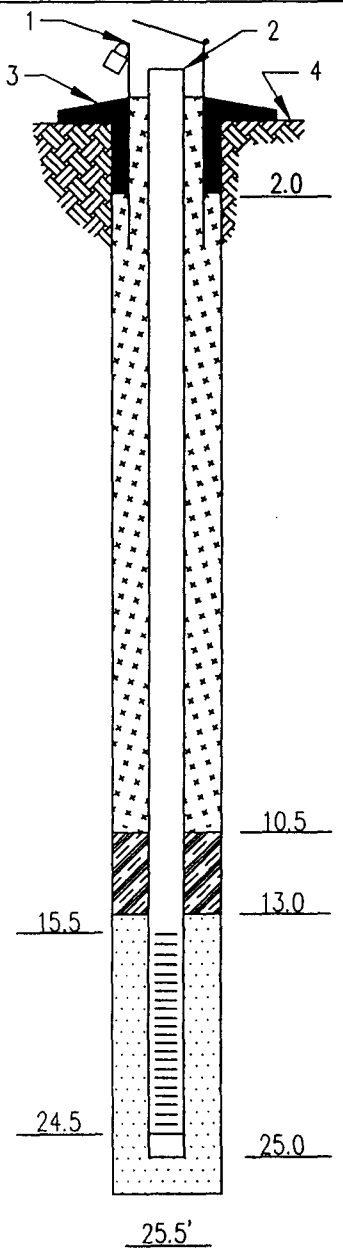
22–25' CLAY, brown, slightly moist, stiff.

TD = 25.0'

CME 5' foot core barrel recovery system

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Monitc. Well ☒
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 _____ 2 _____ 3 _____ 4 _____

Coordinates: X _____ Y _____

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☐ 2" ☐ 3" ☒ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: Colorado Silica Sand 20/40

Bentonite Seal: ☒ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☐ 1/4" Pellets ☐ _____

Grout Type: Portland/5% Bentonite Weight: _____

Bore Hole Diameter: 13.5"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: Precision Engineering

Logged By: PWC

Completion Date: 10/04/92

Date	D-T-W	MSL	Date	Field pH	Field EC

Comments: _____

KWBES

Navajo

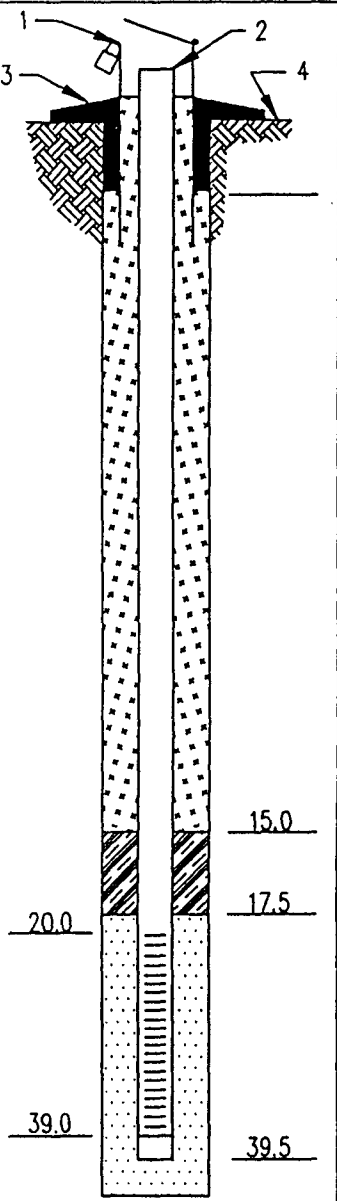
KWB-12A

Project: Navajo 622092003-236
Location: Artesia, New Mexico

Sym	Samp Loc	P (ppi.)	Depth (Feet)	Geologic Description
			2	
			4	0-4.5' SANDY CLAY, brown, moist to dry, becoming lighter in color with decreasing moisture.
			6	
			8	4.5-6' CLAYEY SAND, brown, moist.
			10	6-7' SAND, fine grained, brown, moist.
			12	7-25' SANDY CLAY, brown, moist, gray hydrocarbon staining appearing
			14	at 8', dark gray to black staining
			16	from 8-11', strong odor,
			18	staining and odor disappear from 15-16', brown color, gray stain
			20	and odor return at 16', thin pebble bed near 18', black, saturated,
			22	increasing rock content from 18-25'.
			24	25-27' SILTY SAND, brown, odor.
			26	
			28	27-30' SANDY CLAY, gray to brown, moist.
			30	30-35' CLAYEY SAND, dark gray, grossly contaminated, no structure, saturated.
			32	35-39.5' SANDY CLAY, brown, moist to dry.
			34	
			36	TD = 39.5'
			38	
			40	
			42	NOTE: 5 foot core barrel recovery system used as sampling technique
			44	
			46	
			48	
			50	

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Mo g Well
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specification

Elevations: (feet MSL) 1 3368.33 2 3368.12 3 3365.81 4 3365.4

Coordinates: X 2811.44 Y 3574.80

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ _____

Casing Diameter: ☐ 2" ☐ 3" ☒ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: CSSI 16-40

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐ _____

Grout Type: Portland Weight: _____

Bore Hole Diameter: 12"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: PRECISION ENGINEERING

Logged By: PHILIP CADARETTE

Completion Date: FEBRUARY 17, 1992

Date	D-T-P	MSL	D-T-W	Field pH	Field EC
2/19/92			24.2		
3/10/92	24.0	3344.1	26.1		

Comments: Concrete with 5% bentonite used to grout from seal to surface.

KWBES

KWB4

Project: 622092001-237 (KWB4)
Location: ARTESIA, NEW MEXICO

Sym	Samp	Loc	PID (ppm)	Depth (Feet)
				2
				4
				6
				8
				10
				12
				14
				16
				18
				20
				22
				24
				26
				28
				30
				32
				34
				36
				38
				40
				42
				44
				46
				48
				50

Geologic Description

0-9' SANDY CLAY, brown, moist to dry, becoming lighter in color with decreasing moisture.

9-10' CLAY, brown, moist.

10-15' SANDY CLAY, brown, dry to moist, gray hydrocarbon staining starting at 14'.

15-29' CLAYEY SAND, gray staining with strong hydrocarbon smell, dry to moist.

29-31' SANDY CLAY, gray staining, strong odor, moist.

31-38' SATURATED SILT, brown, strong odor, sheen.

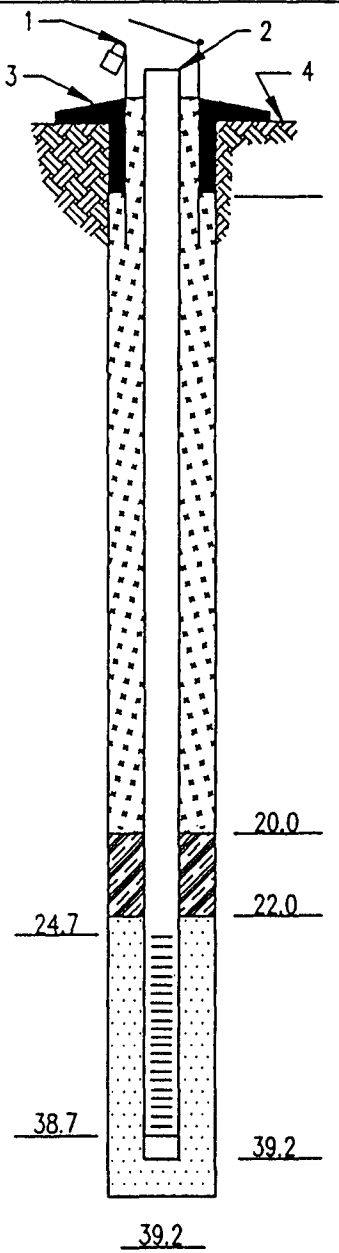
38-39.5' CLAY, brown, stiff, dry.

TD = 39.2'

NOTE: 5 foot core barrel recovery system used as sampling technique

ST=Shelby Tube | SS=Split Spoon | C=Cuttings

Mon. .g Well ☒
Piezometer



Depths in Feet from Ground Surface (Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 3363.02 2 3362.87 3 3360.92 4 3360.6

Coordinates: X 2928.10 Y 4245.94

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ ____

Casing Diameter: ☒ 2" ☐ 3" ☐ 4" ☐ 6" ☐ ____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ ____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ ____

Sand Pack: CSSI 16-40

Bentonite Seal: ☐ 1/2" Pellets ☐ Hole Plug ☐ Slurry ☒ 1/4" Pellets ☐ ____

Grout Type: Portland Weight: ____

Bore Hole Diameter: 8"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ ____

Drilled By: PRECISION ENGINEERING

Logged By: PHILIP CADARETTE

Completion Date: FEBRUARY 11, 1992

Date	D-T-P	MSL	D-T-W	Field pH	Field EC
2/19/92			23.1		
3/10/92	23.3	3339.6	23.4		

Comments: Concrete with 5% bentonite used to grout from seal to ground surface.

KWBES

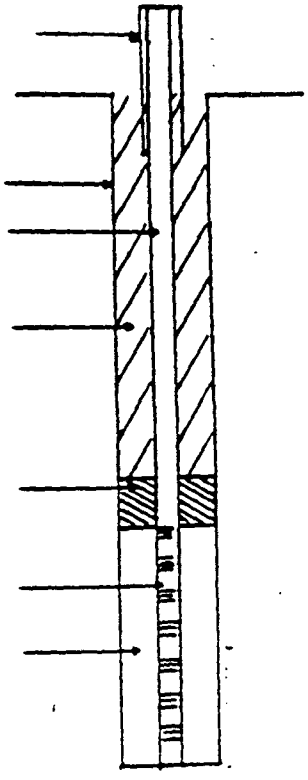
Navajo

KWB5

Project: 622092001-237 (KWB5)
Location: ARTESIA, NEW MEXICO

DETAILS OF WELL CONSTRUCTION

Well # 47 Date 8/22/84 Navajo Refining Company



SAMPLE LOG

Well # 47 Navajo Refining Company - Monitor wells

Drilling Contractor - O. Anderson, El Paso

Rig - Hollow stem auger 8" diameter Split spoon core barrel 18"

Date 8/22/84 Stroud & Ledesma

0 - 5	Dark red soil	damp
10	Lite red soil	damp
11½	Red shale	
13	Orange-red shale	damp
14	Orange-red shale	damp

TD

DRAFT

DETAILS OF WELL CONSTRUCTION

Well # 46 Date 8/22/84 Navajo Refining Company

Protective steel casing

Ground level

8" auger hole

2" PVC casing

cement grout

10'

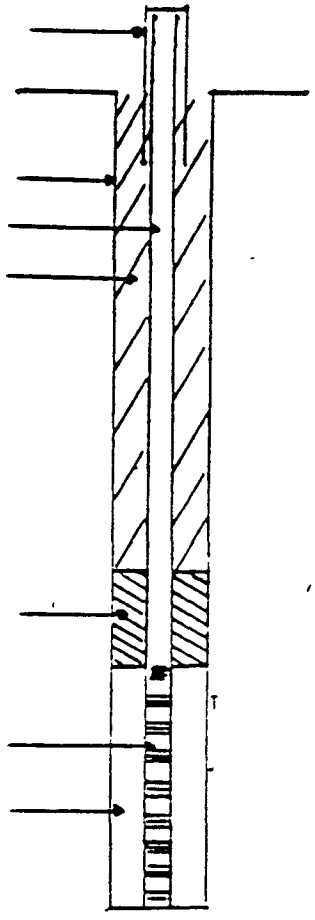
clay seal

12'

slotted screen

gravel pack

TD 17'



SAMPLE LOG

Well # 46 Navajo Refining Company - Monitor Wells

Drilling Contractor - O. Anderson, El Paso

Rig - Hollow stem auger 3" diameter Split spoon core barrel 18"

Date 8/22/84 Stroud & Ledesma

Depth	Sample description
0 - 6½	Dark red soil
8	Lite red soil & gyp dry
11	Gry clay w gyp damp
12½	gry clay, gyp, anhy pcs, tight - dry
14	Gry clay, gyp, anhy gravel water
15½	15.3 gry sdy shale 15½ Red shale
17	Fine red shale. TD

DETAILS OF WELL CONSTRUCTION

Well # 45 Date 8/22/84 Navajo Refining Company

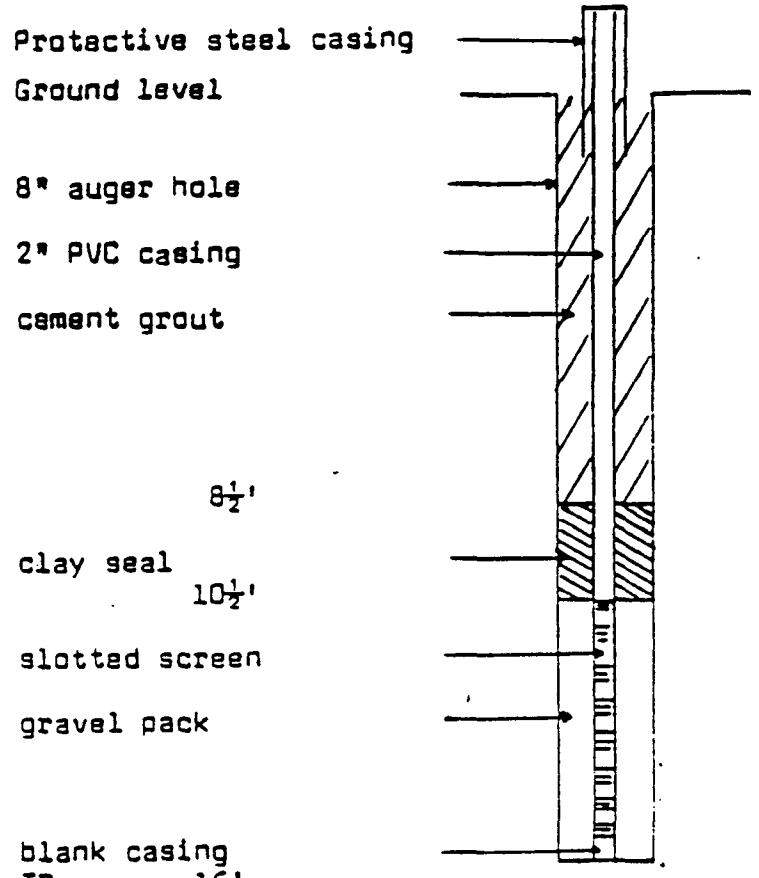


TABLE III

Well # 45 Navajo Refining Company - Monitor wells

Drilling Contractor - O. Anderson, El Paso

Rig - Hollow stem auger 8" diameter Split spoon core barrel 18"

Date 8/22/84 Stroud & Ledesma

Depth	Sample description
0 - 4½	Red soil dry
5	Gyp dry
6½	6.3 wht gyp - dry. 6½ gry shale - dry
8	Gry sdy shale w very lge anhy pcs - dry
9½	8.8 gry shale & gyp. 9.3 anhy gravel 9½ gry shale & anhy - dry
10	drill
11½	10.8 gry shale w anhy pcs. 11.3 anhy gravel. 11½ gry shale sli damp to dry
13	gry shale w gyp & anhy pcs - damp. Tr rd shale 11½-12.3
14½	14' gravel. 14½ gry shale w gravel streaks - water
16	14.7-15 gry shale & gravel. 15-16 drk gry shale water TD

GCL

WELL LOGGING FORM

Client NAVAJO REFINERY Well Number MW- 8

___1/4___1/4___1/4___1/4 S___T___R___ State NEW MEXICO

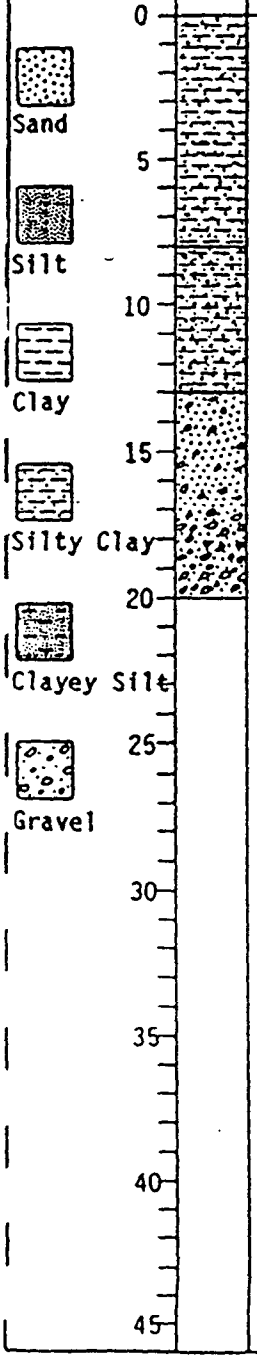
County EDDY Contractor LARRY'S DRILLING

Spud Date 6-20-86 Completion Date 6-20-86

Logs Run LITHOLOGY Logged By SELKE

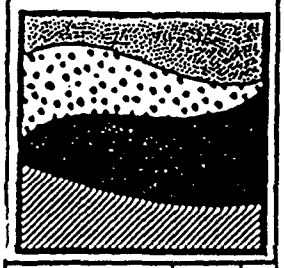
Elevation _____ Spud In (Fm.) _____

Remarks Steam cleaned rig and tools prior to drilling - drilled with air rotary



RUN	FROM	TO	SAMPLE DEPTH	REMARKS
				0-8' Brown, silty sandy clay moist at approx. 8'
				8-13' white to gray, sandy clay with modera amounts of gravel(pea size)
				13-20' lt. brown clayey sand (abund. clay) v. minor gravel at top w/ moderate to abundant gravel at bottom

GCL



WELL LOGGING FORM

Client NAVAJO REFINERY Well Number MW-9

__1/4__1/4__1/4__1/4 S__T__R__ State NEW MEXICO

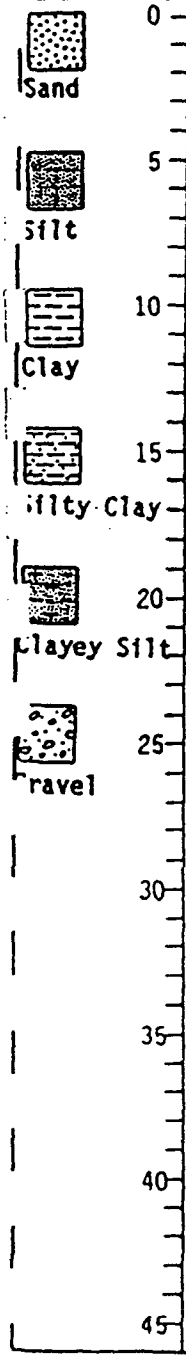
County EDDY Contractor LARRY'S DRILLING

Spud Date 6-20-86 Completion Date 6-20-86

Logs Run LITHOLOGY Logged By SELKE

Elevation _____ Spud In (Fm.) _____

Remarks Steam cleaned rig and tools prior to drilling- drilled with air rotary- no temporary casing



RUN	FROM	TO	SAMPLE DEPTH	REMARKS
				0-approx. 5' brown, silty , sandy clay
				approx. 5'-approx. 15' white to gray, sandy clay
				15-20' lt. brown, clayey sand w/ moderate amounts of fine grain gravel

NAVAJO REFINING COMPANY

FAX
(505) 746-5283 DIV. ORDERS
(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX
(505) 746-5419 ACCOUNTING
(505) 746-5451 EXECUTIVE
(505) 746-5421 ENGINEERING
(505) 746-5480 P / L

OIL CONSERVATION DIV.
01 JUL 20 7 BOX 158 25

July 17, 2001

Mr. Bill Olson
Hydrogeologist
NM Oil Conservation Division
Environmental Bureau
2040 S. Pacheco St.
Santa Fe, NM 87505-5472

RE: Replacement Well on Anderson Farm

Dear Bill,

Enclosed, please find the analysis from the groundwater of the replacement well that was placed on the Anderson Farm. This well is now in the middle of the farm, flush mounted in the road. It is 800 ft. due south of its former location. The replacement well shows no sign of contamination, therefore, it can serve as a detection well if any contaminants spread that far south.

If there are any questions concerning this matter, please call me at 505-748-3311.

Sincerely,
NAVAJO REFINING COMPANY

Darrell Moore
Environmental Mgr. For Water and Waste

Encl.

ATEL

Aqua Tech Environmental Laboratories, Inc.

- CERTIFICATE OF ANALYSIS -

Client #: I2565
Trace Analysis
6701 Aberdeen Suite 9
Lubbock, TX 79424-

Report Date: *08-Jun-01*

Phone: (806) 794-1296 **Ext:**
FAX: (806) 794-1298

Attn: Nell Green

Our Lab #: MAR01-11575 **Your Sample ID:** 171756
Date Logged-In: 5/25/01 **Sample Source:** NPDES/WWTP's
Matrix: WasteWater **Client Project #:** **PO#:**
Project #: **Date Submitted to Lab:** 5/24/2001

KWB R

- COLLECTION INFORMATION -

Date/Time/By: 5/22/01 2:50 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
AL-ICP	200.7/6010B	Aluminum, Al	33000 (100)	UG/L	6/6/01	KG/LJ	26043
AS-MS	200.8/6020	Arsenic, As	14 (3.0)	UG/L	6/5/01	RCM	26025
BE-MS	200.8/6020	Beryllium, Be	2.2 (0.5)	UG/L	6/5/01	RCM	26025
BA-ICP	200.7/6010B	Barium, Ba	144 (10)	UG/L	6/6/01	KG/LJ	26043
B-MS	200.8/6020	Boron, B	220 (50)	UG/L	6/5/01	RCM	26025
CR-ICP	200.7/6010B	Chromium, Cr	24 (20)	UG/L	6/6/01	KG/LJ	26043
CO-ICP	200.7/6010B	Cobalt, Co	ND (10)	UG/L	6/6/01	KG/LJ	26043
CU-ICP	200.7/6010B	Copper, Cu	18 (10)	UG/L	6/6/01	KG/LJ	26043
FE-ICP	200.7/6010B	Iron, Fe	18000 (40)	UG/L	6/6/01	KG/LJ	26043
MN-ICP	200.7/6010B	Manganese, Mn	370 (10)	UG/L	6/6/01	KG/LJ	26043
PB-MS	200.8/6020	Lead, Pb	15 (2.0)	UG/L	6/5/01	RCM	26025
NI-ICP	200.7/6010B	Nickel, Ni	ND (20)	UG/L	6/6/01	KG/LJ	26043
SE-GFAA	3113B/7740	Selenium, Se	16 (15)	UG/L	5/31/01	ROH	25977
AG-ICP	200.7/6010B	Silver, Ag	ND (10)	UG/L	6/6/01	KG/LJ	26043
V-ICP	200.7/6010B	Vanadium, V	71 (20)	UG/L	6/6/01	KG/LJ	26043
ZN-ICP	200.7/6010B	Zinc, Zn	99 (10)	UG/L	6/6/01	KG/LJ	26043
U-MS	6020	Uranium, U	27 (20.0)	UG/L	6/5/01	RCM	26025
MO-MS	200.8	Molybdenum, Mo	ND (30)	UG/L	6/5/01	RCM	26025
CD-GFAA	3113B/7131	Cadmium, Cd	0.9 (0.5)	UG/L	6/6/01	RCM	26026

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End of Report

Report Approved By: Deborah K. Johnson

This report shall not be reproduced, except in its entirety, without the written approval of the laboratory. The results presented on this Certificate only reflect those parameters that were requested by the client on the chain of custody or other documentation received with the sample(s).

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ATEL

Aqua Tech Environmental Laboratories, Inc.

- QUALITY CONTROL REPORT -

Printed: 6/11/2001

WS#	Lab#	Test ID	QC Code	Result	Units	True Added	-- QC Calculations -- QC1	-- QC Calculations -- QC2	Lower Limit	Upper Limit
26043	LCSA 5.24.2	AG	C	.117	MG/L	0.1	117 %R:		80	120
26043	LCSA 5.24.2	FE	C	1.94	MG/L	2	97 %R:		80	120
26025	LCSA 5.24.3	AS	C	21.4003	UG/L	20	107 %R:		50	150
26025	LCSA 5.24.3	CD	C	9.5707	UG/L	10	96 %R:		50	150
26026	LCSA 5.24.3	CD	C	9.632	UG/L	10	96 %R:		70	125
26025	LCSA 5.24.3	PB	C	10.0616	UG/L	10	101 %R:		50	150
26043	LCSA 5.29.2	AG	C	.111	MG/L	0.1	111 %R:		80	120
26043	LCSA 5.29.2	AL	C	1.91	MG/L	2	96 %R:		80	120
26043	LCSA 5.29.2	BA	C	1.91	MG/L	2	96 %R:		80	120
26043	LCSA 5.29.2	CD	C	.165	MG/L	0.2	83 %R:		80	120
26043	LCSA 5.29.2	CO	C	.937	MG/L	1	94 %R:		80	120
26043	LCSA 5.29.2	CR	C	.942	MG/L	1	94 %R:		80	120
26043	LCSA 5.29.2	CU	C	.926	MG/L	1	93 %R:		80	120
26043	LCSA 5.29.2	FE	C	1.83	MG/L	2	92 %R:		80	120
26043	LCSA 5.29.2	K	C	8.266	MG/L	10	83 %R:		80	120
26043	LCSA 5.29.2	MG	C	2.31	MG/L	2.5	92 %R:		80	120
26043	LCSA 5.29.2	MN	C	.931	MG/L	1	93 %R:		80	120
26043	LCSA 5.29.2	NA	C	2.43	MG/L	2.5	97 %R:		80	120
26043	LCSA 5.29.2	ZN	C	.915	MG/L	1	92 %R:		80	120
26025	LCSA 5.29.3	AS	C	22.101	UG/L	20	111 %R:		50	150
26025	LCSA 5.29.3	B	C	102.6098	UG/L	100	103 %R:		50	150
26025	LCSA 5.29.3	BA	C	196.2895	UG/L	200	98 %R:		50	150
26025	LCSA 5.29.3	BE	C	9.2507	UG/L	10	93 %R:		50	150
26026	LCSA 5.29.3	CD	C	10.024	UG/L	10	100 %R:		70	125
26025	LCSA 5.29.3	CD	C	9.4334	UG/L	10	94 %R:		50	150
26025	LCSA 5.29.3	CR	C	102.6754	UG/L	100	103 %R:		50	150
26025	LCSA 5.29.3	MO	C	103.2677	UG/L	100	103 %R:		50	150
26025	LCSA 5.29.3	NI	C	96.7025	UG/L	100	97 %R:		50	150
26025	LCSA 5.29.3	PB	C	10.5684	UG/L	10	106 %R:		50	150
26025	LCSA 5.29.3	SB	C	20.8858	UG/L	20	104 %R:		50	150
25977	LCSA 5.29.3	SE	C	20.26	UG/L	20	101 %R:		70	125
26025	LCSA 5.29.3	SI	C	5.4329	MG/L	5	109 %R:		50	150
26025	LCSA 5.29.3	TL	C	9.8321	UG/L	10	98 %R:		50	150
26025	LCSA 5.29.3	U	C	150.8265	UG/L	200	75 %R:		50	150
26025	LCSA 5.31.3	SI	C	5.271	MG/L	5	105 %R:		50	150
26043	LCSA 6.4.2	AG	C	.099	MG/L	0.1	99 %R:		80	120
26043	LCSA 6.4.2	BA	C	1.74	MG/L	2	87 %R:		80	120

QC Code Legend

B	Blanks	K	Calibration Checks	S	Spikes
C	Control Samples	M	Matrix Spike Duplicates		
D	Duplicates	R	Surrogates		

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ATEL
Aqua Tech Environmental Laboratories, Inc.

- QUALITY CONTROL REPORT -

Printed: 6/11/2001

WS#	Lab#	Test ID	QC Code	Result	Units	True Added	-- QC Calculations -- QC1	-- QC Calculations -- QC2	Lower Limit	Upper Limit
26043	LCSA 6.4.2	CR	C	.82	MG/L	1	82 %R:		80	120
26043	LCSA 6.4.2	CU	C	.806	MG/L	1	81 %R:		80	120
26043	LCSA 6.4.2	MN	C	.809	MG/L	1	81 %R:		80	120
26043	LCSA 6.4.2	PB	C	.936	MG/L	1	94 %R:		80	120
26025	LCSA 6.4.3	AS	C	20.9308	UG/L	20	105 %R:		50	150
26025	LCSA 6.4.3	BA	C	192.462	UG/L	200	96 %R:		50	150
26025	LCSA 6.4.3	BE	C	9.2312	UG/L	10	92 %R:		50	150
26025	LCSA 6.4.3	CD	C	9.1232	UG/L	10	91 %R:		50	150
26025	LCSA 6.4.3	CR	C	97.2553	UG/L	100	97 %R:		50	150
26025	LCSA 6.4.3	NI	C	92.294	UG/L	100	92 %R:		50	150
26025	LCSA 6.4.3	PB	C	10.0959	UG/L	10	101 %R:		50	150
26025	LCSA 6.4.3	SB	C	19.7649	UG/L	20	99 %R:		50	150
26025	LCSA 6.4.3	SI	C	5.179	MG/L	5	104 %R:		50	150
26025	LCSA 6.4.3	TL	C	9.4168	UG/L	10	94 %R:		50	150
26026	LCSA D 5.24.	CD	C	8.736	UG/L	10	87 %R:		70	125
26026	LCSA D 5.29.	CD	C	9.388	UG/L	10	94 %R:		70	125
26043	LCSA DW 5.25	PB	C	124.015748	PPM	131	95 %R:		80	120
25977	LCSA RPT 5.2	SE	C	19.68	UG/L	20	98 %R:		70	125
26025	LCSAD 5.29.3	AS	C	22.1094	UG/L	20	111 %R:		50	150
26025	LCSAD 5.29.3	B	C	99.5835	UG/L	100	100 %R:		50	150
26025	LCSAD 5.29.3	BA	C	200.0833	UG/L	200	100 %R:		50	150
26025	LCSAD 5.29.3	BE	C	9.2349	UG/L	10	92 %R:		50	150
26025	LCSAD 5.29.3	CD	C	9.5657	UG/L	10	96 %R:		50	150
26025	LCSAD 5.29.3	CR	C	101.9598	UG/L	100	102 %R:		50	150
26025	LCSAD 5.29.3	MO	C	104.6951	UG/L	100	105 %R:		50	150
26025	LCSAD 5.29.3	NI	C	98.0688	UG/L	100	98 %R:		50	150
26025	LCSAD 5.29.3	PB	C	10.8513	UG/L	10	109 %R:		50	150
26025	LCSAD 5.29.3	SB	C	21.7896	UG/L	20	109 %R:		50	150
26025	LCSAD 5.29.3	SI	C	5.482	MG/L	5	110 %R:		50	150
26025	LCSAD 5.29.3	TL	C	10.0038	UG/L	10	100 %R:		50	150
26025	LCSAD 5.29.3	U	C	154.1359	UG/L	200	77 %R:		50	150
26025	LCSAD 5.31.3	SI	C	5.2473	MG/L	5	105 %R:		50	150
26043	LCSAD DW 5.2	PB	C	115.686274	PPM	131	88 %R:		80	120
26043	LCSS 5.22.4A	CU	C	134.599156	MG/KG	150.3	90 %R:		70	120
26043	LCSS 5.22.4B	PB	C	126.556016	MG/KG	131	97 %R:		70	120
25977	LCSS 5.22.4B	SE	C	65.1037344	MG/KG	86.4	75 %R:		70	125
26043	LCSS 5.24.4A	CU	C	132.258064	MG/KG	150.3	88 %R:		70	120

QC Code Legend

B	Blanks	K	Calibration Checks	S	Spikes
C	Control Samples	M	Matrix Spike Duplicates		
D	Duplicates	R	Surrogates		

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ATEL
Aqua Tech Environmental Laboratories, Inc.

- QUALITY CONTROL REPORT -

Printed: 6/11/2001

WS#	Lab#	Test ID	QC Code	Result	Units	True Added	-- QC Calculations -- QC1			-- QC Calculations -- QC2		Lower Limit	Upper Limit
26043	LCSS 5.24.4A	PB	C	126.497695	MG/KG	131	97	%R:				70	120
26043	LCSS PC 6.4	PB	C	726.548672	PPM	917	79	%R:				75	125
26025	LFB	AS	C	19.8668	UG/L	20	99	%R:				50	150
26025	LFB	B	C	96.9956	UG/L	100	97	%R:				50	150
26025	LFB	BA	C	197.172	UG/L	200	99	%R:				50	150
26025	LFB	BE	C	9.3095	UG/L	10	93	%R:				50	150
26025	LFB	CD	C	9.6075	UG/L	10	96	%R:				50	150
26025	LFB	CR	C	98.2062	UG/L	100	98	%R:				50	150
26025	LFB	MO	C	101.3889	UG/L	100	101	%R:				50	150
26025	LFB	NI	C	98.7227	UG/L	100	99	%R:				50	150
26025	LFB	PB	C	10.1688	UG/L	10	102	%R:				50	150
26025	LFB	SB	C	20.7985	UG/L	20	104	%R:				50	150
26025	LFB	SI	C	.1148	MG/L	0.1	115	%R:				50	150
26025	LFB	TL	C	9.77	UG/L	10	98	%R:				50	150
26025	LFB	U	C	98.7704	UG/L	100	99	%R:				50	150
26025	MAR01-11136D	AS	D	15.5294	UG/L		1	%D					20
25977	MAR01-11242D	SE	D	.395480225	MG/KG		69	%D	*	(<5 x MDL)			20
25977	MAR01-11243M	SE	M	5.08673469	MG/KG	10.2	46	%R:	*		4 %RPD	80	120
25977	MAR01-11243S	SE	S	5.28414755	MG/KG	9.97	49	%R:	*			80	120
26026	MAR01-11480D	CD	D	.823	UG/L		7	%D		(<5 x MDL)			20
26026	MAR01-11480S	CD	S	3.211	UG/L	2.4	97	%R:				85	115
26025	MAR01-11482D	AS	D	267.6375	UG/L		7	%D					20
26025	MAR01-11482D	PB	D	1.6024	UG/L		54	%D	*	(<5 x MDL)			20
26026	MAR01-11482S	CD	S	2.938	UG/L	2.4	99	%R:				85	115
26043	MAR01-11497D	CU	D	238.326848	MG/KG		11	%D					20
26043	MAR01-11497D	PB	D	1040.85603	MG/KG		9	%D					20
26043	MAR01-11500M	CU	M	587.884806	MG/KG	497	73	%R:	*		10 %RPD	80	120
26043	MAR01-11500M	PB	M	1281.03277	MG/KG	149	77	%R:	*		3 %RPD	80	120
26043	MAR01-11500S	CU	S	650.049850	MG/KG	499	85	%R:				80	120
26043	MAR01-11500S	PB	S	1316.05184	MG/KG	150	100	%R:				80	120
26043	MAR01-11546M	FE	M	2020	UG/L	2000	91	%R:			0 %RPD	80	120
26043	MAR01-11546S	FE	S	2010	UG/L	2000	90	%R:				80	120
26026	MAR01-11575S	CD	S	3.123	UG/L	2.4	93	%R:				85	115
26043	MAR01-11628S	CD	S	.835	MG/L	1	82	%R:				50	150
26043	MAR01-11719D	PB	D	1831.68316	PPM		1	%D					20
26043	MAR01-11747M	AG	M	110	UG/L	100	110	%R:			0 %RPD	80	120
26043	MAR01-11747M	AL	M	2550	UG/L	2000	112	%R:			1 %RPD	80	120

QC Code Legend

B	Blanks	K	Calibration Checks	S	Spikes
C	Control Samples	M	Matrix Spike Duplicates		
D	Duplicates	R	Surrogates		

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ATEL
Aqua Tech Environmental Laboratories, Inc.

- QUALITY CONTROL REPORT -

Printed: 6/11/2001

WS#	Lab#	Test ID	QC Code	Result	Units	True Added	-- QC Calculations -- QC1	-- QC Calculations -- QC2	Lower Limit	Upper Limit
26025	MAR01-11747	MAS	M	21.9118	UG/L	20	97 %R:	6 %RPD	75	125
26025	MAR01-11747	MB	M	108.1471	UG/L	100	95 %R:	6 %RPD	75	125
26025	MAR01-11747	MBA	M	215.62	UG/L	200	99 %R:	5 %RPD	75	125
26025	MAR01-11747	MBE	M	9.5325	UG/L	10	96 %R:	2 %RPD	75	125
26025	MAR01-11747	MCD	M	9.4402	UG/L	10	94 %R:	3 %RPD	75	125
26043	MAR01-11747	MCO	M	950	UG/L	1000	95 %R:	1 %RPD	80	120
26025	MAR01-11747	MCR	M	102.4142	UG/L	100	102 %R:	3 %RPD	75	125
26043	MAR01-11747	MCU	M	937	UG/L	1000	94 %R:	0 %RPD	80	120
26043	MAR01-11747	MFE	M	2480	UG/L	2000	96 %R:	2 %RPD	80	120
26043	MAR01-11747	MK	M	11.58	MG/L	10	96 %R:	3 %RPD	80	120
26043	MAR01-11747	MMG	M	4.54	MG/L	2.5	94 %R:	2 %RPD	80	120
26043	MAR01-11747	MMN	M	1020	UG/L	1000	95 %R:	1 %RPD	80	120
26025	MAR01-11747	MMO	M	102.7634	UG/L	100	102 %R:	4 %RPD	75	125
26043	MAR01-11747	MNA	M	9.07	MG/L	2.5	94 %R:	0 %RPD	80	120
26025	MAR01-11747	MNI	M	98.2746	UG/L	100	98 %R:	4 %RPD	75	125
26025	MAR01-11747	MPB	M	10.9156	UG/L	10	119 %R:	5 %RPD	75	125
26025	MAR01-11747	MSB	M	20.4198	UG/L	20	100 %R:	2 %RPD	75	125
26025	MAR01-11747	MSI	M	7.0623	MG/L	5	116 %R:	2 %RPD	75	125
26025	MAR01-11747	MTL	M	9.7114	UG/L	10	99 %R:	2 %RPD	75	125
26043	MAR01-11747	MZN	M	924	UG/L	1000	92 %R:	0 %RPD	80	120
26043	MAR01-11747	S AG	S	110	UG/L	100	110 %R:		80	120
26043	MAR01-11747	S AL	S	2520	UG/L	2000	110 %R:		80	120
26025	MAR01-11747	S AS	S	20.6394	UG/L	20	91 %R:		75	125
26025	MAR01-11747	S B	S	101.6116	UG/L	100	89 %R:		75	125
26025	MAR01-11747	S BA	S	205.7229	UG/L	200	94 %R:		75	125
26025	MAR01-11747	S BE	S	9.3017	UG/L	10	94 %R:		75	125
26025	MAR01-11747	S CD	S	9.1663	UG/L	10	92 %R:		75	125
26043	MAR01-11747	S CO	S	944	UG/L	1000	94 %R:		80	120
26025	MAR01-11747	S CR	S	99.0938	UG/L	100	98 %R:		75	125
26043	MAR01-11747	S CU	S	941	UG/L	1000	94 %R:		80	120
26043	MAR01-11747	S FE	S	2430	UG/L	2000	93 %R:		80	120
26043	MAR01-11747	S K	S	11.19	MG/L	10	92 %R:		80	120
26043	MAR01-11747	S MG	S	4.47	MG/L	2.5	91 %R:		80	120
26043	MAR01-11747	S MN	S	1010	UG/L	1000	94 %R:		80	120
26025	MAR01-11747	S MO	S	99.0771	UG/L	100	99 %R:		75	125
26043	MAR01-11747	S NA	S	9.06	MG/L	2.5	94 %R:		80	120
26025	MAR01-11747	S NI	S	94.8769	UG/L	100	94 %R:		75	125

QC Code Legend

B	Blanks	K	Calibration Checks	S	Spikes
C	Control Samples	M	Matrix Spike Duplicates		
D	Duplicates	R	Surrogates		

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WS#	Lab#	Test ID	QC Code	Result	Units	True Added	-- QC Calculations -- QC1			-- QC Calculations -- QC2		Lower Limit	Upper Limit
26025	MAR01-11747S	PB	S	10.3598	UG/L	10	113	%R:				75	125
26025	MAR01-11747S	SB	S	19.9666	UG/L	20	97	%R:				75	125
26025	MAR01-11747S	SI	S	6.9481	MG/L	5	113	%R:				75	125
26025	MAR01-11747S	TL	S	9.4986	UG/L	10	97	%R:				75	125
26043	MAR01-11747S	ZN	S	927	UG/L	1000	92	%R:				80	120
26043	MAR01-11748D	AG	D	0	UG/L		4	%D		(<5 x MDL)			20
26043	MAR01-11748D	AL	D	367	UG/L		4	%D		(<5 x MDL)			20
26025	MAR01-11748D	AS	D	1.7232	UG/L		27	%D	*	(<5 x MDL)			20
26025	MAR01-11748D	B	D	4.9709	UG/L		18	%D		(<5 x MDL)			20
26025	MAR01-11748D	BA	D	16.993	UG/L		5	%D		(<5 x MDL)			20
26025	MAR01-11748D	BE	D	.0222	UG/L		86	%D	*	(<5 x MDL)			20
26025	MAR01-11748D	CD	D	.0959	UG/L		199	%D	*	(<5 x MDL)			20
26043	MAR01-11748D	CO	D	0	UG/L		0	%D		(<5 x MDL)			20
26025	MAR01-11748D	CR	D	1.2127	UG/L		5	%D		(<5 x MDL)			20
26043	MAR01-11748D	CU	D	4	UG/L		120	%D	*	(<5 x MDL)			20
26043	MAR01-11748D	FE	D	570	UG/L		5	%D					20
26043	MAR01-11748D	K	D	1.209	MG/L		32	%D	*	(<5 x MDL)			20
26043	MAR01-11748D	MG	D	2.13	MG/L		1	%D					20
26043	MAR01-11748D	MN	D	58	UG/L		2	%D					20
26025	MAR01-11748D	MO	D	.5086	UG/L		37	%D	*	(<5 x MDL)			20
26043	MAR01-11748D	NA	D	5.37	MG/L		4	%D					20
26025	MAR01-11748D	NI	D	11.0617	UG/L		131	%D	*	(<5 x MDL)			20
26025	MAR01-11748D	PB	D	1.944	UG/L		486	%D	*	(<5 x MDL)			20
26025	MAR01-11748D	SB	D	.4342	UG/L		48	%D	*	(<5 x MDL)			20
26025	MAR01-11748D	SI	D	.826	MG/L		30	%D	*				20
26025	MAR01-11748D	TL	D	0	UG/L		0	%D		(<5 x MDL)			20
26043	MAR01-11748D	ZN	D	6	UG/L		0	%D		(<5 x MDL)			20
~~26043~~	~~MAR01-11767~~	~~PB~~		~~.295~~	~~MG/L~~								
26043	MAR01-11767S	PB	S	5.3	MG/L	5	100	%R:				50	150
26043	MAR01-11820S	PB	S	29.3	MG/L	25	110	%R:				50	150
26043	MAR01-12006D	AG	D	0	mg/l		200	%D	*	(<5 x MDL)			20
26025	MAR01-12006D	AS	D	5.0804	UG/L		12	%D		(<5 x MDL)			20
26025	MAR01-12006D	BA	D	316.9067	UG/L		1	%D					20
26025	MAR01-12006D	BE	D	.2561	UG/L		24	%D	*	(<5 x MDL)			20
26025	MAR01-12006D	CD	D	.0016	UG/L		692	%D	*	(<5 x MDL)			20
26025	MAR01-12006D	CR	D	3.5589	UG/L		59	%D	*	(<5 x MDL)			20
26043	MAR01-12006D	CU	D	.004	mg/l		199	%D	*	(<5 x MDL)			20

6/11/01 OKs

OKs 6/11/01

QC Code Legend					
B	Blanks	K	Calibration Checks	S	Spikes
C	Control Samples	M	Matrix Spike Duplicates		
D	Duplicates	R	Surrogates		

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WS#	Lab#	Test ID	QC Code	Result	Units	True Added	-- QC Calculations -- QC1			-- QC Calculations -- QC2		Lower Limit	Upper Limit
26043	MAR01-12006D	MN	D	.373	mg/L		200	%D	*				20
26025	MAR01-12006D	NI	D	8.2061	UG/L		5	%D		(<5 x MDL)			20
26025	MAR01-12006D	PB	D	2.4108	UG/L		27	%D	*	(<5 x MDL)			20
26025	MAR01-12006D	SB	D	.368	UG/L		31	%D	*	(<5 x MDL)			20
26025	MAR01-12006D	TL	D	0	UG/L		0	%D		(<5 x MDL)			20
26043	MAR01-12007M	AG	M	94	UG/L	100	94	%R:			5 %RPD	80	120
26025	MAR01-12007M	AS	M	23.7568	UG/L	20	95	%R:			1 %RPD	75	125
26025	MAR01-12007M	BA	M	526.5039	UG/L	200	103	%R:			2 %RPD	75	125
26025	MAR01-12007M	BE	M	9.6314	UG/L	10	96	%R:			8 %RPD	75	125
26025	MAR01-12007M	CD	M	9.3238	UG/L	10	94	%R:			4 %RPD	75	125
26025	MAR01-12007M	CR	M	98.2935	UG/L	100	98	%R:			3 %RPD	75	125
26043	MAR01-12007M	CU	M	787	UG/L	1000	79	%R:	*		7 %RPD	80	120
26043	MAR01-12007M	MN	M	860	UG/L	1000	80	%R:			4 %RPD	80	120
26025	MAR01-12007M	NI	M	96.8468	UG/L	100	95	%R:			4 %RPD	75	125
26025	MAR01-12007M	PB	M	10.4558	UG/L	10	114	%R:			3 %RPD	75	125
26025	MAR01-12007M	SB	M	21.2306	UG/L	20	105	%R:			5 %RPD	75	125
26025	MAR01-12007M	TL	M	9.3722	UG/L	10	95	%R:			3 %RPD	75	125
26043	MAR01-12007S	AG	S	99	UG/L	100	99	%R:				80	120
26025	MAR01-12007S	AS	S	23.5067	UG/L	20	94	%R:				75	125
26025	MAR01-12007S	BA	S	517.2196	UG/L	200	98	%R:				75	125
26025	MAR01-12007S	BE	S	8.8712	UG/L	10	89	%R:				75	125
26025	MAR01-12007S	CD	S	8.9657	UG/L	10	91	%R:				75	125
26025	MAR01-12007S	CR	S	95.2775	UG/L	100	95	%R:				75	125
26043	MAR01-12007S	CU	S	840	UG/L	1000	84	%R:				80	120
26043	MAR01-12007S	MN	S	898	UG/L	1000	83	%R:				80	120
26025	MAR01-12007S	NI	S	93.3105	UG/L	100	91	%R:				75	125
26025	MAR01-12007S	PB	S	10.1268	UG/L	10	111	%R:				75	125
26025	MAR01-12007S	SB	S	20.0982	UG/L	20	99	%R:				75	125
26025	MAR01-12007S	TL	S	9.0905	UG/L	10	93	%R:				75	125
26043	PB DW 5.25	PB	C	3	UG/Wipe								
26043	PBL 5.29.2	CD	C	.003	MG/L								
26043	PBL 6.4.2	PB	C	.045	MG/L							0	
26043	PBS 5.22.4A	CU	C	.02	MG/L								
26043	PBS 5.22.4B	PB	C	.025	MG/L								
25977	PBS 5.22.4B	SE	C	.11	UG/L		0						
26043	PBS 5.24.4A	CU	C	.004	MG/L								
26043	PBS 5.24.4A	PB	C	.061	MG/L								

QC Code Legend

B	Blanks	K	Calibration Checks	S	Spikes
C	Control Samples	M	Matrix Spike Duplicates		
D	Duplicates	R	Surrogates		

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WS#	Lab#	Test ID	QC Code	Result	Units	True Added	-- QC Calculations -- QC1	-- QC Calculations -- QC2	Lower Limit	Upper Limit
26043	PBS 6.4 PC	PB	C	.021	PPM					
26043	PBW 5.24.2	AG	C	-.001	MG/L					
26043	PBW 5.24.2	FE	C	-.014	MG/L					
26025	PBW 5.24.3	AS	C	1.2139	UG/L					
26026	PBW 5.24.3	CD	C	-.026	UG/L					
26025	PBW 5.24.3	CD	C	-.0293	UG/L					
26025	PBW 5.24.3	PB	C	-1.4581	UG/L					
26043	PBW 5.29.2	AG	C	-.001	MG/L					
26043	PBW 5.29.2	AL	C	.036	MG/L					
26043	PBW 5.29.2	BA	C	0	MG/L					
26043	PBW 5.29.2	CO	C	0	MG/L					
26043	PBW 5.29.2	CR	C	-.004	MG/L					
26043	PBW 5.29.2	CU	C	0	MG/L					
26043	PBW 5.29.2	FE	C	-.01	MG/L					
26043	PBW 5.29.2	K	C	.0395	MG/L					
26043	PBW 5.29.2	MG	C	.038	MG/L					
26043	PBW 5.29.2	MN	C	-.001	MG/L					
26043	PBW 5.29.2	NA	C	.04	MG/L					
26043	PBW 5.29.2	ZN	C	.004	MG/L					
26025	PBW 5.29.3	AS	C	2.8834	UG/L					
26025	PBW 5.29.3	B	C	9.9917	UG/L					
26025	PBW 5.29.3	BA	C	-.1757	UG/L					
26025	PBW 5.29.3	BE	C	.035	UG/L					
26026	PBW 5.29.3	CD	C	-.006	UG/L					
26025	PBW 5.29.3	CD	C	-.0314	UG/L					
26025	PBW 5.29.3	CR	C	.3478	UG/L					
26025	PBW 5.29.3	MO	C	.3452	UG/L					
26025	PBW 5.29.3	NI	C	-.3406	UG/L					
26025	PBW 5.29.3	PB	C	-1.3508	UG/L					
26025	PBW 5.29.3	SB	C	1.1373	UG/L					
25977	PBW 5.29.3	SE	C	.65	UG/L		0			
26025	PBW 5.29.3	SI	C	.0741	MG/L					
26025	PBW 5.29.3	TL	C	-.1533	UG/L					
26025	PBW 5.29.3	U	C	-.4079	UG/L					
26025	PBW 5.31.3	SI	C	.0628	MG/L					
26043	PBW 6.4.2	AG	C	0	MG/L					
26043	PBW 6.4.2	BA	C	0	MG/L					

QC Code Legend

B	Blanks	K	Calibration Checks	S	Spikes
C	Control Samples	M	Matrix Spike Duplicates		
D	Duplicates	R	Surrogates		

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WS#	Lab#	Test ID	QC Code	Result	Units	True Added	-- QC Calculations -- QC1	-- QC Calculations -- QC2	Lower Limit	Upper Limit
26043	PBW 6.4.2	CR	C	-.007	MG/L					
26043	PBW 6.4.2	CU	C	-.003	MG/L					
26043	PBW 6.4.2	MN	C	-.001	MG/L					
26025	PBW 6.4.3	AS	C	1.3373	UG/L					
26025	PBW 6.4.3	BA	C	-.2336	UG/L					
26025	PBW 6.4.3	BE	C	-.0399	UG/L					
26025	PBW 6.4.3	CD	C	-.038	UG/L					
26025	PBW 6.4.3	CR	C	-.2796	UG/L					
26025	PBW 6.4.3	NI	C	-.2868	UG/L					
26025	PBW 6.4.3	PB	C	-.639	UG/L					
26025	PBW 6.4.3	SB	C	.1175	UG/L					
26025	PBW 6.4.3	SI	C	.0541	MG/L					
26025	PBW 6.4.3	TL	C	-.1761	UG/L					

QC Code Legend

B	Blanks	K	Calibration Checks	S	Spikes
C	Control Samples	M	Matrix Spike Duplicates		
D	Duplicates	R	Surrogates		

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Summary Report

David Boyer
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: June 6, 2001

Order ID Number: A01052312

Project Number: Artesia MW Replacement
Project Name: N/A
Project Location: Artesia

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
171756	KWB-R	Water	5/22/01	14:50	5/23/01

This report consists of a total of 3 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 171756 - KWB-R

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<1.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L

Continued on next page ...

Sample 171756 continued ...

Param	Flag	Result	Units
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		258	mg/L as CaCo3
Total Alkalinity		258	mg/L as CaCo3
Specific Conductance		3160	µMHOS/cm
Total Mercury		<0.0002	mg/L
Bromide		<10	mg/L
CL		135	mg/L
Nitrate-N		9.54	mg/L
Sulfate		1510	mg/L
Naphthalene		<0.005	mg/L
Acenaphthylene		<0.005	mg/L
Acenaphthene		<0.005	mg/L
Fluorene		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L

Continued on next page ...

Sample 171756 continued ...

Param	Flag	Result	Units
Fluoranthene		<0.005	mg/L
Pyrene		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
Chrysene		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
Benzo(k)fluoranthene		<0.005	mg/L
Benzo(a)pyrene		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
Benzo(g,h,i)perylene		<0.005	mg/L
Dissolved Calcium		528	mg/L
Dissolved Magnesium		231	mg/L
Dissolved Potassium		2.52	mg/L
Dissolved Sodium		136	mg/L
Total Dissolved Solids		2750	mg/L
pH		7.2	s.u.

TRACEANALYSIS, INC.

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155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

David Boyer
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: June 6, 2001

Order ID Number: A01052312

Project Number: Artesia MW Replacement
Project Name: N/A
Project Location: Artesia

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
171756	KWB-R	Water	5/22/01	14:50	5/23/01

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 15 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 171756 - KWB-R

Analysis:	8260	Analytical Method:	S 8260B	QC Batch:	QC11503	Date Analyzed:	5/25/01
Analyst:	JG	Preparation Method:	E 5030B	Prep Batch:	PB09838	Date Prepared:	5/25/01

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<1.00	µg/L	1	1
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Continued ...

... *Continued* Sample: 171756 Analysis: 8260

Param	Flag	Result	Units	Dilution	RDL
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.53	µg/L	1	50	93	89 - 110
Toluene-d8		49.93	µg/L	1	50	99	95 - 107
4-Bromofluorobenzene		48.46	µg/L	1	50	96	81 - 105

Sample: 171756 - KWB-R

Analysis:	Alkalinity	Analytical Method:	E 310.1	QC Batch:	QC11576	Date Analyzed:	5/31/01
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB09911	Date Prepared:	5/31/01

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		258	mg/L as CaCo3	1	1
Total Alkalinity		258	mg/L as CaCo3	1	1

Sample: 171756 - KWB-R

Analysis:	Conductivity	Analytical Method:	SM 2510B	QC Batch:	QC11581	Date Analyzed:	5/30/01
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB09915	Date Prepared:	5/30/01

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		3160	µMHOS/cm	1	

Sample: 171756 - KWB-R

Analysis:	Hg, Total	Analytical Method:	S 7470A	QC Batch:	QC11565	Date Analyzed:	5/31/01
Analyst:	SSC	Preparation Method:	N/A	Prep Batch:	PB09902	Date Prepared:	5/31/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.0002	mg/L	1	0.0002

Sample: 171756 - KWB-R

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC11472 Date Analyzed: 5/23/01
Analyst: JS Preparation Method: N/A Prep Batch: PB09804 Date Prepared: 5/23/01

Param	Flag	Result	Units	Dilution	RDL
Bromide		<10	mg/L	50	0.20
CL		135	mg/L	5	0.50
Nitrate-N		9.54	mg/L	5	0.20
Sulfate		1510	mg/L	50	0.50

Sample: 171756 - KWB-R

Analysis: PAH Analytical Method: S 8270C QC Batch: QC11535 Date Analyzed: 5/23/01
Analyst: RC Preparation Method: E 3510C Prep Batch: PB09876 Date Prepared: 5/23/01

Param	Flag	Result	Units	Dilution	RDL
Naphthalene		<0.005	mg/L	1	0.005
Acenaphthylene		<0.005	mg/L	1	0.005
Acenaphthene		<0.005	mg/L	1	0.005
Fluorene		<0.005	mg/L	1	0.005
Phenanthrene		<0.005	mg/L	1	0.005
Anthracene		<0.005	mg/L	1	0.005
Fluoranthene		<0.005	mg/L	1	0.005
Pyrene		<0.005	mg/L	1	0.005
Benzo(a)anthracene		<0.005	mg/L	1	0.005
Chrysene		<0.005	mg/L	1	0.005
Benzo(b)fluoranthene		<0.005	mg/L	1	0.005
Benzo(k)fluoranthene		<0.005	mg/L	1	0.005
Benzo(a)pyrene		<0.005	mg/L	1	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	1	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	1	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	1	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		44.33	mg/L	1	80	55	35 - 114
2-Fluorobiphenyl		46.47	mg/L	1	80	58	43 - 116
Terphenyl-d14		39.79	mg/L	1	80	49	33 - 141

Sample: 171756 - KWB-R

Analysis: Salts Analytical Method: S 6010B QC Batch: QC11578 Date Analyzed: 5/29/01
Analyst: LDB Preparation Method: E 3005 A Prep Batch: PB09826 Date Prepared: 5/25/01

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		528	mg/L	1	0.50
Dissolved Magnesium		231	mg/L	1	0.50
Dissolved Potassium		2.52	mg/L	1	0.50

Continued ...

... *Continued* Sample: 171756 Analysis: Salts

Param	Flag	Result	Units	Dilution	RDL
Dissolved Sodium		136	mg/L	1	1.60

Sample: 171756 - KWB-R

Analysis:	TDS	Analytical Method:	E 160.1	QC Batch:	QC11473	Date Analyzed:	5/24/01
Analyst:	JS	Preparation Method:	N/A	Prep Batch:	PB09805	Date Prepared:	5/23/01

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		2750	mg/L	2	10

Sample: 171756 - KWB-R

Analysis:	pH	Analytical Method:	E 150.1	QC Batch:	QC11524	Date Analyzed:	5/23/01
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB09853	Date Prepared:	5/23/01

Param	Flag	Result	Units	Dilution	RDL
pH		7.2	s.u.	1	1

Quality Control Report
Method Blank

Method Blank

QCBatch: QC11472

Param	Flag	Results	Units	Reporting Limit
Bromide		<0.2	mg/L	0.20
CL		<2.0	mg/L	0.50
Nitrate-N		<0.2	mg/L	0.20
Sulfate		<2.0	mg/L	0.50

Method Blank

QCBatch: QC11473

Param	Flag	Results	Units	Reporting Limit
Total Dissolved Solids		<10	mg/L	10

Method Blank

QCBatch: QC11503

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<1.00	µg/L	1
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1

Continued ...

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Param	Flag	Results	Units	Reporting Limit
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.61	µg/L	1	50	99	89 - 110
Toluene-d8		50.43	µg/L	1	50	100	95 - 107
4-Bromofluorobenzene		48.81	µg/L	1	50	97	81 - 105

Method Blank QCBatch: QC11535

Param	Flag	Results	Units	Reporting Limit
Naphthalene		<0.005	mg/L	0.005
Acenaphthylene		<0.005	mg/L	0.005
Acenaphthene		<0.005	mg/L	0.005
Fluorene		<0.005	mg/L	0.005
Phenanthrene		<0.005	mg/L	0.005
Anthracene		<0.005	mg/L	0.005
Fluoranthene		<0.005	mg/L	0.005
Pyrene		<0.005	mg/L	0.005
Benzo(a)anthracene		<0.005	mg/L	0.005
Chrysene		<0.005	mg/L	0.005
Benzo(b)fluoranthene		<0.005	mg/L	0.005
Benzo(k)fluoranthene		<0.005	mg/L	0.005
Benzo(a)pyrene		<0.005	mg/L	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		54.76	mg/L	1	80	68	35 - 114
2-Fluorobiphenyl		60.49	mg/L	1	80	75	43 - 116
Terphenyl-d14		64.76	mg/L	1	80	80	33 - 141

Method Blank

QCBatch: QC11565

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.0002	mg/L	0.0002

Method Blank

QCBatch: QC11576

Param	Flag	Results	Units	Reporting Limit
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.0	mg/L as CaCo3	1
Total Alkalinity		<4.0	mg/L as CaCo3	1

Method Blank

QCBatch: QC11578

Param	Flag	Results	Units	Reporting Limit
Dissolved Calcium		<.5	mg/L	0.50
Dissolved Magnesium		<.5	mg/L	0.50
Dissolved Potassium		<.5	mg/L	0.50
Dissolved Sodium		1.6	mg/L	1.60

Method Blank QCBatch: QC11581

Param	Flag	Results	Units	Reporting Limit
Specific Conductance		4.11	µMHOS/cm	

Quality Control Report
Duplicate Samples

Duplicate QCBatch: QC11473

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		4225	4140	mg/L	1	2	14

Duplicate QCBatch: QC11524

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		8.0	7.9	s.u.	1	1	0.99

Duplicate QCBatch: QC11576

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	7
Carbonate Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	7
Bicarbonate Alkalinity		116	118	mg/L as CaCo3	1	1	7
Total Alkalinity		116	<1.0	mg/L as CaCo3	1	1	7

Duplicate QCBatch: QC11581

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance		1733		µMHOS/cm	1	1	4.6
Specific Conductance		1733	1760	µMHOS/cm	1	1	4.6

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC11472

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Bromide	2.50	2.56	mg/L	1	2.50	<0.2	100	2	90 - 110	20

Continued ...

... Continued

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
CL	12.23	12.21	mg/L	1	12.50	<2.0	97	0	90 - 110	20
Nitrate-N	2.41	2.45	mg/L	1	2.50	<0.2	96	1	90 - 110	20
Sulfate	12.45	12.34	mg/L	1	12.50	<2.0	99	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC11503

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	101	104	µg/L	1	100	<1.00	101	2	80 - 120	20
Benzene	100	104	µg/L	1	100	<1.00	100	3	80 - 120	20
Trichloroethene (TCE)	88	92	µg/L	1	100	<1.00	88	4	80 - 120	20
Toluene	102	106	µg/L	1	100	<1.00	102	3	80 - 120	20
Chlorobenzene	98	102	µg/L	1	100	<1.00	98	4	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	50.17	49.21	µg/L	1	50	100	98	89 - 110
Toluene-d8	48.52	48.76	µg/L	1	50	97	97	95 - 107
4-Bromofluorobenzene	48.05	48.19	µg/L	1	50	96	96	81 - 105

Laboratory Control Spikes

QCBatch: QC11535

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Naphthalene	41.3	42.48	mg/L	1	80	<0.005	51	2	21 - 133	20
Acenaphthylene	44.34	44.61	mg/L	1	80	<0.005	55	0	33 - 145	20
Acenaphthene	45.42	46.32	mg/L	1	80	<0.005	56	1	47 - 145	20
Fluorene	50.69	50.93	mg/L	1	80	<0.005	63	0	59 - 121	20
Phenanthrene	42.97	42.56	mg/L	1	80	<0.005	53	0	54 - 120	20
Anthracene	44.45	44.84	mg/L	1	80	<0.005	55	0	27 - 133	20
Fluoranthene	52.46	50.72	mg/L	1	80	<0.005	65	3	26 - 137	20
Pyrene	41.05	39.79	mg/L	1	80	<0.005	51	3	52 - 115	20
Benzo(a)anthracene	44.79	45.61	mg/L	1	80	<0.005	55	1	33 - 143	20
Chrysene	68.84	69.5	mg/L	1	80	<0.005	86	0	17 - 168	20
Benzo(b)fluoranthene	55.05	52.89	mg/L	1	80	<0.005	68	4	33 - 143	20
Benzo(k)fluoranthene	54.57	50.12	mg/L	1	80	<0.005	68	8	17 - 168	20
Benzo(a)pyrene	48.64	49.37	mg/L	1	80	<0.005	60	1	24 - 159	20
Indeno(1,2,3-cd)pyrene	35.62	40.32	mg/L	1	80	<0.005	44	12	0 - 171	20
Dibenzo(a,h)anthracene	48.96	55.5	mg/L	1	80	<0.005	61	12	0 - 227	20
Benzo(g,h,i)perylene	36.48	41.45	mg/L	1	80	<0.005	45	12	0 - 219	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Nitrobenzene-d5	38.98	42.32	mg/L	1	80	48	52	35 - 114
2-Fluorobiphenyl	41.29	43.01	mg/L	1	80	51	53	43 - 116

Continued ...

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Terphenyl-d14	26.44	28.71	mg/L	1	80	33	35	33 - 141

Laboratory Control Spikes

QCBatch: QC11565

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	0.00104	0.00104	mg/L	1	0.001	<0.0002	104	0	84 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC11578

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	88.4	91.1	mg/L	1	100	<.5	88	3	75 - 125	20
Dissolved Magnesium	84.6	88.6	mg/L	1	100	<.5	84	4	75 - 125	20
Dissolved Potassium	87.5	94.3	mg/L	1	100	<.5	87	7	75 - 125	20
Dissolved Sodium	92.7	90.4	mg/L	1	100	1.6	92	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report
Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC11472

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Bromide	131.84	131.58	mg/L	1	125	<10	105	0	56 - 160	20
CL	[1] 741.53	[2] 743.81	mg/L	1	625	135	97	0	52 - 131	20
Nitrate-N	[3] 135.52	[4] 134.54	mg/L	1	125	9.54	100	0	86 - 110	20
Sulfate	2074.48	2102.36	mg/L	1	625	1510	90	4	71 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC11565

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	0.00097	0.00103	mg/L	1	0.001	<0.0002	97	5	84 - 127	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

[1] I spiked the *50 dilution for 171756, but reported the *5 dilution. The correct %EA = 93.
[2] I spiked the *50 dilution for 171756, but reported the *5 dilution.
[3] I spiked the *50 dilution for 171756, but reported the *5 dilution. The correct %EA = 95.
[4] I spiked the *50 dilution for 171756, but reported the *5 dilution.

