GW - 28

MONITORING REPORTS

DATE:

1998 - 1980

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 27, 1998

RECEIVED
MAR - 2 1998
OIL CONSERVATION DIVISION

Mr. Roger Anderson
Environmental Bureau
Oil Conservation Division
2040 S. Pacheco St.
Santa Fe, NM 87505-5472

Dear Roger,

Enclosed are the results of Navajo Refining Company's annual sampling of the effluent into our evaporation ponds. In Navajo's letter of December 21, 1991, (response to NOV NMD048918817), Navajo agreed to send a copy of these results to ED.

If you have any questions concerning these results, please call me at 505-748-3311. Thank you for your time in this matter.

Sincerely,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Environmental Mgr. for Water and Waste

encl.
cc: NM Environment Dept.

TRACEANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Bryan Madrid
501 E. Main
Artesia, NM 88210

February 18, 1998
Receiving Date: 01/16/98
Sample Type: Water
Project No: NA
Project Location: NA

Prep Date: 01/21/98
Analysis Date: 01/28/98
Sampling Date: 01/14/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: NA

TA#	Field Code	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CALCIUM (mg/L)	SODIUM (mg/L)
T89208	KWB-1A	5.4	410	540	350
T89209	KWB-1C	5.9	380	550	370
T89210	KWB-24	4.5	220	440	140
T89211	KWB-12A	5.2	210	510	269
T89212	KWB-9	4.1	160	370	130
T89213	KWB-3A	6.1	280	620	510
T89214	KWB-11A	10	230	430	290
T89215	KWB-7	5.1	300	440	300
T89216	MW-18	5.4	200	340	70
T89217	MW-45	13.6	340	620	510
T89218	Ponds (Outfall)	51	98	48	1,200
ICV		50	49	49	50
CCV		50	48	48	51
Reporting Limit		0.50	0.50	0.50	0.50
METHOD BLANK		<0.50	<0.50	<0.50	<0.50
RPD		4	3	4	5
% Extraction Accuracy		108	104	107	110
% Instrument Accuracy		100	97	97	101

METHODS: EPA 200.7.
CHEMIST: RR
SPIKE: 100 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.
CV: 50 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

BL
Director, Dr. Blair Leftwich

2-18-98
Date

TRACEANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Bryan Madrid
501 E. Main
Artesia, NM 88210

January 21, 1998
Receiving Date: 01/16/98
Sample Type: Water
Project No: NA
Project Location: NA

Prep Date: 01/17/98
Analysis Date: 01/17/98
Sampling Date: 01/14/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: NA

TA#	FIELD CODE	MTBE (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P,O XYLENE (mg/L)	TOTAL BTEX (mg/L)
T89218	Ponds (Outfall)	0.012	0.015	0.034	<0.010	0.028	0.077
QC	Quality Control	0.094	0.096	0.097	0.094	0.283	
REPORTING LIMIT		0.001	0.001	0.001	0.001	0.001	
RPD		1	1	1	2	1	
% Extraction Accuracy		100	103	102	98	101	
% Instrument Accuracy		94	96	98	94	95	

METHODS: EPA SW 846-8021B, 5030.
CHEMIST: AG
MTBE/BTEX SPIKE AND QC: 0.100 mg/L MTBE/BTEX.

Director, Dr. Blair Leftwich

1-21-98
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 RESULTS FOR
NAVAJO REFINING
Attention: Bryan Madrid
501 E. Main
Artesia, NM 88210

February 18, 1998
Receiving Date: 01/16/98
Sample Type: Water
Sampling Date: 01/14/98
Sample Condition: I & C
Sample Received by: VW
Extraction Date: 01/21/98
Analysis Date: 01/29/98

PAH 8270 Compounds (mg/L)	Reporting Limit	T89218 Ponds (Outfall)	QC	RPD	%EA	%IA
Naphthalene	0.001	0.034	74	4	41	93
Acenaphthylene	0.001	ND	74	0	73	93
Acenaphthene	0.001	ND	73	1	71	91
Fluorene	0.001	ND	68	---	72	85
Phenanthrene	0.001	0.004	74	11	76	93
Anthracene	0.001	ND	78	8	80	98
Fluoranthene	0.001	ND	72	20	72	90
Pyrene	0.001	ND	74	---	111	93
Benzo[a]anthracene	0.001	ND	78	---	81	98
Chrysene	0.001	ND	74	---	98	93
Benzo[b]fluoranthene	0.001	ND	74	---	69	93
Benzo[k]fluoranthene	0.001	ND	88	---	98	110
Benzo[a]pyrene	0.001	ND	77	---	85	96
Indeno[1,2,3-cd]pyrene	0.001	ND	74	---	91	93
Dibenz[a,h]anthracene	0.001	ND	69	---	91	86
Benzo[g,h,i]perylene	0.001	ND	70	---	86	87

ND = Not Detected

SURROGATES	% RECOVERY
Nitrobenzene-d5 SURR	40
2-Fluorobiphenyl SURR	30
Terphenyl-d14 SURR	60

METHODS: EPA SW 846-8270, 3510.

CHEMIST: MB

Director, Dr. Blair Leftwich

2-18-98
DATE

TRACEANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Bryan Madrid
501 E. Main
Artesia, NM 88210

February 18, 1998
Receiving Date: 01/16/98
Sample Type: Water
Project No: NA
Project Location: NA

Prep Date: 01/22/98
Analysis Date: 01/22/98
Sampling Date: 01/14/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: NA

TA#	FIELD CODE	NITRATE-N (mg/L)	CHLORIDE (mg/L)	FLUORIDE (mg/L)	SULFATE (mg/L)	ALKALINITY (mg/L as CaCo3) HC03	C03
T89218	Ponds (Outfall)	<0.01	1,100	3.9	1,500	100	<1.0
ICV		1.338	496	1.07	24	---	---
CCV		1.350	501	1.04	24	---	---
REPORTING LIMIT		0.01	0.5	0.1	10	1.0	1.0
RPD		2	4	0	0	2	2
% Extraction Accuracy		104	102	100	63	---	---
% Instrument Accuracy		101	100	106	97	---	---

METHODS: EPA 300.0, 310.1.
CHEMIST: NITRATE-N: RS CHLORIDE: RC FLUORIDE: JS/RC SULFATE/ALKALINITY: JS
SPIKE: 5,000 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 2,500 mg/L SULFATE; 19.995 mg/L NITRATE-N.
CV: 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 25 mg/L SULFATE; 1.333 mg/L NITRATE-N.

Director, Dr. Blair Leftwich

2-18-98
Date

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

RECEIVED
FEB 27 1997
OIL CONSERVATION DIVISION

February 25, 1997

Mr. Roger Anderson
Environmental Bureau
Oil Conservation Division
2040 S. Pacheco St.
Santa Fe, NM 87505-5472

CERTIFIED MAIL/RETURN RECEIPT
P 355 936 420

Dear Roger,

Enclosed are the results of Navajo Refining Company's annual sampling of the effluent into our evaporation ponds. In Navajo's letter of December 21, 1991, (response to NOV NMD048918817), Navajo agreed to send a copy of these results to ED.

If you have any questions concerning these results, please call me at 505-748-3311. Thank you for your time in this matter.

Sincerely,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Sr.Environmental Specialist

encl.
cc: NM Environment Dept.

TRACEANALYSIS, INC.

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

February 19, 1997
Receiving Date: 01/03/97
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Prep Date: 01/14/97
Analysis Date: 01/14/97
Sampling Date: 01/02/97
Sample Condition: Intact & Cool
Sample Received by: ML
Project Name: NA

TA#	Field Code	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CALCIUM (mg/L)	SODIUM (mg/L)
T65296	Annual Effluent	90	65	96	750
QC	Quality Control	24.8	25	26	25
Reporting Limit		0.10	0.01	0.01	0.40
RPD		5	4	2	0
% Extraction Accuracy		106	107	82	122
% Instrument Accuracy		99	102	106	101

METHODS: EPA 200.7.
CHEMIST: SODIUM/MAGNESIUM/CALCIUM: JT POTASSIUM: RR
SPIKE: 100 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.
QC: 25 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

2-20-97
Date

TRACEANALYSIS, INC.

6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

February 20, 1997
Receiving Date: 01/03/97
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Prep Date: 01/03/97
Analysis Date: 01/06/97
Sampling Date: 01/02/97
Sample Condition: Intact & Cool
Sample Received by: ML
Project Name: NA

TOTAL METALS

TA#	FIELD CODE	As (mg/L)	Cr (mg/L)	Cd (mg/L)	Ba (mg/L)	U (mg/L)	Mo (mg/L)	Zn (mg/L)	Ni (mg/L)	Be (mg/L)	Fe (mg/L)	Mn (mg/L)
T65296	Annual Effluent	<0.10	<0.05	<0.02	<0.20	<0.50	<0.10	<0.10	<0.10	<0.10	4.7	0.24
QC	Quality Control	4.7	4.7	4.7	4.7	5.3	4.9	4.6	4.7	4.9	4.7	4.7
REPORTING LIMIT		0.10	0.05	0.02	0.20	0.50	0.10	0.10	0.10	0.10	0.10	0.10
RPD		2	0	0	0	8	1	10	2	2	0	7
% Extraction Accuracy		97	100	96	98	95	111	90	97	98	100	93
% Instrument Accuracy		96	94	94	94	105	98	92	94	94	94	94

TA#	FIELD CODE	Co (mg/L)	V (mg/L)	Cu (mg/L)	Al (mg/L)	B (mg/L)	Hg (mg/L)	Se (mg/L)	Pb (mg/L)	Ag (mg/L)
T65296	Annual Effluent	<0.10	<0.10	<0.10	0.22	0.26	<0.001	<0.010	<0.005	<0.002
QC	Quality Control	4.5	4.6	4.6	4.6	5.1	0.0049	0.095	0.025	0.021
REPORTING LIMIT		0.10	0.10	0.10	0.10	0.10	0.001	0.010	0.005	0.002
RPD		10	0	10	10	0	2	2	7	1
% Extraction Accuracy		90	97	90	90	97	96	108	120	83
% Instrument Accuracy		92	92	92	92	103	100	95	100	100

METHODS: EPA 200.7, 239.2, 270.2, 272.2, 245.1.
CHEMIST: As, Cd, Cr, Ba, Al, Be, Co, Cu, Fe, Mn, Mo, Ni, V, Zn, Se, Pb, Ag, B: RR Hg: CB U: JT
TOTAL METALS SPIKE: 2.0 mg/L U, B, Mo; 0.005 mg/L Hg, Pb; 3.0 mg/L As, Cd, Cr, Ba, Ni, Be, V, Zn, Al, Fe, Co, Mn, Cu: 0.010 mg/L Ag; 0.050 mg/L Se.
TOTAL METALS QC: 5.0 mg/L U, B, As, Cd, Cr, Ba, Ni, Be, V, Zn, Al, Fe, Co, Mn, Cu, Mo; 0.005 mg/L Hg; 0.025 mg/L Pb; 0.020 mg/L Ag; 0.100 mg/L Se.

BS

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

2-20-97
DATE

TRACEANALYSIS, INC.
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

January 14, 1997
Receiving Date: 01/03/97
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Prep Date: 01/03/97
Analysis Date: 01/09/97
Sampling Date: 01/02/97
Sample Condition: Intact & Cool
Sample Received by: ML
Project Name: NA

TA#	FIELD CODE	CHLORIDE (mg/L)	FLUORIDE (mg/L)	SULFATE (mg/L)	ALKALINITY (mg/L as CaCo3) HCO3	CO3
T65296	Annual Effluent	1,100	35	780	5.00	0
QC	Quality Control	25	1.1	25	---	---
RPD		0	3	0	0	0
% Extraction Accuracy		100	95	100	---	---
% Instrument Accuracy		100	105	100	---	---
REPORTING LIMIT		1.0	0.1	1.0	10	10

METHODS: EPA 300.0, 310.1, 340.2.
CHEMIST: Chloride/Fluoride/Sulfate: MS Alkalinity: RCD/MS
SPIKE: 25 mg/L CHLORIDE; 5.0 mg/L FLUORIDE; 25 mg/L SULFATE.
QC: 25.0 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 25.0 mg/L SULFATE.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

2-14-97
Date

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING COMPANY
Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

January 14, 1997
Receiving Date: 01/03/97
Sample Type: Water
Sampling Date: 01/02/97
Sample Condition: I & C
Sample Received by: ML
Project Location: Artesia, NM
Extraction Date: 01/06/97
Analysis Date: 01/06/97

T65296

PAH 8270 Compounds (mg/L)	Reporting Limit*	Annual Effluent	QC	RPD	%EA	%IA
Naphthalene	0.05	0.12	75	4	72	94
Acenaphthylene	0.05	ND	73	5	82	91
Acenaphthene	0.05	ND	75	4	80	94
Fluorene	0.05	ND	73	5	80	91
Phenanthrene	0.05	ND	74	5	86	93
Anthracene	0.05	ND	79	4	80	99
Fluoranthene	0.05	ND	75	2	84	94
Pyrene*	0.05	ND	79	2	95	99
Benzo[a]anthracene	0.05	ND	75	12	81	94
Chrysene	0.05	ND	78	10	102	98
Benzo[b]fluoranthene	0.05	ND	77	16	82	96
Benzo[k]fluoranthene	0.05	ND	70	12	91	88
Benzo[a]pyrene	0.05	ND	76	13	85	95
Indeno[1,2,3-cd]pyrene	0.05	ND	66	19	70	83
Dibenz[a,h]anthracene	0.05	ND	65	20	66	81
Benzo[g,h,i]perylene	0.05	ND	66	19	70	83

ND = Not Detected

*NOTE: Elevated reporting limit due to sample matrix interference.

	% RECOVERY
Nitrobenzene-d5 SURR	109
2-Fluorobiphenyl SURR	109
Terphenyl-d14 SURR	136

METHODS: EPA SW 846-8270, 3510.
CHEMIST: RD/CC

2-14-97

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

DATE

TRACEANALYSIS, INC.
A Laboratory for Advanced Environmental Research and Analysis

TRACE ANALYSIS, INC.

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

Date: Jan 06, 1997
Date Rec: 1/3/97
Project: ARTESIA
Proj Name: NAVAJO
Proj Loc: ARTESIA, NM

Lab Receiving # : 9701000022
Sampling Date: 1/2/97
Sample Condition: Intact and Cool
Sample Received By: ML

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)
T65296	Annual Effluent	Water	<0.200	1.89	2.94	0.852	1.63	7.31
QC			0.099	0.093	0.093	0.095	0.294	
RPD			0	1	0	1	1	
% Extraction Accuracy			99	95	95	98	101	
% Instrument Accuracy			99	93	93	95	98	
Reporting Limit:			0.001	0.001	0.001	0.001	0.001	

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/L)
MTBE/BTEX	EPA 5030	1/4/97	EPA 8020	1/4/97	RW	0.100 ea	0.1 ea

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

1-6-97
Date

Navajo REFINING COMPANY

501 EAST MAIN STREET ◦ P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

TELEPHONE
(505) 748-3311

EASYLINK
62905278
FAX
(505) 746-6410 ACCTG
(505) 746-6155 EXEC
(505) 748-9077 ENGR
(505) 746-4438 P / L

'94 FE 4 AM 8 35

January 31, 1994

Mr. Roger Anderson
Oil Conservation Division-Environmental Bureau
State Land Office Bldg.
P.O. Box 2088
Santa Fe, NM 87501

Dear Roger,

Enclosed are the results of Navajo Refining Company's annual sampling of the effluent into our evaporation ponds. In Navajo's letter of December 21, 1991, (response to NOV NMD048918817), Navajo agreed to send a copy of these results to ED.

If you have any questions concerning these results, please call me at 505-748-3311. Thank you for your time in this matter.

Sincerely,

Darrell Moore

Darrell Moore
Environmental Specialist

encl.
cc: Mr. Edward Horst, NM Environment Dept.

TRACEANALYSIS, INC.
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

January 19, 1994
Receiving Date: 01/13/94
Sample Type: Water
Project No: NA
Project Location: NA

Analysis Date: 01/18/94
Sampling Date: 01/12/94
Sample Condition: Intact & Cool
Sample Received by: BL
Project Name: NA

TA#	Field Code	pH (s.u.)	FLUORIDE (mg/L)	SULFATE (mg/L)	CHLORIDE (mg/L)	Alkalinity (as CaCO3) CARBONATE (mg/L)	Alkalinity (as CaCO3) BICARBONATE (mg/L)
T17388	Evap. Pond Effluent	8.94	213	345	189	153	286
QC	Quality Control	7.01	2.07	20.6	495	---	---
% Precision		100	98	92	100	100	100
% Extraction Accuracy		---	114	122	98	---	---
% Instrument Accuracy		100	107	98	99	---	---

METHODS: EPA 150.1, 340.1, 375.4, 310.1; 3500 Cl-B.
QC: Blank Spiked with 2.0 mg/L FLUORIDE, SULFATE; 500 mg/L CHLORIDE.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

1-19-94
Date

TRACE ANALYSIS, INC.
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

January 18, 1994
Receiving Date: 01/13/94
Sample Type: Water
Project No: NA
Project Location: NA

Analysis Date: 01/14/94
Sampling Date: 01/12/94
Sample Condition: Intact & Cool
Sample Received by: BL
Project Name: NA

TA#	Field Code	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CALCIUM (mg/L)	SODIUM (mg/L)
T17388	Evap. Pond Eff.	16	32	51	389
QC	Quality Control	97	18.4	18.9	20.3
Detection Limit		1.0	1.0	0.1	1.0
% Precision		100	102	102	103
% Extraction Accuracy		96	97	99	99
% Instrument Accuracy		97	92	94	101

METHODS: EPA 200.7.
QC: Blank Spiked with 100 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

1-19-94
Date

TRACEANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

January 18, 1994
Receiving Date: 01/13/94
Sample Type: Water
Project No: NA
Project Location: NA

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Analysis Date: 01/14/94
Sampling Date: 01/12/94
Sample Condition: Intact & Cool
Sample Received by: BL
Project Name: NA

TOTAL METALS

TA#	FIELD CODE	As (ppm)	Se (ppm)	Cr (ppm)	Zn (ppm)	Cd (ppm)	Pb (ppm)	Ni (ppm)	Fe (ppm)	Mo (ppm)	Be (ppm)	Co (ppm)
T17388	Evap. Pond Effluent	0.3	0.3	<0.05	0.09	<0.01	<0.05	<0.05	2.1	<0.05	<0.01	<0.05
QC	Quality Control	4.9	5.0	4.9	5.0	5.0	5.0	5.4	5.0	5.1	5.2	5.2
DETECTION LIMIT		0.1	0.1	0.05	0.01	0.01	0.05	0.05	0.05	0.05	0.01	0.05
% Precision		100	100	100	100	100	100	100	92	100	100	100
% Extraction Accuracy		99	100	95	96	97	104	105	100	112	111	109
% Instrument Accuracy		99	100	99	100	99	101	108	100	101	103	104

		Mn (ppm)	V (ppm)	Cu (ppm)	Al (ppm)	B (ppm)	Ag (ppm)	Ba (ppm)	U (ppm)	Hg (ppm)
T17388	Evap. Pond Effluent	0.12	<0.05	<0.01	1.2	0.39	<0.01	<0.1	<0.5	<0.001
QC	Quality Control	5.3	5.3	5.2	10.0	10.0	10.4	9.7	9.5	0.020
DETECTION LIMIT		0.01	0.05	0.01	0.2	0.1	0.01	0.1	0.5	0.001
% Precision		97	100	100	100	100	100	100	100	100
% Extraction Accuracy		108	112	104	96	104	100	98	104	105
% Instrument Accuracy		106	105	104	100	100	104	97	97	100

METHODS: EPA 200.7, 245.1.
QC: Blank Spiked with 5.0 ppm As, Se, Cr, Zn, Cd, Pb, Ni, Fe, Mo, Be, Co, Mn, V, Cu; 10.0 ppm Al, B, Ag, Ba; 9.8 ppm U; 0.020 ppm Hg.

BS

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

1-19-94
DATE

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

January 18, 1994
Receiving Date: 01/13/94
Sample Type: Water
Sample Condition: Intact & Cool
Sample Received by: BL
Analysis Date: 01/17/94

T17388
Evap. Pond

EPA 8270 (ppm)	DL	Effluent	QC	%P	%EA	%IA
Naphthalene	0.001	0.046	0.466	100	NR	93
2-Methylnaphthalene	0.001	0.056	0.478	100	NR	95
Acenaphthylene	0.001	ND	0.479	100	NR	95
Acenaphthene	0.001	0.001	0.503	100	NR	100
Fluorene	0.001	0.002	0.479	100	NR	95
Phenanthrene	0.001	0.003	0.521	100	NR	104
Anthracene	0.001	ND	0.532	100	NR	106
Fluoranthene	0.001	ND	0.492	100	NR	98
Pyrene	0.001	ND	0.499	100	NR	99
Benz[a]anthracene	0.001	ND	0.531	100	NR	106
Chyrsene	0.001	ND	0.521	100	NR	104
Benzo[b]fluoranthene	0.001	ND	0.628	100	NR	125
7,12-Dimethylbenz(a)anthracene	0.001	ND	0.479	100	NR	95
Benzo[k]fluoranthene	0.001	ND	0.429	100	NR	85
Benzo[a]pyrene	0.001	ND	0.544	100	NR	108
Dibenzo(a,j)acridine	0.001	ND	0.447	100	NR	89
Indeno[1,2,3-cd]pyrene	0.001	ND	0.427	100	NR	85
Dibenz[a,h]anthracene	0.001	ND	0.479	100	NR	95
Benzo[g,h,i]perylene	0.001	ND	0.495	100	NR	99

*ND = Not Detected

	% RECOVERY
2-Fluorophenol SURR	104
Phenol-d5 SURR	86
Nitrobenzene-d5 SURR	98
2-Fluorobiphenyl SURR	109
2,4,6-Tribromophenol SURR	84
Terphenyl-d14 SURR	115

METHODS: EPA SW 846-8270.

BS

1-19-94

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

DATE

TRACEANALYSIS, INC.
A Laboratory for Advanced Environmental Research and Analysis

TRACEANALYSIS, INC.
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

January 17, 1994
Receiving Date: 01/13/94
Sample Type: Water
Project No: NA
Project Location: NA

Analysis Date: 01/14/94
Sampling Date: 01/12/94
Sample Condition: Intact & Cool
Sample Received by: BL
Project Name: NA

TA#	FIELD CODE	MTBE (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL-BENZENE (ppb)	M,P,O XYLENE (ppb)	TOTAL BTEX (ppb)
T17388	Evap Pond Effluent	<2	166	283	110	313	872
QC	Quality Control	192	190	190	189	566	
Detection Limit		1	1	1	1	1	
% Precision		102	103	103	96	104	
% Extraction Accuracy		103	101	98	101	96	
% Instrument Accuracy		96	95	95	95	94	

METHODS: EPA SW 846-8020.
BTEX SPIKE AND QC: Sample and Blank Spiked with 200 ppb EACH VOLATILE ORGANICS.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

1-17-94
Date

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 #: 505-748-3311
FAX #: 505-748-9077

Company Name & Address: Navajo Refining Co.

Project #:
Project Name :

Project Location:
Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	BTEX, MTBE	TPH	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI					Turn around # of days	Fax ASAP	Report TWC direct	Hold
17388	~~KWB~~ Evap. Pond Effl.	5		X						1	5	4		1/12/94	10:30		See	List		Annual		Effluent									
17389	KWB-3A	2	40ml	X								X		"	11:00	X															
17390	RA-3353	2	"	X								X			11:30	X															
17391	RA-4196	2	"	X								X			11:40	X															
17392	RA-2723	2	"	X								X			13:00	X															
17393	~~KWB~~ RA-4798	2	"	X								X			13:40	X															
17394	KWB-7	2	"	X								X			13:50	X															
17395	KWB-9	2	"	X								X			14:10	X															
17396	RA-3156	2	"	X								X			14:20	X															
17397	KWB-2A	2	"	X								X			14:30	X															
17398	Reverse Osmosis 624/601	14		X						2	14	5	7		15:00		See	List.		Quarterly		Reverse		Osmosis							

Relinquished by:	Date:	Times:	Received by:
Darrell Moore	1/12/93	16:30	
Relinquished by:	Date:	Times:	Received by:
Relinquished by:	Date:	Times:	Received by Laboratory:

REMARKS
One vial for KWB-2A broke.