Matrix Spikes

QCBatch: QC11578

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	155	152	mg/L	1	100	66.5	88	3	75 - 125	20
Dissolved Magnesium	109	108	mg/L	1	100	20.9	88	1	75 - 125	20
Dissolved Potassium	98.6	97.7	mg/L	1	100	7.38	91	0	75 - 125	20
Dissolved Sodium	186	180	mg/L	1	100	100	86	7	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC11472

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	2.50	2.58	103	90 - 110	5/23/01
CL		mg/L	12.50	12.26	98	90 - 110	5/23/01
Fluoride		mg/L	2.50	2.38	95	90 - 110	5/23/01
Nitrate-N		mg/L	2.50	2.42	96	90 - 110	5/23/01
Sulfate		mg/L	12.50	12.34	98	90 - 110	5/23/01

ICV (1)

QCBatch: QC11472

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	2.50	2.55	102	90 - 110	5/23/01
CL		mg/L	12.50	12.46	99	90 - 110	5/23/01
Fluoride		mg/L	2.50	2.31	92	90 - 110	5/23/01
Nitrate-N		mg/L	2.50	2.42	96	90 - 110	5/23/01
Sulfate		mg/L	12.50	12.31	98	90 - 110	5/23/01

CCV (1)

QCBatch: QC11473

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1008	100	90 - 110	5/24/01

ICV (1)

QCBatch: QC11473

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	990	99	90 - 110	5/24/01

CCV (1) QCBatch: QC11503

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	100	95	95	80 - 120	5/25/01
1,1-Dichloroethene		µg/L	100	97	97	80 - 120	5/25/01
Chloroform		µg/L	100	101	101	80 - 120	5/25/01
1,2-Dichloropropane		µg/L	100	109	109	80 - 120	5/25/01
Toluene		µg/L	100	107	107	80 - 120	5/25/01
Chlorobenzene		µg/L	100	101	101	80 - 120	5/25/01
Ethylbenzene		µg/L	100	108	108	80 - 120	5/25/01
Dibromofluoromethane		µg/L	50	48.78	97	80 - 120	5/25/01
Toluene-d8		µg/L	50	48.43	96	80 - 120	5/25/01
4-Bromofluorobenzene		µg/L	50	52.53	105	80 - 120	5/25/01

CCV (2) QCBatch: QC11503

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	100	95	95	80 - 120	5/25/01
1,1-Dichloroethene		µg/L	100	97	97	80 - 120	5/25/01
Chloroform		µg/L	100	101	101	80 - 120	5/25/01
1,2-Dichloropropane		µg/L	100	109	109	80 - 120	5/25/01
Toluene		µg/L	100	107	107	80 - 120	5/25/01
Chlorobenzene		µg/L	100	101	101	80 - 120	5/25/01
Ethylbenzene		µg/L	100	108	108	80 - 120	5/25/01
Dibromofluoromethane		µg/L	50	48.78	97	80 - 120	5/25/01
Toluene-d8		µg/L	50	48.43	96	80 - 120	5/25/01
4-Bromofluorobenzene		µg/L	50	52.53	105	80 - 120	5/25/01

ICV (1) QCBatch: QC11524

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	5/23/01

CCV (1) QCBatch: QC11535

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		mg/L	60	59.52	99	80 - 120	5/23/01
Acenaphthylene		mg/L	60	59.35	98	80 - 120	5/23/01
Acenaphthene		mg/L	60	60.35	100	80 - 120	5/23/01
Fluorene		mg/L	60	64.37	107	80 - 120	5/23/01
Phenanthrene		mg/L	60	59.00	98	80 - 120	5/23/01
Anthracene		mg/L	60	60.06	100	80 - 120	5/23/01
Fluoranthene		mg/L	60	71.76	119	80 - 120	5/23/01
Pyrene		mg/L	60	48.24	80	80 - 120	5/23/01
Benzo(a)anthracene		mg/L	60	60.69	101	0 - 120	5/23/01
Chrysene		mg/L	60	60.41	100	0 - 120	5/23/01
Benzo(b)fluoranthene		mg/L	60	65.21	108	80 - 120	5/23/01
Benzo(k)fluoranthene		mg/L	60	62.61	104	80 - 120	5/23/01
Benzo(a)pyrene		mg/L	60	61.02	101	80 - 120	5/23/01
Indeno(1,2,3-cd)pyrene		mg/L	60	49.15	81	80 - 120	5/23/01
Dibenzo(a,h)anthracene		mg/L	60	50.29	83	80 - 120	5/23/01
Benzo(g,h,i)perylene		mg/L	60	48.09	80	80 - 120	5/23/01
Nitrobenzene-d5		mg/L	60	55.74	92	80 - 120	5/23/01
2-Fluorobiphenyl		mg/L	60	55.76	92	80 - 120	5/23/01
Terphenyl-d14		mg/L	60	51.31	85	80 - 120	5/23/01

CCV (1) QCBatch: QC11565

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.001	0.00095	95	80 - 120	5/31/01

ICV (1) QCBatch: QC11565

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.001	0.00103	103	80 - 120	5/31/01

CCV (1) QCBatch: QC11576

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	90 - 110	5/31/01
Carbonate Alkalinity		mg/L as CaCo3	0	232	0	90 - 110	5/31/01
Bicarbonate Alkalinity		mg/L as CaCo3	0	6.0	0	90 - 110	5/31/01
Total Alkalinity		mg/L as CaCo3	250	238	95	90 - 110	5/31/01

ICV (1) QCBatch: QC11576

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	10	0	90 - 110	5/31/01
Carbonate Alkalinity		mg/L as CaCo3	0	227	0	90 - 110	5/31/01
Bicarbonate Alkalinity		mg/L as CaCo3	0	<1.0	0	90 - 110	5/31/01
Total Alkalinity		mg/L as CaCo3	250	238	95	90 - 110	5/31/01

CCV (1) QCBatch: QC11578

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	25.7	102	90 - 110	5/29/01
Dissolved Magnesium		mg/L	25	24.4	97	90 - 110	5/29/01
Dissolved Potassium		mg/L	25	25.9	103	90 - 110	5/29/01
Dissolved Sodium		mg/L	25	26.5	106	90 - 110	5/29/01

ICV (1) QCBatch: QC11578

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	25	100	95 - 105	5/29/01
Dissolved Magnesium		mg/L	25	24.7	98	95 - 105	5/29/01
Dissolved Potassium		mg/L	25	24.4	97	95 - 105	5/29/01
Dissolved Sodium		mg/L	25	24.8	99	95 - 105	5/29/01

CCV (1) QCBatch: QC11581

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		μMHOS/cm	1412	1428	101	90 - 110	5/30/01

ICV (1) QCBatch: QC11581

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		μMHOS/cm	1402	1434	102	90 - 110	5/30/01

171756

Page 1 of 1

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # AO1052312

Company Name: NAVAJO REFINING Phone #: 505-748-3311

Address: (Street, City, Zip) P.O. BOX 159 ARTESIA NM Fax #: 505-746-5421

Contact Person: DAVID BOYER (505) 397-0510, FAX 393-4388

Invoice to: (If different from above) Darrell Moore

Project #: Artesia MW Replacement Project Name:

Project Location: Artesia Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
171756	KWB-R	5		X				X	X	X	X	5/22	1450

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
			X							X	X			X		

All + MTBE
8260B
NM WQCC Metals to include Hg
Cations/Anions, TDS, Nitrate, Nitrite, Chloride, Fluoride
Sulfate, Alkalinity
per Dave

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
D. Boyer	5/22/01	1530			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
			Vicki Campos	5-23-01	10:00

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp 1 °

Log-in Review MA

REMARKS:
Call Dave Boyer 6/13 if questions
Photocopy of Results to Dave Boyer, SESI P.O. Box 1613, Hobbs 88241

Carrier # Fed Ex 327 8205 9e5

TraceAnalysis , Inc.
General Terms and Conditions

Article 1: General

1.1 The words "we", "us", and "our" refer to TraceAnalysis. You will deliver samples to us for analysis, accompanied, or preceded by, a signed Chain of Custody/Analysis Request defining the scope and timing of our work and stating either the testing criteria you require or identifying the agency to which the results will be submitted.

Article 2: Our General Responsibilities

2.1 We agree to provide the professional services described in this agreement. We will provide you with written reports containing analytical results. In performing our service, we will use that degree of care and skill ordinarily exercised under similar circumstances by reputable members of our profession practicing in the same locality.

2.2 Test and observations will be conducted using test procedures and laboratory protocols as specified in accepted Chain of Custody/Analysis Request. If you direct a manner of making tests that varies from our standard or recommended procedures, you agree to hold us harmless from all claims, damages, and expenses arising out of your direction.

2.3 We will not release information regarding our services for you or any information that we receive from you, except for information that is in the public domain and except as we are required by law.

Article 3: Your General Responsibilities

3.1 On each Chain of Custody/Analysis Request you will designate a representative who has authority to transmit instructions, receive information, and make decisions relative to our work.

3.2 You will respond in a reasonable time to our request for decisions, authorization for changes, additional compensation, or schedule extensions.

3.3 For each Chain of Custody/Analysis Request you will either provide us with the exact methods for analysis of each fraction or you will identify the regulations and agency under which or for which the analysis are to be prepared. If permits, consent orders, work plans, quality assurance plans, or correspondence with regulatory agencies address laboratory requirements, you will provide us with copies of the relevant provisions prior to our initiation of the analyses.

Article 4: Reports and Records

4.1 We will furnish copies of each report to you as specified in the Chain of Custody and Analysis Request. We will retain analytical data for seven years and financial data for three years relating to the services performed following transmittal of our final report.

4.2 If you do not pay for our services as agreed, you agree that we may retain all reports and work not yet delivered to you. You also agree that our work will not be used by you for any purpose unless paid for.

Article 5: Delivery and Acceptance of Samples

5.1 Until we accept delivery of samples by notation on chain of custody documents or otherwise in writing accept the samples, you are responsible for loss of or damage to samples. Until so accepted, we have no responsibility as to samples.

5.2 As to any samples that are suspected of containing hazardous substances or radioactive material, such that would make special handling required, you will specify the suspected or known substances and level and type of radioactive activity. This information will be given to us in writing as a part of the Chain of Custody/Analysis Request and will precede or accompany samples suspected of containing hazardous substances.

5.3 Samples accepted by us remain your property while in our custody. We will retain samples for a period of 14 days following the date of submission or our report. We will extend the retention period if you so direct. Following the retention period we will dispose of non-hazardous samples. We may return highly hazardous, acutely toxic, or radioactive samples and samples containers and residues to you. You agree to accept them.

5.4 Regardless of a prior acceptance, we may refuse acceptance or revoke acceptance of samples if we determine that the samples present a risk to health, safety, or the environment, or that we are not authorized to accept them. If we revoke acceptance of any sample, you will have it removed from our facilities promptly.

Article 6: Changes to Task Orders

6.1 No persons other than the designated representatives for each Chain of Custody/Analysis Request are authorized to act regarding changes to a Chain of Custody/Analysis Request. We will notify you promptly if we identify any activity that we regard as a change to the terms and conditions of a Chain of Custody/Analysis Request. Our notice will include the date, nature, circumstance, and cause of the activity regarded as a change. We will specify the particular elements of project performance for which we may seek an equitable adjustment.

6.2 You will respond to the notice provided for in paragraph 6.1 promptly. Changes may be made to a Chain of Custody/Analysis Request through issuance of an amendment. The amendment will specify the reason for the change and, as appropriate, include any modified budgets, schedules, scope of work, and other necessary provisions.

6.3 Until agreement is reached concerning the proposed change, we may regard the situation as a suspension directed by you.

Article 7: Compensation

7.1 Our pricing for the work is predicated upon your acceptance of the conditions and allocations of risks and responsibilities described in this agreement. You agree to pay for services as stated in our proposal and accepted by you or according to our then current standard pricing documents if there is no other written agreement as to price. An estimate or statement of probable cost is not a firm figure unless stated as such.

7.2 Unless otherwise agreed to elsewhere, you agree to pay invoices within 30 days of receipt unless, within 15 days from receipt of the invoice, you notify us in writing of a particular item that is alleged to be incorrect. You agree to pay the uncontested portions of the invoices within 30 days of receipt. You agree to pay interest on unpaid balances beginning 60 days after receipt of invoice at the rate of 1.5% per month, but not to exceed the maximum rate allowed by law.

7.3 If you direct us to invoice another, we will do so, but you agree to be ultimately responsible for our compensation until you provide us with that third party's written acceptance of all terms of our agreement and until we agree to the substitution.

7.4 You agree to compensate us for our services and expenses if we are required to respond to legal process related to our services for you. Compensable services include hourly charges for all personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, the preparation of the testifier, and appearances related to the legal process.

7.5 If we are delayed by, or the period of performance is materially extended because of, factors beyond our control, or if project condition or the scope or amount of work change, or if the standards or methods of testing change, we will give you timely notice of the change and we will receive an equitable adjustment of our compensation.

Article 8: Risk Allocation, Disputes, and Damages

8.1 Neither we nor you will be liable to the other for special, incidental, consequential or punitive losses or damages, including but not limited to those arising from delay, loss of use, loss of profits or revenue, or the cost of capital.

8.2 We will not be liable to you for damages unless suit is commenced within two years of injury or loss or within two years of the date of the completion of our services, whichever is earlier. In no event will we be liable to you unless you have notified us of the discovery of the negligent act, error, omission or breach within 30 days of the date of its discovery and unless you have given us an opportunity to investigate and to recommend ways of mitigating your damages.

8.3 In the event you fail to pay us within 90 days following the invoice date, we may consider the default a total breach of our agreement and we may, at our option, terminate all of our duties without liability to you or to others.

8.4 If it is claimed by a third party that we did not complete an acceptable analysis, at your request will seek further review and acceptance of the completed work by the third party and use your best efforts to obtain that acceptance. We will assist you as directed.

8.5 You and we agree that disputes will be submitted to "Alternative Dispute Resolution" (ADR) as a condition precedent to litigation and other remedies provided by law. Each of us agrees to exercise good faith efforts to resolve disputes through mediation unless we both agree upon another ADR procedure. All disputes will be governed by the law of the place where our services are rendered, or if our services are rendered in more than one state, you and we agree that the law of the place that services were first rendered will govern.

8.6 If either of us makes a claim against the other as to issues out of the performance of this agreement, the prevailing party will be entitled to recover its reasonable expenses of litigation, including reasonable attorney's fees. If we bring lawsuit against you to collect our invoiced fees and expenses, you agree to pay our reasonable collection expenses including attorney fees.

Article 9: Indemnities

9.1 We will indemnify and hold you harmless from and against demands, damages, and expenses caused by our negligent acts and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom we are legally responsible. You will indemnify and hold us harmless from and against demands, damages, and expenses caused by your negligent act and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom you are legally responsible. These indemnities are subject to specific limitations provided for in this agreement.

Article 10: Miscellaneous Provisions

10.1 This agreement constitutes the entire agreement between you and us, and it supersedes all prior agreements. Any term, condition, prior course of dealing, course of performance, usage of trade, understanding, purchase order conditions, or other agreement purporting to modify, vary, supplement, or explain any provision of this agreement is of no effect until placed in writing and signed by both parties subsequent to the date of this agreement. In no event will the printed terms or conditions stated in a purchase or work order, other than an agreed upon Chain of Custody/Analysis Request, be considered a part of this agreement, even if the document is signed by both of us.

10.2 Neither party will assign this agreement without the express written approval of the other, but we may subcontract laboratory procedures with your approval as we deem necessary to meet our obligations to you.

10.3 If any of the provisions of this agreement are held to be invalid or unenforceable in any respect, the remaining terms will be in full effect and the agreement will be construed as if the invalid or unenforceable matters were never included in it. No waiver of any default will be waiver of any future default.

10.4 Neither you or we will have any liability for nonperformance caused in whole or in part by causes beyond our reasonable control. Such causes include but are not limited to Acts of God, civil unrest and war, labor unrest and strikes, equipment failures, matrix interference, acts of authorities, and failures of subcontractors that could not be reasonably anticipated.

10.5 You may stop our work by giving a written suspension or termination directive, but once work has been suspended, we need not resume work until we agree to change in scope, schedule, and compensation. Upon suspension or termination, we will use reasonable care to preserve samples provided that you agree to compensate us for any additional effort, but we will have no responsibility for meeting holding time limitations after the effective time of a suspension or termination directive. We will be compensated for service rendered and expenses incurred prior to termination that cannot reasonably be avoided.

NAVAJO REFINING COMPANY

FAX
(505) 746-5283 DIV. ORDERS
(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX
(505) 746-5419 ACCOUNTING
(505) 746-5451 EXECUTIVE
(505) 746-5421 ENGINEERING
(505) 746-5480 P / L

TELECOPIED
JUN 2 8 2001

OIL CONSERVATION DIVISION
01 JUL 16 PM 1:52

June 26, 2001

Mr. Wayne Price
Environmental Bureau
Oil Conservation Division
1220 S. St. Francis
Santa Fe, NM 87505-5472

RE: Hydrotest of TK 419, Navajo Refining Co., Eddy County, NM

Dear Wayne,

Enclosed, please find the analysis from the hydrotest water from TK 419. This tank was in diesel service and had its floor replaced. The inside was then sandblasted and filled with 58,000 barrels of fresh groundwater. We would like to discharge this water to our farm.

If there are any questions concerning this matter, please call me at 505-748-3311.

Sincerely,
Navajo Refining Company

Darrell Moore
Environmental Mgr. For Water and Waste

Encl.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Modified Reporting Date: 06/28/01

Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

RCRA METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:		06/20/01	06/27/01	06/21/01	06/27/01	06/21/01	06/21/01	06/21/01	06/20/01
H5928-1	TK 419	<0.1	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
Quality Control		0.051	0.047	27.54	0.022	0.945	4.006	0.00989	0.198
True Value QC		0.050	0.050	25.00	0.020	1.000	4.000	0.01000	0.200
% Recovery		102	94.0	110	110	94.5	100	98.9	99.0
Relative Percent Difference		1.7	0.7	1.3	0.3	3.2	0.9	1.1	1.6

METHODS: EPA 600/4-79-020	206.2	272.2	208.1	213.2	218.1	239.1	245.1	270.2
METHODS: SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

Chemist

06/27/2001
Date

H5928M.XLS

PLEASE NOTE: **Liability and Damages.** **Cardinal's** liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by **Cardinal** within thirty (30) days after completion of the applicable service. In no event shall **Cardinal** be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by **Cardinal**, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/26/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM

Analysis Date: 06/22/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	B (ppm)
H5928-1	TK 419	1.52
Quality Control		0.970
True Value QC		1.000
% Recovery		97.0
Relative Percent Difference		3.9

METHOD: EPA 600/4-79-020 200.7

Chemist

06/27/2001
Date

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H5928(1).XLS

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM

Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER SAMPLE ID	NO_3 (mg/L)	pH (s.u.)	Cl^- (mg/L)	F^- (mg/L)	SO_4 (mg/L)
ANALYSIS DATE:	06/20/01	06/20/01	06/20/01	06/20/01	06/20/01
H5928-1 TK 419	0.37	7.23	35	0.25	428
Quality Control	2.97	6.98	1000	1.08	51.06
True Value QC	3.00	7.00	1000	1.00	50.00
% Accuracy	98.9	99.7	100	108	102
Relative Percent Difference	2.4	0.1	3.0	0.9	0
METHODS: 600/4-79-020	352.1	150.1	SM4500-Cl-B	4500-F D	375.4

	TDS (mg/L)	K (mg/L)	Na (mg/L)	Mg (mg/L)	Ca (mg/L)
ANALYSIS DATE:	06/21/01	06/20/01	06/21/01	06/20/01	06/20/01
H5928-1 TK 419	1026	2.14	9.1	61	150
Quality Control	NR	5.02	0.926	44	47
True Value QC	NR	5.00	1.000	50	50
% Accuracy	NR	100	92.6	88.5	94.9
Relative Percent Difference	NR	5.2	1.5	13.6	8.5
METHODS: 600/4-79-020	160.1	8049	273.1	SM3500-Mg E	SM3500-Ca-D

Chemist

06/21/2001
Date

H5928C.XLS

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM

Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

TOTAL METALS

LAB NUMBER SAMPLE ID	Al (ppm)	Co (ppm)	Cu (ppm)	Fe (ppm)
ANALYSIS DATE:	06/21/01	06/21/01	06/21/01	06/21/01
H5928-1 TK 419	<2	<0.05	<0.5	1.416
Quality Control	10.91	4.964	0.975	5.000
True Value QC	10.00	5.000	1.000	5.000
% Recovery	109	99.3	97.5	100
Relative Percent Difference	4.7	0.3	0.5	0.3
METHODS: EPA 600/04-79-020	202.1	219.1	220.1	236.1

	Mn (ppm)	Mo (ppm)	Ni (ppm)	Zn (ppm)
ANALYSIS DATE:	06/21/01	06/21/01	06/21/01	06/21/01
H5928-1 TK 419	<0.2	<0.5	<0.2	<1
Quality Control	0.983	5.014	5.009	0.504
True Value QC	1.000	5.000	5.000	0.500
% Recovery	98.3	100	101	101
Relative Percent Difference	0.3	4.5	0.9	0.5
METHODS: EPA 600/04-79-020	243.1	246.1	249.1	289.1

Chemist

06/21/2001
Date

H5928M2.XLS

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ANALYTICAL RESULTS FOR
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ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

VOLATILES - 8260 (ppm)		Sample Result H5928-1	Method Blank	QC	%Recov.	True Value QC
63	Hexachlorobutadiene	<0.005	<0.005	0.118	118	0.100
64	Naphthalene	<0.005	<0.005	0.106	106	0.100
65	1,2,4-Trichlorobenzene	<0.005	<0.005	0.107	107	0.100

		% Recovery
66	Dibromofluoromethane	95
67	Toluene-d8	115
68	4-Bromofluorobenzene	106

METHODS: EPA SW-846-8260.

Burgess J. A. Cooke, Ph. D.

6/21/01
Date

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Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

VOLATILES - 8260 (ppm)		Sample Result H5928-1	Method Blank	QC	%Recov.	True Value QC
32	1,1,2-Trichloroethane	<0.005	<0.005	0.107	107	0.100
33	1,3-Dichloropropane	<0.005	<0.005	0.107	107	0.100
34	2-Hexanone	<0.050	<0.050	0.114	114	0.100
35	Dibromochloromethane	<0.005	<0.005	0.106	106	0.100
36	1,2-Dibromoethane	<0.005	<0.005	0.108	108	0.100
37	Tetrachloroethene	<0.005	<0.005	0.109	109	0.100
38	Chlorobenzene	<0.005	<0.005	0.107	107	0.100
39	1,1,1,2-Tetrachloroethane	<0.005	<0.005	0.106	106	0.100
40	Ethylbenzene	<0.005	<0.005	0.109	109	0.100
41	m, p - Xylene	<0.010	<0.010	0.217	109	0.200
42	Bromoform	<0.005	<0.005	0.106	106	0.100
43	Styrene	<0.005	<0.005	0.108	108	0.100
44	o-Xylene	<0.005	<0.005	0.109	109	0.100
45	1,1,2,2-Tetrachloroethane	<0.005	<0.005	0.107	107	0.100
46	1,2,3-Trichloropropane	<0.005	<0.005	0.111	111	0.100
47	Isopropylbenzene	<0.005	<0.005	0.109	109	0.100
48	Bromobenzene	<0.005	<0.005	0.105	105	0.100
49	2-Chlorotoluene	<0.005	<0.005	0.107	107	0.100
50	n-propylbenzene	<0.005	<0.005	0.110	110	0.100
51	4-Chlorotoluene	<0.005	<0.005	0.106	106	0.100
52	1,3,5-Trimethylbenzene	<0.005	<0.005	0.109	109	0.100
53	tert-Butylbenzene	<0.005	<0.005	0.113	113	0.100
54	1,2,4-Trimethylbenzene	<0.005	<0.005	0.110	110	0.100
55	1,3-Dichlorobenzene	<0.005	<0.005	0.107	107	0.100
56	sec-Butylbenzene	<0.005	<0.005	0.111	111	0.100
57	1,4 Dichlorobenzene	<0.005	0.005	0.108	108	0.100
58	4-Isopropyltoluene	<0.005	<0.005	0.111	111	0.100
59	1,2-Dichlorobenzene	<0.005	<0.005	0.105	105	0.100
60	n-Butylbenzene	<0.005	<0.005	0.113	113	0.100
61	1,2-dibromo-3-chloropropane	<0.005	<0.005	0.108	108	0.100
62	1,2,3-Trichlorobenzene	<0.005	<0.005	0.108	108	0.100

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

VOLATILES - 8260 (ppm)		Sample Result H5928-1	Method Blank	QC	%Recov.	True Value QC
1	Dichlorodifluoromethane	<0.005	<0.005	0.100	100	0.100
2	Chloromethane	<0.005	<0.005	0.112	112	0.100
3	Vinyl chloride	<0.005	<0.005	0.113	113	0.100
4	Bromomethane	<0.005	<0.005	0.108	108	0.100
5	Chloroethane	<0.005	<0.005	0.107	107	0.100
6	Iodomethane	<0.005	<0.005	0.116	116	0.100
7	1,1-Dichloroethene	<0.005	<0.005	0.110	110	0.100
8	Trichlorofluoromethane	<0.005	<0.005	0.116	116	0.100
9	Carbon Disulfide	<0.005	<0.005	0.117	117	0.100
10	Methylene chloride	<0.005	0.008	0.110	110	0.100
11	trans-1,2-Dichloroethene	<0.005	<0.005	0.113	113	0.100
12	1,1-Dichloroethane	<0.005	<0.005	0.109	109	0.100
13	2-Butanone	<0.050	<0.050	0.112	112	0.100
14	cis-1,2-Dichloroethene	<0.005	<0.005	0.111	111	0.100
15	2,2-Dichloropropane	<0.005	<0.005	0.092	92	0.100
16	Chloroform	<0.005	<0.005	0.110	110	0.100
17	Bromochloromethane	<0.005	<0.005	0.108	108	0.100
18	1,1,1-Trichloroethane	<0.005	<0.005	0.103	103	0.100
19	1,2-Dichloroethane	<0.005	<0.005	0.109	109	0.100
20	1,1-Dichloropropene	<0.005	<0.005	0.110	110	0.100
21	Benzene	<0.005	<0.005	0.110	110	0.100
22	Carbon tetrachloride	<0.005	<0.005	0.111	111	0.100
23	Trichloroethene	<0.005	<0.005	0.107	107	0.100
24	Dibromomethane	<0.005	<0.005	0.106	106	0.100
25	Bromodichloromethane	<0.005	<0.005	0.107	107	0.100
26	(2-Chloroethoxy)ethene	<0.005	<0.005	0.081	81	0.100
27	trans-1,3-Dichloropropene	<0.005	<0.005	0.117	117	0.100
28	4-methyl-2-pentanone	<0.050	<0.050	0.117	117	0.100
29	1,2-Dichloropropane	<0.005	<0.005	0.106	106	0.100
30	cis-1,3-Dichloropropene	<0.005	<0.005	0.111	111	0.100
31	Toluene	<0.005	<0.005	0.108	108	0.100

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

SEMIVOLATILES - 8270 (ppm)	Sample Result H5928-1	Method Blank	QC	% Recov.	True Value QC
1 n-Nitrosodimethylamine	<0.005	<0.005	0.020	40	0.050
2 2-Picoline	<0.005	<0.005	0.024	48	0.050
3 Methylmethanesulfonate	<0.005	<0.005	0.024	48	0.050
4 Ethylmethanesulfonate	<0.005	<0.005	0.035	70	0.050
5 Phenol	<0.005	<0.005	0.023	46	0.050
6 Aniline	<0.005	<0.005	0.040	80	0.050
7 bis (2-Chloroethyl) ether	<0.005	<0.005	0.041	82	0.050
8 2-Chlorophenol	<0.005	<0.005	0.040	80	0.050
9 1,4-Dichlorobenzene	<0.005	<0.005	0.032	64	0.050
10 1,3-Dichlorobenzene	<0.005	<0.005	0.028	56	0.050
11 Benzyl Alcohol	<0.005	<0.005	0.030	60	0.050
12 1,2-Dichlorobenzene	<0.005	<0.005	0.031	62	0.050
13 2-Methylphenol	<0.005	<0.005	0.035	70	0.050
14 bis (2-Chloroisopropyl) ether	<0.005	<0.005	0.039	78	0.050
15 Acetophenone	<0.005	<0.005	0.040	80	0.050
16 4-Methylphenol	<0.005	<0.005	0.036	72	0.050
17 n-Nitroso-di-n-propylamine	<0.005	<0.005	0.048	96	0.050
18 Hexachloroethane	<0.005	<0.005	0.026	52	0.050
19 Nitrobenzene	<0.005	<0.005	0.043	86	0.050
20 n-Nitrosopiperidine	<0.005	<0.005	0.044	88	0.050
21 Isophorone	<0.005	<0.005	0.043	86	0.050
22 2-Nitrophenol	<0.005	<0.005	0.043	86	0.050
23 2,4-Dimethylphenol	<0.005	<0.005	0.042	84	0.050
24 Benzoic acid	<0.005	<0.005	N/A	N/A	N/A
25 bis (2-Chloroethoxy) methane	<0.005	<0.005	0.044	88	0.050
26 2,4-Dichlorophenol	<0.005	<0.005	0.044	88	0.050
27 1,2,4-Trichlorobenzene	<0.005	<0.005	0.036	72	0.050
28 Naphthalene	<0.005	<0.005	0.041	82	0.050
29 4-Chloroaniline	<0.005	<0.005	0.046	92	0.050
30 2,6-Dichlorophenol	<0.005	<0.005	0.044	88	0.050
31 Hexachlorobutadiene	<0.005	<0.005	0.030	60	0.050
32 n-Nitroso-di-n-butylamine	<0.005	<0.005	0.043	86	0.050
33 4-Chloro-3-methylphenol	<0.005	<0.005	0.043	86	0.050
34 2-Methylnaphthalene	<0.005	<0.005	0.041	82	0.050
35 1,2,4,5-Tetrachlorobenzene	<0.005	<0.005	0.041	82	0.050
36 Hexachlorocyclopentadiene	<0.005	<0.005	0.028	56	0.050
37 2,4,6-Trichlorophenol	<0.005	<0.005	0.045	90	0.050

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ATTN: DARRELL MOORE
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ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

SEMIVOLATILES - 8270 (ppm)	Sample Result H5928-1	Method Blank	QC	% Recov.	True Value QC
38 2,4,5-Trichlorophenol	<0.005	<0.005	0.045	90	0.050
39 2-Chloronaphthalene	<0.005	<0.005	0.044	88	0.050
40 2-Nitroaniline	<0.005	<0.005	0.044	88	0.050
41 Acenaphthylene	<0.005	<0.005	0.044	88	0.050
42 Dimethylphthalate	<0.005	<0.005	0.047	94	0.050
43 2,6-Dinitrotoluene	<0.005	<0.005	0.045	90	0.050
44 3-Nitroaniline	<0.005	<0.005	0.042	84	0.050
45 Acenaphthene	<0.005	<0.005	0.045	90	0.050
46 2,4-Dinitrophenol	<0.005	<0.005	0.043	86	0.050
47 Dibenzofuran	<0.005	<0.005	0.045	90	0.050
48 Pentachlorobenzene	<0.005	<0.005	0.047	94	0.050
49 4-Nitrophenol	<0.005	<0.005	0.023	46	0.050
50 1-Naphthylamine	<0.005	<0.005	0.043	86	0.050
51 2,4-Dinitrotoluene	<0.005	<0.005	0.046	92	0.050
52 2-Naphthylamine	<0.005	<0.005	0.043	86	0.050
53 2,3,4,6-Tetrachlorophenol	<0.005	<0.005	0.046	92	0.050
54 Fluorene	<0.005	<0.005	0.047	94	0.050
55 4-Chlorophenyl-phenylether	<0.005	<0.005	0.046	92	0.050
56 Diethylphthalate	<0.005	<0.005	0.050	100	0.050
57 4-Nitroaniline	<0.005	<0.005	0.044	88	0.050
58 4,6-Dinitro-2-methylphenol	<0.005	<0.005	0.046	92	0.050
59 Diphenylamine	<0.005	<0.005	0.047	94	0.050
60 n-Nitrosodiphenylamine	<0.005	<0.005	0.047	94	0.050
61 4-Bromophenyl-phenylether	<0.005	<0.005	0.046	92	0.050
62 Phenacetin	<0.005	<0.005	0.045	90	0.050
63 Hexachlorobenzene	<0.005	<0.005	0.047	94	0.050
64 4-Aminobiphenyl	<0.005	<0.005	0.043	86	0.050
65 Pentachlorophenol	<0.005	<0.005	0.045	90	0.050
66 Pentachloronitrobenzene	<0.005	<0.005	0.047	94	0.050
67 Pronamide	<0.005	<0.005	0.048	96	0.050
68 Phenanthrene	<0.005	<0.005	0.047	94	0.050
69 Anthracene	<0.005	<0.005	0.047	94	0.050
70 Di-n-butylphthalate	<0.005	<0.005	0.050	100	0.050
71 Fluoranthene	<0.005	<0.005	0.045	90	0.050
72 Benzidine	<0.005	<0.005	0.012	24	0.050
73 Pyrene	<0.005	<0.005	0.047	94	0.050
74 p-(Dimethylamino)azobenzene	<0.005	<0.005	0.046	92	0.050

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

SEMIVOLATILES - 8270 (ppm)	Sample Result H5928-1	Method Blank	QC	% Recov.	True Value QC
75 Butylbenzylphthalate	<0.005	<0.005	0.048	96	0.050
76 Benzo[a]anthracene	<0.005	<0.005	0.047	94	0.050
77 3,3'-Dichlorobenzidine	<0.005	<0.005	0.046	92	0.050
78 Chrysene	<0.005	<0.005	0.047	94	0.050
79 bis (2-Ethylhexyl) phthalate	<0.005	<0.005	0.048	96	0.050
80 Di-n-octylphthalate	<0.005	<0.005	0.044	88	0.050
81 Benzo [b] fluoranthene	<0.005	<0.005	0.047	94	0.050
82 Benzo [k] fluoranthene	<0.005	<0.005	0.044	88	0.050
83 7,12-Dimethylbenz (a) anthracene	<0.005	<0.005	0.051	102	0.050
84 Benzo [a] pyrene	<0.005	<0.005	0.046	92	0.050
85 3- Methylcholanthrene	<0.005	<0.005	0.045	90	0.050
86 Dibenzo (a,j) acridine	<0.005	<0.005	0.047	94	0.050
87 Indeno [1,2,3-cd] pyrene	<0.005	<0.005	0.044	88	0.050
88 Dibenz [a,h] anthracene	<0.005	<0.005	0.046	92	0.050
89 Benzo [g,h,i] perylene	<0.005	<0.005	0.045	90	0.050

	% Recovery
90 2-Fluorophenol	28
91 Phenol-d5	21
92 Nitrobenzene-d5	60
93 2-Fluorobiphenyl	80
94 2,4,6-Tribromophenol	44
95 Terphenyl-d14	95

METHODS: EPA SW 846-8270

Burgess J. A. Cooke, Ph. D.

6/21/01
Date

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NAVAJO REFINING COMPANY

FAX
(50) 746-5283 DIV. ORDERS
(50) 746-5481 TRUCKING
(50) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX
(505) 746-5419 ACCOUNTING
(505) 746-5451 EXECUTIVE
(505) 746-5421 ENGINEERING
(505) 746-5480 P / L

June 26, 2001

Mr. Wayne Price
Environmental Bureau
Oil Conservation Division
1220 S. St. Francis
Santa Fe, NM 87505-5472

RE: Hydrotest of TK 419, Navajo Refining Co., Eddy County, NM

Dear Wayne,

Enclosed, please find the analysis from the hydrotest water from TK 419. This tank was in diesel service and had its floor replaced. The inside was then sandblasted and filled with 58,000 barrels of fresh groundwater. We would like to discharge this water to our farm.

If there are any questions concerning this matter, please call me at 505-748-3311.

Sincerely,
Navajo Refining Company

Darrell Moore

Darrell Moore
Environmental Mgr. For Water and Waste

Encl.

Post-it® Fax Note 7671	Date 6-28-01	# of pages ▶ 12
To Wayne Price	From Darrell Moore	
Co./Dept. Environmental Bureau	Co.	
Phone #	Phone # 748-3311	
Fax # 505-476-3462	Fax # 746-5421	

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Modified Reporting Date: 06/28/01

Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

RCRA METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:		06/20/01	06/27/01	06/21/01	06/27/01	06/21/01	06/21/01	06/21/01	06/20/01
H5928-1	TK 419	<0.1	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
Quality Control		0.051	0.047	27.54	0.022	0.945	4.006	0.00989	0.198
True Value QC		0.050	0.050	25.00	0.020	1.000	4.000	0.01000	0.200
% Recovery		102	94.0	110	110	94.5	100	98.9	99.0
Relative Percent Difference		1.7	0.7	1.3	0.3	3.2	0.9	1.1	1.6
METHODS: EPA 600/4-79-020		206.2	272.2	208.1	213.2	218.1	239.1	245.1	270.2
METHODS: SW-846		7060A	7760A	7080A	7130	7190	7420	7470A	7740

Chemist

06/27/2001
Date

H5928M.XLS

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/26/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM

Analysis Date: 06/22/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	B (ppm)
H5928-1	TK 419	1.52
Quality Control		0.970
True Value QC		1.000
% Recovery		97.0
Relative Percent Difference		3.9

METHOD: EPA 600/4-79-020 200.7

Chemist

06/27/2001
Date

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM

Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER SAMPLE ID	NO_3 (mg/L)	pH (s.u.)	Cl (mg/L)	F (mg/L)	SO_4 (mg/L)
ANALYSIS DATE:	06/20/01	06/20/01	06/20/01	06/20/01	06/20/01
H5928-1 TK 419	0.37	7.23	35	0.25	428
Quality Control	2.97	6.98	1000	1.08	51.06
True Value QC	3.00	7.00	1000	1.00	50.00
% Accuracy	98.9	99.7	100	108	102
Relative Percent Difference	2.4	0.1	3.0	0.9	0
METHODS: 600/4-79-020	352.1	150.1	SM4500-Cl-B	4500-F D	375.4

	TDS (mg/L)	K (mg/L)	Na (mg/L)	Mg (mg/L)	Ca (mg/L)
ANALYSIS DATE:	06/21/01	06/20/01	06/21/01	06/20/01	06/20/01
H5928-1 TK 419	1026	2.14	9.1	61	150
Quality Control	NR	5.02	0.926	44	47
True Value QC	NR	5.00	1.000	50	50
% Accuracy	NR	100	92.6	88.5	94.9
Relative Percent Difference	NR	5.2	1.5	13.6	8.5
METHODS: 600/4-79-020	160.1	8049	273.1	SM3500-Mg E	SM3500-Ca-D

Chemist

06/21/2001
Date

H5928C.XLS

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM

Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

TOTAL METALS

LAB NUMBER SAMPLE ID	Al (ppm)	Co (ppm)	Cu (ppm)	Fe (ppm)
ANALYSIS DATE:	06/21/01	06/21/01	06/21/01	06/21/01
H5928-1 TK 419	<2	<0.05	<0.5	1.416
Quality Control	10.91	4.964	0.975	5.000
True Value QC	10.00	5.000	1.000	5.000
% Recovery	109	99.3	97.5	100
Relative Percent Difference	4.7	0.3	0.5	0.3
METHODS: EPA 600/04-79-020	202.1	219.1	220.1	236.1

	Mn (ppm)	Mo (ppm)	Ni (ppm)	Zn (ppm)
ANALYSIS DATE:	06/21/01	06/21/01	06/21/01	06/21/01
H5928-1 TK 419	<0.2	<0.5	<0.2	<1
Quality Control	0.983	5.014	5.009	0.504
True Value QC	1.000	5.000	5.000	0.500
% Recovery	98.3	100	101	101
Relative Percent Difference	0.3	4.5	0.9	0.5
METHODS: EPA 600/04-79-020	243.1	246.1	249.1	289.1

Chemist

06/21/2001
Date

H5928M2.XLS

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

VOLATILES - 8260 (ppm)		Sample Result H5928-1	Method Blank	QC	%Recov.	True Value QC
63	Hexachlorobutadiene	<0.005	<0.005	0.118	118	0.100
64	Naphthalene	<0.005	<0.005	0.106	106	0.100
65	1,2,4-Trichlorobenzene	<0.005	<0.005	0.107	107	0.100

		% Recovery
66	Dibromofluoromethane	95
67	Toluene-d8	115
68	4-Bromofluorobenzene	106

METHODS: EPA SW-846-8260.

Burgess J. A. Cooke, Ph. D.

6/21/01
Date

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Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

VOLATILES - 8260 (ppm)		Sample Result H5928-1	Method Blank	QC	%Recov.	True Value QC
32	1,1,2-Trichloroethane	<0.005	<0.005	0.107	107	0.100
33	1,3-Dichloropropane	<0.005	<0.005	0.107	107	0.100
34	2-Hexanone	<0.050	<0.050	0.114	114	0.100
35	Dibromochloromethane	<0.005	<0.005	0.106	106	0.100
36	1,2-Dibromoethane	<0.005	<0.005	0.108	108	0.100
37	Tetrachloroethene	<0.005	<0.005	0.109	109	0.100
38	Chlorobenzene	<0.005	<0.005	0.107	107	0.100
39	1,1,1,2-Tetrachloroethane	<0.005	<0.005	0.106	106	0.100
40	Ethylbenzene	<0.005	<0.005	0.109	109	0.100
41	m, p - Xylene	<0.010	<0.010	0.217	109	0.200
42	Bromoform	<0.005	<0.005	0.106	106	0.100
43	Styrene	<0.005	<0.005	0.108	108	0.100
44	o-Xylene	<0.005	<0.005	0.109	109	0.100
45	1,1,2,2-Tetrachloroethane	<0.005	<0.005	0.107	107	0.100
46	1,2,3-Trichloropropane	<0.005	<0.005	0.111	111	0.100
47	Isopropylbenzene	<0.005	<0.005	0.109	109	0.100
48	Bromobenzene	<0.005	<0.005	0.105	105	0.100
49	2-Chlorotoluene	<0.005	<0.005	0.107	107	0.100
50	n-propylbenzene	<0.005	<0.005	0.110	110	0.100
51	4-Chlorotoluene	<0.005	<0.005	0.106	106	0.100
52	1,3,5-Trimethylbenzene	<0.005	<0.005	0.109	109	0.100
53	tert-Butylbenzene	<0.005	<0.005	0.113	113	0.100
54	1,2,4-Trimethylbenzene	<0.005	<0.005	0.110	110	0.100
55	1,3-Dichlorobenzene	<0.005	<0.005	0.107	107	0.100
56	sec-Butylbenzene	<0.005	<0.005	0.111	111	0.100
57	1,4 Dichlorobenzene	<0.005	0.005	0.108	108	0.100
58	4-Isopropyltoluene	<0.005	<0.005	0.111	111	0.100
59	1,2-Dichlorobenzene	<0.005	<0.005	0.105	105	0.100
60	n-Butylbenzene	<0.005	<0.005	0.113	113	0.100
61	1,2-dibromo-3-chloropropane	<0.005	<0.005	0.108	108	0.100
62	1,2,3-Trichlorobenzene	<0.005	<0.005	0.108	108	0.100

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

	VOLATILES - 8260 (ppm)	Sample Result H5928-1	Method Blank	QC	%Recov.	True Value QC
1	Dichlorodifluoromethane	<0.005	<0.005	0.100	100	0.100
2	Chloromethane	<0.005	<0.005	0.112	112	0.100
3	Vinyl chloride	<0.005	<0.005	0.113	113	0.100
4	Bromomethane	<0.005	<0.005	0.108	108	0.100
5	Chloroethane	<0.005	<0.005	0.107	107	0.100
6	Iodomethane	<0.005	<0.005	0.116	116	0.100
7	1,1-Dichloroethene	<0.005	<0.005	0.110	110	0.100
8	Trichlorofluoromethane	<0.005	<0.005	0.116	116	0.100
9	Carbon Disulfide	<0.005	<0.005	0.117	117	0.100
10	Methylene chloride	<0.005	0.008	0.110	110	0.100
11	trans-1,2-Dichloroethene	<0.005	<0.005	0.113	113	0.100
12	1,1-Dichloroethane	<0.005	<0.005	0.109	109	0.100
13	2-Butanone	<0.050	<0.050	0.112	112	0.100
14	cis-1,2-Dichloroethene	<0.005	<0.005	0.111	111	0.100
15	2,2-Dichloropropane	<0.005	<0.005	0.092	92	0.100
16	Chloroform	<0.005	<0.005	0.110	110	0.100
17	Bromochloromethane	<0.005	<0.005	0.108	108	0.100
18	1,1,1-Trichloroethane	<0.005	<0.005	0.103	103	0.100
19	1,2-Dichloroethane	<0.005	<0.005	0.109	109	0.100
20	1,1-Dichloropropene	<0.005	<0.005	0.110	110	0.100
21	Benzene	<0.005	<0.005	0.110	110	0.100
22	Carbon tetrachloride	<0.005	<0.005	0.111	111	0.100
23	Trichloroethene	<0.005	<0.005	0.107	107	0.100
24	Dibromomethane	<0.005	<0.005	0.106	106	0.100
25	Bromodichloromethane	<0.005	<0.005	0.107	107	0.100
26	(2-Chloroethoxy)ethene	<0.005	<0.005	0.081	81	0.100
27	trans-1,3-Dichloropropene	<0.005	<0.005	0.117	117	0.100
28	4-methyl-2-pentanone	<0.050	<0.050	0.117	117	0.100
29	1,2-Dichloropropane	<0.005	<0.005	0.106	106	0.100
30	cis-1,3-Dichloropropene	<0.005	<0.005	0.111	111	0.100
31	Toluene	<0.005	<0.005	0.108	108	0.100

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

SEMIVOLATILES - 8270 (ppm)	Sample Result H5928-1	Method Blank	QC	% Recov.	True Value QC
1 n-Nitrosodimethylamine	<0.005	<0.005	0.020	40	0.050
2 2-Picoline	<0.005	<0.005	0.024	48	0.050
3 Methylmethanesulfonate	<0.005	<0.005	0.024	48	0.050
4 Ethylmethanesulfonate	<0.005	<0.005	0.035	70	0.050
5 Phenol	<0.005	<0.005	0.023	46	0.050
6 Aniline	<0.005	<0.005	0.040	80	0.050
7 bis (2-Chloroethyl) ether	<0.005	<0.005	0.041	82	0.050
8 2-Chlorophenol	<0.005	<0.005	0.040	80	0.050
9 1,4-Dichlorobenzene	<0.005	<0.005	0.032	64	0.050
10 1,3-Dichlorobenzene	<0.005	<0.005	0.028	56	0.050
11 Benzyl Alcohol	<0.005	<0.005	0.030	60	0.050
12 1,2-Dichlorobenzene	<0.005	<0.005	0.031	62	0.050
13 2-Methylphenol	<0.005	<0.005	0.035	70	0.050
14 bis (2-Chloroisopropyl) ether	<0.005	<0.005	0.039	78	0.050
15 Acetophenone	<0.005	<0.005	0.040	80	0.050
16 4-Methylphenol	<0.005	<0.005	0.036	72	0.050
17 n-Nitroso-di-n-propylamine	<0.005	<0.005	0.048	96	0.050
18 Hexachloroethane	<0.005	<0.005	0.026	52	0.050
19 Nitrobenzene	<0.005	<0.005	0.043	86	0.050
20 n-Nitrosopiperidine	<0.005	<0.005	0.044	88	0.050
21 Isophorone	<0.005	<0.005	0.043	86	0.050
22 2-Nitrophenol	<0.005	<0.005	0.043	86	0.050
23 2,4-Dimethylphenol	<0.005	<0.005	0.042	84	0.050
24 Benzoic acid	<0.005	<0.005	N/A	N/A	N/A
25 bis (2-Chloroethoxy) methane	<0.005	<0.005	0.044	88	0.050
26 2,4-Dichlorophenol	<0.005	<0.005	0.044	88	0.050
27 1,2,4-Trichlorobenzene	<0.005	<0.005	0.036	72	0.050
28 Naphthalene	<0.005	<0.005	0.041	82	0.050
29 4-Chloroaniline	<0.005	<0.005	0.046	92	0.050
30 2,6-Dichlorophenol	<0.005	<0.005	0.044	88	0.050
31 Hexachlorobutadiene	<0.005	<0.005	0.030	60	0.050
32 n-Nitroso-di-n-butylamine	<0.005	<0.005	0.043	86	0.050
33 4-Chloro-3-methylphenol	<0.005	<0.005	0.043	86	0.050
34 2-Methylnaphthalene	<0.005	<0.005	0.041	82	0.050
35 1,2,4,5-Tetrachlorobenzene	<0.005	<0.005	0.041	82	0.050
36 Hexachlorocyclopentadiene	<0.005	<0.005	0.028	56	0.050
37 2,4,6-Trichlorophenol	<0.005	<0.005	0.045	90	0.050

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

SEMIVOLATILES - 8270 (ppm)	Sample Result H5928-1	Method Blank	QC	% Recov.	True Value QC
38 2,4,5-Trichlorophenol	<0.005	<0.005	0.045	90	0.050
39 2-Chloronaphthalene	<0.005	<0.005	0.044	88	0.050
40 2-Nitroaniline	<0.005	<0.005	0.044	88	0.050
41 Acenaphthylene	<0.005	<0.005	0.044	88	0.050
42 Dimethylphthalate	<0.005	<0.005	0.047	94	0.050
43 2,6-Dinitrotoluene	<0.005	<0.005	0.045	90	0.050
44 3-Nitroaniline	<0.005	<0.005	0.042	84	0.050
45 Acenaphthene	<0.005	<0.005	0.045	90	0.050
46 2,4-Dinitrophenol	<0.005	<0.005	0.043	86	0.050
47 Dibenzofuran	<0.005	<0.005	0.045	90	0.050
48 Pentachlorobenzene	<0.005	<0.005	0.047	94	0.050
49 4-Nitrophenol	<0.005	<0.005	0.023	46	0.050
50 1-Naphthylamine	<0.005	<0.005	0.043	86	0.050
51 2,4-Dinitrotoluene	<0.005	<0.005	0.046	92	0.050
52 2-Naphthylamine	<0.005	<0.005	0.043	86	0.050
53 2,3,4,6-Tetrachlorophenol	<0.005	<0.005	0.046	92	0.050
54 Fluorene	<0.005	<0.005	0.047	94	0.050
55 4-Chlorophenyl-phenylether	<0.005	<0.005	0.046	92	0.050
56 Diethylphthalate	<0.005	<0.005	0.050	100	0.050
57 4-Nitroaniline	<0.005	<0.005	0.044	88	0.050
58 4,6-Dinitro-2-methylphenol	<0.005	<0.005	0.046	92	0.050
59 Diphenylamine	<0.005	<0.005	0.047	94	0.050
60 n-Nitrosodiphenylamine	<0.005	<0.005	0.047	94	0.050
61 4-Bromophenyl-phenylether	<0.005	<0.005	0.046	92	0.050
62 Phenacetin	<0.005	<0.005	0.045	90	0.050
63 Hexachlorobenzene	<0.005	<0.005	0.047	94	0.050
64 4-Aminobiphenyl	<0.005	<0.005	0.043	86	0.050
65 Pentachlorophenol	<0.005	<0.005	0.045	90	0.050
66 Pentachloronitrobenzene	<0.005	<0.005	0.047	94	0.050
67 Pronamide	<0.005	<0.005	0.048	96	0.050
68 Phenanthrene	<0.005	<0.005	0.047	94	0.050
69 Anthracene	<0.005	<0.005	0.047	94	0.050
70 Di-n-butylphthalate	<0.005	<0.005	0.050	100	0.050
71 Fluoranthene	<0.005	<0.005	0.045	90	0.050
72 Benzidine	<0.005	<0.005	0.012	24	0.050
73 Pyrene	<0.005	<0.005	0.047	94	0.050
74 p-(Dimethylamino)azobenzene	<0.005	<0.005	0.046	92	0.050

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO:

Receiving Date: 06/20/01
Reporting Date: 06/21/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: ARTESIA, NM
Sample ID: TK 419
Lab Number: H5928-1

Analysis Date: 06/20/01
Sampling Date: 06/19/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

SEMIVOLATILES - 8270 (ppm)	Sample Result H5928-1	Method Blank	QC	% Recov.	True Value QC
75 Butylbenzylphthalate	<0.005	<0.005	0.048	96	0.050
76 Benzo[a]anthracene	<0.005	<0.005	0.047	94	0.050
77 3,3'-Dichlorobenzidine	<0.005	<0.005	0.046	92	0.050
78 Chrysene	<0.005	<0.005	0.047	94	0.050
79 bis (2-Ethylhexyl) phthalate	<0.005	<0.005	0.048	96	0.050
80 Di-n-octylphthalate	<0.005	<0.005	0.044	88	0.050
81 Benzo [b] fluoranthene	<0.005	<0.005	0.047	94	0.050
82 Benzo [k] fluoranthene	<0.005	<0.005	0.044	88	0.050
83 7,12-Dimethylbenz (a) anthracene	<0.005	<0.005	0.051	102	0.050
84 Benzo [a] pyrene	<0.005	<0.005	0.046	92	0.050
85 3- Methylcholanthrene	<0.005	<0.005	0.045	90	0.050
86 Dibenzo (a,j) acridine	<0.005	<0.005	0.047	94	0.050
87 Indeno [1,2,3-cd] pyrene	<0.005	<0.005	0.044	88	0.050
88 Dibenz [a,h] anthracene	<0.005	<0.005	0.046	92	0.050
89 Benzo [g,h,i] perylene	<0.005	<0.005	0.045	90	0.050

	% Recovery
90 2-Fluorophenol	28
91 Phenol-d5	21
92 Nitrobenzene-d5	60
93 2-Fluorobiphenyl	80
94 2,4,6-Tribromophenol	44
95 Terphenyl-d14	95

METHODS: EPA SW 846-8270

Burgess J. A. Cooke, Ph. D.

6/21/01
Date

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Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

Trace Analysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #:

Company Name:	Navajo Refining
Phone #:	505-748-3311
Address: (Street, City, Zip)	501 E Main
Fax #:	505-
Contact Person:	Darrell Moore
	88210
Invoice to: (If different from above)	
Project #:	
Project Name:	
Project Location:	Artesia NM
Sampler Signature:	Darrell Moore

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
H50282-1	TK 419	5		X								6/19/01	15:00

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Metals (As, Mo, Cr, Zn, Cd, Ni, Fe, Co, Mn, Cu, Pb, Ag, Al, B, Ba, Hg)	General Chemistry	Turn Around Time if different from standard	Hold
										XX	X				X	X		

Relinquished by:	Date:	Time:	Received by:
Darrell Moore	6/19/01	16:30	
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received at Laboratory by: Date: Time:
			Jennifer Nell 6-20-01 9:30am

LAB USE ONLY
Intact Y / N
Headspace Y / N
Temp °
Log-in Review

REMARKS: General Chemistry - Nitrate, pH, Chloride, Fluoride, Sulfate, TDS, Potassium, Sodium, Magnesium, Calcium,
RUSH

Carrier #

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

012
NAVAJO REFINING-ENGRINGR
06/28/01 THU 16:23 FAX 7465421

Price, Wayne

cc: MM

From: Price, Wayne

Sent: Tuesday, July 03, 2001 1:51 PM

To: 'darrell@navajo-refining.com'

Subject: Hydrotest water Tk 419 Navajo Refining-Artesia

Dear Mr. Moore:

The NMOCD is in receipt of the fax letter dated June 26, 2001 and analytical results of the hydro-test water. Your request to discharge this water to the plant farm is hereby approved.

Please be advised that NMOCD approval of this plan does not relieve Navajo Refining Co. of liability should their operations pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Navajo Refining Co. of responsibility for compliance with any other federal, state, or local laws and/or regulations.

REFINING COMPANY

FAX
(505) 746-5283 DIV. ORDERS
(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET ◦ P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX
(505) 746-5419 ACCOUNTING
(505) 746-5451 EXECUTIVE
(505) 746-5421 ENGINEERING
(505) 746-5480 P / L

RECEIVED
JUN 8 2001
OIL CONSERVATION DIVISION

June 6, 2001

Mr. Wayne Price
Environmental Bureau
Oil Conservation Division
1220 S. St. Francis
Santa Fe, NM 87505-5472

RE: Hydrotest of TK 423, Navajo Refining Co., Eddy County, New Mexico

Dear Wayne,

Navajo is in the process of hydrotesting a tank that we call TK 423. This tank was previously in asphalt service but is being converted to Light Cycle Oil (LCO) service. The tank was cleaned out down to bare metal, a new floor was put in, and nozzles and manways were added. The tank is now filled (8,200 bbls) with fresh water and shows no leaks. We would like to discharge this water to our farm, which is on the northeast part of the property and is the same farm where we discharge our RO Reject water.

As we discussed on the phone, the analysis attached is from a previous hydrotest of another asphalt tank (TK 431). We have not changed any asphalt processes since this analysis was performed and these results will accurately reflect the water that will be discharged from this test.

After looking over this submission, could you please give me a verbal to discharge this water. We thank you for your attention to this matter. If you have any questions, please call me at 505-746-5281. My e-mail address is darrell@navajo-refining.com.

Sincerely,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Environmental Manager for Water and Waste

Encl.

Price, Wayne

From: Price, Wayne
Sent: Wednesday, June 06, 2001 10:21 AM
To: 'darrell@navajo-refining.com'
Cc: Kieling, Martyne
Subject: Navajo Tk 423 Hydro-test water

Dear Darrell:

The OCD is in receipt of your faxed letter dated June 06, 2001 requesting to discharge hydro-test water from Tank 423 which has been sandblasted clean and tested using fresh water onto the permitted Navajo farm for irrigation water.

Your request is hereby approved.

Please be advised that NMOCD approval of this plan does not relieve Navajo Refining Company of liability should their operations pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Navajo Refining Company of responsibility for compliance with any other federal, state, or local laws and/or regulations.

TELEPHONE
(505) 748-3311

NAVAJO REFINING COMPANY

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

ACCOUNTS RECEIVABLES FAX NUMBER: 505/746-5419

PLEASE DELIVER 11 PAGES, INCLUDING THIS COVER SHEET

TO: Wayne Price PHONE:

COMPANY / DEPARTMENT: OCD

MESSAGE: Wayne, here is the submission. Hard copies to follow via U.S. Mail.

Thanks

FROM: D. Moore DATE: 6/6/01

If you do not receive all pages, please call at 505/746-5

NOTE: Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is privileged and confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error or are not sure whether it is privileged, please immediately notify us by telephone and return the original message to us at the above address via the U.S. Postal Service. Thank you!

NAVAJO REFINING COMPANY

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TELEPHONE (505) 748-3311

FAX
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(505) 746-5451 EXECUTIVE
(505) 746-5421 ENGINEERING
(505) 746-5480 P / L

June 6, 2001

Mr. Wayne Price
Environmental Bureau
Oil Conservation Division
1220 S. St. Francis
Santa Fe, NM 87505-5472

RE: Hydrotest of TK 423, Navajo Refining Co., Eddy County, New Mexico

Dear Wayne,

Navajo is in the process of hydrotesting a tank that we call TK 423. This tank was previously in asphalt service but is being converted to Light Cycle Oil (LCO) service. The tank was cleaned out down to bare metal, a new floor was put in, and nozzles and manways were added. The tank is now filled (8,200 bbls) with fresh water and shows no leaks. We would like to discharge this water to our farm, which is on the northeast part of the property and is the same farm where we discharge our Rod Reject water.

As we discussed on the phone, the analysis attached is from a previous hydrotest on another asphalt tank (TK 421). We have not changed any asphalt processes since this analysis was performed and these results will accurately reflect the water that will be discharged from this test.

After looking over this submission, could you please give me a verbal for discharge of this water. We thank you for your attention to this matter. If you have any questions, please call me at 505-746-5281. My e-mail address is darrell@navajo-refining.com.

Sincerely,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Environmental Manager for Water and Waste

Encl

ENV - OCD
1(NDP)

TELEPHONE
(505) 748-3311

EASYLINK
62905278

REFINING COMPANY

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

FAX
(505) 746-6410 ACCTG
(505) 746-6155 EXEC
(505) 748-9077 ENGR
(505) 746-4438 P/L

March 7, 1995

Mark Ashley
Geologist
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

RE: HYDROTEST WATER FROM TK 431, NAVAJO REFINING CO., ARTESIA, NM

Dear Mark

Enclosed is the analysis from the hydrotest water of our Tk 431. If you'll remember, we made the decision to proceed with discharging the water to our farm before test results were available. We were on a short time table and felt there was no risk from this water.

As you can see, we had minor amounts of zinc, barium, and manganese and a not too surprising amount of iron considering the material the tank is made of. Other parametets were well below WQCC limits.

If there are any questions, please call me at 505-748-3311. Thank you for your time and attention to this matter. We truly appreciate it.

Sincerely

Daniel Moore

Daniel Moore
Environmental Specialist

Encl.

6701 Aberdeen Avenue
Lubbock, Texas 79424
(806) 794-1296
FAX (806) 794-1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

March 02, 1995
Receiving Date: 02/21/95
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 02/22/95
Sampling Date: 02/20/95
Sample Condition: Intact & Cool
Sample Received By: JW
Project Name: NA

TA#	FIELD CODE	TOTAL CN (mg/L)
32383	TK 431	<0.01
QC	Quality Control	0.04
	Precision	10%
	Extraction Accuracy	4%
	Instrument Accuracy	99
	Detection Limit	0.01

METHODS: EPA 335.2:
TOTAL CN- SPIKE AND QC: Sample and Blank spiked with 0.01 mg/L TOTAL CN-.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

3-2-95
DATE

ENVIRONMENTAL TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806-794-1296 FAX 806-794-1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Darrell Moore
501E. Main
Artesia, NM 88210

March 02, 1995
Receiving Date: 02/21/95
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 02/21/95
Sampling Date: 02/20/95
Sample Condition: Iced & Cool
Sample Received by: JW
Project Name: NA

TA#	FIELD CODE	NITRATE-N (mg/L)	pH (s.u.)	CHLORIDE (mg/L)	FLUORIDE (mg/L)	SULFATE (mg/L)	PHENOLS (mg/L)	TDS (mg/L)
T3238	JR 431	0.55	7.4	17	1.2	573	<0.002	846
QC	Quality Control	1.00	7.0	504	1.0	10	0.801	---
% Precision		97	100	100	100	103	104	99
% Extraction Accuracy		101	----	103	102	86	98	---
% Instrument Accuracy		100	100	101	103	96	101	---
DETECTION LIMIT		0.03	----	1	0.1	1	0.002	---

METHODS: EPA 375.4, 353.3, 340.2; 4500 Cl-E; 150.1, 150.1; 420.1.
QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10 mg/L SULFATE; 1.00 mg/L NITRATE; 0.8 mg/L PHENOLS.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonald

3-2-95
Date

03/06/2001 09:19 FAX 505 746 5119 NAVAJO 005/011

6701 Aberdeen Avenue · Lubbock, Texas 79424 · 806/794-1296 · FAX 806/794-1298

ANALYTICAL RESULTS FOR

March 02, 1995
Receiving Date: 02/21/95
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

NAVAJO REFINING
Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Analysis Date: 02/28/95
Sampling Date: 02/20/95
Sample Condition: Intact & Cool
Sample Received by: JW
Project Name: NA

TOTAL METALS

TA#	FIELD CODE	As (mg/L)	Mo (mg/L)	Cr (mg/L)	Zr (mg/L)	Cd (mg/L)	Ni (mg/L)	Fe (mg/L)	Co (mg/L)	Mn (mg/L)	Cu (mg/L)	Pb (mg/L)
T323	TF 431	<0.1	<0.05	<0.01	0.02	<0.01	<0.05	2.7	<0.05	0.6	<0.05	<0.05
QC	Quality Control	5.05	5.06	5.08	4.96	5.06	5.05	5.02	4.95	5.0	5.00	5.0
DETECTION LIMIT		0.1	0.05	0.01	0.01	0.01	0.05	0.01	0.05	0.1	0.05	0.05
% Precision		105	107	105	104	106	105	102	99	104	102	107
% Extraction Accuracy		110	111	107	105	108	100	115	96	105	106	110
% Instrument Accuracy		101	101	102	99	101	101	100	99	100	100	100

TA#	FIELD CODE	Ag (mg/L)	Al (mg/L)	B (mg/L)	Ba (mg/L)	U (ug/L)	Hg (mg/L)	Se (mg/L)
T32383	TF 431	<0.01	<0.08	<0.05	0.06	<0.5	<0.001	0.002
QC	Quality Control	9.73	5.16	5.18	5.07	10.4	0.022	0.050
DETECTION LIMIT		0.01	0.08	0.05	0.5	0.5	0.001	0.001
% Precision		107	102	99	106	96	100	100
% Extraction Accuracy		117	100	94	99	96	100	76
% Instrument Accuracy		97	103	104	101	106	100	100

METHODS: EPA 200.7

TOTAL METALS QC. Blank spiked with 5.00 mg/L As, Mo, Cr, Zr, Cd, Ni, Fe, Co, Cu, Al, B, Ba; 5.0 mg/L Mn, Pb; 10.0 mg/L Ag; 9.8 mg/L U; 0.020 mg/L Hg; 0.050 mg/L Se.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

3-2-95
DATE

08/06/2001 09:21 FAX 505 746 5419 NAVAJO 006/011

6701 Aberdeen Avenue
Lubbock, Texas 79424
806-794-1296
FAX 806-794-1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Analysis Date: 02/26/95
Sampling Date: 02/20/95
Sample Condition: Intact & Cool
Sample Received by: JW
Project Name: NA

Project #: NA
Project Date: 02/21/95
Sample Type: Water
Project #: NA
Project Location: Artesia, NM

	T32383 TK-431	Detection Limit
EPA 8240 Compounds (ppb)		
Trichlorodifluoromethane	ND	1
Chloromethane	ND	1
Vinyl chloride	ND	1
Bromomethane	ND	1
Chloroethane	ND	1
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
Iodomethane	ND	1
Carbon disulfide	ND	1
Methylene chloride	ND	1
trans-1,2-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
Vinyl acetate	ND	1
2-Butanone	ND	10
Chloroform	ND	1
1,1,1-Trichloroethane	ND	1
1,2-Dichloroethane	ND	1
Benzene	ND	1
Carbon Tetrachloride	ND	1
1,2-Dichloropropane	ND	1
Trichloroethene	ND	1
Bromodichloromethane	ND	1
cis-1,3-Dichloropropene	ND	1
4-Methyl-2-pentanone	ND	100
trans-1,3-Dichloropropene	ND	1
Toluene	ND	1
1,1,2-Trichloroethane	ND	1
2-Hexanone	ND	100

NAVAJO REFINING
Project Location: Artesia, NM

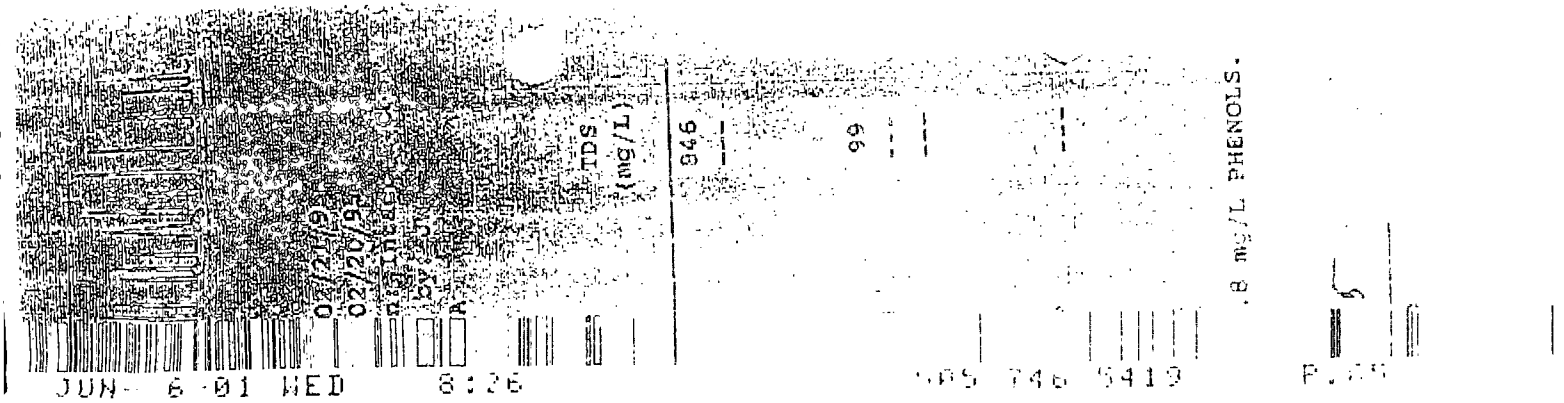
EPA 8240 Compounds (mg/m3)	(2222) VK 421	Detection Limit
Dibromochloromethane	ND	1
Tetrachloroethene	ND	1
Chlorobenzene	ND	1
Ethylbenzene	ND	1
m,p-Xylene	ND	1
Bromoform	ND	1
Styrene	ND	1
o-Xylene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
trans-1,4-Dichloro-2-butene	ND	5
cis-1,4-Dichloro-2-butene	ND	5
1,2-Dichlorobenzene	ND	2
1,3-Dichlorobenzene	ND	2
1,4-Dichlorobenzene	ND	2
SURROGATES	% RECOVERY	
Dibromofluoromethane	88	
Toluene-d8	99	
4-Bromofluorobenzene	101	

ND = Not Detected

METHODS: EPA 8240.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonald

Date


TDS (mg/L)
946
99
.8 mg/L PHENOLS.
02/21/95
02/20/95
JUN- 6-01 WED 8:26
505 746 5419

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ALYTICAL RESULTS FOR
NAVAJO REFINING

Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

March 02, 1995
Receiving Date: 02/21/95
Sample Type: Wate
Sample Condition: I & C
Sample Submitted by: [illegible]
Project Location: Artesia, NM
Analysis Date: 02/26/95

PAH's

T32383

EPA 8270 (ppm)	DL	TR 431	BS	BSD	%RA	%DA
Naphthalene	0.001	ND	0.523			105
Acenaphthylene	0.001	ND	0.526			105
Acenaphthene	0.001	ND	0.508	99	81	102
Fluorene	0.001	ND	0.508			102
Phenanthrene	0.001	ND	0.481			96
Anthracene	0.001	ND	0.500			100
Fluoranthene	0.001	ND	0.508			102
Pyrene	0.001	ND	0.500	99	89	100
[illegible]	[illegible]	[illegible]	0.490	[illegible]	[illegible]	[illegible]
Chrysene	0.001	ND	0.491			98
Benzo[b]fluoranthene	0.001	ND	0.473			95
Benzo[k]fluoranthene	0.001	ND	0.420			84
Benzo[a]pyrene	0.001	ND	0.491			98
Indeno[1,2,3-cd]pyrene	0.001	ND	0.442			88
Dibenz[a,h]anthracene	0.001	ND	0.494			99
Benzo[g,h,i]perylene	0.001	ND	0.501			100

ND = Not Detected

	% RECOVERY
2-Fluorophenol SURR	44
Phenol-d6 SURR	38
Nitrobenzene-d5 SURR	66
2-Fluorobiphenyl SURR	77
2,4,6 Tribromophenol SURR	72
Terphenyl-d14 SURR	94

METHODS: EPA 8270.

Director, D. Blair Leftwich

3-2-95
DATE

Director, Dr. Bruce McDonell

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

March 02, 1995
Receiving Date: 02/21/95
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 03/01/95
Sampling Date: 02/20/95
Sample Condition: Intact & Cool
Sample Received by: JW
Project Name: NA

LAB ID	FIELD CODE	PCB's (ppm)
33283	TK 431	<0.0001
QC	Quality Control	0.0051
DETECTION LIMIT		0.0001
Precision		106
Extraction Accuracy		9.
Instrument Accuracy		103

METHODS: EPA SW 846-3510, 8080.
PCB SPIKE AND QC: Sample Spiked with 0.005 ppm PCB QC
Blank spiked with 0.005 ppm PCB.

Director, Dr. Blair Leftwich — DATE

052 AH

TraceAnalysis, Inc.

6701 Aberdeen Avenue · Lubbock, Texas 79424
Tel (806) 794 1296 Fax (806) 794 1298

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Darrell Moore
Phone #: 325-726-3310
FAX #: 325-726-7077

Company Name & address: Navajo Refining

Project #:

Project Location: Artesia, NM

Sampler Signature: David Moore

ANALYSIS REQUEST

SPECIAL HANDLING: Turn around # of days; Fax C.O.A.P.; Report TWC direct; Hold

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERV. METHOD: HNO3	ICE	NONE	OTHER	SAMPLED: DATE	TIME	BTEX 8021B	TPH	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI
32383	TK #1	2	X						X	X		2/16/95	11:00		X					

Relinquished by: David Moore Date: 2/22/95 Time: 4:00 Received by:

Relinquished by: Date: Time: Received by:

Relinquished by: Date: Time: Received by Laboratory: JN 2-22-95 4

REMARKS: Acct — results faxed 2-5-95

08/08/2001 09:30 FAX 505 748 3419 NAVAJO 011/011

TELEPHONE
(505) 748-3311

NAVAJO REFINING COMPANY

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

ACCOUNTS RECEIVABLES FAX NUMBER: 505/746-5419

FOR DELIVERY 11 PAGES, INCLUDING THIS COVERSHEET

TO: Wayne Price PHONE: 505-476-3471

COMPANY/DEPARTMENT: E&D

MESSAGE: Wayne, here is the commission Hard copies to follow via U.S. Mail.

Thanks

FROM: D. Moore DATE: 6/6/01

If you do not receive all pages, please call at 505-746-

NOTE: Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is privileged and confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error or are not sure whether it is privileged, please immediately notify us by telephone and return the original message to us at the above address via the U.S. Postal Service. Thank you!

file

NAVAJO REFINING COMPANY

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(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX
(505) 746-5419 ACCOUNTING
(505) 746-5451 EXECUTIVE
(505) 746-5421 ENGINEERING
(505) 746-5430 P / L

June 6, 2001

Mr. Wayne Price
Environmental Bureau
Oil Conservation Division
1220 S. St. Francis
Santa Fe, NM 87505-5472

Hydrotest of TK 423, Navajo Refining Co., Eddy County, New Mexico

Dear Wayne:

Navajo is in the process of hydrotesting a tank that we call TK 423. This tank was previously in asphalt service but is being converted to Light Cycle Oil (LCO) service. The tank was cleaned out down to bare metal, a new floor was put in, and nozzles and manways were added. The tank is now filled (8,200 bbls) with fresh water and shows no leaks. We would like to discharge this water to our farm, which is on the northeast part of the property and is the same farm where we discharge our RO Reject water.

As we discussed on the phone, the analysis attached is from a previous hydrotest of another asphalt tank (TK 431). We have not changed any asphalt processes since this analysis was performed and these results will accurately reflect the water that will be discharged from this test.

After looking over this submission, could you please give me a verbal to discharge this water. We thank you for your attention to this matter. If you have any questions, please call me at 505 746-5281. My e-mail address is darrell@navajo-refining.com.

Sincerely,
NAVAJO REFINING COMPANY

Darrell Moore
Environmental Manager for Water and Waste

Encl.

ENV-OCD
1(NDP)

TELEPHONE
(505) 748-3311

EASYLINK
62905278

NAVAJO REFINING COMPANY

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

FAX
(505) 746-6410 ACCTG
(505) 746-6155 EXEC
(505) 748-9077 ENGR
(505) 746-4438 P/L

March [illegible], 1999

Mark Ashley
Geologist
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

RE: HYDROTEST WATER FROM TK 431 NAVAJO REFINING CO., ARTESIA, NM

Dear Mark,

Enclosed is the analysis from the hydrotest water of our Tk 431. If you'll remember, we made the decision to proceed with disch[illegible] the water to our farm before test results were available. We were on a short time table and felt there was no risk from the water.

As you can see, we had minor amounts of zinc, barium, and manganese and a not to [illegible] amount of iron concentration, the material the tank is made of. Other parameters were well below WQCC limits.

If there are any questions, please call me at 505-748-3311. Thank you for your time and attention to this matter. We truly appreciate it.

Sincerely,

Darrell Moore

Darrell Moore
Environmental Specialist

/dm

6701 Aberdeen Avenue
Lubbock, Texas 79424
(806) 794-1296
FAX (806) 794-1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Analysis Date: 02/22/95
Sampling Date: 02/20/95
Sample Condition: Intact & Cool
Sample Received by: GM
Project Name: NA

Receiving Date: 02/21/95
Sample Type: Water
P.O. #: NA
Project Location: Artesia, NM

FIELD CODE	TOTAL [illegible] (mg/L)
TK 43	[illegible]

Quality Control

Precision
Extraction Accuracy
Instrument Accuracy

Units

METHODS: EPA 335.2
[illegible] CN SPIKE AND QC: Sample and Blank spiked with 0.04 mg/L [illegible]

Director, Dr. Blair Leftwich
Director, Dr. [illegible] McDonald

DATE

TRACE ANALYSIS, INC.
A Laboratory for Advanced Environmental Research and Analysis

REFINING COMPANY

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(505) 746-5458 PERSONNEL

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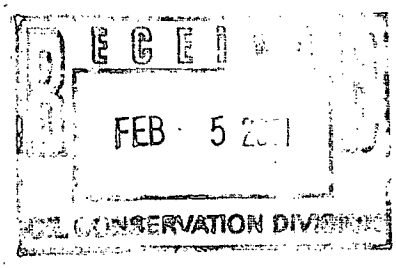
(505) 746-5480 P / L

February 2, 2001



Mr. Wayne Price
New Mexico Oil Conservation Division
1220 S. St. Francis
Santa Fe, NM 87505

RE: TK 111 Hydrotest Water, Navajo Refining Company, Artesia, NM

Dear Wayne,

Per our phone conversation and e-mail correspondence, Navajo Refining Company discharged 5000 bbls. of fresh water to our farm at the north end of our Artesia facility. The tank that is the subject of this letter is a 5000 bbl. tank in naphtha service and was entered as a routine maintenance procedure. Once inside, the tank was inspected and recoated, buttoned back up, and hydrotested with fresh groundwater. That water was analyzed and those results are included.

If there are any questions concerning this submission, please call me at 505-748-3311. Thank you for your time in this matter.

Respectfully,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Environmental Mgr. for Water and Waste

encl.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO: (505) 746-5421

Receiving Date: 01/10/01
Reporting Date: 01/12/01
Project Number: NOT GIVEN
Project Name: TKIII
Project Location: ARTESIA

Sampling Date: 01/10/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH

TOTAL METALS

LAB NUMBER SAMPLE ID	Al (mg/L)	Co (mg/L)	Cu (mg/L)	Fe (mg/L)
ANALYSIS DATE:	01/11/01	01/11/01	01/11/01	01/11/01
H5508-1 TKIII	<1	<0.05	<0.1	1.377
Quality Control	5.62	4.989	1.012	5.025
True Value QC	5.00	5.000	1.000	5.000
% Recovery	112	99.8	101	101
Relative Percent Difference	2.6	0.4	0.2	0.6
METHODS: EPA 600/04-79-020	202.1	219.1	220.1	236.1

	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	Zn (mg/L)
ANALYSIS DATE:	01/11/01	01/11/01	01/11/01	01/11/01
H5508-1 TKIII	<0.2	<0.1	<0.2	<0.1
Quality Control	0.943	5.062	1.027	0.501
True Value QC	1.000	5.000	1.000	0.500
% Recovery	94.3	101	103	100
Relative Percent Difference	0.7	1.2	0.9	0.6
METHODS: EPA 600/04-79-020	243.1	246.1	249.1	289.1

Chemist

01/13/2001
Date

H5508M2.XLS

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO: (505) 746-5421

Receiving Date: 01/10/01
Reporting Date: 01/12/01
Project Number: NOT GIVEN
Project Name: TKIII
Project Location: ARTESIA

Sampling Date: 01/10/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH

LAB NUMBER	SAMPLE ID	COD (mg/L)	F^- (mg/L)	NO_3 (mg/L)	TSS (mg/L)
ANALYSIS DATE		01/11/01	01/10/01	01/10/01	01/12/01
H5508-1	TKIII	0.002	1.48	0.64	9.5
Quality Control		966	0.87	2.64	NR
True Value QC		900	1.00	3.00	NR
% Recovery		107	87.0	88.1	NR
Relative Percent Difference		1.4	6.9	2.5	NR
METHODS: EPA 600/4-79-020		410.4	4500-F^- D*	353.3	160.2

*Std. Methods

Chemist

01/13/2001
Date

H5508B.XLS

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO: (505) 746-5421

Receiving Date: 01/10/01
Reporting Date: 01/13/01
Project Number: NOT GIVEN
Project Name: TKIII
Project Location: ARTESIA

Sampling Date: 01/10/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (mS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:	01/11/01	01/13/01	01/13/01	01/10/01	01/10/01	01/10/01
H5508-1 TKIII	16	154	78	0.98	1216	196
Quality Control	NR	51	52	4.94	1489	NR
True Value QC	NR	50	50	5.00	1413	NR
% Recovery	NR	102	104	98.8	105	NR
Relative Percent Difference	NR	0	1.9	1.6	0.3	NR
METHODS:		SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	01/10/01	01/13/01	01/10/01	01/10/01	01/10/01	01/11/01
H5508-1 TKIII	33	480	0	239	7.42	942
Quality Control	994	53.19	NR	995	7.02	NR
True Value QC	1000	50.00	NR	1000	7.00	NR
% Recovery	99.4	106	NR	99.5	100	NR
Relative Percent Difference	1.0	0.3	NR	0	0	
METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter, Chemist

01/13/2001
Date

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ANALYTICAL RESULTS FOR
NAVAJO REFINERY
ATTN: DARREL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO: (505) 746-5421

Receiving Date: 01/10/01
Reporting Date: 01/11/01
Project Number: NOT GIVEN
Project Name: TK111
Project Location: ARTESIA, NM
Lab Number: H5508-1
Sample ID: TK111

Analysis Date: 01/10/01
Sampling Date: 01/10/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

SEMIVOLATILES - 8270 (ppm)	Sample Result H5508-1	Method Blank	QC	% Recov.	True Value QC
1 n-Nitrosodimethylamine	<0.005	<0.005	0.027	54	0.050
2 2-Picoline	<0.005	<0.005	0.012	24	0.050
3 Methylmethanesulfonate	<0.005	<0.005	0.029	58	0.050
4 Ethylmethanesulfonate	<0.005	<0.005	0.032	64	0.050
5 Phenol	<0.005	<0.005	0.023	46	0.050
6 Aniline	<0.005	<0.005	0.015	30	0.050
7 bis (2-Chloroethyl) ether	<0.005	<0.005	0.023	46	0.050
8 2-Chlorophenol	<0.005	<0.005	0.022	44	0.050
9 1,4-Dichlorobenzene	<0.005	<0.005	0.028	56	0.050
10 1,3-Dichlorobenzene	<0.005	<0.005	0.027	54	0.050
11 Benzyl Alcohol	<0.005	<0.005	0.026	52	0.050
12 1,2-Dichlorobenzene	<0.005	<0.005	0.028	56	0.050
13 2-Methylphenol	<0.005	<0.005	0.026	52	0.050
14 bis (2-Chloroisopropyl) ether	<0.005	<0.005	0.029	58	0.050
15 Acetophenone	<0.005	<0.005	0.028	56	0.050
16 4-Methylphenol	<0.005	<0.005	0.022	44	0.050
17 n-Nitroso-di-n-propylamine	<0.005	<0.005	0.024	48	0.050
18 Hexachloroethane	<0.005	<0.005	0.026	52	0.050
19 Nitrobenzene	<0.005	<0.005	0.027	54	0.050
20 n-Nitrosopiperidine	<0.005	<0.005	0.029	58	0.050
21 Isophorone	<0.005	<0.005	0.030	60	0.050
22 2-Nitrophenol	<0.005	<0.005	0.027	54	0.050
23 2,4-Dimethylphenol	<0.005	<0.005	0.032	64	0.050
24 Benzoic acid	<0.005	<0.005	0.013	26	0.050
25 bis (2-Chloroethoxy) methane	<0.005	<0.005	0.030	60	0.050
26 2,4-Dichlorophenol	<0.005	<0.005	0.032	64	0.050
27 1,2,4-Trichlorobenzene	<0.005	<0.005	0.029	58	0.050
28 Naphthalene	<0.005	<0.005	0.028	56	0.050
29 4-Chloroaniline	<0.005	<0.005	0.020	40	0.050
30 2,6-Dichlorophenol	<0.005	<0.005	0.028	56	0.050
31 Hexachlorobutadiene	<0.005	<0.005	0.023	46	0.050
32 n-Nitroso-di-n-butylamine	<0.005	<0.005	0.030	60	0.050
33 4-Chloro-3-methylphenol	<0.005	<0.005	0.030	60	0.050
34 2-Methylnaphthalene	<0.005	<0.005	0.029	58	0.050
35 1,2,4,5-Tetrachlorobenzene	<0.005	<0.005	0.028	56	0.050
36 Hexachlorocyclopentadiene	<0.005	<0.005	0.022	44	0.050
37 2,4,6-Trichlorophenol	<0.005	<0.005	0.027	54	0.050

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ANALYTICAL RESULTS FOR
NAVAJO REFINERY
ATTN: DARREL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO: (505) 746-5421

Receiving Date: 01/10/01
Reporting Date: 01/11/01
Project Number: NOT GIVEN
Project Name: TK111
Project Location: ARTESIA, NM
Lab Number: H5508-1
Sample ID: TK111

Analysis Date: 01/10/01
Sampling Date: 01/10/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

SEMIVOLATILES - 8270 (ppm)	Sample Result H5508-1	Method Blank	QC	% Recov.	True Value QC
38 2,4,5-Trichlorophenol	<0.005	<0.005	0.029	58	0.050
39 2-Chloronaphthalene	<0.005	<0.005	0.027	54	0.050
40 2-Nitroaniline	<0.005	<0.005	0.028	56	0.050
41 Acenaphthalene	<0.005	<0.005	0.029	58	0.050
42 Dimethylphthalate	<0.005	<0.005	0.027	54	0.050
43 2,6-Dinitrotoluene	<0.005	<0.005	0.029	58	0.050
44 3-Nitroaniline	<0.005	<0.005	0.026	52	0.050
45 Acenaphthene	<0.005	<0.005	0.029	58	0.050
46 2,4-Dinitrophenol	<0.005	<0.005	0.035	70	0.050
47 Dibenzofuran	<0.005	<0.005	0.028	56	0.050
48 Pentachlorobenzene	<0.005	<0.005	0.025	50	0.050
49 4-Nitrophenol	<0.005	<0.005	0.032	64	0.050
50 1-Naphthylamine	<0.005	<0.005	0.014	28	0.050
51 2,4-Dinitrotoluene	<0.005	<0.005	0.025	50	0.050
52 2-Naphthylamine	<0.005	<0.005	0.018	36	0.050
53 2,3,4,6-Tetrachlorophenol	<0.005	<0.005	0.026	52	0.050
54 Fluorene	<0.005	<0.005	0.028	56	0.050
55 4-Chlorophenyl-phenylether	<0.005	<0.005	0.027	54	0.050
56 Diethylphthalate	<0.005	<0.005	0.031	62	0.050
57 4-Nitroaniline	<0.005	<0.005	0.031	62	0.050
58 4,6-Dinitro-2-methylphenol	<0.005	<0.005	0.032	64	0.050
59 Diphenylamine	<0.005	<0.005	0.027	54	0.050
60 n-Nitrosodiphenylamine	<0.005	<0.005	0.027	54	0.050
61 4-Bromophenyl-phenylether	<0.005	<0.005	0.023	46	0.050
62 Phenacetin	<0.005	<0.005	0.029	58	0.050
63 Hexachlorobenzene	<0.005	<0.005	0.022	44	0.050
64 4-Aminobiphenyl	<0.005	<0.005	0.029	58	0.050
65 Pentachlorophenol	<0.005	<0.005	0.032	64	0.050
66 Pentachloronitrobenzene	<0.005	<0.005	0.024	48	0.050
67 Pronamide	<0.005	<0.005	0.026	52	0.050
68 Phenanthrene	<0.005	<0.005	0.025	50	0.050
69 Anthracene	<0.005	<0.005	0.024	48	0.050
70 Di-n-butylphthalate	<0.005	<0.005	0.028	56	0.050
71 Fluoranthene	<0.005	<0.005	0.026	52	0.050
72 Benzidine	<0.005	<0.005	0.001	2	0.050
73 Pyrene	<0.005	<0.005	0.027	54	0.050
74 p-(Dimethylamino)azobenzene	<0.005	<0.005	0.026	52	0.050

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ANALYTICAL RESULTS FOR
NAVAJO REFINERY
ATTN: DARREL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO: (505) 746-5421

Receiving Date: 01/10/01
Reporting Date: 01/11/01
Project Number: NOT GIVEN
Project Name: TK111
Project Location: ARTESIA, NM
Lab Number: H5508-1
Sample ID: TK111

Analysis Date: 01/10/01
Sampling Date: 01/10/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

SEMIVOLATILES - 8270 (ppm)	Sample Result H5508-1	Method Blank	QC	% Recov.	True Value QC
75 Butylbenzylphthalate	<0.005	<0.005	0.031	62	0.050
76 Benzo[a]anthracene	<0.005	<0.005	0.026	52	0.050
77 3,3'-Dichlorobenzidine	<0.005	<0.005	0.028	56	0.050
78 Chrysene	<0.005	<0.005	0.029	58	0.050
79 bis (2-Ethylhexyl) phthalate	<0.005	0.005	0.034	68	0.050
80 Di-n-octylphthalate	<0.005	<0.005	0.036	72	0.050
81 Benzo [b] fluoranthene	<0.005	<0.005	0.030	60	0.050
82 Benzo [k] fluoranthene	<0.005	<0.005	0.031	62	0.050
83 7,12-Dimethylbenz (a) anthracene	<0.005	<0.005	0.032	64	0.050
84 Benzo [a] pyrene	<0.005	<0.005	0.039	78	0.050
85 3- Methylcholanthrene	<0.005	<0.005	0.027	54	0.050
86 Dibenzo (a,j) acridine	<0.005	<0.005	0.006	12	0.050
87 Indeno [1,2,3-cd] pyrene	<0.005	<0.005	0.030	60	0.050
88 Dibenz [a,h] anthracene	<0.005	<0.005	0.037	74	0.050
89 Benzo [g,h,i] perylene	<0.005	<0.005	0.034	68	0.050

	% Recovery
90 2-Fluorophenol	64
91 Phenol-d5	43
92 Nitrobenzene-d5	41
93 2-Fluorobiphenyl	77
94 2,4,6-Tribromophenol	30
95 Terphenyl-d14	85

METHODS: EPA SW 846-8270

Burgess J. A. Cooke, Ph. D.

1/11/01
Date

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ANALYTICAL RESULTS FOR
NAVAJO REFINERY
ATTN: DARREL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO: (505) 746-5421

Receiving Date: 01/10/01
Reporting Date: 01/12/01
Project Number: NOT GIVEN
Project Name: TK111
Project Location: ARTESIA, NM
Lab Number: H5508-1
Sample ID: TK111

Analysis Date: 01/12/01
Sampling Date: 01/10/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: GP

VOLATILES - 8260 (ppm)		Sample Result H5508-1	Method Blank	QC	%Recov.	True Value QC
1	Dichlorodifluoromethane	<0.005	<0.005	0.099	99	0.100
2	Chloromethane	<0.005	<0.005	0.080	80	0.100
3	Vinyl chloride	<0.005	<0.005	0.092	92	0.100
4	Bromomethane	<0.005	<0.005	0.082	82	0.100
5	Chloroethane	<0.005	<0.005	0.086	86	0.100
6	Iodomethane	<0.005	<0.005	0.081	81	0.100
7	1,1-Dichloroethene	<0.005	<0.005	0.102	102	0.100
8	Trichlorofluoromethane	<0.005	<0.005	0.097	97	0.100
9	Carbon Disulfide	<0.005	<0.005	0.090	90	0.100
10	Acetone	<0.050	<0.050	0.085	85	0.100
11	Methylene chloride	<0.005	<0.005	0.093	93	0.100
12	trans-1,2-Dichloroethene	<0.005	<0.005	0.100	100	0.100
13	1,1-Dichloroethane	<0.005	<0.005	0.098	98	0.100
14	2-Butanone	<0.050	<0.050	0.100	100	0.100
15	Vinyl acetate	<0.050	<0.050	0.095	95	0.100
16	Chloroform	<0.005	<0.005	0.094	94	0.100
17	1,1,1-Trichloroethane	<0.005	<0.005	0.101	101	0.100
18	1,2-Dichloroethane	<0.005	<0.005	0.096	96	0.100
19	Allyl chloride	<0.005	<0.005	NR	NR	NR
20	Benzene	<0.005	<0.005	0.084	84	0.100
21	Carbon tetrachloride	<0.005	<0.005	0.093	93	0.100
22	Trichloroethene	<0.005	<0.005	0.096	96	0.100
23	Dibromomethane	<0.005	<0.005	0.094	94	0.100
24	Bromodichloromethane	<0.005	<0.005	0.096	96	0.100
25	1,4-Dichloro-2-butene	<0.005	<0.005	NR	NR	NR
26	trans-1,3-Dichloropropene	<0.005	<0.005	0.097	97	0.100
27	4-Methyl-2-pentanone	<0.050	<0.050	0.092	92	0.100
28	1,2-Dichloropropane	<0.005	<0.005	0.094	94	0.100
29	cis-1,3-Dichloropropene	<0.005	<0.005	0.104	104	0.100
30	Toluene	<0.005	<0.005	0.096	96	0.100
31	1,1,2-Trichloroethane	<0.005	<0.005	0.101	101	0.100

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ANALYTICAL RESULTS FOR
NAVAJO REFINERY
ATTN: DARREL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO: (505) 746-5421

Receiving Date: 01/10/01
Reporting Date: 01/12/01
Project Number: NOT GIVEN
Project Name: TK111
Project Location: ARTESIA, NM
Lab Number: H5508-1
Sample ID: TK111

Analysis Date: 01/12/01
Sampling Date: 01/10/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: GP

VOLATILES - 8260 (ppm)		Sample Result H5508-1	Method Blank	QC	%Recov.	True Value QC
32	1,3-Dichloropropane	<0.005	<0.005	0.096	96	0.100
33	2-Hexanone	<0.050	<0.050	0.090	90	0.100
34	Dibromochloromethane	<0.005	<0.005	0.099	99	0.100
35	1,2-Dibromoethane	<0.005	<0.005	0.097	97	0.100
36	Tetrachloroethene	<0.005	<0.005	0.101	101	0.100
37	Chlorobenzene	<0.005	<0.005	0.093	93	0.100
38	1,1,1,2-Tetrachloroethane	<0.005	<0.005	0.092	92	0.100
39	Ethylbenzene	<0.005	<0.005	0.098	98	0.100
40	m, p - Xylene	<0.010	<0.010	0.196	98	0.200
41	Bromoform	<0.005	<0.005	0.094	94	0.100
42	Styrene	<0.005	<0.005	0.096	96	0.100
43	o-Xylene	<0.005	<0.005	0.097	97	0.100
44	1,1,2,2-Tetrachloroethane	<0.005	<0.005	0.101	101	0.100
45	1,2,3-Trichloropropane	<0.005	<0.005	0.101	101	0.100
46	1,3-Dichlorobenzene	<0.005	<0.005	0.099	99	0.100
47	1,4 Dichlorobenzene	<0.005	<0.005	0.099	99	0.100
48	1,2-Dichlorobenzene	<0.005	<0.005	0.098	98	0.100
49	1,2-Dibromo-3-chloropropane	<0.005	<0.005	0.103	103	0.100

		% Recovery
50	1,2-Dichloroethane-d4	97
51	Toluene-d8	104
52	4-Bromofluorobenzene	96

METHODS: EPA SW-846-8260.

Burgess J. A. Cooke, Ph. D.

1/12/01
Date

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ANALYTICAL RESULTS FOR
NAVAJO REFINERY
ATTN: DARREL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO: (505) 746-5421

Receiving Date: 01/10/01
Reporting Date: 01/11/01
Project Number: NOT GIVEN
Project Name: TK111
Project Location: ARTESIA, NM
Lab Number: H5508-1
Sample ID: TK111

Analysis Date: 01/10/01
Sampling Date: 01/10/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

POLYNUCLEAR AROMATIC HYDROCARBON - 8270 (mg/L)		Sample Result H5508-1	Method Blank	QC	% Recov.	True Value QC
1	Naphthalene	<0.005	<0.005	0.028	56	0.050
2	Acenaphthylene	<0.005	<0.005	0.029	58	0.050
3	Acenaphthene	<0.005	<0.005	0.029	58	0.050
4	Fluorene	<0.005	<0.005	0.028	56	0.050
5	Phenanthrene	<0.005	<0.005	0.025	50	0.050
6	Anthracene	<0.005	<0.005	0.024	48	0.050
7	Fluoranthene	<0.005	<0.005	0.026	52	0.050
8	Pyrene	<0.005	<0.005	0.027	54	0.050
9	Benzo(a)anthracene	<0.005	<0.005	0.026	52	0.050
10	Chrysene	<0.005	<0.005	0.030	60	0.050
11	Benzo(b)fluoranthene	<0.005	<0.005	0.030	60	0.050
12	Benzo(k)fluoranthene	<0.005	<0.005	0.031	62	0.050
13	Benzo(a)pyrene	<0.005	<0.005	0.039	78	0.050
14	Indeno(1,2,3-cd)pyrene	<0.005	<0.005	0.030	60	0.050
15	Dibenzo(a,h,)anthracene	<0.005	<0.005	0.037	74	0.050
16	Benzo(g,h,i)perylene	<0.005	<0.005	0.034	68	0.050

		% Recovery
17	Nitrobenzene-d5	41
18	2-Fluorobiphenyl	77
19	Terphenyl-d14	85

METHODS: EPA SW-846 8270

Chemist

1/11/01
Date

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ANALYTICAL RESULTS FOR
NAVAJO REFINING
ATTN: DARRELL MOORE
501 E. MAIN
ARTESIA, NM 88210
FAX TO: (505) 746-5421

Receiving Date: 01/10/01
Reporting Date: 01/17/01
Project Number: NOT GIVEN
Project Name: TKIII
Project Location: ARTESIA

Sampling Date: 01/10/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: GP

BOD5 (mg/L)

LAB NUMBER	SAMPLE ID	Date In	Date Out
ANALYSIS DATE:		01/11/01	01/16/01
H5508-1	TKIII	<2	
Quality Control		NR	
True Value QC		NR	
% Recovery		NR	
Relative Percent Difference		NR	

METHODS: EPA 600/4-79-020 405.1

Chemist

01/17/2001
Date

H5508B2.XLS

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CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page____ of ____

Company Name:	NAVAJO REFINERY	**BILL TO**	
Project Manager:	DARREL MOORE	**P.O. #:**	
Address:	501 EAST MAIN	**Company:**	NAVAJO
City:	ARTESIA **State:** NM **Zip:** 88210	**Attn:**	
Phone #:	505-748-3311 **Fax #:**	**Address:**	
Project #:	**Project Owner:**	**City:**	
Project Name:	TK III	**State:** **Zip:**	
Project Location:	ARTESIA	**Phone #:**	
Sampler Name:		**Fax #:**	

LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: METALS	VOC	Semi VOC	CATIONS	TSS	BOD & COD	NITRATES
H5508-1	TK III												01/10/01	8:15	✓	✓	✓	✓	✓	✓	✓

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	**Date:**	**Received By:**	
	Time:		
Relinquished By:	**Date:** 1-10-01	**Received By: (Lab Staff)**	
	Time: 9:10 AM		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	**Sample Condition** Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	**CHECKED BY: (Initials)**	

Phone Result: ☐ Yes ☐ No **Add'l Phone #:**
Fax Result: ☐ Yes ☐ No **Add'l Fax #:**
REMARKS: Rush

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

TELEPHONE
(505) 748-3311

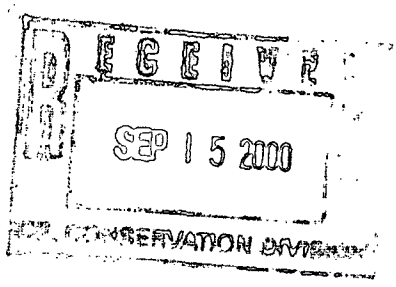
EASYLINK
62905278

NAVAJO REFINING COMPANY

501 EAST MAIN STREET ◦ P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

FAX
(505) 746-6410 ACCTG
(505) 746-6155 EXEC
(505) 748-9077 ENGR
(505) 746-4438 P / L

September 13, 2000



Mr. Bill Olson
Hydrogeologist
Environmental Bureau
Oil Conservation Division
2040 S. Pacheco St.
Santa Fe, NM 87505-5472

RE: Report on Groundwater Monitor Well Repositioning, Navajo Refining Company

Dear Bill,

Enclosed, please find Dave Boyer's report on the new monitor well that we installed to replace the two wells on the Anderson Farm. There are also analysis of the water and a boring log. We have now added this well to our routine sampling of the offsite plume and will include it in our next annual report.

If there are any questions concerning this matter, please call me at 505-748-3311. Thank you for your attention to this matter.

Sincerely,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Environmental Mgr. for Water and Waste

Encl.

P.O. Box 1613
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
505/397-0510
fax 505/393-4388
www.sesi-nm.com

Safety & Environmental Solutions, Inc.

August 30, 2000

Mr. Darrell Moore, Environmental Manager for Water and Waste
Navajo Refining Company
New Mexico Oil Conservation Division
P.O. Box 158
Artesia, New Mexico 88211-0159

RE: Report on Groundwater Monitor Well Repositioning, Navajo Artesia Refinery

Dear Mr. Moore:

This letter report provides you with a description of the activities and investigation results related to the repositioning of the offsite groundwater monitoring wells previously known as KWB-2A and KWB-2B at Navajo's Artesia Refinery.

Background Information

In a January 13, 2000 letter to the New Mexico Oil Conservation Division (OCD), Navajo requested New Mexico Oil Conservation Division (OCD) approval to relocate the wells from the Armstrong Farm to US Highway 82 right-of-way due to the landowners concern that the original location restricted his access for farming. The request was approved by the OCD with conditions on May 3, 2000. A letter clarifying the number of replacement wells to be drilled was sent to the OCD on May 19 by Safety & Environmental Solutions (SESI). The May 19 letter confirmed OCD's verbal concurrence given in a telephone conversation to Mr. David Boyer of SESI that only a single replacement well needed to be drilled because aquifer testing is not planned for the new location. The replacement well has been designated KWB-2R.

The location selected for the replacement well was the south side of U.S. Highway 82 at a point 650 ft. due north of the two wells being replaced (See attached location map). The location is across the highway and approximately 800 ft. east of the Navajo main office. After site selection, buried utilities, including a petroleum pipeline and a telephone cable, were located through the New Mexico One Call service. A health and safety plan was prepared and in effect for the drilling and well installation.

Drilling and Well Installation

Drilling began on June 19, 2000, using personnel from Safety & Environmental Solutions of Hobbs. A Giddings trailer-mounted drill, Model 25-SCT was used to bore the hole with a 6-5/8 in. hollow-stem auger. Cuttings were monitored visually and by a photoionization detector (PID) for signs of hydrocarbon contamination. Cuttings exhibiting contamination were placed in a 55-gallon drum for removal to the refinery for further testing prior to disposition.

The boring lithology is typical for this area and the lithologic log of the boring is provided in the Appendix to this report. Surface material consists of clayey and silty sand to about 7 ft. At that depth the material becomes increasingly clayey and slightly moist. At 15 ft., a color change to light gray was observed with black staining on the occasional caliche rock encountered. From 17 to 20 ft., increasing limestone gravels were seen in the clay. At 20 ft., gravels were encountered that were

clean of fines and exhibited a slight odor. The gravels did not appear saturated at the time of drilling. At the base of the gravels (24.6 ft.) soft moist clay with a strong hydrocarbon odor was encountered. The clay and silty clay lithology continued to total depth of the boring at 40 ft. No obvious water zones were encountered and the drilling returns were not wet until about 38 ft. However, previous drilling in the area of the refinery has demonstrated that thin lenticular zones of coarser material are commonly present and saturated below a depth of 25-30 ft.

Drilling had been completed and bailing of water and mud from the auger stem had commenced when activity ceased at 2:30 p.m. due to lightning in the area. At the time of shut down, the water level in the hole was 27 ft., down from 23.7 ft. at the start of bailing. Water collected during bailing was also placed in a barrel for disposal at the refinery.

Well installation was completed on June 20. First, the well was again bailed to remove mud and cuttings. Twenty feet of 0.010 in. slotted 2-in. screen was set from 20 to 40 ft. A sand pack was emplaced to 18 ft. with a bentonite from 15 to 18 ft. and cement grout from 15 ft. to the surface. The well was developed by the drillers to remove additional fines using a combination of bailing and pumping. Well completion details are shown on the completion diagram included in the Appendix.

Groundwater Sampling and Water Quality Results

Following well development, the well was sampled on the afternoon of June 20 and the sample analyzed for NM Water Quality Control Commission (WQCC) ground water constituents, including aromatic and halogenated volatiles, PAH semi-volatiles, metals, and major cations and anions. The results of the sampling are shown in the accompanying table and copies of the results are included in the Appendix.

No phase-separated hydrocarbon was observed in the well; however, results of the sampling show the groundwater exceeding NM WQCC standards for benzene, ethylbenzene, and total xylene volatiles and the semi-volatile naphthalene. This is not unexpected because recovery of hydrocarbon product is occurring in recovery trenches across Highway 82 in the Toolpushers Supply Company yard and to the east at Bolton Road. Because auger cuttings show hydrocarbon product was present at this location in the past, the lack of product at this time indicates free product recovery efforts at Toolpushers and other locations in the southern area of the refinery are succeeding.

No WQCC halogenated volatiles were detected in the sample. Although none would be expected to be found, the detection level was elevated due to matrix interference from the dissolved phase hydrocarbons. Also, no semi-volatiles other than naphthalene were detected in the sample.

A comparison of the results of the metals analysis with WQCC standards shows only manganese exceeding the standard. This is not unexpected because there is very likely a reduced chemical environment due to the presence of the dissolved phase hydrocarbons and a lack of dissolved oxygen in the groundwater.

Chloride, fluoride and total dissolved solids exceed WQCC standards in the monitor well. However, the concentrations of general chemistry constituents are similar to those seen in other monitor wells completed in the near-surface saturated zone in the vicinity of the refinery.

Modification to the Groundwater Monitoring Plan

The monitoring well KWB-2R will be added to the current monitoring plan and will be sampled on the same schedule and for the same constituents as the other monitor wells on the periphery of the refinery. Monitor wells KWB-2A and KWB-2B have been plugged and their surface locations leveled by the landowner. KWB-2R is a suitable replacement well because it monitors the same perched

groundwater zone and is closer to hydrocarbon recovery efforts where it will provide information on remediation progress and can detect phase-separated hydrocarbon in the event of a future release in the southern area of the refinery.

If you have any questions regarding the information provided in this letter report, please contact me at (505) 397-0510 or at (505) 281-8591.

Sincerely yours,

David G. Boyer, P.G.
Hydrogeologist

Appendix:
Drilling and completion logs, site map, water quality analysis results

Table 1. Results of Water Quality Sampling of Monitor Well KWB-2R
(Sample date June 20, 2000)

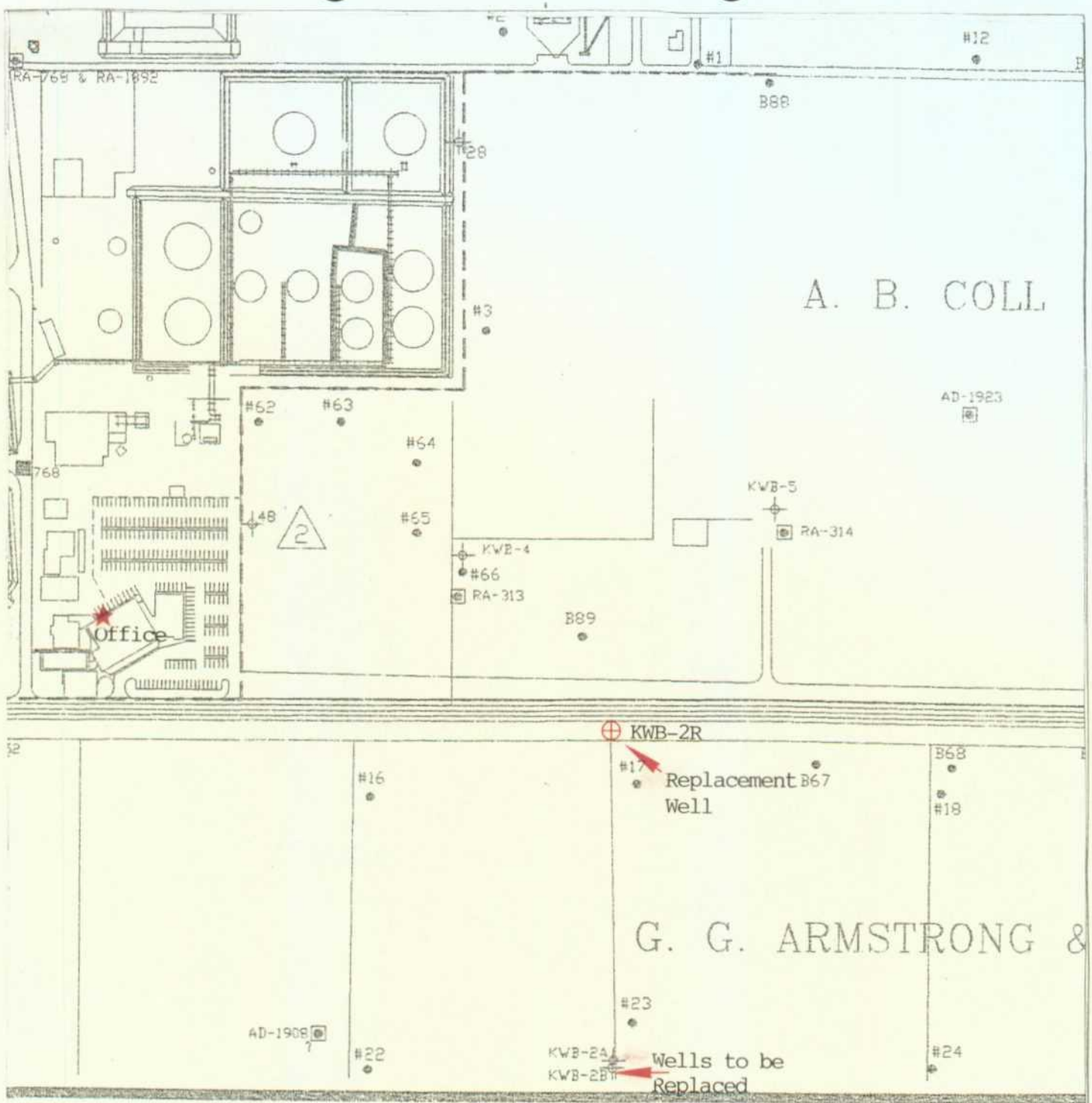
Constituent	Sample Result (mg/L)	NM WQCC Standard (mg/L)	Comment
Volatiles:			
Benzene	**2.448**	0.010	Bolded if result exceeds standard. Elevated detection levels due to matrix interference; no MTBE or halogenated hydrocarbons detected at 0.2 mg/L
Toluene	<0.200	0.750	
Ethylbenzene	**2.627**	0.750	
Total xylenes	**3.035**	0.620	
Naphthalene	**0.391**	0.030	(by method 8260)
Semi-Volatiles:			
Naphthalene	**0.282**	0.03	(by method 8270) Other PAH semi-volatiles less than 0.025 mg/L
WQCC Metals			
Aluminum	<0.01	5.0	Bolded if result exceeds standard. Samples not filtered; results are total (vs. dissolved) for metals
Arsenic	<0.01	0.1	
Barium	0.26	1.0	
Boron	0.40	0.75	
Cadmium	<0.002	0.01	
Chromium	<0.005	0.05	
Cobalt	<0.02	0.05	
Copper	<0.02	1.0	
Iron	0.74	1.0	
Lead	<0.01	0.05	
Manganese	**0.43**	0.2	
Mercury	<0.0002	0.002	
Molybdenum	<0.05	1.0	
Nickel	<0.02	0.2	
Selenium	<0.01	0.05	
Silver	<0.005	0.05	
Uranium	<0.10	5.0	
Zinc	<0.01	10.0	
Cations/Anions			
Sodium	300	--	Bolded if result exceeds standard. Samples not filtered; results are total (vs. dissolved) for a constituent
Potassium	4.7	--	
Calcium	265	--	
Magnesium	167	--	
Chloride	**490**	250	
Sulfate	560	600	
Carbonate	<1.0	--	
Bicarbonate	792	--	
Nitrate	2.7	10.0	
Fluoride	**1.9**	1.6	
Total Dissolved Solids	**2,300**	1,000	
pH	6.7	between 6 and 9	

APPENDIX:

Drilling and Completion Logs

Site Map

Water Quality Analysis Results



RENCE DRAWINGS

NO.

Site Map
Navajo Refinery
Groundwater Monitor Well Repositioning
June 19-20, 2000
(Scale 1"=300')

LOG OF BORING KWB-2R

Navajo Montoring Wells
Replacement Well Installation

Navajo Refining Company
Artesia, New Mexico

Date, Time Started:	: 06/19/00, 0900	Drilled By:	: Safety & Env. Solutions
Date Completed	: 06/19/00, p.m.	Logged By:	: D.G. Boyer
Hole Diameter:	: 6-5/8 in.		
Drilling Method:	: Hollow-Stem Auger		
Sampling Method:	: Cuttings, core barrel		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sample Type: SS Split Spoon (18" or 24"); CB Core Barrel (2.5' or 5'); CT Auger Cuttings; NR No recovery

Depth in Feet	Sample Type	USCS	DESCRIPTION	PID Interval (ft)	PID (ppm)
0	CT	SM	0-5 ft. CLAYEY-SILTY SAND, very fine grained, light brown w/caliche chips and occassional caliche to 2 in		
5			5-7 ft. CLAYEY-SILTY SAND, as above, slightly moist		
	CT	CL	7-10 ft. SILTY-SANDY CLAY, brown, very cohesive, some small gravels 1/4-1/2 in., occasionally bigger.		
10			10-12 ft. SILTY CLAY, light brown, very cohesive, hard dry.		
	CT	CH	12-15 ft. CLAY, fat, light gray, slightly moist, no odor		
15		CL	15 ft. CLAY, as above, with gray caliche rock having black H/C residue and staining, no odor.		
	CT		17 ft. SILTY CLAY, fat, light gray, slightly moist, softer, occasional rounded, smooth limestone gravels to 1.5 in.	17	65.2
		GC	17.5 ft.GRAVELLY CLAY, increasing cobbles, river gravel		
20			18-20 ft. CLAYEY GRAVEL		
	CT	GW	20-24.6 ft. GRAVEL, Well Graded, clean, slight odor		
				24	53
25				25	1002
	CT		24.6-28 ft. CLAY, soft, moist, gray, strong H/C odor		
			28 ft. SILTY CLAY, light brown, occasional gravel, H/C odor		
				29	140
30	CT	CL	32 ft. SILTY CLAY, as above	32	36
35			35 ft. SILTY CLAY, as above, light gray, H/C odor, very soft drilling		
	CB		38 ft. CLAY, light gray, moist, H/C odor, drilling returns wet		
40			40 ft. Total depth, SILTY CLAY, wet		

Notes:

H/C = Petroleum Hydrocarbon

Well drilled using Giddings Trailer-Mounted Drill, Model 25-SCT.
See KWB-2R (Completion Details) for well completion information. Depth to water at 23.7 ft. inside auger casing at completion of drilling p.m. 06/19/00.
Offsite 1430 06/19/00 due to lightning storm.

08-30-2000 D:\TRANSFER\MTECH5-32\NAV-OFFSITE\OFFSITE 2000\KWB-2R.BOR

LOG OF WELL KWB-2R (Completion Details)

Navajo Montoring Wells
Replacement Well Installation

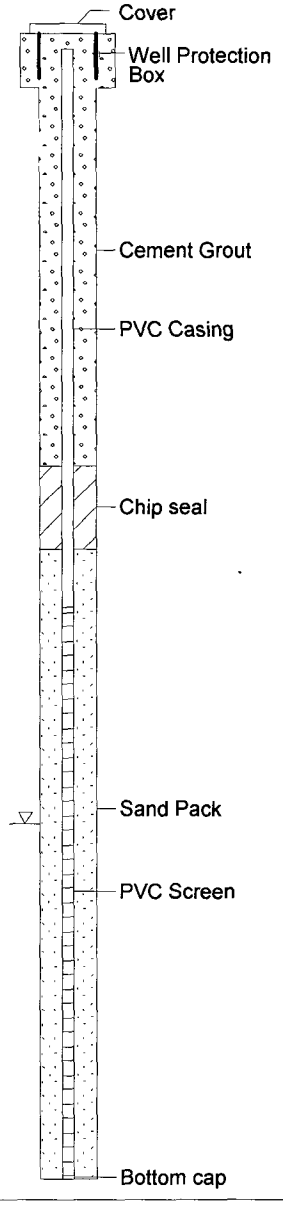
Navajo Refining Company
Artesia, New Mexico

Date, Time Started:	: 06/19/00, 0900	Drilled By:	: Safety & Env. Solutions
Date Completed	: 06/19/00, p.m.	Logged By:	: D.G. Boyer
Hole Diameter:	: 6-5/8 in.	Northing Coordinate	: 2403.973
Drilling Method:	: Hollow-Stem Auger	Easting Coordinate	: 3901.792
Sampling Method:	: Cuttings, core barrel	Survey By	: Atkins Engr. Assoc.

Water Levels
▼ Hydrocarbon Prod.
▽ Water Level

Depth in Feet	USCS	GRAPHIC	DESCRIPTION
0	SM		0-5 ft. CLAYEY-SILTY SAND, very fine grained, light brown w/caliche chips and occassional caliche to 2 in
5			5-7 ft. CLAYEY-SILTY SAND, as above, slightly moist
	CL		7-10 ft. SILTY-SANDY CLAY, brown, very cohesive, some small gravels 1/4-1/2 in., occasionally bigger.
10			10-12 ft. SILTY CLAY, light brown, very cohesive, hard dry.
	CH		12-15 ft. CLAY, fat, light gray, slightly moist, no odor
15	CL		15 ft. CLAY, as above, with gray caliche rock having black H/C residue and staining, no odor.
	GC		17 ft. SILTY CLAY, fat, light gray, slightly moist, softer, occasional rounded, smooth limestone gravels to 1.5 in.
20			17.5 ft.GRAVELLY CLAY, increasing cobbles, river gravel
	GW		18-20 ft. CLAYEY GRAVEL
			20-24.6 ft. GRAVEL, Well Graded, clean, slight odor
25			24.6-28 ft. CLAY, soft, moist, gray, strong H/C odor
			28 ft. SILTY CLAY, light brown, occasional gravel, H/C odor
30	CL		32 ft. SILTY CLAY, as above
35			35 ft. SILTY CLAY, as above, light gray, H/C odor, very soft drilling
			38 ft. CLAY, light gray, moist, H/C odor, drilling returns wet
40			40 ft. Total depth, SILTY CLAY, wet

Well: KWB-2R
Elev.: 3362.21



Well Construction Information

COMPLETION DATA

Hole Depth	: 40 ft. Below LS
TD Inside casing	: 39.06 ft. Below TOC

CASING, SCREEN & CAP

Material, joints	: PVC, threaded
Diameter	: 2 in. ID
Manufacturer	: Atlantic Screen
Screen type	: Slotted
Screen length	: 20 ft.
Screen opening	: 0.010 slot
Scrn. placement	: 20-40 ft. BLS
Bottom Cap	: 0.2 ft PVC
Protector Casing	: Flush Mount steel
Lock Key #	:

SEALS & SAND PACK

Cement seal type	: Quikcrete hand mix
Cem't placement	: 0 - 15 ft. BLS
Annular seal type	: Black Hills Bentonite
Seal placement	: Powder, 15-18 ft. BLS
Sand pack type	: 10-20 Oglebay silica
Sand placement	: 18-40 ft. BLS

ELEVATIONS.

Ground elevation	: 3362.07
Inner casing, lip	: 3362.21
Outer casing, top	: 3362.45

NOTES

WELL INSTALLATION:
06/19: Drilled to 40 feet. Depth to water 23.7 ft. Bailed approx. 20 times with 2 in. bailer to remove water and mud from inside auger. Strong odor, slight sheen, no obvious product. Water level at 27 feet after bailing. Bailed again; water remains at 27 feet. Shut down at 1430 due to lightning storm.
06/20: On site 0830. Bailed inside auger stem with steel surge plug/bailer to remove mud. Set 20 ft. screen from 20 to 40 ft. and emplaced sand pack to 18 ft. Powdered bentonite 15-18 ft. Cement from 15 ft. to surface, install flush-mount protection box.

WELL DEVELOPMENT:
Drillers developed well. Pumped approximately 10 gallons. Purged another 5 gallons by bailing before sampling on 06/20/00.

On 08/25/00 DTW 21.24 ft.,TD BTOC 39.06 ft.

Notes:
Well drilled using Giddings Trailer-Mounted Drill, Model 25-SCT.
See log of boring KWB-2R for detailed lithologic and drilling information.
Survey coordinates referenced to existing KWB-4.
H/C = Petroleum Hydrocarbon

08-31-2000 D:\TRANSFER\MTECH5-32\NAV-OFFSITE\OFFSITE 2000\WELLS\KWB-2R MW.BOR

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

July 5, 2000
Receiving Date: 06/21/00
Sample Type: Water
Project No: Artesia-Monitor Well Replacement
Project Location: KWB-2R

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: David Boyer
P.O. Box 159
Artesia, NM 88211

Sampling Date: 06/19/00
Sample Condition: Intact & Cool
Sample Received by: VH
Project Name: N/A

DISSOLVED METALS (mg/L)

TA#	Field Code	Al (mg/L)	As (mg/L)	Ba (mg/L)	Be (mg/L)	B (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	Cu (mg/L)	Fe (mg/L)	Pb (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/L)	Ag (mg/L)	U (mg/L)	V (mg/L)	Zn (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Hg (mg/L)
T148481	KWB-2R	<0.01	<0.01	0.26	<0.01	0.40	<0.002	<0.005	<0.02	<0.02	0.74	<0.01	0.43	<0.05	<0.02	<0.01	<0.005	<0.10	<0.02	<0.01	265	167	4.7	300	<0.0002
ICV		4.74	2.44	5.11	0.51	2.52	50.00	1.03	2.51	0.98	5.07	2.55	0.51	2.56	2.49	2.44	0.5	2.54	2.52	0.51	10.1	10.0	9.7	9.6	0.00092
CCV		4.81	2.35	5.43	0.52	2.48	0.51	1.06	2.64	1.00	5.26	2.63	0.53	2.66	2.56	2.35	0.51	2.69	2.63	0.54	265	167	4.7	300	0.00092
Reporting Limit		0.01	0.01	0.05	0.01	0.05	0.002	0.01	0.02	0.02	0.05	0.01	0.01	0.05	0.02	0.01	0.005	0.10	0.02	0.01	1.0	1.0	1.0	1.0	0.0002
RPD		0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	5	1	1	2	1	8
% Extraction Accuracy		87	88	102	90	93	80	100	96	100	99	94	105	104	94	99	95	111	103	105	102	94	105	98	120
% Instrument Accuracy		95	98	102	102	101	100	103	101	98	101	102	102	102	99	98	100	102	101	102	101	100	100	97	96

PREP DATE	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00	6/22/00
ANALYSIS DATE	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00

CHEMIST: Al, As, Ba, Be, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Mo, Ni, Se, Ag, U, V, Zn, Ca, Mg, K, Na: RR Hg: JM
METHODS: EPA SW 846-3005A, 6010B, 7470A.
DISSOLVED METALS SPIKE: 2.0 mg/L Al, Ba, Fe 1.0 mg/L As,B, Co, Pb, Mo, Ni, U, V 0.20 mg/L Be, Cd, Mn, Ag, Zn 0.40 mg/L Cr, Cu, 0.80 mg/L Se 1000 mg/L Ca, Mg, K, Na
DISSOLVED METALS CCV: 5.0 mg/L Al, Ba, Fe 2.5 mg/L As,B, Co, Pb, Mo, Ni, Se, U, V 0.50 mg/L Be, Cd, Mn, Ag, Zn 1.0 mg/L Cr, Cu, 10 mg/L Ca, Mg, K, Na

Director, Dr. Blair Leftwich

8-17-00
Date

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
NAVAJO REFINING CO.

August 17, 2000
Receiving Date: 6/21/00
Sample Type: Water
Project No: Artesia-Monitor Well Rplacement
Project Location: KWB-2R

Attention: David Boyer
P.O. Box 159
Artesia, NM 88211

*CORRECTED

Sampling Date: 6/19
Sample Condition: Intact
Sample Received by: VH
Project Name: N/A

TA#	FIELD CODE	FLUORIDE (mg/L)	CHLORIDE (mg/L)	NITRATE (mg/L)	SULFATE (mg/L)
T148481	KWB-2R	1.9	490	2.7	560
ICV		2.50	11.81	4.69	12.15
CCV		2.50	11.90	4.71	12.43
REPORTING LIMIT		0.2	0.5	0.2	0.5
RPD		3	0	1	1
% Extraction Accuracy		93	93	91	97
% Instrument Accuracy		100	94	94	99
PREP DATE		06/21/00	06/21/00	06/21/00	06/21/00
ANALYSIS DATE		06/21/00	06/21/00	06/21/00	06/21/00

METHODS: EPA 300.0
CHEMIST: FLUORIDE, CHLORIDE, NITRATE, SULFATE: JS/RS
FLUORIDE/ SPIKE CONC.: 12.5 CHLORIDE/SULFATE SPIKE CONC.: 62.5 mg/L NITRATE SPIKE CONC.: 25 mg/L
FLUORIDE CCV CONC.: 2.5 CHLORIDE CCV CONC.: 12.5 mg/L NITRATE CCV CONC.: 5.0 mg/L
***Corrected field code.**

Director, Dr. Blair Leftwich

8-17-00
DATE

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

David Boyer
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: August 16, 2000

Order ID Number: A00062106

Project Number: Artesia Monitor Well Replacement
Project Name: N/A
Project Location: KWB-2R

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
148481	KWB-2R	Water	6/19/00	15:15	6/21/00

These results represent only the samples received in the laboratory. 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.

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Dr. Blair Leftwich, Director

Analytical and Quality Control Report

Sample: 148481 - KWB-2R

Analysis:	8260	Analytical Method:	S 8260B	QC Batch:	QC03398	Date Analyzed:	6/22/00
Analyst:	JG	Preparation Method:	E 5030B	Prep Batch:	PB02923	Date Prepared:	6/22/00

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<200	µg/L	1	2
Dichlorodifluoromethane		<200	µg/L	1	2
Chloromethane (methyl chloride)		<200	µg/L	1	2
Vinyl Chloride		<200	µg/L	1	2
Bromomethane (methyl bromide)		<500	µg/L	1	5
Chloroethane		<200	µg/L	1	2
Trichlorofluoromethane		<200	µg/L	1	2
Acetone		<1000	µg/L	1	10
Iodomethane (methyl iodide)		<200	µg/L	1	2
Carbon Disulfide		<200	µg/L	1	2
Acrylonitrile		<200	µg/L	1	2
2-Butanone (MEK)		<200	µg/L	1	2
4-methyl-2-pentanone (MIBK)		<1000	µg/L	1	10
2-hexanone		<200	µg/L	1	2
trans 1,4-Dichloro-2-butene		<1000	µg/L	1	10
1,1-Dichloroethene		<200	µg/L	1	2
Methylene chloride		<500	µg/L	1	5
MTBE		<200	µg/L	1	2
trans-1,2-Dichloroethene		<200	µg/L	1	2
1,1-Dichloroethane		<200	µg/L	1	2
cis-1,2-dichloroethene		<200	µg/L	1	2
2,2-Dichloropropane		<200	µg/L	1	2
1,2-Dichloroethane (EDC)		<200	µg/L	1	2
Chloroform		<200	µg/L	1	2
1,1,1-Trichloroethane		<200	µg/L	1	2
1,1-Dichloropropene		<200	µg/L	1	2
Benzene		2448	µg/L	1	2
Carbon Tetrachloride		<200	µg/L	1	2
1,2-Dichloropropane		<200	µg/L	1	2
Trichloroethene (TCE)		<200	µg/L	1	2
Dibromomethane (methylene bromide)		<200	µg/L	1	2
Bromodichloromethane		<200	µg/L	1	2
2-Chloroethyl vinyl ether		<1000	µg/L	1	10
cis-1,3-Dichloropropene		<200	µg/L	1	2
trans-1,3-Dichloropropene		<200	µg/L	1	2
Toluene		<200	µg/L	1	2
1,1,2-Trichloroethane		<200	µg/L	1	2
1,3-Dichloropropane		<200	µg/L	1	2
Dibromochloromethane		<200	µg/L	1	2
1,2-Dibromoethane (EDB)		<200	µg/L	1	2
Tetrachloroethene (PCE)		<200	µg/L	1	2
Chlorobenzene		<200	µg/L	1	2
1,1,1,2-Tetrachloroethane		<200	µg/L	1	2
Ethylbenzene		2627	µg/L	1	2
m,p-Xylene		3035	µg/L	1	2

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... *Continued* Sample: 148481 Analysis: 8260

Param	Flag	Result	Units	Dilution	RDL
Bromoform		<200	µg/L	1	2
Styrene		<200	µg/L	1	2
o-Xylene		<200	µg/L	1	2
1,1,2,2-Tetrachloroethane		<200	µg/L	1	2
2-Chlorotoluene		<200	µg/L	1	2
1,2,3-Trichloropropane		<200	µg/L	1	2
Isopropylbenzene		<200	µg/L	1	2
Bromobenzene		<200	µg/L	1	2
n-Propylbenzene		203	µg/L	1	2
1,3,5-Trimethylbenzene		227	µg/L	1	2
tert-Butylbenzene		<200	µg/L	1	2
1,2,4-Trimethylbenzene		935	µg/L	1	2
1,4-Dichlorobenzene (para)		<200	µg/L	1	2
sec-Butylbenzene		<200	µg/L	1	2
1,3-Dichlorobenzene		<200	µg/L	1	2
p-Isopropyltoluene		<200	µg/L	1	2
4-Chlorotoluene		<200	µg/L	1	2
1,2-Dichlorobenzene (ortho)		<200	µg/L	1	2
n-Butylbenzene		<200	µg/L	1	2
1,2-Dibromo-3-chloropropane		<500	µg/L	1	5
1,2,3-Trichlorobenzene		<500	µg/L	1	5
1,2,4-Trichlorobenzene		<500	µg/L	1	5
Naphthalene	[1]	391	µg/L	1	2
Hexachlorobutadiene		<500	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.08	µg/L	1	50	92	84 - 116
Toluene-d8		47.58	µg/L	1	50	95	92 - 108
4-Bromofluorobenzene		47.90	µg/L	1	50	95	80 - 110

Sample: 148481 - KWB-2R

Analysis:	Alkalinity	Analytical Method:	E 310.1	QC Batch:	QC03440	Date Analyzed:	6/27/00
Analyst:	LD	Preparation Method:	N/A	Prep Batch:	PB02964	Date Prepared:	6/27/00

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		792	mg/L as CaCo3	1	1
Total Alkalinity		792	mg/L as CaCo3	1	1

Sample: 148481 - KWB-2R

Analysis:	Conductivity	Analytical Method:	SM 2510B	QC Batch:	QC03441	Date Analyzed:	6/27/00
Analyst:	LD	Preparation Method:	N/A	Prep Batch:	PB02965	Date Prepared:	6/27/00

[1] RSD value exceeds 15% on intial calibration

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		3300	uMHOS/cm	1	

Sample: 148481 - KWB-2R

Analysis:	Dissolved Metals	Analytical Method:	E 200.7	QC Batch:	QC03359	Date Analyzed:	6/22/00
Analyst:	RR	Preparation Method:	E 3005A	Prep Batch:	PB02889	Date Prepared:	6/22/00

Param	Flag	Result	Units	Dilution	RDL
Dissolved Potassium		4.7	mg/L	1	0.50

Sample: 148481 - KWB-2R

Analysis:	PAH	Analytical Method:	S 8270C	QC Batch:	QC03400	Date Analyzed:	6/23/00
Analyst:	MA	Preparation Method:	E 3510C	Prep Batch:	PB02897	Date Prepared:	6/21/00

Param	Flag	Result	Units	Dilution	RDL
Naphthalene		0.282	mg/L	5	0.005
Acenaphthylene		<0.025	mg/L	5	0.005
Acenaphthene		<0.025	mg/L	5	0.005
Fluorene		<0.025	mg/L	5	0.005
Phenanthrene		<0.025	mg/L	5	0.005
Anthracene		<0.025	mg/L	5	0.005
Fluoranthene		<0.025	mg/L	5	0.005
Pyrene		<0.025	mg/L	5	0.005
Benzo(a)anthracene		<0.025	mg/L	5	0.005
Chrysene		<0.025	mg/L	5	0.005
Benzo(b)fluoranthene		<0.025	mg/L	5	0.005
Benzo(k)fluoranthene		<0.025	mg/L	5	0.005
Benzo(a)pyrene		<0.025	mg/L	5	0.005
Indeno(1,2,3-cd)pyrene		<0.025	mg/L	5	0.005
Dibenzo(a,h)anthracene		<0.025	mg/L	5	0.005
Benzo(g,h,i)perylene		<0.025	mg/L	5	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		51.06	mg/L	5	80	63	36 - 107
2-Fluorobiphenyl		57.17	mg/L	5	80	71	54 - 97
Terphenyl-d14		47.63	mg/L	5	80	59	0 - 113

Sample: 148481 - KWB-2R

Analysis:	TDS	Analytical Method:	E 160.1	QC Batch:	QC03401	Date Analyzed:	6/26/00
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB02933	Date Prepared:	6/23/00

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		2300	mg/L	1	10

Sample: 148481 - KWB-2R

Analysis:	pH	Analytical Method:	E 150.1	QC Batch:	QC03403	Date Analyzed:	6/21/00
Analyst:	RS	Preparation Method:	N/A	Prep Batch:	PB02930	Date Prepared:	6/21/00

Param	Flag	Result	Units	Dilution	RDL
pH	[2]	6.7	s.u.	1	1

Quality Control Report
Method Blank

Sample: Method Blank QCBatch: QC03359

Param	Flag	Results	Units	Reporting Limit
Dissolved Potassium		<1.0	mg/L	0.50

Sample: Method Blank QCBatch: QC03398

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<2.00	µg/L	2
Dichlorodifluoromethane		<2.00	µg/L	2
Chloromethane (methyl chloride)		<2.00	µg/L	2
Vinyl Chloride		<2.00	µg/L	2
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<2.00	µg/L	2
Trichlorofluoromethane		<2.00	µg/L	2
Acetone		<10.00	µg/L	10
Iodomethane (methyl iodide)		<2.00	µg/L	2
Carbon Disulfide		<2.00	µg/L	2
Acrylonitrile		<2.00	µg/L	2
2-Butanone (MEK)		<2.00	µg/L	2
4-methyl-2-pentanone (MIBK)		<10.00	µg/L	10
2-hexanone		<2.00	µg/L	2
trans 1,4-Dichloro-2-butene		<10.00	µg/L	10
1,1-Dichloroethene		<2.00	µg/L	2
Methylene chloride		<5.00	µg/L	5
MTBE		<2.00	µg/L	2
trans-1,2-Dichloroethene		<2.00	µg/L	2
1,1-Dichloroethane		<2.00	µg/L	2
cis-1,2-dichloroethene		<2.00	µg/L	2
2,2-Dichloropropane		<2.00	µg/L	2
1,2-Dichloroethane (EDC)		<2.00	µg/L	2
Chloroform		<2.00	µg/L	2

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[2]Out of holding time.