Navajo REFINING COMPANY

EASYLINK
62905278
FAX
(505) 746-6410 ACCTG
(505) 746-6155 EXEC
(505) 748-9077 ENGR
(505) 746-4438 P / L

TELEPHONE
(505) 748-3311

501 EAST MAIN STREET ◦ P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

'94 JAN 13 AM 9 22

January 12, 1994

Mr. Roger Anderson
NM Oil Conservation Division
Land Office Building
P.O. Box 2088
Santa Fe, NM 87501

RE: FALL 1993 REPORT - GROUNDWATER SAMPLING AROUND EVAPORATION PONDS

Dear Roger:

Enclosed are results from our Fall 1993 sampling of the monitor wells around the evaporation ponds. This is on a staggered schedule per your letter of October 21, 1991.We have also included analysis that Navajo agreed to do as part of our consent agreement with EPA. This includes testing for arsenic, chromium, nickel, and lead. Also, Navajo agreed to resample well OCD 11A and OCD 3 for the above mentioned metals. The following is a summary of field observations:

Well #	Groundwater ft amsL	pH	EC umhos	Deg. C	Description
MW-1	3300.62	7.00	13040	19	Mod. Odor, , Turbid
MW-2	3301.65	6.94	12820	19.2	Odor, Silty, Turbid
MW-3	3299.70	7.12	7160	19	Slight Odor, Silty,
MW-4	3299.49	7.22	6890	17.6	Odor
MW-5	3298.83	7.32	17560	18.1	Moderate odor
OCD-2	3300.93	6.92	12750	18	Odor,Murky
OCD-3	3299.90	7.17	14390	17.6	Murky, odor
OCD-4	3300.06	7.21	15610	17.2	Brown, Mild odor
OCD-6	3299.28	6.93	11800	15.6	Brown,Turbid
OCD-8	3298.94	7.12	11120	15.8	odor, turbid
OCD-11A	3299.61	6.99	18160	17.1	Brown, odor,

REFINING COMPANY

TELEPHONE
(505) 748-3311

501 EAST MAIN STREET ◦ P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

EASYLINK
62905278
FAX
(505) 746-6410 ACCTG
(505) 746-6155 EXEC
(505) 748-9077 ENGR
(505) 746-4438 P / L

If you have any questions, please contact me at 748-3311, extension 281.

Respectfully yours,

Darrell Moore

Darrell Moore
Environmental Specialist

cc:MFR, file
enclosures

TRACEANALYSIS, INC.
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

January 06, 1994
Receiving Date: 12/22/93
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 12/24/93
Sampling Date: 12/20/93
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: Evaporation Ponds

TA#	Field Code	MTBE (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL-BENZENE (ppb)	M,P,O XYLENE (ppb)	TOTAL BTEX (ppb)
T16897	MW - 1	<1	<1	<1	<1	<1	<1
T16898	MW - 2	<10	<10	<10	<10	<10	<10
T16899	MW - 3	<10	<10	<10	<10	<10	<10
T16900	MW - 4	<10	<10	<10	<10	<10	<10
T16901	MW - 5	<10	<10	<10	<10	<10	<10
T16902	OCD - 2	10	<2	<2	<2	<2	<2
T16904	OCD - 4	2	<1	<1	<1	<1	<1
T16905	OCD - 6	<10	<10	<10	<10	<10	<10
T16906	OCD - 8	<10	<10	<10	<10	77	77
QC	Quality Control	207	189	187	186	556	
Detection Limit		1	1	1	1	1	
% Precision		99	101	100	101	100	
% Extraction Accuracy		111	97	96	94	97	
% Instrument Accuracy		103	94	93	93	92	

METHODS: EPA SW 846-8020.
BTEX SPIKE AND QC: Sample and Blank Spiked with 200 ppb EACH VOLATILE ORGANICS.

BS 1-6-94

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

Date

TRACE ANALYSIS, INC.
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

January 06, 1994
Receiving Date: 12/22/93
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 12/24/93
Sampling Date: 12/20/93
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: Evaporation Ponds

TA#	Field Code	CHLORIDE (mg/L)	FLUORIDE (mg/L)	SULFATE (mg/L)	Alkalinity CARBONATE (as CaCO3) (mg/L)	Alkalinity BICARBONATE (as CaCO3) (mg/L)	pH (s.u.)
T16897	MW - 1	4,418	1.1	2,523	0	429	6.94
T16898	MW - 2	2,090	11.3	1,808	0	521	7.11
T16899	MW - 3	1,330	2.9	2,452	0	327	7.34
T16900	MW - 4	1,473	1.9	2,205	0	235	7.12
T16901	MW - 5	5,178	3.1	4,913	0	398	7.27
T16902	OCD - 2	3,325	1.2	4,328	0	500	7.08
T16904	OCD - 4	5,510	0.9	3,711	0	191	7.61
T16905	OCD - 6	2,233	3.7	5,044	0	562	7.15
T16906	OCD - 8	2,233	2.9	4,127	0	429	7.06
QC	Quality Control	504	2.10	29.8	---	---	7.01
Precision		100	100	93	99	99	100
% Extraction Accuracy		99	110	116	---	---	99
% Instrument Accuracy		101	107	94	---	---	100
DETECTION LIMIT		1	0.1	1	---	10	---

METHODS: EPA 375.4, 310.1, 150.1, 340.2; 3500 Cl-B.
QC: Blank Spiked with 500 mg/L CHLORIDE; 2.0 mg/L FLUORIDE; 30.0 mg/L SULFATE.

BS

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

1-6-94
Date

TRACEANALYSIS, INC.
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

January 06, 1994
Receiving Date: 12/22/93
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 12/23/93
Sampling Date: 12/20/93
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: Evaporation Ponds

TOTAL METALS

TA#	Field Code	As (ppm)	Cr (ppm)	Pb (ppm)	Ni (ppm)	K (ppm)	Mg (ppm)	Ca (ppm)	Na (ppm)
T16897	MW - 1	<0.1	<0.05	<0.05	<0.05	10	472	749	1,870
T16898	MW - 2	<0.1	<0.05	<0.05	0.19	13	69	365	1,800
T16899	MW - 3	0.2	<0.05	<0.05	<0.05	12	138	475	998
T16900	MW - 4	0.2	<0.05	<0.05	<0.05	8	89	548	1,060
T16901	MW - 5	0.1	<0.05	<0.05	<0.05	20	675	583	4,480
T16902	OCD - 2	0.2	<0.05	<0.05	<0.05	19	201	513	2,480
T16904	OCD - 4	<0.1	<0.05	<0.05	<0.05	66	224	892	2,720
QC	Quality Control	5.2	5.1	5.1	5.0	100.8	20.3	19.8	19.6
Precision		100	100	100	100	97	95	98	101
% Extraction Accuracy		103	101	100	103	104	95	97	102
% Instrument Accuracy		104	102	101	100	101	101	99	98
Detection Limit		0.1	0.05	0.05	0.05	1.0	1.0	1.0	1.0

METHODS: EPA 200.7.
TOTAL METALS QC: Blank Spiked with 5.0 ppm As, Cr, Pb, Ni; 100.0 ppm K; 20.0 ppm Mg, Ca, Na.

BS

1-6-94
Date

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

TRACEANALYSIS, INC.
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

January 06, 1994
Receiving Date: 12/22/93
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 12/23/93
Sampling Date: 12/20/93
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: Evaporation Ponds

TOTAL METALS

TA#	Field Code	As (ppm)	Cr (ppm)	Pb (ppm)	Ni (ppm)	K (ppm)	Mg (ppm)	Ca (ppm)	Na (ppm)
T16905	OCD - 6	<1.0	<0.5	<0.5	<0.5	106	112	613	2,720
T16906	OCD - 8	<1.0	<0.5	<0.5	<0.5	73	185	571	1,820
QC	Quality Control	5.2	5.1	5.1	5.0	100.8	20.3	19.8	19.6
% Precision		100	100	100	100	97	95	98	101
% Extraction Accuracy		103	101	100	103	104	95	97	102
% Instrument Accuracy		104	102	101	100	101	101	99	98
Detection Limit		1.0	0.5	0.5	0.5	10	1.0	1.0	1.0

METHODS: EPA 200.7.
TOTAL METALS QC: Blank Spiked with 5.0 ppm As, Cr, Pb, Ni; 100.0 ppm K; 20.0 ppm Mg, Ca, Na.

BL

1-6-94

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

Date

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

January 06, 1994
Receiving Date: 12/22/93
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 12/29/93
Sampling Date: 12/20/93
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: NA

EPA 8240 Compounds (ppb)	T16900 MW - 4	Detection Limit	QC	%P	%EA	%IA
Naphthalene	ND	0.001	0.477	100	NR	95
2-Methylnapthalene	ND	0.001	0.474	100	NR	94

ND = Not Detected

	% RECOVERY
2-Fluorophenol SURR	105
Phenol-d5 SURR	109
Nitrobenzene-d5 SURR	107
2-Fluorobiphenyl SURR	92
2,4,6-Tribromophenol SURR	100
Terphenyl-d14 SURR	108

METHODS: EPA SW 846-8270.

BS

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

1-6-94
DATE

TRACEANALYSIS, INC.
A Laboratory for Advanced Environmental Research and Analysis

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

January 06, 1994
Receiving Date: 12/22/93
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 12/29/93
Sampling Date: 12/20/93
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: NA

EPA 8240 Compounds (ppb)	T16901 MW - 5	Detection Limit	QC	%P	%EA	%IA
Naphthalene	ND	0.001	0.477	100	NR	95
2-Methylnapthalene	ND	0.001	0.474	100	NR	94

ND = Not Detected

	% RECOVERY
2-Fluorophenol SURR	84
Phenol-d5 SURR	112
Nitrobenzene-d5 SURR	96
2-Fluorobiphenyl SURR	93
2,4,6-Tribromophenol SURR	95
Terphenyl-d14 SURR	78

METHODS: EPA SW 846-8270.

BG 1-6-94

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

DATE

TRACEANALYSIS, INC.
A Laboratory for Advanced Environmental Research and Analysis

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

January 06, 1994
Receiving Date: 12/22/93
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 12/23/93
Sampling Date: 12/20/93
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: Evaporation Ponds

		TOTAL METALS			
TA#	FIELD CODE	As (ppm)	Cr (ppm)	Pb (ppm)	Ni (ppm)
T16903	OCD - 3	<0.1	<0.05	<0.05	<0.05
QC	Quality Control	5.2	5.1	5.1	5.0
% Precision		100	100	100	100
% Extraction Accuracy		103	101	100	103
% Instrument Accuracy		104	102	101	100
DETECTION LIMIT		0.1	0.05	0.05	0.05

METHODS: EPA 200.7.
TOTAL METALS QC: Blank Spiked with 5.0 ppm As, Cr, Pb, Ni.

BS

1-6-94

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

DATE

TRACEANALYSIS, INC.
A Laboratory for Advanced Environmental Research and Analysis

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

January 06, 1994
Receiving Date: 12/22/93
Sample Type: Water
Project No: NA
Project Location: Artesia, NM

Analysis Date: 12/23/93
Sampling Date: 12/21/93
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: Evaporation Ponds

		TOTAL METALS			
TA#	FIELD CODE	As (ppm)	Cr (ppm)	Pb (ppm)	Ni (ppm)
T16907	OCD - 11A	<1.0	<0.5	<0.5	<0.5
QC	Quality Control	5.2	5.1	5.1	5.0
% Precision		100	100	100	100
% Extraction Accuracy		103	101	100	103
% Instrument Accuracy		104	102	101	100
DETECTION LIMIT		1.0	0.5	0.5	0.5

METHODS: EPA 200.7.
TOTAL METALS QC: Blank Spiked with 5.0 ppm As, Cr, Pb, Ni.

BS 1-6-94

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

DATE

TRACEANALYSIS, INC.
A Laboratory for Advanced Environmental Research and Analysis

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 #: 505-748-2311
FAX #: 505-748-9077

Company Name & Address: Navajo Refining Co.

Project #:
Project Name :

Project Location: Artesia Evap Ponds
Sampler Signature: Darrell Moore

ANALYSIS REQUEST

SPECIAL HANDLING

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	BTEX, MTBE	TPH	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI	Metals As, Cr, Ni, Pb					Turn around # of days	Fax ASAP	Report TWC direct	Hold
16897	MW-1	6		X							X			12/20/93	11:00		See list							X								
98	MW-2	"		X							X			" "	12:45		"				"			X								
99	MW-3	"		X							X			" "	13:30		"				"			X								
16900	MW-4	"		X							X			" "	1400		"				"			X								
1	MW-5	"		X							X			" "	1430		"				"			X								
2	~~MW~~ OCD-2	"		X							X			" "	1500		"				"			X								
3	OCD-3	1		X							X			" "	1530									X								
4	OCD-4	6		X							X			" "	1545		See list							X								
5	OCD-6	"		X							X			" "	1615		"				"			X								
6	OCD-8	"		X							X			" "	1645		"				"			X								
7	OCD-11A	1		X							X			12/21/93	1000									X								

Relinquished by:	Date:	Times:	Received by:
Darrell Moore	12/21/93	1630	
	12-22-93		Received by Laboratory: MS CT

REMARKS

TELEPHONE
(505) 748-3311

Navajo REFINING COMPANY
501 EAST MAIN STREET ◦ P.O. DRAWER 159
ARTESIA, NEW MEXICO 88211-0159

EASYLINK
62905278
FAX
(505) 746-6410 ACCTG
(505) 746-6155 EXEC
(505) 748-9077 ENGR
(505) 746-4438 P / L

June 15, 1993

Mr. Roger Anderson
NM Oil Conservation Division
Land Office Building
P.O. Box 2088
Santa Fe, NM 87501

RE: SPRING 1993 REPORT - GROUNDWATER SAMPLING AROUND EVAPORATION PONDS

Dear Roger:

Enclosed are results from our Spring 1993 sampling of the monitor wells around the evaporation ponds. This is on a staggered schedule per your letter of October 21, 1991. The following is a summary of field observations:

Well #	Groundwater ft amsL	pH	EC umhos	Deg. C	Description
MW-3	3300.62	6.94	7000	24	Mod. Odor, Silty, Turbid
MW-4	3300.51	7.15	7200	20.3	Mod. Odor, Silty, Turbid
MW-5	3299.97	7.03	12250	18.2	Slight Odor, V., Silty, Brown
MW-6	3300.85	7.36	3700	24.5	Brownish, Silty
MW-7	3299.85	7.24	14400	21.6	Moderate Silt, Brown
OCD-1	3303.63	7.03	13800	18.6	Murky
OCD-3	3301.04	7.05	17300	21	Murky
OCD-5	3300.88	7.13	18200	19.8	Brown, Mild Odor
OCD-7	3302.75	7.04	12000	19.7	Brown, Turbid

If you have any questions, please contact me at 748-3311, extension 281.

Respectfully yours,

Darrell Moore

Darrell Moore
Environmental Specialist

DGM/pb
enclosures

Sample Description: MW-3
Date Sampled: 4/28/93

Laboratory ID: D0430512

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	292	mg/L	EPA 310.1	5/3/93
P-Alkalinity, as CaCO3	0	mg/L	EPA 310.1	5/3/93
Chloride, as Cl	1330	mg/L	EPA 9251	5/14/93
Fluoride, total	2.3	mg/L	EPA 340.2	5/5/93
Sulfate, as SO4	2520	mg/L	EPA 9038	5/4/93
Bicarbonate, alk as CaC03	356	mg/L	Calculation	5/3/93
Carbonate, alk as CaC03	0	mg/L	Calculation	5/3/93
Aluminum, total	0.83	mg/L	EPA 6010	5/5/93
Boron, total	0.70	mg/L	EPA 6010	5/5/93
Calcium, total	499	mg/L	EPA 6010	5/5/93
Magnesium, total	187	mg/L	EPA 6010	5/5/93
Cobalt, total	< 0.01	mg/L	EPA 6010	5/5/93
Nickel, total	0.02	mg/L	EPA 6010	5/5/93
Potassium, total	7.94	mg/L	EPA 6010	5/5/93
Sodium, total	961	mg/L	EPA 6010	5/5/93
Vanadium, total	< 0.01	mg/L	EPA 6010	5/5/93

EPA Method 8020
Aromatic Volatiles

Betz Laboratory ID	D0430512
Client Identification	MW-3
Date Sampled	4/28/93
Date Analyzed	5/3/93
Analyst	KS
PQL, ug/L	5

Analyte	Concentration, ug/L (Liquid)
Benzene	6.0
Toluene	9.3
Ethyl Benzene	6.5
*Xylenes, total	18

*2 times PQL

Sample Description: MW-4
Date Sampled: 4/28/93

Laboratory ID: D0430513

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	244	mg/L	EPA 310.1	5/3/93
P-Alkalinity, as CaCO3	0	mg/L	EPA 310.1	5/3/93
Chloride, as Cl	1500	mg/L	EPA 9251	5/14/93
Fluoride, total	1.6	mg/L	EPA 340.2	5/5/93
Sulfate, as SO4	2070	mg/L	EPA 9038	5/4/93
Bicarbonate, alk as CaC03	298	mg/L	Calculation	5/3/93
Carbonate, alk as CaC03	0	mg/L	Calculation	5/3/93
Aluminum, total	0.74	mg/L	EPA 6010	5/5/95
Boron, total	0.66	mg/L	EPA 6010	5/5/93
Calcium, total	458	mg/L	EPA 6010	5/5/93
Magnesium, total	130	mg/L	EPA 6010	5/5/93
Cobalt, total	< 0.01	mg/L	EPA 6010	5/5/93
Nickel, total	0.01	mg/L	EPA 6010	5/5/93
Potassium, total	7.8	mg/L	EPA 6010	5/5/93
Sodium, total	1010	mg/L	EPA 6010	5/5/93
Vanadium, total	< 0.01	mg/L	EPA 6010	5/5/93

Sample Description: MW-4
Date Sampled: 4/28/93
Date Extracted: 5/3/93

Laboratory ID: D0430513
Date Analyzed: 5/4/93
Analyst: JR

BASE NEUTRAL EXTRACTABLE ORGANICS (EPA 8270)

Compound	ug/L
Naphthalene	ND
Mononaphthalene	ND

Limit of Practical Quantitation is 10 ug/L, unless otherwise noted in brackets.

				Recovery Limits
Surrogate Recovery:	Nitrobenzene-d5	60	%	35 - 114 %
	2-Fluorobiphenyl	72	%	43 - 116 %
	Terphenyl-d14	80	%	33 - 141 %

BETZ Analytical Services

EPA Method 8020
Aromatic Volatiles

Betz Laboratory ID	D0430513
Client Identification	MW-4
Date Sampled	4/28/93
Date Analyzed	5/3/93
Analyst	KS
PQL, ug/L	5

Analyte	Concentration, ug/L (Liquid)
Benzene	20
Toluene	12
Ethyl Benzene	19
*Xylenes, total	43

*2 times PQL

Sample Description: MW-5
Date Sampled: 4/28/93

Laboratory ID: D0430514

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	393	mg/L	EPA 310.1	5/3/93
P-Alkalinity, as CaCO3	0	mg/L	EPA 310.1	5/3/93
Chloride, as Cl	3620	mg/L	EPA 9251	5/14/93
Fluoride, total	2.3	mg/L	EPA 340.2	5/5/93
Sulfate, as SO4	6330	mg/L	EPA 9038	5/4/93
Bicarbonate, alk as CaC03	479	mg/L	Calculation	5/3/93
Carbonate, alk as CaC03	0	mg/L	Calculation	5/3/93
Aluminum, total	2.7	mg/L	EPA 6010	5/5/95
Boron, total	0.94	mg/L	EPA 6010	5/5/93
Calcium, total	458	mg/L	EPA 6010	5/5/93
Magnesium, total	626	mg/L	EPA 6010	5/5/93
Cobalt, total	< 0.01	mg/L	EPA 6010	5/5/93
Nickel, total	0.04	mg/L	EPA 6010	5/5/93
Potassium, total	15.3	mg/L	EPA 6010	5/5/93
Sodium, total	3260	mg/L	EPA 6010	5/5/93
Vanadium, total	0.01	mg/L	EPA 6010	5/5/93

EPA Method 8020
Aromatic Volatiles

Betz Laboratory ID	D0430514
Client Identification	MW-5
Date Sampled	4/28/93
Date Analyzed	5/3/93
Analyst	KS
PQL, ug/L	5

Analyte	Concentration, ug/L (Liquid)
Benzene	26
Toluene	47
Ethyl Benzene	10
*Xylenes, total	36

*2 times PQL

BETZ Analytical Services

Navajo Refining Company
501 East Main Street
P.O. Drawer 159
Artesia, New Mexico 88210

Date Submitted: 4/30/93
Date Reported: 5/24/93

Attn: Darrell Moore

Sample Description: MW-6
Date Sampled: 4/28/93

Laboratory ID: D0430511

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	229	mg/L	EPA 310.1	5/3/93
P-Alkalinity, as CaCO3	0	mg/L	EPA 310.1	5/3/93
Chloride, as Cl	684	mg/L	EPA 9251	5/14/93
Fluoride, total	2.5	mg/L	EPA 340.2	5/5/93
Sulfate, as SO4	1300	mg/L	EPA 9038	5/4/93
Bicarbonate, alk as CaC03	279	mg/L	Calculation	5/3/93
Carbonate, alk as CaC03	0	mg/L	Calculation	5/3/93
Aluminum, total	2.3	mg/L	EPA 6010	5/5/93
Boron, total	0.48	mg/L	EPA 6010	5/5/93
Calcium, total	285	mg/L	EPA 6010	5/5/93
Magnesium, total	83	mg/L	EPA 6010	5/5/93
Cobalt, total	< 0.01	mg/L	EPA 6010	5/5/93
Nickel, total	0.01	mg/L	EPA 6010	5/5/93
Potassium, total	2.5	mg/L	EPA 6010	5/5/93
Sodium, total	570	mg/L	EPA 6010	5/5/93
Vanadium, total	0.02	mg/L	EPA 6010	5/5/93

Sample Description: MW-6
Date Sampled: 4/28/93
Date Extracted: 5/3/93

Laboratory ID: D0430511
Date Analyzed: 5/4/93
Analyst: JR

BASE NEUTRAL EXTRACTABLE ORGANICS (EPA 8270)

Compound	ug/L
Naphthalene	ND
Mononaphthalene	ND

Limit of Practical Quantitation is 10 ug/L, unless otherwise noted in brackets.