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Param	Flag	Results	Units	Reporting Limit
1,1,1-Trichloroethane		<2.00	µg/L	2
1,1-Dichloropropene		<2.00	µg/L	2
Benzene		<2.00	µg/L	2
Carbon Tetrachloride		<2.00	µg/L	2
1,2-Dichloropropane		<2.00	µg/L	2
Trichloroethene (TCE)		<2.00	µg/L	2
Dibromomethane (methylene bromide)		<2.00	µg/L	2
Bromodichloromethane		<2.00	µg/L	2
2-Chloroethyl vinyl ether		<10.00	µg/L	10
cis-1,3-Dichloropropene		<2.00	µg/L	2
trans-1,3-Dichloropropene		<2.00	µg/L	2
Toluene		<2.00	µg/L	2
1,1,2-Trichloroethane		<2.00	µg/L	2
1,3-Dichloropropane		<2.00	µg/L	2
Dibromochloromethane		<2.00	µg/L	2
1,2-Dibromoethane (EDB)		<2.00	µg/L	2
Tetrachloroethene (PCE)		<2.00	µg/L	2
Chlorobenzene		<2.00	µg/L	2
1,1,1,2-Tetrachloroethane		<2.00	µg/L	2
Ethylbenzene		<2.00	µg/L	2
m,p-Xylene		<2.00	µg/L	2
Bromoform		<2.00	µg/L	2
Styrene		<2.00	µg/L	2
o-Xylene		<2.00	µg/L	2
1,1,2,2-Tetrachloroethane		<2.00	µg/L	2
2-Chlorotoluene		<2.00	µg/L	2
1,2,3-Trichloropropane		<2.00	µg/L	2
Isopropylbenzene		<2.00	µg/L	2
Bromobenzene		<2.00	µg/L	2
n-Propylbenzene		<2.00	µg/L	2
1,3,5-Trimethylbenzene		<2.00	µg/L	2
tert-Butylbenzene		<2.00	µg/L	2
1,2,4-Trimethylbenzene		<2.00	µg/L	2
1,4-Dichlorobenzene (para)		<2.00	µg/L	2
sec-Butylbenzene		<2.00	µg/L	2
1,3-Dichlorobenzene		<2.00	µg/L	2
p-Isopropyltoluene		<2.00	µg/L	2
4-Chlorotoluene		<2.00	µg/L	2
1,2-Dichlorobenzene (ortho)		<2.00	µg/L	2
n-Butylbenzene		<2.00	µg/L	2
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<2.00	µg/L	2
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Spike Amount	Percent Recovery	Recovery Limit
Dibromofluoromethane		46.42	µg/L	50	92	84 - 116
Toluene-d8		47.62	µg/L	50	95	92 - 108

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Surrogate	Flag	Result	Units	Spike Amount	Percent Recovery	Recovery Limit
4-Bromofluorobenzene		47.64	µg/L	50	95	80 - 110

Sample: Method Blank

QCBatch: QC03400

Param	Flag	Results	Units	Reporting Limit
Naphthalene		<0.005	mg/L	0.005
Acenaphthylene		<0.005	mg/L	0.005
Acenaphthene		<0.005	mg/L	0.005
Fluorene		<0.005	mg/L	0.005
Phenanthrene		<0.005	mg/L	0.005
Anthracene		<0.005	mg/L	0.005
Fluoranthene		<0.005	mg/L	0.005
Pyrene		<0.005	mg/L	0.005
Benzo(a)anthracene		<0.005	mg/L	0.005
Chrysene		<0.005	mg/L	0.005
Benzo(b)fluoranthene		<0.005	mg/L	0.005
Benzo(k)fluoranthene		<0.005	mg/L	0.005
Benzo(a)pyrene		<0.005	mg/L	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	0.005

Surrogate	Flag	Result	Units	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5		79.23	mg/L	80	99	36 - 107
2-Fluorobiphenyl		77.38	mg/L	80	96	54 - 97
Terphenyl-d14		48.47	mg/L	80	60	0 - 113

Sample: Method Blank

QCBatch: QC03401

Param	Flag	Results	Units	Reporting Limit
Total Dissolved Solids		<10	mg/L	10

Sample: Method Blank

QCBatch: QC03440

Param	Flag	Results	Units	Reporting Limit
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1
Bicarbonate Alkalinity		<2.0	mg/L as CaCo3	1
Total Alkalinity		<2.0	mg/L as CaCo3	1

Sample: Method Blank QCBatch: QC03441

Param	Flag	Results	Units	Reporting Limit
Specific Conductance		5.1	uMHOS/cm	

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Sample: LCS QC Batch: QC03359

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Dissolved Potassium		100	mg/L	1	100	<1.0	100		75 - 125	20

Sample: LCSD QC Batch: QC03359

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Dissolved Potassium		105	mg/L	1	100	<1.0	105	5	75 - 125	20

Sample: LCS QC Batch: QC03398

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
1,1-Dichloroethene		98	µg/L	1	100	<2.00	98		73 - 154	20
Benzene		99	µg/L	1	100	<2.00	99		84 - 126	20
Trichloroethene (TCE)		102	µg/L	1	100	<2.00	102		82 - 123	20
Toluene		98	µg/L	1	100	<2.00	98		81 - 122	20
Chlorobenzene		99	µg/L	1	100	<2.00	99		86 - 121	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
Dibromofluoromethane		46.23	µg/L	1	50	92	84 - 116
Toluene-d8		47.39	µg/L	1	50	94	92 - 108
4-Bromofluorobenzene		48.33	µg/L	1	50	96	80 - 110

Sample: LCSD QC Batch: QC03398

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
1,1-Dichloroethene		101	µg/L	1	100	<2.00	101	3	73 - 154	20
Benzene		102	µg/L	1	100	<2.00	102	3	84 - 126	20
Trichloroethene (TCE)		105	µg/L	1	100	<2.00	105	3	82 - 123	20
Toluene		102	µg/L	1	100	<2.00	102	4	81 - 122	20
Chlorobenzene		102	µg/L	1	100	<2.00	102	3	86 - 121	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
Dibromofluoromethane		46.40	µg/L	1	50	92	84 - 116
Toluene-d8		47.36	µg/L	1	50	94	92 - 108
4-Bromofluorobenzene		48.02	µg/L	1	50	96	80 - 110

Sample: LCS

QC Batch: QC03400

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Naphthalene		48.435	mg/L	1	80	<0.005	60		36 - 100	20
Acenaphthylene		56.958	mg/L	1	80	<0.005	71		56 - 105	20
Acenaphthene		54.760	mg/L	1	80	<0.005	68		60 - 99	20
Fluorene		55.579	mg/L	1	80	<0.005	69		57 - 109	20
Phenanthrene		55.690	mg/L	1	80	<0.005	69		54 - 112	20
Anthracene		53.672	mg/L	1	80	<0.005	67		52 - 110	20
Fluoranthene		50.641	mg/L	1	80	<0.005	63		53 - 117	20
Pyrene		53.964	mg/L	1	80	<0.005	67		42 - 114	20
Benzo(a)anthracene		54.369	mg/L	1	80	<0.005	67		55 - 107	20
Chrysene		73.180	mg/L	1	80	<0.005	91		0 - 149	20
Benzo(b)fluoranthene		51.820	mg/L	1	80	<0.005	64		49 - 113	20
Benzo(k)fluoranthene		55.230	mg/L	1	80	<0.005	69		39 - 135	20
Benzo(a)pyrene		57.666	mg/L	1	80	<0.005	72		50 - 118	20
Indeno(1,2,3-cd)pyrene		56.115	mg/L	1	80	<0.005	70		29 - 120	20
Dibenzo(a,h)anthracene		64.177	mg/L	1	80	<0.005	80		0 - 165	20
Benzo(g,h,i)perylene		55.629	mg/L	1	80	<0.005	69		39 - 121	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
Nitrobenzene-d5		56.03	mg/L	1	80	70	36 - 107
2-Fluorobiphenyl		56.72	mg/L	1	80	70	54 - 97
Terphenyl-d14		32.61	mg/L	1	80	40	0 - 113

Sample: LCSD

QC Batch: QC03400

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Naphthalene		46.218	mg/L	1	80	<0.005	57	5	36 - 100	20
Acenaphthylene		55.699	mg/L	1	80	<0.005	69	2	56 - 105	20
Acenaphthene		54.638	mg/L	1	80	<0.005	68	0	60 - 99	20
Fluorene		57.246	mg/L	1	80	<0.005	71	3	57 - 109	20
Phenanthrene		60.245	mg/L	1	80	<0.005	75	8	54 - 112	20
Anthracene		60.149	mg/L	1	80	<0.005	75	11	52 - 110	20
Fluoranthene		58.794	mg/L	1	80	<0.005	73	15	53 - 117	20
Pyrene		57.438	mg/L	1	80	<0.005	71	6	42 - 114	20
Benzo(a)anthracene		61.026	mg/L	1	80	<0.005	76	12	55 - 107	20
Chrysene		83.741	mg/L	1	80	<0.005	104	13	0 - 149	20
Benzo(b)fluoranthene		56.627	mg/L	1	80	<0.005	70	9	49 - 113	20
Benzo(k)fluoranthene		61.546	mg/L	1	80	<0.005	76	11	39 - 135	20
Benzo(a)pyrene		62.206	mg/L	1	80	<0.005	77	8	50 - 118	20
Indeno(1,2,3-cd)pyrene		60.073	mg/L	1	80	<0.005	75	7	29 - 120	20
Dibenzo(a,h)anthracene		70.355	mg/L	1	80	<0.005	87	9	0 - 165	20
Benzo(g,h,i)perylene		59.083	mg/L	1	80	<0.005	73	6	39 - 121	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
Nitrobenzene-d5		53.54	mg/L	1	80	66	36 - 107
2-Fluorobiphenyl		55.63	mg/L	1	80	69	54 - 97
Terphenyl-d14		35.99	mg/L	1	80	44	0 - 113

Quality Control Report
Matrix Spikes and Duplicate Spikes

Sample: MS QC Batch: QC03359

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Dissolved Potassium		1055	mg/L	1	1000	4.7	105		75 - 125	20

Sample: MSD QC Batch: QC03359

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Dissolved Potassium		1030	mg/L	1	1000	4.7	102	2	75 - 125	20

Quality Control Report

Duplicate Samples

Sample: Duplicate QC Batch: QC03401

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		1178	1200	mg/L	1	2	20

Sample: Duplicate QC Batch: QC03403

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		9.1	9.1	s.u.	1	0	20

Sample: Duplicate QC Batch: QC03440

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	20
Carbonate Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	20
Bicarbonate Alkalinity		762	792	mg/L as CaCo3	1	4	20
Total Alkalinity		762	792	mg/L as CaCo3	1	4	20

Sample: Duplicate QC Batch: QC03441

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance		3.53	3.5	uMHOS/cm	1	1	20

Quality Control Report
Continuing Calibration Verification Standards

Sample: CCV (1) QC Batch: QC03359

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Potassium		mg/L	10	9.5	95	75 - 125	6/22/00

Sample: ICV (1)

QC Batch: QC03359

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Potassium		mg/L	10	9.7	97	75 - 125	6/22/00

Sample: CCV (1)

QC Batch: QC03398

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	100	95	95	80 - 120	6/22/00
1,1-Dichloroethene		µg/L	100	99	99	73 - 154	6/22/00
Chloroform		µg/L	100	93	93	80 - 120	6/22/00
1,2-Dichloropropane		µg/L	100	99	99	80 - 120	6/22/00
Toluene		µg/L	100	101	101	81 - 122	6/22/00
Chlorobenzene		µg/L	100	98	98	86 - 121	6/22/00
Ethylbenzene		µg/L	100	99	99	80 - 120	6/22/00
Dibromofluoromethane		µg/L	50	46.97	93	80 - 120	6/22/00
Toluene-d8		µg/L	50	46.82	93	80 - 120	6/22/00
4-Bromofluorobenzene		µg/L	50	51.00	102	80 - 120	6/22/00

Sample: CCV (1)

QC Batch: QC03400

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		mg/L	60	59.62	99	36 - 100	6/23/00
Acenaphthylene		mg/L	60	60.11	100	56 - 105	6/23/00
Acenaphthene		mg/L	60	59.90	99	60 - 99	6/23/00
Fluorene		mg/L	60	58.96	98	57 - 109	6/23/00
Phenanthrene		mg/L	60	58.52	97	54 - 112	6/23/00
Anthracene		mg/L	60	58.83	98	52 - 110	6/23/00
Fluoranthene		mg/L	60	55.18	91	53 - 117	6/23/00
Pyrene		mg/L	60	57.59	95	42 - 114	6/23/00
Benzo(a)anthracene		mg/L	60	57.74	96	55 - 107	6/23/00
Chrysene		mg/L	60	57.72	96	0 - 149	6/23/00
Benzo(b)fluoranthene		mg/L	60	56.55	94	49 - 113	6/23/00
Benzo(k)fluoranthene		mg/L	60	62.99	104	39 - 135	6/23/00
Benzo(a)pyrene		mg/L	60	60.77	101	50 - 118	6/23/00
Indeno(1,2,3-cd)pyrene		mg/L	60	58.38	97	29 - 120	6/23/00
Dibenzo(a,h)anthracene		mg/L	60	58.37	97	0 - 165	6/23/00
Benzo(g,h,i)perylene		mg/L	60	60.46	100	39 - 121	6/23/00
Nitrobenzene-d5		mg/L	60	57.16	95	36 - 107	6/23/00
2-Fluorobiphenyl		mg/L	60	58.77	97	54 - 97	6/23/00
Terphenyl-d14		mg/L	60	55.99	93	0 - 113	6/23/00

Sample: CCV (1) QC Batch: QC03401

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	979	97	80 - 120	6/26/00

Sample: ICV (1) QC Batch: QC03401

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	956	95	80 - 120	6/26/00

Sample: CCV (1) QC Batch: QC03403

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	80 - 120	6/21/00

Sample: ICV (1) QC Batch: QC03403

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	80 - 120	6/21/00

Sample: CCV (1) QC Batch: QC03440

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	80 - 120	6/27/00
Carbonate Alkalinity		mg/L as CaCo3	0	228	0	80 - 120	6/27/00
Bicarbonate Alkalinity		mg/L as CaCo3	0	14	0	80 - 120	6/27/00
Total Alkalinity		mg/L as CaCo3	250	242	96	80 - 120	6/27/00

Sample: ICV (1) QC Batch: QC03440

Continued ...

... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	80 - 120	6/27/00
Carbonate Alkalinity		mg/L as CaCo3	0	234	0	80 - 120	6/27/00
Bicarbonate Alkalinity		mg/L as CaCo3	0	9	0	80 - 120	6/27/00
Total Alkalinity		mg/L as CaCo3	250	243	97	80 - 120	6/27/00

Sample: CCV (1)

QC Batch: QC03441

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		uMHOS/cm	1413	1401	99	80 - 120	6/27/00

Sample: ICV (1)

QC Batch: QC03441

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		uMHOS/cm	1413	1409	99	80 - 120	6/27/00

148479-81

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1 (800) 378-1296

TraceAnalysis, Inc.

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El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS

LAB Order ID # A0006210

Company Name: Navajo Refining Co. Phone #: (505) 748-3311

Address: (Street, City, Zip) P.O. Box 159 Artesia NM 88211 Fax #: 748-9077

Contact Person: David Boyer (505) 281-8591

Invoice to: (If different from above) Darrell Moore NRC (~~Quarterly~~ See Annual List)

Project #: Artesia - Monitor Well Replacement Project Name:

Project Location: KWB-2R Sampler Signature: D.L. Boyer

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	NaHSO4	H2SO4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
148479	KWB-2R 25'	1			X								X		6/19	1215
80	KWB-2R 38'	1			X								X		6/19	1335
81	KWB-2R	5 OH		X					X	X			X		6/19	1515

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
	X									X	X			X		
	X															
										X	X			X		

CANCEL per D. Boyer

Full List PAH

(Dissolved metals - Samples Filtered by Trace Analysis)

NM WQCC Metals + Cations, Anions, TDS, Alkalinity

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
D.L. Boyer	6/20/00	1535			
	6/20/00	16:15			
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
			Vicki Hensley	6-21-00	9:00 am

LAB USE ONLY

Intact Y N

Headspace Y N

Temp 2 °

Log-in Review MS

REMARKS: Copy of Results to Dave Boyer. See Navajo Annual list for metals. Please FILTER Metals before digestion

Carrier # Fed Ex 288-2428-1415

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

TELEPHONE
(505) 748-3311

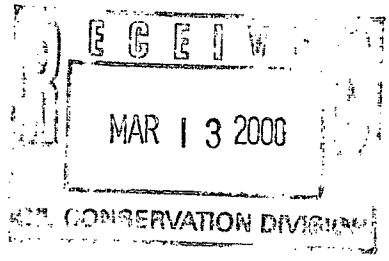
EASYLINK
62905278

NAVAJO REFINING COMPANY

501 EAST MAIN STREET ° P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

FAX
(505) 746-6410 ACCTG
(505) 746-6155 EXEC
(505) 748-9077 ENGR
(505) 746-4438 P / L

March 9, 2000



Mr. Wayne Price
Environmental Bureau
Oil Conservation Division
2040 S. Pacheco St.
Santa Fe, NM 87505-5472

RE: TK 112 Hydrotest Water, Navajo Refining Co.

Dear Wayne,

In late February, 2000, Navajo Refining performed repairs on a gasoline tank at our Artesia refinery that we call Tk 112. A new floor was added along with new valving. The inside of the tank was then sand blasted up to about 10 feet from the floor. In the past, this tank has held leaded gasoline although that was several years ago. More recently, it has been in naphtha service.

After the repairs were finished, we filled the tank up with 25,000 bbls. of well water and caught samples. Those results are enclosed. As you will see we busted for several WQCC parameters. The water from this tank was then discharged to our in-plant sewer system with final disposal into our Class I injection wells.

You brought up the suggestion that we should make a minor modification to our Discharge Permit to cover scenarios like this for the future. We would like to request that modification be made to both Navajo's Discharge Permit GW-28 and Lea Refining's Discharge Permit GW-14 since the same thing will happen there.

If there are any questions concerning this matter, please call me at 505-748-3311. Thank you for your attention to this matter.

Regards,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Environmental Mgr. for Water and Waste

encl.

(file: OCD Navajo Discharge Plan)

Cation-Anion Balance Sheet

Sample # 139541 Date: 2/4/00

Cations

	ppm	meq/L
Calcium	191	9.5309
Magnesium	58	4.77282
Sodium	19	0.8265
Potassium	2.7	0.069066

Total Cations 15.1993 in meq/L

Anions

	ppm	meq/L
Alkalinity	186	3.72
Sulfate	460	9.5772
Chloride	24	0.67704
Nitrate as N	2.8	0.199892
Fluoride	2.5	0.1316

Total Anions 14.3057 in meq/L

Percentage Error
6.05696 %
(needs to be <10%)

OTHER INFORMATION

TDS	906
EC	1200

Measure EC and Cation Sums	1519.9286	Range should be:	1080	to	1320
Measure EC and Anion Sums	1430.5732	Range should be:	1080	to	1320
Calculated TDS/Conductivity	0.755	Range should be:	0.55	to	0.77
Measure TDS and Cation Sums	0.5960806	Range should be:	0.55	to	0.77
Measure TDS and Anion Sums	0.6333126	Range should be:	0.55	to	0.77

TRACEANALYSIS, INC.

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4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

February 4, 2000
Receiving Date: 01/28/00
Sample Type: Water
Project No: N/A
Project Loc: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO REFINING CO.
Attention: Darrell Moore
501 E. Main Street
Artesia, NM 88210

Prep Date: 01/29/00
Analysis Date: 01/29/00
Sampling Date: 01/27/00
Sample Condition: I & C
Sample Received by: VW
Project Name: N/A

FIELD CODE: TK 112 Hydrotest
TA #: T139541

8260 Compounds	Reporting Limit (ug/L)	Concentration (ug/L)	QC	RPD	EA	IA
Dichlorodifluoromethane	2	ND				
Chloromethane	2	ND				
Vinyl chloride	2	ND	101			101
Bromomethane	5	ND				
Chloroethane	2	ND				
Trichlorofluoromethane	2	ND				
1,1-Dichloroethene	2	ND	99	1	86	99
Methylene chloride	5	ND				
trans-1,2-Dichloroethene	2	ND				
1,1-Dichloroethane	2	ND				
cis-1,2-Dichloroethene	2	ND				
Chloroform	2	ND	97			97
2,2-Dichloropropane	2	ND				
Bromochloromethane	2	ND				
1,2-Dichloroethane	2	ND				
1,1,1-Trichloroethane	2	ND				
Carbon Tetrachloride	2	ND				
1,1-Dichloropropene	2	ND				
Benzene	2	ND		1	96	
1,2-Dichloropropane	2	ND	100			100
Trichloroethene	2	ND		2	80	
Dibromomethane	2	ND				
Bromodichloromethane	2	ND				
cis-1,3-Dichloropropene	2	ND				
trans-1,3-Dichloropropene	2	ND				
Toluene	2	3.40	101	1	96	101
1,1,2-Trichloroethane	2	ND				
1,3-Dichloropropane	2	ND				
MTBE	2	ND				
Dibromochloromethane	2	ND				
1,2-Dibromoethane	2	ND				
Tetrachloroethene	2	ND				
Chlorobenzene	2	ND	100	0	99	100

FIELD CODE: TK 112 Hydrotest
TA #: T139541

8260 Compounds	Reporting Limit (ug/L)	Concentration (ug/L)	QC	RPD	EA	IA
1,1,1,2-Tertachloroethane	2	ND				
Ethylbenzene	2	ND	105			105
m & p-Xylene	2	ND				
Bromoform	2	ND				
Styrene	2	ND				
o-Xylene	2	ND				
1,1,2,2-Tetrachloroethane	2	ND				
1,2,3-Trichloropropane	2	ND				
Isopropylbenzene	2	ND				
Bromobenzene	2	ND				
2-Chlorotoluene	2	ND				
n-Propylbenzene	2	ND				
4-Chlorotoluene	2	ND				
1,3,5-Trimethylbenzene	2	ND				
tert-Butylbenzene	2	ND				
1,2,4-Trimethylbenzene	2	ND				
1,4-Dichlorobenzene	2	ND				
sec-Butylbenzene	2	ND				
1,3-Dichlorobenzene	2	ND				
4-Isopropyltoluene	2	ND				
1,2-Dichlorobenzene	2	ND				
n-Butylbenzene	2	ND				
1,2-Dibromo-3-chloropropane	5	ND				
1,2,3-Trichlorobenzene	5	ND				
Naphthalene	2	ND				
1,2,4-Trichlorobenzene	5	ND				
Hexachlorobutadiene	5	ND				
Acetone	10	ND				
Iodomethane	10	ND				
Carbon Disulfide	2	ND				
Acrylonitrile	10	ND				
2-Buranone	2	ND				
4-Methyl-2-Pentanone	2	ND				
2-Hexanone	10	ND				
trans-1,4-Dichloro-2-butene	20	ND				
Vinyl Acetate	20	ND				

	% Recovery
Dibromofluoromethane	102
Toluene-d8	102
4-Bromofluorobenzene	90

ND = Not Detected
Methods: EPA SW 846-5035, 8260B
CHEMIST: JG

Director, Dr. Blair Leftwich

02/04/02
Date

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Bryan Madrid
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 2/4/00

Project Number: N/A
Project Name: N/A
Project Location: N/A

Order ID Number: A00012823

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
139541	TK 112 Hydrotest	Water	1/27/00	15:00	1/28/00

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 14 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 139541
Description: TK 112 Hydrotest

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	2/2/00	2/2/00	JS	PB00544	QC00695	1
Carbonate Alkalinity	<1.0	1	E 310.1	2/2/00	2/2/00	JS	PB00544	QC00695	1
Bicarbonate Alkalinity	186	1	E 310.1	2/2/00	2/2/00	JS	PB00544	QC00695	1
Total Alkalinity	186	1	E 310.1	2/2/00	2/2/00	JS	PB00544	QC00695	1
BOD5 (mg/L)									
Biological Oxygen Demand	<7.5	1	SM 5210B	1/28/00	2/2/00	RS	PB00524	QC00669	
COD (mg/L)									
Chemical Oxygen Demand	<20	1	E 410.4	2/2/00	2/2/00	JS	PB00543	QC00694	20
Conductivity (uMHOS/cm)									
Specific Conductance	1200	1	SM 2510B	2/2/00	2/2/00	JS	PB00545	QC00696	
Dissolved Metals (mg/L)									
Dissolved Calcium	191	1	E 200.7	2/1/00	2/1/00	RR	PB00572	QC00728	0.5
Dissolved Magnesium	58	1	E 200.7	2/1/00	2/1/00	RR	PB00572	QC00728	0.5
Dissolved Potassium	2.7	1	E 200.7	2/1/00	2/1/00	RR	PB00572	QC00728	0.5
Dissolved Sodium	19	1	E 200.7	2/1/00	2/1/00	RR	PB00572	QC00728	0.5
Hg, Total (mg/L)									
Total Mercury	<0.0002	1	S 7470A	2/1/00	2/1/00	BP	PB00573	QC00729	0.0002
Ion Chromatography (IC) (mg/L)									
CL	24	1	E 300.0	1/28/00	1/29/00	BGW	PB00575	QC00730	0.5
Fluoride	2.5	1	E 300.0	1/28/00	1/29/00	BGW	PB00575	QC00730	0.1
Nitrate-N	2.8	1	E 300.0	1/28/00	1/29/00	BGW	PB00575	QC00730	0.2
Sulfate	460	1	E 300.0	1/28/00	1/29/00	BGW	PB00575	QC00730	0.5
PAH (mg/L)									
Naphthalene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Acenaphthylene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Acenaphthene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Fluorene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Phenanthrene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Anthracene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Fluoranthene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Pyrene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Benzo(a)anthracene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Chrysene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Benzo(b)fluoranthene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Benzo(k)fluoranthene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Benzo(a)pyrene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Dibenzo(a,h)anthracene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005
Benzo(g,h,i)perylene	<0.005	1	S 8270C	1/31/00	1/31/00	LK	PB00496	QC00663	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #	
Nitrobenzene-d5	64.61	1	80	81	34 - 130	LK	PB00496	QC00663	
2-Fluorobiphenyl	66.81	1	80	84	38 - 128	LK	PB00496	QC00663	
Terphenyl-d14	60.35	1	80	75	0 - 145	LK	PB00496	QC00663	
pH (s.u.)									
pH	7.4	1	E 150.1	1/28/00	1/28/00	RS	PB00522	QC00672	1
TDS (mg/L)									
Total Dissolved Solids	906	1	E 160.1	2/1/00	2/2/00	RS	PB00540	QC00691	10
Total Cyanide (mg/L)									
Total Cyanide	* <0.01	1	4500-CN C	2/1/00	2/1/00	RS	PB00526	QC00667	0.01
* Total Cyanide - sample was not preserved with NaOH									
Total Metals (mg/L)									
Total Aluminum	0.83	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.05
Total Arsenic	0.75	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.1
Total Barium	<0.10	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.1
Total Beryllium	<0.01	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.01
Total Boron	<0.50	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.5
Total Cadmium	<0.01	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.01
Total Chromium	0.05	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.05
Total Cobalt	<0.05	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.05
Total Copper	0.21	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.1
Total Iron	71	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.1
Total Lead	0.11	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.005
Total Manganese	0.42	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.1
Total Molybdenum	<0.10	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.1
Total Nickel	<0.10	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.1
Total Selenium	<0.01	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.01
Total Uranium	<1.0	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	1
Total Vanadium	<0.10	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.1
Total Zinc	0.18	1	S 6010B	2/1/00	2/3/00	RR	PB00568	QC00733	0.1
TSS (mg/L)									
Total Suspended Solids	9.0	1	E 160.2	2/1/00	2/2/00	RS	PB00523	QC00671	1

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Hydroxide Alkalinity (mg/L as CaCo3)		<1.0	1	2/2/00	PB00544	QC00695
Carbonate Alkalinity (mg/L as CaCo3)		<1.0	1	2/2/00	PB00544	QC00695
Bicarbonate Alkalinity (mg/L as CaCo3)		<4.0	1	2/2/00	PB00544	QC00695
Total Alkalinity (mg/L as CaCo3)		<4.0	1	2/2/00	PB00544	QC00695

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Biological Oxygen Demand (mg/L)		0.16		2/2/00	PB00524	QC00669

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Chemical Oxygen Demand (mg/L)		<20	20	2/2/00	PB00543	QC00694

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Specific Conductance (uMHOS/cm)		2.7		2/2/00	PB00545	QC00696

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Dissolved Calcium (mg/L)		<0.50	0.5	2/1/00	PB00572	QC00728
Dissolved Magnesium (mg/L)		<0.50	0.5	2/1/00	PB00572	QC00728
Dissolved Potassium (mg/L)		<0.50	0.5	2/1/00	PB00572	QC00728
Dissolved Sodium (mg/L)		<0.50	0.5	2/1/00	PB00572	QC00728

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Total Mercury (mg/L)		<0.0002	0.0002	2/1/00	PB00573	QC00729

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
CL (mg/L)		<0.5	0.5	1/29/00	PB00575	QC00730
Fluoride (mg/L)		<0.1	0.1	1/29/00	PB00575	QC00730
Nitrate-N (mg/L)		<0.2	0.2	1/29/00	PB00575	QC00730
Sulfate (mg/L)		<0.5	0.5	1/29/00	PB00575	QC00730

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Naphthalene (mg/L)		<0.005	0.005	1/31/00	PB00496	QC00663
Acenaphthylene (mg/L)		<0.005	0.005	1/31/00	PB00496	QC00663
Acenaphthene (mg/L)		<0.005	0.005	1/31/00	PB00496	QC00663
Fluorene (mg/L)		<0.005	0.005	1/31/00	PB00496	QC00663
Phenanthrene (mg/L)		<0.005	0.005	1/31/00	PB00496	QC00663

N/A N/A N/A

Anthracene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663
Fluoranthene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663
Pyrene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663
Benzo(a)anthracene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663
Chrysene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663
Benzo(b)fluoranthene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663
Benzo(k)fluoranthene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663
Benzo(a)pyrene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663
Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663
Dibenzo(a,h)anthracene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663
Benzo(g,h,i)perylene (mg/L)	<0.005	0.005	1/31/00	PB00496	QC00663

Surrogate	Result	Spike Amount	% Rec.	% Rec. Limit	QC Batch #
Nitrobenzene-d5 (mg/L)	63.18	80	79	34 - 130	QC00663
2-Fluorobiphenyl (mg/L)	64.71	80	81	38 - 128	QC00663
Terphenyl-d14 (mg/L)	43.77	80	55	0 - 145	QC00663

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Total Dissolved Solids (mg/L)		10	10	2/2/00	PB00540	QC00691

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Total Cyanide (mg/L)		<0.01	0.01	2/1/00	PB00526	QC00667

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Total Arsenic (mg/L)		<0.05	0.1	2/3/00	PB00568	QC00733
Total Barium (mg/L)		<0.10	0.1	2/3/00	PB00568	QC00733
Total Beryllium (mg/L)		<0.01	0.01	2/3/00	PB00568	QC00733
Total Boron (mg/L)		<0.50	0.5	2/3/00	PB00568	QC00733
Total Cadmium (mg/L)		<0.01	0.01	2/3/00	PB00568	QC00733
Total Chromium (mg/L)		<0.05	0.05	2/3/00	PB00568	QC00733
Total Cobalt (mg/L)		<0.05	0.05	2/3/00	PB00568	QC00733
Total Copper (mg/L)		<0.10	0.1	2/3/00	PB00568	QC00733
Total Iron (mg/L)		<0.10	0.1	2/3/00	PB00568	QC00733
Total Lead (mg/L)		<0.005	0.005	2/3/00	PB00568	QC00733
Total Manganese (mg/L)		<0.10	0.1	2/3/00	PB00568	QC00733
Total Molybdenum (mg/L)		<0.10	0.1	2/3/00	PB00568	QC00733
Total Nickel (mg/L)		<0.10	0.1	2/3/00	PB00568	QC00733
Total Selenium (mg/L)		<0.01	0.01	2/3/00	PB00568	QC00733
Total Uranium (mg/L)		<1.0	1	2/3/00	PB00568	QC00733
Total Vanadium (mg/L)		<0.10	0.1	2/3/00	PB00568	QC00733
Total Zinc (mg/L)		<0.10	0.1	2/3/00	PB00568	QC00733

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Total Suspended Solids (mg/L)		<1.0	1	2/2/00	PB00523	QC00671

Quality Control Report
Matrix Spike and Matrix Duplicate Spike

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	Total Cyanide (mg/L)	0.419	1	0.48	0.794	78		80 - 120	0 - 20	QC00667
MSD	Total Cyanide (mg/L)	0.419	1	0.48	0.788	77	2	80 - 120	0 - 20	QC00667

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	Chemical Oxygen Demand (mg/L	<20	1	250	242	97		80 - 120	0 - 20	QC00694
MSD	Chemical Oxygen Demand (mg/L	<20	1	250	242	97	0	80 - 120	0 - 20	QC00694

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	Dissolved Calcium (mg/L)	351	1	1000	1414	106		75 - 125	0 - 20	QC00728
MS	Dissolved Magnesium (mg/L)	222	1	1000	1298	108		75 - 125	0 - 20	QC00728
MS	Dissolved Potassium (mg/L)	25	1	1000	1069	104		75 - 125	0 - 20	QC00728
MS	Dissolved Sodium (mg/L)	90	1	1000	1113	102		75 - 125	0 - 20	QC00728
MSD	Dissolved Calcium (mg/L)	351	1	1000	1415	106	0	75 - 125	0 - 20	QC00728
MSD	Dissolved Magnesium (mg/L)	222	1	1000	1307	109	1	75 - 125	0 - 20	QC00728
MSD	Dissolved Potassium (mg/L)	25	1	1000	1073	105	0	75 - 125	0 - 20	QC00728
MSD	Dissolved Sodium (mg/L)	90	1	1000	1125	103	1	75 - 125	0 - 20	QC00728

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	Total Mercury (mg/L)	<0.0002	1	0.001	0.00091	91		80 - 120	0 - 20	QC00729
MSD	Total Mercury (mg/L)	<0.0002	1	0.001	0.00095	95	4	80 - 120	0 - 20	QC00729

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/L)	44	1	625	779.64	118		80 - 120	0 - 20	QC00730
MS	Fluoride (mg/L)	6.39	1	126	124.74	94		80 - 120	0 - 20	QC00730
MS	Nitrate-N (mg/L)	4.7	1	250	257.06	101		80 - 120	0 - 20	QC00730
MS	Sulfate (mg/L)	35	1	625	744.25	113		80 - 120	0 - 20	QC00730
MSD	CL (mg/L)	44	1	625	774.96	117	1	80 - 120	0 - 20	QC00730
MSD	Fluoride (mg/L)	6.39	1	125	125.93	95	1	80 - 120	0 - 20	QC00730
MSD	Nitrate-N (mg/L)	4.7	1	250	255.90	100	0	80 - 120	0 - 20	QC00730

N/A				N/A						N/A
MSD	Sulfate (mg/L)	35	1	625	740.29	113	1	80 - 120	0 - 20	QC00730

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	Total Aluminum (mg/L)	<0.05	1	2	1.97	99		75 - 125	0 - 20	QC00733
MS	Total Arsenic (mg/L)	<0.10	1	2	1.94	97		75 - 125	0 - 20	QC00733
MS	Total Barium (mg/L)	0.11	1	2	2..01	95		75 - 125	0 - 20	QC00733
MS	Total Beryllium (mg/L)	<0.01	1	2	1.95	98		75 - 125	0 - 20	QC00733
MS	Total Boron (mg/L)	<0.50	1	2	2.10	105		75 - 125	0 - 20	QC00733
MS	Total Cadmium (mg/L)	<0.01	1	2	1.93	97		75 - 125	0 - 20	QC00733
MS	Total Chromium (mg/L)	<0.05	1	2	1.94	97		75 - 125	0 - 20	QC00733
MS	Total Cobalt (mg/L)	<0.05	1	2	1.91	96		75 - 125	0 - 20	QC00733
MS	Total Copper (mg/L)	<0.10	1	2	1.90	95		75 - 125	0 - 20	QC00733
MS	Total Iron (mg/L)	0.16	1	2	2.07	96		75 - 125	0 - 20	QC00733
MS	Total Lead (mg/L)	0.009	1	2	1.87	93		75 - 125	0 - 20	QC00733
MS	Total Manganese (mg/L)	<0.10	1	2	1.93	97		75 - 125	0 - 20	QC00733
MS	Total Molybdenum (mg/L)	<0.10	1	2	1.94	97		75 - 125	0 - 20	QC00733
MS	Total Nickel (mg/L)	<0.10	1	2	1.90	95		75 - 125	0 - 20	QC00733
MS	Total Selenium (mg/L)	<0.01	1	2	1.88	94		75 - 125	0 - 20	QC00733
MS	Total Uranium (mg/L)	<1.0	1	2	2.23	112		75 - 125	0 - 20	QC00733
MS	Total Vanadium (mg/L)	<0.10	1	2	1.95	98		75 - 125	0 - 20	QC00733
MS	Total Zinc (mg/L)	<0.10	1	2	1.91	96		75 - 125	0 - 20	QC00733
MSD	Total Aluminum (mg/L)	<0.05	1	2	1.95	98	1	75 - 125	0 - 20	QC00733
MSD	Total Arsenic (mg/L)	<0.10	1	2	1.91	96	2	75 - 125	0 - 20	QC00733
MSD	Total Barium (mg/L)	0.11	1	2	2.00	95	0	75 - 125	0 - 20	QC00733
MSD	Total Beryllium (mg/L)	<0.01	1	2	1.93	97	1	75 - 125	0 - 20	QC00733
MSD	Total Boron (mg/L)	<0.50	1	2	2.11	106	0	75 - 125	0 - 20	QC00733
MSD	Total Cadmium (mg/L)	<0.01	1	2	1.90	95	2	75 - 125	0 - 20	QC00733
MSD	Total Chromium (mg/L)	<0.05	1	2	1.92	96	1	75 - 125	0 - 20	QC00733
MSD	Total Cobalt (mg/L)	<0.05	1	2	1.92	96	1	75 - 125	0 - 20	QC00733
MSD	Total Copper (mg/L)	<0.10	1	2	1.90	95	0	75 - 125	0 - 20	QC00733
MSD	Total Iron (mg/L)	0.16	1	2	2.07	96	0	75 - 125	0 - 20	QC00733
MSD	Total Lead (mg/L)	0.009	1	2	1.87	93	0	75 - 125	0 - 20	QC00733
MSD	Total Manganese (mg/L)	<0.10	1	2	1.91	96	1	75 - 125	0 - 20	QC00733
MSD	Total Molybdenum (mg/L)	<0.10	1	2	1.93	97	1	75 - 125	0 - 20	QC00733
MSD	Total Nickel (mg/L)	<0.10	1	2	1.90	95	0	75 - 125	0 - 20	QC00733
MSD	Total Selenium (mg/L)	<0.01	1	2	1.88	94	0	75 - 125	0 - 20	QC00733
MSD	Total Uranium (mg/L)	<1.0	1	2	2.24	112	0	75 - 125	0 - 20	QC00733
MSD	Total Vanadium (mg/L)	<0.10	1	2	1.93	97	1	75 - 125	0 - 20	QC00733
MSD	Total Zinc (mg/L)	<0.10	1	2	1.92	96	1	75 - 125	0 - 20	QC00733

Quality Control Report
Duplicates

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Hydroxide Alkalinity (mg/L as CaCo		<1.0	<1.0	1	0	0 - 20	QC00695
Duplicate	Carbonate Alkalinity (mg/L as CaCo		<1.0	<1.0	1	0	0 - 20	QC00695
Duplicate	Bicarbonate Alkalinity (mg/L as CaC		186	186	1	0	0 - 20	QC00695
Duplicate	Total Alkalinity (mg/L as CaCo3)		186	186	1	0	0 - 20	QC00695

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Biological Oxygen Demand (mg/L)		<7.5	<7.5	1	0	0 - 20	QC00669

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Specific Conductance (uMHOS/cm)		5348	5200	1	3	0 - 20	QC00696

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	pH (s.u.)		8.4	8.4	1	0	0 - 20	QC00672

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Total Dissolved Solids (mg/L)		960	960	1	0	0 - 20	QC00691

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Total Suspended Solids (mg/L)		68	70	1	3	0 - 20	QC00671

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Biological Oxygen Demand (mg/L)	0.16	1	198	196	99		80 - 120	0 - 20	QC00669
LCSD	Biological Oxygen Demand (mg/L)	0.16	1	198	220	111	12	80 - 120	0 - 20	QC00669

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Dissolved Calcium (mg/L)	<0.50	1	1000	1005	100		75 - 125	0 - 20	QC00728
LCS	Dissolved Magnesium (mg/L)	<0.50	1	1000	996	100		75 - 125	0 - 20	QC00728
LCS	Dissolved Potassium (mg/L)	<0.50	1	1000	1022	102		75 - 125	0 - 20	QC00728
LCS	Dissolved Sodium (mg/L)	<0.50	1	1000	1004	100		75 - 125	0 - 20	QC00728
LCSD	Dissolved Calcium (mg/L)	<0.50	1	1000	1015	101	1	75 - 125	0 - 20	QC00728
LCSD	Dissolved Magnesium (mg/L)	<0.50	1	1000	1029	103	3	75 - 125	0 - 20	QC00728
LCSD	Dissolved Potassium (mg/L)	<0.50	1	1000	1045	105	2	75 - 125	0 - 20	QC00728
LCSD	Dissolved Sodium (mg/L)	<0.50	1	1000	1023	102	2	75 - 125	0 - 20	QC00728

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Total Mercury (mg/L)	<0.0002	1	0.001	0.0011	110		80 - 120	0 - 20	QC00729
LCSD	Total Mercury (mg/L)	<0.0002	1	0.001	0.0012	120	9	80 - 120	0 - 20	QC00729

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Naphthalene (mg/L)	<0.005	1	80	62.950	79		35 - 118	0 - 20	QC00663
LCS	Acenaphthylene (mg/L)	<0.005	1	80	73.935	92		38 - 139	0 - 20	QC00663
LCS	Acenaphthene (mg/L)	<0.005	1	80	70.400	88		46 - 126	0 - 20	QC00663
LCS	Fluorene (mg/L)	<0.005	1	80	79.470	99		44 - 136	0 - 20	QC00663
LCS	Phenanthrene (mg/L)	<0.005	1	80	81.209	102		45 - 132	0 - 20	QC00663
LCS	Anthracene (mg/L)	<0.005	1	80	77.563	97		45 - 132	0 - 20	QC00663
LCS	Fluoranthene (mg/L)	<0.005	1	80	80.687	101		42 - 144	0 - 20	QC00663
LCS	Pyrene (mg/L)	<0.005	1	80	66.811	84		18 - 163	0 - 20	QC00663
LCS	Benzo(a)anthracene (mg/L)	<0.005	1	80	70.780	88		44 - 135	0 - 20	QC00663
LCS	Chrysene (mg/L)	<0.005	1	80	38.450	48		9 - 171	0 - 20	QC00663
LCS	Benzo(b)fluoranthene (mg/L)	<0.005	1	80	69.148	86		37 - 114	0 - 20	QC00663
LCS	Benzo(k)fluoranthene (mg/L)	<0.005	1	80	64.911	81		34 - 128	0 - 20	QC00663
LCS	Benzo(a)pyrene (mg/L)	<0.005	1	80	66.956	84		42 - 120	0 - 20	QC00663
LCS	Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	1	80	58.300	73		30 - 130	0 - 20	QC00663

N/A N/A N/A

LCS	Dibenzo(a,h)anthracene (mg/L)	<0.005	1	80	33.891	42		6 - 162	0 - 20	QC00663
LCS	Benzo(g,h,i)perylene (mg/L)	<0.005	1	80	63.907	80		39 - 118	0 - 20	QC00663

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	Nitrobenzene-d5 (mg/L)	1	80	66.96	84	34 - 130	QC00663
LCS	2-Fluorobiphenyl (mg/L)	1	80	67.24	84	38 - 128	QC00663
LCS	Terphenyl-d14 (mg/L)	1	80	36.51	46	0 - 145	QC00663

LCSD	Naphthalene (mg/L)	<0.005	1	80	65.360	82	4	35 - 118	0 - 20	QC00663
LCSD	Acenaphthylene (mg/L)	<0.005	1	80	75.103	94	2	38 - 139	0 - 20	QC00663
LCSD	Acenaphthene (mg/L)	<0.005	1	80	71.701	90	2	46 - 126	0 - 20	QC00663
LCSD	Fluorene (mg/L)	<0.005	1	80	77.983	97	2	44 - 136	0 - 20	QC00663
LCSD	Phenanthrene (mg/L)	<0.005	1	80	79.088	99	3	45 - 132	0 - 20	QC00663
LCSD	Anthracene (mg/L)	<0.005	1	80	74.780	93	4	45 - 132	0 - 20	QC00663
LCSD	Fluoranthene (mg/L)	<0.005	1	80	80.523	101	0	42 - 144	0 - 20	QC00663
LCSD	Pyrene (mg/L)	<0.005	1	80	67.535	84	1	18 - 163	0 - 20	QC00663
LCSD	Benzo(a)anthracene (mg/L)	<0.005	1	80	70.782	88	0	44 - 135	0 - 20	QC00663
LCSD	Chrysene (mg/L)	<0.005	1	80	37.956	47	1	9 - 171	0 - 20	QC00663
LCSD	Benzo(b)fluoranthene (mg/L)	<0.005	1	80	67.643	85	0	37 - 114	0 - 20	QC00663
LCSD	Benzo(k)fluoranthene (mg/L)	<0.005	1	80	61.551	77	4	34 - 128	0 - 20	QC00663
LCSD	Benzo(a)pyrene (mg/L)	<0.005	1	80	66.026	83	1	42 - 120	0 - 20	QC00663
LCSD	Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	1	80	62.928	79	3	30 - 130	0 - 20	QC00663
LCSD	Dibenzo(a,h)anthracene (mg/L)	<0.005	1	80	35.843	45	2	6 - 162	0 - 20	QC00663
LCSD	Benzo(g,h,i)perylene (mg/L)	<0.005	1	80	65.052	81	0	39 - 118	0 - 20	QC00663

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	Nitrobenzene-d5 (mg/L)	1	80	66.62	83	34 - 130	QC00663
LCSD	2-Fluorobiphenyl (mg/L)	1	80	67.53	84	38 - 128	QC00663
LCSD	Terphenyl-d14 (mg/L)	1	80	46.31	58	0 - 145	QC00663

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Total Aluminum (mg/L)		1	2	2.16	108		75 - 125	0 - 20	QC00733
LCS	Total Arsenic (mg/L)	<0.05	1	2	2.10	105		75 - 125	0 - 20	QC00733
LCS	Total Barium (mg/L)	<0.10	1	2	2.14	107		75 - 125	0 - 20	QC00733
LCS	Total Beryllium (mg/L)	<0.01	1	2	2.16	108		75 - 125	0 - 20	QC00733
LCS	Total Boron (mg/L)	<0.50	1	2	2.12	106		75 - 125	0 - 20	QC00733
LCS	Total Cadmium (mg/L)	<0.01	1	2	2.19	110		75 - 125	0 - 20	QC00733
LCS	Total Chromium (mg/L)	<0.05	1	2	2.20	110		75 - 125	0 - 20	QC00733
LCS	Total Cobalt (mg/L)	<0.05	1	2	2.17	109		75 - 125	0 - 20	QC00733
LCS	Total Copper (mg/L)	<0.10	1	2	2.23	112		75 - 125	0 - 20	QC00733
LCS	Total Iron (mg/L)	<0.10	1	2	2.20	110		75 - 125	0 - 20	QC00733
LCS	Total Lead (mg/L)	<0.005	1	2	2.17	109		75 - 125	0 - 20	QC00733
LCS	Total Manganese (mg/L)	<0.10	1	2	2.23	112		75 - 125	0 - 20	QC00733
LCS	Total Nickel (mg/L)	<0.10	1	2	2.21	111		75 - 125	0 - 20	QC00733
LCS	Total Selenium (mg/L)	<0.01	1	2	2.11	106		75 - 125	0 - 20	QC00733
LCS	Total Silver (mg/L)	<0.05	1	0.4	0.43	108		75 - 125	0 - 20	QC00733
LCS	Total Uranium (mg/L)	<1.0	1	2	2.24	112		75 - 125	0 - 20	QC00733
LCS	Total Vanadium (mg/L)	<0.10	1	2	2.22	111		75 - 125	0 - 20	QC00733

N/A N/A N/A

LCS	Total Zinc (mg/L)	<0.10	1	2	2.18	109		75 - 125	0 - 20	QC00733
LCSD	Total Aluminum (mg/L)		1	2	2.00	100	8	75 - 125	0 - 20	QC00733
LCSD	Total Arsenic (mg/L)	<0.05	1	2	2.19	110	4	75 - 125	0 - 20	QC00733
LCSD	Total Barium (mg/L)	<0.10	1	2	1.97	99	8	75 - 125	0 - 20	QC00733
LCSD	Total Beryllium (mg/L)	<0.01	1	2	2.02	101	7	75 - 125	0 - 20	QC00733
LCSD	Total Boron (mg/L)	<0.50	1	2	2.11	106	0	75 - 125	0 - 20	QC00733
LCSD	Total Cadmium (mg/L)	<0.01	1	2	2.19	110	0	75 - 125	0 - 20	QC00733
LCSD	Total Chromium (mg/L)	<0.05	1	2	2.15	108	2	75 - 125	0 - 20	QC00733
LCSD	Total Cobalt (mg/L)	<0.05	1	2	2.24	112	3	75 - 125	0 - 20	QC00733
LCSD	Total Copper (mg/L)	<0.10	1	2	2.04	102	9	75 - 125	0 - 20	QC00733
LCSD	Total Iron (mg/L)	<0.10	1	2	2.14	107	3	75 - 125	0 - 20	QC00733
LCSD	Total Lead (mg/L)	<0.005	1	2	2.18	109	0	75 - 125	0 - 20	QC00733
LCSD	Total Manganese (mg/L)	<0.10	1	2	2.11	106	6	75 - 125	0 - 20	QC00733
LCSD	Total Molybdenum (mg/L)	<0.10	1	2	2.25	113		75 - 125	0 - 20	QC00733
LCSD	Total Nickel (mg/L)	<0.10	1	2	2.24	112	1	75 - 125	0 - 20	QC00733
LCSD	Total Selenium (mg/L)	<0.01	1	2	2.17	109	3	75 - 125	0 - 20	QC00733
LCSD	Total Silver (mg/L)	<0.05	1	0.4	0.42	105	2	75 - 125	0 - 20	QC00733
LCSD	Total Uranium (mg/L)	<1.0	1	2	2.23	112	0	75 - 125	0 - 20	QC00733
LCSD	Total Vanadium (mg/L)	<0.10	1	2	2.24	112	1	75 - 125	0 - 20	QC00733
LCSD	Total Zinc (mg/L)	<0.10	1	2	2.25	113	3	75 - 125	0 - 20	QC00733

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Hydroxide Alkalinity (mg/L as CaCo3)		0	40	0	80 - 120	2/2/00	QC00695
ICV	Carbonate Alkalinity (mg/L as CaCo3)		0	2400	0	80 - 120	2/2/00	QC00695
ICV	Bicarbonate Alkalinity (mg/L as CaCo3)		0	<1.0	0	80 - 120	2/2/00	QC00695
ICV	Total Alkalinity (mg/L as CaCo3)		2400	2440	102	80 - 120	2/2/00	QC00695
CCV 1	Hydroxide Alkalinity (mg/L as CaCo3)		0	<1.0	0	80 - 120	2/2/00	QC00695
CCV 1	Carbonate Alkalinity (mg/L as CaCo3)		0	2280	0	80 - 120	2/2/00	QC00695
CCV 1	Bicarbonate Alkalinity (mg/L as CaCo3)		0	180	0	80 - 120	2/2/00	QC00695
CCV 1	Total Alkalinity (mg/L as CaCo3)		2400	2460	102	80 - 120	2/2/00	QC00695

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Chemical Oxygen Demand (mg/L)		250	255	102	80 - 120	2/2/00	QC00694
CCV 1	Chemical Oxygen Demand (mg/L)		250	244	98	80 - 120	2/2/00	QC00694

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Specific Conductance (uMHOS/cm)		1413	1350	96	80 - 120	2/2/00	QC00696
CCV 1	Specific Conductance (uMHOS/cm)		1413	1360	96	80 - 120	2/2/00	QC00696

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Dissolved Calcium (mg/L)		20	21.0	105	75 - 125	2/1/00	QC00728
ICV	Dissolved Magnesium (mg/L)		20	21.0	105	75 - 125	2/1/00	QC00728
ICV	Dissolved Potassium (mg/L)		20	21.0	105	75 - 125	2/1/00	QC00728
ICV	Dissolved Sodium (mg/L)		20	21.0	105	75 - 125	2/1/00	QC00728
CCV 1	Dissolved Calcium (mg/L)		20	21	105	75 - 125	2/1/00	QC00728
CCV 1	Dissolved Magnesium (mg/L)		20	21	105	75 - 125	2/1/00	QC00728
CCV 1	Dissolved Potassium (mg/L)		20	21	105	75 - 125	2/1/00	QC00728
CCV 1	Dissolved Sodium (mg/L)		20	21	105	75 - 125	2/1/00	QC00728

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Total Mercury (mg/L)		0.001	0.00113	113	80 - 120	2/1/00	QC00729
CCV 1	Total Mercury (mg/L)		0.001	0.00099	99	80 - 120	2/1/00	QC00729

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
CCV 1	Naphthalene (mg/L)		60	57.82	96	35 - 118	1/31/00	QC00663
CCV 1	Acenaphthylene (mg/L)		60	60.39	101	38 - 139	1/31/00	QC00663
CCV 1	Acenaphthene (mg/L)		60	58.95	98	46 - 126	1/31/00	QC00663
CCV 1	Fluorene (mg/L)		60	60.50	101	44 - 136	1/31/00	QC00663
CCV 1	Phenanthrene (mg/L)		60	58.86	98	45 - 132	1/31/00	QC00663
CCV 1	Anthracene (mg/L)		60	59.35	99	45 - 132	1/31/00	QC00663
CCV 1	Fluoranthene (mg/L)		60	55.08	92	42 - 144	1/31/00	QC00663
CCV 1	Pyrene (mg/L)		60	61.25	102	18 - 163	1/31/00	QC00663
CCV 1	Benzo(a)anthracene (mg/L)		60	61.46	102	44 - 135	1/31/00	QC00663
CCV 1	Chrysene (mg/L)		60	59.93	100	9 - 171	1/31/00	QC00663
CCV 1	Benzo(b)fluoranthene (mg/L)		60	66.71	111	37 - 114	1/31/00	QC00663
CCV 1	Benzo(k)fluoranthene (mg/L)		60	62.09	103	34 - 128	1/31/00	QC00663
CCV 1	Benzo(a)pyrene (mg/L)		60	63.19	105	42 - 120	1/31/00	QC00663
CCV 1	Indeno(1,2,3-cd)pyrene (mg/L)		60	55.73	93	30 - 130	1/31/00	QC00663
CCV 1	Dibenzo(a,h)anthracene (mg/L)		60	57.27	95	6 - 162	1/31/00	QC00663
CCV 1	Benzo(g,h,i)perylene (mg/L)		60	59.58	99	39 - 118	1/31/00	QC00663
CCV 1	Nitrobenzene-d5 (mg/L)		60	59.01	98	34 - 130	1/31/00	QC00663
CCV 1	2-Fluorobiphenyl (mg/L)		60	58.73	98	38 - 128	1/31/00	QC00663
CCV 1	Terphenyl-d14 (mg/L)		60	61.85	103	0 - 145	1/31/00	QC00663

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	pH (s.u.)		7	7.0	100	80 - 120	1/28/00	QC00672
CCV 1	pH (s.u.)		7	7.0	100	80 - 120	1/28/00	QC00672

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Total Dissolved Solids (mg/L)		1000	1025	102	80 - 120	2/2/00	QC00691
CCV 1	Total Dissolved Solids (mg/L)		1000	1054	105	80 - 120	2/2/00	QC00691

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Total Cyanide (mg/L)		0.12	0.119	99	80 - 120	2/1/00	QC00667
CCV 1	Total Cyanide (mg/L)		0.12	0.118	98	80 - 120	2/1/00	QC00667

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Total Aluminum (mg/L)		1	1.08	108	75 - 125	2/3/00	QC00733

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Total Arsenic (mg/L)		1	1.09	109	75 - 125	2/3/00	QC00733
ICV	Total Barium (mg/L)		1	1.08	108	75 - 125	2/3/00	QC00733
ICV	Total Beryllium (mg/L)		1	1.04	104	75 - 125	2/3/00	QC00733
ICV	Total Boron (mg/L)		1	1.06	106	75 - 125	2/3/00	QC00733
ICV	Total Cadmium (mg/L)		1	1.02	102	75 - 125	2/3/00	QC00733
ICV	Total Chromium (mg/L)		1	1.05	105	75 - 125	2/3/00	QC00733
ICV	Total Cobalt (mg/L)		1	1.07	107	75 - 125	2/3/00	QC00733
ICV	Total Copper (mg/L)		1	1.09	109	75 - 125	2/3/00	QC00733
ICV	Total Iron (mg/L)		1	1.03	103	75 - 125	2/3/00	QC00733
ICV	Total Lead (mg/L)		1	1.07	107	75 - 125	2/3/00	QC00733
ICV	Total Manganese (mg/L)		1	1.03	103	75 - 125	2/3/00	QC00733
ICV	Total Molybdenum (mg/L)		1	1.06	106	75 - 125	2/3/00	QC00733
ICV	Total Nickel (mg/L)		1	1.08	108	75 - 125	2/3/00	QC00733
ICV	Total Selenium (mg/L)		1	1.09	109	75 - 125	2/3/00	QC00733
ICV	Total Uranium (mg/L)		1	1.08	108	75 - 125	2/3/00	QC00733
ICV	Total Vanadium (mg/L)		1	1.03	103	75 - 125	2/3/00	QC00733
ICV	Total Zinc (mg/L)		1	1.03	103	75 - 125	2/3/00	QC00733
CCV 1	Total Aluminum (mg/L)		1	0.99	99	75 - 125	2/3/00	QC00733
CCV 1	Total Arsenic (mg/L)		1	1.04	104	75 - 125	2/3/00	QC00733
CCV 1	Total Barium (mg/L)		1	0.98	98	75 - 125	2/3/00	QC00733
CCV 1	Total Beryllium (mg/L)		1	1.01	101	75 - 125	2/3/00	QC00733
CCV 1	Total Boron (mg/L)		1	1.03	103	75 - 125	2/3/00	QC00733
CCV 1	Total Cadmium (mg/L)		1	1.05	105	75 - 125	2/3/00	QC00733
CCV 1	Total Chromium (mg/L)		1	1.03	103	75 - 125	2/3/00	QC00733
CCV 1	Total Cobalt (mg/L)		1	1.05	105	75 - 125	2/3/00	QC00733
CCV 1	Total Copper (mg/L)		1	1.00	100	75 - 125	2/3/00	QC00733
CCV 1	Total Iron (mg/L)		1	1.05	105	75 - 125	2/3/00	QC00733
CCV 1	Total Lead (mg/L)		1	1.05	105	75 - 125	2/3/00	QC00733
CCV 1	Total Manganese (mg/L)		1	1.03	103	75 - 125	2/3/00	QC00733
CCV 1	Total Molybdenum (mg/L)		1	1.02	102	75 - 125	2/3/00	QC00733
CCV 1	Total Nickel (mg/L)		1	1.04	104	75 - 125	2/3/00	QC00733
CCV 1	Total Selenium (mg/L)		1	1.03	103	75 - 125	2/3/00	QC00733
CCV 1	Total Uranium (mg/L)		1	1.02	102	75 - 125	2/3/00	QC00733
CCV 1	Total Vanadium (mg/L)		1	0.99	99	75 - 125	2/3/00	QC00733
CCV 1	Total Zinc (mg/L)		1	1.05	105	75 - 125	2/3/00	QC00733

139541

Page____ of____

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1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A000112023

Company Name: Navajo Refining Co — Phone #:

Address: (Street, City, Zip) — Fax #:

Contact Person: Darrell Moore

Invoice to: (If different from above)

Project #: — Project Name:

Project Location: Artesia NM — Sampler Signature: Darrell Moore

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	H_2SO_4	SAMPLING: DATE	TIME
139541	Tk 112 Hydrotest	6		X				2	1	All	2	1	1/27/00	15:00

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	General Chemistry	Anions	Cyanide	Turn Around Time if different from standard	Hold
			X	X						X					X	X	X	X	

ASAP

Relinquished by: Darrell Moore — Date: 1/27/00 — Time: 16:20

Received by: — Date: — Time:

Relinquished by: — Date: — Time:

Received by: — Date: — Time:

Relinquished by: — Date: — Time:

Received at Laboratory by: Vicki Wrolle — Date: 1-28-00 — Time: 2:00 pm

LAB USE ONLY

Intact (Y) N

Headspace Y / N

Temp 1 °

Log-in Review

REMARKS:
Metals as RO Reject
General Chemistry - TSS, TDS, BOD, pH, EC, Nitrates, COD
Need Results Rushed - ASAP
2/4

Carrier # FedEx 273 8125 022

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

TraceAnalysis , Inc.
General Terms and Conditions

Article 1: General

1.1 The words "we", "us", and "our" refer to TraceAnalysis. You will deliver samples to us for analysis, accompanied or preceded by, a signed Chain of Custody/Analysis Request defining the scope and timing of our work and stating either the testing criteria you require or identifying the agency to which the results will be submitted.

Article 2: Our General Responsibilities

2.1 We agree to provide the professional services described in this agreement. We will provide you with written reports containing analytical results. In performing our service, we will use that degree of care and skill ordinarily exercised under similar circumstances by reputable members of our profession practicing in the same locality.

2.2 Test and observations will be conducted using test procedures and laboratory protocols as specified in accepted Chain of Custody/Analysis Request. If you direct a manner of making tests that varies from our standard or recommended procedures, you agree to hold us harmless from all claims, damages, and expenses arising out of your direction.

2.3 We will not release information regarding our services for you or any information that we receive from you, except for information that is in the public domain and except as we are required by law.

Article 3: Your General Responsibilities

3.1 On each Chain of Custody/Analysis Request you will designate a representative who has authority to transmit instructions, receive information, and make decisions relative to our work.

3.2 You will respond in a reasonable time to our request for decisions, authorization for changes, additional compensation, or schedule extensions.

3.3 For each Chain of Custody/Analysis Request you will either provide us with the exact methods for analysis of each fraction or you will identify the regulations and agency under which or for which the analysis are to be prepared. If permits, consent orders, work plans, quality assurance plans, or correspondence with regulatory agencies address laboratory requirements, you will provide us with copies of the relevant provisions prior to our initiation of the analyses.

Article 4: Reports and Records

4.1 We will furnish copies of each report to you as specified in the Chain of Custody and Analysis Request. We will retain analytical data for seven years and financial data for three years relating to the services performed following transmittal of our final report.

4.2 If you do not pay for our services as agreed, you agree that we may retain all reports and work not yet delivered to you. You also agree that our work will not be used by you for any purpose unless paid for.

Article 5: Delivery and Acceptance of Samples

5.1 Until we accept delivery of samples by notation on chain of custody documents or otherwise in writing accept the samples, you are responsible for loss of or damage to samples. Until so accepted, we have no responsibility as to samples.

5.2 As to any samples that are suspected of containing hazardous substances or radioactive material, such that would make special handling required, you will specify the suspected or known substances, and level and type of radioactive activity. This information will be given to us in writing as a part of the Chain of Custody/Analysis Request, and will precede or accompany samples suspected of containing hazardous substances.

5.3 Samples accepted by us remain your property while in our custody. We will retain samples for a period of 14 days following the date of submission or our report. We will extend the retention period if you so direct. Following the retention period we will dispose of non-hazardous samples. We may return highly hazardous, acutely toxic or reactive samples and samples containers and residues to you. You agree to accept them.

5.4 Regardless of a prior acceptance, we may refuse acceptance or revoke acceptance of samples if we determine that the samples present a risk to health, safety, or the environment, or that we are not authorized to accept them. If we revoke acceptance of any sample, you will have it removed from our facilities promptly.

Article 6: Changes to Task Orders

6.1 No persons other than the designated representatives for each Chain of Custody/Analysis Request are authorized to act regarding changes to a Chain of Custody/Analysis Request. We will notify you promptly if we identify any activity that we regard as a change to the terms and conditions of a Chain of Custody/Analysis Request. Our notice will include the date, nature, circumstance, and cause of the activity regarded as a change. We will specify the particular elements of project performance for which we may seek an equitable adjustment.

6.2 You will respond to the notice provided for in paragraph 6.1 promptly. Changes may be made to a Chain of Custody/Analysis Request through issuance of an amendment. The amendment will specify the reason for the change and, as appropriate, include any modified budgets, schedules, scope of work, and other necessary provisions.

6.3 Until agreement is reached concerning the proposed change, we may regard the situation as a suspension directed by you.

Article 7: Compensation

7.1 Our pricing for the work is predicated upon your acceptance of the conditions and allocations of risks and responsibilities described in this agreement. You agree to pay for services as stated in our proposal and accepted by you or according to our then current standard pricing documents if there is no other written agreement as to price. An estimate or statement of probable cost is not a firm figure unless stated as such.

7.2 Unless otherwise agreed to elsewhere, you agree to pay invoices within 30 days of receipt unless, within 15 days from receipt of the invoice, you notify us in writing of a particular item that is alleged to be incorrect. You agree to pay the uncontested portions of the invoices within 30 days of receipt. You agree to pay interest on unpaid balances beginning 60 days after receipt of invoice at the rate of 1.5% per month, but not to exceed the maximum rate allowed by law.

7.3 If you direct us to invoice another, we will do so, but you agree to be ultimately responsible for our compensation until you provide us with that third party's written acceptance of all terms of our agreement and until we agree to the substitution.

7.4 You agree to compensate us for our services and expenses if we are required to respond to legal process related to our services for you. Compensable services include hourly charges for all personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, the preparation of the testifier, and appearances related to the legal process.

7.5 If we are delayed by, or the period of performance is materially extended because of, factors beyond our control, or if project condition or the scope or amount of work change, or if the standards or methods of testing change, we will give you timely notice of the change and we will receive an equitable adjustment of our compensation.

Article 8: Risk Allocation, Disputes, and Damages

8.1 Neither we nor you will be liable to the other for special, incidental, consequential or punitive losses or damages, including but not limited to those arising from delay, loss of use, loss of profits or revenue, or the cost of capital.

8.2 We will not be liable to you for damages unless suit is commenced within two years of injury or loss or within two years of the date of the completion of our services, whichever is earlier. In no event will we be liable to you unless you have notified us of the discovery of the negligent act, error, omission or breach within 30 days of the date of its discovery and unless you have given us an opportunity to investigate and to recommend ways of mitigating your damages.

8.3 In the event you fail to pay us within 90 days following the invoice date, we may consider the default a total breach of our agreement and we may, at our option, terminate all of our duties without liability to you or to others.

8.4 If it is claimed by a third party that we did not complete an acceptable analysis, at your request will seek further review and acceptance of the completed work by the third party and use your best efforts to obtain that acceptance. We will assist you as directed.

8.5 You and we agree that disputes will be submitted to "Alternative Dispute Resolution" (ADR) as a condition precedent to litigation and other remedies provided by law. Each of us agrees to exercise good faith efforts to resolve disputes through mediation unless we both agree upon another ADR procedure. All disputes will be governed by the law of the place where our services are rendered, or if our services are rendered in more than one state, you and we agree that the law of the place that services were first rendered will govern.

8.6 If either of us makes a claim against the other as to issues out of the performance of this agreement, the prevailing party will be entitled to recover its reasonable expenses of litigation, including reasonable attorney's fees. If we bring lawsuit against you to collect our invoiced fees and expenses, you agree to pay our reasonable collection expenses including attorney fees.

Article 9: Indemnities

9.1 We will indemnify and hold you harmless from and against demands, damages, and expenses caused by our negligent acts and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom we are legally responsible. You will indemnify and hold us harmless from and against demands, damages, and expenses caused by your negligent act and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom you are legally responsible. These indemnities are subject to specific limitations provided for in this agreement.

Article 10: Miscellaneous Provisions

10.1 This agreement constitutes the entire agreement between you and us, and it supersedes all prior agreements. Any term, condition, prior course of dealing, course of performance, usage of trade, understanding, purchase order conditions, or other agreement purporting to modify, vary, supplement, or explain any provision of this agreement is of no effect until placed in writing and signed by both parties subsequent to the date of this agreement. In no event will the printed terms or conditions stated in a purchase or work order, other than an agreed upon Chain of Custody/Analysis Request, be considered a part of this agreement, even if the document is signed by both of us.

10.2 Neither party will assign this agreement without the express written approval of the other, but we may subcontract laboratory procedures with your approval as we deem necessary to meet our obligations to you.

10.3 If any of the provisions of this agreement are held to be invalid or unenforceable in any respect, the remaining terms will be in full effect and the agreement will be construed as if the invalid or unenforceable matters were never included in it. No waiver of any default will be waiver of any future default.

10.4 Neither you or we will have any liability for nonperformance caused in whole or in part by causes beyond our reasonable control. Such causes include but are not limited to Acts of God, civil unrest and war, labor unrest and strikes, equipment failures, matrix interference, acts of authorities, and failures of subcontractors that could not be reasonably anticipated.

10.5 You may stop our work by giving a written suspension or termination directive, but once work has been suspended, we need not resume work until we agree to change in scope, schedule, and compensation. Upon suspension or termination, we will use reasonable care to preserve samples provided that you agree to compensate us for any additional effort, but we will have no responsibility for meeting holding time limitations after the effective time of a suspension or termination directive. We will be compensated for service rendered and expenses incurred prior to termination that cannot reasonably be avoided.

TELEPHONE
(505) 748-3311

EASYLINK
62905278

Navajo REFINING COMPANY

501 EAST MAIN STREET ◦ P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

FAX
(505) 746-6410 ACCTG
(505) 746-6155 EXEC
(505) 748-9077 ENGR
(505) 746-4438 P / L

February 29, 2000

RECEIVED

MAR 0 9 2000

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Mr. Bill Olson
Hydrogeologist
Environmental Bureau
Oil Conservation Division
2040 S. Pacheco St.
Santa Fe, NM 87505-5472

RE: 1999 Annual Ground Water and Treatment System Monitoring Report, Navajo Refining

Dear Bill,

The referenced report is enclosed. It consists of the following:

- four ground water potentiometric maps,
- four product thickness maps,
- twelve graphs depicting elevation and thickness vs. time,
- one Quarterly Oil and Water Recovery Report for calendar year 1999,
- one table showing hits on wells,
- the analysis from monitor, residential, and irrigation wells relating to the Ground Water and Treatment System Monitoring that is taking place at Navajo Refining.

Per your agency's letter of June 14, 1996, the reporting frequency of this report was changed from quarterly to yearly.

For 1999, the Quarterly and Yearly Recovery Well Report shows that we recovered 15,680,235 gallons of water and 476,987 gallons of product. The amount that came from each well is detailed on the sheet. All water that is pumped out of these wells is sent to our waste water plant to be treated and then to the Injection Wells to be disposed. Product is brought back into the plant and is eventually introduced back into the refinery for reprocessing.

Well #1 on Bolton Road is dry with no water or product in it. This has been the case for the better part of its operational life. Also, at the end of December, 1999, the casing on Well #2 on Bolton Road collapsed. That well is in the process of being repaired so the numbers on it for next year will be down somewhat.

In the water analysis spreadsheet, which shows hits in the offsite wells, you will notice that RA-1227 has a hit of .002 MTBE on August 31, 1999 as does RA-1331 (.001 MTBE). These wells have had this concentration of MTBE since we started sampling in 1992-93 with no increase. Also, in the August 9, 1999 sampling, RA-307, which is an irrigation well, showed a hit of hydrocarbons. Subsequent sampling of this well showed no detection of any hydrocarbon constituents. This leads us to believe that the August 9, 1999 sampling was contaminated from an outside source (lab or during the sampling) and is not a true indication of any contamination in the water supply. The same reasoning applies to RA-3156 with the hit it showed in the September, 1999 sampling.

We also continue to see hits on the plume that is past Bolton Road in KWB-7 and KWB-11. These monitor wells are both east of Bolton Road. If you remember, we sited the recovery wells on Bolton Road knowing that part of the plume was past this point. We believe what we are seeing in KWB-7 and KWB-11 is that part of the plume that was already east of Bolton Road. In addition, KWB-1A and KWB-1C are beginning to show signs of a plume that probably originates on the north end of the plant. If you'll remember, we have sited a recovery trench just north of these wells but have yet to see any free phase hydrocarbons in this trench.

Finally, we would like to note that the area around the North Colony Landfarm and the Tetra-Ethyl Lead Impoundment is almost devoid of free phase hydrocarbons. At one time some of these wells had free product in them on the order of several feet thick. The recovery program has worked very well so far.

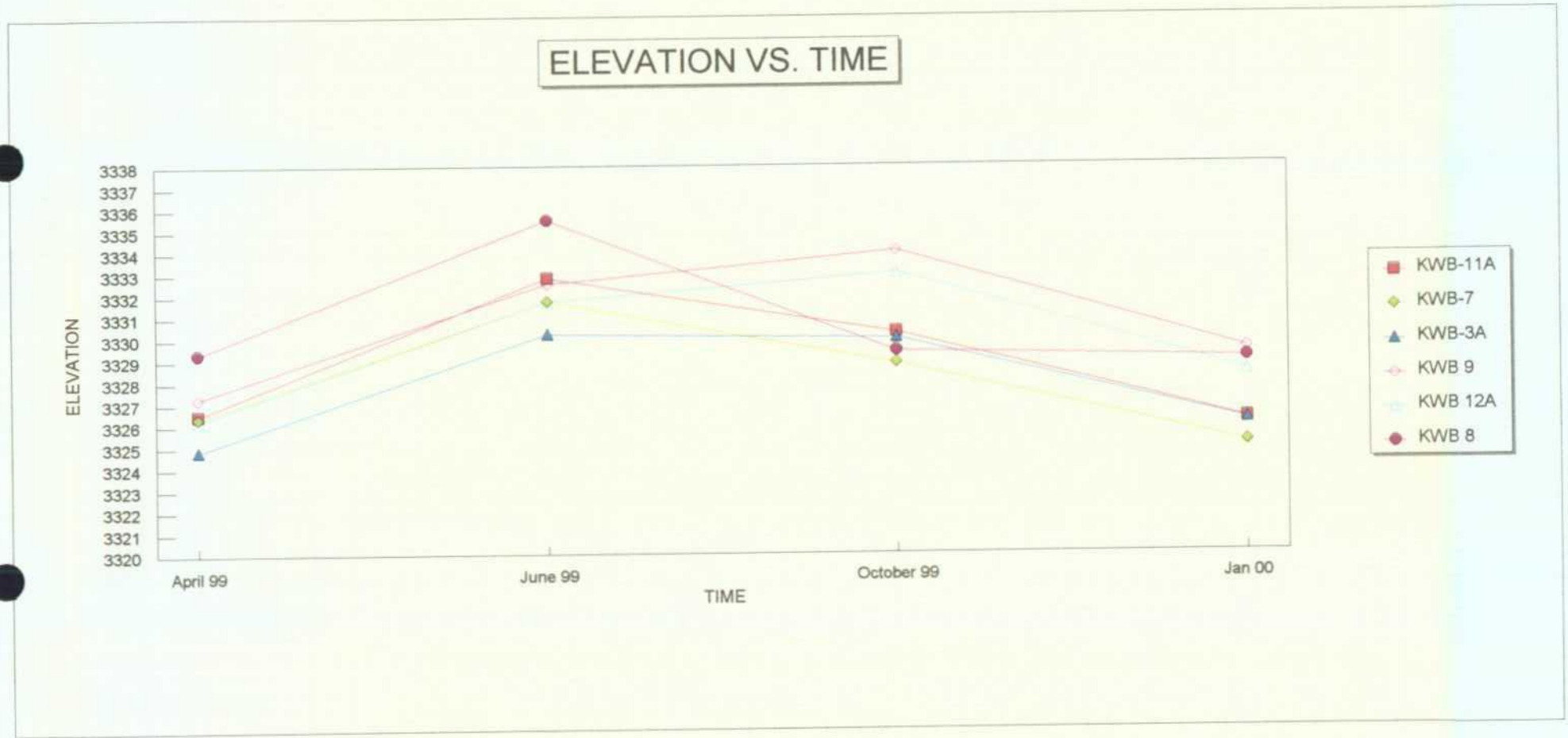
We feel that the program is working well at both recovering lost product and insuring the safety of drinking and irrigation water in the area. Navajo is working with Mr. Dave Boyer of Safety and Environmental Solutions on selecting sites for additional recovery wells to further enhance the success of this program. I thank you for your time in this matter. As always, if there are any questions, please feel free to call me at 505-748-3311.

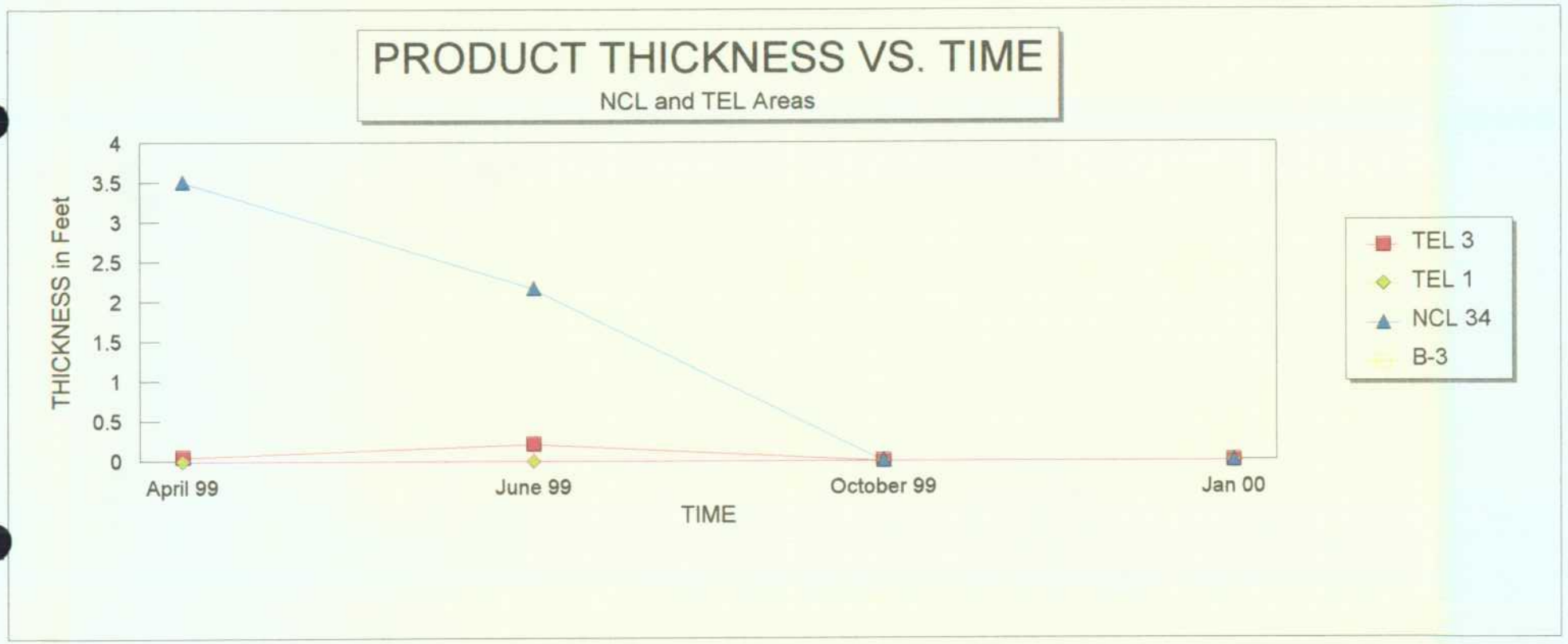
Sincerely,
Navajo Refining Co.

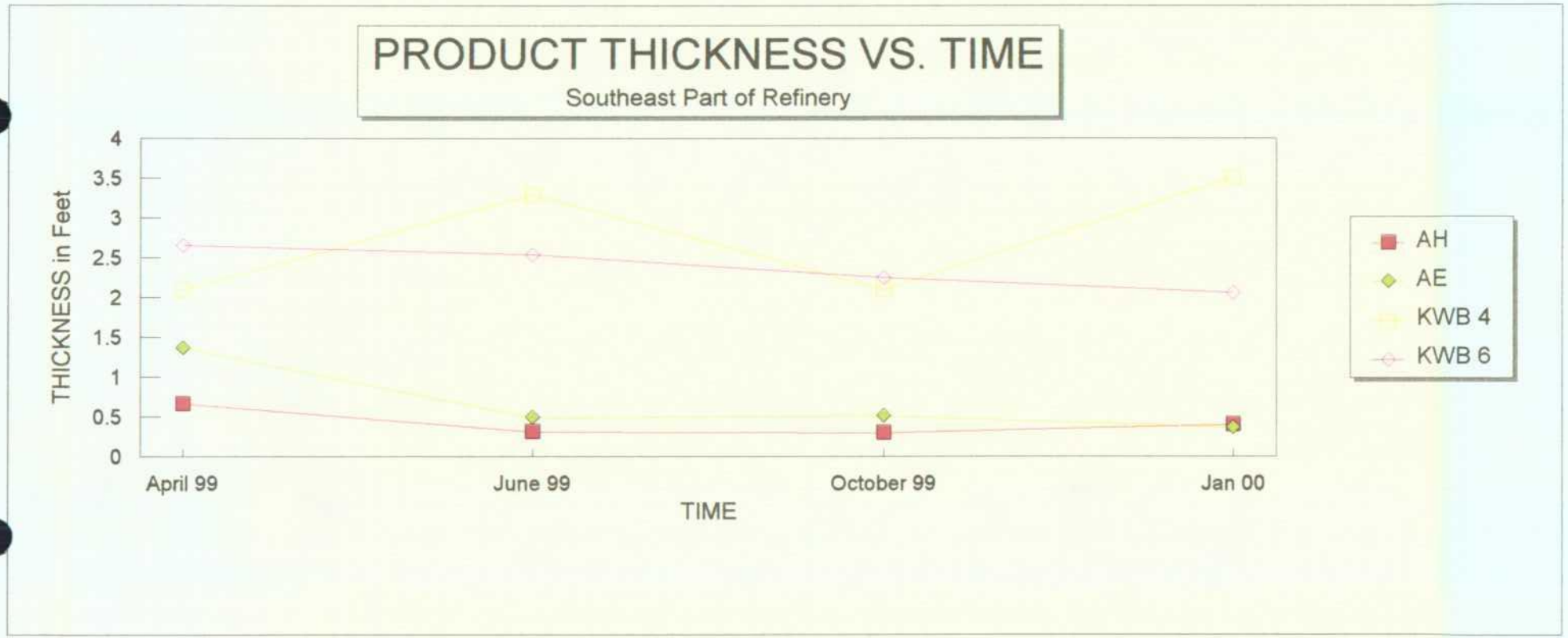
Darrell Moore

Darrell Moore
Environmental Mgr. for Water and Waste

Encl.
cc: PLY, RRH, MPC (without enclosures)

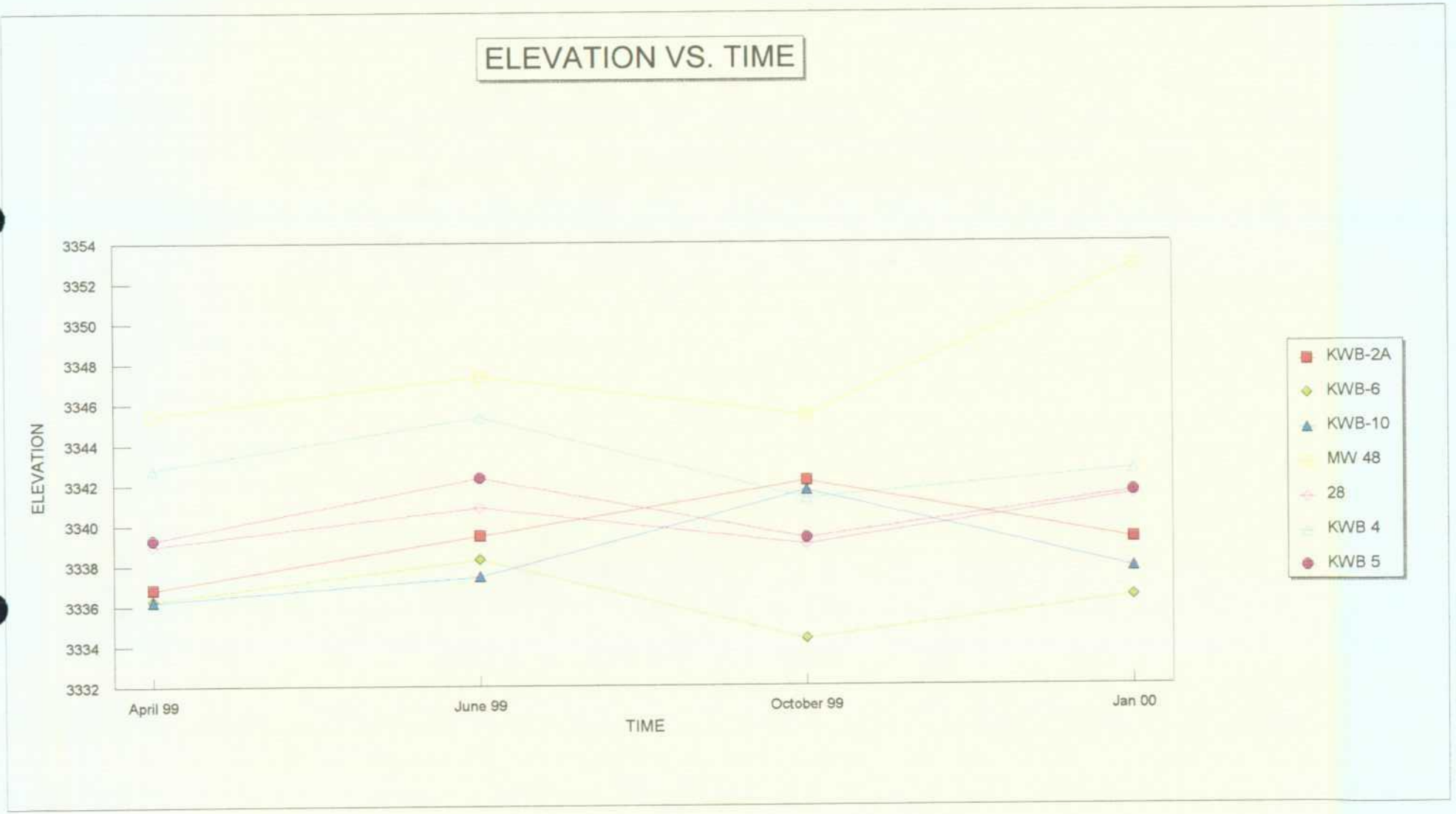

ELEVATION VS. TIME
ELEVATION
3338
3337
3336
3335
3334
3333
3332
3331
3330
3329
3328
3327
3326
3325
3324
3323
3322
3321
3320
April 99
June 99
October 99
Jan 00
TIME
KWB-11A
KWB-7
KWB-3A
KWB 9
KWB 12A
KWB 8


PRODUCT THICKNESS VS. TIME
NCL and TEL Areas
THICKNESS in Feet
4
3.5
3
2.5
2
1.5
1
0.5
0
April 99
June 99
October 99
Jan 00
TIME
TEL 3
TEL 1
NCL 34
B-3

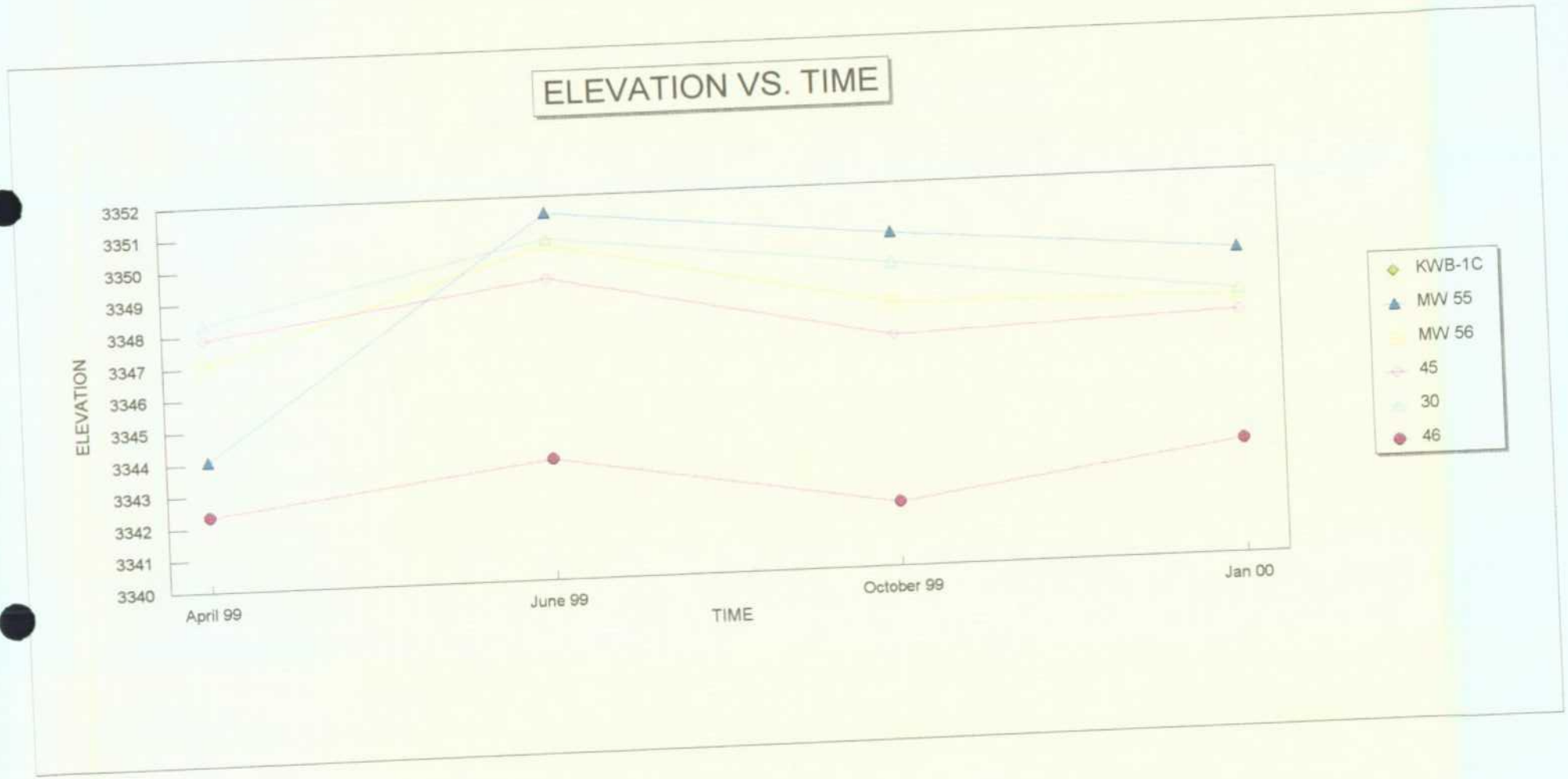

PRODUCT THICKNESS VS. TIME
Southeast Part of Refinery
THICKNESS in Feet
4
3.5
3
2.5
2
1.5
1
0.5
0
April 99
June 99
October 99
Jan 00
TIME
AH
AE
KWB 4
KWB 6

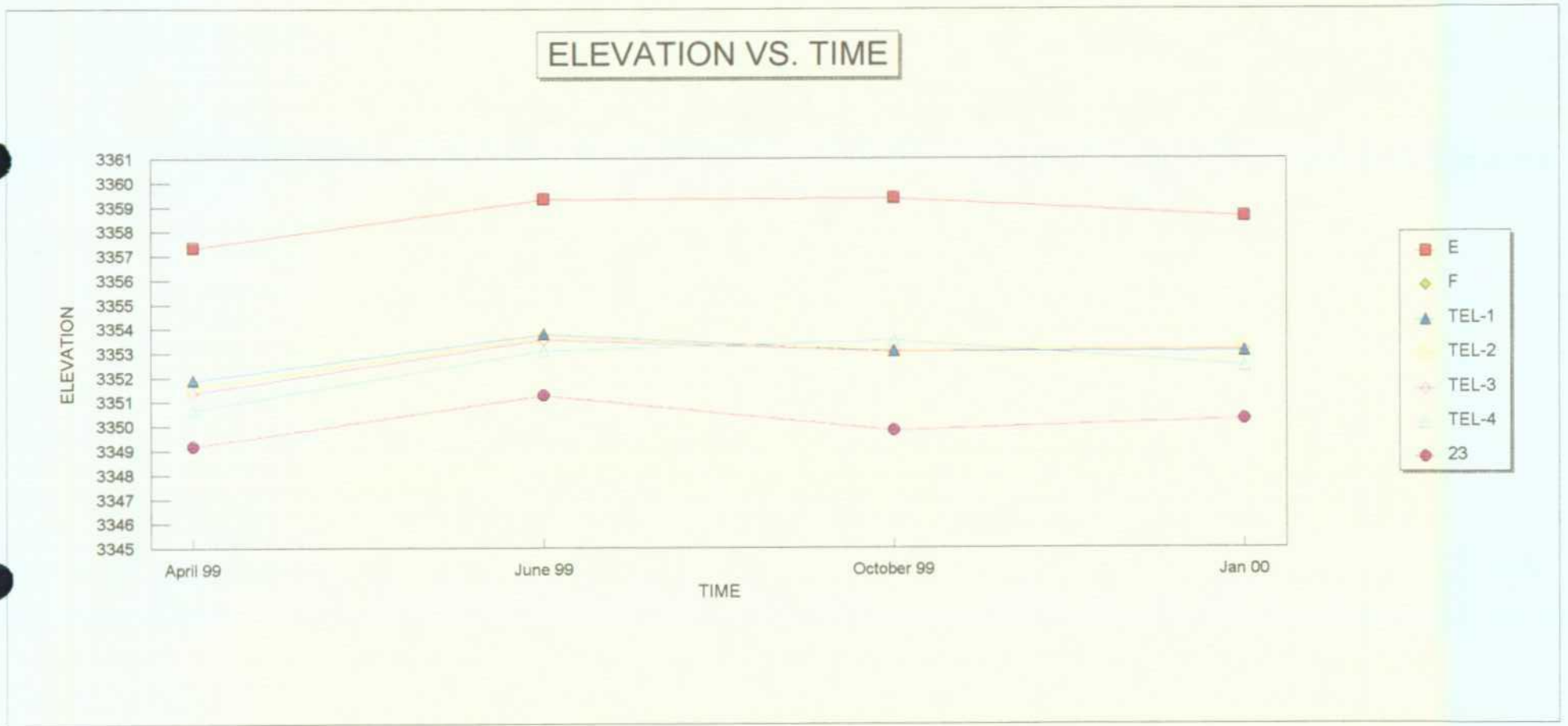
ELEVATION VS. TIME
ELEVATION
3357
3356
3355
3354
3353
3352
3351
3350
3349
3348
April 99
June 99
October 99
Jan 00
TIME
NCL 34
NCL 33
NCL 32
NCL 31
NCL 44
NCL 49
MW 53
19
18
MW-54

ELEVATION VS. TIME



PRODUCT THICKNESS VS. TIME
Truck By Pass Landfarm Area
THICKNESS in Feet
0.1
0.08
0.06
0.04
0.02
0
April 99
June 99
October 99
Jan 00
TIME
24
42
43
T


ELEVATION VS. TIME
ELEVATION
3352
3351
3350
3349
3348
3347
3346
3345
3344
3343
3342
3341
3340
April 99
June 99
October 99
Jan 00
TIME
KWB-1C
MW 55
MW 56
45
30
46


ELEVATION VS. TIME
ELEVATION
3361
3360
3359
3358
3357
3356
3355
3354
3353
3352
3351
3350
3349
3348
3347
3346
3345
April 99
June 99
October 99
Jan 00
TIME
E
F
TEL-1
TEL-2
TEL-3
TEL-4
23

ELEVATION VS. TIME
ELEVATION
3360
3359
3358
3357
3356
3355
3354
3353
3352
3351
3350
3349
April 99
June 99
October 99
Jan 00
TIME
29
39
41
42
43
T
24

ELEVATION VS. TIME
ELEVATION
3354
3353
3352
3351
3350
3349
3348
3347
April 99
June 99
October 99
Jan 00
TIME
Mw-51
MW-52
MW-50
AH
AE
MW 49

ELEVATION VS. TIME
ELEVATION
3340
3339
3338
3337
3336
3335
3334
3333
3332
3331
3330
3329
3328
3327
3326
3325
3324
3323
3322
3321
3320
April 99
June 99
October 99
Jan 00
TIME
MW 8
MW 9
MW 21
KWB 7
KWB 11
KWB 3A

Quarterly Recovery Well Report

H2O Data in gallons

In Plant	1st Qtr. Total	2nd Qtr Total	3rd Qtr Total	4th Qtr Total	Yrly Total
Well #1	18005	518	10497	6480	35500
Well #2	0	0	0	0	0
Well #4	17856	20088	16632	61920	116496
Well #5	0	0	0	2880	2880
Well #7	730192	336228	348768	500400	1915588
Well #8	578290	84384	468678	812880	1944232

Bolton Rd			Total in Plant		4014696
Well #1	0	0	0	0	0
Well #2	464040	1202472	1373040	474480	3514032
Well #3	793224	1279440	1432780	892800	4398244
Well #4	569788	1233000	1333435	617040	3753263

Total Bolton Rd 11665539

Total H2O 15680235

Oil Data in Gallons

In Plant	1st Qtr. Total	2nd Qtr Total	3rd Qtr Total	4th Qtr Total	Yrly Total
Well #1	34056	7948	8370	12943	63317
Well #2	9520	3758	5708	4653	23639
Well #4	222	1461	4174	2810	8667
Well #5	1935	2999	3805	3040	11779
Well #7	3824	9633	24010	14378	51845
Well #8	13873	5669	19272	9356	48170

Total in Plant 207417

Toolpushers Trench					
Well #15	500	9337	7645	4654	22136

Total ToolPushers 22136

Bolton Rd					
Well #1	0	0	0	0	0
Well #2	16666	31177	13193	16364	77400
Well #3	12335	7560	10432	13443	43770
Well #4	26127	56318	30519	13300	126264

Total Bolton Rd 247434

Total Oil 476987

HITS IN OFFSITE WELLS

	01/28/99	02/25/99	03/8-9/99	04/29/99	05/18/99	06/04/99	06/10/99	06/17/99	08/09/99	08/31/99	09/7-10/99	11/8-10/99	12/13-15/99
RA 307			Being Repaired	*	*				.002 Benzene *	*	*		
RA 313			out of service	out of service	*	*			*	*	*	*	
RA 314				*	*				*		*	*	
RA 1227				*	*	*			*	.002 MTBE *	*	*	
RA 1331				*	*				*	.001 MTBE *	*	*	
RA 2723													
RA 3156			*			*					.001 MTBE *		*
RA 3353			*				*				[redacted] *		*
RA 4196	*	*	*	*	*	*			*	*	*	*	*
RA 4798	*	*	*	*	*	*			*	*	*	*	*
KWB 1A			.076 MTBE *				.011 MTBE *				.046 MTBE, .001 benzene *		.029 MTBE *
KWB 1C			.079 MTBE, .002 benzene *				.009 MTBE *				.037 MTBE, .002 Benzene *		.030 MTBE *
KWB 2A						*					*		*
KWB 3A			*				*				*		*
KWB 7			*					.013 MTBE *			.046 MTBE *		.024 MTBE *
KWB 9			*			*					*		*
KWB 11A			.001 MTBE *					*			*		*
KWB 12A			*			*				[redacted]	*		*
MW 18			*								*		*
MW 45			.003 MTBE, .002 Toluene, .001 ethylbenzene, .004 m,p,o xylene *				.001 MTBE *				*		.005 MTBE *
NP-1			*				*						*
NP-2			.001 MTBE *				*				*		*

Values In mg/l

* denotes well was sampled

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
Navajo Refining
Attention Darrell Moore
501 E. Main
Artesia NM 88210

Lab Receiving # : 9901000424
Date Rec: 1/29/99
Sampling Date: 1/28/99
Sample Condition: Intact and Cool
Sample Received By: ng

Date: Feb 02, 1999
Project: N/A
Proj Name: Monthly Off-Site Plume
Proj Loc: Artesia,NM

TA#	Field Code	MATRIX	MTBE (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P,O XYLENE (mg/L)	TOTAL BTEX (mg/L)
117890	RA-4798	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
117891	RA-4196	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Method Blank			<0.001	<0.001	<0.001	<0.001	<0.001	
Reporting Limit			0.001	0.001	0.001	0.001	0.001	
QC			0.099	0.101	0.107	0.101	0.304	
RPD			4	1	2	5	1	
% Extraction Accuracy			109	108	113	105	107	
% Instrument Accuracy			99	101	107	101	101	

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/L)
BTEX	N/A	1/30/99	EPA 602	1/30/99	RC	0.100 ea	0.1 ea

BL

Director, Dr. Blair Leftwich

2-2-99

Date

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 424

Company Name: Navajo Phone #: 505-748-3311

Address: (Street, City, Zip) Fax #: 505-748-9077

Contact Person: Darrell Moore

Invoice to: (If different from above) Mo. Off-site Plume

Project #: Project Name: ~~Mo Abbey Cooling Tower~~

Project Location: Artesia NM Sampler Signature: Darrell McDaniel

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH					Turn Around Time if different from standard	Hold
117890	RA-4798	2	40ml	X				X		X		1/28/99	14:00	X	X																			
91	RA-4196	2	40ml	X				X		X		1/28/99	14:10	X	X																			

Relinquished by: Darrell McDaniel Date: 1/28/99 Time: 16:15 Received by: Date: Time:

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received at Laboratory by: Mell Green Date: 1-29-99 Time: 9:00am

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

LAB USE ONLY

Intact (Y) N

Headspace Y / N

Temp -2°

Log-in Review

REMARKS:

2/2

Carrier # Fedex 230913720 5

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
Navajo Refining
Attention Darrell Moore
501 E. Main
Artesia NM 88210

Lab Receiving # : 9902000424
Date Rec: 2/26/99
Sampling Date: 2/25/99
Sample Condition: Intact and Cool
Sample Received By: VW

Date: Mar 03, 1999
Project: N/A
Proj Name: Monthly Off-Site Plume
Proj Loc: Artesia,NM

TA#	Field Code	MATRIX	MTBE (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P,O XYLENE (mg/L)	TOTAL BTEX (mg/L)
119658	RA-4798	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
119659	RA-4196	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Method Blank			<0.001	<0.001	<0.001	<0.001	<0.001	
Reporting Limit			0.001	0.001	0.001	0.001	0.001	
QC			0.105	0.099	0.100	0.102	0.304	
RPD			0	4	4	5	4	
% Extraction Accuracy			100	115	114	113	114	
% Instrument Accuracy			105	99	100	102	101	

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/L)
BTEX	N/A	2/28/99	EPA 602	2/28/99	RC	0.100 ea	0.1 ea

Director, Dr. Blair Leftwich

3-3-99
Date

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 424

Company Name: Navajo
Phone #: 505-748-3311
Address: (Street, City, Zip)
Fax #: 505-748-9077
Contact Person: Darrell Moore
Invoice to: (If different from above) Mo. Off-Site Plume
Project #:
Project Name:
Project Location: Artesia NM
Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH					Turn Around Time if different from standard	Hold
119658	BA-4798	2	40ml	X				X		X		9/25/99	15:05	X	X																			
59	BA-4196	2	40ml	X				X		X		9/25/99	15:00	X	X																			

Relinquished by: Date: Time:
9/25/99 16:15
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received at Laboratory by: Date: Time:
Vicki Wrolle 9-26-99 10:00am

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

LAB USE ONLY

Intact Y / N
Headspace Y / N
Temp 2 °
Log-in Review

REMARKS:

313

Carrier # Fed Ex 241 2880 084

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
Navajo Refining
Attention Darrell Moore
501 E. Main
Artesia NM 88210

Lab Receiving # : 99030908
Date Rec: 3/9/99
Sampling Date: 3/8/99
Sample Condition: See note on COC
Sample Received By: VW

Date: Mar 12, 1999
Project: Qtrly Offsite
Proj Name: N/A
Proj Loc: 501 E Main, Artesia,NM

TA#	Field Code	MATRIX	MTBE mg/L	BENZENE mg/L	TOLUENE mg/L	ETHYL-BENZENE mg/L	M,P,O XYLENE mg/L	TOTAL BTEX mg/L
120502	MW-12A	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
120503	RA-3156	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
120504	RA-4798	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
120505	KWB-3A	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
120506	RA-3353	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
120507	KWB-11A	Water	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
120508	KWB-7	Water	0.074	<0.001	<0.001	<0.001	<0.001	<0.001
120509	KWB-1C	Water	0.079	0.002	<0.001	<0.001	<0.001	0.002
120510	KWB-1A	Water	0.076	<0.001	<0.001	<0.001	<0.001	<0.001
Reporting Limit			0.001	0.001	0.001	0.001	0.001	
QC			0.092	0.103	0.100	0.098	0.284	
RPD			1	1	0	0	0	
% Extraction Accuracy			92	102	100	98	95	
%Instrument Accuracy			90	104	102	100	95	

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: mg/L
BTEX	E 5030B	3/10/99	S 8021B	3/10/99	RC	0.100 ea	0.100 ea

Director, Dr. Blair Leftwich

3-12-99
Date

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
Navajo Refining
Attention Darrell Moore
501 E. Main
Artesia NM 88210

Lab Receiving # : 99030908
Date Rec: 3/9/99
Sampling Date: 3/8/99
Sample Condition: See note on COC
Sample Received By: VW

Date: Mar 12, 1999
Project: Qtrly Offsite
Proj Name: N/A
Proj Loc: 501 E Main, Artesia,NM

TA#	Field Code	MATRIX	MTBE mg/L	BENZENE mg/L	TOLUENE mg/L	ETHYL-BENZENE mg/L	M,P,O XYLENE mg/L	TOTAL BTEX mg/L
120511	KWB-9	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
120512	RA-4196	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Reporting Limit			0.001	0.001	0.001	0.001	0.001	
QC			0.092	0.103	0.100	0.098	0.284	
RPD			1	1	0	0	0	
% Extraction Accuracy			92	102	100	98	95	
%Instrument Accuracy			90	104	102	100	95	

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: mg/L
BTEX	E 5030B	3/10/99	S 8021B	3/10/99	RC	0.100 ea	0.100 ea

Director, Dr. Blair Leftwich

3-12-99
Date

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TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 9903090 8

Company Name: NAVAJO REFINING CO. Phone #: (505) 748-3311

Address: (Street, City, Zip) 501 E. MAIN ARTESIA 88210 Fax #: (505) 748-9077

Contact Person: DARRELL MOORE

Invoice to: (If different from above)

Project #: Project Name: QTLY OFFSITE SAMPLING

Project Location: Sampler Signature: Byron Madrid

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
12050	MW-12A	2	40ml	X				X		X		3/8/98	9:15
03	RA-3156	2	40ml	X				X		X		3/8/98	9:30
04	~~RA-1257~~ RA-4798	2	40ml	X				X		X		3/8/98	15:05
05	KWB-3A	2	40ml	X				X		X		3/8/98	9:55
06	RA-3353	2	40ml	X				X		X		3/8/98	10:05
07	KWB-11A	2	40ml	X				X		X		3/8/98	10:30
08	KWB-7	2	40ml	X				X		X		3/8/98	11:15
09	KWB-1C	2	40ml	X				X		X		3/8/98	13:20
10	KWB-1A	2	40ml	X				X		X		3/8/98	14:15
11	KWB-9	2	40ml	X				X		X		3/8/98	14:35
12	RA-4196	2	40ml	X				X		X		3/8/98	15:00

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602 | BTEX 8021B/602 | TPH 418.1/TX1005 | PAH 8270C | Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7 | TCLP Metals Ag As Ba Cd Cr Pb Se Hg | TCLP Volatiles | TCLP Semi Volatiles | TCLP Pesticides | RCI | GC-MS Vol. 8260B/624 | GC/MS Semi. Vol. 8270C/625 | PCB's 8082/608 | Pesticides 8081A/608 | BOD, TSS, pH | Turn Around Time if different from standard | Hold

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Byron Madrid	3/9/98	16:15	FED EX	3/8/98	16:15
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Vicki Wyndham	Date: 3-9-98	Time: 9:15 AM

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

LAB USE ONLY

Intact (Y) / N

Headspace Y / N

Temp -2 °

Log-in Review

REMARKS:

3/5

Carrier # Fedex 236988108 7

TRACE ANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
Navajo Refining
Attention Darrell Moore
501 E. Main
Artesia NM 88210

Lab Receiving # : 99031009
Date Rec: 3/10/99
Sampling Date: 3/9/99
Sample Condition: See note on COC
Sample Received By: VW

Date: Mar 15, 1999
Project:
Proj Name:
Proj Loc:

TA#	Field Code	MATRIX	MTBE mg/L	BENZENE mg/L	TOLUENE mg/L	ETHYL-BENZENE mg/L	M,P,O XYLENE mg/L	TOTAL BTEX mg/L
120565	MW-45	Water	0.003	<0.001	0.002	0.001	0.004	0.007
120566	NP-2	Water	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
120567	NP-1	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
120568	MW-18	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Reporting Limit			0.001	0.001	0.001	0.001	0.001	
QC			0.092	0.103	0.100	0.098	0.284	
RPD			1	1	0	0	0	
% Extraction Accuracy			92	102	100	98	95	
%Instrument Accuracy								

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: mg/L
BTEX	E 5030B	3/10/99	S 8021B	3/10/99	RC	0.100 ea	0.100 ea

Director, Dr. Blair Leftwich

03/16/99
Date

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TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 99031009

Company Name: NAVAJO REFINING CO. Phone #: (505) 748-3311

Address: (Street, City, Zip) 501 E. MAIN ARTESIA 88210 Fax #: (505) 748-9027

Contact Person: DARREN MOORE

Invoice to: (If different from above)

Project #: Project Name:

Project Location: Sampler Signature: Bryan Mallard

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
120565	MW-45	2	40ml	X				X		X		3/9/99	10:15
66	NP-2	2	40ml	X				X		X		3/9/99	10:45
67	NP-1	2	40ml	X				X		X		3/9/99	11:15
68	MW-18	2	40ml	X				X		X		3/9/99	~~12:15~~ 12:30

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
X	X															
X	X															
X	X															
X	X															

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Bryan Mallard	3/9/99	16:15	FED EX	3/9/99	16:15
			Received at Laboratory by: Jodi Windham	3-9-99	9:30

LAB USE ONLY

Intact (Y / N)

Headspace (Y / N)

Temp -2 °

Log-in Review ONS

REMARKS:

3/16

Carrier # Fed Ex 236 5014 583

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 5/12/99

Project Number: N/A
Project Name: Monthly Off-Site Plume
Project Location: Artesia,NM

Order ID Number: 99043016

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
123880	RA-314	Water	4/29/99	14:20	4/30/99
123881	RA-1227	Water	4/29/99	14:25	4/30/99
123882	RA-4196	Water	4/29/99	14:30	4/30/99
123883	RA-1331	Water	4/29/99	14:35	4/30/99
123884	RA-307	Water	4/29/99	14:40	4/30/99
123885	RA-4798	Water	4/29/99	14:45	4/30/99

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 4 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 123880
Description: RA-314

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Benzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Toluene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Ethylbenzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
M,P,O-Xylene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Total BTEX		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001

Sample Number: 123881
Description: RA-1227

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Benzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Toluene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Ethylbenzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
M,P,O-Xylene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Total BTEX		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001

Sample Number: 123882
Description: RA-4196

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Benzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Toluene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Ethylbenzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
M,P,O-Xylene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Total BTEX		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001

Sample Number: 123883
Description: RA-1331

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Benzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Toluene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Ethylbenzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
M,P,O-Xylene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Total BTEX		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001

Sample Number: 123884
Description: RA-307

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Benzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001

Toluene	<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Ethylbenzene	<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
M,P,O-Xylene	<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Total BTEX	<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001

Sample Number: 123885
Description: RA-4798

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Benzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Toluene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Ethylbenzene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
M,P,O-Xylene		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001
Total BTEX		<0.001	mg/L	1	E 602	5/8/99	5/10/99	SO	PB00668	QC00823	0.001

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Units	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE		<0.001	mg/L	0.001	5/10/99	PB00668	QC00823
Benzene		<0.001	mg/L	0.001	5/10/99	PB00668	QC00823
Toluene		<0.001	mg/L	0.001	5/10/99	PB00668	QC00823
Ethylbenzene		<0.001	mg/L	0.001	5/10/99	PB00668	QC00823
M,P,O-Xylene		<0.001	mg/L	0.001	5/10/99	PB00668	QC00823
Total BTEX		<0.001	mg/L	0.001	5/10/99	PB00668	QC00823

Quality Control Report
Lab Control Spikes and Duplicate Spike

Standard	Param	Units	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE	mg/L	<0.001	1	0.1	0.105	105		80-120	0 - 20	QC00823
LCS	Benzene	mg/L	<0.001	1	0.1	0.106	106		80-120	0 - 20	QC00823
LCS	Toluene	mg/L	<0.001	1	0.1	0.104	104		80-120	0 - 20	QC00823
LCS	Ethylbenzene	mg/L	<0.001	1	0.1	0.101	101		80-120	0 - 20	QC00823
LCS	M,P,O-Xylene	mg/L	<0.001	1	0.3	0.298	99		80-120	0 - 20	QC00823
LCSD	MTBE	mg/L	<0.001	1	0.1	0.102	102	3	80-120	0 - 20	QC00823
LCSD	Benzene	mg/L	<0.001	1	0.1	0.102	102	4	80-120	0 - 20	QC00823
LCSD	Toluene	mg/L	<0.001	1	0.1	0.100	100	4	80-120	0 - 20	QC00823
LCSD	Ethylbenzene	mg/L	<0.001	1	0.1	0.097	97	4	80-120	0 - 20	QC00823
LCSD	M,P,O-Xylene	mg/L	<0.001	1	0.3	0.285	95	4	80-120	0 - 20	QC00823

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	Units	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE		0.1	mg/L	0.087	87	80 - 120	5/10/99	QC00823
ICV	Benzene		0.1	mg/L	0.099	99	80 - 120	5/10/99	QC00823
ICV	Toluene		0.1	mg/L	0.098	98	80 - 120	5/10/99	QC00823
ICV	Ethylbenzene		0.1	mg/L	0.097	97	80 - 120	5/10/99	QC00823
ICV	M,P,O-Xylene		0.3	mg/L	0.279	93	80 - 120	5/10/99	QC00823
CCV (1)	MTBE		0.1	mg/L	0.097	97	80 - 120	5/10/99	QC00823
CCV (1)	Benzene		0.1	mg/L	0.096	96	80 - 120	5/10/99	QC00823
CCV (1)	Toluene		0.1	mg/L	0.095	95	80 - 120	5/10/99	QC00823
CCV (1)	Ethylbenzene		0.1	mg/L	0.094	94	80 - 120	5/10/99	QC00823
CCV (1)	M,P,O-Xylene		0.3	mg/L	0.269	90	80 - 120	5/10/99	QC00823

Page 1 of 1

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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 990430~~87~~16

Company Name: Navajo
Phone #: 505-748-3311
Address: (Street, City, Zip)
Fax #: 505-748-9077
Contact Person: Darrell Moore
Invoice to: (If different from above) Mo. Off-Site Plume
Project #:
Project Name:
Project Location: Artesia NM
Sampler Signature: Darrell Moore

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
123880	RA-314	2	40ml	X				X		X		4/29/99	14:20	X	X															
81	RA-1227	2	"	X				X		X		"	14:25	X	X															
82	RA-4196	2	"	X				X		X		"	14:30	X	X															
83	RA-1331	2	"	X				X		X		"	14:35	X	X															
84	RA-307	2	"	X				X		X		"	14:40	X	X															
85	RA-4798	2	"	X				X		X		"	14:45	X	X															

Relinquished by: Darrell Moore Date: 4/29/99 Time: 16:15
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received at Laboratory by: Vicki Wadlow Date: 4-30-99 Time: 10:00

LAB USE ONLY

Intact (Y) / N
Headspace Y (N)
Temp -2 °
Log-in Review MY

REMARKS:

5/12

Carrier # Fedex 2499491696

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Bryan Madrid
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 5/25/99

Project Number: N/A
Project Name: Mo Off -Site
Project Location: Artesia,NM

Order ID Number: 99052118

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
125241	RA-4196	Water	5/18/99	8:30	5/21/99
125242	RA-307	Water	5/18/99	8:45	5/21/99
125243	RA-1331	Water	5/18/99	8:50	5/21/99
125244	RA-4798	Water	5/18/99	9:00	5/21/99
125245	RA-1227	Water	5/20/99	13:50	5/21/99
125246	RA-314	Water	5/20/99	14:00	5/21/99
125247	RA-313	Water	5/20/99	14:15	5/21/99

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 5 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 125241
Description: RA-4196

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Benzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Toluene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Ethylbenzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
M,P,O-Xylene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Total BTEX		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001

Sample Number: 125242
Description: RA-307

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Benzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Toluene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Ethylbenzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
M,P,O-Xylene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Total BTEX		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001

Sample Number: 125243
Description: RA-1331

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Benzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Toluene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Ethylbenzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
M,P,O-Xylene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Total BTEX		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001

Sample Number: 125244
Description: RA-4798

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Benzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Toluene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Ethylbenzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
M,P,O-Xylene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Total BTEX		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001

Sample Number: 125245
Description: RA-1227

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Benzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001

Toluene	<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Ethylbenzene	<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
M,P,O-Xylene	<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Total BTEX	<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001

Sample Number: 125246
Description: RA-314

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Benzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Toluene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Ethylbenzene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
M,P,O-Xylene		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001
Total BTEX		<0.001	mg/L	1	S 8021B	5/21/99	5/21/99	RC	PB00828	QC01039	0.001

Sample Number: 125247
Description: RA-313

Param	Flag	Result	Units	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE		<0.001	mg/L	1	S 8021B	5/24/99	5/24/99	SO	PB00846	QC01069	0.001
Benzene		<0.001	mg/L	1	S 8021B	5/24/99	5/24/99	SO	PB00846	QC01069	0.001
Toluene		<0.001	mg/L	1	S 8021B	5/24/99	5/24/99	SO	PB00846	QC01069	0.001
Ethylbenzene		<0.001	mg/L	1	S 8021B	5/24/99	5/24/99	SO	PB00846	QC01069	0.001
M,P,O-Xylene		<0.001	mg/L	1	S 8021B	5/24/99	5/24/99	SO	PB00846	QC01069	0.001
Total BTEX		<0.001	mg/L	1	S 8021B	5/24/99	5/24/99	SO	PB00846	QC01069	0.001

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Units	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE		<0.001	mg/L	0.001	5/21/99	PB00828	QC01039
Benzene		<0.001	mg/L	0.001	5/21/99	PB00828	QC01039
Toluene		<0.001	mg/L	0.001	5/21/99	PB00828	QC01039
Ethylbenzene		<0.001	mg/L	0.001	5/21/99	PB00828	QC01039
M,P,O-Xylene		<0.001	mg/L	0.001	5/21/99	PB00828	QC01039
Total BTEX		<0.001	mg/L	0.001	5/21/99	PB00828	QC01039
MTBE		<0.001	mg/L	0.001	5/24/99	PB00846	QC01069
Benzene		<0.001	mg/L	0.001	5/24/99	PB00846	QC01069
Toluene		<0.001	mg/L	0.001	5/24/99	PB00846	QC01069
Ethylbenzene		<0.001	mg/L	0.001	5/24/99	PB00846	QC01069
M,P,O-Xylene		<0.001	mg/L	0.001	5/24/99	PB00846	QC01069
Total BTEX		<0.001	mg/L	0.001	5/24/99	PB00846	QC01069

Quality Control Report
Lab Control Spikes and Duplicate Spike

Standard	Param	Units	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE	mg/L	<0.001	1	0.1	0.094	94		80 - 120	0 - 20	QC01039
LCS	Benzene	mg/L	<0.001	1	0.1	0.088	88		80 - 120	0 - 20	QC01039
LCS	Toluene	mg/L	<0.001	1	0.1	0.086	86		80 - 120	0 - 20	QC01039
LCS	Ethylbenzene	mg/L	<0.001	1	0.1	0.085	85		80 - 120	0 - 20	QC01039
LCS	M,P,O-Xylene	mg/L	<0.001	1	0.3	0.249	83		80 - 120	0 - 20	QC01039
LCSD	MTBE	mg/L	<0.001	1	0.1	0.104	104	10	80 - 120	0 - 20	QC01039
LCSD	Benzene	mg/L	<0.001	1	0.1	0.097	97	10	80 - 120	0 - 20	QC01039
LCSD	Toluene	mg/L	<0.001	1	0.1	0.097	97	12	80 - 120	0 - 20	QC01039
LCSD	Ethylbenzene	mg/L	<0.001	1	0.1	0.097	97	13	80 - 120	0 - 20	QC01039
LCSD	M,P,O-Xylene	mg/L	<0.001	1	0.3	0.287	96	14	80 - 120	0 - 20	QC01039

Standard	Param	Units	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE	mg/L	<0.001	1	0.1	0.105	105		80 - 120	0 - 20	QC01069
LCS	Benzene	mg/L	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC01069
LCS	Toluene	mg/L	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC01069
LCS	Ethylbenzene	mg/L	<0.001	1	0.1	0.098	98		80 - 120	0 - 20	QC01069
LCS	M,P,O-Xylene	mg/L	<0.001	1	0.3	0.299	100		80 - 120	0 - 20	QC01069
LCSD	MTBE	mg/L	<0.001	1	0.1	0.089	89	16	80 - 120	0 - 20	QC01069
LCSD	Benzene	mg/L	<0.001	1	0.1	0.088	88	12	80 - 120	0 - 20	QC01069
LCSD	Toluene	mg/L	<0.001	1	0.1	0.088	88	12	80 - 120	0 - 20	QC01069
LCSD	Ethylbenzene	mg/L	<0.001	1	0.1	0.086	86	13	80 - 120	0 - 20	QC01069
LCSD	M,P,O-Xylene	mg/L	<0.001	1	0.3	0.257	86	15	80 - 120	0 - 20	QC01069

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	Units	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE		0.1	mg/L	0.091	91	80 - 120	5/21/99	QC01039
ICV	Benzene		0.1	mg/L	0.089	89	80 - 120	5/21/99	QC01039
ICV	Toluene		0.1	mg/L	0.088	88	80 - 120	5/21/99	QC01039
ICV	Ethylbenzene		0.1	mg/L	0.088	88	80 - 120	5/21/99	QC01039
ICV	M,P,O-Xylene		0.3	mg/L	0.259	86	80 - 120	5/21/99	QC01039
CCV (1)	MTBE		0.1	mg/L	0.097	97	80 - 120	5/21/99	QC01039
CCV (1)	Benzene		0.1	mg/L	0.098	98	80 - 120	5/21/99	QC01039
CCV (1)	Toluene		0.1	mg/L	0.098	98	80 - 120	5/21/99	QC01039
CCV (1)	Ethylbenzene		0.1	mg/L	0.099	99	80 - 120	5/21/99	QC01039
CCV (1)	M,P,O-Xylene		0.3	mg/L	0.294	98	80 - 120	5/21/99	QC01039

Standard	Param	Flag	CCVs TRUE Conc.	Units	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE		0.1	mg/L	0.101	101	80 - 120	5/24/99	QC01069
ICV	Benzene		0.1	mg/L	0.099	99	80 - 120	5/24/99	QC01069
ICV	Toluene		0.1	mg/L	0.099	99	80 - 120	5/24/99	QC01069
ICV	Ethylbenzene		0.1	mg/L	0.098	98	80 - 120	5/24/99	QC01069
ICV	M,P,O-Xylene		0.3	mg/L	0.296	99	80 - 120	5/24/99	QC01069
CCV (1)	MTBE		0.1	mg/L	0.104	104	80 - 120	5/24/99	QC01069
CCV (1)	Benzene		0.1	mg/L	0.098	98	80 - 120	5/24/99	QC01069
CCV (1)	Toluene		0.1	mg/L	0.098	98	80 - 120	5/24/99	QC01069
CCV (1)	Ethylbenzene		0.1	mg/L	0.097	97	80 - 120	5/24/99	QC01069
CCV (1)	M,P,O-Xylene		0.3	mg/L	0.291	97	80 - 120	5/24/99	QC01069

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El Paso, Texas 79922-1028
Tel (915) 585-3443
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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 9905 2118

Company Name: NAVAJO REFINING CO. Phone #: (505) 748-3311

Address: (Street, City, Zip) 501 E MAIN ARTESIA 88210 Fax #: (505) 748-9077

Contact Person: BRYAN MADRID

Invoice to: (If different from above)

Project #: Project Name: MONTHLY OFFSITE

Project Location: Sampler Signature: Bryan Madrid

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	MeOH/Soil	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
125241	RA-4196	2	80ml	X								X	5/18/99	8:30	X	X															
242	RA-307	2	80ml									X	5/18/99	8:45	X	X															
243	RA-1331	2	80ml									X	5/18/99	8:50	X	X															
244	RA-4798	2	80ml									X	5/18/99	9:00	X	X															
245	RA-1227	2	80ml									X	5/20/99	13:50	X	X															
246	RA-314	2	80ml					X					5/20/99	14:00	X	X															
247	RA-313	2	80ml					X					5/20/99	14:15	X	X															

Relinquished by: Bryan Madrid Date: 5/20/99 Time: 16:15 Received by: Date: Time:

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received at Laboratory by: Vicki Wrather Date: 5-21-99 Time: 10:00

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

LAB USE ONLY

Intact (Y) / N

Headspace Y / (N)

Temp 1° °

Log-in Review MB

REMARKS: 5/25/99

Carrier # FedEx 2501780757

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 6/14/99

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Order ID Number: 99060809

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
126010	KWB-12A	Water	6/4/99	9:55	6/8/99
126011	RA-3156	Water	6/4/99	10:30	6/8/99
126012	KWB-2A	Water	6/4/99	11:30	6/8/99
126013	RA-1227	Water	6/4/99	14:00	6/8/99
126014	KWB-9	Water	6/4/99	14:25	6/8/99
126015	RA-4196	Water	6/4/99	14:35	6/8/99
126016	RA-4798	Water	6/4/99	14:45	6/8/99
126017	RA-313	Water	6/4/99	15:10	6/8/99

These results represent only the samples received in the laboratory. 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.

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Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 126010
Description: KWB-12A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Benzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Toluene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.085	1	0.1	85	80 - 120	MF	PB01029	QC01272
4-BFB (mg/L)	0.080	1	0.1	80	80 - 120	MF	PB01029	QC01272

Sample Number: 126011
Description: RA-3156

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Benzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Toluene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.069	1	0.1	69	80 - 120	MF	PB01029	QC01272
4-BFB (mg/L)	0.063	1	0.1	63	80 - 120	MF	PB01029	QC01272

Sample Number: 126012
Description: KWB-2A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Benzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Toluene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.070	1	0.1	70	80 - 120	MF	PB01029	QC01272
4-BFB (mg/L)	0.081	1	0.1	81	80 - 120	MF	PB01029	QC01272

Sample Number: 126013
Description: RA-1227

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Benzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Toluene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.063	1	0.1	63	80 - 120	MF	PB01029	QC01272
4-BFB (mg/L)	0.058	1	0.1	58	80 - 120	MF	PB01029	QC01272

Sample Number: 126014
Description: KWB-9

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Benzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Toluene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.075	1	0.1	75	80 - 120	MF	PB01029	QC01272
4-BFB (mg/L)	0.070	1	0.1	70	80 - 120	MF	PB01029	QC01272

Sample Number: 126015
Description: RA-4196

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Benzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Toluene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/8/99	6/8/99	MF	PB01029	QC01272	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.085	1	0.1	85	80 - 120	MF	PB01029	QC01272
4-BFB (mg/L)	0.085	1	0.1	85	80 - 120	MF	PB01029	QC01272

Sample Number: 126016
Description: RA-4798

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001
Benzene (mg/L)		<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001
Toluene (mg/L)		<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001

Ethylbenzene (mg/L)	<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001
M,P,O-Xylene (mg/L)	<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001
Total BTEX (mg/L)	<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.105	1	0.1	105	80 - 120	SO	PB01063	QC01302
4-BFB (mg/L)	0.102	1	0.1	102	80 - 120	SO	PB01063	QC01302

Sample Number: 126017
Description: RA-313

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001
Benzene (mg/L)		<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001
Toluene (mg/L)		<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/10/99	6/10/99	SO	PB01063	QC01302	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.104	1	0.1	104	80 - 120	SO	PB01063	QC01302
4-BFB (mg/L)	0.101	1	0.1	101	80 - 120	SO	PB01063	QC01302

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE (mg/L)		<0.001	0.001	6/8/99	PB01029	QC01272
Benzene (mg/L)		<0.001	0.001	6/8/99	PB01029	QC01272
Toluene (mg/L)		<0.001	0.001	6/8/99	PB01029	QC01272
Ethylbenzene (mg/L)		<0.001	0.001	6/8/99	PB01029	QC01272
M,P,O-Xylene (mg/L)		<0.001	0.001	6/8/99	PB01029	QC01272
Total BTEX (mg/L)		<0.001	0.001	6/8/99	PB01029	QC01272
MTBE (mg/L)		<0.001	0.001	6/10/99	PB01063	QC01302
Benzene (mg/L)		<0.001	0.001	6/10/99	PB01063	QC01302
Toluene (mg/L)		<0.001	0.001	6/10/99	PB01063	QC01302
Ethylbenzene (mg/L)		<0.001	0.001	6/10/99	PB01063	QC01302
M,P,O-Xylene (mg/L)		<0.001	0.001	6/10/99	PB01063	QC01302
Total BTEX (mg/L)		<0.001	0.001	6/10/99	PB01063	QC01302

Quality Control Report
Lab Control Spikes and Duplicate Spike

Standard	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.093	93		80 - 120	0 - 20	QC01272
LCS	Benzene (mg/L)	<0.001	1	0.1	0.092	92		80 - 120	0 - 20	QC01272
LCS	Toluene (mg/L)	<0.001	1	0.1	0.092	92		80 - 120	0 - 20	QC01272
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.093	93		80 - 120	0 - 20	QC01272
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.268	89		80 - 120	0 - 20	QC01272
LCSD	MTBE (mg/L)	<0.001	1	0.1	0.092	92	1	80 - 120	0 - 20	QC01272
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.093	93	1	80 - 120	0 - 20	QC01272
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.092	92	0	80 - 120	0 - 20	QC01272
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.091	91	2	80 - 120	0 - 20	QC01272
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.268	89	0	80 - 120	0 - 20	QC01272

Standard	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.105	105		80 - 120	0 - 20	QC01302
LCS	Benzene (mg/L)	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC01302
LCS	Toluene (mg/L)	<0.001	1	0.1	0.097	97		80 - 120	0 - 20	QC01302
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC01302
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.291	97		80 - 120	0 - 20	QC01302

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.104	104	80 - 120	QC01302
LCS	4-BFB (mg/L)	1	0.1	0.108	108	80 - 120	QC01302

Standard	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCSD	MTBE (mg/L)	<0.001	1	0.1	0.110	110	5	80 - 120	0 - 20	QC01302
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.102	102	3	80 - 120	0 - 20	QC01302
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.101	101	4	80 - 120	0 - 20	QC01302
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.102	102	3	80 - 120	0 - 20	QC01302
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.302	101	4	80 - 120	0 - 20	QC01302

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.103	103	80 - 120	QC01302
LCSD	4-BFB (mg/L)	1	0.1	0.108	108	80 - 120	QC01302

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.100	100	80 - 120	6/8/99	QC01272
ICV	Benzene (mg/L)		0.1	0.093	93	80 - 120	6/8/99	QC01272
ICV	Toluene (mg/L)		0.1	0.091	91	80 - 120	6/8/99	QC01272
ICV	Ethylbenzene (mg/L)		0.1	0.091	91	80 - 120	6/8/99	QC01272
ICV	M,P,O-Xylene (mg/L)		0.3	0.264	88	80 - 120	6/8/99	QC01272
CCV (1)	MTBE (mg/L)		0.1	0.099	99	80 - 120	6/8/99	QC01272
CCV (1)	Benzene (mg/L)		0.1	0.098	98	80 - 120	6/8/99	QC01272
CCV (1)	Toluene (mg/L)		0.1	0.0099	10	80 - 120	6/8/99	QC01272
CCV (1)	Ethylbenzene (mg/L)		0.1	0.099	99	80 - 120	6/8/99	QC01272
CCV (1)	M,P,O-Xylene (mg/L)		0.3	0.287	96	80 - 120	6/8/99	QC01272

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.102	102	80 - 120	6/10/99	QC01302
ICV	Benzene (mg/L)		0.1	0.097	97	80 - 120	6/10/99	QC01302
ICV	Toluene (mg/L)		0.1	0.095	95	80 - 120	6/10/99	QC01302
ICV	Ethylbenzene (mg/L)		0.1	0.097	97	80 - 120	6/10/99	QC01302
ICV	M,P,O-Xylene (mg/L)		0.3	0.286	95	80 - 120	6/10/99	QC01302
CCV (1)	MTBE (mg/L)		0.1	0.099	99	80 - 120	6/10/99	QC01302
CCV (1)	Benzene (mg/L)		0.1	0.101	101	80 - 120	6/10/99	QC01302
CCV (1)	Toluene (mg/L)		0.1	0.100	100	80 - 120	6/10/99	QC01302
CCV (1)	Ethylbenzene (mg/L)		0.1	0.102	102	80 - 120	6/10/99	QC01302
CCV (1)	M,P,O-Xylene (mg/L)		0.3	0.296	99	80 - 120	6/10/99	QC01302

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TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 99060809

Company Name: NAVAJO REFINING CO. Phone #: (505) 748-3311
Address: (Street, City, Zip) 501 E. MAIN ARTESIA 88210 Fax #: (505) 748-9077
Contact Person: DARRELL MOORE
Invoice to: (If different from above)
Project #: Project Name: QUARTERLY OFFSITE
Project Location: Sampler Signature: Bryan Madrid

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	NaHSO4	SAMPLING: DATE	TIME
126010	KWB-12A	2	40ml	X						X		X	6/4/99	9:55
11	RA-3156	2											6/4/99	10:30
12	KWB-2A	2											6/4/99	11:30
13	RA-1227	2											6/4/99	14:00
14	KWB-9	2											6/4/99	14:25
15	RA-4196	2											6/4/99	14:35
16	RA-4798	2											6/4/99	14:45
17	RA-313	2											6/4/99	15:10

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
X	X															
X	X															
X	X															
X	X															
X	X															
X	X															
X	X															
X	X															

Relinquished by: Bryan Mad Date: 6/7/99 Time: 16:15
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received at Laboratory by: Vicki Wrather Date: 6-8-99 Time: 9:10

LAB USE ONLY
Intact Y / N
Headspace Y / N
Temp -1°C
Log-in Review

REMARKS:

6/14

Carrier # FedEx 250 8498 246

This constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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Analytical and Quality Control Report

Bryan Madrid
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 6/23/99

Project Number: N/A
Project Name: Quarterly RO Reject
Project Location: Artesia, NM

Order ID Number: 99061219

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
126376	KWB-1C	Water	6/10/99	11:30	6/12/99
126377	KWB-1A	Water	6/10/99	11:45	6/12/99
126378	KWB-3A	Water	6/10/99	14:15	6/12/99
126379	RA-3353	Water	6/10/99	14:30	6/12/99
126380	NP-2	Water	6/10/99	15:00	6/12/99
126381	NP-1	Water	6/11/99	9:00	6/12/99
126382	MW45	Water	6/11/99	15:00	6/12/99
126383	18	Water	6/11/99	15:30	6/12/99

These results represent only the samples received in the laboratory. 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.