			Recovery Limits
Surrogate Recovery:	Nitrobenzene-d5	32**%	35 - 114 %
	2-Fluorobiphenyl	64 %	43 - 116 %
	Terphenyl-d14	70 %	33 - 141 %

**Surrogate recovery is below QC limits, but above 10%.

EPA Method 8020
Aromatic Volatiles

Betz Laboratory ID	D0430511
Client Identification	MW-6
Date Sampled	4/28/93
Date Analyzed	5/3/93
Analyst	KS
PQL, ug/L	5

Analyte	Concentration, ug/L (Liquid)
Benzene	ND
Toluene	5
Ethyl Benzene	5.8
*Xylenes, total	19

*2 times PQL

Sample Description: MW-7
Date Sampled: 4/28/93

Laboratory ID: D0430515

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	265	mg/L	EPA 310.1	5/3/93
P-Alkalinity, as CaCO3	0	mg/L	EPA 310.1	5/3/93
Chloride, as Cl	2500	mg/L	EPA 9251	5/14/93
Fluoride, total	1.3	mg/L	EPA 340.2	5/5/93
Sulfate, as SO4	4060	mg/L	EPA 9038	5/4/93
Bicarbonate, alk as CaC03	323	mg/L	Calculation	5/3/93
Carbonate, alk as CaC03	0	mg/L	Calculation	5/3/93
Aluminum, total	1.4	mg/L	EPA 6010	5/5/93
Boron, total	0.89	mg/L	EPA 6010	5/5/93
Calcium, total	428	mg/L	EPA 6010	5/5/93
Magnesium, total	356	mg/L	EPA 6010	5/5/93
Cobalt, total	< 0.01	mg/L	EPA 6010	5/5/93
Nickel, total	0.02	mg/L	EPA 6010	5/5/93
Potassium, total	16	mg/L	EPA 6010	5/5/93
Sodium, total	2270	mg/L	EPA 6010	5/5/93
Vanadium, total	0.01	mg/L	EPA 6010	5/5/93

EPA Method 8020
Aromatic Volatiles

Betz Laboratory ID	D0430515
Client Identification	MW-7
Date Sampled	4/28/93
Date Analyzed	5/3/93
Analyst	KS
PQL, ug/L	5

Analyte	Concentration, ug/L (Liquid)
Benzene	ND
Toluene	ND
Ethyl Benzene	ND
*Xylenes, total	ND

*2 times PQL

Sample Description: OCD-1
Date Sampled: 4/28/93

Laboratory ID: D0430519

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	643	mg/L	EPA 310.1	5/3/93
P-Alkalinity, as CaCO3	0	mg/L	EPA 310.1	5/3/93
Chloride, as Cl	2450	mg/L	EPA 9251	5/14/93
Fluoride, total	4	mg/L	EPA 340.2	5/5/93
Sulfate, as SO4	3670	mg/L	EPA 9038	5/4/93
Bicarbonate, alk as CaC03	784	mg/L	Calculation	5/3/93
Carbonate, alk as CaC03	0	mg/L	Calculation	5/3/93
Aluminum, total	6.1	mg/L	EPA 6010	5/5/93
Boron, total	0.45	mg/L	EPA 6010	5/5/93
Calcium, total	670	mg/L	EPA 6010	5/5/93
Magnesium, total	177	mg/L	EPA 6010	5/5/93
Cobalt, total	0.02	mg/L	EPA 6010	5/5/93
Nickel, total	0.03	mg/L	EPA 6010	5/5/93
Potassium, total	22	mg/L	EPA 6010	5/5/93
Sodium, total	2390	mg/L	EPA 6010	5/5/93
Vanadium, total	0.02	mg/L	EPA 6010	5/5/93

EPA Method 8020
Aromatic Volatiles

Betz Laboratory ID	D0430519
Client Identification	OCD-1
Date Sampled	4/28/93
Date Analyzed	5/3/93
Analyst	KS
PQL, ug/L	5

Analyte	Concentration, ug/L (Liquid)
Benzene	ND
Toluene	ND
Ethyl Benzene	ND
*Xylenes, total	ND

*2 times PQL

Sample Description: OCD-3
Date Sampled: 4/28/93

Laboratory ID: D0430518

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	345	mg/L	EPA 310.1	5/3/93
P-Alkalinity, as CaCO3	0	mg/L	EPA 310.1	5/3/93
Chloride, as Cl	4710	mg/L	EPA 9251	5/14/93
Fluoride, total	0.8	mg/L	EPA 340.2	5/5/93
Sulfate, as SO4	2520	mg/L	EPA 9038	5/4/93
Bicarbonate, alk as CaC03	421	mg/L	Calculation	5/3/93
Carbonate, alk as CaC03	0	mg/L	Calculation	5/3/93
Aluminum, total	35	mg/L	EPA 6010	5/5/93
Boron, total	0.81	mg/L	EPA 6010	5/5/93
Calcium, total	1190	mg/L	EPA 6010	5/5/93
Magnesium, total	304	mg/L	EPA 6010	5/5/93
Cobalt, total	0.01	mg/L	EPA 6010	5/5/93
Nickel, total	0.03	mg/L	EPA 6010	5/5/93
Potassium, total	53	mg/L	EPA 6010	5/5/93
Sodium, total	2440	mg/L	EPA 6010	5/5/93
Vanadium, total	0.06	mg/L	EPA 6010	5/5/93

EPA Method 8020
Aromatic Volatiles

Betz Laboratory ID	D0430518
Client Identification	OCD-3
Date Sampled	4/28/93
Date Analyzed	5/1/93
Analyst	KS
PQL, ug/L	5

Analyte	Concentration, ug/L (Liquid)
Benzene	ND
Toluene	ND
Ethyl Benzene	ND
*Xylenes, total	ND

*2 times PQL

BETZ Analytical Services

Sample Description: OCD-5
Date Sampled: 4/28/93

Laboratory ID: D0430517

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	209	mg/L	EPA 310.1	5/3/93
P-Alkalinity, as CaCO3	0	mg/L	EPA 310.1	5/3/93
Chloride, as Cl	4850	mg/L	EPA 9251	5/14/93
Fluoride, total	0.9	mg/L	EPA 340.2	5/5/93
Sulfate, as SO4	2990	mg/L	EPA 9038	5/4/93
Bicarbonate, alk as CaC03	255	mg/L	Calculation	5/3/93
Carbonate, alk as CaC03	0	mg/L	Calculation	5/3/93
Aluminum, total	2.6	mg/L	EPA 6010	5/5/93
Boron, total	1.0	mg/L	EPA 6010	5/5/93
Calcium, total	740	mg/L	EPA 6010	5/5/93
Magnesium, total	226	mg/L	EPA 6010	5/5/93
Cobalt, total	< 0.01	mg/L	EPA 6010	5/5/93
Nickel, total	0.02	mg/L	EPA 6010	5/5/93
Potassium, total	51	mg/L	EPA 6010	5/5/93
Sodium, total	2840	mg/L	EPA 6010	5/5/93
Vanadium, total	0.01	mg/L	EPA 6010	5/5/93

EPA Method 8020
Aromatic Volatiles

Betz Laboratory ID	D0430517
Client Identification	OCD-5
Date Sampled	4/28/93
Date Analyzed	5/1/93
Analyst	KS
PQL, ug/L	5

Analyte	Concentration, ug/L (Liquid)
Benzene	ND
Toluene	ND
Ethyl Benzene	ND
*Xylenes, total	ND

*2 times PQL

Sample Description: OCD-7
Date Sampled: 4/28/93

Laboratory ID: D0430516

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	630	mg/L	EPA 310.1	5/3/93
P-Alkalinity, as CaCO3	0	mg/L	EPA 310.1	5/3/93
Chloride, as Cl	1940	mg/L	EPA 9251	5/14/93
Fluoride, total	1.8	mg/L	EPA 340.2	5/5/93
Sulfate, as SO4	3150	mg/L	EPA 9038	5/4/93
Bicarbonate, alk as CaCO3	769	mg/L	Calculation	5/3/93
Carbonate, alk as CaCO3	0	mg/L	Calculation	5/3/93
Aluminum, total	3.4	mg/L	EPA 6010	5/5/93
Boron, total	0.53	mg/L	EPA 6010	5/5/93
Calcium, total	579	mg/L	EPA 6010	5/5/93
Magnesium, total	180	mg/L	EPA 6010	5/5/93
Cobalt, total	0.02	mg/L	EPA 6010	5/5/93
Nickel, total	0.05	mg/L	EPA 6010	5/5/93
Potassium, total	14	mg/L	EPA 6010	5/5/93
Sodium, total	1780	mg/L	EPA 6010	5/5/93
Vanadium, total	0.02	mg/L	EPA 6010	5/5/93

EPA Method 8020
Aromatic Volatiles

Betz Laboratory ID	D0430516
Client Identification	OCD-7
Date Sampled	4/28/93
Date Analyzed	5/3/93
Analyst	KS
PQL, ug/L	5

Analyte	Concentration, ug/L (Liquid)
Benzene	ND
Toluene	ND
Ethyl Benzene	ND
*Xylenes, total	ND

*2 times PQL

TELEPHONE
(505) 748-3311

Navajo REFINING COMPANY
501 EAST MAIN STREET • P.O. DRAWER 159
ARTESIA, NEW MEXICO 88210

EASYLINK
62905278
FAX
(505) 746-6410

OIL CONSERVATION DIVISION
RECEIVED
'93 MAR 24 AM 9 13

March 19, 1993

Mr. William Olson, Hydrogeologist
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Dear Bill:

Enclosed are the results of our yearly sampling of our effluent into the Evaporation Ponds. Previously we sent our semi-annual report on our monitor wells around the ponds, but the effluent analysis was not included in that report. If you have any questions please call me at 748-3311, extension 281.

Thanks,

Darrell Moore

Darrell Moore
Environmental Specialist

DGM/pb

enclosure

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

BTEX
AROMATIC VOLATILE ORGANICS

Client:	**K.W. BROWN ENVIRONMENTAL SERVICES, INC.**		
Project Name:	Navajo Offsite H/C	Report Date:	03/01/93
Sample ID:	Navajo Effluent	Date Sampled:	02/11/93
Sample Number:	C930367	Date Received:	02/12/93
Sample Matrix:	Water	Date Analyzed:	02/24/93
Preservative:	Cool, pH < 2		
Condition:	Intact		

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Methyl tert-Butyl ether	ND	125
Benzene	267	25
Toluene	788	25
Ethylbenzene	253	25
m,p-Xylene	444	25
o-Xylene	232	25

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1-Chloro-2-Fluorobenzene	100%	75-125%

Reference: Method 5030, Purge and Trap
Method 8020, Aromatic Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments:

Mary Higginbotham
Analyst

Wenda M Rogers
Review

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

METHOD 8010
HALOGENATED VOLATILE ORGANICS

Client:	**K.W. BROWN ENVIRONMENTAL SERVICES, INC.**		
Project Name:	Navajo Offsite H/C	Report Date:	03/02/93
Sample ID:	Navajo Effluent	Date Sampled:	02/11/93
Sample Number:	C930367	Date Received:	02/12/93
Sample Matrix:	Water	Date Analyzed:	02/23/93
Preservative:	Cool, pH<2		
Condition:	Intact		

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Bromodichloromethane	ND	2.5
Bromoform	ND	2.5
Bromomethane	ND	25
Carbon tetrachloride	ND	2.5
Chlorobenzene	ND	2.5
Chloroethane	ND	25
2-Chloroethylvinyl ether	ND	250
Chloroform	ND	2.5
Chloromethane	ND	25
Dibromochloromethane	ND	2.5
1,2-Dichlorobenzene	ND	2.5
1,3-Dichlorobenzene	ND	2.5
1,4-Dichlorobenzene	ND	2.5
Dichlorodifluoromethane	ND	25
1,1-Dichloroethane	ND	2.5
1,2-Dichloroethane	ND	2.5
1,1-Dichloroethene	ND	2.5
trans-1,2-Dichloroethene	ND	2.5
1,2-Dichloropropane	ND	2.5
cis-1,3-Dichloropropene	ND	2.5
trans-1,3-Dichloropropene	ND	2.5
Methylene Chloride	8.4 B	2.5
1,1,2,2-Tetrachloroethane	ND	2.5
Tetrachloroethene	ND	2.5
1,1,1-Trichloroethane	ND	2.5
1,1,2-Trichloroethane	ND	2.5
Trichloroethene	ND	2.5
Trichlorofluoromethane	ND	5.0
Vinyl chloride	ND	5.0

ND - Analyte not detected at stated detection limit

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

METHOD 8010
HALOGENATED VOLATILE ORGANICS
Page 2 - Quality Control

Client:	**K.W. BROWN ENVIRONMENTAL SERVICES, INC.**		
Project Name:	Navajo Offsite H/C	Report Date:	03/02/93
Sample ID:	Navajo Effluent	Date Sampled:	02/11/93
Sample Number:	C930367	Date Received:	02/12/93
Sample Matrix:	Water	Date Analyzed:	02/23/93
Preservative:	Cool, pH<2		
Condition:	Intact		

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromochloromethane	84%	75-125%
1-Chloro-2-Fluorobenzene	73%	75-125%

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments: B - Methylene Chloride is a common laboratory contaminant. Analytical results should not be considered reliable unless the sample result exceeds five times the reporting limit or ten times the blank concentration.

Mary Higginbotham
Analyst

Wenda M Log
Review

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Offsite H/C
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: Navajo Effluent
Laboratory ID: C930367
Sample Matrix: Water
Condition: Cool, Lid Cracked

Report Date: 02/26/93
Date Sampled: 02/11/93
Date Received: 02/12/93
Date Extracted: 02/18/93
Date Analyzed: 02/25/93

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	15
Acenaphthylene	ND	15
Anthracene	ND	15
Benzo(a)anthracene	ND	15
Benzo(b)fluoranthene	ND	15
Benzo(k)fluoranthene	ND	15
Benzo(g,h,i)perylene	ND	15
Benzo(a)pyrene	ND	15
bis(2-Chloroethoxy)methane	ND	15
bis(2-Chloroethyl)ether	ND	15
bis(2-Chloroisopropyl)ether	ND	15
bis(2-Ethylhexyl)phthalate	ND	40
4-Bromophenyl phenyl ether	ND	15
Butyl benzyl phthalate	ND	15
p - Chloroaniline	ND	15
2 - Chloronaphthalene	ND	15
4-Chlorophenyl phenyl ether	ND	15
Chrysene	ND	15
Di - n - butylphthalate	ND	40
Dibenz(a,h)anthracene	ND	15
Dibenzofuran	ND	15
o - Dichlorobenzene	ND	15
m - Dichlorobenzene	ND	15
p - Dichlorobenzene	ND	15
3,3' - Dichlorobenzidine	ND	15
Diethyl phthalate	ND	15
Dimethyl phthalate	ND	15

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Offsite H/C
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: Navajo Effluent
Laboratory ID: C930367

Report Date: 02/26/93
Date Sampled: 02/18/93
Date Analyzed: 02/25/93

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
3,3' - Dichlorobenzidine	ND	15
Diethyl phthalate	ND	15
Dimethyl phthalate	ND	15
2,4 - Dinitrotoluene	ND	15
2,6 - Dinitrotoluene	ND	15
Di - n - octyl phthalate	ND	40
Fluoranthene	ND	15
Fluorene	ND	15
Hexachlorobenzene	ND	15
Hexachlorocyclopentadiene	ND	40
Hexachloroethane	ND	15
Hexachlorobutadiene	ND	15
Ideno(1,2,3-cd)pyrene	ND	15
Isophorone	ND	15
1 - Methylnaphthalene	**31**	15
2 - Methylnaphthalene	**29**	15
Naphthalene	**29**	15
o - Nitroaniline	ND	15
m - Nitroaniline	ND	15
p - Nitroaniline	ND	15
Nitrobenzene	ND	15
n - Nitrosodimethylamine	ND	15
n - Nitrosodiphenylamine	ND	15
n-Nitroso-di-n-propylamine	ND	15
Phenanthrene	ND	15
Pyrene	ND	15
1,2,4 - Trichlorobenzene	ND	15

ND - Analyte not detected at stated limit of detection

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EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Offsite H/C
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: Navajo Effluent
Laboratory ID: C930367

Report Date: 02/26/93
Date Sampled: 02/18/93
Date Analyzed: 02/25/93

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
2,4 - Dimethylphenol	12.86	240
2 - Methylphenol	11.22	750 J
4 - Methylphenol	11.67	1600 J
Phenol	9.90	1900 J
Unknown Hydrocarbon	11.67	190 *
Unknown Hydrocarbon	13.19	62 *
Hydrocarbon Envelope	6 - 22	
Sulfur Envelope	22 - 32	

* - Concentration calculated using assumed Relative Response Factor = 1
J - Estimated concentration, above calibration range

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	67%	21 - 100%
Phenol - d5	58%	10 - 110%
Nitrobenzene - d5	61%	35 - 114%
2 - Fluorobiphenyl	76%	43 - 116%
2,4,6 - Tribromophenol	80%	10 - 123%
Terphenyl - d14	67%	33 - 141%

References: Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Lance Lopez
Analyst

Review

Inter[illegible]ountain Laboratories, Inc.
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11183 SH 30 College Station, Texas 77845

Project #93020094

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	Navajo Effluent	**Report Date:**	03/05/93
Laboratory Number:	C930367/W00731	**Date Sampled:**	02/11/93
Sample Matrix:	WATER	**Date Received:**	02/16/93
Preservative:	HNO3, COOL	**Date Extracted:**	02/18/93
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Aluminum	1.4	mg/L	0.1	6010
Total Arsenic	0.042	mg/L	0.005	7061
Total Barium	ND	mg/L	0.05	6010
Total Boron	2.09	mg/L	0.05	6010
Total Cadmium	ND	mg/L	0.01	6010
Total Chromium	0.04	mg/L	0.02	6010
Total Cobalt	ND	mg/L	0.02	6010
Total Copper	ND	mg/L	0.01	6010
Total Iron	0.37	mg/L	0.05	6010
Total Manganese	0.11	mg/L	0.02	6010
Total Molybdenum	ND	mg/L	0.05	6010
Total Lead	ND	mg/L	0.01	7421
Total Mercury	ND	mg/L	0.002	7470
Total Nickel	ND	mg/L	0.01	6010
Total Selenium	0.133	mg/L	0.05	7741
Total Silver	ND	mg/L	0.01	6010
Total Zinc	0.12	mg/L	0.01	6010

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

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11183 SH 30 College Station, Texas 77845

Project #93020094

WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	Navajo Effluent	**Report Date:**	03/05/93
Laboratory Number:	C930367/W00731	**Date Sampled:**	02/11/93
Sample Matrix:	WATER	**Date Received:**	02/16/93
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	8.9	s.u.	0.1	SW-846 9040
Conductivity	9300.	umhos/cm	1.	SW-846 9050
Calcium	21.	mg/L	1.	SW-846 6010
Magnesium	55.	mg/L	1.	SW-846 6010
Potassium	22.	mg/L	1.	SW-846 6010
Sodium	1290.	mg/L	1.	SW-846 6010
Total Alkalinity	829.	mg/L	1.	EPA 310.1
Chloride	1920.	mg/L	1.	SW-846 9251
Sulfate	1034.	mg/L	1.	EPA 375.3
Fluoride	151.	mg/L	0.1	EPA 340.2
Total Dissolved Solids	7348.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

FILE COPY

KWB

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CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
Navajo Offsite H/C	ARtesia NM

Sampler: (Signature)	Chain of Custody Tape No.
D G Boyer	Hand delivered

ANALYSES / PARAMETERS

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	BTEX 8020 MTBE	Halogenated 8010	Heavy Metals (1)	Water Chemistry (2)	Remarks
Navajo Effluent	2/11/93	1145	C930367	Water	5	X	X	X	X	pH 8, cond 9082 µmhos
Water Well RA2023	2/11/93	1230	C930368	"	2	X				
Trand Blank			C930369	"						

Notes:
(1) Call to confirm metals to be tested for.
(2) major Cations/Anions + Fluoride

Phone 690-9280

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
D G Boyer	2/12/93	5:30pm	Wenda M Rogers	2/12/93	5:30pm
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

☐ 1633 Terra Avenue, Sheridan, Wyoming 82801, Telephone (307) 672-8945
☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945
☐ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737
☐ 910 Technology Blvd. Suite B, Bozeman, Montana 59715, Telephone (406) 586-8450
☐ Route 3, Box 256, College Station, TX 77845, Telephone (409) 776-8945
☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

8700

TELEPHONE
(505) 748-3311

EASYLINK
62905278

FAX
(505) 746-6410

Navajo REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

February 1, 1993

Mr. Roger Anderson
New Mexico Oil Conservation Division
Land Office Building
P O Box 2088
Santa Fe NM 87501

RE: FALL 1992 REPORT - GROUNDWATER SAMPLING AROUND EVAPORATION PONDS

Dear Roger:

Enclosed are results from our Fall 1992 sampling. This is on a staggered schedule per your letter of October 21, 1991. If there are any questions concerning this report, please contact me at 505-748-3311.

Respectfully yours,

Darrell Moore

Darrell Moore
Environmental Specialist

DGM/kds

Enclosure

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	11/18/92
Sample ID:	NEP-GW-MW-1	Date Sampled:	11/10/92
Laboratory ID:	C922278	Date Received:	11/12/92
Sample Matrix:	Water	Date Extracted:	11/12/92
Condition:	Cool, intact	Date Analyzed:	11/12/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

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EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-MW-1
Laboratory ID C922278

Report Date: 11/18/92
Date Sampled: 11/10/92
Date Analyzed: 11/12/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Unknown hydrocarbon	18.04	25 *

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	90%	76 - 114%
Toluene-d8	103%	88 - 110%
Bromofluorobenzene	99%	86 - 115%

Reference:

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 1
Laboratory ID: C922278
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 12/31/92
Date Sampled: 11/10/92
Date Received: 11/12/92
Date Extracted: 11/13/92
Date Analyzed: 11/13/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
bis(2-Chloroethoxy)methane	ND	10
bis(2-Chloroethyl)ether	ND	10
bis(2-Chloroisopropyl)ether	ND	10
bis(2-Ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
o - Cresol / 2 - Methylphenol	ND	10
p - Cresol / 4 - Methylphenol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3' - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	10

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 1
Laboratory ID: C922278

Report Date: 12/31/92
Date Sampled: 11/10/92
Date Analyzed: 11/13/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
4,6 - Dinitro - o - cresol	ND	25
2,4 - Dinitrophenol	ND	25
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	10
Di - n - octyl phthalate	ND	25
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorocyclopentadiene	ND	25
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - Nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection

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EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 1
Laboratory ID: C922278

Report Date: 12/31/92
Date Sampled: 11/10/92
Date Analyzed: 11/13/92

Tentative Identification	Retention Time (Minutes)	Concentration* (ug/L)
Unknown Hydrocarbon	3.93	10
Unknown Hydrocarbon	11.22	39

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	65%	21 - 100%
Phenol - d5	94%	10 - 110%
Nitrobenzene - d5	76%	35 - 114%
2 - Fluorobiphenyl	82%	43 - 116%
2,4,6 - Tribromophenol	99%	10 - 123%
Terphenyl - d14	95%	33 - 141%

References: Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

imL Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705 11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	C922278/15632	**Report Date:**	12/24/92
Laboratory Number:	NEP-GW-MW-1	**Date Sampled:**	11/10/92
Sample Matrix:	WATER	**Date Received:**	11/12/92
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	7.5	s.u.	0.1	SW-846 9040
Conductivity	14900.	umhos/cm	1.	SW-846 9050
Calcium	764.	mg/L	1.	SW-846 6010
Magnesium	480.	mg/L	0.1	SW-846 6010
Potassium	14.	mg/L	0.1	SW-846 6010
Sodium	2130.	mg/L	1.	SW-846 6010
Total Alkalinity	406.	mg/L	1.	EPA 310.1
Chloride	3750.	mg/L	1.	SW-846 9251
Sulfate	3020.	mg/L	1.	EPA 375.3
Fluoride	1.1	mg/L	0.1	EPA 340.2
Total Dissolved Solids	11200.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE:

SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor–Water Operations

imL Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705 11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-1	**Report Date:**	12/24/92
Laboratory Number:	C922278/15632	**Date Sampled:**	11/10/92
Sample Matrix:	WATER	**Date Received:**	11/12/92
Preservative:	HNO3, COOL	**Date Extracted:**	11/13/92
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Arsenic	0.020	mg/L	0.005	7061
Dissolved Arsenic	ND	mg/L	0.005	7061
Total Chromium	3.65 .05	mg/L	0.02	7190
Dissolved Chromium	ND	mg/L	0.02	7191
Total Lead	ND	mg/L	0.02	7421
Dissolved Lead	ND	mg/L	0.02	7421
Total Nickel	0.35	mg/L	0.01	7520
Dissolved Nickel	0.20	mg/L	0.01	7520

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan

Mitch Swan
Supervisor–Water Operations

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-MW-1-02 (Duplicate)
Laboratory ID: C922279
Sample Matrix: Water
Condition: Cool, intact

Report Date: 11/18/92
Date Sampled: 11/11/92
Date Received: 11/12/92
Date Extracted: 11/12/92
Date Analyzed: 11/12/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

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College Station, Texas 77845

EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-MW-1-02 Duplicate DMB
Laboratory ID C922279

Report Date: 11/18/92
Date Sampled: 11/11/92
Date Analyzed: 11/12/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Unknown hydrocarbon	18.03	28 *

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	90%	76 - 114%
Toluene-d8	104%	88 - 110%
Bromofluorobenzene	101%	86 - 115%

Reference:

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

iml
Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-OCD-8	**Report Date:**	12/31/92
Laboratory Number:	C922393/15723	**Date Sampled:**	11/17/92
Sample Matrix:	WATER	**Date Received:**	11/23/92
Preservative:	HNO3, COOL	**Date Extracted:**	11/30/92
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Arsenic	0.032	mg/L	0.005	7061
Dissolved Arsenic	0.019	mg/L	0.005	7061
Total Chromium	ND	mg/L	0.02	7191
Dissolved Chromium	ND	mg/L	0.02	7191
Total Lead	ND	mg/L	0.02	7421
Dissolved Lead	ND	mg/L	0.02	7421
Total Nickel	0.12	mg/L	0.01	7520
Dissolved Nickel	0.11	mg/L	0.01	7520

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan

Mitch Swan
Supervisor--Water Operations

imd
Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-OCD-8	**Report Date:**	12/31/92
Laboratory Number:	C922393/15723	**Date Sampled:**	11/17/92
Sample Matrix:	WATER	**Date Received:**	11/23/92
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	7.0	s.u.	0.1	SW-846 9040
Conductivity	12400.	umhos/cm	1.	SW-846 9050
Calcium	633.	mg/L	1.	EPA 215.2
Magnesium	308.	mg/L	0.1	SW-846 6010
Potassium	11.	mg/L	0.1	SW-846 6010
Sodium	1930.	mg/L	1.	SW-846 6010
Total Alkalinity	434.	mg/L	1.	EPA 310.1
Chloride	2290.	mg/L	1.	SW-846 9251
Sulfate	3620.	mg/L	1.	EPA 375.3
Fluoride	2.5	mg/L	0.1	EPA 340.2
Total Dissolved Solids	9670.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor–Water Operations

Inter-Mountain Laboratories, Inc.