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Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 126376
Description: KWB-1C

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.009	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Benzene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Toluene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.102	1	0.1	102	72 - 128	SO	PB01196	QC01481
4-BFB (mg/L)	0.094	1	0.1	94	72 - 128	SO	PB01196	QC01481

Sample Number: 126377
Description: KWB-1A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.011	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Benzene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Toluene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.108	1	0.1	108	72 - 128	SO	PB01196	QC01481
4-BFB (mg/L)	0.1	1	0.1	100	72 - 128	SO	PB01196	QC01481

Sample Number: 126378
Description: KWB-3A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Benzene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Toluene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.106	1	0.1	106	72 - 128	SO	PB01196	QC01481
4-BFB (mg/L)	0.1	1	0.1	100	72 - 128	SO	PB01196	QC01481

Sample Number: 126379
Description: RA-3353

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/16/99	6/16/99	SO	PB01132	QC01393	0.001
Benzene (mg/L)		<0.001	1	E 602	6/16/99	6/16/99	SO	PB01132	QC01393	0.001
Toluene (mg/L)		<0.001	1	E 602	6/16/99	6/16/99	SO	PB01132	QC01393	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/16/99	6/16/99	SO	PB01132	QC01393	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/16/99	6/16/99	SO	PB01132	QC01393	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/16/99	6/16/99	SO	PB01132	QC01393	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.096	1	0.1	96	72 - 128	SO	PB01132	QC01393
4-BFB (mg/L)	0.08	1	0.1	80	72 - 128	SO	PB01132	QC01393

Sample Number: 126380
Description: NP-2

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.005	5	E 602	6/18/99	6/18/99	SO	PB01195	QC01479	0.001
Benzene (mg/L)		<0.005	5	E 602	6/18/99	6/18/99	SO	PB01195	QC01479	0.001
Toluene (mg/L)		<0.005	5	E 602	6/18/99	6/18/99	SO	PB01195	QC01479	0.001
Ethylbenzene (mg/L)		<0.005	5	E 602	6/18/99	6/18/99	SO	PB01195	QC01479	0.001
M,P,O-Xylene (mg/L)		<0.005	5	E 602	6/18/99	6/18/99	SO	PB01195	QC01479	0.001
Total BTEX (mg/L)		<0.005	5	E 602	6/18/99	6/18/99	SO	PB01195	QC01479	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.518	5	0.1	103	72 - 128	SO	PB01195	QC01479
4-BFB (mg/L)	0.492	5	0.1	98	72 - 128	SO	PB01195	QC01479

Sample Number: 126381
Description: NP-1

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Benzene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Toluene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.104	1	0.1	104	72 - 128	SO	PB01196	QC01481
4-BFB (mg/L)	0.099	1	0.1	99	72 - 128	SO	PB01196	QC01481

Sample Number: 126382
Description: MW45

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Benzene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Toluene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/18/99	6/18/99	SO	PB01196	QC01481	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.102	1	0.1	102	72 - 128	SO	PB01196	QC01481
4-BFB (mg/L)	0.097	1	0.1	97	72 - 128	SO	PB01196	QC01481

Sample Number: 126383
Description: 18

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/22/99	6/22/99	SO	PB01209	QC01497	0.001
Benzene (mg/L)		<0.001	1	E 602	6/22/99	6/22/99	SO	PB01209	QC01497	0.001
Toluene (mg/L)		<0.001	1	E 602	6/22/99	6/22/99	SO	PB01209	QC01497	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/22/99	6/22/99	SO	PB01209	QC01497	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/22/99	6/22/99	SO	PB01209	QC01497	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/22/99	6/22/99	SO	PB01209	QC01497	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.111	1	0.1	111	72 - 128	SO	PB01209	QC01497
4-BFB (mg/L)	0.106	1	0.1	106	72 - 128	SO	PB01209	QC01497

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE (mg/L)		<0.001	0.001	6/16/99	PB01132	QC01393
Benzene (mg/L)		<0.001	0.001	6/16/99	PB01132	QC01393
Toluene (mg/L)		<0.001	0.001	6/16/99	PB01132	QC01393
Ethylbenzene (mg/L)		<0.001	0.001	6/16/99	PB01132	QC01393
M,P,O-Xylene (mg/L)		<0.001	0.001	6/16/99	PB01132	QC01393
Total BTEX (mg/L)		<0.001	0.001	6/16/99	PB01132	QC01393
MTBE (mg/L)		<0.001	0.001	6/18/99	PB01195	QC01479
Benzene (mg/L)		<0.001	0.001	6/18/99	PB01195	QC01479
Toluene (mg/L)		<0.001	0.001	6/18/99	PB01195	QC01479
Ethylbenzene (mg/L)		<0.001	0.001	6/18/99	PB01195	QC01479
M,P,O-Xylene (mg/L)		<0.001	0.001	6/18/99	PB01195	QC01479
Total BTEX (mg/L)		<0.001	0.001	6/18/99	PB01195	QC01479
MTBE (mg/L)		<0.001	0.001	6/18/99	PB01196	QC01481
Benzene (mg/L)		<0.001	0.001	6/18/99	PB01196	QC01481
Toluene (mg/L)		<0.001	0.001	6/18/99	PB01196	QC01481
Ethylbenzene (mg/L)		<0.001	0.001	6/18/99	PB01196	QC01481
M,P,O-Xylene (mg/L)		<0.001	0.001	6/18/99	PB01196	QC01481
Total BTEX (mg/L)		<0.001	0.001	6/18/99	PB01196	QC01481
MTBE (mg/L)		<0.001	0.001	6/22/99	PB01209	QC01497
Benzene (mg/L)		<0.001	0.001	6/22/99	PB01209	QC01497
Toluene (mg/L)		<0.001	0.001	6/22/99	PB01209	QC01497
Ethylbenzene (mg/L)		<0.001	0.001	6/22/99	PB01209	QC01497
M,P,O-Xylene (mg/L)		<0.001	0.001	6/22/99	PB01209	QC01497
Total BTEX (mg/L)		<0.001	0.001	6/22/99	PB01209	QC01497

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.088	88		80 - 120	0 - 20	QC01393
LCS	Benzene (mg/L)	<0.001	1	0.1	0.088	88		80 - 120	0 - 20	QC01393
LCS	Toluene (mg/L)	<0.001	1	0.1	0.091	91		80 - 120	0 - 20	QC01393
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.094	94		80 - 120	0 - 20	QC01393
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.274	91		80 - 120	0 - 20	QC01393

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.103	103	72 - 128	QC01393
LCS	4-BFB (mg/L)	1	0.1	0.106	106	72 - 128	QC01393

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.100	100	13	80 - 120	0 - 20	QC01393
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.102	102	15	80 - 120	0 - 20	QC01393
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.101	101	10	80 - 120	0 - 20	QC01393
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.102	102	8	80 - 120	0 - 20	QC01393
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.303	101	10	80 - 120	0 - 20	QC01393

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.100	100	72 - 128	QC01393
LCSD	4-BFB (mg/L)	1	0.1	0.107	107	72 - 128	QC01393

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC01479
LCS	Benzene (mg/L)	<0.001	1	0.1	0.091	91		80 - 120	0 - 20	QC01479
LCS	Toluene (mg/L)	<0.001	1	0.1	0.090	90		80 - 120	0 - 20	QC01479
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.087	87		80 - 120	0 - 20	QC01479
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.253	84		80 - 120	0 - 20	QC01479

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.096	96	72 - 128	QC01479
LCS	4-BFB (mg/L)	1	0.1	0.097	97	72 - 128	QC01479

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.101	101	6	80 - 120	0 - 20	QC01479
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.097	97	6	80 - 120	0 - 20	QC01479
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.095	95	5	80 - 120	0 - 20	QC01479
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.092	92	6	80 - 120	0 - 20	QC01479
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.270	90	7	80 - 120	0 - 20	QC01479

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.096	96	72 - 128	QC01479
LCSD	4-BFB (mg/L)	1	0.1	0.098	98	72 - 128	QC01479

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC01481
LCS	Benzene (mg/L)	<0.001	1	0.1	0.091	91		80 - 120	0 - 20	QC01481
LCS	Toluene (mg/L)	<0.001	1	0.1	0.090	90		80 - 120	0 - 20	QC01481
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.087	87		80 - 120	0 - 20	QC01481
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.253	84		80 - 120	0 - 20	QC01481

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.096	96	72 - 128	QC01481
LCS	4-BFB (mg/L)	1	0.1	0.097	97	72 - 128	QC01481

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.101	101	6	80 - 120	0 - 20	QC01481
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.097	97	6	80 - 120	0 - 20	QC01481
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.095	95	5	80 - 120	0 - 20	QC01481
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.092	92	6	80 - 120	0 - 20	QC01481
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.270	90	7	80 - 120	0 - 20	QC01481

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.096	96	72 - 128	QC01481
LCSD	4-BFB (mg/L)	1	0.1	0.098	98	72 - 128	QC01481

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.090	90		80 - 120	0 - 20	QC01497
LCS	Benzene (mg/L)	<0.001	1	0.1	0.087	87		80 - 120	0 - 20	QC01497
LCS	Toluene (mg/L)	<0.001	1	0.1	0.090	90		80 - 120	0 - 20	QC01497
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.092	92		80 - 120	0 - 20	QC01497
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.263	88		80 - 120	0 - 20	QC01497

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.101	101	72 - 128	QC01497
LCS	4-BFB (mg/L)	1	0.1	0.100	100	72 - 128	QC01497

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.097	97	7	80 - 120	0 - 20	QC01497
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.092	92	6	80 - 120	0 - 20	QC01497
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.091	91	1	80 - 120	0 - 20	QC01497
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.089	89	3	80 - 120	0 - 20	QC01497
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.260	87	1	80 - 120	0 - 20	QC01497

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.107	107	72 - 128	QC01497
LCSD	4-BFB (mg/L)	1	0.1	0.107	107	72 - 128	QC01497

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.096	96	80 - 120	6/16/99	QC01393
ICV	Benzene (mg/L)		0.1	0.099	99	80 - 120	6/16/99	QC01393
ICV	Toluene (mg/L)		0.1	0.099	99	80 - 120	6/16/99	QC01393
ICV	Ethylbenzene (mg/L)		0.1	0.097	97	80 - 120	6/16/99	QC01393
ICV	M,P,O-Xylene (mg/L)		0.3	0.291	97	80 - 120	6/16/99	QC01393
CCV (1	MTBE (mg/L)		0.1	0.088	88	80 - 120	6/16/99	QC01393
CCV (1	Benzene (mg/L)		0.1	0.095	95	80 - 120	6/16/99	QC01393
CCV (1	Toluene (mg/L)		0.1	0.093	93	80 - 120	6/16/99	QC01393
CCV (1	Ethylbenzene (mg/L)		0.1	0.091	91	80 - 120	6/16/99	QC01393
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.269	90	80 - 120	6/16/99	QC01393

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.100	100	80 - 120	6/18/99	QC01479
ICV	Benzene (mg/L)		0.1	0.095	95	80 - 120	6/18/99	QC01479
ICV	Toluene (mg/L)		0.1	0.093	93	80 - 120	6/18/99	QC01479
ICV	Ethylbenzene (mg/L)		0.1	0.090	90	80 - 120	6/18/99	QC01479
ICV	M,P,O-Xylene (mg/L)		0.3	0.264	88	80 - 120	6/18/99	QC01479
CCV (1	MTBE (mg/L)		0.1	0.091	91	80 - 120	6/18/99	QC01479
CCV (1	Benzene (mg/L)		0.1	0.087	87	80 - 120	6/18/99	QC01479
CCV (1	Toluene (mg/L)		0.1	0.085	85	80 - 120	6/18/99	QC01479
CCV (1	Ethylbenzene (mg/L)		0.1	0.083	83	80 - 120	6/18/99	QC01479
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.240	80	80 - 120	6/18/99	QC01479

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.102	102	80 - 120	6/18/99	QC01481
ICV	Benzene (mg/L)		0.1	0.099	99	80 - 120	6/18/99	QC01481
ICV	Toluene (mg/L)		0.1	0.098	98	80 - 120	6/18/99	QC01481
ICV	Ethylbenzene (mg/L)		0.1	0.096	96	80 - 120	6/18/99	QC01481
ICV	M,P,O-Xylene (mg/L)		0.3	0.280	93	80 - 120	6/18/99	QC01481
CCV (1	MTBE (mg/L)		0.1	0.096	96	80 - 120	6/18/99	QC01481
CCV (1	Benzene (mg/L)		0.1	0.091	91	80 - 120	6/18/99	QC01481
CCV (1	Toluene (mg/L)		0.1	0.090	90	80 - 120	6/18/99	QC01481
CCV (1	Ethylbenzene (mg/L)		0.1	0.088	88	80 - 120	6/18/99	QC01481
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.255	85	80 - 120	6/18/99	QC01481

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.104	104	80 - 120	6/22/99	QC01497
ICV	Benzene (mg/L)		0.1	0.099	99	80 - 120	6/22/99	QC01497
ICV	Toluene (mg/L)		0.1	0.098	98	80 - 120	6/22/99	QC01497
ICV	Ethylbenzene (mg/L)		0.1	0.097	97	80 - 120	6/22/99	QC01497
ICV	M,P,O-Xylene (mg/L)		0.3	0.285	95	80 - 120	6/22/99	QC01497
CCV (1	MTBE (mg/L)		0.1	0.102	102	80 - 120	6/22/99	QC01497
CCV (1	Benzene (mg/L)		0.1	0.097	97	80 - 120	6/22/99	QC01497
CCV (1	Toluene (mg/L)		0.1	0.096	96	80 - 120	6/22/99	QC01497
CCV (1	Ethylbenzene (mg/L)		0.1	0.094	94	80 - 120	6/22/99	QC01497
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.277	92	80 - 120	6/22/99	QC01497

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 9906121g

Company Name: NAVAJO REFINING Co. Phone #: (505) 748-3311
Address: (Street, City, Zip) 501 E MAIN ARTESIA, 88210 Fax #: (505) 748-9077
Contact Person: DARREL MOORE
Invoice to: (If different from above)
Project #: Project Name: QUARTERLY SAMPLING
Project Location: Sampler Signature: Bryan Madrid

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	NaHSO4	SAMPLING: DATE	TIME
126376	KWB-1C	2	40ml	X						X		X	6/10/99	11:30
377	KWB-1A	2											6/10/99	11:45
378	KWB-3A	2											6/10/99	14:15
379	RA-3353	2											6/9/99	14:30
380	NP-2	2											6/11/99	15:00
381	NP-1	2											6/11/99	9:00
382	MW45	2											6/11/99	15:00
383	18	2											6/11/99	15:30

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
X	X															
X	X															
X	X															
X	X															
X	X															
X	X															
X	X															
X	X															

Relinquished by: Bryan Madrid Date: 6/11/99 Time: 16:15
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received at Laboratory by: Date: Time: 6/12/99 2:00 pm

LAB USE ONLY

Intact (Y) / N
Headspace Y / N
Temp -2 °
Log-in Review

REMARKS: 6/24/99

Carrier # FED EX - 254 0533 834

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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TRACEANALYSIS, INC.

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Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 7/1/99

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Order ID Number: 99062204

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
126923	KWB-11A	Water	6/17/99	9:00	6/22/99
126924	KWB-7	Water	6/17/99	9:30	6/22/99

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 3 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 126923
Description: KWB-11A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001
Benzene (mg/L)		<0.001	1	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001
Toluene (mg/L)		<0.001	1	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001
Total BTEX (mg/L)		<0.001	1	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001

Sample Number: 126924
Description: KWB-7

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.013	5	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001
Benzene (mg/L)		<0.001	5	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001
Toluene (mg/L)		<0.001	5	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001
Ethylbenzene (mg/L)		<0.001	5	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001
M,P,O-Xylene (mg/L)		<0.001	5	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001
Total BTEX (mg/L)		<0.001	5	E 602	6/25/99	6/26/99	RC	PB01262	QC01558	0.001

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE (mg/L)		<0.001	0.001	6/26/99	PB01262	QC01558
Benzene (mg/L)		<0.001	0.001	6/26/99	PB01262	QC01558
Toluene (mg/L)		<0.001	0.001	6/26/99	PB01262	QC01558
Ethylbenzene (mg/L)		<0.001	0.001	6/26/99	PB01262	QC01558
M,P,O-Xylene (mg/L)		<0.001	0.001	6/26/99	PB01262	QC01558
Total BTEX (mg/L)		<0.001	0.001	6/26/99	PB01262	QC01558

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.091	91		80 - 120	0 - 20	QC01558
LCS	Benzene (mg/L)	<0.001	1	0.1	0.102	102		80 - 120	0 - 20	QC01558
LCS	Toluene (mg/L)	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC01558
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC01558
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.275	92		80 - 120	0 - 20	QC01558

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.110	110	72 - 128	QC01558
LCS	4-BFB (mg/L)	1	0.1	0.095	95	72 - 128	QC01558

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.095	95	4	80 - 120	0 - 20	QC01558
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.105	105	3	80 - 120	0 - 20	QC01558
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.102	102	3	80 - 120	0 - 20	QC01558
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.099	99	4	80 - 120	0 - 20	QC01558
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.288	96	5	80 - 120	0 - 20	QC01558

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.109	109	72 - 128	QC01558
LCSD	4-BFB (mg/L)	1	0.1	0.095	95	72 - 128	QC01558

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.092	92	80 - 120	6/26/99	QC01558
ICV	Benzene (mg/L)		0.1	0.105	105	80 - 120	6/26/99	QC01558
ICV	Toluene (mg/L)		0.1	0.101	101	80 - 120	6/26/99	QC01558
ICV	Ethylbenzene (mg/L)		0.1	0.097	97	80 - 120	6/26/99	QC01558
ICV	M,P,O-Xylene (mg/L)		0.3	0.284	95	80 - 120	6/26/99	QC01558
CCV (1	MTBE (mg/L)		0.1	0.102	102	80 - 120	6/26/99	QC01558
CCV (1	Benzene (mg/L)		0.1	0.108	108	80 - 120	6/26/99	QC01558
CCV (1	Toluene (mg/L)		0.1	0.107	107	80 - 120	6/26/99	QC01558
CCV (1	Ethylbenzene (mg/L)		0.1	0.106	106	80 - 120	6/26/99	QC01558
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.317	106	80 - 120	6/26/99	QC01558

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TraceAnalysis, Inc.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 990622O4

Company Name: NAVAJO REFINING Co. Phone #: (505) 748-3311

Address: (Street, City, Zip) 501 E. MAIN ARTESIA 88210 Fax #: (505) 748-9077

Contact Person: DARRELL MOORE

Invoice to: (If different from above)

Project #: Project Name: QUARTERLY SAMPLING

Project Location: Sampler Signature: Bryan Madrid

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	As HNO3	SAMPLING: DATE	TIME
12693	KWB-11A	2	40ml	X						X		X	6/17/99	9:00
24	KWB-7	2	40ml	X						X		X	6/17/99	9:30

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
X	X															
X	X															

Relinquished by: Bryan Madrid Date: 6/21/99 Time: 16:15

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received at Laboratory by: Vicki Wadham Date: 6-22-99 Time: 9:30

LAB USE ONLY

Intact (Y) / N

Headspace Y / (N)

Temp 2° °

Log-in Review MS

REMARKS:

Carrier # Fed Ex 252-0508-006

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

DGM

TRACEANALYSIS, INC.

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Analytical and Quality Control Report

Bryan Madrid
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 8/12/99

Project Number: N/A
Project Name: Monthly Off-Site Plume
Project Location: Artesia,NM

Order ID Number: 99081007

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
129580	RA-314	Water	8/9/99	8:30	8/10/99
129581	RA-1227	Water	8/9/99	8:35	8/10/99
129582	RA-4196	Water	8/9/99	8:45	8/10/99
129583	RA-4798	Water	8/9/99	8:50	8/10/99
129584	RA-307	Water	8/9/99	9:00	8/10/99
129585	RA-1331	Water	8/9/99	9:10	8/10/99
129586	RA-313	Water	8/9/99	9:20	8/10/99

These results represent only the samples received in the laboratory. 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.

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Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 129580
Description: RA-314

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Benzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Toluene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Total BTEX (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.091	1	0.1	91	72 - 128	RC	PB01861	QC02301
4-BFB (mg/L)	0.085	1	0.1	85	72 - 128	RC	PB01861	QC02301

Sample Number: 129581
Description: RA-1227

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Benzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Toluene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Total BTEX (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.096	1	0.1	96	72 - 128	RC	PB01861	QC02301
4-BFB (mg/L)	0.088	1	0.1	88	72 - 128	RC	PB01861	QC02301

Sample Number: 129582
Description: RA-4196

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Benzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Toluene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001
Total BTEX (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02301	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.089	1	0.1	89	72 - 128	RC	PB01861	QC02301
4-BFB (mg/L)	0.084	1	0.1	84	72 - 128	RC	PB01861	QC02301

Sample Number: 129583
Description: RA-4798

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Benzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Toluene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Total BTEX (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.100	1	0.1	100	72 - 128	RC	PB01861	QC02302
4-BFB (mg/L)	0.092	1	0.1	92	72 - 128	RC	PB01861	QC02302

Sample Number: 129584
Description: RA-307

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Benzene (mg/L)		0.002	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Toluene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Total BTEX (mg/L)		0.002	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.099	1	0.1	99	72 - 128	RC	PB01861	QC02302
4-BFB (mg/L)	0.084	1	0.1	84	72 - 128	RC	PB01861	QC02302

Sample Number: 129585
Description: RA-1331

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Benzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Toluene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Total BTEX (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.094	1	0.1	94	72 - 128	RC	PB01861	QC02302
4-BFB (mg/L)	0.083	1	0.1	83	72 - 128	RC	PB01861	QC02302

Sample Number: 129586
Description: RA-313

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Benzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Toluene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001

M,P,O-Xylene (mg/L)	<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001
Total BTEX (mg/L)	<0.001	1	E 602	8/10/99	8/10/99	RC	PB01861	QC02302	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.098	1	0.1	98	72 - 128	RC	PB01861	QC02302
4-BFB (mg/L)	0.079	1	0.1	79	72 - 128	RC	PB01861	QC02302

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02301
Benzene (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02301
Toluene (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02301
Ethylbenzene (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02301
M,P,O-Xylene (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02301
Total BTEX (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02301
MTBE (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02302
Benzene (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02302
Toluene (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02302
Ethylbenzene (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02302
M,P,O-Xylene (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02302
Total BTEX (mg/L)		<0.001	0.001	8/10/99	PB01861	QC02302

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC02301
LCS	Benzene (mg/L)	<0.001	1	0.1	0.087	87		80 - 120	0 - 20	QC02301
LCS	Toluene (mg/L)	<0.001	1	0.1	0.090	90		80 - 120	0 - 20	QC02301
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.089	89		80 - 120	0 - 20	QC02301
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.261	87		80 - 120	0 - 20	QC02301

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.097	97	72 - 128	QC02301
LCS	4-BFB (mg/L)	1	0.1	0.098	98	72 - 128	QC02301

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCSD	MTBE (mg/L)	<0.001	1	0.1	0.099	99	0	80 - 120	0 - 20	QC02301
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.086	86	1	80 - 120	0 - 20	QC02301
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.090	90	0	80 - 120	0 - 20	QC02301
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.088	88	1	80 - 120	0 - 20	QC02301
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.258	86	1	80 - 120	0 - 20	QC02301

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.091	91	72 - 128	QC02301
LCSD	4-BFB (mg/L)	1	0.1	0.092	92	72 - 128	QC02301

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC02302
LCS	Benzene (mg/L)	<0.001	1	0.1	0.087	87		80 - 120	0 - 20	QC02302
LCS	Toluene (mg/L)	<0.001	1	0.1	0.090	90		80 - 120	0 - 20	QC02302
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.089	89		80 - 120	0 - 20	QC02302
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.261	87		80 - 120	0 - 20	QC02302

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.097	97	72 - 128	QC02302
LCS	4-BFB (mg/L)	1	0.1	0.098	98	72 - 128	QC02302

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCSD	MTBE (mg/L)	<0.001	1	0.1	0.099	99	0	80 - 120	0 - 20	QC02302
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.086	86	1	80 - 120	0 - 20	QC02302
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.090	90	0	80 - 120	0 - 20	QC02302
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.088	88	1	80 - 120	0 - 20	QC02302
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.258	86	1	80 - 120	0 - 20	QC02302

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.091	91	72 - 128	QC02302
LCSD	4-BFB (mg/L)	1	0.1	0.092	92	72 - 128	QC02302

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.099	99	80 - 120	8/10/99	QC02301
ICV	Benzene (mg/L)		0.1	0.090	90	80 - 120	8/10/99	QC02301
ICV	Toluene (mg/L)		0.1	0.094	94	80 - 120	8/10/99	QC02301
ICV	Ethylbenzene (mg/L)		0.1	0.095	95	80 - 120	8/10/99	QC02301
ICV	M,P,O-Xylene (mg/L)		0.3	0.279	93	80 - 120	8/10/99	QC02301
CCV (1	MTBE (mg/L)		0.1	0.097	97	80 - 120	8/10/99	QC02301
CCV (1	Benzene (mg/L)		0.1	0.084	84	80 - 120	8/10/99	QC02301
CCV (1	Toluene (mg/L)		0.1	0.084	84	80 - 120	8/10/99	QC02301
CCV (1	Ethylbenzene (mg/L)		0.1	0.082	82	80 - 120	8/10/99	QC02301
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.242	81	80 - 120	8/10/99	QC02301

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.097	97	80 - 120	8/10/99	QC02302
ICV	Benzene (mg/L)		0.1	0.084	84	80 - 120	8/10/99	QC02302
ICV	Toluene (mg/L)		0.1	0.084	84	80 - 120	8/10/99	QC02302
ICV	Ethylbenzene (mg/L)		0.1	0.082	82	80 - 120	8/10/99	QC02302
ICV	M,P,O-Xylene (mg/L)		0.3	0.242	81	80 - 120	8/10/99	QC02302
CCV (1	MTBE (mg/L)		0.1	0.094	94	80 - 120	8/10/99	QC02302
CCV (1	Benzene (mg/L)		0.1	0.084	84	80 - 120	8/10/99	QC02302
CCV (1	Toluene (mg/L)		0.1	0.086	86	80 - 120	8/10/99	QC02302
CCV (1	Ethylbenzene (mg/L)		0.1	0.083	83	80 - 120	8/10/99	QC02302
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.245	82	80 - 120	8/10/99	QC02302

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TraceAnalysis, Inc.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 99081007

Company Name: NAVAJO REFINING CO. Phone #: (505) 748-3311

Address: (Street, City, Zip) 501 E MAIN ARTESIA, 88210 Fax #: (505) 748-9077

Contact Person: BRYAN MADRID

Invoice to: (If different from above)

Project #: Project Name: NO. OFFSITE PLUME

Project Location: ARTESIA Sampler Signature: Bryan Madrid

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	NaHSO4	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH					Turn Around Time if different from standard	Hold
129580	RA-314	2	40ml	X						X		X	8/9/99	8:30	X	X																			
81	RA-1227	2	40ml	X						X		X	8/9/99	8:35	X	X																			
82	RA-4196	2	40ml	X						X		X	8/9/99	8:45	X	X																			
83	RA-4798	2	40ml	X						X		X	8/9/99	8:50	X	X																			
84	RA-307	2	40ml	X						X		X	8/9/99	9:00	X	X																			
85	RA-1331	2	40ml	X						X		X	8/9/99	9:10	X	X																			
86	RA-313	2	40ml	X						X		X	8/9/99	9:20	X	X																			

Relinquished by: Bryan Madrid Date: 8/9/99 Time: 16:15
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received at Laboratory by: Vicki Wootten Date: 8-10-99 Time: 10:00

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

LAB USE ONLY

Intact (Y) / N
Headspace Y / (N)
Temp 0°
Log-in Review MS

REMARKS: 8/13/99

Carrier # Fed Ex 258-9215-973

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 9/10/99

Project Number: N/A
Project Name: Mo Off -Site
Project Location: Artesia,NM

Order ID Number: 99090804

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
131415	RA-1227	Water	8/31/99	9:30	9/8/99
131416	RA-1331	Water	8/31/99	9:40	9/8/99
131417	RA-307	Water	8/31/99	9:45	9/8/99
131418	RA-4196	Water	8/31/99	9:50	9/8/99
131419	RA-4798	Water	8/31/99	10:00	9/8/99
131420	RA-313	Water	8/31/99	10:25	9/8/99

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 6 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 131415
Description: RA-1227

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.002	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02831	0.001
Benzene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02831	0.001
Toluene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02831	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02831	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02831	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02831	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.103	1	0.1	103	72 - 128	RC	PB02262	QC02831
4-BFB (mg/L)	0.098	1	0.1	98	72 - 128	RC	PB02262	QC02831

Sample Number: 131416
Description: RA-1331

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Benzene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Toluene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.103	1	0.1	103	72 - 128	RC	PB02262	QC02832
4-BFB (mg/L)	0.098	1	0.1	98	72 - 128	RC	PB02262	QC02832

Sample Number: 131417
Description: RA-307

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Benzene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Toluene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.106	1	0.1	106	72 - 128	RC	PB02262	QC02832
4-BFB (mg/L)	0.1	1	0.1	100	72 - 128	RC	PB02262	QC02832

Sample Number: 131418
Description: RA-4196

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Benzene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Toluene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.108	1	0.1	108	72 - 128	RC	PB02262	QC02832
4-BFB (mg/L)	0.102	1	0.1	102	72 - 128	RC	PB02262	QC02832

Sample Number: 131419
Description: RA-4798

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Benzene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Toluene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.101	1	0.1	101	72 - 128	RC	PB02262	QC02832
4-BFB (mg/L)	0.095	1	0.1	95	72 - 128	RC	PB02262	QC02832

Sample Number: 131420
Description: RA-313

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.005	5	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Benzene (mg/L)		<0.005	5	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Toluene (mg/L)		<0.005	5	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Ethylbenzene (mg/L)		<0.005	5	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
M,P,O-Xylene (mg/L)		<0.005	5	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001
Total BTEX (mg/L)		<0.005	5	E 602	9/8/99	9/8/99	RC	PB02262	QC02832	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.484	5	0.1	97	72 - 128	RC	PB02262	QC02832
4-BFB (mg/L)	0.444	5	0.1	89	72 - 128	RC	PB02262	QC02832

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02831
Benzene (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02831
Toluene (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02831
Ethylbenzene (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02831
M,P,O-Xylene (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02831
Total BTEX (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02831
MTBE (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02832
Benzene (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02832
Toluene (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02832
Ethylbenzene (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02832
M,P,O-Xylene (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02832
Total BTEX (mg/L)		<0.001	0.001	9/8/99	PB02262	QC02832

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC02831
LCS	Benzene (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC02831
LCS	Toluene (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC02831
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.094	94		80 - 120	0 - 20	QC02831
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.283	94		80 - 120	0 - 20	QC02831

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.098	98	72 - 128	QC02831
LCS	4-BFB (mg/L)	1	0.1	0.096	96	72 - 128	QC02831

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.1	100	4	80 - 120	0 - 20	QC02831
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.1	100	4	80 - 120	0 - 20	QC02831
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.098	98	3	80 - 120	0 - 20	QC02831
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.098	98	4	80 - 120	0 - 20	QC02831
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.292	97	3	80 - 120	0 - 20	QC02831

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.101	101	72 - 128	QC02831
LCSD	4-BFB (mg/L)	1	0.1	0.1	100	72 - 128	QC02831

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC02832
LCS	Benzene (mg/L)	<0.001	1	0.1	0.094	94		80 - 120	0 - 20	QC02832
LCS	Toluene (mg/L)	<0.001	1	0.1	0.092	92		80 - 120	0 - 20	QC02832
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.09	90		80 - 120	0 - 20	QC02832
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.269	90		80 - 120	0 - 20	QC02832

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.095	95	72 - 128	QC02832
LCS	4-BFB (mg/L)	1	0.1	0.092	92	72 - 128	QC02832

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.104	104	5	80 - 120	0 - 20	QC02832
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.097	97	3	80 - 120	0 - 20	QC02832
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.094	94	2	80 - 120	0 - 20	QC02832
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.095	95	5	80 - 120	0 - 20	QC02832
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.277	92	3	80 - 120	0 - 20	QC02832

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.099	99	72 - 128	QC02832
LCSD	4-BFB (mg/L)	1	0.1	0.096	96	72 - 128	QC02832

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.098	98	80 - 120	9/8/99	QC02831
ICV	Benzene (mg/L)		0.1	0.096	96	80 - 120	9/8/99	QC02831
ICV	Toluene (mg/L)		0.1	0.094	94	80 - 120	9/8/99	QC02831
ICV	Ethylbenzene (mg/L)		0.1	0.093	93	80 - 120	9/8/99	QC02831
ICV	M,P,O-Xylene (mg/L)		0.3	0.28	93	80 - 120	9/8/99	QC02831
CCV (1	MTBE (mg/L)		0.1	0.104	104	80 - 120	9/8/99	QC02831
CCV (1	Benzene (mg/L)		0.1	0.098	98	80 - 120	9/8/99	QC02831
CCV (1	Toluene (mg/L)		0.1	0.096	96	80 - 120	9/8/99	QC02831
CCV (1	Ethylbenzene (mg/L)		0.1	0.094	94	80 - 120	9/8/99	QC02831
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.281	94	80 - 120	9/8/99	QC02831

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.105	105	80 - 120	9/8/99	QC02832
ICV	Benzene (mg/L)		0.1	0.098	98	80 - 120	9/8/99	QC02832
ICV	Toluene (mg/L)		0.1	0.097	97	80 - 120	9/8/99	QC02832
ICV	Ethylbenzene (mg/L)		0.1	0.095	95	80 - 120	9/8/99	QC02832
ICV	M,P,O-Xylene (mg/L)		0.3	0.284	95	80 - 120	9/8/99	QC02832
CCV (1	MTBE (mg/L)		0.1	0.098	98	80 - 120	9/8/99	QC02832
CCV (1	Benzene (mg/L)		0.1	0.094	94	80 - 120	9/8/99	QC02832
CCV (1	Toluene (mg/L)		0.1	0.089	89	80 - 120	9/8/99	QC02832
CCV (1	Ethylbenzene (mg/L)		0.1	0.085	85	80 - 120	9/8/99	QC02832
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.242	81	80 - 120	9/8/99	QC02832

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 99090804

Company Name: NAVAJO REFINING CO. Phone #: (505) 748-3311
Address: (Street, City, Zip) 501 E MAIN ARTESIA 88210 Fax #: (505) 748-9077
Contact Person: DARRELL MOORE
Invoice to: (If different from above)
Project #: Project Name: NO. OFFSITE PLUME
Project Location: Sampler Signature: Bryan Madrid

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	NaHSO4	SAMPLING: DATE	TIME
131415	RA-1227	2	40ml	X						X		X	8/31/99	9:30
16	RA-1331	2	40ml	X						X		X	"	9:40
17	RA-307	2	40ml	X						X		X	"	9:45
18	RA-4196	2	40ml	X						X		X	"	9:50
19	RA-4798	2	40ml							X		X	"	10:00
	[redacted]	[redacted]												
20	RA-313	2	40ml							X		X	"	10:25

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602 | BTEX 8021B/602 | TPH 418.1/TX1005 | PAH 8270C | Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7 | TCLP Metals Ag As Ba Cd Cr Pb Se Hg | TCLP Volatiles | TCLP Semi Volatiles | TCLP Pesticides | RCI | GC-MS Vol. 8260B/624 | GC/MS Semi. Vol. 8270C/625 | PCB's 8082/608 | Pesticides 8081A/608 | BOD, TSS, pH | Turn Around Time if different from standard | Hold

Relinquished by: Bryan Madrid Date: 9/1/99 Time: 16:15
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received at Laboratory by: Nell Green Date: 9-8-99 Time: 9:30am

LAB USE ONLY
Intact (Y) / N
Headspace Y / N
Temp 0°
Log-in Review

REMARKS:

9/10

Carrier # FedEx 261-9373-032

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Bryan Madrid
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 9/13/99

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Order ID Number: 99090910

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
131483	KWB-2A	Water	9/7/99	11:30	9/9/99
131484	KWB-12A	Water	9/7/99	14:15	9/9/99
131485	RA-3156	Water	9/7/99	14:30	9/9/99
131486	RA-1227	Water	9/7/99	14:40	9/9/99
131487	KWB-9	Water	9/7/99	14:55	9/9/99
131488	RA-4196	Water	9/7/99	15:00	9/9/99
131489	RA-4798	Water	9/7/99	15:05	9/9/99
131490	RA-307	Water	9/7/99	15:10	9/9/99
131491	RA-1331	Water	9/7/99	15:15	9/9/99
131492	KWB-11A	Water	9/8/99	11:00	9/9/99
131493	KWB-7	Water	9/8/99	11:15	9/9/99
131494	KWB-3A	Water	9/8/99	11:30	9/9/99
131495	RA-3353	Water	9/8/99	11:25	9/9/99
131496	KWB-1A	Water	9/8/99	14:00	9/9/99
131497	KWB-1C	Water	9/8/99	14:15	9/9/99
131498	MW-18	Water	9/8/99	14:30	9/9/99
131499	NP-2	Water	9/8/99	15:00	9/9/99
131500	RA-314	Water	9/8/99	13:00	9/9/99

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 10 pages and shall not be reproduced except in its entirety, without written approval of *TraceAnalysis, Inc.*

Analytical Results Report

Sample Number: 131483
Description: KWB-2A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.005	5	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Benzene (mg/L)		<0.005	5	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Toluene (mg/L)		<0.005	5	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Ethylbenzene (mg/L)		<0.005	5	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
M,P,O-Xylene (mg/L)		<0.005	5	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Total BTEX (mg/L)		<0.005	5	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.467	5	0.1	93	72 - 128	RC	PB02289	QC02865
4-BFB (mg/L)	0.444	5	0.1	89	72 - 128	RC	PB02289	QC02865

Sample Number: 131484
Description: KWB-12A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.083	1	0.1	83	72 - 128	RC	PB02289	QC02865
4-BFB (mg/L)	0.072	1	0.1	72	72 - 128	RC	PB02289	QC02865

Sample Number: 131485
Description: RA-3156

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.093	1	0.1	93	72 - 128	RC	PB02289	QC02865
4-BFB (mg/L)	0.082	1	0.1	82	72 - 128	RC	PB02289	QC02865

Sample Number: 131486
Description: RA-1227

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.084	1	0.1	84	72 - 128	RC	PB02289	QC02865
4-BFB (mg/L)	0.074	1	0.1	74	72 - 128	RC	PB02289	QC02865

Sample Number: 131487
Description: KWB-9

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.1	1	0.1	100	72 - 128	RC	PB02289	QC02865
4-BFB (mg/L)	0.091	1	0.1	91	72 - 128	RC	PB02289	QC02865

Sample Number: 131488
Description: RA-4196

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.102	1	0.1	102	72 - 128	RC	PB02289	QC02865
4-BFB (mg/L)	0.092	1	0.1	92	72 - 128	RC	PB02289	QC02865

Sample Number: 131489
Description: RA-4798

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001

M,P,O-Xylene (mg/L)	<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Total BTEX (mg/L)	<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.098	1	0.1	98	72 - 128	RC	PB02289	QC02865
4-BFB (mg/L)	0.087	1	0.1	87	72 - 128	RC	PB02289	QC02865

Sample Number: 131490
Description: RA-307

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.098	1	0.1	98	72 - 128	RC	PB02289	QC02865
4-BFB (mg/L)	0.087	1	0.1	87	72 - 128	RC	PB02289	QC02865

Sample Number: 131491
Description: RA-1331

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02865	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.1	1	0.1	100	72 - 128	RC	PB02289	QC02865
4-BFB (mg/L)	0.089	1	0.1	89	72 - 128	RC	PB02289	QC02865

Sample Number: 131492
Description: KWB-11A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.106	1	0.1	106	72 - 128	RC	PB02289	QC02866
4-BFB (mg/L)	0.095	1	0.1	95	72 - 128	RC	PB02289	QC02866

Sample Number: 131493
Description: KWB-7

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.046	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.094	1	0.1	94	72 - 128	RC	PB02289	QC02866
4-BFB (mg/L)	0.081	1	0.1	81	72 - 128	RC	PB02289	QC02866

Sample Number: 131494
Description: KWB-3A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.092	1	0.1	92	72 - 128	RC	PB02289	QC02866
4-BFB (mg/L)	0.075	1	0.1	75	72 - 128	RC	PB02289	QC02866

Sample Number: 131495
Description: RA-3353

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.095	1	0.1	95	72 - 128	RC	PB02289	QC02866
4-BFB (mg/L)	0.076	1	0.1	76	72 - 128	RC	PB02289	QC02866

Sample Number: 131496
Description: KWB-1A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.046	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Benzene (mg/L)		0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001

M,P,O-Xylene (mg/L)	<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Total BTEX (mg/L)	0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.098	1	0.1	98	72 - 128	RC	PB02289	QC02866
4-BFB (mg/L)	0.077	1	0.1	77	72 - 128	RC	PB02289	QC02866

Sample Number: 131497
Description: KWB-1C

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.037	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Benzene (mg/L)		0.002	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Total BTEX (mg/L)		0.002	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.097	1	0.1	97	72 - 128	RC	PB02289	QC02866
4-BFB (mg/L)	0.08	1	0.1	80	72 - 128	RC	PB02289	QC02866

Sample Number: 131498
Description: MW-18

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.103	1	0.1	103	72 - 128	RC	PB02289	QC02866
4-BFB (mg/L)	0.075	1	0.1	75	72 - 128	RC	PB02289	QC02866

Sample Number: 131499
Description: NP-2

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.003	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.1	1	0.1	100	72 - 128	RC	PB02289	QC02866
4-BFB (mg/L)	0.08	1	0.1	80	72 - 128	RC	PB02289	QC02866

Sample Number: 131500
Description: RA-314

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Benzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Toluene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/11/99	9/11/99	RC	PB02289	QC02866	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.095	1	0.1	95	72 - 128	RC	PB02289	QC02866
4-BFB (mg/L)	0.075	1	0.1	75	72 - 128	RC	PB02289	QC02866

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02865
Benzene (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02865
Toluene (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02865
Ethylbenzene (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02865
M,P,O-Xylene (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02865
Total BTEX (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02865
MTBE (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02866
Benzene (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02866
Toluene (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02866
Ethylbenzene (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02866
M,P,O-Xylene (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02866
Total BTEX (mg/L)		<0.001	0.001	9/11/99	PB02289	QC02866

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC02865
LCS	Benzene (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC02865
LCS	Toluene (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC02865
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.094	94		80 - 120	0 - 20	QC02865
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.282	94		80 - 120	0 - 20	QC02865

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.096	96	72 - 128	QC02865
LCS	4-BFB (mg/L)	1	0.1	0.096	96	72 - 128	QC02865

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.102	102	3	80 - 120	0 - 20	QC02865
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.098	98	2	80 - 120	0 - 20	QC02865
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.098	98	3	80 - 120	0 - 20	QC02865
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.097	97	3	80 - 120	0 - 20	QC02865
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.289	96	2	80 - 120	0 - 20	QC02865

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.099	99	72 - 128	QC02865
LCSD	4-BFB (mg/L)	1	0.1	0.099	99	72 - 128	QC02865

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC02866
LCS	Benzene (mg/L)	<0.001	1	0.1	0.094	94		80 - 120	0 - 20	QC02866
LCS	Toluene (mg/L)	<0.001	1	0.1	0.093	93		80 - 120	0 - 20	QC02866
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.091	91		80 - 120	0 - 20	QC02866
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.271	90		80 - 120	0 - 20	QC02866

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.094	94	72 - 128	QC02866
LCS	4-BFB (mg/L)	1	0.1	0.093	93	72 - 128	QC02866

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.105	105	6	80 - 120	0 - 20	QC02866
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.099	99	5	80 - 120	0 - 20	QC02866
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.097	97	4	80 - 120	0 - 20	QC02866
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.096	96	5	80 - 120	0 - 20	QC02866
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.284	95	5	80 - 120	0 - 20	QC02866

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.098	98	72 - 128	QC02866
LCSD	4-BFB (mg/L)	1	0.1	0.097	97	72 - 128	QC02866

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.101	101	80 - 120	9/11/99	QC02865
ICV	Benzene (mg/L)		0.1	0.094	94	80 - 120	9/11/99	QC02865
ICV	Toluene (mg/L)		0.1	0.093	93	80 - 120	9/11/99	QC02865
ICV	Ethylbenzene (mg/L)		0.1	0.091	91	80 - 120	9/11/99	QC02865
ICV	M,P,O-Xylene (mg/L)		0.3	0.272	91	80 - 120	9/11/99	QC02865
CCV (1	MTBE (mg/L)		0.1	0.101	101	80 - 120	9/11/99	QC02865
CCV (1	Benzene (mg/L)		0.1	0.093	93	80 - 120	9/11/99	QC02865
CCV (1	Toluene (mg/L)		0.1	0.092	92	80 - 120	9/11/99	QC02865
CCV (1	Ethylbenzene (mg/L)		0.1	0.091	91	80 - 120	9/11/99	QC02865
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.267	89	80 - 120	9/11/99	QC02865

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.102	102	80 - 120	9/11/99	QC02866
ICV	Benzene (mg/L)		0.1	0.097	97	80 - 120	9/11/99	QC02866
ICV	Toluene (mg/L)		0.1	0.096	96	80 - 120	9/11/99	QC02866
ICV	Ethylbenzene (mg/L)		0.1	0.094	94	80 - 120	9/11/99	QC02866
ICV	M,P,O-Xylene (mg/L)		0.3	0.279	93	80 - 120	9/11/99	QC02866
CCV (1	MTBE (mg/L)		0.1	0.087	87	80 - 120	9/11/99	QC02866
CCV (1	Benzene (mg/L)		0.1	0.098	98	80 - 120	9/11/99	QC02866
CCV (1	Toluene (mg/L)		0.1	0.096	96	80 - 120	9/11/99	QC02866
CCV (1	Ethylbenzene (mg/L)		0.1	0.092	92	80 - 120	9/11/99	QC02866
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.273	91	80 - 120	9/11/99	QC02866

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 99090910

Company Name: NAVAJO REFINING
Phone #: (505) 748-3311
Address: (Street, City, Zip) 501 E. MAIN
Fax #: (505) 748-9077
Contact Person: BRYAN MADRID
Invoice to: (If different from above)
Project #:
Project Name: QUARTERLY OFFSITE
Project Location:
Sampler Signature: Bryan Madrid

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	NaHSO4	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
131483	KWB-2A	2	40ml	X						X		X	9/7/99	11:30	X	X														
84	KWB-12A	2	"										9/7/99	14:15	X	X														
85	RA-3156	2	"										9/7/99	14:30	X	X														
86	RA-1227	2	"										9/7/99	14:40	X	X														
87	KWB-9	2	"										9/7/99	14:55	X	X														
88	RA-41K	2	"										9/7/99	15:00	X	X														
89	RA-4798	2	"										9/7/99	15:05	X	X														
90	RA-307	2	"										9/7/99	15:10	X	X														
91	RA-1331	2	"										9/7/99	15:15	X	X														
92	KWB-11A	2	"										9/8/99	11:00	X	X														
93	KWB-7	2	"										9/8/99	11:15	X	Y														

ANALYSIS REQUEST
(Circle or Specify Method No.)

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Bryan Madrid	9/8/99	16:15			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Mell Green	Date: 9-9-99	Time: 9:15am

LAB USE ONLY
Intact (Y) / N
Headspace Y / (N)
Temp -1 °
Log-in Review MS

REMARKS:

9/14

Carrier # FedEx 261-9633-813

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 99090910

Company Name: NAVAJO REFINING
Phone #: (505) 748-3311
Address: (Street, City, Zip) 501 E. MAIN
Fax #: (505) 748-9077
Contact Person: BRYAN MADRID
Invoice to: (If different from above)
Project #:
Project Name: QUARTERLY OFF SITE
Project Location:
Sampler Signature: Bryan Madrid

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	H2SO4	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
131494	KWB-3A	2	40ml	X						X		X	9/8/99	11:30	X	X															
95	RA-3353												9/8/99	11:25	X	X															
96	KWB-1A												9/8/99	14:00	X	X															
97	KWB-1C												9/8/99	14:15	X	X															
98	MW 18												9/8/99	14:30	X	X															
99	NP-2												9/8/99	15:02	X	X															
500	RA-314	2	1	X						X		X	9/8/99	13:00	X	X															

Relinquished by: Bryan Madrid	Date: 9/8/99	Time: 16:15
Relinquished by:	Date:	Time:
Relinquished by:	Date:	Time:

Received by:	Date:	Time:
Received by:	Date:	Time:
Received at Laboratory by: Nell Green	Date: 9-9-99	Time: 9:15 am

LAB USE ONLY
Intact (Y) / N
Headspace Y / (N)
Temp -1° C
Log-in Review MS

REMARKS:

Carrier # Fed Ex 261-9633-813

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TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Bryan Madrid
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 9/17/99

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Order ID Number: 99091307

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
131648	RA-313	Water	9/9/99	12:00	9/13/99
131649	MW-45	Water	9/10/99	11:30	9/13/99

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 3 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 131648
Description: RA-313

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		<0.001	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001
Benzene (mg/L)		<0.001	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001
Toluene (mg/L)		<0.001	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001
Ethylbenzene (mg/L)		<0.001	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001
M,P,O-Xylene (mg/L)		<0.001	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001
Total BTEX (mg/L)		<0.001	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001

Sample Number: 131649
Description: MW-45

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
MTBE (mg/L)		0.006	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001
Benzene (mg/L)		<0.005	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001
Toluene (mg/L)		<0.005	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001
Ethylbenzene (mg/L)		<0.005	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001
M,P,O-Xylene (mg/L)		<0.005	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001
Total BTEX (mg/L)		<0.005	1	E 602	9/15/99	9/15/99	RC	PB02332	QC02933	0.001

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE (mg/L)		<0.001	0.001	9/15/99	PB02332	QC02933
Benzene (mg/L)		<0.001	0.001	9/15/99	PB02332	QC02933
Toluene (mg/L)		<0.001	0.001	9/15/99	PB02332	QC02933
Ethylbenzene (mg/L)		<0.001	0.001	9/15/99	PB02332	QC02933
M,P,O-Xylene (mg/L)		<0.001	0.001	9/15/99	PB02332	QC02933
Total BTEX (mg/L)		<0.001	0.001	9/15/99	PB02332	QC02933

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC02933
LCS	Benzene (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC02933
LCS	Toluene (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC02933
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC02933
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.284	95		80 - 120	0 - 20	QC02933

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.095	95	72 - 128	QC02933
LCS	4-BFB (mg/L)	1	0.1	0.093	93	72 - 128	QC02933

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.098	98	3	80 - 120	0 - 20	QC02933
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.099	99	3	80 - 120	0 - 20	QC02933
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.099	99	3	80 - 120	0 - 20	QC02933
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.098	98	3	80 - 120	0 - 20	QC02933
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.292	97	3	80 - 120	0 - 20	QC02933

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.099	99	72 - 128	QC02933
LCSD	4-BFB (mg/L)	1	0.1	0.097	97	72 - 128	QC02933

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.091	91	80 - 120	9/15/99	QC02933
ICV	Benzene (mg/L)		0.1	0.102	102	80 - 120	9/15/99	QC02933
ICV	Toluene (mg/L)		0.1	0.101	101	80 - 120	9/15/99	QC02933
ICV	Ethylbenzene (mg/L)		0.1	0.099	99	80 - 120	9/15/99	QC02933
ICV	M,P,O-Xylene (mg/L)		0.3	0.295	98	80 - 120	9/15/99	QC02933
CCV (1	MTBE (mg/L)		0.1	0.097	97	80 - 120	9/15/99	QC02933
CCV (1	Benzene (mg/L)		0.1	0.098	98	80 - 120	9/15/99	QC02933
CCV (1	Toluene (mg/L)		0.1	0.098	98	80 - 120	9/15/99	QC02933
CCV (1	Ethylbenzene (mg/L)		0.1	0.096	96	80 - 120	9/15/99	QC02933
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.288	96	80 - 120	9/15/99	QC02933

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El Paso, Texas 79922-1028
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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 9909130 7

Company Name: NAVAJO REFINING Co. Phone #: (505) 748-3311

Address: (Street, City, Zip) 501 E. MAIN ARTESIA 88210 Fax #: (505) 748-9077

Contact Person: BRYAN MADRID

Invoice to: (If different from above)

Project #: Project Name: QUARTERLY OFF SITE

Project Location: Sampler Signature: Bryan Madrid

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	H2SO4	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH					Turn Around Time if different from standard	Hold
131648	RA-313	2	40ml	X						X		X	9/9/99	12:00	X	X																		
49	MW-45	2	"	X						X		X	9/10/99	11:30	X	X																		

Relinquished by: Bryan Madrid Date: 9/10/99 Time: 16:15

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received at Laboratory by: Victor Windham Date: 9-13-99 Time:

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp °

Log-in Review

REMARKS:

9/17/99

Carrier #

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Darrell Moore
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 11/18/99

Project Number: N/A
Project Name: Monthly Off-Site Plume
Project Location: Artesia,NM

Order ID Number: 99111109

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
135334	RA-4196	Water	11/8/99	13:40	11/11/99
135335	RA-4798	Water	11/8/99	13:50	11/11/99
135336	RA-313	Water	11/9/99	9:40	11/11/99
135337	RA-314	Water	11/9/99	9:54	11/11/99
135338	RA-4196	Water	11/9/99	14:33	11/11/99
135339	RA-1331	Water	11/9/99	14:38	11/11/99
135340	RA-1227	Water	11/10/99	11:25	11/11/99

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 5 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 135334
Description: RA-4196

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Benzene		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Toluene		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Ethylbenzene		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
M.P.O-Xylene		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Total BTEX		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.088	1	0.1	88	72 - 128	RC	PB03151	QC04078
4-BFB (mg/L)	0.073	1	0.1	73	72 - 128	RC	PB03151	QC04078

Sample Number: 135335
Description: RA-4798

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Benzene		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Toluene		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Ethylbenzene		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
M.P.O-Xylene		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Total BTEX		<0.001	1	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.09	1	0.1	90	72 - 128	RC	PB03151	QC04078
4-BFB (mg/L)	0.076	1	0.1	76	72 - 128	RC	PB03151	QC04078

Sample Number: 135336
Description: RA-313

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Benzene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Toluene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Ethylbenzene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
M.P.O-Xylene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Total BTEX		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.473	5	0.1	95	72 - 128	RC	PB03151	QC04078
4-BFB (mg/L)	0.412	5	0.1	82	72 - 128	RC	PB03151	QC04078

Sample Number: 135337
Description: RA-314

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Benzene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Toluene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Ethylbenzene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
M,P,O-Xylene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Total BTEX		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.468	5	0.1	94	72 - 128	RC	PB03151	QC04078
4-BFB (mg/L)	0.429	5	0.1	86	72 - 128	RC	PB03151	QC04078

Sample Number: 135338
Description: RA-4196

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Benzene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Toluene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Ethylbenzene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
M,P,O-Xylene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Total BTEX		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.477	5	0.1	95	72 - 128	RC	PB03151	QC04078
4-BFB (mg/L)	0.438	5	0.1	88	72 - 128	RC	PB03151	QC04078

Sample Number: 135339
Description: RA-1331

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Benzene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Toluene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Ethylbenzene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
M,P,O-Xylene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Total BTEX		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.46	5	0.1	460	72 - 128	RC	PB03151	QC04078
4-BFB (mg/L)	0.413	5	0.1	83	72 - 128	RC	PB03151	QC04078

Sample Number: 135340
Description: RA-1227

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Benzene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Toluene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Ethylbenzene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
M,P,O-Xylene		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001
Total BTEX		<0.005	5	E 602	11/16/99	11/16/99	RC	PB03151	QC04078	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.403	5	0.1	81	72 - 128	RC	PB03151	QC04078
4-BFB (mg/L)	0.393	5	0.1	79	72 - 128	RC	PB03151	QC04078

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE (mg/L)		<0.001	0.001	11/16/99	PB03151	QC04078
Benzene (mg/L)		<0.001	0.001	11/16/99	PB03151	QC04078
Toluene (mg/L)		<0.001	0.001	11/16/99	PB03151	QC04078
Ethylbenzene (mg/L)		<0.001	0.001	11/16/99	PB03151	QC04078
M,P,O-Xylene (mg/L)		<0.001	0.001	11/16/99	PB03151	QC04078
Total BTEX (mg/L)		<0.001	0.001	11/16/99	PB03151	QC04078

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC04078
LCS	Benzene (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC04078
LCS	Toluene (mg/L)	<0.001	1	0.1	0.094	94		80 - 120	0 - 20	QC04078
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.092	92		80 - 120	0 - 20	QC04078
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.266	89		80 - 120	0 - 20	QC04078

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.102	102	72 - 128	QC04078
LCS	4-BFB (mg/L)	1	0.1	0.095	95	72 - 128	QC04078

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.098	98	2	80 - 120	0 - 20	QC04078
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.094	94	1	80 - 120	0 - 20	QC04078
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.093	93	1	80 - 120	0 - 20	QC04078
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.092	92	0	80 - 120	0 - 20	QC04078
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.265	88	0	80 - 120	0 - 20	QC04078

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.089	89	72 - 128	QC04078
LCSD	4-BFB (mg/L)	1	0.1	0.106	106	72 - 128	QC04078

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.092	92	80 - 120	11/16/99	QC04078
ICV	Benzene (mg/L)		0.1	0.084	84	80 - 120	11/16/99	QC04078
ICV	Toluene (mg/L)		0.1	0.083	83	80 - 120	11/16/99	QC04078
ICV	Ethylbenzene (mg/L)		0.1	0.082	82	80 - 120	11/16/99	QC04078
ICV	M,P,O-Xylene (mg/L)		0.3	0.239	80	80 - 120	11/16/99	QC04078
CCV (1	MTBE (mg/L)		0.1	0.095	95	80 - 120	11/16/99	QC04078
CCV (1	Benzene (mg/L)		0.1	0.089	89	80 - 120	11/16/99	QC04078
CCV (1	Toluene (mg/L)		0.1	0.088	88	80 - 120	11/16/99	QC04078
CCV (1	Ethylbenzene (mg/L)		0.1	0.088	88	80 - 120	11/16/99	QC04078
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.254	85	80 - 120	11/16/99	QC04078

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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 99111109

Company Name: NAVAJO REFINING Co. Phone #: (505) 748-3311

Address: (Street, City, Zip) 501 E. Main Artesia 88210 Fax #: (505) 748-9077

Contact Person: DARRELL Moore

Invoice to: (If different from above)

Project #: Project Name: Mo. Offsite Plume

Project Location: Sampler Signature: Chuck Hoyt

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	H2SO4	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
135334	RA-4196	2	40mL	X						X		X	11/8/99	13:40	X	X														
335	RA-4798	2	40ml	X						X		X	11/8/99	13:50	X	X														
336	RA-313	2	40ml	X						X		X	11/9/99	9:40	X	X														
337	RA-314	2	40ml	X						X		X	11/9/99	9:54	X	X														
338	RA-4196	2	40ml	X						X		X	11/9/99	14:33	X	X														
339	RA-1331	2	40ml	X						X		X	11/9/99	14:38	X	X														
340	RA-1227	2	40mL	X						X		X	11/10/99	11:25	X	X														

Relinquished by: Chuck Hoyt Date: 11/10/99 Time: 16:15
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received at Laboratory by: Vicki Wrather 11-11-99 Date: 9:00 Time:

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

LAB USE ONLY

Intact (Y) / N
Headspace Y / (N)
Temp -2 °
Log-in Review AM

REMARKS:

Carrier # FedEx 267-5410-464

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Charlie Plymale
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 12/21/99

Project Number: Qtrly Offsite
Project Name: N/A
Project Location: 501 E Main, Artesia,NM

Order ID Number: 99121609

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
137496	RA 3353	Water	12/13/99	14:35	12/16/99
137497	KWB-3A	Water	12/13/99	14:30	12/16/99
137498	KWB-11A	Water	12/13/99	15:00	12/16/99
137499	RA3156	Water	12/13/99	13:45	12/16/99
137500	KWB-12A	Water	12/13/99	13:50	12/16/99
137501	KWA-2A	Water	12/13/99	10:47	12/16/99
137502	KWB-9	Water	12/13/99	14:05	12/16/99
137503	KWB-1C	Water	12/14/99	9:30	12/16/99
137504	KWB-1A	Water	12/14/99	8:55	12/16/99
137505	MW-18	Water	12/15/99	14:20	12/16/99
137506	KWB-7	Water	12/15/99	10:30	12/16/99
137507	NP-1	Water	12/15/99	11:45	12/16/99
137508	NP-2	Water	12/15/99	11:35	12/16/99
137509	RA-4196	Water	12/15/99	14:50	12/16/99
137510	45	Water	12/15/99	14:00	12/16/99
137511	RA-4798	Water	12/15/99	14:20	12/16/99

These results represent only the samples received in the laboratory. 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.

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Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 137496
Description: RA 3353

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Benzene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Toluene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Ethylbenzene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
M,P,O-Xylene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Total BTEX		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001

Sample Number: 137497
Description: KWB-3A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Benzene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Toluene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Ethylbenzene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
M,P,O-Xylene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Total BTEX		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001

Sample Number: 137498
Description: KWB-11A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Benzene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Toluene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Ethylbenzene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
M,P,O-Xylene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Total BTEX		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001

Sample Number: 137499
Description: RA3156

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Benzene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Toluene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Ethylbenzene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
M,P,O-Xylene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Total BTEX		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001

Sample Number: 137500
Description: KWB-12A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Benzene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Toluene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Ethylbenzene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
M,P,O-Xylene		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001
Total BTEX		<0.005	5	E 602	12/16/99	12/16/99	RC	PB00014	QC00020	0.001

Sample Number: 137501
Description: KWA-2A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Benzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Toluene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Ethylbenzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
M,P,O-Xylene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Total BTEX		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001

Sample Number: 137502
Description: KWB-9

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Benzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Toluene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Ethylbenzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
M,P,O-Xylene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Total BTEX		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001

Sample Number: 137503
Description: KWB-1C

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		0.030	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Benzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Toluene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Ethylbenzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
M,P,O-Xylene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Total BTEX		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001

Sample Number: 137504
Description: KWB-1A

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		0.029	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Benzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Toluene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Ethylbenzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
M,P,O-Xylene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Total BTEX		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001

Sample Number: 137505
Description: MW-18

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Benzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Toluene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Ethylbenzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
M,P,O-Xylene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Total BTEX		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001

Sample Number: 137506
Description: KWB-7

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		0.024	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Benzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Toluene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Ethylbenzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
M,P,O-Xylene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Total BTEX		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001

Sample Number: 137507
Description: NP-1

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Benzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Toluene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Ethylbenzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
M,P,O-Xylene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Total BTEX		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001

Sample Number: 137508
Description: NP-2

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Benzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Toluene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Ethylbenzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
M,P,O-Xylene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Total BTEX		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001

Sample Number: 137509
Description: RA-4196

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00010	QC00021	0.001
Benzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00010	QC00021	0.001
Toluene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00010	QC00021	0.001
Ethylbenzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00010	QC00021	0.001
M,P,O-Xylene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00010	QC00021	0.001
Total BTEX		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00010	QC00021	0.001

Sample Number: 137510
Description: 45

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Benzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Toluene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Ethylbenzene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
M,P,O-Xylene		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001
Total BTEX		<0.005	1	E 602	12/16/99	12/16/99	RC	PB00014	QC00021	0.001

Sample Number: 137511
Description: RA-4798

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/L)										
MTBE		<0.005	5	E 602	12/20/99	12/20/99	RC	PB00039	QC00055	0.001
Benzene		<0.005	5	E 602	12/20/99	12/20/99	RC	PB00039	QC00055	0.001
Toluene		<0.005	5	E 602	12/20/99	12/20/99	RC	PB00039	QC00055	0.001
Ethylbenzene		<0.005	5	E 602	12/20/99	12/20/99	RC	PB00039	QC00055	0.001
M,P,O-Xylene		<0.005	5	E 602	12/20/99	12/20/99	RC	PB00039	QC00055	0.001
Total BTEX		<0.005	5	E 602	12/20/99	12/20/99	RC	PB00039	QC00055	0.001

Surrogate	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT (mg/L)	0.511	5	0.1	102	72 - 128	RC	PB00039	QC00055
4-BFB (mg/L)	0.474	5	0.1	95	72 - 128	RC	PB00039	QC00055

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00020
Benzene (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00020
Toluene (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00020
Ethylbenzene (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00020
M,P,O-Xylene (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00020
Total BTEX (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00020
MTBE (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00021
MTBE (mg/L)		<0.001	0.001	12/16/99	PB00010	QC00021
Benzene (mg/L)		<0.001	0.001	12/16/99	PB00010	QC00021
Benzene (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00021
Toluene (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00021
Toluene (mg/L)		<0.001	0.001	12/16/99	PB00010	QC00021
Ethylbenzene (mg/L)		<0.001	0.001	12/16/99	PB00010	QC00021
Ethylbenzene (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00021
M,P,O-Xylene (mg/L)		<0.001	0.001	12/16/99	PB00010	QC00021
M,P,O-Xylene (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00021
Total BTEX (mg/L)		<0.001	0.001	12/16/99	PB00010	QC00021
Total BTEX (mg/L)		<0.001	0.001	12/16/99	PB00014	QC00021
MTBE (mg/L)		<0.001	0.001	12/20/99	PB00039	QC00055
Benzene (mg/L)		<0.001	0.001	12/20/99	PB00039	QC00055
Toluene (mg/L)		<0.001	0.001	12/20/99	PB00039	QC00055
Ethylbenzene (mg/L)		<0.001	0.001	12/20/99	PB00039	QC00055
M,P,O-Xylene (mg/L)		<0.001	0.001	12/20/99	PB00039	QC00055
Total BTEX (mg/L)		<0.001	0.001	12/20/99	PB00039	QC00055

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC00020
LCS	Benzene (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC00020
LCS	Toluene (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC00020
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.094	94		80 - 120	0 - 20	QC00020
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.273	91		80 - 120	0 - 20	QC00020

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.096	96	72 - 128	QC00020
LCS	4-BFB (mg/L)	1	0.1	0.095	95	72 - 128	QC00020

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCSD	MTBE (mg/L)	<0.001	1	0.1	0.097	97	1	80 - 120	0 - 20	QC00020
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.095	95	1	80 - 120	0 - 20	QC00020
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.094	94	1	80 - 120	0 - 20	QC00020
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.093	93	1	80 - 120	0 - 20	QC00020
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.272	91	0	80 - 120	0 - 20	QC00020

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.095	95	72 - 128	QC00020
LCSD	4-BFB (mg/L)	1	0.1	0.095	95	72 - 128	QC00020

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC00021
LCS	MTBE (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC00021
LCS	Benzene (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC00021
LCS	Benzene (mg/L)	<0.001	1	0.1	0.096	96		80 - 120	0 - 20	QC00021
LCS	Toluene (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC00021
LCS	Toluene (mg/L)	<0.001	1	0.1	0.095	95		80 - 120	0 - 20	QC00021
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.094	94		80 - 120	0 - 20	QC00021
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.094	94		80 - 120	0 - 20	QC00021
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.273	91		80 - 120	0 - 20	QC00021
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.273	91		80 - 120	0 - 20	QC00021

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.096	96	72 - 128	QC00021
LCS	TFT (mg/L)	1	0.1	0.096	96	72 - 128	QC00021
LCS	4-BFB (mg/L)	1	0.1	0.095	95	72 - 128	QC00021
LCS	4-BFB (mg/L)	1	0.1	0.095	95	72 - 128	QC00021

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCSD	MTBE (mg/L)	<0.001	1	0.1	0.097	97	1	80 - 120	0 - 20	QC00021
LCSD	MTBE (mg/L)	<0.001	1	0.1	0.097	97	1	80 - 120	0 - 20	QC00021
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.095	95	1	80 - 120	0 - 20	QC00021
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.095	95	1	80 - 120	0 - 20	QC00021

LCSD	Toluene (mg/L)	<0.001	1	0.1	0.094	94	1	80 - 120	0 - 20	QC00021
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.094	94	1	80 - 120	0 - 20	QC00021
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.093	93	1	80 - 120	0 - 20	QC00021
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.093	93	1	80 - 120	0 - 20	QC00021
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.272	91	0	80 - 120	0 - 20	QC00021
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.272	91	0	80 - 120	0 - 20	QC00021

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.095	95	72 - 128	QC00021
LCSD	TFT (mg/L)	1	0.1	0.095	95	72 - 128	QC00021
LCSD	4-BFB (mg/L)	1	0.1	0.095	95	72 - 128	QC00021
LCSD	4-BFB (mg/L)	1	0.1	0.095	95	72 - 128	QC00021

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/L)	<0.001	1	0.1	0.099	99		80 - 120	0 - 20	QC00055
LCS	Benzene (mg/L)	<0.001	1	0.1	0.091	91		80 - 120	0 - 20	QC00055
LCS	Toluene (mg/L)	<0.001	1	0.1	0.09	90		80 - 120	0 - 20	QC00055
LCS	Ethylbenzene (mg/L)	<0.001	1	0.1	0.089	89		80 - 120	0 - 20	QC00055
LCS	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.26	87		80 - 120	0 - 20	QC00055

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/L)	1	0.1	0.099	99	72 - 128	QC00055
LCS	4-BFB (mg/L)	1	0.1	0.098	98	72 - 128	QC00055

LCSD	MTBE (mg/L)	<0.001	1	0.1	0.095	95	4	80 - 120	0 - 20	QC00055
LCSD	Benzene (mg/L)	<0.001	1	0.1	0.092	92	1	80 - 120	0 - 20	QC00055
LCSD	Toluene (mg/L)	<0.001	1	0.1	0.091	91	1	80 - 120	0 - 20	QC00055
LCSD	Ethylbenzene (mg/L)	<0.001	1	0.1	0.089	89	0	80 - 120	0 - 20	QC00055
LCSD	M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.261	87	0	80 - 120	0 - 20	QC00055

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/L)	1	0.1	0.097	97	72 - 128	QC00055
LCSD	4-BFB (mg/L)	1	0.1	0.095	95	72 - 128	QC00055

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.098	98	80 - 120	12/16/99	QC00020
ICV	Benzene (mg/L)		0.1	0.097	97	80 - 120	12/16/99	QC00020
ICV	Toluene (mg/L)		0.1	0.096	96	80 - 120	12/16/99	QC00020
ICV	Ethylbenzene (mg/L)		0.1	0.095	95	80 - 120	12/16/99	QC00020
ICV	M,P,O-Xylene (mg/L)		0.3	0.277	92	80 - 120	12/16/99	QC00020
CCV (1	MTBE (mg/L)		0.1	0.103	103	80 - 120	12/16/99	QC00020
CCV (1	Benzene (mg/L)		0.1	0.097	97	80 - 120	12/16/99	QC00020
CCV (1	Toluene (mg/L)		0.1	0.096	96	80 - 120	12/16/99	QC00020
CCV (1	Ethylbenzene (mg/L)		0.1	0.093	93	80 - 120	12/16/99	QC00020
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.269	90	80 - 120	12/16/99	QC00020

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.098	98	80 - 120	12/16/99	QC00021
ICV	MTBE (mg/L)		0.1	0.098	98	80 - 120	12/16/99	QC00021
ICV	Benzene (mg/L)		0.1	0.097	97	80 - 120	12/16/99	QC00021
ICV	Benzene (mg/L)		0.1	0.097	97	80 - 120	12/16/99	QC00021
ICV	Toluene (mg/L)		0.1	0.096	96	80 - 120	12/16/99	QC00021
ICV	Toluene (mg/L)		0.1	0.096	96	80 - 120	12/16/99	QC00021
ICV	Ethylbenzene (mg/L)		0.1	0.095	95	80 - 120	12/16/99	QC00021
ICV	Ethylbenzene (mg/L)		0.1	0.095	95	80 - 120	12/16/99	QC00021
ICV	M,P,O-Xylene (mg/L)		0.3	0.277	92	80 - 120	12/16/99	QC00021
ICV	M,P,O-Xylene (mg/L)		0.3	0.277	92	80 - 120	12/16/99	QC00021
CCV (1	MTBE (mg/L)		0.1	0.103	103	80 - 120	12/16/99	QC00021
CCV (1	MTBE (mg/L)		0.1	0.103	103	80 - 120	12/16/99	QC00021
CCV (1	Benzene (mg/L)		0.1	0.097	97	80 - 120	12/16/99	QC00021
CCV (1	Benzene (mg/L)		0.1	0.097	97	80 - 120	12/16/99	QC00021
CCV (1	Toluene (mg/L)		0.1	0.096	96	80 - 120	12/16/99	QC00021
CCV (1	Toluene (mg/L)		0.1	0.096	96	80 - 120	12/16/99	QC00021
CCV (1	Ethylbenzene (mg/L)		0.1	0.093	93	80 - 120	12/16/99	QC00021
CCV (1	Ethylbenzene (mg/L)		0.1	0.093	93	80 - 120	12/16/99	QC00021
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.269	90	80 - 120	12/16/99	QC00021
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.269	90	80 - 120	12/16/99	QC00021

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/L)		0.1	0.098	98	80 - 120	12/20/99	QC00055
ICV	Benzene (mg/L)		0.1	0.095	95	80 - 120	12/20/99	QC00055
ICV	Toluene (mg/L)		0.1	0.095	95	80 - 120	12/20/99	QC00055

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Ethylbenzene (mg/L)		0.1	0.093	93	80 - 120	12/20/99	QC00055
ICV	M,P,O-Xylene (mg/L)		0.3	0.274	91	80 - 120	12/20/99	QC00055
CCV (1	MTBE (mg/L)		0.1	0.103	103	80 - 120	12/20/99	QC00055
CCV (1	Benzene (mg/L)		0.1	0.101	101	80 - 120	12/20/99	QC00055
CCV (1	Toluene (mg/L)		0.1	0.099	99	80 - 120	12/20/99	QC00055
CCV (1	Ethylbenzene (mg/L)		0.1	0.097	97	80 - 120	12/20/99	QC00055
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.286	95	80 - 120	12/20/99	QC00055

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TraceAnalysis, Inc.