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College Station, Texas 77845

EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	11/18/92
Sample ID:	NEP-GW-MW-2	Date Sampled:	11/10/92
Laboratory ID:	C922280	Date Received:	11/12/92
Sample Matrix:	Water	Date Extracted:	11/13/92
Condition:	Cool, intact	Date Analyzed:	11/13/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

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EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-MW-2
Laboratory ID C922280

Report Date: 11/18/92
Date Sampled: 11/10/92
Date Analyzed: 11/13/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Methyl tert-Butyl ether	5.35	15
Unknown hydrocarbon	17.10	26 *
Unknown hydrocarbon	18.66	22 *
Unknown hydrocarbon	19.77	39 *
Unknown hydrocarbon	21.35	35 *
Unknown hydrocarbon	21.80	14 *
Unknown hydrocarbon	21.90	26 *
Unknown hydrocarbon	22.45	24 *
Unknown hydrocarbon	22.97	16 *

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	94%	76 - 114%
Toluene-d8	102%	88 - 110%
Bromofluorobenzene	101%	86 - 115%

Reference: Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 2
Laboratory ID: C922280
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 12/31/92
Date Sampled: 11/10/92
Date Received: 11/12/92
Date Extracted: 11/13/92
Date Analyzed: 11/16/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
bis(2-Chloroethoxy)methane	ND	10
bis(2-Chloroethyl)ether	ND	10
bis(2-Chloroisopropyl)ether	ND	10
bis(2-Ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
o - Cresol / 2 - Methylphenol	ND	10
p - Cresol / 4 - Methylphenol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3' - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	10

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: K. W. BROWN ENVIRONMENTAL SERVICES
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 2
Laboratory ID: C922280

Report Date: 12/31/92
Date Sampled: 11/10/92
Date Analyzed: 11/13/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
4,6 - Dinitro - o - cresol	ND	25
2,4 - Dinitrophenol	ND	25
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	10
Di - n - octyl phthalate	ND	25
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorocyclopentadiene	ND	25
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - Nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection

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EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 2
Laboratory ID: C922280

Report Date: 12/31/92
Date Sampled: 11/10/92
Date Analyzed: 11/13/92

Tentative Identification	Retention Time (Minutes)	Concentration* (ug/L)
Unknown Hydrocarbon	8.99	44
Unknown Hydrocarbon	10.75	13
Hydrocarbon Envelope	7 - 28	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	66%	21 - 100%
Phenol - d5	102%	10 - 110%
Nitrobenzene - d5	77%	35 - 114%
2 - Fluorobiphenyl	82%	43 - 116%
2,4,6 - Tribromophenol	98%	10 - 123%
Terphenyl - d14	79%	33 - 141%

References: Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705 11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-2	**Report Date:**	12/24/92
Laboratory Number:	C922280/15633	**Date Sampled:**	11/10/92
Sample Matrix:	WATER	**Date Received:**	11/12/92
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	7.4	s.u.	0.1	SW-846 9040
Conductivity	11300.	umhos/cm	1.	SW-846 9050
Calcium	573.	mg/L	1.	SW-846 6010
Magnesium	134.	mg/L	0.1	SW-846 6010
Potassium	14.	mg/L	0.1	SW-846 6010
Sodium	2170.	mg/L	1.	SW-846 6010
Total Alkalinity	523.	mg/L	1.	EPA 310.1
Chloride	2120.	mg/L	1.	SW-846 9251
Sulfate	3180.	mg/L	1.	EPA 375.3
Fluoride	9.9	mg/L	0.1	EPA 340.2
Total Dissolved Solids	8430.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE:

SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

Inter[illegible]ountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-2	**Report Date:**	12/24/92
Laboratory Number:	C922280/15633	**Date Sampled:**	11/10/92
Sample Matrix:	WATER	**Date Received:**	11/12/92
Preservative:	HNO3, COOL	**Date Extracted:**	11/13/92
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Arsenic	0.087	mg/L	0.005	7061
Dissolved Arsenic	0.073	mg/L	0.005	7061
Total Chromium	0.10	mg/L	0.02	7190
Dissolved Chromium	ND	mg/L	0.02	7191
Total Lead	ND	mg/L	0.02	7421
Dissolved Lead	ND	mg/L	0.02	7421
Total Nickel	0.12	mg/L	0.01	7520
Dissolved Nickel	0.10	mg/L	0.01	7520

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	12/19/92
Sample ID:	NEP-GW-MW-3	Date Sampled:	11/12/92
Laboratory ID:	C922322	Date Received:	11/16/92
Sample Matrix:	Water	Date Extracted:	11/25/92
Condition:	Cool, intact	Date Analyzed:	11/25/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	17	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	16	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	21	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	25	5

ND - Analyte not detected at stated limit of detection

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EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-MW-3
Laboratory ID C922322

Report Date: 12/19/92
Date Sampled: 11/12/92
Date Analyzed: 11/25/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Unknown hydrocarbon	12.45	90*
Unknown hydrocarbon	17.06	144*
Unknown hydrocarbon	18.00	2000*
Unknown hydrocarbon	18.62	89*
Unknown hydrocarbon	19.48	87*
Unknown hydrocarbon	20.26	224*
Unknown hydrocarbon	20.65	374*
Hydrocarbon envelope	15-24	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	99%	76 - 114%
Toluene-d8	102%	88 - 110%
Bromofluorobenzene	109%	86 - 115%

Reference: Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 3
Laboratory ID: C922322
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 01/07/93
Date Sampled: 11/12/92
Date Received: 11/16/92
Date Extracted: 11/19/92
Date Analyzed: 11/24/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	60
Acenaphthylene	ND	60
Anthracene	ND	60
Benzo(a)anthracene	ND	60
Benzo(b)fluoranthene	ND	60
Benzo(k)fluoranthene	ND	60
Benzo(g,h,i)perylene	ND	60
Benzo(a)pyrene	ND	60
Benzoic acid	ND	60
Benzyl alcohol	ND	60
bis(2-Chloroethoxy)methane	ND	60
bis(2-Chloroethyl)ether	ND	60
bis(2-Chloroisopropyl)ether	ND	60
bis(2-Ethylhexyl)phthalate	ND	150
4-Bromophenyl phenyl ether	ND	60
Butyl benzyl phthalate	ND	60
p - Chloroaniline	ND	60
p - Chloro - m - cresol	ND	60
2 - Chloronaphthalene	ND	60
2 - Chlorophenol	ND	60
4-Chlorophenyl phenyl ether	ND	60
Chrysene	ND	60
o - Cresol / 2 - Methylphenol	ND	60
p - Cresol / 4 - Methylphenol	ND	60
Di - n - butylphthalate	ND	150
Dibenz(a,h)anthracene	ND	60
Dibenzofuran	ND	60
o - Dichlorobenzene	ND	60
m - Dichlorobenzene	ND	60
p - Dichlorobenzene	ND	60
3,3' - Dichlorobenzidine	ND	60
2,4 - Dichlorophenol	ND	60
Diethyl phthalate	ND	60
2,4 - Dimethylphenol	ND	60
Dimethyl phthalate	ND	60

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 3
Laboratory ID: C922322

Report Date: 01/07/93
Date Sampled: 11/12/92
Date Analyzed: 11/24/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
4,6 - Dinitro - o - cresol	ND	150
2,4 - Dinitrophenol	ND	150
2,4 - Dinitrotoluene	ND	60
2,6 - Dinitrotoluene	ND	60
Di - n - octyl phthalate	ND	150
Fluoranthene	ND	60
Fluorene	ND	60
Hexachlorobenzene	ND	60
Hexachlorocyclopentadiene	ND	150
Hexachloroethane	ND	60
Hexachlorobutadiene	ND	60
Ideno(1,2,3-cd)pyrene	ND	60
Isophorone	ND	60
2 - Methylnaphthalene	ND	60
Naphthalene	ND	60
o - Nitroaniline	ND	60
m - Nitroaniline	ND	60
p - Nitroaniline	ND	60
Nitrobenzene	ND	60
o - Nitrophenol	ND	60
p - Nitrophenol	ND	60
n - Nitrosodimethylamine	ND	60
n - Nitrosodiphenylamine	ND	60
n-Nitroso-di-n-propylamine	ND	60
Pentachlorophenol	ND	150
Phenanthrene	ND	60
Phenol	ND	60
Pyrene	ND	60
1,2,4 - Trichlorobenzene	ND	60
2,4,5 - Trichlorophenol	ND	60
2,4,6 - Trichlorophenol	ND	60

ND - Analyte not detected at stated limit of detection

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EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 3
Laboratory ID: C922322

Report Date: 01/07/93
Date Sampled: 11/10/92
Date Analyzed: 11/13/92

Tentative Identification	Retention Time (Minutes)	Concentration* (ug/L)
Unknown Aromatic	8.76	600
Unknown Hydrocarbon	11.58	160
Unknown Aromatic	11.86	87
Unknown Hydrocarbon	12.04	85
Unknown Hydrocarbon	12.23	140
Hydrocarbon Envelope	10 - 32	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	74%	21 - 100%
Phenol - d5	85%	10 - 110%
Nitrobenzene - d5	84%	35 - 114%
2 - Fluorobiphenyl	93%	43 - 116%
2,4,6 - Tribromophenol	107%	10 - 123%
Terphenyl - d14	107%	33 - 141%

References:
Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

iml
Inter Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-3	**Report Date:**	12/30/92
Laboratory Number:	C922322/15647	**Date Sampled:**	11/12/92
Sample Matrix:	WATER	**Date Received:**	11/16/92
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	7.3	s.u.	0.1	SW-846 9040
Conductivity	7220.	umhos/cm	1.	SW-846 9050
Calcium	457.	mg/L	1.	SW-846 6010
Magnesium	119.	mg/L	0.1	SW-846 6010
Potassium	12.	mg/L	0.1	SW-846 6010
Sodium	975.	mg/L	1.	SW-846 6010
Total Alkalinity	285.	mg/L	1.	EPA 310.1
Chloride	1820.	mg/L	1.	SW-846 9251
Sulfate	1020.	mg/L	1.	EPA 375.3
Fluoride	3.0	mg/L	0.1	EPA 340.2
Total Dissolved Solids	5310.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor–Water Operations

imL
Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-3	**Report Date:**	12/30/92
Laboratory Number:	C922322/15647	**Date Sampled:**	11/12/92
Sample Matrix:	WATER	**Date Received:**	11/16/92
Preservative:	HNO3, COOL	**Date Extracted:**	11/19/92
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Arsenic	0.078	mg/L	0.005	7061
Dissolved Arsenic	0.054	mg/L	0.005	7061
Total Chromium	0.03	mg/L	0.02	7191
Dissolved Chromium	ND	mg/L	0.02	7191
Total Lead	ND	mg/L	0.02	7421
Dissolved Lead	ND	mg/L	0.02	7421
Total Nickel	0.12	mg/L	0.01	7520
Dissolved Nickel	0.08	mg/L	0.01	7520

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

Inter-Mountain Laboratories, Inc.

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EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**K.W. BROWN ENVIRONMENTAL SERVICES, INC.**		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	12/19/92
Sample ID:	NEP-GW-MW-4	Date Sampled:	11/12/92
Laboratory ID:	C922333	Date Received:	11/16/92
Sample Matrix:	Water	Date Extracted:	11/25/92
Condition:	Cool, intact	Date Analyzed:	11/25/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	21	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	5
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	19	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	9	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	32	5

ND - Analyte not detected at stated limit of detection

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EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-MW-4
Laboratory ID C922333

Report Date: 12/19/92
Date Sampled: 11/12/92
Date Analyzed: 11/25/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Unknown hydrocarbon	17.06	148*
Unknown hydrocarbon	17.99	2300*
Unknown hydrocarbon	18.61	118*
Unknown hydrocarbon	19.47	115*
Unknown hydrocarbon	19.71	245*
Unknown hydrocarbon	20.24	263*
Unknown hydrocarbon	20.64	120*
Unknown hydrocarbon	21.30	115*

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	99%	76 - 114%
Toluene-d8	102%	88 - 110%
Bromofluorobenzene	112%	86 - 115%

Reference: Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 4
Laboratory ID: C922333
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 01/07/93
Date Sampled: 11/12/92
Date Received: 11/16/92
Date Extracted: 11/19/92
Date Analyzed: 11/24/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	100
Acenaphthylene	ND	100
Anthracene	ND	100
Benzo(a)anthracene	ND	100
Benzo(b)fluoranthene	ND	100
Benzo(k)fluoranthene	ND	100
Benzo(g,h,i)perylene	ND	100
Benzo(a)pyrene	ND	100
Benzoic acid	ND	100
Benzyl alcohol	ND	100
bis(2-Chloroethoxy)methane	ND	100
bis(2-Chloroethyl)ether	ND	100
bis(2-Chloroisopropyl)ether	ND	100
bis(2-Ethylhexyl)phthalate	ND	250
4-Bromophenyl phenyl ether	ND	100
Butyl benzyl phthalate	ND	100
p - Chloroaniline	ND	100
p - Chloro - m - cresol	ND	100
2 - Chloronaphthalene	ND	100
2 - Chlorophenol	ND	100
4-Chlorophenyl phenyl ether	ND	100
Chrysene	ND	100
o - Cresol / 2 - Methylphenol	ND	100
p - Cresol / 4 - Methylphenol	ND	100
Di - n - butylphthalate	ND	250
Dibenz(a,h)anthracene	ND	100
Dibenzofuran	ND	100
o - Dichlorobenzene	ND	100
m - Dichlorobenzene	ND	100
p - Dichlorobenzene	ND	100
3,3' - Dichlorobenzidine	ND	100
2,4 - Dichlorophenol	ND	100
Diethyl phthalate	ND	100
2,4 - Dimethylphenol	ND	100
Dimethyl phthalate	ND	100

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 4
Laboratory ID: C922333

Report Date: 01/07/93
Date Sampled: 11/12/92
Date Analyzed: 11/24/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
4,6 - Dinitro - o - cresol	ND	250
2,4 - Dinitrophenol	ND	250
2,4 - Dinitrotoluene	ND	100
2,6 - Dinitrotoluene	ND	100
Di - n - octyl phthalate	ND	250
Fluoranthene	ND	100
Fluorene	ND	100
Hexachlorobenzene	ND	100
Hexachlorocyclopentadiene	ND	250
Hexachloroethane	ND	100
Hexachlorobutadiene	ND	100
Ideno(1,2,3-cd)pyrene	ND	100
Isophorone	ND	100
2 - Methylnaphthalene	ND	100
Naphthalene	ND	100
o - Nitroaniline	ND	100
m - Nitroaniline	ND	100
p - Nitroaniline	ND	100
Nitrobenzene	ND	100
o - Nitrophenol	ND	100
p - Nitrophenol	ND	100
n - Nitrosodimethylamine	ND	100
n - Nitrosodiphenylamine	ND	100
n-Nitroso-di-n-propylamine	ND	100
Pentachlorophenol	ND	250
Phenanthrene	ND	100
Phenol	ND	100
Pyrene	ND	100
1,2,4 - Trichlorobenzene	ND	100
2,4,5 - Trichlorophenol	ND	100
2,4,6 - Trichlorophenol	ND	100

ND - Analyte not detected at stated limit of detection

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EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 4
Laboratory ID: C922333

Report Date: 01/07/93
Date Sampled: 11/10/92
Date Analyzed: 11/13/92

Tentative Identification	Retention Time (Minutes)	Concentration* (ug/L)
Unknown Hydrocarbon	8.76	730
Unknown Hydrocarbon	10.53	95
Hydrocarbon Envelope	9 - 30	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	84%	21 - 100%
Phenol - d5	94%	10 - 110%
Nitrobenzene - d5	91%	35 - 114%
2 - Fluorobiphenyl	106%	43 - 116%
2,4,6 - Tribromophenol	116%	10 - 123%
Terphenyl - d14	121%	33 - 141%

References:
Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

imL Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705 11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-4	**Report Date:**	12/30/92
Laboratory Number:	C922333/15644	**Date Sampled:**	11/12/92
Sample Matrix:	WATER	**Date Received:**	11/16/92
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	7.3	s.u.	0.1	SW-846 9040
Conductivity	7610.	umhos/cm	1.	SW-846 9050
Calcium	370.	mg/L	1.	SW-846 6010
Magnesium	119.	mg/L	0.1	SW-846 6010
Potassium	5.5	mg/L	0.1	SW-846 6010
Sodium	1180.	mg/L	1.	SW-846 6010
Total Alkalinity	234.	mg/L	1.	EPA 310.1
Chloride	1380.	mg/L	1.	SW-846 9251
Sulfate	1880.	mg/L	1.	EPA 375.3
Fluoride	1.8	mg/L	0.1	EPA 340.2
Total Dissolved Solids	5360.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

imL
Phone (409) 776-8945 FAX (409) 774-4705
Inter-Mountain Laboratories, Inc.
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-4	**Report Date:**	12/30/92
Laboratory Number:	C922333/15644	**Date Sampled:**	11/12/92
Sample Matrix:	WATER	**Date Received:**	11/16/92
Preservative:	HNO3, COOL	**Date Extracted:**	11/19/92
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Arsenic	0.080	mg/L	0.005	7061
Dissolved Arsenic	0.069	mg/L	0.005	7061
Total Chromium	ND	mg/L	0.02	7191
Dissolved Chromium	ND	mg/L	0.02	7191
Total Lead	ND	mg/L	0.02	7421
Dissolved Lead	ND	mg/L	0.02	7421
Total Nickel	0.11	mg/L	0.01	7520
Dissolved Nickel	0.07	mg/L	0.01	7520

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

Inter-Mountain Laboratories, Inc.

3304 Longmire
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EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	12/19/92
Sample ID:	NEP-GW-MW-5	Date Sampled:	11/11/92
Laboratory ID:	C922334	Date Received:	11/16/92
Sample Matrix:	Water	Date Extracted:	12/08/92
Condition:	Cool, intact	Date Analyzed:	12/08/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	13	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	5
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	6	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	27	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	7	5

ND - Analyte not detected at stated limit of detection

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EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-MW-5
Laboratory ID C922334

Report Date: 12/19/92
Date Sampled: 11/11/92
Date Analyzed: 12/08/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Unknown hydrocarbon	17.05	137*
Unknown hydrocarbon	17.99	3140*
Unknown hydrocarbon	19.47	106*
Unknown hydrocarbon	19.70	183*
Unknown hydrocarbon	20.24	282*
Unknown hydrocarbon	20.64	188*
Unknown hydrocarbon	20.73	92*
Hydrocarbon envelope	15-22	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	106%	76 - 114%
Toluene-d8	100%	88 - 110%
Bromofluorobenzene	117%	86 - 115%

Reference: Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments: The surrogate recovery (Bromofluorobenzene) is high due to matrix interference. The result was confirmed through re-analysis of the sample.

Analyst

Review

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 5
Laboratory ID: C922334
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 01/07/93
Date Sampled: 11/11/92
Date Received: 11/16/92
Date Extracted: 11/19/92
Date Analyzed: 11/23/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
bis(2-Chloroethoxy)methane	ND	10
bis(2-Chloroethyl)ether	ND	10
bis(2-Chloroisopropyl)ether	ND	10
bis(2-Ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
o - Cresol / 2 - Methylphenol	ND	10
p - Cresol / 4 - Methylphenol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3' - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	10

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 5
Laboratory ID: C922334

Report Date: 01/07/93
Date Sampled: 11/11/92
Date Analyzed: 11/23/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
4,6 - Dinitro - o - cresol	ND	25
2,4 - Dinitrophenol	ND	25
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	10
Di - n - octyl phthalate	ND	25
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorocyclopentadiene	ND	25
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - Nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection

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EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 5
Laboratory ID: C922334

Report Date: 01/07/93
Date Sampled: 11/10/92
Date Analyzed: 11/13/92

Tentative Identification	Retention Time (Minutes)	Concentration* (ug/L)
Unknown Hydrocarbon	8.81	490
Unknown Hydrocarbon	11.04	84
Unknown Hydrocarbon	11.59	66
Unknown Hydrocarbon	12.05	79
Unknown Hydrocarbon	12.24	49
Hydrocarbon Envelope	10 - 32	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	87%	21 - 100%
Phenol - d5	98%	10 - 110%
Nitrobenzene - d5	92%	35 - 114%
2 - Fluorobiphenyl	99%	43 - 116%
2,4,6 - Tribromophenol	113%	10 - 123%
Terphenyl - d14	105%	33 - 141%

References:
Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments: Sample was extracted outside of EPA required holding time; therefore, concentrations should be considered minimum.

Lance Cooper
Analyst

Wendel Mlay
Review

imL Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705 11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-5	**Report Date:**	12/30/92
Laboratory Number:	C922334/15645	**Date Sampled:**	11/11/92
Sample Matrix:	WATER	**Date Received:**	11/16/92
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	7.2	s.u.	0.1	SW-846 9040
Conductivity	28000.	umhos/cm	1.	SW-846 9050
Calcium	585.	mg/L	1.	SW-846 6010
Magnesium	1020.	mg/L	0.1	SW-846 6010
Potassium	9.0	mg/L	0.1	SW-846 6010
Sodium	5250.	mg/L	1.	SW-846 6010
Total Alkalinity	423.	mg/L	1.	EPA 310.1
Chloride	5410.	mg/L	1.	SW-846 9251
Sulfate	9770.	mg/L	1.	EPA 375.3
Fluoride	3.3	mg/L	0.1	EPA 340.2
Total Dissolved Solids	24300.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

imL
Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-5	**Report Date:**	12/30/92
Laboratory Number:	C922334/15645	**Date Sampled:**	11/11/92
Sample Matrix:	WATER	**Date Received:**	11/16/92
Preservative:	HNO3, COOL	**Date Extracted:**	11/19/92
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Arsenic	0.074	mg/L	0.005	7061
Dissolved Arsenic	0.063	mg/L	0.005	7061
Total Chromium	0.03	mg/L	0.02	7191
Dissolved Chromium	ND	mg/L	0.02	7191
Total Lead	ND	mg/L	0.02	7421
Dissolved Lead	ND	mg/L	0.02	7421
Total Nickel	0.27	mg/L	0.01	7520
Dissolved Nickel	0.25	mg/L	0.01	7520

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan

Mitch Swan
Supervisor–Water Operations

Inter-Mountain Laboratories, Inc.

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EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-MW-15 (Dup of MW-5 ABB)
Laboratory ID: C922335
Sample Matrix: Water
Condition: Cool, intact

Report Date: 12/19/92
Date Sampled: 11/11/92
Date Received: 11/16/92
Date Extracted: 11/25/92
Date Analyzed: 11/25/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	13	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	5
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	6	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	28	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	8	5

ND - Analyte not detected at stated limit of detection

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EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-MW-15 (Dup of MW-5)
Laboratory ID C922335

Report Date: 12/19/92
Date Sampled: 11/11/92
Date Analyzed: 11/25/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Unknown hydrocarbon	17.05	127*
Unknown hydrocarbon	17.99	2900*
Unknown hydrocarbon	19.47	94*
Unknown hydrocarbon	19.71	172*
Unknown hydrocarbon	20.23	263*
Unknown hydrocarbon	20.65	167*
Unknown hydrocarbon	20.74	91*
Hydrocarbon envelope	15-22	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	105%	76 - 114%
Toluene-d8	102%	88 - 110%
Bromofluorobenzene	105%	86 - 115%

Reference: Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 15 (MW-5 Dup) DKB
Laboratory ID: C922335
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 01/07/93
Date Sampled: 11/11/92
Date Received: 11/16/92
Date Extracted: 11/19/92
Date Analyzed: 11/24/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
bis(2-Chloroethoxy)methane	ND	10
bis(2-Chloroethyl)ether	ND	10
bis(2-Chloroisopropyl)ether	ND	10
bis(2-Ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
o - Cresol / 2 - Methylphenol	ND	10
p - Cresol / 4 - Methylphenol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3' - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	10

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 15 (MW-5 Dup)
Laboratory ID: C922335

Report Date: 01/07/93
Date Sampled: 11/11/92
Date Analyzed: 11/24/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
4,6 - Dinitro - o - cresol	ND	25
2,4 - Dinitrophenol	ND	25
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	10
Di - n - octyl phthalate	ND	25
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorocyclopentadiene	ND	25
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - Nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

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EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - MW - 15 (MW3 Dup) 11/13
Laboratory ID: C922335

Report Date: 01/07/93
Date Sampled: 11/10/92
Date Analyzed: 11/13/92

Tentative Identification	Retention Time (Minutes)	Concentration* (ug/L)
Unknown Hydrocarbon	7.86	40
Unknown Hydrocarbon	8.82	580
Unknown Hydrocarbon	11.04	100
Unknown Hydrocarbon	11.59	80
Unknown Hydrocarbon	12.25	60
Hydrocarbon Envelope	9 - 32	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	109%	21 - 100%
Phenol - d5	**117%**	10 - 110%
Nitrobenzene - d5	108%	35 - 114%
2 - Fluorobiphenyl	113%	43 - 116%
2,4,6 - Tribromophenol	123%	10 - 123%
Terphenyl - d14	119%	33 - 141%

References:
Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:
One acid surrogate above acceptance limit.
Sample was extracted outside of EPA required holding time; therefore, concentrations should be considered minimum.

Analyst

Review

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11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-15 (Dup of MW-5 A&B)	**Report Date:**	12/30/92
Laboratory Number:	C922335/15646	**Date Sampled:**	11/11/92
Sample Matrix:	WATER	**Date Received:**	11/16/92
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	7.2	s.u.	0.1	SW-846 9040
Conductivity	28100.	umhos/cm	1.	SW-846 9050
Calcium	579.	mg/L	1.	SW-846 6010
Magnesium	1020.	mg/L	0.1	SW-846 6010
Potassium	9.3	mg/L	0.1	SW-846 6010
Sodium	5150.	mg/L	1.	SW-846 6010
Total Alkalinity	427.	mg/L	1.	EPA 310.1
Chloride	5470.	mg/L	1.	SW-846 9251
Sulfate	9740.	mg/L	1.	EPA 375.3
Fluoride	3.3	mg/L	0.1	EPA 340.2
Total Dissolved Solids	24400.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

iml Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705 11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-MW-15 (Dup MW-5)	**Report Date:**	12/30/92
Laboratory Number:	C922335/15646	**Date Sampled:**	11/11/92
Sample Matrix:	WATER	**Date Received:**	11/16/92
Preservative:	HNO3, COOL	**Date Extracted:**	11/19/92
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Arsenic	0.077	mg/L	0.005	7061
Dissolved Arsenic	0.062	mg/L	0.005	7061
Total Chromium	0.02	mg/L	0.02	7191
Dissolved Chromium	ND	mg/L	0.02	7191
Total Lead	ND	mg/L	0.02	7421
Dissolved Lead	ND	mg/L	0.02	7421
Total Nickel	0.26	mg/L	0.01	7520
Dissolved Nickel	0.26	mg/L	0.01	7520

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

Water Mountain Laboratories, Inc.

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College Station, Texas 77845

EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	12/23/92
Sample ID:	NEP-GW-OCD-2	Date Sampled:	11/15/92
Laboratory ID:	C922357	Date Received:	11/17/92
Sample Matrix:	Water	Date Extracted:	11/28/92
Condition:	Cool, intact	Date Analyzed:	11/28/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-OCD-2
Laboratory ID C922357

Report Date: 12/23/92
Date Sampled: 11/15/92
Date Analyzed: 11/28/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Unknown hydrocarbon	14.72	16*
Unknown hydrocarbon	17.05	25*
Unknown hydrocarbon	18.61	24*
Unknown hydrocarbon	19.71	27*
Unknown hydrocarbon	21.30	20*

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	81%	76 - 114%
Toluene-d8	102%	88 - 110%
Bromofluorobenzene	98%	86 - 115%

Reference:

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 2
Laboratory ID: C922357
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 01/08/93
Date Sampled: 11/15/92
Date Received: 11/17/92
Date Extracted: 11/22/92
Date Analyzed: 12/01/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
bis(2-Chloroethoxy)methane	ND	10
bis(2-Chloroethyl)ether	ND	10
bis(2-Chloroisopropyl)ether	ND	10
bis(2-Ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
o - Cresol / 2 - Methylphenol	ND	10
p - Cresol / 4 - Methylphenol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3' - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	25

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EPA Method 8270

SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 2
Laboratory ID: C922357

Report Date: 01/08/93
Date Sampled: 11/15/92
Date Analyzed: 12/01/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
4,6 - Dinitro - o - cresol	ND	25
2,4 - Dinitrophenol	ND	10
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	25
Di - n - octyl phthalate	ND	10
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	25
Hexachlorocyclopentadiene	ND	10
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - Nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection

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EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 2
Laboratory ID: C922357

Report Date: 01/08/93
Date Sampled: 11/15/92
Date Analyzed: 12/01/92

Tentative Identification	Retention Time (Minutes)	Concentration* (ug/L)
Unknown Hydrocarbon	8.31	20
Unknown Hydrocarbon	8.74	70
Unknown Hydrocarbon	12.03	60
Unknown Hydrocarbon	15.52	20
Hydrocarbon Envelope	9 - 29	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	60%	21 - 100%
Phenol - d5	51%	10 - 110%
Nitrobenzene - d5	70%	35 - 114%
2 - Fluorobiphenyl	70%	43 - 116%
2,4,6 - Tribromophenol	82%	10 - 123%
Terphenyl - d14	89%	33 - 141%

References: Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
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WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-OCD-2	**Report Date:**	12/31/92
Laboratory Number:	C922357/15669	**Date Sampled:**	11/15/92
Sample Matrix:	WATER	**Date Received:**	11/17/92
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	7.0	s.u.	0.1	SW-846 9040
Conductivity	15400.	umhos/cm	1.	SW-846 9050
Calcium	565.	mg/L	1.	EPA 215.2
Magnesium	333.	mg/L	0.1	SW-846 6010
Potassium	8.1	mg/L	0.1	SW-846 6010
Sodium	2510.	mg/L	1.	SW-846 6010
Total Alkalinity	404.	mg/L	1.	EPA 310.1
Chloride	3220.	mg/L	1.	SW-846 9251
Sulfate	3990.	mg/L	1.	EPA 375.3
Fluoride	1.2	mg/L	0.1	EPA 340.2
Total Dissolved Solids	11800.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor–Water Operations

Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-OCD-2	**Report Date:**	12/31/92
Laboratory Number:	C922357/15669	**Date Sampled:**	11/15/92
Sample Matrix:	WATER	**Date Received:**	11/17/92
Preservative:	HNO3, COOL	**Date Extracted:**	11/19/92
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Arsenic	0.067	mg/L	0.005	7061
Dissolved Arsenic	0.043	mg/L	0.005	7061
Total Chromium	0.04	mg/L	0.02	7191
Dissolved Chromium	ND	mg/L	0.02	7191
Total Lead	ND	mg/L	0.02	7421
Dissolved Lead	ND	mg/L	0.02	7421
Total Nickel	0.15	mg/L	0.01	7520
Dissolved Nickel	0.12	mg/L	0.01	7520

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	01/08/93
Sample ID:	NEP-GW-OCD-4	Date Sampled:	11/16/92
Laboratory ID:	C922398	Date Received:	11/19/92
Sample Matrix:	Water	Date Extracted:	12/09/92
Condition:	Cool, intact	Date Analyzed:	12/09/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

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College Station, Texas 77845

EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-OCD-4
Laboratory ID C922398

Report Date: 01/08/93
Date Sampled: 11/16/92
Date Analyzed: 12/09/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
None detected at reportable levels.		

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	93%	76 - 114%
Toluene-d8	103%	88 - 110%
Bromofluorobenzene	102%	86 - 115%

Reference:

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments: This sample was analyzed outside of the required holding time.
Analytical results obtained from samples not analyzed within required holding times should be considered minimum values.

Analyst

Review

Inter-Mountain Laboratories, Inc.

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: K. W. BROWN ENVIRONMENTAL SERVICES
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 4
Laboratory ID: C922398
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 01/08/93
Date Sampled: 11/16/92
Date Received: 11/19/92
Date Extracted: 11/23/92
Date Analyzed: 12/01/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
bis(2-Chloroethoxy)methane	ND	10
bis(2-Chloroethyl)ether	ND	10
bis(2-Chloroisopropyl)ether	ND	10
bis(2-Ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
o - Cresol / 2 - Methylphenol	ND	10
p - Cresol / 4 - Methylphenol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3' - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	10

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 4
Laboratory ID: C922398

Report Date: 01/08/93
Date Sampled: 11/16/92
Date Analyzed: 12/01/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
4,6 - Dinitro - o - cresol	ND	25
2,4 - Dinitrophenol	ND	25
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	10
Di - n - octyl phthalate	ND	25
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorocyclopentadiene	ND	25
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - Nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection
** - Concentration and detection limit calculated on dry weight basis.

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EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 4
Laboratory ID: C922398

Report Date: 01/08/93
Date Sampled: 11/16/92
Date Analyzed: 12/01/92

Tentative Identification	Retention Time (Minutes)	Concentration* (ug/L)
None detected at reportable levels.		

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	62%	21 - 100%
Phenol - d5	66%	10 - 110%
Nitrobenzene - d5	68%	35 - 114%
2 - Fluorobiphenyl	79%	43 - 116%
2,4,6 - Tribromophenol	103%	10 - 123%
Terphenyl - d14	113%	33 - 141%

References: Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Lance Lopez
Analyst

Review

iml
Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-OCD-4	**Report Date:**	12/31/92
Laboratory Number:	C922398/15727	**Date Sampled:**	11/16/92
Sample Matrix:	WATER	**Date Received:**	11/23/92
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	7.2	s.u.	0.1	SW-846 9040
Conductivity	19000.	umhos/cm	1.	SW-846 9050
Calcium	724.	mg/L	1.	SW-846 6010
Magnesium	240.	mg/L	0.1	SW-846 6010
Potassium	50.	mg/L	0.1	SW-846 6010
Sodium	3120.	mg/L	1.	SW-846 6010
Total Alkalinity	197.	mg/L	1.	EPA 310.1
Chloride	4500.	mg/L	1.	SW-846 9251
Sulfate	3010.	mg/L	1.	EPA 375.3
Fluoride	0.9	mg/L	0.1	EPA 340.2
Total Dissolved Solids	13100.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

iml
Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-OCD-4	**Report Date:**	12/31/92
Laboratory Number:	C922398/15727	**Date Sampled:**	11/16/92
Sample Matrix:	WATER	**Date Received:**	11/23/92
Preservative:	HNO3, COOL	**Date Extracted:**	11/30/92
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Arsenic	0.015	mg/L	0.005	7061
Dissolved Arsenic	0.005	mg/L	0.005	7061
Total Chromium	ND	mg/L	0.02	7191
Dissolved Chromium	ND	mg/L	0.02	7191
Total Lead	ND	mg/L	0.02	7421
Dissolved Lead	ND	mg/L	0.02	7421
Total Nickel	0.15	mg/L	0.01	7520
Dissolved Nickel	0.11	mg/L	0.01	7520

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan

Mitch Swan
Supervisor–Water Operations

Inter-Mountain Laboratories, Inc.

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EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	01/05/93
Sample ID:	NAV-EP-OCD4	Date Sampled:	12/12/92
Laboratory ID:	C922568/B925779	Date Received:	12/24/92
Sample Matrix:	Water	Date Extracted:	12/24/92
Condition:	Cool, intact	Date Analyzed:	12/24/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

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EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	01/05/93
Sample ID:	NAV-EP-OCD4	Date Sampled:	12/12/92
Laboratory ID	C922568/B925779	Date Analyzed:	12/24/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
None detected at reportable levels.		

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	103%	76 - 114%
Toluene-d8	101%	88 - 110%
Bromofluorobenzene	90%	86 - 115%

Reference: Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

for CS
Analyst

for WS
Review

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EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	01/08/93
Sample ID:	NEP-GW-OCD-6	Date Sampled:	11/16/92
Laboratory ID:	C922400	Date Received:	11/19/92
Sample Matrix:	Water	Date Extracted:	12/10/92
Condition:	Cool, intact	Date Analyzed:	12/10/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

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EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP-GW-OCD-6
Laboratory ID C922400

Report Date: 01/08/93
Date Sampled: 11/16/92
Date Analyzed: 12/10/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Unknown hydrocarbon	13.94	50*
Unknown hydrocarbon	17.05	32*
Unknown hydrocarbon	18.60	37*
Unknown hydrocarbon	19.70	55*
Unknown hydrocarbon	20.64	28*
Unknown hydrocarbon	21.29	49*
Unknown hydrocarbon	22.38	40*

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	91%	76 - 114%
Toluene-d8	102%	88 - 110%
Bromofluorobenzene	105%	86 - 115%

Reference:

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments: This sample was analyzed outside of the required holding time. Analytical results obtained from samples not analyzed within required holding times should be considered minimum values.

Analyst

Review

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 6
Laboratory ID: C922400
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 01/08/93
Date Sampled: 11/16/92
Date Received: 11/19/92
Date Extracted: 11/23/92
Date Analyzed: 12/01/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
bis(2-Chloroethoxy)methane	ND	10
bis(2-Chloroethyl)ether	ND	10
bis(2-Chloroisopropyl)ether	ND	10
bis(2-Ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
o - Cresol / 2 - Methylphenol	ND	10
p - Cresol / 4 - Methylphenol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3' - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	10

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EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 6
Laboratory ID: C922400

Report Date: 01/08/93
Date Sampled: 11/16/92
Date Analyzed: 12/01/92

Analyte	Concentration (ug/L) **	Detection Limit (ug/L)
4,6 - Dinitro - o - cresol	ND	25
2,4 - Dinitrophenol	ND	25
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	10
Di - n - octyl phthalate	ND	25
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorocyclopentadiene	ND	25
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - Nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection
** - Concentration and detection limit calculated on dry weight basis.

Inter-Mountain Laboratories, Inc.

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EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 6
Laboratory ID: C922400

Report Date: 01/08/93
Date Sampled: 11/16/92
Date Analyzed: 12/01/92

Tentative Identification	Retention Time (Minutes)	Concentration* (ug/L)
Unknown Hydrocarbon	8.01	0.06
Unknown Hydrocarbon	8.75	0.11
Unknown Hydrocarbon	10.53	0.02
Unknown Hydrocarbon	12.04	0.07
Unknown Hydrocarbon	15.52	0.02
Hydrocarbon Envelope	7 - 29	

** - Concentration calculated using assumed Relative Response Factor = 1*

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	73%	21 - 100%
Phenol - d5	91%	10 - 110%
Nitrobenzene - d5	85%	35 - 114%
2 - Fluorobiphenyl	96%	43 - 116%
2,4,6 - Tribromophenol	103%	10 - 123%
Terphenyl - d14	118%	33 - 141%

References: Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

iml
Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705
11183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
GENERAL CHEMISTRY

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-OCD-6	**Report Date:**	12/31/92
Laboratory Number:	C922400/15729	**Date Sampled:**	11/16/92
Sample Matrix:	WATER	**Date Received:**	11/23/92
Preservative:	COOL		
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
pH	7.1	s.u.	0.1	SW-846 9040
Conductivity	14500.	umhos/cm	1.	SW-846 9050
Calcium	675.	mg/L	1.	EPA 215.2
Magnesium	210.	mg/L	0.1	SW-846 6010
Potassium	15.	mg/L	0.1	SW-846 6010
Sodium	2550.	mg/L	1.	SW-846 6010
Total Alkalinity	495.	mg/L	1.	EPA 310.1
Chloride	3000.	mg/L	1.	SW-846 9251
Sulfate	3670.	mg/L	1.	EPA 375.3
Fluoride	2.9	mg/L	0.1	EPA 340.2
Total Dissolved Solids	10900.	mg/L	10.	EPA 160.1

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

EPA - "Methods for Chemical Analysis of Water and Wastes," US EPA, EPA 600/4-79-020, Revised March 1983.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

imL Inter-Mountain Laboratories, Inc.
Phone (409) 776-8945 FAX (409) 774-4705 1183 SH 30 College Station, Texas 77845

WATER QUALITY REPORT
TRACE METALS

CLIENT: K.W. BROWN ENVIRONMENTAL SERVICES
PROJECT: NAVAJO - #622092005

Sample ID:	NEP-GW-OCD-6	**Report Date:**	12/31/92
Laboratory Number:	C922400/15729	**Date Sampled:**	11/16/92
Sample Matrix:	WATER	**Date Received:**	11/23/92
Preservative:	HNO3, COOL	**Date Extracted:**	11/30/92
Condition:	INTACT		

Analyte	Concentration	Units	Detection Limit	Method Reference
Total Arsenic	0.036	mg/L	0.005	7061
Dissolved Arsenic	0.028	mg/L	0.005	7061
Total Chromium	ND	mg/L	0.02	7191
Dissolved Chromium	ND	mg/L	0.02	7191
Total Lead	ND	mg/L	0.02	7421
Dissolved Lead	ND	mg/L	0.02	7421
Total Nickel	0.14	mg/L	0.01	7520
Dissolved Nickel	0.13	mg/L	0.01	7520

ND - Parameter not detected at stated detection limit.
Detection limits are derived from practical quantitation levels.

REFERENCE: Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," United States Environmental Protection Agency, November, 1986.

Reviewed by:

Mitch Swan
Supervisor--Water Operations

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	01/05/93
Sample ID:	NAV-EP-OCD6	Date Sampled:	12/12/92
Laboratory ID:	C922569/B925780	Date Received:	12/24/92
Sample Matrix:	Water	Date Extracted:	12/24/92
Condition:	Cool, intact	Date Analyzed:	12/24/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **K.W. BROWN ENVIRONMENTAL SERVICES, INC.**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NAV-EP-OCD6
Laboratory ID C922569/B925780

Report Date: 01/05/93
Date Sampled: 12/12/92
Date Analyzed: 12/24/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Unknown phthalate	18.10	300*
Unknown hydrocarbon	19.83	70*
Unknown hydrocarbon	20.38	70*
Unknown hydrocarbon	20.77	40*
Unknown hydrocarbon	21.44	60*

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	99%	76 - 114%
Toluene-d8	99%	88 - 110%
Bromofluorobenzene	94%	86 - 115%

Reference: Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8240
VOLATILE ORGANIC COMPOUNDS

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	01/08/93
Sample ID:	NEP-GW-OCD-8	Date Sampled:	11/17/92
Laboratory ID:	C922393	Date Received:	11/19/92
Sample Matrix:	Water	Date Extracted:	11/29/92
Condition:	Cool, intact	Date Analyzed:	11/29/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8240

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

K.W. BROWN ENVIRONMENTAL SERVICES

Client:	K.W. BROWN ENVIRONMENTAL SERVICES, INC.		
Project Name:	Navajo Refinery		
Project Location:	Artesia, NM		
Project Number:	622092005	Report Date:	01/08/93
Sample ID:	NEP-GW-OCD-8	Date Sampled:	11/17/92
Laboratory ID	C922393	Date Analyzed:	11/29/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
Unknown hydrocarbon	14.71	110*
Unknown hydrocarbon	17.05	57*
Unknown hydrocarbon	17.97	974*
Unknown hydrocarbon	18.60	41*
Unknown hydrocarbon	19.69	133*
Unknown hydrocarbon	20.23	120*
Unknown hydrocarbon	21.29	108*
Unknown hydrocarbon	21.83	59*
Hydrocarbon envelope	18-24	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Water Acceptance Limits
1,2-Dichloroethane-d4	93%	76 - 114%
Toluene-d8	103%	88 - 110%
Bromofluorobenzene	99%	86 - 115%

Reference: Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 8
Laboratory ID: C922393
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 01/08/93
Date Sampled: 11/17/92
Date Received: 11/19/92
Date Extracted: 11/24/92
Date Analyzed: 12/02/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
bis(2-Chloroethoxy)methane	ND	10
bis(2-Chloroethyl)ether	ND	10
bis(2-Chloroisopropyl)ether	ND	10
bis(2-Ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
o - Cresol / 2 - Methylphenol	ND	10
p - Cresol / 4 - Methylphenol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3' - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	25

Inter-Mountain Laboratories, Inc.

3304 Longm-e
College Station, Texas 77845

EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 8
Laboratory ID: C922393

Report Date: 01/08/93
Date Sampled: 11/17/92
Date Analyzed: 12/02/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
4,6 - Dinitro - o - cresol	ND	25
2,4 - Dinitrophenol	ND	10
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	25
Di - n - octyl phthalate	ND	10
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	25
Hexachlorocyclopentadiene	ND	10
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - Nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **K. W. BROWN ENVIRONMENTAL SERVICES**
Project Name: Navajo Refinery
Project Location: Artesia, NM
Project Number: 622092005
Sample ID: NEP - GW - OCD - 8
Laboratory ID: C922393

Report Date: 01/08/93
Date Sampled: 11/17/92
Date Analyzed: 12/02/92

Tentative Identification	Retention Time (Minutes)	Concentration* (ug/L)
Unknown Hydrocarbon	8.75	170
Unknown Hydrocarbon	10.51	40
Unknown Hydrocarbon	11.01	20
Unknown Hydrocarbon	12.02	30
Unknown Hydrocarbon	15.50	20
Hydrocarbon Envelope	10 - 29	

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	16%	21 - 100%
Phenol - d5	17%	10 - 110%
Nitrobenzene - d5	40%	35 - 114%
2 - Fluorobiphenyl	35%	43 - 116%
2,4,6 - Tribromophenol	26%	10 - 123%
Terphenyl - d14	54%	33 - 141%

References: Method 3510: Separatory Funnel Liquid - Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments: One acid and one B/N surrogate outside acceptance limits.

Analyst

Review

TELEPHONE
(505) 748-3311

Navajo REFINING COMPANY

501 EAST MAIN STREET ⊙ P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

EASYLINK
62905278

FAX
(505) 746-6410

October 12, 1992

Mr. Roger Anderson
NM Oil Conservation Division
Land Office Building
P.O. Box 2088
Santa Fe, NM 87501

RE: SPRING 1992 REPORT - GROUNDWATER SAMPLING AROUND EVAPORATION PONDS

Dear Roger:

Enclosed are results from our Spring '92 sampling. This is on a staggered schedule per your letter of October 21, 1991. The following is a summary of field observations:

Well #	Groundwater ft amsL	pH	EC umhos	Deg. C	Description
MW-3	3303.75	6.88	7100	21.7	Mod. Odor, Slightly Soapy
MW-4	3306.48	7.06	6830	20.5	Mod. Odor, Slightly Foamy
MW-5	3302.79	6.99	28200	19.9	Soapy, Slt. Odor, Silty, Oil Sheen
MW-6	3304.01	7.07	4380	23.7	Brown H_2O, Silty, Organic Odor
MW-7	3302.48	7.2	13900	18.9	Slight Odor, Mod. Silt, Brown
OCD-1	3306.08	7.15	14800	17.7	Lt. Oily Sheen, Murky Water
OCD-3	3303.04	6.93	15600	18.8	Murky Water
OCD-5	3302.82	6.99	16200	18.3	Brown Color
OCD-7	3304.61	7.31	13500	20.0	Gas Odor, Brown Color

If you have any questions, please contact me at 748-3311, extension 281.

Respectfully yours,

Darrell Moore

Darrell Moore
Environmental Specialist

DGM/pb
enclosures

DGM-QRTL:pb

Hobbs
Midland

Amarillo
Trevose

BETZ INDUSTRIAL

Navajo Refining Co. **Analytical Services**
Artesia, New Mexico

Report to: Mr. David Griffin; Mr. Ronald Loyd

SAMPLE WELLS

	MW-6	MW-3	MW-4	MW-5	MW-7				
Hold	9	6	6	7	6				
Cut	1' -2"	1' -4"	1' -8"	2' 6-1/4	2' -4"				
Conductivity	4380	7100	6830	28200	13900				
pH	7.07	6.88	7.06	6.99	7.2				
Temp.	23.7	21.7	20.5	19.9	18.9				

	OCD-1	OCD-3	OCD-5	OCD-7					
Hold	8	11	9	6					
Cut	1'4-3/4"	1'6-1/2"	1'8-7/8"	1'4-3/8"					
Conductivity	14800	15600	16200	13500					
pH	7.15	6.93	6.99	7.31					
Temp.	17.7	18.8	18.3	20					

Comments:

MW-6 Water discolored brownish, silt present, moderate organic odor.

MW-3 Moderate odor, slightly soapy.

MW-4 Moderate odor, slightly foamy.

MW-5 Soapy, slight odor, very silty, brownish color, light oil sheen.

MW-7 Slight odor, moderate silt, brownish color.

OCD-1 Light oily sheen, murky water.

OCD-3 Murky water.

OCD-5 Brownish in color.

OCD-7 Gas odor, brownish in color.

SIGNED: 06/11/92

BETZ Analytical Services

Sample Description: MW-3
Date Sampled: 6/10/92

Laboratory ID: C0612575

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	250.0	mg/L	SM 403 16th	6/25/92
P-Alkalinity, as CaCO3	0.0	mg/L	SM 403 16th	6/25/92
Chloride, as Cl	1480.0	mg/L	EPA 9251	6/24/92
Flouride, total	2.40	mg/L	EPA 340.2	6/16/92
Sulfate, as SO4	2620.0	mg/L	EPA 9038	6/19/92
Calcium, total	498.0	mg/L	EPA 6010	6/26/92
Magnesium, total	167.0	mg/L	EPA 6010	6/26/92
Potassium, total	10.3	mg/L	EPA 6010	6/26/92
Sodium, total	1030.0	mg/L	EPA 6010	6/26/92
Bicarbonate, alk as CaCO3	250.0	mg/L	calculation	N/A
Carbonate, alk as CaCO3	0.0	mg/L	calculation	N/A

Sample Description: MW-3
Date Sampled: 6/10/92

Laboratory ID: C0612575
Date Analyzed: 6/17/92 19:28
Analyst: AF/RDW

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5.0 ug/L	EPA 8020
Benzene	10 ug/L		
Ethylbenzene	10 ug/L		
Toluene	16 ug/L		
*Total Xylenes	24 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	117 %	78-168 %

* = 2 times limit of detection.