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El Paso, Texas 79922-1028
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Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 9912609

Company Name: Navajo Refining
Phone #: 505 748 3311
Address: (Street, City, Zip) 501 E Main
Fax #: 505 748 9077
Contact Person: Charlie Plymale
Invoice to: (If different from above)
Project #:
Project Name: Quarterly offsite Sampling
Project Location: Artesia NM 88210
Sampler Signature: Charlie Plymale

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH					Turn Around Time if different from standard	Hold
137507	NP-1	2	40ml	X				X		X		12/15/99	11:45	X	X																			
508	NP-2	2	40ml	X				X		X		12/15/99	11:35	X	X																			
509	RA-4196	2	40ml	X				X		X		12/15/99	14:50	X	X																			
510	45	2	40ml	X				X		X		12/15/99	1400	X	X																			
511	RA-4798	2	40ml	X				X		X		12/15/99	1420	X	X																			

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Charlie Plymale	12/15/99	16:15			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Vicki Worden	12/16-99	10:00am

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

LAB USE ONLY

Intact (Y) / N
Headspace Y / (N)
Temp -2° °
Log-in Review MS

REMARKS:

Carrier # FedEx 272 4528-694

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El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 99121609

Company Name: Navajo
Phone #: 505 748 3311
Address: (Street, City, Zip) 501 E. Main
Fax #: 505 748 9077
Contact Person: Charlie Plymale
Invoice to: (If different from above)
Project #:
Project Name: Quarterly Offsite Sampling
Project Location: Artesia NM 88210
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH					Turn Around Time if different from standard	Hold
37496	RA 3353	2	40ml	X				X		X		12/13/99	14:35	X	X																			
97	KWB-3A	2	40ml	X				X		X		12/13/99	14:30	X	X																			
98	KWB-11A	2	40ml	X				X		X		12/13/99	15:00	X	X																			
99	RA3156	2	40ml	X				X		X		12/13/99	13:45	X	X																			
500	KWB-12A	2	40ml	X				X		X		12/13/99	13:50	X	X																			
501	KWB-2A	2	40ml	X				X		X		12/13/99	10:47	X	X																			
502	KWB-9	2	40ml	X				X		X		12/13/99	14:05	X	X																			
503	KWB-1C	2	40ml	X				X		X		12/14/99	9:30	X	X																			
504	KWB-1A	2	40ml	X				X		X		12/14/99	8:55	X	X																			
505	MW-18	2	40ml	X				X		X		12/15/99	14:20	X	X																			
506	XWB-7	2	40ml	X				X		X		12/15/99	10:30	X	X																			

Relinquished by: Date: 12/15/99 Time: 16:15
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received at Laboratory by: Vicki Winchell Date: 12-16-99 Time: 10:00am

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

LAB USE ONLY

Intact (Y) / N
Headspace Y / (N)
Temp -2° °
Log-in Review AS

REMARKS:
12.21

Carrier # Fed Ex 272-4528-694

TRACE ANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

February 14, 2000
Receiving Date: 01/14/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Prep Date: 01/21/2000
Analysis Date: 01/21/2000
Sampling Date: 01/13/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Offsite Well
Annual

TA#	Field Code	DISSOLVED Na (mg/L)	DISSOLVED K (mg/L)	DISSOLVED Mg (mg/L)	DISSOLVED Ca (mg/L)
T138725	KWB 1A	261	3.5	348	469
T138726	KWB 1C	269	4.3	321	468
ICV		19	20	19	19
CCV		20	20	20	20
Reporting Limit		0.50	0.50	0.50	0.50
METHOD BLANK		<0.50	<0.50	<0.50	<0.50
RPD		1	2	1	1
% Extraction Accuracy		105	108	99	103
% Instrument Accuracy		99	101	101	99

METHODS: EPA 200.7.
CHEMIST: RR/JM
SPIKE: 1,000 mg/L MAGNESIUM, CALCIUM, POTASSIUM, SODIUM.
CV: 20 mg/L MAGNESIUM, CALCIUM, POTASSIUM, SODIUM.

Director, Dr. Blair Leftwich

2-14-00
Date

TRACE ANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

February 14, 2000
Receiving Date: 01/14/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 01/13/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Offsite Well

TOTAL METALS Annual

TA#	FIELD CODE	Ag (mg/L)	Al (mg/L)	As (mg/L)	B (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Co (mg/L)	Cr (mg/L)	Cu (mg/L)
T138725	KWB 1A	0.02	0.14	<0.10	1.2	<0.10	<0.01	0.01	<0.05	<0.05	<0.10
T138726	KWB 1C	0.01	0.17	<0.10	1.2	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
ICV		0.202	0.98	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
CCV		0.205	0.97	1.0	1.0	0.98	1.0	1.0	1./0	1.0	1.0
METHOD BLANK		<0.005	<0.05	<0.10	<0.10	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
REPORTING LIMIT		0.005	0.05	0.10	0.10	0.10	0.01	0.01	0.05	0.05	0.10
RPD		0	1	2	1	2	1	1	0	1	1
% Extraction Accuracy		90	102	90	99	94	93	83	82	85	92
% Instrument Accuracy		101	97	103	104	100	103	103	102	101	100
PREP DATE		01/19/00	01/19/00	01/19/00	01/19/00	01/19/00	01/19/00	01/19/00	01/19/00	01/19/00	01/19/00
ANALYSIS DATE		01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00

TA#	FIELD CODE	Fe (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	Pb (mg/L)	Se (mg/L)	Hg (mg/L)	U (mg/L)	V (mg/L)	Zn (mg/L)
T138725	KWB 1A	0.14	0.22	<0.10	<0.10	<0.05	<0.05	<0.0002	<1.0	<0.10	<0.10
T138726	KWB 1C	0.25	0.25	<0.10	<0.10	<0.05	<0.05	<0.0002	<1.0	<0.10	<0.10
ICV		1.0	1.0	1.0	1.0	0.99	1.0	0.00101	1.0	1.0	1.0
CCV		0.99	1.0	1.0	1.0	1.0	1.0	0.00108	1.0	1.0	1.0
METHOD BLANK		<0.10	<0.10	<0.10	<0.10	<0.05	<0.05	<0.0002	<1.0	<0.10	<0.10
REPORTING LIMIT		0.10	0.10	0.10	0.10	0.05	0.05	0.0002	1.0	0.10	0.10
RPD		6	2	3	1	1	2	1	2	0	3
% Extraction Accuracy		90	86	87	81	86	93	95	92	90	81
% Instrument Accuracy		100	100	101	103	102	103	104	104	101	103
PREP DATE		01/19/00	01/19/00	01/19/00	01/19/00	01/19/00	01/19/00	01/19/00	01/19/00	01/19/00	01/19/00
ANALYSIS DATE		01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/19/00	01/25/00	01/25/00	01/25/00

METHODS: EPA 200.7, 245.1.
CHEMIST: Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn: RR Hg: BP
TOTAL METALS SPIKE: 0.40 mg/L Ag; 2.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.0010 mg/L Hg.
TOTAL METALS CV: 0.20 mg/L Ag; 1.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.0010 mg/L Hg.

Director, Dr. Blair Leftwich

2-14-00
DATE

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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Charlie Plymale
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 2/16/00

Project Number: N/A
Project Name: Mo Off-Site
Project Location: Artesia,NM

Order ID Number: A00011408

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
138725	KWB 1A	Water	1/13/00	13:40	1/14/00
138726	KWB 1C	Water	1/13/00	13:50	1/14/00

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 9 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 138725
Description: KWB 1A

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/20/00	1/20/00	JS	PB00358	QC00469	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/20/00	1/20/00	JS	PB00358	QC00469	1
Bicarbonate Alkalinity	450	1	E 310.1	1/20/00	1/20/00	JS	PB00358	QC00469	1
Total Alkalinity	450	1	E 310.1	1/20/00	1/20/00	JS	PB00358	QC00469	1
Ion Chromatography (IC) (mg/L)									
CL	340	1	E 300.0	1/14/00	1/14/00	JS	PB00297	QC00388	0.5
Fluoride	1.9	1	E 300.0	1/14/00	1/14/00	JS	PB00297	QC00388	0.1
Nitrate-N	<1.0	1	E 300.0	1/14/00	1/14/00	JS	PB00297	QC00388	0.2
Sulfate	2400	1	E 300.0	1/14/00	1/14/00	JS	PB00297	QC00388	0.5
PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Acenaphthylene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Acenaphthene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Fluorene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Phenanthrene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Anthracene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Fluoranthene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Pyrene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Chrysene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	35.26	1	80	44	34 - 130	MA	PB00733	QC00908
2-Fluorobiphenyl	45.04	1	80	56	38 - 128	MA	PB00733	QC00908
Terphenyl-d14	63.13	1	80	79	0 - 145	MA	PB00733	QC00908

Sample Number: 138726
Description: KWB 1C

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/20/00	1/20/00	JS	PB00358	QC00469	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/20/00	1/20/00	JS	PB00358	QC00469	1
Bicarbonate Alkalinity	434	1	E 310.1	1/20/00	1/20/00	JS	PB00358	QC00469	1
Total Alkalinity	434	1	E 310.1	1/20/00	1/20/00	JS	PB00358	QC00469	1
Ion Chromatography (IC) (mg/L)									
CL	350	1	E 300.0	1/14/00	1/14/00	JS	PB00297	QC00388	0.5
Fluoride	1.7	1	E 300.0	1/14/00	1/14/00	JS	PB00297	QC00388	0.1
Nitrate-N	<1.0	1	E 300.0	1/14/00	1/14/00	JS	PB00297	QC00388	0.2

Sulfate	2400	1	E 300.0	1/14/00	1/14/00	JS	PB00297	QC00388	0.5
PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Acenaphthylene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Acenaphthene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Fluorene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Phenanthrene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Anthracene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Fluoranthene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Pyrene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Chrysene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/17/00	2/15/00	MA	PB00733	QC00908	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	43.16	1	80	54	34 - 130	MA	PB00733	QC00908
2-Fluorobiphenyl	49.38	1	80	62	38 - 128	MA	PB00733	QC00908
Terphenyl-d14	59.58	1	80	74	0 - 145	MA	PB00733	QC00908

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Hydroxide Alkalinity (mg/L as CaCo3)		<1.0	1	1/20/00	PB00358	QC00469
Carbonate Alkalinity (mg/L as CaCo3)		<1.0	1	1/20/00	PB00358	QC00469
Bicarbonate Alkalinity (mg/L as CaCo3)		<4.0	1	1/20/00	PB00358	QC00469
Total Alkalinity (mg/L as CaCo3)		<4.0	1	1/20/00	PB00358	QC00469

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
CL (mg/L)		<0.5	0.5	1/14/00	PB00297	QC00388
Fluoride (mg/L)		<0.1	0.1	1/14/00	PB00297	QC00388
Nitrate-N (mg/L)		<0.2	0.2	1/14/00	PB00297	QC00388
Sulfate (mg/L)		<0.5	0.5	1/14/00	PB00297	QC00388

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Naphthalene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Acenaphthylene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Acenaphthene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Fluorene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Phenanthrene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Anthracene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Fluoranthene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Pyrene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Benzo(a)anthracene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Chrysene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Benzo(b)fluoranthene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Benzo(k)fluoranthene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Benzo(a)pyrene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Indeno(1,2,3-cd)pyrene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Dibenzo(a,h)anthracene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908
Benzo(g,h,i)perylene (mg/L)		<0.005	0.005	2/15/00	PB00733	QC00908

Surrogate	Result	Spike Amount	% Rec.	% Rec. Limit	QC Batch #
Nitrobenzene-d5 (mg/L)	58.14	80	73	34 - 130	QC00908
2-Fluorobiphenyl (mg/L)	60.82	80	76	38 - 128	QC00908
Terphenyl-d14 (mg/L)	79.91	80	100	0 - 145	QC00908

Quality Control Report
Matrix Spike and Matrix Duplicate Spike

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/L)	740	1	625	1365.08	100		80 - 120	0 - 20	QC00388
MS	Fluoride (mg/L)	7.9	1	125	123.14	92		80 - 120	0 - 20	QC00388
MS	Nitrate-N (mg/L)	<1.0	1	250	242.26	97		80 - 120	0 - 20	QC00388
MS	Sulfate (mg/L)	172.3	1	625	782.96	98		80 - 120	0 - 20	QC00388
MSD	CL (mg/L)	740	1	625	1362.12	100	0	80 - 120	0 - 20	QC00388
MSD	Fluoride (mg/L)	7.9	1	125	130.59	98	6	80 - 120	0 - 20	QC00388
MSD	Nitrate-N (mg/L)	<1.0	1	250	242.41	97	0	80 - 120	0 - 20	QC00388
MSD	Sulfate (mg/L)	172.3	1	625	786.38	99	1	80 - 120	0 - 20	QC00388

Quality Control Report
Duplicates

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Hydroxide Alkalinity (mg/L as CaCo		<1.0	<1.0	1	0	0 - 20	QC00469
Duplicate	Carbonate Alkalinity (mg/L as CaCo		<1.0	<1.0	1	0	0 - 20	QC00469
Duplicate	Bicarbonate Alkalinity (mg/L as CaC		454	434	1	5	0 - 20	QC00469
Duplicate	Total Alkalinity (mg/L as CaCo3)		454	434	1	5	0 - 20	QC00469

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Naphthalene (mg/L)	<0.005	1	80	64.015	80		35 - 118	0 - 20	QC00908
LCS	Acenaphthylene (mg/L)	<0.005	1	80	77.382	97		38 - 139	0 - 20	QC00908
LCS	Acenaphthene (mg/L)	<0.005	1	80	73.606	92		46 - 126	0 - 20	QC00908
LCS	Fluorene (mg/L)	<0.005	1	80	77.215	97		44 - 136	0 - 20	QC00908
LCS	Phenanthrene (mg/L)	<0.005	1	80	77.368	97		45 - 132	0 - 20	QC00908
LCS	Anthracene (mg/L)	<0.005	1	80	74.713	93		45 - 132	0 - 20	QC00908
LCS	Fluoranthene (mg/L)	<0.005	1	80	85.183	106		42 - 144	0 - 20	QC00908
LCS	Pyrene (mg/L)	<0.005	1	80	73.765	92		18 - 163	0 - 20	QC00908
LCS	Benzo(a)anthracene (mg/L)	<0.005	1	80	74.845	94		44 - 135	0 - 20	QC00908
LCS	Chrysene (mg/L)	<0.005	1	80	50.374	63		9 - 171	0 - 20	QC00908
LCS	Benzo(b)fluoranthene (mg/L)	<0.005	1	80	72.694	91		37 - 114	0 - 20	QC00908
LCS	Benzo(k)fluoranthene (mg/L)	<0.005	1	80	77.235	97		34 - 128	0 - 20	QC00908
LCS	Benzo(a)pyrene (mg/L)	<0.005	1	80	75.752	95		42 - 120	0 - 20	QC00908
LCS	Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	1	80	72.521	91		30 - 130	0 - 20	QC00908
LCS	Dibenzo(a,h)anthracene (mg/L)	<0.005	1	80	47.975	60		6 - 162	0 - 20	QC00908
LCS	Benzo(g,h,i)perylene (mg/L)	<0.005	1	80	74.855	94		39 - 118	0 - 20	QC00908

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	Nitrobenzene-d5 (mg/L)	1	80	70.11	88	34 - 130	QC00908
LCS	2-Fluorobiphenyl (mg/L)	1	80	75.30	94	38 - 128	QC00908
LCS	Terphenyl-d14 (mg/L)	1	80	70.87	89	0 - 145	QC00908

LCSD	Naphthalene (mg/L)	<0.005	1	80	53.120	66	19	35 - 118	0 - 20	QC00908
LCSD	Acenaphthylene (mg/L)	<0.005	1	80	64.079	80	19	38 - 139	0 - 20	QC00908
LCSD	Acenaphthene (mg/L)	<0.005	1	80	62.027	78	17	46 - 126	0 - 20	QC00908
LCSD	Fluorene (mg/L)	<0.005	1	80	67.980	85	13	44 - 136	0 - 20	QC00908
LCSD	Phenanthrene (mg/L)	<0.005	1	80	71.646	90	8	45 - 132	0 - 20	QC00908
LCSD	Anthracene (mg/L)	<0.005	1	80	69.816	87	7	45 - 132	0 - 20	QC00908
LCSD	Fluoranthene (mg/L)	<0.005	1	80	85.434	107	0	42 - 144	0 - 20	QC00908
LCSD	Pyrene (mg/L)	<0.005	1	80	77.829	97	5	18 - 163	0 - 20	QC00908
LCSD	Benzo(a)anthracene (mg/L)	<0.005	1	80	72.307	90	3	44 - 135	0 - 20	QC00908
LCSD	Chrysene (mg/L)	<0.005	1	80	47.573	59	6	9 - 171	0 - 20	QC00908
LCSD	Benzo(b)fluoranthene (mg/L)	<0.005	1	80	70.450	88	3	37 - 114	0 - 20	QC00908
LCSD	Benzo(k)fluoranthene (mg/L)	<0.005	1	80	71.098	89	8	34 - 128	0 - 20	QC00908
LCSD	Benzo(a)pyrene (mg/L)	<0.005	1	80	73.822	92	3	42 - 120	0 - 20	QC00908
LCSD	Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	1	80	70.688	88	3	30 - 130	0 - 20	QC00908
LCSD	Dibenzo(a,h)anthracene (mg/L)	<0.005	1	80	47.473	59	1	6 - 162	0 - 20	QC00908
LCSD	Benzo(g,h,i)perylene (mg/L)	<0.005	1	80	72.784	91	3	39 - 118	0 - 20	QC00908

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	Nitrobenzene-d5 (mg/L)	1	80	56.84	71	34 - 130	QC00908
LCSD	2-Fluorobiphenyl (mg/L)	1	80	60.66	76	38 - 128	QC00908
LCSD	Terphenyl-d14 (mg/L)	1	80	76.81	96	0 - 145	QC00908

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Hydroxide Alkalinity (mg/L as CaCo3)		0	<1.0	0	80 - 120	1/20/00	QC00469
ICV	Carbonate Alkalinity (mg/L as CaCo3)		0	2120	0	80 - 120	1/20/00	QC00469
ICV	Bicarbonate Alkalinity (mg/L as CaCo3)		0	140	0	80 - 120	1/20/00	QC00469
ICV	Total Alkalinity (mg/L as CaCo3)		2400	2260	94	80 - 120	1/20/00	QC00469
CCV 1	Hydroxide Alkalinity (mg/L as CaCo3)		0	<1.0	0	80 - 120	1/20/00	QC00469
CCV 1	Carbonate Alkalinity (mg/L as CaCo3)		0	2320	0	80 - 120	1/20/00	QC00469
CCV 1	Bicarbonate Alkalinity (mg/L as CaCo3)		0	<1.0	0	80 - 120	1/20/00	QC00469
CCV 1	Total Alkalinity (mg/L as CaCo3)		2400	2320	97	80 - 120	1/20/00	QC00469

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	12.51	100	80 - 120	1/14/00	QC00388
ICV	Fluoride (mg/L)		2.5	2.46	98	80 - 120	1/14/00	QC00388
ICV	Nitrate-N (mg/L)		5	4.65	93	80 - 120	1/14/00	QC00388
ICV	Sulfate (mg/L)		12.5	12.57	101	80 - 120	1/14/00	QC00388
CCV 1	CL (mg/L)		12.5	11.56	92	80 - 120	1/14/00	QC00388
CCV 1	Fluoride (mg/L)		2.5	2.48	99	80 - 120	1/14/00	QC00388
CCV 1	Nitrate-N (mg/L)		5	4.66	93	80 - 120	1/14/00	QC00388
CCV 1	Sulfate (mg/L)		12.5	11.85	95	80 - 120	1/14/00	QC00388

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
CCV 1	Naphthalene (mg/L)		60	60.25	100	35 - 118	2/15/00	QC00908
CCV 1	Acenaphthylene (mg/L)		60	60.27	100	38 - 139	2/15/00	QC00908
CCV 1	Acenaphthene (mg/L)		60	59.00	98	46 - 126	2/15/00	QC00908
CCV 1	Fluorene (mg/L)		60	59.94	100	44 - 136	2/15/00	QC00908
CCV 1	Phenanthrene (mg/L)		60	59.42	99	45 - 132	2/15/00	QC00908
CCV 1	Anthracene (mg/L)		60	59.77	100	45 - 132	2/15/00	QC00908
CCV 1	Fluoranthene (mg/L)		60	68.28	114	42 - 144	2/15/00	QC00908
CCV 1	Pyrene (mg/L)		60	62.57	104	18 - 163	2/15/00	QC00908
CCV 1	Benzo(a)anthracene (mg/L)		60	60.63	101	44 - 135	2/15/00	QC00908
CCV 1	Chrysene (mg/L)		60	59.18	99	9 - 171	2/15/00	QC00908
CCV 1	Benzo(b)fluoranthene (mg/L)		60	59.21	99	37 - 114	2/15/00	QC00908
CCV 1	Benzo(k)fluoranthene (mg/L)		60	57.56	96	34 - 128	2/15/00	QC00908
CCV 1	Benzo(a)pyrene (mg/L)		60	61.52	103	42 - 120	2/15/00	QC00908
CCV 1	Indeno(1,2,3-cd)pyrene (mg/L)		60	62.97	105	30 - 130	2/15/00	QC00908
CCV 1	Dibenzo(a,h)anthracene (mg/L)		60	59.82	100	6 - 162	2/15/00	QC00908
CCV 1	Benzo(g,h,i)perylene (mg/L)		60	61.78	103	39 - 118	2/15/00	QC00908
*CCV 1	Nitrobenzene-d5 (mg/L)		60	60.24	100	34 - 130	2/15/00	QC00908

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
CCV 1	2-Fluorobiphenyl (mg/L)		60	60.44	101	38 - 128	2/15/00	QC00908
CCV 1	Terphenyl-d14 (mg/L)		60	64.36	107	0 - 145	2/15/00	QC00908

138725-26

Page ____ of ____

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A00011408

Company Name: NAVAJO
Phone #: 505 7483311
Address: (Street, City, Zip) PO Box 159
Fax #: 505 7489077
Contact Person: Charlie Phymale or Darrell Moore
Invoice to: (If different from above)
Project #:
Project Name: Offsite well Abd Annual
Project Location: Artesia NM
Sampler Signature: Charlie Phymale

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
138725	KWB 1A	1	1L	X						X	X	1/13/00	1340
		1	250ml	X					X	X		1/13/00	1340
		1	1L	X						X	X	1/13/00	1340
138726	KWB 1C	1	1L	X					X	X	X	1/13/00	1350
		1	250ml	X						X		1/13/00	1350
		1	1L	X						X	X	1/13/00	1350

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
			See Attachment													

Relinquished by: Charlie Phymale Date: 1/13/00 Time: 16:15
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received at Laboratory by: Vicki Wrather Date: 1-14-00 Time: 9:00

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

LAB USE ONLY

Intact (Y) / N
Headspace Y / N
Temp -2° °
Log-in Review TMS

REMARKS:

2/16

Carrier # TRK - 272 - 710 - 635

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

February 14, 2000
Receiving Date: 01/21/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Prep Date: 01/27/2000
Analysis Date: 01/27/2000
Sampling Date: 01/20/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Annual Offsite Wells

TA#	Field Code	DISSOLVED Na (mg/L)	DISSOLVED K (mg/L)	DISSOLVED Mg (mg/L)	DISSOLVED Ca (mg/L)
T139183	KWB 2A	136	15.2	206	418
T139184	KWB 3A	444	8.8	264	602
T139185	KWB 7	236	6.1	221	314
T139186	KWB 9	119	3.4	149	333
T139187	KWB 11A	278	6.2	229	424
T139188	KWB 12A	233	3.3	215	512
ICV		21	20	21	21
CCV		19	19	20	20
Reporting Limit		0.50	0.50	0.50	0.50
METHOD BLANK		<0.50	<0.50	<0.50	<0.50
RPD		6	3	6	5
% Extraction Accuracy		103	99	101	102
% Instrument Accuracy		100	100	102	102

METHODS: EPA 200.7.
CHEMIST: RR/JM
SPIKE: 1,000 mg/L MAGNESIUM, CALCIUM, POTASSIUM, SODIUM.
CV: 20 mg/L MAGNESIUM, CALCIUM, POTASSIUM, SODIUM.

Director, Dr. Blair Leftwich

2-14-00
Date

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

February 14, 2000
Receiving Date: 01/21/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 01/20/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Annual Offsite Wells

TOTAL METALS

TA#	FIELD CODE	Ag (mg/L)	Al (mg/L)	As (mg/L)	B (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Co (mg/L)	Cr (mg/L)	Cu (mg/L)
T139187	KWB 11A	0.05	6.6	<0.10	0.58	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
T139188	KWB 12A	0.05	36	<0.10	<0.50	0.33	<0.01	<0.01	<0.05	<0.05	<0.10
ICV		0.206	0.96	1.0	1.0	1.0	1.0	1.0	0.99	1.0	0.95
CCV		0.200	0.93	1.0	1.0	1.0	0.95	1.0	1.0	0.90	0.99
METHOD BLANK		<0.005	<0.05	<0.10	<0.50	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
REPORTING LIMIT		0.005	0.05	0.10	0.50	0.10	0.01	0.01	0.05	0.05	0.10
RPD		0	0	0	0	5	10	2	1	5	10
% Extraction Accuracy		28	110	110	110	99	99	104	96	100	105
% Instrument Accuracy		101	94	103	105	102	98	104	100	97	97
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00

TA#	FIELD CODE	Fe (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	Pb (mg/L)	Se (mg/L)	Hg (mg/L)	U (mg/L)	V (mg/L)	Zn (mg/L)
T139187	KWB 11A	3.1	<0.10	<0.10	<0.10	<0.005	<0.01	0.00088	<1.0	<0.10	<0.10
T139188	KWB 12A	29	0.62	<0.10	<0.10	0.02	<0.01	0.002	<1.0	<0.10	<0.10
ICV		0.99	1.0	1.0	1.0	1.0	1.0	0.00103	1.0	0.97	1.0
CCV		1.0	1.0	1.0	0.99	0.97	0.93	0.00113	1.0	0.99	1.0
METHOD BLANK		<0.10	<0.10	<0.10	<0.10	<0.005	<0.01	<0.0002	<1.0	<0.10	<0.10
REPORTING LIMIT		0.10	0.10	0.10	0.10	0.005	0.01	0.0002	1.0	0.10	0.10
RPD		0	6	2	15	2	5	1	0	4	0
% Extraction Accuracy		110	109	108	105	102	110	105	105	101	110
% Instrument Accuracy		100	104	105	101	99	98	108	107	98	106
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/26/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/26/00	01/31/00	01/31/00	01/31/00

METHODS: EPA 200.7, 245.1.
CHEMIST: Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn: RR Hg: BP
TOTAL METALS SPIKE: 0.40 mg/L Ag; 2.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.
TOTAL METALS CV: 0.20 mg/L Ag; 1.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.

Director, Dr. Blair Leftwich

2-14-00
DATE

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E-Mail: lab@traceanalysis.com

February 14, 2000
Receiving Date: 01/21/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 01/20/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Annual Offsite Wells

TOTAL METALS

TA#	FIELD CODE	Ag (mg/L)	Al (mg/L)	As (mg/L)	B (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Co (mg/L)	Cr (mg/L)	Cu (mg/L)
T139185	KWB 7	0.04	35	<0.10	0.64	0.25	<0.01	<0.01	<0.05	<0.05	<0.10
T139186	KWB 9	0.05	23	<0.10	0.55	0.16	<0.01	<0.01	<0.05	<0.05	<0.10
ICV		0.206	0.96	1.0	1.0	1.0	1.0	1.0	0.99	1.0	0.95
CCV		0.200	0.93	1.0	1.0	1.0	0.95	1.0	1.0	0.90	0.99
METHOD BLANK		<0.005	<0.05	<0.10	<0.50	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
REPORTING LIMIT		0.005	0.05	0.10	0.50	0.10	0.01	0.01	0.05	0.05	0.10
RPD		0	0	0	0	5	10	2	1	5	10
% Extraction Accuracy		28	110	110	110	99	99	104	96	100	105
% Instrument Accuracy		101	94	103	105	102	98	104	100	97	97
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00

TA#	FIELD CODE	Fe (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	Pb (mg/L)	Se (mg/L)	Hg (mg/L)	U (mg/L)	V (mg/L)	Zn (mg/L)
T139185	KWB 7	20	5.4	<0.10	<0.10	<0.005	<0.01	0.0014	<1.0	<0.10	<0.10
T139186	KWB 9	11	0.25	<0.10	<0.10	<0.005	<0.01	0.0012	<1.0	<0.10	<0.10
ICV		0.99	1.0	1.0	1.0	1.0	1.0	0.00103	1.0	0.97	1.0
CCV		1.0	1.0	1.0	0.99	0.97	0.93	0.00113	1.0	0.99	1.0
METHOD BLANK		<0.10	<0.10	<0.10	<0.10	<0.005	<0.01	<0.0002	<1.0	<0.10	<0.10
REPORTING LIMIT		0.10	0.10	0.10	0.10	0.005	0.01	0.0002	1.0	0.10	0.10
RPD		0	6	2	15	2	5	1	0	4	0
% Extraction Accuracy		110	109	108	105	102	110	105	105	101	110
% Instrument Accuracy		100	104	105	101	99	98	108	107	98	106
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/26/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/26/00	01/31/00	01/31/00	01/31/00

METHODS: EPA 200.7, 245.1.
CHEMIST: Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn: RR Hg: BP
TOTAL METALS SPIKE: 0.40 mg/L Ag; 2.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.
TOTAL METALS CV: 0.20 mg/L Ag; 1.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.

Director, Dr. Blair Leftwich

2-14-00
DATE

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E-Mail: lab@traceanalysis.com

February 14, 2000
Receiving Date: 01/21/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 01/20/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Annual Offsite Wells

TOTAL METALS

TA#	FIELD CODE	Ag (mg/L)	Al (mg/L)	As (mg/L)	B (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Co (mg/L)	Cr (mg/L)	Cu (mg/L)
T139183	KWB 2A	0.04	22	<0.10	<0.50	0.12	<0.01	<0.01	<0.05	<0.05	<0.10
T139184	KWB 3A	0.04	1.8	<0.10	<0.50	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
ICV		0.206	0.96	1.0	1.0	1.0	1.0	1.0	0.99	1.0	0.95
CCV		0.200	0.93	1.0	1.0	1.0	0.95	1.0	1.0	0.90	0.99
METHOD BLANK		<0.005	<0.05	<0.10	<0.50	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
REPORTING LIMIT		0.005	0.05	0.10	0.50	0.10	0.01	0.01	0.05	0.05	0.10
RPD		0	0	0	0	5	10	2	1	5	10
% Extraction Accuracy		28	110	110	110	99	99	104	96	100	105
% Instrument Accuracy		101	94	103	105	102	98	104	100	97	97
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00

TA#	FIELD CODE	Fe (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	Pb (mg/L)	Se (mg/L)	Hg (mg/L)	U (mg/L)	V (mg/L)	Zn (mg/L)
T139183	KWB 2A	0.12	0.20	<0.10	<0.10	<0.005	<0.01	0.00036	<1.0	<0.10	<0.10
T139184	KWB 3A	0.85	<0.10	<0.10	<0.10	<0.005	<0.01	<0.0002	<1.0	<0.10	<0.10
ICV		0.99	1.0	1.0	1.0	1.0	1.0	0.00103	1.0	0.97	1.0
CCV		1.0	1.0	1.0	0.99	0.97	0.93	0.00113	1.0	0.99	1.0
METHOD BLANK		<0.10	<0.10	<0.10	<0.10	<0.005	<0.01	<0.0002	<1.0	<0.10	<0.10
REPORTING LIMIT		0.10	0.10	0.10	0.10	0.005	0.01	0.0002	1.0	0.10	0.10
RPD		0	6	2	15	2	5	1	0	4	0
% Extraction Accuracy		110	109	108	105	102	110	105	105	101	110
% Instrument Accuracy		100	104	105	101	99	98	108	107	98	106
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/26/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/26/00	01/31/00	01/31/00	01/31/00

METHODS: EPA 200.7, 245.1.
CHEMIST: Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn: RR Hg: BP
TOTAL METALS SPIKE: 0.40 mg/L Ag; 2.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.
TOTAL METALS CV: 0.20 mg/L Ag; 1.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.

Director, Dr. Blair Leftwich

2-14-00
DATE

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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Charlie Plymale
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 2/16/00

Project Number: N/A
Project Name: Annual Offsite Wells
Project Location: Artesia, NM

Order ID Number: A00012107

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
139183	KWB 2A	Water	1/20/00	9:20	1/21/00
139184	KWB 3A	Water	1/20/00	10:30	1/21/00
139185	KWB 7	Water	1/20/00	10:30	1/21/00
139186	KWB 9	Water	1/20/00	9:45	1/21/00
139187	KWB 11A	Water	1/20/00	13:50	1/21/00
139188	KWB 12A	Water	1/20/00	10:10	1/21/00

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 14 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 139183
Description: KWB 2A

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Bicarbonate Alkalinity	266	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Total Alkalinity	266	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Ion Chromatography (IC) (mg/L)									
CL	130	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00503	0.5
Fluoride	1.6	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00503	0.1
Nitrate-N	7.1	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00503	0.2
Sulfate	1700	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00503	0.5
PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluorene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Phenanthrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Chrysene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	57.06	1	80	71	34 - 130	LK	PB00742	QC00918
2-Fluorobiphenyl	59.96	1	80	75	38 - 128	LK	PB00742	QC00918
Terphenyl-d14	55.91	1	80	70	0 - 145	LK	PB00742	QC00918

Sample Number: 139184
Description: KWB 3A

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Bicarbonate Alkalinity	296	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Total Alkalinity	296	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Ion Chromatography (IC) (mg/L)									
CL	460	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00503	0.5
Fluoride	1.2	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00503	0.1
Nitrate-N	22	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00503	0.2

Sulfate	2400	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00503	0.5
PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluorene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Phenanthrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Chrysene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	57.43	1	80	72	34 - 130	LK	PB00742	QC00918
2-Fluorobiphenyl	61.03	1	80	76	38 - 128	LK	PB00742	QC00918
Terphenyl-d14	65.65	1	80	82	0 - 145	LK	PB00742	QC00918

Sample Number: 139185
Description: KWB 7

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Bicarbonate Alkalinity	670	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Total Alkalinity	670	1	E 310.1	1/24/00	1/24/00	MD	PB00413	QC00544	1
Ion Chromatography (IC) (mg/L)									
CL	390	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.5
Fluoride	1.7	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.1
Nitrate-N	3.0	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.2
Sulfate	980	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.5
PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluorene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Phenanthrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Chrysene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005

Dibenzo(a,h)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	53.75	1	80	67	34 - 130	LK	PB00742	QC00918
2-Fluorobiphenyl	57.94	1	80	72	38 - 128	LK	PB00742	QC00918
Terphenyl-d14	58.10	1	80	73	0 - 145	LK	PB00742	QC00918

Sample Number: 139186
Description: KWB 9

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Bicarbonate Alkalinity	502	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Total Alkalinity	502	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Ion Chromatography (IC) (mg/L)									
CL	110	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.5
Fluoride	1.1	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.1
Nitrate-N	<1.0	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.2
Sulfate	970	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.5
PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluorene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Phenanthrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Chrysene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	54.05	1	80	68	34 - 130	LK	PB00742	QC00918
2-Fluorobiphenyl	56.84	1	80	71	38 - 128	LK	PB00742	QC00918
Terphenyl-d14	54.53	1	80	68	0 - 145	LK	PB00742	QC00918

Sample Number: 139187
Description: KWB 11A

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Bicarbonate Alkalinity	240	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1

Total Alkalinity	240	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Ion Chromatography (IC) (mg/L)									
CL	500	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.5
Fluoride	2.6	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.1
Nitrate-N	6.6	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.2
Sulfate	1300	1	E 300.0	1/21/00	1/21/00	JS	PB00383	QC00506	0.5
PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluorene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Phenanthrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Chrysene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	46.80	1	80	59	34 - 130	LK	PB00742	QC00918
2-Fluorobiphenyl	51.25	1	80	64	38 - 128	LK	PB00742	QC00918
Terphenyl-d14	48.48	1	80	61	0 - 145	LK	PB00742	QC00918

Sample Number: 139188
Description: KWB 12A

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Bicarbonate Alkalinity	330	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Total Alkalinity	330	1	E 310.1	1/24/00	1/24/00	MD	PB00414	QC00545	1
Ion Chromatography (IC) (mg/L)									
CL	94	1	E 300.0	1/21/00	1/22/00	JS	PB00383	QC00508	0.5
Fluoride	1.2	1	E 300.0	1/21/00	1/22/00	JS	PB00383	QC00508	0.1
Nitrate-N	5.6	1	E 300.0	1/21/00	1/22/00	JS	PB00383	QC00508	0.2
Sulfate	1900	1	E 300.0	1/21/00	1/22/00	JS	PB00383	QC00508	0.5
PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Acenaphthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluorene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Phenanthrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005

Chrysene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00742	QC00918	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	50.56	1	80	63	34 - 130	LK	PB00742	QC00918
2-Fluorobiphenyl	52.87	1	80	66	38 - 128	LK	PB00742	QC00918
Terphenyl-d14	56.65	1	80	71	0 - 145	LK	PB00742	QC00918

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Hydroxide Alkalinity (mg/L as CaCo3)		<1.0	1	1/24/00	PB00413	QC00544
Carbonate Alkalinity (mg/L as CaCo3)		<1.0	1	1/24/00	PB00413	QC00544
Bicarbonate Alkalinity (mg/L as CaCo3)		<1.0	1	1/24/00	PB00413	QC00544
Total Alkalinity (mg/L as CaCo3)		<1.0	1	1/24/00	PB00413	QC00544
Hydroxide Alkalinity (mg/L as CaCo3)		<1.0	1	1/24/00	PB00414	QC00545
Carbonate Alkalinity (mg/L as CaCo3)		<1.0	1	1/24/00	PB00414	QC00545
Bicarbonate Alkalinity (mg/L as CaCo3)		<1.0	1	1/24/00	PB00414	QC00545
Total Alkalinity (mg/L as CaCo3)		<1.0	1	1/24/00	PB00414	QC00545

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
CL (mg/L)		<0.5	0.5	1/21/00	PB00383	QC00503
Fluoride (mg/L)		<0.1	0.1	1/21/00	PB00383	QC00503
Nitrate-N (mg/L)		<0.2	0.2	1/21/00	PB00383	QC00503
Sulfate (mg/L)		<0.5	0.5	1/21/00	PB00383	QC00503
CL (mg/L)		<0.5	0.5	1/21/00	PB00383	QC00506
Fluoride (mg/L)		<0.1	0.1	1/21/00	PB00383	QC00506
Nitrate-N (mg/L)		<0.2	0.2	1/21/00	PB00383	QC00506
Sulfate (mg/L)		<0.5	0.5	1/21/00	PB00383	QC00506
CL (mg/L)		<0.5	0.5	1/22/00	PB00383	QC00508
Fluoride (mg/L)		<0.1	0.1	1/22/00	PB00383	QC00508
Nitrate-N (mg/L)		<0.2	0.2	1/22/00	PB00383	QC00508
Sulfate (mg/L)		<0.5	0.5	1/22/00	PB00383	QC00508

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Naphthalene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Acenaphthylene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Acenaphthene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Fluorene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Phenanthrene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Anthracene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Fluoranthene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Pyrene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Benzo(a)anthracene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Chrysene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Benzo(b)fluoranthene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Benzo(k)fluoranthene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Benzo(a)pyrene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Indeno(1,2,3-cd)pyrene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Dibenzo(a,h)anthracene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918
Benzo(g,h,i)perylene (mg/L)		<0.005	0.005	1/26/00	PB00742	QC00918

Surrogate	Result	Spike Amount	% Rec.	% Rec. Limit	QC Batch #
Nitrobenzene-d5 (mg/L)	58.51	80	73	34 - 130	QC00918
2-Fluorobiphenyl (mg/L)	60.79	80	76	38 - 128	QC00918
Terphenyl-d14 (mg/L)	47.24	80	59	0 - 145	QC00918

Quality Control Report
Matrix Spike and Matrix Duplicate Spike

Standard	Param		Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/L)	*	170	1	125	264.72	76		80 - 120	0 - 20	QC00503
MS	Fluoride (mg/L)	*	2.3	1	25	26.97	99		80 - 120	0 - 20	QC00503
MS	Nitrate-N (mg/L)	*	3.7	1	50	49.19	91		80 - 120	0 - 20	QC00503
MS	Sulfate (mg/L)	*	73	1	125	191.09	94		80 - 120	0 - 20	QC00503

* CL - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 90.
* Fluoride - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 97.
* Nitrate-N - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 87.
* Sulfate - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 96.

Standard	Param		Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MSD	CL (mg/L)	*	170	1	125	266.33	77	2	80 - 120	0 - 20	QC00503
MSD	Fluoride (mg/L)	*	2.3	1	25	26.71	98	1	80 - 120	0 - 20	QC00503
MSD	Nitrate-N (mg/L)	*	3.7	1	50	49.50	92	1	80 - 120	0 - 20	QC00503
MSD	Sulfate (mg/L)	*	73	1	125	191.04	94	0	80 - 120	0 - 20	QC00503

* CL - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 90.
* Fluoride - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 97.
* Nitrate-N - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 87.
* Sulfate - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 96.

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/L)	1.2	1	12.5	11.74	84		80 - 120	0 - 20	QC00506
MS	Fluoride (mg/L)	<0.1	1	2.5	2.47	99		80 - 120	0 - 20	QC00506
MS	Nitrate-N (mg/L)	<0.2	1	5	4.75	95		80 - 120	0 - 20	QC00506
MS	Sulfate (mg/L)	0.83	1	12.5	12.38	92		80 - 120	0 - 20	QC00506
MSD	CL (mg/L)	1.2	1	12.5	11.65	84	1	80 - 120	0 - 20	QC00506
MSD	Fluoride (mg/L)	<0.1	1	2.5	2.41	96	2	80 - 120	0 - 20	QC00506
MSD	Nitrate-N (mg/L)	<0.2	1	5	4.78	96	1	80 - 120	0 - 20	QC00506
MSD	Sulfate (mg/L)	0.83	1	12.5	12.51	93	1	80 - 120	0 - 20	QC00506

Standard	Param		Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/L)	*	170	1	125	274.10	83		80 - 120	0 - 20	QC00508
MS	Fluoride (mg/L)	*	2.5	1	25	26.96	98		80 - 120	0 - 20	QC00508
MS	Nitrate-N (mg/L)	*	4.1	1	50	50.03	92		80 - 120	0 - 20	QC00508
MS	Sulfate (mg/L)	*	78	1	125	196.11	94		80 - 120	0 - 20	QC00508

* CL - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 90.
* Fluoride - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 98.
* Nitrate-N - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 88.
* Sulfate - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 94.

Standard	Param		Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MSD	CL (mg/L)	*	170	1	125	272.54	82	2	80 - 120	0 - 20	QC00508

MSD	Fluoride (mg/L)	*	2.5	1	25	26.53	96	2	80 - 120	0 - 20	QC00508
MSD	Nitrate-N (mg/L)	*	4.1	1	50	50.01	92	0	80 - 120	0 - 20	QC00508
MSD	Sulfate (mg/L)	*	78	1	125	196.06	94	0	80 - 120	0 - 20	QC00508

* CL - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 90.
* Fluoride - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 98.
* Nitrate-N - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 88.
* Sulfate - I spiked the *10 dilution, but reported the *5 dilution. The correct %EA = 94.

Quality Control Report
Duplicates

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Hydroxide Alkalinity (mg/L as CaCo		< 1	<1.0	1	0	0 - 20	QC00544
Duplicate	Carbonate Alkalinity (mg/L as CaCo		< 1	<1.0	1	0	0 - 20	QC00544
Duplicate	Bicarbonate Alkalinity (mg/L as CaC		662	670	1	1	0 - 20	QC00544
Duplicate	Total Alkalinity (mg/L as CaCo3)		662	670	1	1	0 - 20	QC00544

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Hydroxide Alkalinity (mg/L as CaCo		< 1	<1.0	1	0	0 - 20	QC00545
Duplicate	Carbonate Alkalinity (mg/L as CaCo		< 1	<1.0	1	0	0 - 20	QC00545
Duplicate	Bicarbonate Alkalinity (mg/L as CaC		500	502	1	0	0 - 20	QC00545
Duplicate	Total Alkalinity (mg/L as CaCo3)		500	502	1	0	0 - 20	QC00545

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Naphthalene (mg/L)	<0.005	1	80	57.76	72		35 - 118	0 - 20	QC00918
LCS	Acenaphthylene (mg/L)	<0.005	1	80	65.53	82		38 - 139	0 - 20	QC00918
LCS	Acenaphthene (mg/L)	<0.005	1	80	62.72	78		46 - 126	0 - 20	QC00918
LCS	Fluorene (mg/L)	<0.005	1	80	67.78	85		44 - 136	0 - 20	QC00918
LCS	Phenanthrene (mg/L)	<0.005	1	80	66.43	83		45 - 132	0 - 20	QC00918
LCS	Anthracene (mg/L)	<0.005	1	80	64.14	80		45 - 132	0 - 20	QC00918
LCS	Fluoranthene (mg/L)	<0.005	1	80	64.87	81		42 - 144	0 - 20	QC00918
LCS	Pyrene (mg/L)	<0.005	1	80	57.88	72		18 - 163	0 - 20	QC00918
LCS	Benzo(a)anthracene (mg/L)	<0.005	1	80	62.04	78		44 - 135	0 - 20	QC00918
LCS	Chrysene (mg/L)	<0.005	1	80	34.04	43		9 - 171	0 - 20	QC00918
LCS	Benzo(b)fluoranthene (mg/L)	<0.005	1	80	60.97	76		37 - 114	0 - 20	QC00918
LCS	Benzo(k)fluoranthene (mg/L)	<0.005	1	80	61.13	76		34 - 128	0 - 20	QC00918
LCS	Benzo(a)pyrene (mg/L)	<0.005	1	80	63.10	79		42 - 120	0 - 20	QC00918
LCS	Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	1	80	56.81	71		30 - 130	0 - 20	QC00918
LCS	Dibenzo(a,h)anthracene (mg/L)	<0.005	1	80	33.07	41		6 - 162	0 - 20	QC00918
LCS	Benzo(g,h,i)perylene (mg/L)	<0.005	1	80	62.70	78		39 - 118	0 - 20	QC00918

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	Nitrobenzene-d5 (mg/L)	1	80	61.91	77	34 - 130	QC00918
LCS	2-Fluorobiphenyl (mg/L)	1	80	63.15	79	38 - 128	QC00918
LCS	Terphenyl-d14 (mg/L)	1	80	35.80	45	0 - 145	QC00918

LCSD	Naphthalene (mg/L)	<0.005	1	80	54.30	68	6	35 - 118	0 - 20	QC00918
LCSD	Acenaphthylene (mg/L)	<0.005	1	80	62.31	78	5	38 - 139	0 - 20	QC00918
LCSD	Acenaphthene (mg/L)	<0.005	1	80	60.68	76	3	46 - 126	0 - 20	QC00918
LCSD	Fluorene (mg/L)	<0.005	1	80	64.14	80	6	44 - 136	0 - 20	QC00918
LCSD	Phenanthrene (mg/L)	<0.005	1	80	67.01	84	1	45 - 132	0 - 20	QC00918
LCSD	Anthracene (mg/L)	<0.005	1	80	63.74	80	1	45 - 132	0 - 20	QC00918
LCSD	Fluoranthene (mg/L)	<0.005	1	80	64.02	80	1	42 - 144	0 - 20	QC00918
LCSD	Pyrene (mg/L)	<0.005	1	80	61.81	77	7	18 - 163	0 - 20	QC00918
LCSD	Benzo(a)anthracene (mg/L)	<0.005	1	80	62.17	78	0	44 - 135	0 - 20	QC00918
LCSD	Chrysene (mg/L)	<0.005	1	80	35.30	44	4	9 - 171	0 - 20	QC00918
LCSD	Benzo(b)fluoranthene (mg/L)	<0.005	1	80	59.60	75	2	37 - 114	0 - 20	QC00918
LCSD	Benzo(k)fluoranthene (mg/L)	<0.005	1	80	63.09	79	3	34 - 128	0 - 20	QC00918
LCSD	Benzo(a)pyrene (mg/L)	<0.005	1	80	61.16	76	3	42 - 120	0 - 20	QC00918
LCSD	Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	1	80	55.74	70	2	30 - 130	0 - 20	QC00918
LCSD	Dibenzo(a,h)anthracene (mg/L)	<0.005	1	80	33.57	42	2	6 - 162	0 - 20	QC00918
LCSD	Benzo(g,h,i)perylene (mg/L)	<0.005	1	80	62.90	79	0	39 - 118	0 - 20	QC00918

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	Nitrobenzene-d5 (mg/L)	1	80	54.62	68	34 - 130	QC00918
LCSD	2-Fluorobiphenyl (mg/L)	1	80	59.34	74	38 - 128	QC00918
LCSD	Terphenyl-d14 (mg/L)	1	80	42.03	53	0 - 145	QC00918

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Hydroxide Alkalinity (mg/L as CaCo3)		0	0	0	80 - 120	1/24/00	QC00544
ICV	Carbonate Alkalinity (mg/L as CaCo3)		0	2080	0	80 - 120	1/24/00	QC00544
ICV	Bicarbonate Alkalinity (mg/L as CaCo3)		0	40	0	80 - 120	1/24/00	QC00544
ICV	Total Alkalinity (mg/L as CaCo3)		2400	2120	88	80 - 120	1/24/00	QC00544
CCV 1	Hydroxide Alkalinity (mg/L as CaCo3)		0	0	0	80 - 120	1/24/00	QC00544
CCV 1	Carbonate Alkalinity (mg/L as CaCo3)		0	2160	0	80 - 120	1/24/00	QC00544
CCV 1	Bicarbonate Alkalinity (mg/L as CaCo3)		0	40	0	80 - 120	1/24/00	QC00544
CCV 1	Total Alkalinity (mg/L as CaCo3)		2400	2200	92	80 - 120	1/24/00	QC00544

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Hydroxide Alkalinity (mg/L as CaCo3)		0	0	0	80 - 120	1/24/00	QC00545
ICV	Carbonate Alkalinity (mg/L as CaCo3)		0	2080	0	80 - 120	1/24/00	QC00545
ICV	Bicarbonate Alkalinity (mg/L as CaCo3)		0	40	0	80 - 120	1/24/00	QC00545
ICV	Total Alkalinity (mg/L as CaCo3)		2400	2120	88	80 - 120	1/24/00	QC00545
CCV 1	Hydroxide Alkalinity (mg/L as CaCo3)		0	0	0	80 - 120	1/24/00	QC00545
CCV 1	Carbonate Alkalinity (mg/L as CaCo3)		0	2000	0	80 - 120	1/24/00	QC00545
CCV 1	Bicarbonate Alkalinity (mg/L as CaCo3)		0	140	0	80 - 120	1/24/00	QC00545
CCV 1	Total Alkalinity (mg/L as CaCo3)		2400	2140	89	80 - 120	1/24/00	QC00545

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	11.37	91	80 - 120	1/21/00	QC00503
ICV	Fluoride (mg/L)		2.5	2.47	99	80 - 120	1/21/00	QC00503
ICV	Nitrate-N (mg/L)		5	4.62	92	80 - 120	1/21/00	QC00503
ICV	Sulfate (mg/L)		12.5	11.82	95	80 - 120	1/21/00	QC00503
CCV 1	CL (mg/L)		12.5	11.29	90	80 - 120	1/21/00	QC00503
CCV 1	Fluoride (mg/L)		2.5	2.44	98	80 - 120	1/21/00	QC00503
CCV 1	Nitrate-N (mg/L)		5	4.59	92	80 - 120	1/21/00	QC00503
CCV 1	Sulfate (mg/L)		12.5	11.90	95	80 - 120	1/21/00	QC00503

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	11.29	90	80 - 120	1/21/00	QC00506
ICV	Fluoride (mg/L)		2.5	2.44	98	80 - 120	1/21/00	QC00506
ICV	Nitrate-N (mg/L)		5	4.59	92	80 - 120	1/21/00	QC00506
ICV	Sulfate (mg/L)		12.5	11.90	95	80 - 120	1/21/00	QC00506
CCV 1	CL (mg/L)		12.5	11.24	90	80 - 120	1/21/00	QC00506

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
CCV 1	Fluoride (mg/L)		2.5	2.45	98	80 - 120	1/21/00	QC00506
CCV 1	Nitrate-N (mg/L)		5	4.60	92	80 - 120	1/21/00	QC00506
CCV 1	Sulfate (mg/L)		12.5	11.86	95	80 - 120	1/21/00	QC00506

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	11.24	90	80 - 120	1/22/00	QC00508
ICV	Fluoride (mg/L)		2.5	2.45	98	80 - 120	1/22/00	QC00508
ICV	Nitrate-N (mg/L)		5	4.60	92	80 - 120	1/22/00	QC00508
ICV	Sulfate (mg/L)		12.5	11.86	95	80 - 120	1/22/00	QC00508
CCV 1	CL (mg/L)		12.5	11.23	90	80 - 120	1/22/00	QC00508
CCV 1	Fluoride (mg/L)		2.5	2.43	97	80 - 120	1/22/00	QC00508
CCV 1	Nitrate-N (mg/L)		5	4.58	92	80 - 120	1/22/00	QC00508
CCV 1	Sulfate (mg/L)		12.5	11.83	95	80 - 120	1/22/00	QC00508

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
CCV 1	Naphthalene (mg/L)		60	59.63	99	35 - 118	1/26/00	QC00918
CCV 1	Acenaphthylene (mg/L)		60	61.41	102	38 - 139	1/26/00	QC00918
CCV 1	Acenaphthene (mg/L)		60	59.96	100	46 - 126	1/26/00	QC00918
CCV 1	Fluorene (mg/L)		60	59.32	99	44 - 136	1/26/00	QC00918
CCV 1	Phenanthrene (mg/L)		60	59.04	98	45 - 132	1/26/00	QC00918
CCV 1	Anthracene (mg/L)		60	59.72	100	45 - 132	1/26/00	QC00918
CCV 1	Fluoranthene (mg/L)		60	52.06	87	42 - 144	1/26/00	QC00918
CCV 1	Pyrene (mg/L)		60	56.71	95	18 - 163	1/26/00	QC00918
CCV 1	Benzo(a)anthracene (mg/L)		60	60.62	101	44 - 135	1/26/00	QC00918
CCV 1	Chrysene (mg/L)		60	60.69	101	9 - 171	1/26/00	QC00918
CCV 1	Benzo(b)fluoranthene (mg/L)		60	60.15	100	37 - 114	1/26/00	QC00918
CCV 1	Benzo(k)fluoranthene (mg/L)		60	59.86	100	34 - 128	1/26/00	QC00918
CCV 1	Benzo(a)pyrene (mg/L)		60	59.74	100	42 - 120	1/26/00	QC00918
CCV 1	Indeno(1,2,3-cd)pyrene (mg/L)		60	53.33	89	30 - 130	1/26/00	QC00918
CCV 1	Dibenzo(a,h)anthracene (mg/L)		60	54.16	90	6 - 162	1/26/00	QC00918
CCV 1	Benzo(g,h,i)perylene (mg/L)		60	58.15	97	39 - 118	1/26/00	QC00918
CCV 1	Nitrobenzene-d5 (mg/L)		60	59.26	99	34 - 130	1/26/00	QC00918
CCV 1	2-Fluorobiphenyl (mg/L)		60	61.83	103	38 - 128	1/26/00	QC00918
CCV 1	Terphenyl-d14 (mg/L)		60	56.02	93	0 - 145	1/26/00	QC00918

139183-88

Page 1 of 2

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El Paso, Texas 79922-1028
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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A00012107

Company Name: NAVAJO Refining Phone #: 505 7483311

Address: (Street, City, Zip) 501 E. Main Fax #: 505 7489077

Contact Person: Charlie Plymale or Darrell Moore

Invoice to: (If different from above)

Project #: Project Name: Annual offsite Wells

Project Location: Artesia NM Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
139183	KWB2A	1	1L	X						X	X	1/20/00	9:20
	"	1	1L	X						X	X	1/20/00	9:20
	"	2	250ml	X					X	X		1/20/00	9:20
184	KWB3A	1	1L	X						X	X	1/20/00	10:30
	"	1	1L	X						X	X	1/20/00	10:30
	"	2	250ml	X					X	X		1/20/00	10:30
185	KWB7	1	1L	X						X	X	1/20/00	10:30
	"	1	1L	X						X	X	1/20/00	10:30
	"	2	250ml	X					X	X		1/20/00	10:30

See list for Annual

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602 | BTEX 8021B/602 | TPH 418.1/TX1005 | PAH 8270C | Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7 | TCLP Metals Ag As Ba Cd Cr Pb Se Hg | TCLP Volatiles | TCLP Semi Volatiles | TCLP Pesticides | RCI | GC-MS Vol. 8260B/624 | GC/MS Semi. Vol. 8270C/625 | PCB's 8082/608 | Pesticides 8081A/608 | BOD, TSS, pH | Turn Around Time if different from standard | Hold

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	1/20/00	16:15			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Vicki Windham	1-20-00	9:30

LAB USE ONLY

Intact (Y) / N

Headspace Y / N

Temp 2 °

Log-in Review ok

REMARKS:

2/16

Carrier # Fedex TRK 273-2474-315

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A000l2107

Company Name: Navajo Refining | Phone #: 505 748 3311

Address: (Street, City, Zip) 501 E Main | Fax #: 505 748 9077

Contact Person: Charlie Plymale or Darrell Moore

Invoice to: (If different from above)

Project #: | Project Name: Annual off. Well S

Project Location: Artesia NM | Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
139186	KWB 9	1	1L	X						X	X	1/20/00	9:45
	"	1	1L	X						X	X	1/20/00	9:45
	"	2	250ml	X					X	X		1/20/00	9:45
187	KWB 11A	1	1L	X						X	X	1/20/00	13:50
	"	1	1L	X						X	X	1/20/00	13:50
	"	2	250ml	X					X	X		1/20/00	13:50
188	KWB 12A	1	1L	X						X	X	1/20/00	10:10
	"	1	1L	X						X	X	1/20/00	10:10
	"	2	250ml	X					X	X		1/20/00	10:10

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold

See list for Annual

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	1/20/00	16:15			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Vicki Windham	1-21-00	9:30

LAB USE ONLY

Intact (Y) / N

Headspace Y / N

Temp -2 °

Log-in Review MS

REMARKS:

Carrier # Fed Ex 273-2474-315

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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TRACE ANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

February 15, 2000
Receiving Date: 01/24/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Prep Date: 02/01/2000
Analysis Date: 02/01/2000
Sampling Date: 01/21/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Annual Offsite Wells

TA#	Field Code	DISSOLVED Na (mg/L)	DISSOLVED K (mg/L)	DISSOLVED Mg (mg/L)	DISSOLVED Ca (mg/L)
T139291	MW 18	90	25	222	351
T139292	MW 28	151	22	240	84
T139293	MW 29	324	11	329	429
T139294	MW 45	506	11	283	509
ICV		21	21	21	21
CCV		21	21	21	21
Reporting Limit		0.50	0.50	0.50	0.50
METHOD BLANK		<0.50	<0.50	<0.50	<0.50
RPD		1	1	1	1
% Extraction Accuracy		102	104	108	106
% Instrument Accuracy		105	105	105	105

METHODS: EPA 200.7.
CHEMIST: RR
SPIKE: 1,000 mg/L MAGNESIUM, CALCIUM, POTASSIUM, SODIUM.
CV: 20 mg/L MAGNESIUM, CALCIUM, POTASSIUM, SODIUM.

Director, Dr. Blair Leftwich

02/17/00
Date

TRACE ANALYSIS, INC.

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4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

February 17, 2000
Receiving Date: 01/24/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 01/21/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Annual Offsite Wells

TOTAL METALS

TA#	FIELD CODE	Ag (mg/L)	Al (mg/L)	As (mg/L)	B (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Co (mg/L)	Cr (mg/L)	Cu (mg/L)
T139291	MW 18	0.02	0.76	<0.10	0.64	0.18	<0.01	<0.01	<0.05	<0.05	<0.10
ICV		0.206	0.96	1.07	1.03	1.00	1.02	1.06	0.99	1.04	0.95
CCV		0.200	0.93	1.00	1.07	1.03	0.95	1.01	1.01	0.90	0.99
METHOD BLANK		<0.005	<0.05	<0.10	<0.50	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
REPORTING LIMIT		0.005	0.05	0.10	0.50	0.10	0.01	0.01	0.05	0.05	0.10
RPD		0	0	0	0	5	10	2	1	5	10
% Extraction Accuracy		28	110	110	110	99	99	104	96	100	105
% Instrument Accuracy		101	94	103	105	102	98	104	100	97	97
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00

TA#	FIELD CODE	Fe (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	Pb (mg/L)	Se (mg/L)	Hg (mg/L)	U (mg/L)	V (mg/L)	Zn (mg/L)
T139291	MW 18	0.42	0.10	<0.10	<0.10	<0.005	<0.01	<0.0002	<1.0	<0.10	<0.10
ICV		0.99	1.05	1.04	1.03	1.02	1.03	0.00103	1.09	0.97	1.08
CCV		1.01	1.04	1.06	0.99	0.97	0.93	0.00113	1.05	0.99	1.05
METHOD BLANK		<0.10	<0.10	<0.10	<0.10	<0.005	<0.01	<0.0002	<1.0	<0.10	<0.10
REPORTING LIMIT		0.10	0.10	0.10	0.10	0.005	0.01	0.0002	1.0	0.10	0.10
RPD		0	6	2	15	2	5	1	0	4	0
% Extraction Accuracy		110	109	108	105	102	110	105	105	101	110
% Instrument Accuracy		100	104	105	101	99	98	108	107	98	106
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/26/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/26/00	01/31/00	01/31/00	01/31/00

METHODS: EPA 200.7, 245.1.
CHEMIST: Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn: RR Hg: BP
TOTAL METALS SPIKE: 0.40 mg/L Ag; 2.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.
TOTAL METALS CV: 0.20 mg/L Ag; 1.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.

Director, Dr. Blair Leftwich

2-17-00
DATE

TRACE ANALYSIS, INC.

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4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

February 17, 2000
Receiving Date: 01/24/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 01/21/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Annual Offsite Wells

TOTAL METALS

TA#	FIELD CODE	Ag (mg/L)	Al (mg/L)	As (mg/L)	B (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Co (mg/L)	Cr (mg/L)	Cu (mg/L)
T139292	MW 28	0.03	1.5	<0.10	1.5	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
ICV		0.206	0.96	1.07	1.03	1.00	1.0	1.06	0.99	1.04	0.95
CCV		0.200	0.93	1.00	1.07	1.03	0.95	1.01	1.01	0.90	0.99
METHOD BLANK		<0.005	<0.05	<0.10	<0.50	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
REPORTING LIMIT		0.005	0.05	0.10	0.50	0.10	0.01	0.01	0.05	0.05	0.10
RPD		0	0	0	0	5	10	2	1	5	10
% Extraction Accuracy		28	110	110	110	99	99	104	96	100	105
% Instrument Accuracy		101	94	103	105	102	98	104	100	97	97
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00

TA#	FIELD CODE	Fe (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	Pb (mg/L)	Se (mg/L)	Hg (mg/L)	U (mg/L)	V (mg/L)	Zn (mg/L)
T139292	MW 28	0.81	<0.10	<0.10	<0.10	0.26	<0.01	<0.0002	<1.0	<0.10	<0.10
ICV		0.99	1.05	1.04	1.03	1.02	1.03	0.00103	1.09	0.97	1.08
CCV		1.01	1.04	1.06	0.99	0.97	0.93	0.00118	1.05	0.99	1.05
METHOD BLANK		<0.10	<0.10	<0.10	<0.10	<0.005	<0.01	<0.0002	<1.0	<0.10	<0.10
REPORTING LIMIT		0.10	0.10	0.10	0.10	0.005	0.01	0.0002	1.0	0.10	0.10
RPD		0	6	2	15	2	5	4	0	4	0
% Extraction Accuracy		110	109	108	105	102	110	112	105	101	110
% Instrument Accuracy		100	104	105	101	99	98	116	107	98	106
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/26/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/26/00	01/31/00	01/31/00	01/31/00

METHODS: EPA 200.7, 245.1.
CHEMIST: Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn: RR Hg: BP
TOTAL METALS SPIKE: 0.40 mg/L Ag; 2.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.
TOTAL METALS CV: 0.20 mg/L Ag; 1.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.

BL
Director, Dr. Blair Leftwich

2-17-00
DATE

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E-Mail: lab@traceanalysis.com

February 17, 2000
Receiving Date: 01/24/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 01/21/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Annual Offsite Wells

TOTAL METALS

TA#	FIELD CODE	Ag (mg/L)	Al (mg/L)	As (mg/L)	B (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Co (mg/L)	Cr (mg/L)	Cu (mg/L)
T139293	MW 29	0.04	0.35	<0.10	1.1	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
ICV		0.206	0.96	1.07	1.03	1.00	1.02	1.06	0.99	1.04	0.95
CCV		0.200	0.93	1.00	1.07	1.03	0.95	1.01	1.01	0.90	0.99
METHOD BLANK		<0.005	<0.05	<0.10	<0.50	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
REPORTING LIMIT		0.005	0.05	0.10	0.50	0.10	0.01	0.01	0.05	0.05	0.10
RPD		0	0	0	0	5	10	2	1	5	10
% Extraction Accuracy		28	110	110	110	99	99	104	96	100	105
% Instrument Accuracy		101	94	103	105	102	98	104	100	97	97
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00

TA#	FIELD CODE	Fe (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	Pb (mg/L)	Se (mg/L)	Hg (mg/L)	U (mg/L)	V (mg/L)	Zn (mg/L)
T139293	MW 29	0.25	0.49	<0.10	<0.10	<0.005	<0.01	<0.0002	<1.0	<0.10	<0.10
ICV		0.99	1.05	1.04	1.03	1.02	1.03	0.00103	1.09	0.97	1.08
CCV		1.01	1.04	1.06	0.99	0.97	0.93	0.00118	1.05	0.99	1.05
METHOD BLANK		<0.10	<0.10	<0.10	<0.10	<0.005	<0.01	<0.0002	<1.0	<0.10	<0.10
REPORTING LIMIT		0.10	0.10	0.10	0.10	0.005	0.01	0.0002	1.0	0.10	0.10
RPD		0	6	2	15	2	5	4	0	4	0
% Extraction Accuracy		110	109	108	105	102	110	112	105	101	110
% Instrument Accuracy		100	104	105	101	99	98	116	107	98	106
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/26/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/26/00	01/31/00	01/31/00	01/31/00

METHODS: EPA 200.7, 245.1.
CHEMIST: Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn: RR Hg: BP
TOTAL METALS SPIKE: 0.40 mg/L Ag; 2.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.
TOTAL METALS CV: 0.20 mg/L Ag; 1.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.

Director, Dr. Blair Leftwich

2-17-00
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E-Mail: lab@traceanalysis.com

February 17, 2000
Receiving Date: 01/24/2000
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO
Attention: Charlie Plymale or Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 01/21/2000
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Annual Offsite Wells

TOTAL METALS

TA#	FIELD CODE	Ag (mg/L)	Al (mg/L)	As (mg/L)	B (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Co (mg/L)	Cr (mg/L)	Cu (mg/L)
T139294	MW 45	0.04	16	<0.10	<0.50	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
ICV		0.206	0.96	1.07	1.03	1.00	1.02	1.06	0.99	1.04	0.95
CCV		0.200	0.93	1.00	1.07	1.03	0.95	1.01	1.01	0.90	0.99
METHOD BLANK		<0.005	<0.05	<0.10	<0.50	<0.10	<0.01	<0.01	<0.05	<0.05	<0.10
REPORTING LIMIT		0.005	0.05	0.10	0.50	0.10	0.01	0.01	0.05	0.05	0.10
RPD		0	0	0	0	5	10	2	1	5	10
% Extraction Accuracy		28	110	110	110	99	99	104	96	100	105
% Instrument Accuracy		101	94	103	105	102	98	104	100	97	97
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00

TA#	FIELD CODE	Fe (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	Pb (mg/L)	Se (mg/L)	Hg (mg/L)	U (mg/L)	V (mg/L)	Zn (mg/L)
T139294	MW 45	6.2	0.40	<0.10	<0.10	0.04	<0.01	<0.0002	<1.0	<0.10	<0.10
ICV		0.99	1.05	1.04	1.03	1.02	1.03	0.00103	1.09	0.97	1.08
CCV		1.01	1.04	1.06	0.99	0.97	0.93	0.00118	1.05	0.99	1.05
METHOD BLANK		<0.10	<0.10	<0.10	<0.10	<0.005	<0.01	<0.0002	<1.0	<0.10	<0.10
REPORTING LIMIT		0.10	0.10	0.10	0.10	0.005	0.01	0.0002	1.0	0.10	0.10
RPD		0	6	2	15	2	5	4	0	4	0
% Extraction Accuracy		110	109	108	105	102	110	112	105	101	110
% Instrument Accuracy		100	104	105	101	99	98	116	107	98	106
PREP DATE		01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/28/00	01/26/00	01/28/00	01/28/00	01/28/00
ANALYSIS DATE		01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/26/00	01/31/00	01/31/00	01/31/00

METHODS: EPA 200.7, 245.1.
CHEMIST: Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn: RR Hg: BP
TOTAL METALS SPIKE: 0.40 mg/L Ag; 2.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.
TOTAL METALS CV: 0.20 mg/L Ag; 1.0 mg/L Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, U, V, Zn; 0.00100 mg/L Hg.

Director, Dr. Blair Leftwich

2-17-00
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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Charlie Plymale
Navajo Refining
501 E. Main
Artesia, NM 88210

Report Date: 2/17/00

Project Number: N/A
Project Name: Annual Offsite Wells
Project Location: Artesia, NM

Order ID Number: A00012406

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
139291	MW 18	Water	1/21/00	9:45	1/24/00
139292	MW 28	Water	1/21/00	10:45	1/24/00
139293	MW 29	Water	1/21/00	10:30	1/24/00
139294	MW 45	Water	1/21/00	10:10	1/24/00

These results represent only the samples received in the laboratory. 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.

This report consists of a total of 11 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 139291
Description: MW 18

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Bicarbonate Alkalinity	336	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Total Alkalinity	336	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Ion Chromatography (IC) (mg/L)									
CL	190	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00543	0.5
Fluoride	1.6	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00543	0.1
Nitrate-N	* 8.2	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00543	0.2
Sulfate	1000	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00543	0.5
PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Acenaphthylene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Acenaphthene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Fluorene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Phenanthrene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Anthracene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Fluoranthene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Pyrene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Chrysene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/24/00	1/25/00	LK	PB00734	QC00909	0.005

* Nitrate-N - Sample came in already out of holding time for NO3.

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	51.59	1	80	64	34 - 130	LK	PB00734	QC00909
2-Fluorobiphenyl	58.49	1	80	73	38 - 128	LK	PB00734	QC00909
Terphenyl-d14	56.27	1	80	70	0 - 145	LK	PB00734	QC00909

Sample Number: 139292
Description: MW 28

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Bicarbonate Alkalinity	590	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Total Alkalinity	590	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Ion Chromatography (IC) (mg/L)									
CL	200	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00543	0.5
Fluoride	1.6	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00543	0.1

Nitrate-N	* <1.0	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00543	0.2
Sulfate	350	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00543	0.5

* Nitrate-N - Sample came in already out of holding time for NO3.

PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Acenaphthylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Acenaphthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Fluorene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Phenanthrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Chrysene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	47.60	1	80	60	34 - 130	LK	PB00778	QC00952
2-Fluorobiphenyl	48.85	1	80	61	38 - 128	LK	PB00778	QC00952
Terphenyl-d14	40.61	1	80	51	0 - 145	LK	PB00778	QC00952

Sample Number: 139293
Description: MW 29

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Bicarbonate Alkalinity	632	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Total Alkalinity	632	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Ion Chromatography (IC) (mg/L)									
CL	330	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00542	0.5
Fluoride	2.9	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00542	0.1
Nitrate-N	* <1.0	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00542	0.2
Sulfate	1600	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00542	0.5

* Nitrate-N - Sample came in already out of holding time for NO3.

PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Acenaphthylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Acenaphthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Fluorene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Phenanthrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Chrysene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005

Benzo(k)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	51.67	1	80	65	34 - 130	LK	PB00778	QC00952
2-Fluorobiphenyl	51.98	1	80	65	38 - 128	LK	PB00778	QC00952
Terphenyl-d14	46.67	1	80	58	0 - 145	LK	PB00778	QC00952

Sample Number: 139294
Description: MW 45

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Alkalinity (mg/L as CaCo3)									
Hydroxide Alkalinity	<1.0	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Carbonate Alkalinity	<1.0	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Bicarbonate Alkalinity	300	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Total Alkalinity	300	1	E 310.1	1/27/00	1/27/00	JS	PB00469	QC00611	1
Ion Chromatography (IC) (mg/L)									
CL	470	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00542	0.5
Fluoride	2.9	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00542	0.1
Nitrate-N	* <1.0	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00542	0.2
Sulfate	2200	1	E 300.0	1/24/00	1/24/00	JS	PB00412	QC00542	0.5
* Nitrate-N - Sample came in already out of holding time for NO3.									
PAH (mg/L)									
Naphthalene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Acenaphthylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Acenaphthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Fluorene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Phenanthrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(a)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Chrysene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(b)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(k)fluoranthene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(a)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Indeno(1,2,3-cd)pyrene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Dibenzo(a,h)anthracene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005
Benzo(g,h,i)perylene	<0.005	1	E 625	1/24/00	1/26/00	LK	PB00778	QC00952	0.005

Surrogate (mg/L)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
Nitrobenzene-d5	50.81	1	80	64	34 - 130	LK	PB00778	QC00952
2-Fluorobiphenyl	53.82	1	80	67	38 - 128	LK	PB00778	QC00952
Terphenyl-d14	49.74	1	80	62	0 - 145	LK	PB00778	QC00952

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Hydroxide Alkalinity (mg/L as CaCo3)		<1.0	1	1/27/00	PB00469	QC00611
Carbonate Alkalinity (mg/L as CaCo3)		<1.0	1	1/27/00	PB00469	QC00611
Bicarbonate Alkalinity (mg/L as CaCo3)		<4.0	1	1/27/00	PB00469	QC00611
Total Alkalinity (mg/L as CaCo3)		<4.0	1	1/27/00	PB00469	QC00611

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
CL (mg/L)		<0.5	0.5	1/24/00	PB00412	QC00542
Fluoride (mg/L)		<0.1	0.1	1/24/00	PB00412	QC00542
Nitrate-N (mg/L)		<0.2	0.2	1/24/00	PB00412	QC00542
Sulfate (mg/L)		<0.5	0.5	1/24/00	PB00412	QC00542
CL (mg/L)		<0.5	0.5	1/24/00	PB00412	QC00543
Fluoride (mg/L)		<0.1	0.1	1/24/00	PB00412	QC00543
Nitrate-N (mg/L)		<0.2	0.2	1/24/00	PB00412	QC00543
Sulfate (mg/L)		<0.5	0.5	1/24/00	PB00412	QC00543

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Naphthalene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Acenaphthylene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Acenaphthene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Fluorene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Phenanthrene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Anthracene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Fluoranthene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Pyrene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Benzo(a)anthracene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Chrysene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Benzo(b)fluoranthene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Benzo(k)fluoranthene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Benzo(a)pyrene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Indeno(1,2,3-cd)pyrene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Dibenzo(a,h)anthracene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909
Benzo(g,h,i)perylene (mg/L)		<0.005	0.005	1/25/00	PB00734	QC00909

Surrogate	Result	Spike Amount	% Rec.	% Rec. Limit	QC Batch #
Nitrobenzene-d5 (mg/L)	58.51	80	73	34 - 130	QC00909
2-Fluorobiphenyl (mg/L)	60.79	80	76	38 - 128	QC00909
Terphenyl-d14 (mg/L)	47.24	80	59	0 - 145	QC00909

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Naphthalene (mg/L)		<0.005	0.005	1/26/00	PB00778	QC00952
Acenaphthylene (mg/L)		<0.005	0.005	1/26/00	PB00778	QC00952
Acenaphthene (mg/L)		<0.005	0.005	1/26/00	PB00778	QC00952
Fluorene (mg/L)		<0.005	0.005	1/26/00	PB00778	QC00952

Phenanthrene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Anthracene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Fluoranthene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Pyrene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Benzo(a)anthracene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Chrysene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Benzo(b)fluoranthene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Benzo(k)fluoranthene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Benzo(a)pyrene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Dibenzo(a,h)anthracene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Benzo(g,h,i)perylene (mg/L)	<0.005	0.005	1/26/00	PB00778	QC00952
Surrogate	Result	Spike Amount	% Rec.	% Rec. Limit	QC Batch #
Nitrobenzene-d5 (mg/L)	58.15	80	73	34 - 130	QC00952
2-Fluorobiphenyl (mg/L)	61.75	80	77	38 - 128	QC00952
Terphenyl-d14 (mg/L)	45.52	80	57	0 - 145	QC00952

Quality Control Report
Matrix Spike and Matrix Duplicate Spike

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/L)	241	1	62.5	290.04	80		80 - 120	0 - 20	QC00542
MS	Fluoride (mg/L)	6.7	1	12.5	19.36	101		80 - 120	0 - 20	QC00542
MS	Nitrate-N (mg/L)	6.4	1	25	29.42	92		80 - 120	0 - 20	QC00542
MS	Sulfate (mg/L)	190	1	62.5	245.72	89		80 - 120	0 - 20	QC00542
MSD	CL (mg/L)	241	1	62.5	294.87	88	9	80 - 120	0 - 20	QC00542
MSD	Fluoride (mg/L)	6.7	1	12.5	18.13	91	10	80 - 120	0 - 20	QC00542
MSD	Nitrate-N (mg/L)	6.4	1	25	28.84	90	3	80 - 120	0 - 20	QC00542
MSD	Sulfate (mg/L)	190	1	62.5	248.32	93	5	80 - 120	0 - 20	QC00542

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/L)	201.83	1	62.5	260.35	97		80 - 120	0 - 20	QC00543
MS	Fluoride (mg/L)	7.73	1	12.5	19.62	95		80 - 120	0 - 20	QC00543
MS	Nitrate-N (mg/L)	19	1	25	42.39	94		80 - 120	0 - 20	QC00543
MSD	CL (mg/L)	201.83	1	62.5	259.61	95	1	80 - 120	0 - 20	QC00543
MSD	Fluoride (mg/L)	7.73	1	12.5	19.47	94	1	80 - 120	0 - 20	QC00543
MSD	Nitrate-N (mg/L)	19	1	25	42.33	93	0	80 - 120	0 - 20	QC00543

Quality Control Report
Duplicates

Standard	Param	Flag	Duplicate Result	Sample Result	Dilution	RPD	RPD Limit	QC Batch #
Duplicate	Hydroxide Alkalinity (mg/L as CaCo		<1.0	<1.0	1	0	0 - 20	QC00611
Duplicate	Carbonate Alkalinity (mg/L as CaCo		<1.0	<1.0	1	0	0 - 20	QC00611
Duplicate	Bicarbonate Alkalinity (mg/L as CaC		168	170	1	1	0 - 20	QC00611
Duplicate	Total Alkalinity (mg/L as CaCo3)		168	170	1	1	0 - 20	QC00611

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param		Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Sulfate (mg/L)	*	<0.5	1	12.5	11.93	95		80 - 120	0 - 20	QC00543
* Sulfate - Blank spikes used because I'm re-running the SO4 on the sample I spiked.											
LCSD	Sulfate (mg/L)	*	<0.5	1	12.5	11.96	96	0	80 - 120	0 - 20	QC00543
* Sulfate - Blank spikes used because I'm re-running the SO4 on the sample I spiked.											

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Naphthalene (mg/L)	<0.005	1	80	57.76	72		35 - 118	0 - 20	QC00909
LCS	Acenaphthylene (mg/L)	<0.005	1	80	65.53	82		38 - 139	0 - 20	QC00909
LCS	Acenaphthene (mg/L)	<0.005	1	80	62.72	78		46 - 126	0 - 20	QC00909
LCS	Fluorene (mg/L)	<0.005	1	80	67.78	85		44 - 136	0 - 20	QC00909
LCS	Phenanthrene (mg/L)	<0.005	1	80	66.43	83		45 - 132	0 - 20	QC00909
LCS	Anthracene (mg/L)	<0.005	1	80	64.14	80		45 - 132	0 - 20	QC00909
LCS	Fluoranthene (mg/L)	<0.005	1	80	64.87	81		42 - 144	0 - 20	QC00909
LCS	Pyrene (mg/L)	<0.005	1	80	57.88	72		18 - 163	0 - 20	QC00909
LCS	Benzo(a)anthracene (mg/L)	<0.005	1	80	62.04	78		44 - 135	0 - 20	QC00909
LCS	Chrysene (mg/L)	<0.005	1	80	34.04	43		9 - 171	0 - 20	QC00909
LCS	Benzo(b)fluoranthene (mg/L)	<0.005	1	80	60.97	76		37 - 114	0 - 20	QC00909
LCS	Benzo(k)fluoranthene (mg/L)	<0.005	1	80	61.13	76		34 - 128	0 - 20	QC00909
LCS	Benzo(a)pyrene (mg/L)	<0.005	1	80	63.10	79		42 - 120	0 - 20	QC00909
LCS	Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	1	80	56.81	71		30 - 130	0 - 20	QC00909
LCS	Dibenzo(a,h)anthracene (mg/L)	<0.005	1	80	33.07	41		6 - 162	0 - 20	QC00909
LCS	Benzo(g,h,i)perylene (mg/L)	<0.005	1	80	62.70	78		39 - 118	0 - 20	QC00909

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	Nitrobenzene-d5 (mg/L)	1	80	61.91	77	34 - 130	QC00909
LCS	2-Fluorobiphenyl (mg/L)	1	80	63.15	79	38 - 128	QC00909
LCS	Terphenyl-d14 (mg/L)	1	80	35.80	45	0 - 145	QC00909

LCSD	Naphthalene (mg/L)	<0.005	1	80	54.30	68	6	35 - 118	0 - 20	QC00909
LCSD	Acenaphthylene (mg/L)	<0.005	1	80	62.31	78	5	38 - 139	0 - 20	QC00909
LCSD	Acenaphthene (mg/L)	<0.005	1	80	60.68	76	3	46 - 126	0 - 20	QC00909
LCSD	Fluorene (mg/L)	<0.005	1	80	64.14	80	6	44 - 136	0 - 20	QC00909
LCSD	Phenanthrene (mg/L)	<0.005	1	80	67.01	84	1	45 - 132	0 - 20	QC00909
LCSD	Anthracene (mg/L)	<0.005	1	80	63.74	80	1	45 - 132	0 - 20	QC00909
LCSD	Fluoranthene (mg/L)	<0.005	1	80	64.02	80	1	42 - 144	0 - 20	QC00909
LCSD	Pyrene (mg/L)	<0.005	1	80	61.81	77	7	18 - 163	0 - 20	QC00909
LCSD	Benzo(a)anthracene (mg/L)	<0.005	1	80	62.17	78	0	44 - 135	0 - 20	QC00909
LCSD	Chrysene (mg/L)	<0.005	1	80	35.30	44	4	9 - 171	0 - 20	QC00909
LCSD	Benzo(b)fluoranthene (mg/L)	<0.005	1	80	59.60	75	2	37 - 114	0 - 20	QC00909
LCSD	Benzo(k)fluoranthene (mg/L)	<0.005	1	80	63.09	79	3	34 - 128	0 - 20	QC00909

LCSD	Benzo(a)pyrene (mg/L)	<0.005	1	80	61.19	76	3	42 - 120	0 - 20	QC00909
LCSD	Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	1	80	55.74	70	2	30 - 130	0 - 20	QC00909
LCSD	Dibenzo(a,h)anthracene (mg/L)	<0.005	1	80	33.57	42	2	6 - 162	0 - 20	QC00909
LCSD	Benzo(g,h,i)perylene (mg/L)	<0.005	1	80	62.90	79	0	39 - 118	0 - 20	QC00909

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	Nitrobenzene-d5 (mg/L)	1	80	54.62	68	34 - 130	QC00909
LCSD	2-Fluorobiphenyl (mg/L)	1	80	59.34	74	38 - 128	QC00909
LCSD	Terphenyl-d14 (mg/L)	1	80	42.03	53	0 - 145	QC00909

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	Naphthalene (mg/L)	<0.005	1	80	59.08	74		35 - 118	0 - 20	QC00952
LCS	Acenaphthylene (mg/L)	<0.005	1	80	63.72	80		38 - 139	0 - 20	QC00952
LCS	Acenaphthene (mg/L)	<0.005	1	80	62.19	78		46 - 126	0 - 20	QC00952
LCS	Fluorene (mg/L)	<0.005	1	80	68.69	86		44 - 136	0 - 20	QC00952
LCS	Phenanthrene (mg/L)	<0.005	1	80	67.29	84		45 - 132	0 - 20	QC00952
LCS	Anthracene (mg/L)	<0.005	1	80	62.50	78		45 - 132	0 - 20	QC00952
LCS	Fluoranthene (mg/L)	<0.005	1	80	63.05	79		42 - 144	0 - 20	QC00952
LCS	Pyrene (mg/L)	<0.005	1	80	59.56	74		18 - 163	0 - 20	QC00952
LCS	Benzo(a)anthracene (mg/L)	<0.005	1	80	60.24	75		44 - 135	0 - 20	QC00952
LCS	Chrysene (mg/L)	<0.005	1	80	35.04	44		9 - 171	0 - 20	QC00952
LCS	Benzo(b)fluoranthene (mg/L)	<0.005	1	80	58.20	73		37 - 114	0 - 20	QC00952
LCS	Benzo(k)fluoranthene (mg/L)	<0.005	1	80	68.17	85		34 - 128	0 - 20	QC00952
LCS	Benzo(a)pyrene (mg/L)	<0.005	1	80	63.26	79		42 - 120	0 - 20	QC00952
LCS	Indeno(1,2,3-cd)pyrene (mg/L)	<0.005	1	80	44.68	56		30 - 130	0 - 20	QC00952
LCS	Dibenzo(a,h)anthracene (mg/L)	<0.005	1	80	28.11	35		6 - 162	0 - 20	QC00952
LCS	Benzo(g,h,i)perylene (mg/L)	<0.005	1	80	54.96	69		39 - 118	0 - 20	QC00952

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	Nitrobenzene-d5 (mg/L)	1	80	59.89	75	34 - 130	QC00952
LCS	2-Fluorobiphenyl (mg/L)	1	80	62.72	78	38 - 128	QC00952
LCS	Terphenyl-d14 (mg/L)	1	80	35.99	45	0 - 145	QC00952

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Hydroxide Alkalinity (mg/L as CaCo3)		0	<1.0	0	80 - 120	1/27/00	QC00611
ICV	Carbonate Alkalinity (mg/L as CaCo3)		0	2200	0	80 - 120	1/27/00	QC00611
ICV	Bicarbonate Alkalinity (mg/L as CaCo3)		0	60	0	80 - 120	1/27/00	QC00611
ICV	Total Alkalinity (mg/L as CaCo3)		2400	2260	94	80 - 120	1/27/00	QC00611
CCV 1	Hydroxide Alkalinity (mg/L as CaCo3)		0	40	0	80 - 120	1/27/00	QC00611
CCV 1	Carbonate Alkalinity (mg/L as CaCo3)		0	2200	0	80 - 120	1/27/00	QC00611
CCV 1	Bicarbonate Alkalinity (mg/L as CaCo3)		0	<1.0	0	80 - 120	1/27/00	QC00611
CCV 1	Total Alkalinity (mg/L as CaCo3)		2400	2240	93	80 - 120	1/27/00	QC00611

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	11.60	93	80 - 120	1/24/00	QC00542
ICV	Fluoride (mg/L)		2.5	2.45	98	80 - 120	1/24/00	QC00542
ICV	Nitrate-N (mg/L)		5	4.69	94	80 - 120	1/24/00	QC00542
ICV	Sulfate (mg/L)		12.5	12.49	100	80 - 120	1/24/00	QC00542
CCV 1	CL (mg/L)		12.5	11.98	96	80 - 120	1/24/00	QC00542
CCV 1	Fluoride (mg/L)		2.5	2.48	99	80 - 120	1/24/00	QC00542
CCV 1	Nitrate-N (mg/L)		5	4.65	93	80 - 120	1/24/00	QC00542
CCV 1	Sulfate (mg/L)		12.5	12.46	100	80 - 120	1/24/00	QC00542

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	11.39	91	80 - 120	1/24/00	QC00543
ICV	Fluoride (mg/L)		2.5	2.42	97	80 - 120	1/24/00	QC00543
ICV	Nitrate-N (mg/L)		5	4.59	92	80 - 120	1/24/00	QC00543
ICV	Sulfate (mg/L)		12.5	11.75	94	80 - 120	1/24/00	QC00543
CCV 1	CL (mg/L)		12.5	11.60	93	80 - 120	1/24/00	QC00543
CCV 1	Fluoride (mg/L)		2.5	2.45	98	80 - 120	1/24/00	QC00543
CCV 1	Nitrate-N (mg/L)		5	4.69	94	80 - 120	1/24/00	QC00543
CCV 1	Sulfate (mg/L)		12.5	12.49	100	80 - 120	1/24/00	QC00543

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
CCV 1	Naphthalene (mg/L)		60	59.63	99	35 - 118	1/25/00	QC00909
CCV 1	Acenaphthylene (mg/L)		60	61.41	102	38 - 139	1/25/00	QC00909
CCV 1	Acenaphthene (mg/L)		60	59.96	100	46 - 126	1/25/00	QC00909
CCV 1	Fluorene (mg/L)		60	59.32	99	44 - 136	1/25/00	QC00909
CCV 1	Phenanthrene (mg/L)		60	59.04	98	45 - 132	1/25/00	QC00909

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
CCV 1	Anthracene (mg/L)		60	59.72	100	45 - 132	1/25/00	QC00909
CCV 1	Fluoranthene (mg/L)		60	52.06	87	42 - 144	1/25/00	QC00909
CCV 1	Pyrene (mg/L)		60	56.71	95	18 - 163	1/25/00	QC00909
CCV 1	Benzo(a)anthracene (mg/L)		60	60.62	101	44 - 135	1/25/00	QC00909
CCV 1	Chrysene (mg/L)		60	60.69	101	9 - 171	1/25/00	QC00909
CCV 1	Benzo(b)fluoranthene (mg/L)		60	60.15	10	37 - 114	1/25/00	QC00909
CCV 1	Benzo(k)fluoranthene (mg/L)		60	59.86	100	34 - 128	1/25/00	QC00909
CCV 1	Benzo(a)pyrene (mg/L)		60	59.74	100	42 - 120	1/25/00	QC00909
CCV 1	Indeno(1,2,3-cd)pyrene (mg/L)		60	53.33	89	30 - 130	1/25/00	QC00909
CCV 1	Dibenzo(a,h)anthracene (mg/L)		60	54.16	90	6 - 162	1/25/00	QC00909
CCV 1	Benzo(g,h,i)perylene (mg/L)		60	58.15	97	39 - 118	1/25/00	QC00909
CCV 1	Nitrobenzene-d5 (mg/L)		60	59.06	98	34 - 130	1/25/00	QC00909
CCV 1	2-Fluorobiphenyl (mg/L)		60	61.83	103	38 - 128	1/25/00	QC00909
CCV 1	Terphenyl-d14 (mg/L)		60	56.02	93	0 - 145	1/25/00	QC00909

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
CCV 1	Naphthalene (mg/L)		60	60.53	101	35 - 118	1/26/00	QC00952
CCV 1	Acenaphthylene (mg/L)		60	60.60	101	38 - 139	1/26/00	QC00952
CCV 1	Acenaphthene (mg/L)		60	60.05	100	46 - 126	1/26/00	QC00952
CCV 1	Fluorene (mg/L)		60	63.60	106	44 - 136	1/26/00	QC00952
CCV 1	Phenanthrene (mg/L)		60	58.84	98	45 - 132	1/26/00	QC00952
CCV 1	Anthracene (mg/L)		60	60.19	100	45 - 132	1/26/00	QC00952
CCV 1	Fluoranthene (mg/L)		60	57.38	96	42 - 144	1/26/00	QC00952
CCV 1	Pyrene (mg/L)		60	56.73	95	18 - 163	1/26/00	QC00952
CCV 1	Benzo(a)anthracene (mg/L)		60	58.45	97	44 - 135	1/26/00	QC00952
CCV 1	Chrysene (mg/L)		60	61.35	102	9 - 171	1/26/00	QC00952
CCV 1	Benzo(b)fluoranthene (mg/L)		60	57.56	96	37 - 114	1/26/00	QC00952
CCV 1	Benzo(k)fluoranthene (mg/L)		60	64.41	107	34 - 128	1/26/00	QC00952
CCV 1	Benzo(a)pyrene (mg/L)		60	58.39	97	42 - 120	1/26/00	QC00952
CCV 1	Indeno(1,2,3-cd)pyrene (mg/L)		60	49.42	82	30 - 130	1/26/00	QC00952
CCV 1	Dibenzo(a,h)anthracene (mg/L)		60	50.41	84	6 - 162	1/26/00	QC00952
CCV 1	Benzo(g,h,i)perylene (mg/L)		60	56.35	94	39 - 118	1/26/00	QC00952
CCV 1	Nitrobenzene-d5 (mg/L)		60	57.89	96	34 - 130	1/26/00	QC00952
CCV 1	2-Fluorobiphenyl (mg/L)		60	60.23	100	38 - 128	1/26/00	QC00952
CCV 1	Terphenyl-d14 (mg/L)		60	57.07	95	0 - 145	1/26/00	QC00952

139291-94

Page____of____

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A0001240 6

Company Name: NAVAJO
Phone #: 505 748 3311
Address: (Street, City, Zip) 501 E Main
Fax #: 505 748 9077
Contact Person: Charles Hymale or Darrell Moore
Invoice to: (If different from above)
Project #:
Project Name: Ann Off-Wells
Project Location: Artesia NM
Sampler Signature: Charles Hymale

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
139291	MW 18	1	1L	X						X	X	1/21/00	9:45
	MW 18	1	1L	X						X	X	1/21/00	9:45
	"	1	500ml	X					X	X		1/21/00	9:45
139292	MW 28	1	1L	X						X	X	1/21/00	10:45
	"	1	1L	X						X	X	1/21/00	10:45
	"	1	500ml	X					X	X		1/21/00	10:45
139293	MW 29	1	1L	X						X	X	1/21/00	10:30
	"	1	1L	X						X	X	1/21/00	10:30
	"	1	500ml	X					X	X		1/21/00	10:30

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
		S														

Relinquished by: Charles Hymale Date: 1/21/00 Time: 16:15
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received at Laboratory by: Vicki Wmdle 1-24-00 9:30M Date: Time:

LAB USE ONLY

Intact (Y) / N
Headspace Y / N
Temp 3° °
Log-in Review MS

REMARKS: 2/18/00

Carrier # Fed Ex 273-2612 906

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: NAVAJO
Phone #: 505 748 3311
Address: (Street, City, Zip) 501 E Main
Fax #: 505 748 9077
Contact Person: Charlie Plymale or Darrell Moore
Invoice to: (If different from above)
Project #:
Project Name: Ann. of Wells
Project Location: Artesia NM
Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
139294	MW 45	1	1L	X						X	X	1/21/00	10:10
	"	1	1L	X						X	X	1/21/00	10:10
	"	1	500ml	X					X	X		1/21/00	10:10

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
				Sec 1/2 SA												

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Charlie Plymale	1/21/00	16:15			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
			Vicki Windle	1-24-00	9:30

LAB USE ONLY

Intact (Y) / N
Headspace Y / N
Temp 3° °
Log-in Review MB

REMARKS:

Carrier # Fed Ex 273 2612 906

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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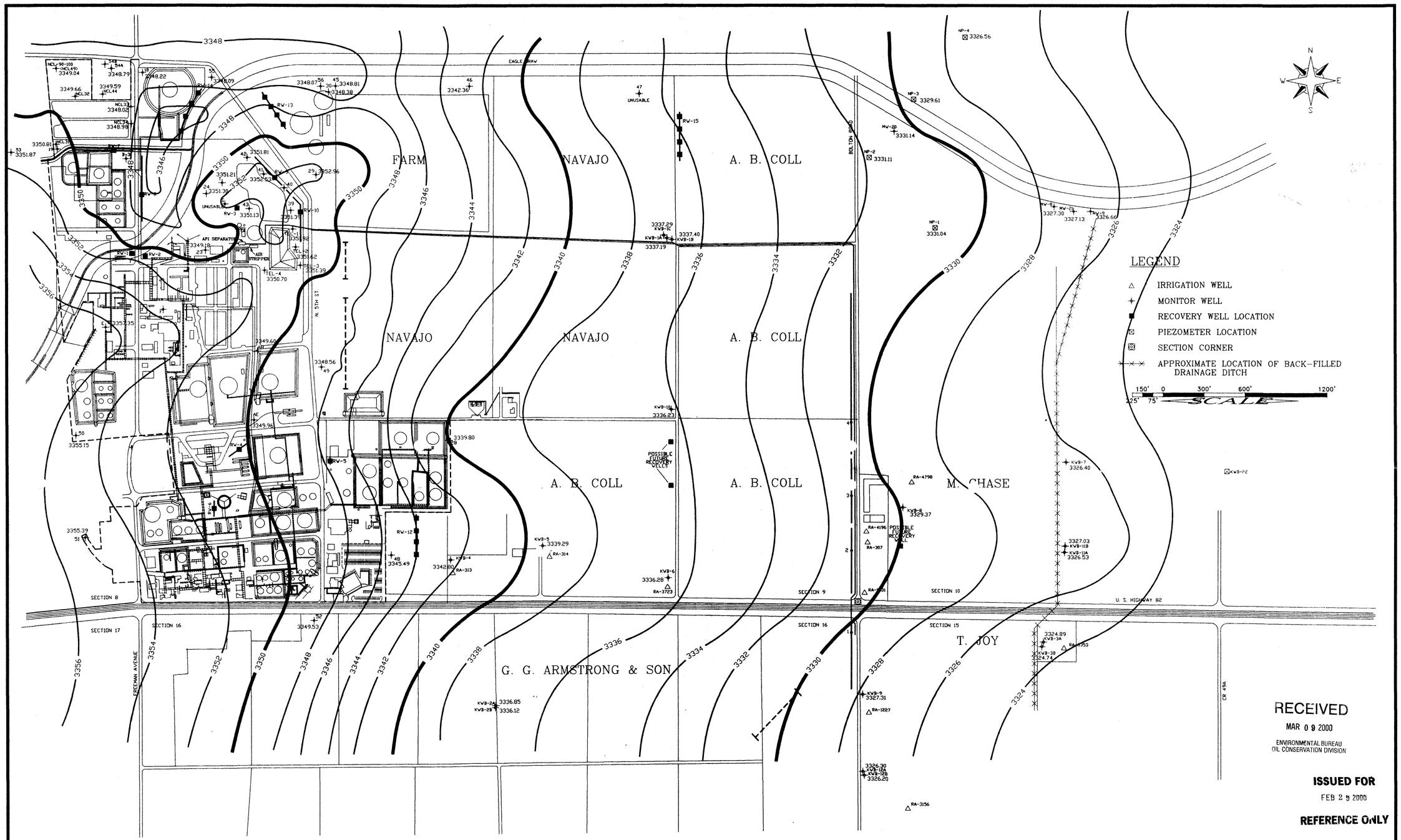

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OIL CONSERVATION DIVISION

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FEB 2 9 2000

REFERENCE ONLY

NOTES
TRENCHES
POSSIBLE FUTURE TRENCHES

REFERENCE DRAWINGS

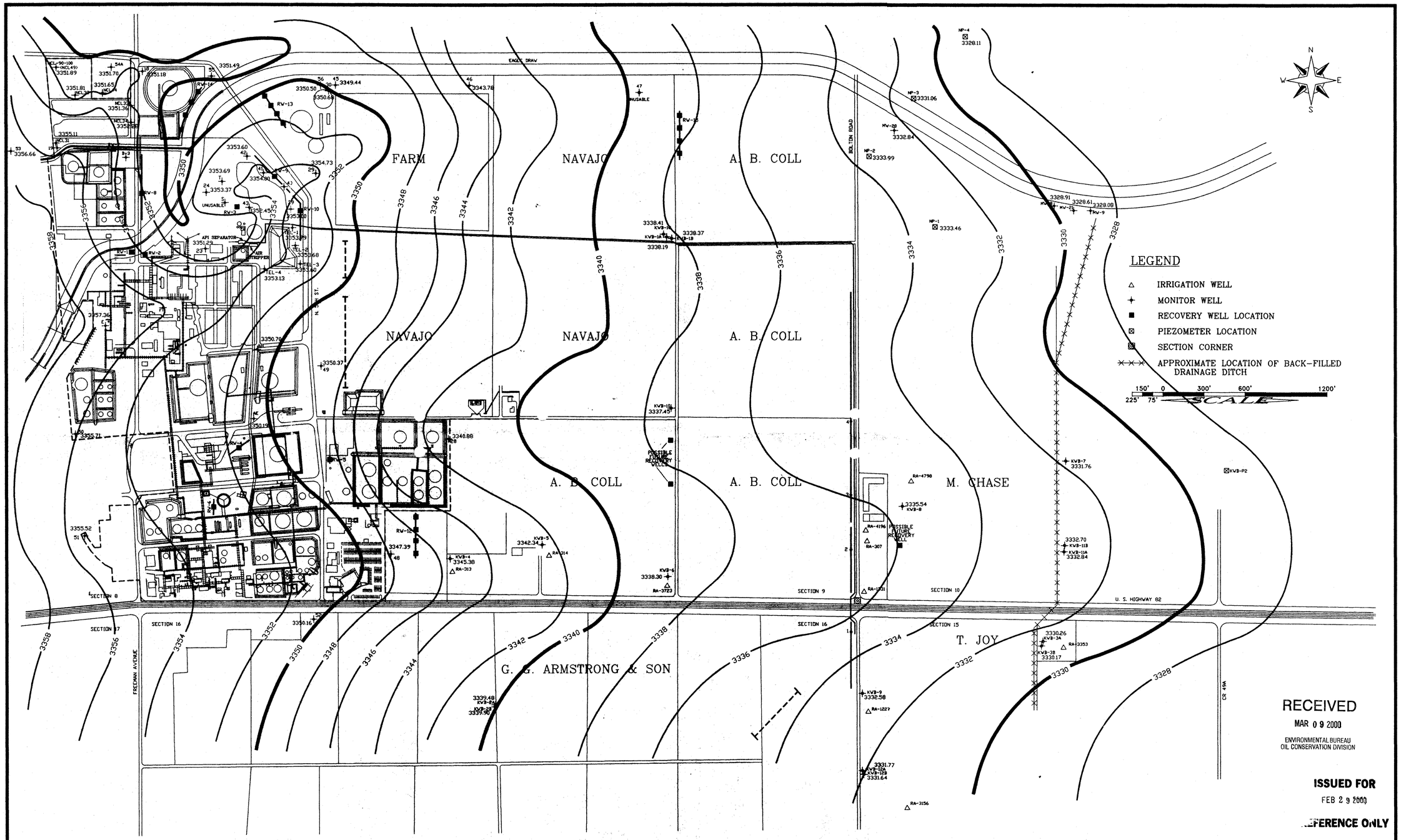
NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR.
11	JAN. 1999 READINGS	LGR	DGM	2/22/99	DGM	DGJ
10	SEP. 1998 READINGS	LGR	DGM	10/26/98	DGM	DGJ
9	JUN. 1998 READINGS	LGR	DGM	7/25/98	DGM	DGJ
8	MAR. 1998 READINGS	LGR	DGM	2/24/98	DGM	DGJ
7	JAN. 1998 READINGS	LGR	DGM	2/18/98	DGM	DGJ
6	OCT. , 1996 READINGS	DLW	DGJ	10/8/96	DGM	DGJ
5	AUGUST, 1996 READINGS	DLW	DGJ	9/11/96	DGM	DGJ
4	MAY, 1996 READINGS	DLW	DGJ	5/31/96	DGM	DGJ
3	JANUARY, 1996 READINGS	DLW	DGJ	11-11-96	DGM	DGJ
2	SEPTEMBER, 1995 READINGS	PETE	DGJ	10-7-95	DGM	DGJ
1	JUNE, 1995 READINGS	PETE	DGJ	7-13-95	DGM	ILS
0	ISSUED WITH MARCH, 1995 READINGS	PETE	DGJ	3-27-95	DGM	ILS

DRAWING TITLE

GROUNDWATER
POTENTIOMETRIC MAP
NAVAJO REFINING
1st QTR.

NAVAJO REFINING CO.
ENGINEERING DEPARTMENT
P.O. DRAWER 159
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
DLW	DGM	AS SHOWN	
DATE	APPR BY	DRAWING NUMBER	REV.
3-17-95	ILS	90-44-D	11



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NOTES
TRENCHES ———
POSSIBLE FUTURE TRENCHES - - - - - - - -

REFERENCE DRAWINGS

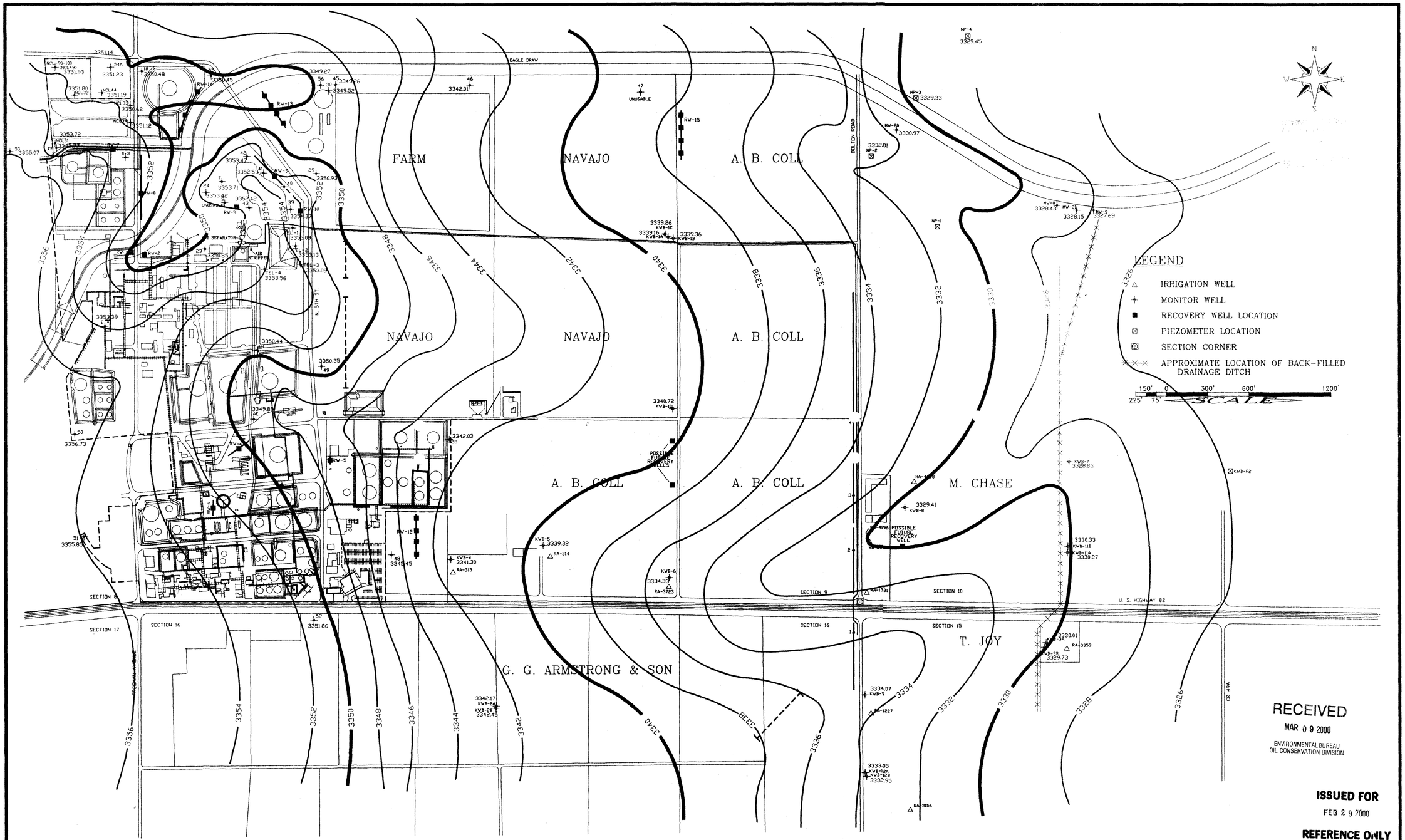
NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR.
12	MAR. 1999 READINGS	LGR	DGM	10/4/99	DGM	DGJ
11	JAN. 1999 READINGS	LGR	DGM	3/2/99	DGM	DGJ
10	SEP. 1998 READINGS	LGR	DGM	10/6/98	DGM	DGJ
9	JUN. 1998 READINGS	LGR	DGM	6/26/98	DGM	DGJ
8	MAR. 1998 READINGS	LGR	DGM	10/24/97	DGM	DGJ
7	JAN. 1998 READINGS	LGR	DGM	10/18/97	DGM	DGJ
6	OCT., 1996 READINGS	DLW	DGJ	10/28/96	DGM	DGJ
5	AUGUST, 1996 READINGS	DLW	DGJ	10/11/96	DGM	DGJ
4	MAY, 1996 READINGS	DLW	DGJ	10/11/96	DGM	DGJ
3	JANUARY, 1996 READINGS	DLW	DGJ	10-11-96	DGM	DGJ
2	SEPTEMBER, 1995 READINGS	PETE	DGJ	10-7-95	DGM	DGJ
1	JUNE, 1995 READINGS	PETE	DGJ	7-13-95	DGM	ILS
0	ISSUED WITH MARCH, 1995 READINGS	PETE	DGJ	5-27-95	DGM	ILS

DRAWING TITLE

GROUNDWATER POTENTIOMETRIC MAP
NAVAJO REFINING
2nd QTR.

NAVAJO REFINING CO.
ENGINEERING DEPARTMENT
P.O. DRAWER 159
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
DLW	DGM	AS SHOWN	
DATE	APPR BY	DRAWING NUMBER	REV.
3-17-95	ILS	90-44-D	12



LEGEND

- △ IRRIGATION WELL
- ✦ MONITOR WELL
- ■ RECOVERY WELL LOCATION
- ⊠ PIEZOMETER LOCATION
- ⊡ SECTION CORNER
- APPROXIMATE LOCATION OF BACK-FILLED DRAINAGE DITCH

150' 0 300' 600' 1200'
225' 75' SCALE

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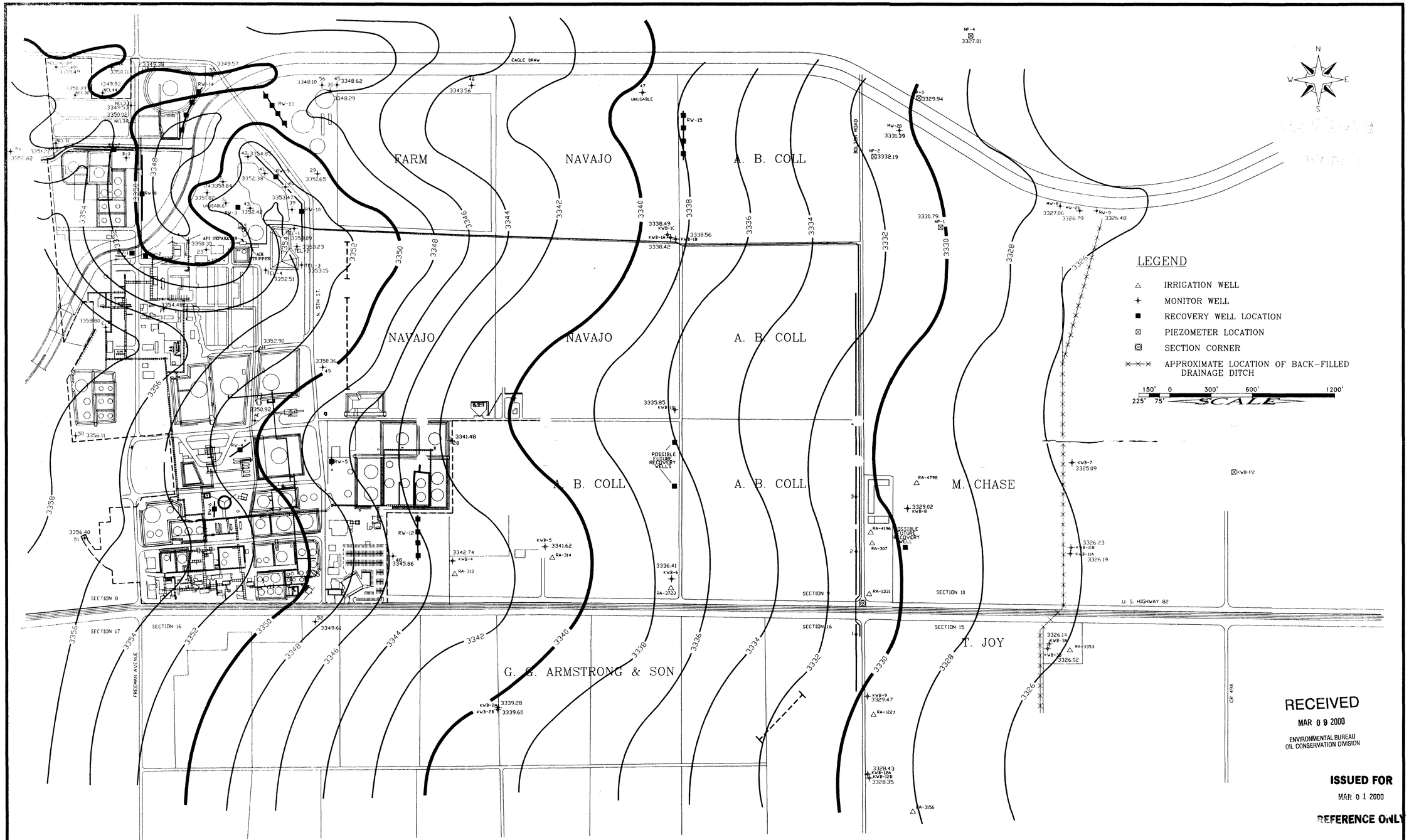
NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR.
13	JUN. 1999 READINGS	LGR	DGM	8/5/99	DGM	DGJ
12	MAR. 1999 READINGS	LGR	DGM	3/24/99	DGM	DGJ
11	JAN. 1999 READINGS	LGR	DGM	1/22/99	DGM	DGJ
10	SEP. 1998 READINGS	LGR	DGM	9/28/98	DGM	DGJ
9	JUN. 1998 READINGS	LGR	DGM	6/25/98	DGM	DGJ
8	MAR. 1998 READINGS	LGR	DGM	3/24/98	DGM	DGJ
7	JAN. 1998 READINGS	LGR	DGM	12/18/98	DGM	DGJ
6	OCT. , 1996 READINGS	DLW	DGJ	10/28/96	DGM	DGJ
5	AUGUST, 1996 READINGS	DLW	DGJ	9/11/96	DGM	DGJ
4	MAY, 1996 READINGS	DLW	DGJ	6/14/96	DGM	DGJ
3	JANUARY, 1996 READINGS	DLW	DGJ	1-11-96	DGM	DGJ
2	SEPTEMBER, 1995 READINGS	PETE	DGJ	9-7-95	DGM	DGJ
1	JUNE, 1995 READINGS	PETE	DGJ	7-13-95	DGM	ILS
0	ISSUED WITH MARCH, 1995 READINGS	PETE	DGJ	3-27-95	DGM	ILS

DRAWING TITLE

GROUNDWATER POTENTIOMETRIC MAP
NAVAJO REFINING
3rd QTR.

NAVAJO REFINING CO.
ENGINEERING DEPARTMENT
P.O. DRAWER 159
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
DLW	DGM	AS SHOWN	
DATE	APPR BY	DRAWING NUMBER	REV.
3-17-95	ILS	90-44-D	13



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REFERENCE ONLY

NOTES
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POSSIBLE FUTURE TRENCHES

REFERENCE DRAWINGS

NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR
14	SEPT. 1999 READINGS	LGR	DGM	10/25/99	DGM	DGJ
13	JUN. 1999 READINGS	LGR	DGM	10/25/99	DGM	DGJ
12	MAR. 1999 READINGS	LGR	DGM	10/24/99	DGM	DGJ
11	JAN. 1999 READINGS	LGR	DGM	10/27/99	DGM	DGJ
10	SEPT. 1998 READINGS	LGR	DGM	10/26/99	DGM	DGJ
9	JUN. 1998 READINGS	LGR	DGM	10/25/99	DGM	DGJ

NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR
8	MAR. 1998 READINGS	LGR	DGM	10/26/99	DGM	DGJ
7	JAN. 1998 READINGS	LGR	DGM	10/28/99	DGM	DGJ
6	OCT. , 1996 READINGS	DLW	DGJ	11/25/96	DGM	DGJ
5	AUGUST, 1996 READINGS	DLW	DGJ	09/11/96	DGM	DGJ
4	MAY, 1996 READINGS	DLW	DGJ	05/14/96	DGM	DGJ
3	JANUARY, 1996 READINGS	DLW	DGJ	01-11-96	DGM	DGJ
2	SEPTEMBER, 1995 READINGS	PETE	DGJ	10-7-95	DGM	DGJ
1	JUNE, 1995 READINGS	PETE	DGJ	7-12-95	DGM	ILS
0	ISSUED WITH MARCH, 1995 READINGS	PETE	DGJ	3-27-95	DGM	ILS

DRAWING TITLE

GROUNDWATER POTENTIOMETRIC MAP NAVAJO REFINING

4th QTR.

NAVAJO REFINING CO.
ENGINEERING DEPARTMENT
P.O. DRAWER 159
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
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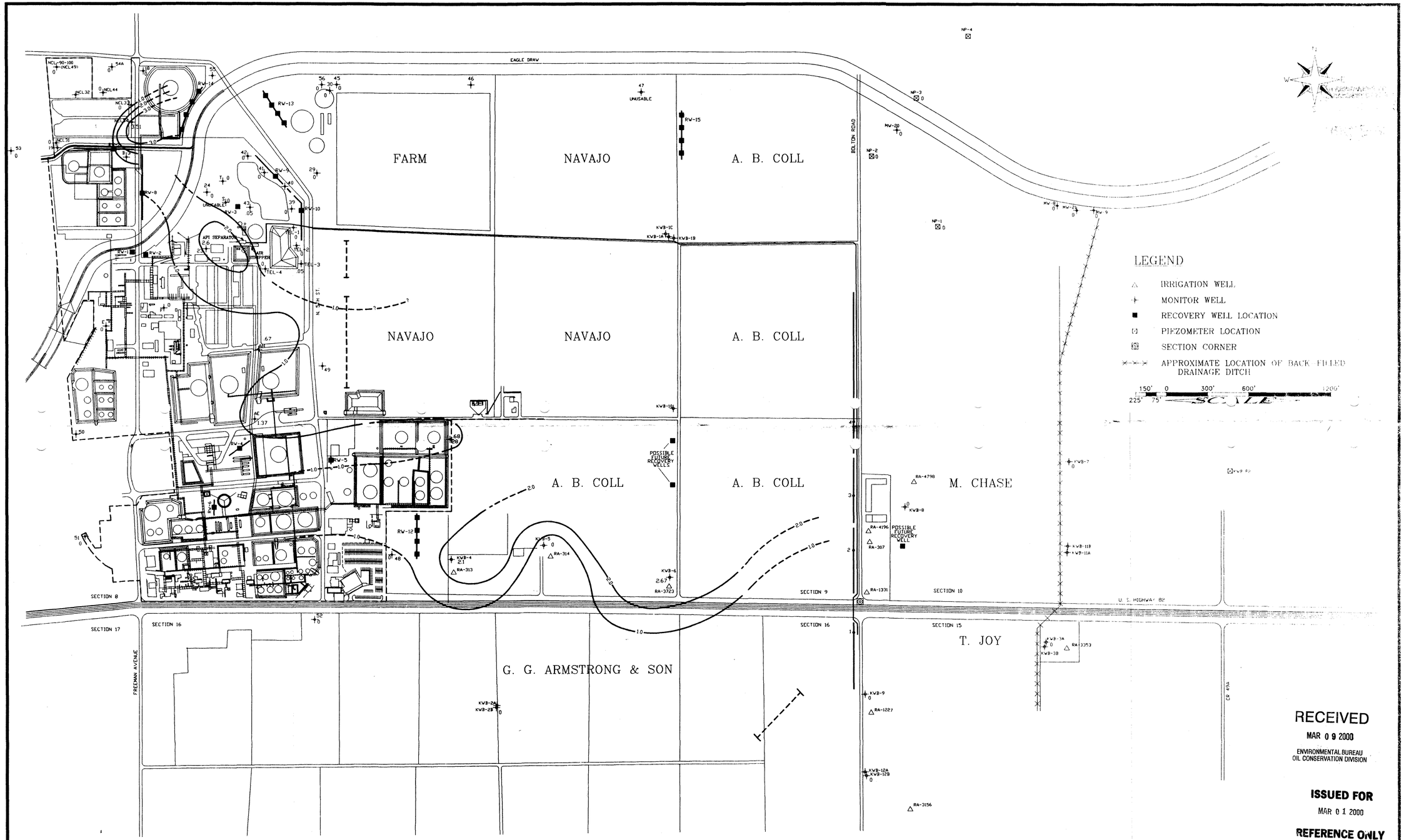
DATE	APPR BY	DRAWING NUMBER	REV.
3-17-95	ILS	90-44-D	14



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MAR 0 9 2000
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

ISSUED FOR
MAR 0 1 2000

REFERENCE ONLY

NOTES
TRENCHES
POSSIBLE FUTURE TRENCHES

REFERENCE DRAWINGS

NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR.
14	SEPT. 1999 READINGS	LGR	DGM	12/15/99	DGM	DGJ
13	JUN. 1999 READINGS	LGR	DGM	12/15/99	DGM	DGJ
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11	JAN. 1999 READINGS	LGR	DGM	12/15/99	DGM	DGJ
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9	JUN. 1998 READINGS	LGR	DGM	12/15/98	DGM	DGJ
8	MAR. 1998 READINGS	LGR	DGM	12/15/98	DGM	DGJ
7	JAN. 1998 READINGS	LGR	DGM	12/15/98	DGM	DGJ
6	OCT. , 1996 READINGS	DLW	DGJ	10/28/96	DGM	DGJ
5	AUGUST, 1996 READINGS	DLW	DGJ	9/11/96	DGM	DGJ
4	MAY, 1996 READINGS	DLW	DGJ	6/14/96	DGM	DGJ
3	JANUARY, 1996 READINGS	DLW	DGJ	01-15-96	DGM	DGJ
2	SEPTEMBER, 1995 READINGS	PETE	DGJ	9-11-95	DGM	DGJ
1	JUNE, 1995 READINGS	PETE	DGJ	7-18-95	DGM	ILS
0	ISSUED WITH MARCH, 1995 READINGS	PETE	DGJ	3-27-95	DGM	ILS

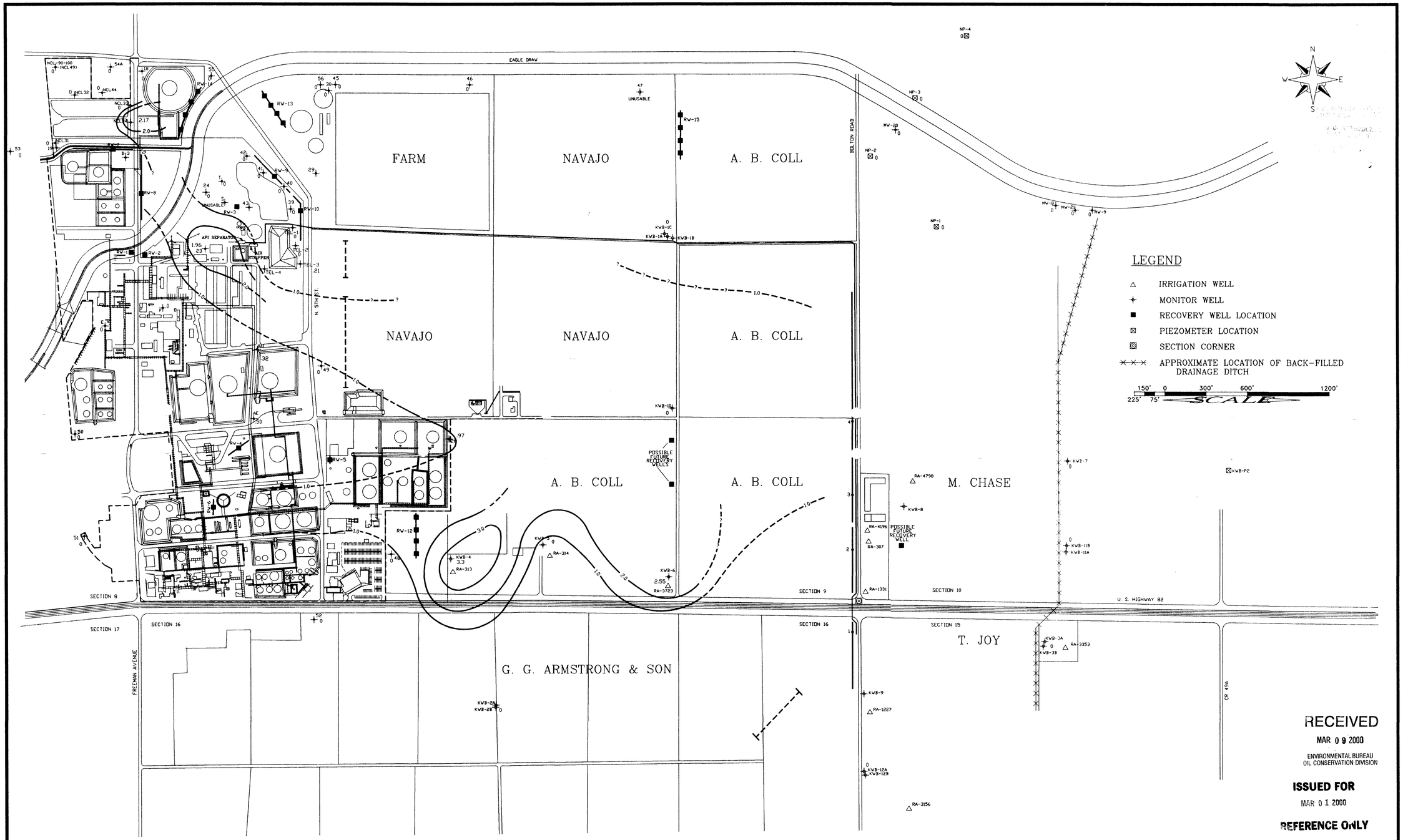
DRAWING TITLE

PRODUCT THICKNESS
MAP
NAVAJO REFINING
1st QTR.

NAVAJO REFINING CO
ENGINEERING DEPARTMENT
P.O. DRAWER 159
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE
DLW	DGM	AS SHOWN
DATE	APPR BY	DRAWING NUMBER
3-17-95	ILS	90-45-D

REV. 11



LEGEND

- △ IRRIGATION WELL
- ✦ MONITOR WELL
- ■ RECOVERY WELL LOCATION
- ⊠ PIEZOMETER LOCATION
- ⊙ SECTION CORNER
- ×–×–× APPROXIMATE LOCATION OF BACK-FILLED DRAINAGE DITCH

150' 0 300' 600' 1200'
225' 75' SCALE

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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

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REFERENCE ONLY

NOTES
TRENCHES ———
POSSIBLE FUTURE TRENCHES - - - - - - - -

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9	JUN. 1998 READINGS	LGR	DGM	12/15/99	DGM	DGJ
8	MAR. 1998 READINGS	LGR	DGM	12/15/99	DGM	DGJ
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3	JANUARY, 1996 READINGS	DLW	DGJ	01-18-96	DGM	DGJ
2	SEPTEMBER, 1995 READINGS	PETE	DGJ	10-11-95	DGM	DGJ
1	JUNE, 1995 READINGS	PETE	DGJ	7-18-95	DGM	ILS
0	ISSUED WITH MARCH, 1995 READINGS	PETE	DGJ	3-27-95	DGM	ILS

DRAWING TITLE

PRODUCT THICKNESS MAP NAVAJO REFINING

2nd QTR.

NAVAJO REFINING CO.
ENGINEERING DEPARTMENT
P.O. DRAWER 159
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
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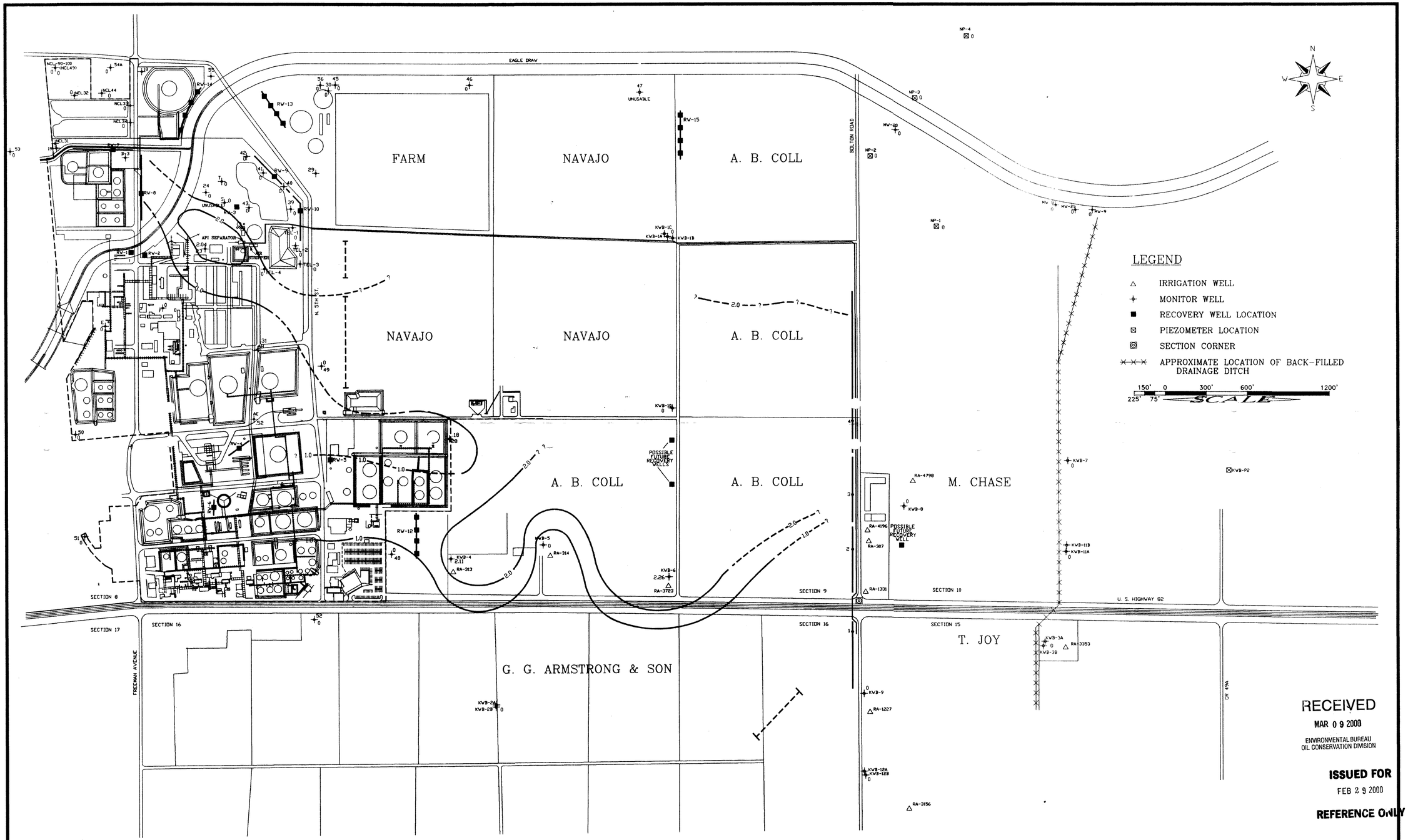

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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

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FEB 2 9 2000

REFERENCE ONLY

NOTES

TRENCHES ———

POSSIBLE FUTURE TRENCHES - - - - - - - - - -

REFERENCE DRAWINGS

NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR.
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NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR.
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0	ISSUED WITH MARCH, 1995 READINGS	PETE	DGJ	3-27-95	DGM	ILS

DRAWING TITLE

PRODUCT THICKNESS MAP NAVAJO REFINING

3rd QTR.

NAVAJO REFINING CO.
ENGINEERING DEPARTMENT
P.O. DRAWER 159
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
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DATE	APPR BY	DRAWING NUMBER	REV.
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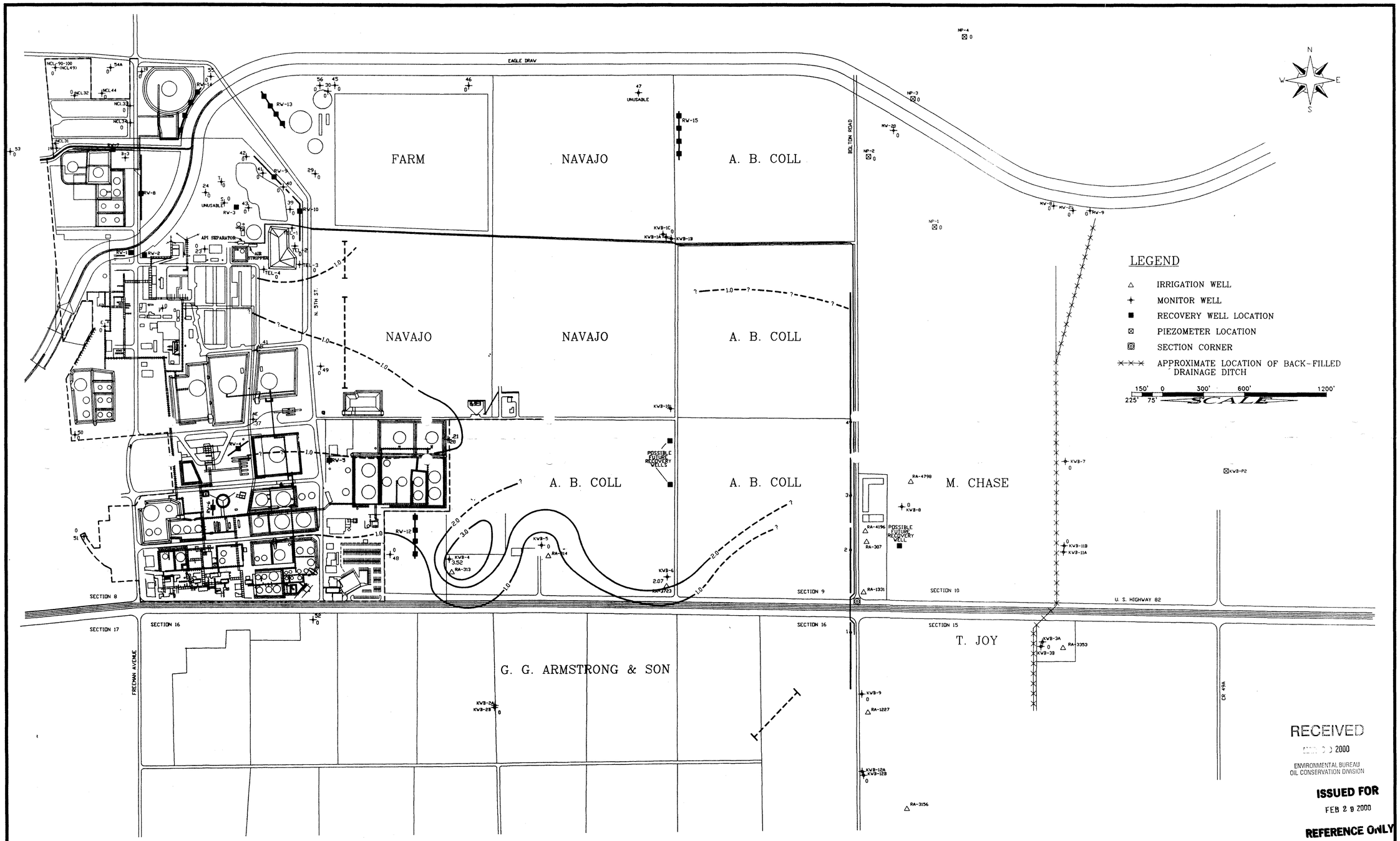

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- ✦ MONITOR WELL
- ■ RECOVERY WELL LOCATION
- ⊠ PIEZOMETER LOCATION
- ◎ SECTION CORNER
- ×–×–× APPROXIMATE LOCATION OF BACK-FILLED DRAINAGE DITCH

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0	ISSUED WITH MARCH, 1995 READINGS	PETE	DGJ	3-27-95	DGM	ILS

DRAWING TITLE

PRODUCT THICKNESS MAP NAVAJO REFINING

4th QTR.

NAVAJO REFINING CO.
ENGINEERING DEPARTMENT
P.O. DRAWER 159
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
DLW	DGM	AS SHOWN	
DATE	APPR BY	DRAWING NUMBER	REV
3-17-95	ILS	90-45-D	14

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

October 30, 2000

CERTIFIED MAIL
RETURN RECEIPT NO. 5051-3723

Mr. Darrell Moore
Navajo Refining Company
P.O. Box 159
Artesia, New Mexico 88211-0159

RE: GROUND WATER MONITOR WELL REPOSITIONING
NAVAJO ARTESIA REFINERY

Dear Mr. Moore:

The New Mexico Oil Conservation Division (OCD) has reviewed Navajo Refining Company's (Navajo) September 13, 2000 "REPORT ON GROUNDWATER MONITOR WELL REPOSITIONING, NAVAJO REFINING COMPANY". This document contains the results of Navajo's installation of monitor well KWB-2R as a replacement for monitor wells KWB-2 and KWB-2A which were replaced due to the landowners concern that they restrict his access for farming the land.

The investigation work as contained in the above referenced document is satisfactory. However, ground water from the new well, KWB-2R, is contaminated in excess of the New Mexico Water Quality Control Commission (WQCC) standards. As a result there is no longer a southern monitor well in this area which shows that the southern extent of contamination is contained. Therefore, the OCD requires that Navajo submit a work plan to install an additional monitor well south of KWB-2R. The work plan shall be submitted to the OCD Santa Fe Office by December 30, 2000 with a copy provided to the OCD Artesia District Office.

If you have any questions, please contact me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: OCD Artesia District Office