BETZ Analytical Services

Sample Description: MW-4
Date Sampled: 6/10/92

Laboratory ID: C0612576

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	217.0	mg/L	SM 403 16th	6/25/92
P-Alkalinity, as CaCO3	0.0	mg/L	SM 403 16th	6/25/92
Chloride, as Cl	1500.0	mg/L	EPA 9251	6/24/92
Flouride, total	1.70	mg/L	EPA 340.2	6/16/92
Sulfate, as SO4	1630.0	mg/L	EPA 9038	6/19/92
Calcium, total	382.0	mg/L	EPA 6010	6/26/92
Magnesium, total	117.0	mg/L	EPA 6010	6/26/92
Potassium, total	6.0	mg/L	EPA 6010	6/26/92
Sodium, total	1010.0	mg/L	EPA 6010	6/26/92
Bicarbonate, alk as CaCO3	217.0	mg/L	calculation	N/A
Carbonate, alk as CaCO3	0.0	mg/L	calculation	N/A

Sample Description: MW-4
Date Sampled: 6/10/92

Laboratory ID: C0612576
Date Analyzed: 6/17/92 20:04
Analyst: AF/RDW

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5.0 ug/L	EPA 8020
Benzene	18 ug/L		
Ethylbenzene	14 ug/L		
Toluene	6 ug/L		
*Total Xylenes	35 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	121 %	78-168 %

* = 2 times limit of detection.

BETZ
Analytical Services

Sample Description: MW-4
Date Sampled: 6/10/92
Date Extracted: 6/15/92
Dilution: 1:10

Laboratory ID: C0612576
Date Analyzed: 7/24/92 09:51
Analyst: JC

ACID EXTRACTABLE ORGANICS (EPA 8270)

Compound	ug/L
4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND *
2-Methyl-4,6-dinitrophenol	ND *
2-Nitrophenol	ND
4-Nitrophenol	ND *
Pentachlorophenol	ND *
Phenol	ND
2,4,6-Trichlorophenol	ND

Limit of Practical Quantitation is 100 ug/L, unless otherwise noted in brackets.
* = 5 times limit of detection

Surrogate Recovery:		Recovery Limits:
2-Fluorophenol	39 %	10- 94 %
Phenol-d5	69 %	21-100 %
2,4,6-Tribromophenol	60 %	10-123 %

BETZ
Analytical Services

Sample Description: MW-4
Date Sampled: 6/10/92
Date Extracted: 6/15/92
Dilution: 1:10

Laboratory ID: C0612576
Date Analyzed: 7/24/92 09:51
Analyst: JC

BASE NEUTRAL EXTRACTABLE ORGANICS (EPA 8270)

Compound	ug/L
Acenaphthene	ND
Acenaphthylene	ND
Anthracene	ND
Benzidine	ND
Benzo(a)anthracene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Benzo(a)pyrene	ND
Benzo(ghi)perylene	ND
Benzyl alcohol	ND
Benzyl butyl phthalate	ND
Bis(2-chloroethyl)ether	ND
Bis(2-chloroethoxy)methane	ND
Bis(2-ethylhexyl)phthalate	ND
Bis(2-chloroisopropyl)ether	ND
4-Bromophenyl phenyl ether	ND
4-Chloroaniline	ND
2-Chloronaphthalene	ND
4-Chlorophenyl phenyl ether	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Di-n-butyl phthalate	ND
1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND
3,3'-Dichlorobenzidine	ND *

BETZ
Analytical Services

BASE/NEUTRAL EXTRACTABLE ORGANICS (EPA 8270)
Laboratory ID: C0612576 (Continued)

Compound	ug/L
Diethyl phthalate	ND
Dimethyl phthalate	ND
2,4-Dinitrotoluene	ND
2,6-Dinitrotoluene	ND
Di-n-octyl phthalate	ND
Fluoranthene	ND
Fluorene	ND
Hexachlorobenzene	ND
Hexachlorobutadiene	ND
Hexachloroethane	ND
Indeno(1,2,3-cd)pyrene	ND
Isophorone	ND
2-Methylnaphthalene	ND
Naphthalene	ND
2-Nitroaniline	ND
3-Nitroaniline	ND
4-Nitroaniline	ND
Nitrobenzene	ND
N-Nitrosodi-n-propylamine	ND
N-Nitrosodimethyamine	ND
N-Nitrosodiphenylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

Limit of Practical Quantitation is 100 ug/L, unless otherwise noted in brackets.
* = 2 times limit of detection

				Recovery Limits	
Surrogate Recovery:	Nitrobenzene-d5	70	%	35 - 114	%
	2-Fluorobiphenyl	91	%	43 - 116	%
	Terphenyl-d14	98	%	33 - 141	%

BETZ Analytical Services

Sample Description: MW-5
Date Sampled: 6/10/92

Laboratory ID: C0612577

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	493.0	mg/L	SM 403 16th	6/25/92
P-Alkalinity, as CaCO3	0.0	mg/L	SM 403 16th	6/25/92
Chloride, as Cl	7860.0	mg/L	EPA 9251	6/24/92
Flouride, total	3.50	mg/L	EPA 340.2	6/16/92
Sulfate, as SO4	11100.0	mg/L	EPA 9038	6/19/92
Calcium, total	817.0	mg/L	EPA 6010	6/24/92
Magnesium, total	1360.0	mg/L	EPA 6010	6/24/92
Potassium, total	62.5	mg/L	EPA 6010	6/24/92
Sodium, total	5780.0	mg/L	EPA 6010	6/24/92
Bicarbonate, alk as CaCO3	493.0	mg/L	calculation	N/A
Carbonate, alk as CaCO3	0.0	mg/L	calculation	N/A

Sample Description: MW-5
Date Sampled: 6/10/92

Laboratory ID: C0612577
Date Analyzed: 6/17/92 20:39
Analyst: AF/RDW

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5.0 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	< 5 ug/L		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	115 %	78-168 %

* = 2 times limit of detection.

BETZ
Analytical Services

Navajo Refining Company
501 East Main Street
P.O. Drawer 159
Artesia, New Mexico 88210

Date Submitted: 6/12/92
Date Reported: 7/29/92
Partial Reported: 7/14/92

Attn: David Griffin

Sample Description: MW-6
Date Sampled: 6/10/92

Laboratory ID: C0612574

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	135.0	mg/L	SM 403 16th	6/25/92
P-Alkalinity, as CaCO3	0.0	mg/L	SM 403 16th	6/25/92
Chloride, as Cl	966.0	mg/L	EPA 9251	6/24/92
Flouride, total	2.40	mg/L	EPA 340.2	6/16/92
Sulfate, as SO4	1520.0	mg/L	EPA 9038	6/19/92
Calcium, total	343.0	mg/L	EPA 6010	6/26/92
Magnesium, total	92.5	mg/L	EPA 6010	6/26/92
Potassium, total	6.78	mg/L	EPA 6010	6/26/92
Sodium, total	637.0	mg/L	EPA 6010	6/26/92
Bicarbonate, alk as CaCO3	135.0	mg/L	calculation	N/A
Carbonate, alk as CaCO3	0.0	mg/L	calculation	N/A

Sample Description: MW-6
Date Sampled: 6/10/92

Laboratory ID: C0612574
Date Analyzed: 6/17/92 18:53
Analyst: AF/RDW

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5.0 ug/L	EPA 8020
Benzene	< 5 ug/L		
Ethylbenzene	< 5 ug/L		
Toluene	< 5 ug/L		
*Total Xylenes	14 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	117 %	78-168 %

* = 2 times limit of detection.

BETZ
Analytical Services

Sample Description: MW-6
Date Sampled: 6/10/92
Date Extracted: 6/15/92
Dilution: 1:10

Laboratory ID: C0612574
Date Analyzed: 7/24/92 08:52
Analyst: JC

ACID EXTRACTABLE ORGANICS (EPA 8270)

Compound	ug/L
4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND *
2-Methyl-4,6-dinitrophenol	ND *
2-Nitrophenol	ND
4-Nitrophenol	ND *
Pentachlorophenol	ND *
Phenol	ND
2,4,6-Trichlorophenol	ND

Limit of Practical Quantitation is 100 ug/L, unless otherwise noted in brackets.
* = 5 times limit of detection

Surrogate Recovery:		Recovery Limits:
2-Fluorophenol	71 %	10- 94 %
Phenol-d5	83 %	21-100 %
2,4,6-Tribromophenol	65 %	10-123 %

BETZ
Analytical Services

Sample Description: MW-6
Date Sampled: 6/10/92
Date Extracted: 6/15/92
Dilution: 1:10

Laboratory ID: C0612574
Date Analyzed: 7/24/92 08:52
Analyst: JC

BASE NEUTRAL EXTRACTABLE ORGANICS (EPA 8270)

Compound	ug/L
Acenaphthene	ND
Acenaphthylene	ND
Anthracene	ND
Benzidine	ND
Benzo(a)anthracene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Benzo(a)pyrene	ND
Benzo(ghi)perylene	ND
Benzyl alcohol	ND
Benzyl butyl phthalate	ND
Bis(2-chloroethyl)ether	ND
Bis(2-chloroethoxy)methane	ND
Bis(2-ethylhexyl)phthalate	ND
Bis(2-chloroisopropyl)ether	ND
4-Bromophenyl phenyl ether	ND
4-Chloroaniline	ND
2-Chloronaphthalene	ND
4-Chlorophenyl phenyl ether	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Di-n-butyl phthalate	ND
1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND
3,3'-Dichlorobenzidine	ND *

BETZ Analytical Services

BASE/NEUTRAL EXTRACTABLE ORGANICS (EPA 8270)
Laboratory ID: C0612574 (Continued)

Compound	ug/L
Diethyl phthalate	ND
Dimethyl phthalate	ND
2,4-Dinitrotoluene	ND
2,6-Dinitrotoluene	ND
Di-n-octyl phthalate	ND
Fluoranthene	ND
Fluorene	ND
Hexachlorobenzene	ND
Hexachlorobutadiene	ND
Hexachloroethane	ND
Indeno(1,2,3-cd)pyrene	ND
Isophorone	ND
2-Methylnaphthalene	ND
Naphthalene	ND
2-Nitroaniline	ND
3-Nitroaniline	ND
4-Nitroaniline	ND
Nitrobenzene	ND
N-Nitrosodi-n-propylamine	ND
N-Nitrosodimethyamine	ND
N-Nitrosodiphenylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

Limit of Practical Quantitation is 100 ug/L, unless otherwise noted in brackets.
* = 2 times limit of detection

				Recovery Limits	
Surrogate Recovery:	Nitrobenzene-d5	82	%	35 - 114	%
	2-Fluorobiphenyl	92	%	43 - 116	%
	Terphenyl-d14	110	%	33 - 141	%

BETZ Analytical Services

Sample Description: MW-7
Date Sampled: 6/10/92

Laboratory ID: C0612578

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	457.0	mg/L	SM 403 16th	6/25/92
P-Alkalinity, as CaCO3	0.0	mg/L	SM 403 16th	6/25/92
Chloride, as Cl	3750.0	mg/L	EPA 9251	6/24/92
Flouride, total	1.40	mg/L	EPA 340.2	6/16/92
Sulfate, as SO4	3480.0	mg/L	EPA 9038	6/23/92
Calcium, total	482.0	mg/L	EPA 6010	6/26/92
Magnesium, total	406.0	mg/L	EPA 6010	6/26/92
Potassium, total	18.9	mg/L	EPA 6010	6/26/92
Sodium, total	2400.0	mg/L	EPA 6010	6/26/92
Bicarbonate, alk as CaCO3	457.0	mg/L	calculation	N/A
Carbonate, alk as CaCO3	0.0	mg/L	calculation	N/A

Sample Description: MW-7
Date Sampled: 6/10/92

Laboratory ID: C0612578
Date Analyzed: 6/17/92 21:14
Analyst: AF/RDW

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5.0 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	< 5 ug/L		
Toluene	ND		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	109 %	78-168 %

* = 2 times limit of detection.

BETZ
Analytical Services

Sample Description: OCD-1
Date Sampled: 6/11/92

Laboratory ID: C0612579

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	555.0	mg/L	SM 403 16th	6/25/92
P-Alkalinity, as CaCO3	0.0	mg/L	SM 403 16th	6/25/92
Chloride, as Cl	4090.0	mg/L	EPA 9251	6/24/92
Flouride, total	4.80	mg/L	EPA 340.2	6/16/92
Sulfate, as SO4	3880.0	mg/L	EPA 9038	6/23/92
Calcium, total	740.0	mg/L	EPA 6010	6/26/92
Magnesium, total	229.0	mg/L	EPA 6010	6/26/92
Potassium, total	26.2	mg/L	EPA 6010	6/26/92
Sodium, total	2660.0	mg/L	EPA 6010	6/26/92
Bicarbonate, alk as CaCO3	555.0	mg/L	calculation	N/A
Carbonate, alk as CaCO3	0.0	mg/L	calculation	N/A

Sample Description: OCD-1
Date Sampled: 6/11/92

Laboratory ID: C0612579
Date Analyzed: 6/17/92 21:49
Analyst: AF/RDW

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5.0 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	ND		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	103 %	78-168 %

* = 2 times limit of detection.

BETZ Analytical Services

Sample Description: OCD-3
Date Sampled: 6/11/92

Laboratory ID: C0612580

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	276.0	mg/L	SM 403 16th	6/25/92
P-Alkalinity, as CaCO3	0.0	mg/L	SM 403 16th	6/25/92
Chloride, as Cl	5500.0	mg/L	EPA 9251	6/24/92
Flouride, total	0.90	mg/L	EPA 340.2	6/16/92
Sulfate, as SO4	2560.0	mg/L	EPA 9038	6/23/92
Calcium, total	918.0	mg/L	EPA 6010	6/26/92
Magnesium, total	280.0	mg/L	EPA 6010	6/26/92
Potassium, total	40.9	mg/L	EPA 6010	6/26/92
Sodium, total	2470.0	mg/L	EPA 6010	6/26/92
Bicarbonate, alk as CaCO3	276.0	mg/L	calculation	N/A
Carbonate, alk as CaCO3	0.0	mg/L	calculation	N/A

Sample Description: OCD-3
Date Sampled: 6/11/92

Laboratory ID: C0612580
Date Analyzed: 6/17/92 22:24
Analyst: AF/RDW

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5.0 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	ND		
*Total Xylenes	ND		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	96 %	78-168 %

* = 2 times limit of detection.

BETZ Analytical Services

Sample Description: OCD-5
Date Sampled: 6/11/92

Laboratory ID: C0612581

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	273.0	mg/L	SM 403 16th	6/25/92
P-Alkalinity, as CaCO3	0.0	mg/L	SM 403 16th	6/25/92
Chloride, as Cl	5740.0	mg/L	EPA 9251	6/24/92
Flouride, total	0.90	mg/L	EPA 340.2	7/06/92
Sulfate, as SO4	3140.0	mg/L	EPA 9038	6/23/92
Calcium, total	790.0	mg/L	EPA 6010	6/24/92
Magnesium, total	246.0	mg/L	EPA 6010	6/24/92
Potassium, total	40.6	mg/L	EPA 6010	6/24/92
Sodium, total	2830.0	mg/L	EPA 6010	6/24/92
Bicarbonate, alk as CaCO3	273.0	mg/L	calculation	N/A
Carbonate, alk as CaCO3	0.0	mg/L	calculation	N/A

Sample Description: OCD-5
Date Sampled: 6/11/92

Laboratory ID: C0612581
Date Analyzed: 6/17/92 22:59
Analyst: AF/RDW

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5.0 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	ND		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	99 %	78-168 %

* = 2 times limit of detection.

BETZ Analytical Services

Sample Description: OCD-7
Date Sampled: 6/11/92

Laboratory ID: C0612582

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CaCO3	607.0	mg/L	SM 403 16th	6/25/92
P-Alkalinity, as CaCO3	0.0	mg/L	SM 403 16th	6/25/92
Chloride, as Cl	3820.0	mg/L	EPA 9251	6/24/92
Flouride, total	7.60	mg/L	EPA 340.2	7/06/92
Sulfate, as SO4	3470.0	mg/L	EPA 9038	6/23/92
Calcium, total	720.0	mg/L	EPA 6010	6/24/92
Magnesium, total	218.0	mg/L	EPA 6010	6/24/92
Potassium, total	18.3	mg/L	EPA 6010	6/24/92
Sodium, total	2260.0	mg/L	EPA 6010	6/24/92
Bicarbonate, alk as CaCO3	607.0	mg/L	calculation	N/A
Carbonate, alk as CaCO3	0.0	mg/L	calculation	N/A

Sample Description: OCD-7
Date Sampled: 6/11/92

Laboratory ID: C0612582
Date Analyzed: 6/17/92 23:34
Analyst: AF/RDW

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5.0 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	ND		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	101 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

Chain of Custody

P.O. Box 4300 • 9669 Grogans Mill Road • The Woodlands, TX 77380 • 713-367-6201 • Fax 713-367-3189

Client Name/Address: NAVAJO REFINING CO. 501 E. MAIN ARTESIA, NM

Send Report to: MR. DAVID GRIFFIN

P.O. Number:

Invoice to: SAME AS ABOVE

Samplers (Signature): [signature]

Project Number:

Sta No.	Date	Time	Comp.	Grab	Station Location	Number of Containers	VOA's (2)	Metals	Cl, SO4, PH, ALK	Fluoride	BNA's (3)		Remarks
MW-6	6/10/92	17:20		✓	EVAP PONDS	8	✓	✓	✓	✓	✓		
MW-3	"	17:44		✓	"	5	✓	✓	✓	✓			
MW-4	"	18:10		✓	"	8	✓	✓	✓	✓	✓		
MW-5	"	18:40		✓	"	5	✓	✓	✓	✓			
MW-7	"	19:11		✓	"	5	✓	✓	✓	✓			
OCD-1	6/11/92	0730		✓	"	5	✓	✓	✓	✓			
OCD-3	"	0800		✓	"	5	✓	✓	✓	✓			
OCD-5	"	0845		✓	"	5	✓	✓	✓	✓			
OCD-7	"	0910		✓	"	5	✓	✓	✓	✓			VOA sample not fixed

Relinquished by (Signature)	Date / Time	Received by (Signature)	Relinquished by (Signature)	Date / Time	Received by (Signature)
[signature]	6-11-92 16:00				
Relinquished by (Signature)	Date / Time	Received by (Signature)	Relinquished by (Signature)	Date / Time	Received by (Signature)
Relinquished by (Signature)	Date / Time	Received for Laboratory by (Sig.)	Date / Time	Sample condition upon receipt:	
		Glinda M. Hinton	6-12-92 12:00	8°C & 15°C	

Method of Shipment:

LAB 170 9109 (3 part)

ORGANIC CHEMISTRY ANALYTICAL REQUEST FORM

SCIENTIFIC LABORATORY DIVISION
700 CAMINO DE SALUD N.E., ALBUQUERQUE, NM 87106
Organic Chemistry Section - Telephone: (505) 841-2570

SLD No. OR92 0514 -C

Date Received: 3/20/92

Request ID No. 028740-C

2 User Code #: 7 0 3 2 0

3 Request ID No.:

4 Priority Code #: [If "1" or "2", call EID-SLD Coordinator]

5 Facility Name: NAVAJO REFINERY

6 County: EDDY

7 City: ARTESIA

8 State:

9 Sample Location: FINAL EFFLUENT

10 Collected By: ROGER (First) ANDERSON (Last.....) On: 92/03/16 (Date: YY/MM/DD) At: 1110 hrs. (Time: 24 hr. clock 3:00 pm = 1500 hrs.)

11 Codes: Submitter / WSS # / Organization

12 Latitude (DDMMSS) ° ' "
Longitude (DDDMMSS) ° ' "
2 Digit ID (If needed)

13 Report To: Name ~~David G. Boyer~~ ROGER ANDERSON

14 Phone #: (505) 827-5812

Address: New Mexico Oil Conservation Division
P. O. Box 2088

City, State Zip: Santa Fe, New Mexico 87504-2088

15 Sampling Information:
Sample Purpose:
- [ ] Compliance
- [ ] Check
- [ ] Monitoring
- [ ] Special

- [ ] Grab
- [ ] Composite ____ (Composite Time Period)
  - [ ] Flow Proportioned
  - [ ] Equal Aliquot
- [ ] Sample Split w/Permittee
- [ ] Chain of Custody

16 Field Data: pH: 12.5, Conductivity: 12800 umhos @ 35 °C, Temperature: ____ °C, Chlorine Residual: ____ mg/l, Flow: ____

17 Sample Source:
- [ ] Stream
- [ ] Lake
- [ ] Drain
- [ ] Pool
- [ ] WWTP
- [ ] Well; Depth: ____
- [ ] Spring
- [ ] Distribution
- [x] Point-of-Entry
- [ ] Other: ____

18 Field Notes/ Sample #:

19 Sample Type: [ ] Water, [ ] Soil, [ ] Food, [x] Wastewater, [ ] Other ____

This form accompanies a single sample consisting of:
2 - septum vial(s) (volume = ____)
____ - glass jugs (volume = ____)
____ - ____ (volume = ____)

20 Preservation:
- [ ] NP — No Preservation; Sample stored at room temperature
- [x] P-Ice — Sample stored in an ice bath (Not Frozen)
- [ ] P-TS — Sample Preserved with Sodium Thiosulfate to remove chlorine residual
- [ ] P-HCl — Sample Preserved with Hydrochloric Acid (2 drops/40 ml)
- [x] Other — HgCl

21 Analyses Requested: Please check the appropriate box(es) below to indicate the type of analytical screen(s) required. Whenever possible, list specific compounds suspected or required.

Volatile Screens:

- [ ] (753) Aliphatic Headspace (1-5 Carbons)
- [x] (754) Aromatic & Halogenated Purgeables (EPA 601 & 602)
- [ ] (765) Mass Spectrometer Purgeables (EPA 624)
- [ ] (766) SDWA Total Trihalomethanes (EPA 501.1)
- [ ] (774) SDWA VOC's I [8 Regulated +] (EPA 502.2)
- [ ] (775) SDWA VOC's II [EDB & DBCP] (EPA 504)

Other Specific Compounds or Classes:

- [ ] - ( ) ____
- [ ] - ( ) ____
- [ ] - ( ) ____

Semivolatile Screens:

- [ ] (763) Acid Extractables
- [ ] (751) Aliphatic Hydrocarbons
- [ ] (755) Base/Neutral Extractables (EPA 625)
- [ ] (756) Base/Neutral/Acid Extractables (EPA 8270)
- [ ] (758) Herbicides, Chlorophenoxy Acid
- [ ] (759) Herbicides, Triazines
- [ ] (760) Organochlorine Pesticides
- [ ] (761) Organophosphate Pesticides
- [ ] (767) Polychlorinated Biphenyls (PCB's)
- [ ] (764) Polynuclear Aromatic Hydrocarbons
- [ ] (762) SDWA Pesticides & Herbicides

Remarks:

RECEIVED
APR 21 1992
OIL CONSERVATION DIV
SANTA FE

SLD 8912-OR Form New 12/89 This Form Will NOT Be Returned With Your Results. Please RETAIN A COPY!

DEFINITIONS:

The term ***SDWA Pesticides & Herbicides*** shall mean that the following parameters will be determined: Endrin, Lindane, Methoxychlor, Toxaphene, 2, 4-D, and 2, 4, 5-TP (Silvex). Special container(s) required. Sample should be refrigerated.

The term ***SDWA VOC's I*** shall mean that the following parameters shall be determined: Aromatic and Halogenated purgeables to determine the presence of Benzene, Carbon tetrachloride, 1,1-Dichloroethylene, 1,2-Dichloroethane, para-Dichlorobenzene, Trichloroetylene, and Vinyl chloride plus 49 unregulated contaminants. Special container(s) required. Sample should be refrigerated.

The term ***SDWA VOC's II*** shall mean that the following parameters shall be determined: Ethylene dibromide (EDB) and 1,2-Dibromo-3-chloropropane (DBCP). Special container(s) required. Sample should be refrigerated.

The term ***SDWA Total Trihalomethanes*** that the following parameters shall be determined: Total Trihalomethanes. Special container(s) required. Sample should be refrigerated.

SAMPLE CONTAINERS:

All Volatile Screens require two 40 ml VOC Septum Vials.

All Semivolatile Screens (except 762) require two 1-liter bottles filled approximately 4/5ths full.

SDWA Pesticides & Herbicides Screen (762) requires three 1-liter bottles filled approximately 4/5ths full.

Refrigerated means keep cool (0-4°C), but do not freeze.

Please contact the Organic Section with questions on sampling or interpretation of data/results.

Use Only When Necessary

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on _____ (Date) at _____ (Time)

Evidentiary Seals: ☐-Not Sealed Seals Intact: ☐-Yes ☐-No

Signatures _____ _____

and from (if applicable) _____ to _____

at (location) _____ on _____ (Date) at _____ (Time)

Evidentiary Seals: ☐-Not Sealed Seals Intact: ☐-Yes ☐-No

Signatures _____ _____

STATE OF NEW MEXICO DEPARTMENT OF HEALTH
SCIENTIFIC LABORATORY DIVISION
P.O. Box 4700 700 Camino de Salud, NE
Albuquerque, NM 87196-4700 [505]-841-2500
ORGANIC CHEMISTRY SECTION [505]-841-2570

Distribution
(_) User 70320
(■) Submitter 998
(※) SLD Files

April 15, 1992

Request
ID No. 028740

ANALYTICAL REPORT
SLD Accession No. OR-92-0514

To: R. Anderson
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

From: Organic Chemistry Section
Scientific Laboratory Div.
700 Camino de Salud, NE
Albuquerque, NM 87106

Re: **A water, purgeable sample submitted to this laboratory on March 20, 1992**

DEMOGRAPHIC DATA

COLLECTION		*LOCATION*
On: 16-Mar-92	*By:* And . . .	Final Effluent
At: 11:10 hrs.	*In/Near:* Artesia	

ANALYTICAL RESULTS: Aromatic & Halogenated Purgeable [EPA-601/2] Screen {754}

Parameter	Value	Note	MDL	Units
Halogenated Volatiles (42)	0.00	N	200.00	ppb
Benzene	10500.00		200.00	ppb
Toluene	9900.00		200.00	ppb
Ethylbenzene	1100.00		200.00	ppb
p- & m-Xylene	1200.00		200.00	ppb
o-Xylene	1500.00		200.00	ppb
1,2,4-Trimethylbenzene	407.00		200.00	ppb

See Laboratory Remarks for Additional Information

Notations & Comments:

MDL = Minimal Detectable Level.

A = Approximate Value; N = None Detected above Detection Limit; P = Compound Present, but not quantified;
T = Trace (<Detection Limit); U = Compound Identity Not Confirmed.

Evidentiary Seals: Not Sealed[X]; Intact: No[ ], Yes[ ] & Broken By: _____ Date: _____

Laboratory Remarks:

One compound eluting from near toluene at approximately 60,000 ppb detected by the photoionization detector but not identified.

In addition to the compounds in the above table the following were also detected;

Naphthalene	615.0	ppb	200

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: NM SCIENTIFIC LABORATORY DIVISION Contract: N/A

(Continued on page 2.)

Lab Code: N/A Case No.: N/A
Matrix: (soil/water) Water
Sample wt/vol: 5.0 (g/mL) mL
Level: (low/med) Low
% Moisture: not dec. N/A dec. N/A
Extraction: (SepF/Cont/Sonc) N/A
GPC Cleanup: (Y/N) No pH:

SAS No.: N/A SDG No.: N/A
Lab Sample ID: OR-92-0514
SLD Batch No: 64
Date Received: 3/20/92
Date Extracted: N/A
Date Analyzed: 4/1/92
Dilution Factor: 200
CONCENTRATION UNITS:
(ug/L or ug/Kg): ug/L

This sample was analyzed for the following compounds using EPA Methods 601 & 602

CAS NO.	COMPOUND	CONC.	QUALIFIER
67-64-1	Acetone	1000.0	U
71-43-2	Benzene	10500.	
108-86-1	Bromobenzene	200.0	U
74-97-5	Bromochloromethane	200.0	U
75-27-4	Bromodichloromethane	200.0	U
75-25-2	Bromoform	200.0	U
78-93-3	2-Butanone (MEK)	1000.0	U
104-51-8	n-Butylbenzene	200.0	U
135-98-8	sec-Butylbenzene	200.0	U
98-06-6	tert-Butylbenzene	200.0	U
1634-04-4	tert-Butyl methyl ether (MTBE)	1000.0	U
56-23-5	Carbon tetrachloride	200.0	U
108-90-7	Chlorobenzene	200.0	U
67-66-3	Chloroform	200.0	U
95-49-8	2-Chlorotoluene	200.0	U
106-43-4	4-Chlorotoluene	200.0	U
96-12-8	1,2-Dibromo-3-chloropropane	200.0	U
124-48-1	Dibromochloromethane	200.0	U
106-93-4	1,2-Dibromoethane	200.0	U
74-95-3	Dibromomethane	200.0	U
95-50-1	1,2-Dichlorobenzene	200.0	U
541-73-1	1,3-Dichlorobenzene	200.0	U
106-46-7	1,4-Dichlorobenzene	200.0	U
75-71-8	Dichlorodifluoromethane	200.0	U
75-34-3	1,1-Dichloroethane	200.0	U
107-06-2	1,2-Dichloroethane	200.0	U
75-35-4	1,1-Dichloroethene	200.0	U
156-59-4	cis-1,2-Dichloroethene	200.0	U
156-60-5	trans-1,2-Dichloroethene	200.0	U

(Continued on page 3.)

78-87-5	1,2-Dichloropropane	200.0	U
142-28-9	1,3-Dichloropropane	200.0	U
590-20-7	2,2-Dichloropropane	200.0	U
563-58-6	1,1-Dichloropropene	200.0	U
1006-01-5	cis-1,3-Dichloropropene	200.0	U
1006-02-6	trans-1,3-Dichloropropene	200.0	U
100-41-4	Ethylbenzene	1100.0	
87-68-3	Hexachlorobutadiene	200.0	U
98-82-8	Isopropylbenzene	200.0	U
99-87-6	4-Isopropyltoluene	200.0	U
75-09-2	Methylene chloride	200.0	U
90-12-0	1-Methylnaphthalene	200.0	U
91-57-6	2-Methylnaphthalene	200.0	U
91-20-3	Naphthalene	615.0	
103-65-1	Propylbenzene	200.0	U
100-42-5	Styrene	200.0	U
630-20-6	1,1,1,2-Tetrachloroethane	200.0	U
79-34-5	1,1,2,2-Tetrachloroethane	200.0	U
127-18-4	Tetrachloroethene	200.0	U
109-99-9	Tetrahydrofuran (THF)	1000.0	U
108-88-3	Toluene	9900.0	
87-61-5	1,2,3-Trichlorobenzene	200.0	U
120-82-1	1,2,4-Trichlorobenzene	200.0	U
71-55-6	1,1,1-Trichloroethane	200.0	U
79-00-5	1,1,2-Trichloroethane	200.0	U
79-01-6	Trichloroethene	200.0	U
75-69-4	Trichlorofluoromethane	200.0	U
96-18-4	1,2,3-Trichloropropane	200.0	U
95-63-6	1,2,4-Trimethylbenzene	407.0	
108-67-8	1,3,5-Trimethylbenzene	200.0	U
75-01-4	Vinyl chloride	200.0	U
95-47-6	o-Xylene	1500.0	
N/A	p- & m-Xylene	1200.0	

Qualifier Definitions:

B - Indicates compound was detected in the Lab Blank as well as in the sample.

D - Indicates value taken from a secondary (diluted) sample analysis.

E - Indicates compound concentration exceeded the range of the standard curve.

J - Indicates an estimated value for tentatively identified compounds, or for compounds detected and identified but present at a

(Continued on page 4.)

concentration less than the quantitation limit.
N - Indicates that more than one peak was used for quantitation.
U - Indicates compound was analyzed for, but not detected above the concentration listed (Quantitation Limit).

QUALITY CONTROL SUMMARY FOR VOLATILES SCREEN

METHOD BLANK: A laboratory method blank was analyzed along with this sample to assure the absence of interfering contaminants from lab reagents, instruments, or the general laboratory environment. Unless listed below, no contaminants were detected in this blank above the reported detection limit.

COMPOUND DETECTED	CONCENTRATION (PPB)
No Compounds Detected	

SURROGATE RECOVERIES:

SURROGATE	CONCENTRATION	% RECOVERY
Bromofluorobenzene	25.0 ppb	99.5
2-Bromo-1-chloropropane	25.0 ppb	95.9

SPIKE RECOVERY: The % recoveries for compounds in the batch spike were from 80% to 120% with the exception of the compounds listed below:

COMPOUND	CONCENTRATION	% RECOVERY
1,1-Dichloroethene	36.0 ppb	143.8
1,2-Dichlorobenzene	30.5 ppb	121.9

Analyst: Gary C. Eden
Analyst, Organic Chemistry

Reviewed By: Richard F. Meyerhein 04/15/92
Supervisor, Organic Chemistry Section

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

RECEIVED '92 MAR 25 AM 9 04

ANALYSIS REQUEST FORM

Contract Lab SWL Contract No.

OCD Sample No. 9203161110

Collection Date	Collection Time	Collected by—Person/Agency
92/03/16	1110	ROGER ANDERSON/OCD

SITE INFORMATION

Sample location NAVAJO REFINERY

Collection Site Description FINAL EFFLUENT AT POND 2

Township, Range, Section, Tract:

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400) 12.5

Water Temp. (00010) 35°C

Water level

Discharge

Sample type GRAB

Conductivity (Uncorrected) 12800 μmho

Conductivity at 25° C μmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 μ membrane filter
☐ **PF:** Pre-filtered w/45 μ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added
X : HgCl

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METH
NO ☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7
☒ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

SwL

SOUTHWESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

2575 LONE STAR DRIVE * P.O. BOX 224227, DALLAS,TEXAS 75222 * 214/631-2700

Client OIL CONSERVATION DIVISION
P.O. BOX 2088,
SANTA FE, NEW MEXICO
87504-2088
Attn: KATHY M. BROWN

Client No. 23178400
Report No. D2-03-255
Report Date 04/07/92 16:08

Project HALLBRTN ARTESIA/NAVAJO RFNRY

Date Sampled 03/16/92

Sampled By ROGER ANDERSON/OCD

Sample Type WASTE WATER

Transported by LSO

P.O. # CONTRACT#80-521.07-140

Date Received 03/25/92

Lab No.	Sample Identification
D2-03-255-01	9203161110/NAVAJO REFINERY
D2-03-255-02	9203161445/HALLBRTN ARTSIA

SOUTHWESTERN LABORATORIES

Gillia Smith
Reviewed By

Bob Garrett
Bob Garrett, Mgr., EAS

SOUTHWESTERN LABORATORIES

Order # D2-03-255
04/07/92 16:08
Client: OIL CONSERVATION DIVISION

TEST RESULTS BY SAMPLE

Sample: 01A 9203161110/NAVAJO REFINERY Collected: 03/16/92 11:10

Test Name	Method	Result	Units	Detection Limit	Date Started	Analyst
Volatile Organics	EPA 624/8240	Enclosure	Date Com		04/02/92	LK

Sample: 02A 9203161445/HALLBRTN ARTSIA Collected: 03/16/92 14:45

Test Name	Method	Result	Units	Detection Limit	Date Started	Analyst
Volatile Organics	EPA 624/8240	Enclosure	Date Com		04/01/92	LK

Lab Name: SOUTHWESTERN LABORATORIES
Lab Code: 54-55
Client: Oil Conservation
Date Analyzed: 4/01/92 thru 4/02/92
Instrument ID: 70 1

THE FOLLOWING SAMPLES WERE ANALYZED:

LAB NUMBER	SAMPLE ID	LAB FILE ID
9203255-1	920316110/Navajo	>AF819
9203255-2	9203161445/Hall	>AF804

Loretta M Koehler

Loretta Koehler, GC/MS Chemist

William J. Gase

William J. Gase, Lab Supervisor, EAS

VOLATILE ORGANICS ANALYSIS DATA SHEET
EPA METHOD 8240

Lab Name: SOUTHWESTERN LABORATORIES
Lab Code: 54-55 Dallas
Matrix: (soil/water) WATER
Sample wt/vol: 0.05 (g/mL) mL
Level: (low/med) LOW
Dilution Factor: 1.0

Lab Number: 9203255-1
Client: Oil Conservation
Sample ID: 9203161110/Navajo
Lab File ID: >AF819
Date Received: 3/25/92
Date Analyzed: 4/02/92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
107-02-8	Acrolein	5000.	U
107-13-1	Acrylonitrile	5000.	U
75-71-8	Dichlorodifluoromethane	1000.	U
74-88-4	Iodomethane	1000.	U
74-87-3	Chloromethane	1000.	U
74-83-9	Bromomethane	1000.	U
75-01-4	Vinyl Chloride	1000.	U
75-69-4	Trichlorofluoromethane	1000.	U
75-00-3	Chloroethane	1000.	U
75-09-2	Methylene_Chloride	500.	U
75-15-0	Carbon Disulfide	500.	U
75-35-4	1,1-Dichloroethene	500.	U
75-34-3	1,1-Dichloroethane	500.	U
156-60-5	trans-1,2-Dichloroethene	500.	U
67-66-3	Chloroform	500.	U
107-02-2	1,2-Dichloroethane	500.	U
78-93-3	2-Butanone	10000.	U
71-55-6	1,1,1-Trichloroethane	500.	U
56-23-5	Carbon Tetrachloride	500.	U
108-05-4	Vinyl Acetate	5000.	U
74-95-3	Dibromomethane	500.	U

NOTE: U - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.
D - The result is from a diluted sample.
B - The compound was found in the method blank.

VOLATILE ORGANICS ANALYSIS DATA SHEET
EPA METHOD 8240

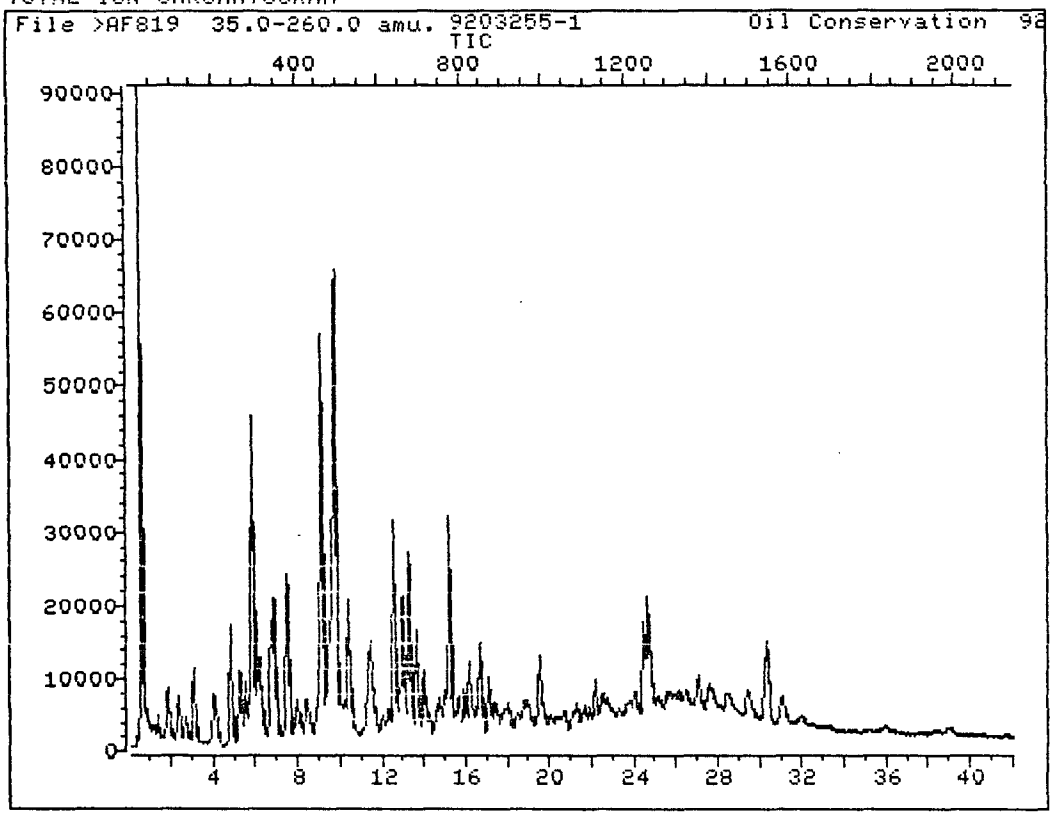
Lab Name: SOUTHWESTERN LABORATORIES
Lab Code: 54-55 Dallas
Matrix: (soil/water) WATER
Sample wt/vol: 0.05 (g/mL) mL
Level: (low/med) LOW
Dilution Factor: 1.0

Lab Number: 9203255-1
Client: Oil Conservation
Sample ID: 9203161110/Navajo
Lab File ID: >AF819
Date Received: 3/25/92
Date Analyzed: 4/02/92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
110-57-6	1,4-Dichloro-2-Butene	500.	U
75-27-4	Bromodichloromethane	500.	U
78-87-5	1,2-Dichloropropane	500.	U
110-75-8	2-Chloroethylvinyl_Ether	1000.	U
10061-01-5	cis-1,3-Dichloropropene	500.	U
79-01-6	Trichloroethene	500.	U
124-48-1	Dibromochloromethane	500.	U
79-00-5	1,1,2-Trichloroethane	500.	U
71-43-2	Benzene	14000.	
10061-02-6	trans-1,3-Dichloropropene	500.	U
75-25-2	Bromoform	500.	U
108-10-1	4-Methyl-2-pentanone	5000.	U
591-78-6	2-Hexanone	5000.	U
127-18-4	Tetrachloroethene	500.	U
96-18-4	1,2,3-Trichloropropane	500.	U
97-63-2	Ethyl Methacrylate	500.	U
79-34-5	1,1,2,2-Tetrachloroethane	500.	U
108-88-3	Toluene	16000.	
108-90-7	Chlorobenzene	500.	U
100-41-4	Ethylbenzene	4100.	
100-42-5	Styrene	500.	U
133-02-7	Xylene (total)	1800.	

NOTE: U - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.
D - The result is from a diluted sample.
B - The compound was found in the method blank.

TOTAL ION CHROMATOGRAM



Data File: >AF819::D3 Quant Output File: ^AF819::QT
Name: 9203255-1
Misc: Oil Conservation 9203161110/Navajo 50ul

Id File: ID_VOA::SC
Title: SWL VOA Standards for 5 Point Calibration Curve MAR '92
Last Calibration: 920303 09:49

Operator ID: RET
Quant Time: 920402 18:08
Injected at: 920402 17:25

TELEPHONE
(505) 748-3311

EASYLINK
62905278

FAX
(505) 746-6410

OIL CONSERVATION DIVISION
RECEIVED
'92 MAR

Navajo REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

March 24, 1992

RECEIVED
MAR 26 1992
OIL CONSERVATION DIV.
SANTA FE

Mr. Roger Anderson, Acting Chief
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

RE: EVAPORATION PONDS MONITORING RESULTS
SCOPE OF WORK - HYDROCARBON PLUME

Fall '91 Report

Dear Roger:

Enclosed are the documents that Bill Olson of your staff requested. It is regrettable that time did not permit, during your recent sampling visit, for copies to be made for you then.

Concerning the high pH seen during your sampling, Refining Operations informs me that they had experienced a major unit upset in the Merox Unit, which uses caustic (NaOH) to sweeten gasoline blendstock. The upset caused a loss of the caustic inventory in the unit to sewer. Normally the caustic is used in the unit until spent, then shipped to Merichem in Houston, which markets the sulfidic caustic for its sodium sulfide content to paper mills, etc. The upset had been corrected before your visit, but with the residence time in wastewater treatment, the effects of the upset were still seen in your samples.

Also for your information, Navajo appears to have finally discovered and corrected the odor problem in Lovington. There were still complaints after Navajo began treating our Lea Refinery Discharge with Fe Cl_3. The ferric chloride effectively deodorized the effluent, leaving us baffled as to the complaints. Navajo hired consultants to review the City of Lovington's sewer system, and to monitor the home of Mrs. Hillard, who had complained. In addition, Mrs. Hillard's home plumbing was repaired as a joint effort between Navajo and the City (several plumbing code violations were corrected).

The investigation results showed that there is a flow problem in the City sewer main behind Mrs. Hillard's home, which resulted in sewer gas being pumped into her home each time the nearby lift station came on. This had apparently been going on for sometime with the Hillards' becoming accustom to the odor, at least until Navajo changed the smell.

Once the problem was identified, the City relocated the Hillard's and another adjacent sewer tie-in to a new location, where sewer gas will not back pressure the connections. There have now been no complaints and no detectable odors associated with Navajo for the past three days, during which Navajo had discharged around the clock. Needless to say, there is a feeling here that we know more about sewers than we care to. Navajo has decided for the long term, to extend its effluent pipeline directly to the City's POTW and avoid the City sewer collection system.

Sincerely

David G. Griffin
Supt. Environmental
Affairs/Quality Control

DGG/pb

enclosures

BETZ

ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

RECEIVED
JAN 10 1992
NAVAJO REFINING CO.

RECEIVED
MAR 26 1992
OIL CONSERVATION DIV.
SANTA FE

Navajo Refining Company
501 East Main Street
P.O. Drawer 159
Artesia, New Mexico 88210

January 6, 1992

Attn: Zeke Sherman

Dear Sir:

Attached are the analytical results for your samples identified as as B1209518 through B1209532, which was sampled on December 5 and 6, 1991; your Project No. Req# 883.

We at Betz appreciate the opportunity to serve you with quality analytical testing. If you have any questions about the results, please do not hesitate to contact me.

Idelis Z. Williams

Idelis Z. Williams
Project Manager
Betz Laboratories
(713) 367-6201
FAX (713) 367-3189

IZW:jlh
cc: K. Tooker

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Navajo Refining Company
501 East Main Street
P.O. Drawer 159
Artesia, New Mexico 88210

Date Submitted: 12/9/91
Date Reported: 12/6/91

Attn: Zeke Sherman

Sample Description: MW1
Date Sampled: 12/6/91

Laboratory ID: B1209518

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	511	mg/L	EPA 310.1	12/9/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/9/91
Chloride, as Cl	4740	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	4280	mg/L	EPA 375.4	12/11/91
Calcium, total	624	mg/L	EPA 200.7	12/11/91
Magnesium, total	1030	mg/L	EPA 200.7	12/11/91
Potassium, total	28.0	mg/L	EPA 200.7	12/11/91
Sodium, total	3360	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	14700	mg/L	calculation	N/A

Sample Description: MW1
Date Sampled: 12/6/91

Laboratory ID: B1209518
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	< 5 ug/L		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	120 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Sample Description: MW2
Date Sampled: 12/6/91

Laboratory ID: B1209519

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	422	mg/L	EPA 310.1	12/9/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/9/91
Chloride, as Cl	2330	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	3460	mg/L	EPA 375.4	12/11/91
Calcium, total	589	mg/L	EPA 200.7	12/11/91
Magnesium, total	151	mg/L	EPA 200.7	12/11/91
Potassium, total	15.5	mg/L	EPA 200.7	12/11/91
Sodium, total	2350	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	9410	mg/L	calculation	N/A

Sample Description: MW2
Date Sampled: 12/6/91

Laboratory ID: B1209519
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	< 5 ug/L		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	118 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Sample Description: MW3
Date Sampled: 12/5/91

Laboratory ID: B1209520

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	276	mg/L	EPA 310.1	12/9/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/9/91
Chloride, as Cl	1230	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	2570	mg/L	EPA 375.4	12/12/91
Calcium, total	545	mg/L	EPA 200.7	12/11/91
Magnesium, total	199	mg/L	EPA 200.7	12/11/91
Potassium, total	11.9	mg/L	EPA 200.7	12/11/91
Sodium, total	1310	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	6200	mg/L	calculation	N/A

Sample Description: MW3
Date Sampled: 12/5/91

Laboratory ID: B1209520
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	< 5 ug/L		
Ethylbenzene	< 5 ug/L		
Toluene	< 5 ug/L		
*Total Xylenes	14 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	111 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Sample Description: MW4
Date Sampled: 12/5/91

Laboratory ID: B1209521

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	234	mg/L	EPA 310.1	12/9/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/9/91
Chloride, as Cl	1460	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	2200	mg/L	EPA 375.4	12/12/91
Calcium, total	481	mg/L	EPA 200.7	12/11/91
Magnesium, total	140	mg/L	EPA 200.7	12/11/91
Potassium, total	7.24	mg/L	EPA 200.7	12/11/91
Sodium, total	1460	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	6030	mg/L	calculation	N/A

Sample Description: MW4
Date Sampled: 12/6/91

Laboratory ID: B1209521
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	17 ug/L		
Ethylbenzene	10 ug/L		
Toluene	7 ug/L		
*Total Xylenes	28 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	112 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Sample Description: MW4
Date Sampled: 12/6/91
Date Extracted: 12/9/91

Laboratory ID: B1209521
Date Analyzed: 12/31/91

ACID EXTRACTABLE ORGANICS (EPA 8270)

Compound	ug/L
Benzoic acid	ND*
4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
o-Cresol	ND
p-Cresol	ND
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,5-Trichlorophenol	ND
2,4,6-Trichlorophenol	ND

Limit of Detection is 1000 ug/L, unless otherwise noted.
* = 5 times limit of detection.

Surrogate Recovery:		Limits:
2-Fluorophenol	- ** %	10 - 94 %
Phenol-d5	- ** %	21 - 100 %
2,4,6-Tribromophenol	- ** %	10 - 123 %

** No surrogate recovery due to the dilution

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Sample Description: MW4
Date Sampled: 12/6/91
Date Extracted: 12/9/91

Laboratory ID: B1209521
Date Analyzed: 12/31/91

BASE/NEUTRAL EXTRACTABLE ORGANICS (EPA 8270)

Compound	ug/L
Acenaphthene	ND
Acenaphthylene	ND
Anthracene	ND
Benzo(a)anthracene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Benzo(a)pyrene	ND
Benzo(ghi)perylene	ND
Benzyl alcohol	ND**
Butylbenzylphthalate	ND
Bis(2-chloroethyl)ether	ND
Bis(2-chloroethoxy)methane	ND
Bis(2-ethylhexyl)phthalate	ND
Bis(2-chloroisopropyl)ether	ND
4-Bromophenyl phenyl ether	ND
4-Chloroaniline	ND**
2-Chloronaphthalene	ND
4-Chlorophenyl phenyl ether	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Di-n-butyl phthalate	ND
1,3-Dichlorobenzene	ND
1,2-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

BASE/NEUTRAL EXTRACTABLE ORGANICS (EPA 8270)

(cont'd) Laboratory ID: B1209521

Compound	ug/L
3,3'-Dichlorobenzidine	ND**
Diethyl phthalate	ND
Dimethyl phthalate	ND
2,4-Dinitrotoluene	ND
2,6-Dinitrotoluene	ND
Di-n-octyl phthalate	ND
Fluoranthene	ND
Fluorene	ND
Hexachlorocyclopentadiene	ND
Hexachlorobenzene	ND
Hexachlorobutadiene	ND
Hexachloroethane	ND
Indeno(1,2,3-cd)pyrene	ND
Isophorone	ND
2-Methylnaphthalene	ND
Naphthalene	ND
2-Nitroaniline	ND*
3-Nitroaniline	ND*
4-Nitroaniline	ND*
Nitrobenzene	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

Limit of Practical Quantitation is 1000 ug/L, unless otherwise noted.
* = 5 times limit of detection.
** = 2 times limit of detection.

Surrogate Recovery:		Recovery Limits
Nitrobenzene-d5	*** %	35 - 114 %
2-Fluorobiphenyl	*** %	43 - 116 %
Terphenyl-d14	*** %	33 - 141 %

*** No surrogate recovery due to the dilution

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Sample Description: MW5
Date Sampled: 12/5/91

Laboratory ID: B1209522

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	434	mg/L	EPA 310.1	12/9/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/9/91
Chloride, as Cl	6760	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	7460	mg/L	EPA 375.4	12/12/91
Calcium, total	442	mg/L	EPA 200.7	12/11/91
Magnesium, total	1310	mg/L	EPA 200.7	12/11/91
Potassium, total	44.7	mg/L	EPA 200.7	12/11/91
Sodium, total	5540	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	22100	mg/L	calculation	N/A

Sample Description: MW5
Date Sampled: 12/5/91

Laboratory ID: B1209522
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	< 5 ug/L		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	118 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

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Sample Description: MW5
Date Sampled: 12/6/91
Date Analyzed: 12/31/91

Laboratory ID: B1209522
Date Extracted: 12/9/91

ACID EXTRACTABLE ORGANICS (EPA 8270)

Compound	ug/L
Benzoic acid	ND*
4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
o-Cresol	ND
p-Cresol	ND
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,5-Trichlorophenol	ND
2,4,6-Trichlorophenol	ND

Limit of Detection is 500 ug/L, unless otherwise noted.
* = 5 times limit of detection.

Surrogate Recovery:		Limits:
2-Fluorophenol	- ** %	10 - 94 %
Phenol-d5	- ** %	21 - 100 %
2,4,6-Tribromophenol	- ** %	10 - 123 %

** No surrogate recovery due to the dilution

BETZ ANALYTICAL SERVICES

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Sample Description: MW5
Date Sampled: 12/6/91
Date Analyzed: 12/31/91

Laboratory ID: B1209522
Date Extracted: 12/9/91

BASE/NEUTRAL EXTRACTABLE ORGANICS (EPA 8270)

Compound	ug/L
Acenaphthene	ND
Acenaphthylene	ND
Anthracene	ND
Benzo(a)anthracene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Benzo(a)pyrene	ND
Benzo(ghi)perylene	ND
Benzyl alcohol	ND**
Butylbenzylphthalate	ND
Bis(2-chloroethyl)ether	ND
Bis(2-chloroethoxy)methane	ND
Bis(2-ethylhexyl)phthalate	ND
Bis(2-chloroisopropyl)ether	ND
4-Bromophenyl phenyl ether	ND
4-Chloroaniline	ND**
2-Chloronaphthalene	ND
4-Chlorophenyl phenyl ether	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Di-n-butyl phthalate	ND
1,3-Dichlorobenzene	ND
1,2-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND

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BASE/NEUTRAL EXTRACTABLE ORGANICS (EPA 8270)

(cont'd) Laboratory ID: B1209522

Compound	ug/L
3,3'-Dichlorobenzidine	ND**
Diethyl phthalate	ND
Dimethyl phthalate	ND
2,4-Dinitrotoluene	ND
2,6-Dinitrotoluene	ND
Di-n-octyl phthalate	ND
Fluoranthene	ND
Fluorene	ND
Hexachlorocyclopentadiene	ND
Hexachlorobenzene	ND
Hexachlorobutadiene	ND
Hexachloroethane	ND
Indeno(1,2,3-cd)pyrene	ND
Isophorone	ND
2-Methylnaphthalene	ND
Naphthalene	ND
2-Nitroaniline	ND*
3-Nitroaniline	ND*
4-Nitroaniline	ND*
Nitrobenzene	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

Limit of Practical Quantitation is 500 ug/L, unless otherwise noted.
* = 5 times limit of detection.
** = 2 times limit of detection.

Surrogate Recovery:		Recovery Limits
Nitrobenzene-d5	*** %	35 - 114 %
2-Fluorobiphenyl	*** %	43 - 116 %
Terphenyl-d14	*** %	33 - 141 %

*** No surrogate recovery due to the dilution

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Sample Description: MW6
Date Sampled: 12/5/91

Laboratory ID: B1209523

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	165	mg/L	EPA 310.1	12/9/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/9/91
Chloride, as Cl	871	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	2020	mg/L	EPA 375.4	12/12/91
Calcium, total	631	mg/L	EPA 200.7	12/11/91
Magnesium, total	114	mg/L	EPA 200.7	12/11/91
Potassium, total	5.58	mg/L	EPA 200.7	12/11/91
Sodium, total	830	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	4670	mg/L	calculation	N/A

Sample Description: MW6
Date Sampled: 12/5/91

Laboratory ID: B1209523
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	8.4 ug/L		
Ethylbenzene	5.5 ug/L		
Toluene	8.6 ug/L		
*Total Xylenes	12.0 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	106 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

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Sample Description: MW7
Date Sampled: 12/7/91

Laboratory ID: B1209524

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	304	mg/L	EPA 310.1	12/9/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/9/91
Chloride, as Cl	3170	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	3680	mg/L	EPA 375.4	12/12/91
Calcium, total	489	mg/L	EPA 200.7	12/11/91
Magnesium, total	428	mg/L	EPA 200.7	12/11/91
Potassium, total	20.3	mg/L	EPA 200.7	12/11/91
Sodium, total	3070	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	11200	mg/L	calculation	N/A

Sample Description: MW7
Date Sampled: 12/5/91

Laboratory ID: B1209524
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	< 5 ug/L		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	118 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Sample Description: OCD1
Date Sampled: 12/6/91

Laboratory ID: B1209525

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	550	mg/L	EPA 310.1	12/10/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/10/91
Chloride, as Cl	3230	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	3000	mg/L	EPA 375.4	12/12/91
Calcium, total	703	mg/L	EPA 200.7	12/11/91
Magnesium, total	200	mg/L	EPA 200.7	12/11/91
Potassium, total	19.7	mg/L	EPA 200.7	12/11/91
Sodium, total	2900	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	10700	mg/L	calculation	N/A

Sample Description: OCD1
Date Sampled: 12/6/91

Laboratory ID: B1209525
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	ND		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	118 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

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Sample Description: OCD8
Date Sampled: 12/6/91

Laboratory ID: B1209526

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	445	mg/L	EPA 310.1	12/10/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/10/91
Chloride, as Cl	2390	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	3060	mg/L	EPA 375.4	12/12/91
Calcium, total	584	mg/L	EPA 200.7	12/11/91
Magnesium, total	336	mg/L	EPA 200.7	12/11/91
Potassium, total	19.3	mg/L	EPA 200.7	12/11/91
Sodium, total	2240	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	9170	mg/L	calculation	N/A

Sample Description: OCD8
Date Sampled: 12/6/91

Laboratory ID: B1209526
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	< 5 ug/L		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	114 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

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Sample Description: OCD7
Date Sampled: 12/6/91

Laboratory ID: B1209527

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	661	mg/L	EPA 310.1	12/10/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/10/91
Chloride, as Cl	2290	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	2880	mg/L	EPA 375.4	12/12/91
Calcium, total	6.30	mg/L	EPA 200.7	12/11/91
Magnesium, total	199	mg/L	EPA 200.7	12/11/91
Potassium, total	19.6	mg/L	EPA 200.7	12/11/91
Sodium, total	2480	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	8680	mg/L	calculation	N/A

Sample Description: OCD7
Date Sampled: 12/6/91

Laboratory ID: B1209527
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	ND		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	116 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

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Sample Description: OCD6
Date Sampled: 12/6/91

Laboratory ID: B1209528

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	499	mg/L	EPA 310.1	12/10/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/10/91
Chloride, as Cl	3350	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	3220	mg/L	EPA 375.4	12/12/91
Calcium, total	781	mg/L	EPA 200.7	12/11/91
Magnesium, total	268	mg/L	EPA 200.7	12/11/91
Potassium, total	29.9	mg/L	EPA 200.7	12/11/91
Sodium, total	2930	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	12000	mg/L	calculation	N/A

Sample Description: OCD6
Date Sampled: 12/6/91

Laboratory ID: B1209528
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	< 5 ug/L		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	116 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

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Sample Description: OCD5
Date Sampled: 12/6/91

Laboratory ID: B1209529

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	262	mg/L	EPA 310.1	12/10/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/10/91
Chloride, as Cl	4750	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	2710	mg/L	EPA 375.4	12/12/91
Calcium, total	723	mg/L	EPA 200.7	12/11/91
Magnesium, total	227	mg/L	EPA 200.7	12/11/91
Potassium, total	47.2	mg/L	EPA 200.7	12/11/91
Sodium, total	3400	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	12200	mg/L	calculation	N/A

Sample Description: OCD5
Date Sampled: 12/6/91

Laboratory ID: B1209529
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	ND		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	118 %	78-168 %

* = 2 times limit of detection.

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P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Sample Description: OCD4
Date Sampled: 12/6/91

Laboratory ID: B1209530

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	243	mg/L	EPA 310.1	12/10/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/10/91
Chloride, as Cl	5830	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	2740	mg/L	EPA 375.4	12/12/91
Calcium, total	779	mg/L	EPA 200.7	12/11/91
Magnesium, total	267	mg/L	EPA 200.7	12/11/91
Potassium, total	62.1	mg/L	EPA 200.7	12/11/91
Sodium, total	4240	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	14200	mg/L	calculation	N/A

Sample Description: OCD4
Date Sampled: 12/6/91

Laboratory ID: B1209530
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	ND		
*Total Xylenes	ND		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	122 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

P.O. BOX 4300 • 9669 GROGANS MILL ROAD • THE WOODLANDS, TX 77380 • 713-367-6201 • FAX 713-367-3189

Sample Description: OCD3
Date Sampled: 12/6/91

Laboratory ID: B1209531

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	545	mg/L	EPA 310.1	12/10/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/10/91
Chloride, as Cl	5380	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	2520	mg/L	EPA 375.4	12/12/91
Calcium, total	938	mg/L	EPA 200.7	12/11/91
Magnesium, total	314	mg/L	EPA 200.7	12/11/91
Potassium, total	40.4	mg/L	EPA 200.7	12/11/91
Sodium, total	3340	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	13200	mg/L	calculation	N/A

Sample Description: OCD3
Date Sampled: 12/6/91

Laboratory ID: B1209531
Date Analyzed: 12/9/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	< 5 ug/L		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	108 %	78-168 %

* = 2 times limit of detection.

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Sample Description: OCD2
Date Sampled: 12/6/91

Laboratory ID: B1209532

TEST	VALUE	UNITS	METHOD	ANALYZED
M-Alkalinity, as CACO3	398	mg/L	EPA 310.1	12/10/91
P-Alkalinity, as CACO3	0.0	mg/L	EPA 310.1	12/10/91
Chloride, as Cl	3840	mg/L	EPA 325.2	12/16/91
Sulfate, as SO4	3390	mg/L	EPA 375.4	12/12/91
Calcium, total	584	mg/L	EPA 200.7	12/11/91
Magnesium, total	402	mg/L	EPA 200.7	12/11/91
Potassium, total	17.6	mg/L	EPA 200.7	12/11/91
Sodium, total	3190	mg/L	EPA 200.7	12/11/91
Hydroxide	0	mg/L	calculation	N/A
Total Dissolved Solids	11900	mg/L	calculation	N/A

Sample Description: OCD2
Date Sampled: 12/6/91

Laboratory ID: B1209532
Date Analyzed: 12/12/91

TEST	VALUE	QUANT. LIM.	METHOD
BTEX		5 ug/L	EPA 8020
Benzene	ND		
Ethylbenzene	ND		
Toluene	< 5 ug/L		
*Total Xylenes	< 10 ug/L		

8020 Surrogate recovery:		Limits:
Trifluorotoluene	104 %	78-168 %

* = 2 times limit of detection.

BETZ ANALYTICAL SERVICES

Chain of Custody

P.O. Box 4300 • 9669 Grogans Mill Road • The Woodlands, TX 77380 • 713-367-6201 • Fax 713-367-3189

Client Name/Address: NAVAJO REFINING CO. 501 E. Main ARTESIA, NM 88210

Send Report to: MR. ZEKE SHERMAN

P.O. Number

Invoice to: Navajo Refining Co. ATTN: Zeke Sherman

Samplers (Signature): [signature]

Project Number: REQ # 883

Sta No.	Date	Time	Comp.	Grab	Station Location	Number of Containers	VOA	Cl, SO4	P+M AIK	METALS	BNA's		Remarks
MW-1	12/6/91	13:00		✓	EVAP. POND	5	✓	✓	✓	✓			
MW-2	12/6/91	09:30		✓	"	5	✓	✓	✓	✓			
MW-3	12/5/91	14:50		✓	"	5	✓	✓	✓	✓			
MW-4	12/5/91	15:30		✓	"	8	✓	✓	✓	✓	✓		
MW-5	12/5/91	16:30		✓	"	8	✓	✓	✓	✓	✓		
MW-6	12/5/91	14:20		✓	"	5	✓	✓	✓	✓			
MW-7	12/5/91	17:00		✓	"	5	✓	✓	✓	✓			
OCD-1	12/6/91	10:00		✓	"	5	✓	✓	✓	✓			
OCD-8	12/5/91	17:30		✓	"	5	✓	✓	✓	✓			
OCD-7	12/6/91	08:00		✓	"	5	✓	✓	✓	✓			
OCD-6	12/6/91	12:00		✓	"	5	✓	✓	✓	✓			
OCD-5	12/6/91	11:30		✓	"	5	✓	✓	✓	✓			
OCD-4	12/6/91	08:50		✓	"	5	✓	✓	✓	✓			
OCD-3	12/6/91	11:00		✓	"	5	✓	✓	✓	✓			
OCD-2	12/6/91	10:30		✓	"	5	✓	✓	✓	✓			

Relinquished by (Signature)	Date / Time	Received by (Signature)	Relinquished by (Signature)	Date / Time	Received by (Signature)
[signature]	12/6/91 16:30				
Relinquished by (Signature)	Date / Time	Received by (Signature)	Relinquished by (Signature)	Date / Time	Received by (Signature)
Relinquished by (Signature)	Date / Time	Received for Laboratory by (Sig.)	Date / Time	Sample condition upon receipt:	
		Glinda Henton	12-9-91 10:45	I-90 I-72 15°C, 10°C	

Method of Shipment:

Rocky Mountain
Analytical Laboratory

Enseco
A CORNING Company

November 30, 1990

Mr. Zeke Sherman
Navajo Refining
501 East Main Street
Artesia, NM 88210

Dear Mr. Sherman:

Recently, Enseco was late in delivering the analytical results to you for RMAL Project #011768. I am sending this letter to formally apologize, and to assure you that we are taking steps to prevent this from occurring again.

Navajo Refining is a valued customer to Enseco. As our Guaranteed Turnaround Policy states, to compensate for any inconvenience this may have caused your company, please accept the 10% credit that has been deducted on your project invoice.

Enseco's leadership in analytical laboratory services is founded on its dedicated commitment to total customer satisfaction, where service and quality are our highest priority.

Thank you for choosing Enseco as your laboratory. We will continue to work hard to earn your business. If you would like to discuss this further, please call me directly at the number listed below. Again, we apologize for the delay in your results.

Sincerely,

for Mark Bollinger

Mark J. Bollinger, Ph.D.
Division Director

MJB/dmh

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Rocky Mountain
Analytical Laboratory

Enseco
A CORNING Company

November 30, 1990

Mr. Zeke Sherman
Navajo Refining
501 East Main Street
Artesia, NM 88210

Dear Mr. Sherman:

Enclosed is the report for two aqueous samples received at Enseco-Rocky Mountain Analytical Laboratory on October 10, 1990.

Included with the report is a quality control summary.

Please call if you have any questions.

Sincerely,

Cindy Ingram
Program Administrator

Reviewed by:

Sue Dalla
Manager
Program Administration

CI/SD/dmh
Enclosures

RMAL #011768

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Rocky Mountain
Analytical Laboratory

Enseco
A CORNING Company

November 21, 1990

Mr. Zeke Sherman
Navajo Refining Company
501 East Main Street
Artesia, NM 88210

Dear Mr. Sherman:

Enclosed is the report for one aqueous sample received at Enseco-Rocky Mountain Analytical Laboratory on October 19, 1990.

Included with the report is a quality control summary.

Please call if you have any questions.

Sincerely,

Cindy Ingram
Program Administrator

Reviewed by:

Sue Dalla
Manager
Program Administration

CI/SD/dmh
Enclosures

RMAL #011889

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Rocky Mountain
Analytical Laboratory

Enseco

ANALYTICAL RESULTS

FOR

NAVAJO REFINING COMPANY

ENSECO-RMAL NO. 011889

NOVEMBER 21, 1990

Reviewed by: Cindy Ingram

Cindy Ingram

Sue Dalla

Sue Dalla

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- Sample Description Information
- Analytical Test Requests
- Analytical Results
- Quality Control Report

The pH holding time expired in transit. The TDS holding time was expired.

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

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SAMPLE DESCRIPTION INFORMATION
for
Navajo Refining Company

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
011889-0001-SA	#1017900845/Treated Effluent	AQUEOUS	17 OCT 90	08:45	19 OCT 90

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ANALYTICAL TEST REQUESTS
for
Navajo Refining Company

Lab ID: 011889	Group Code	Analysis Description	Custom Test?
0001	A	Alkalinity,	N
		Total/Carbonate/Bicarbonate/Hydroxide	N
		Chloride, Ion Chromatography	N
		Fluoride, Electrode	N
		Ammonia	N
		Nitrate Plus Nitrite	N
		pH	N
		Sulfate, Ion Chromatography	N
		Specific Conductance	N
		Total Dissolved Solids (TDS)	N
		Ion Balance Cations done by ICP	N
		Ion Balance Calculation	N
		Ion Balance Components	N

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, May, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

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Metals

Dissolved Metals

Client Name: Navajo Refining Company
Client ID: #1017900845/Treated Effluent
Lab ID: 011889-0001-SA
Matrix: AQUEOUS Sampled: 17 OCT 90 Received: 19 OCT 90
Authorized: 19 OCT 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Calcium	52.2	mg/L	0.40	6010	NA	14 NOV 90
Iron	0.46	mg/L	0.20	6010	NA	14 NOV 90
Magnesium	31.4	mg/L	0.40	6010	NA	14 NOV 90
Potassium	38.9	mg/L	10.0	6010	NA	14 NOV 90
Sodium	832	mg/L	10.0	6010	NA	14 NOV 90

ND = Not detected
NA = Not applicable

Reported By: Leslie Gergurich Approved By: Will Pratt

Enseco
A Corning Company

General Inorganics

Client Name: Navajo Refining Company
Client ID: #1017900845/Treated Effluent
Lab ID: 011889-0001-SA
Matrix: AQUEOUS Sampled: 17 OCT 90 Received: 19 OCT 90
Authorized: 19 OCT 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Alkalinity, Total as CaCO3 at pH 4.5	292	mg/L	5.0	310.1	NA	22 OCT 90
Alkalinity, Bicarb. as CaCO3 at pH 4.5	10.0	mg/L	5.0	310.1	NA	22 OCT 90
Alkalinity, Carb. as CaCO3 at pH 8.3	282	mg/L	5.0	310.1	NA	22 OCT 90
Alkalinity, Hydrox. as CaCO3	ND	mg/L	5.0	310.1	NA	22 OCT 90
Chloride	775	mg/L	15.0	300.0	NA	24 OCT 90
Fluoride	48.1	mg/L	0.10	340.2	NA	08 NOV 90
Ion Balance Difference	3.7	%	0.1	104C	NA	15 NOV 90
Total Anions	40.5	meq/L	0.30		NA	15 NOV 90
Total Cations	43.6	meq/L	0.10		NA	15 NOV 90
Ammonia as N	16.5	mg/L	1.0	350.1	NA	31 OCT 90
Nitrate plus Nitrite	0.72	mg/L	0.10	353.2	NA	03 NOV 90
pH	9.8	units	--	9040	NA	19 OCT 90
Sulfate	612	mg/L	25.0	300.0	NA	24 OCT 90
Specific Conductance at 25 deg.C	3900	umhos/cm	1.0	120.1	NA	19 OCT 90
Total Dissolved Solids	2750	mg/L	20.0	160.1	NA	30 OCT 90

ND = Not detected
NA = Not applicable

Reported By: Tammy Bailey Approved By: John Laferty

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analyses of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data

2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix

3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and

4) provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/- 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot for which the DCS pair are not analyzed.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

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QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
011889-0001-SA	AQUEOUS	ICP-AD	14 NOV 90-L	-

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DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: ICP-AD								
Matrix: AQUEOUS								
QC Lot: 14 NOV 90-L								
Concentration Units: mg/L								
Aluminum	2.0	1.95	1.95	1.95	98	75-125	0.1	20
Antimony	0.5	0.455	0.467	0.461	92	75-125	2.5	20
Arsenic	0.5	0.421	0.420	0.420	84	75-125	0.4	20
Barium	2.0	1.89	1.88	1.89	94	75-125	0.2	20
Beryllium	0.05	0.0489	0.0482	0.0486	97	75-125	1.4	20
Cadmium	0.05	0.0424	0.0412	0.0418	84	75-125	2.8	20
Calcium	100	100	100	100	100	75-125	0.1	20
Chromium	0.2	0.184	0.184	0.184	92	75-125	0.1	20
Cobalt	0.5	0.413	0.412	0.412	82	75-125	0.4	20
Copper	0.25	0.224	0.222	0.223	89	75-125	1.1	20
Iron	1.0	1.03	1.03	1.03	103	75-125	0.1	20
Lead	0.5	0.423	0.420	0.421	84	75-125	0.6	20
Magnesium	50	50.3	50.3	50.3	101	75-125	0.0	20
Manganese	0.5	0.417	0.419	0.418	84	75-125	0.5	20
Nickel	0.5	0.423	0.420	0.422	84	75-125	0.8	20
Potassium	50	50.8	51.0	50.9	102	75-125	0.4	20
Silver	0.05	0.0467	0.0487	0.0477	95	75-125	4.2	20
Sodium	100	102	102	102	102	75-125	0.2	20
Vanadium	0.5	0.481	0.481	0.481	96	75-125	0.0	20
Zinc	0.5	0.422	0.422	0.422	84	75-125	0.2	20

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

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QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
011889-0001-SA	AQUEOUS	ALK-A	22 OCT 90-F	-
011889-0001-SA	AQUEOUS	CL-IC-A	24 OCT 90-N	-
011889-0001-SA	AQUEOUS	F-A	08 NOV 90-A	-
011889-0001-SA	AQUEOUS	NH3-A	31 OCT 90-D	-
011889-0001-SA	AQUEOUS	NO3-A	03 NOV 90-A	-
011889-0001-SA	AQUEOUS	PH-A	19 OCT 90-C	-
011889-0001-SA	AQUEOUS	SO4-IC-A	24 OCT 90-N	-
011889-0001-SA	AQUEOUS	COND-A	19 OCT 90-F	-
011889-0001-SA	AQUEOUS	TDS-A	30 OCT 90-A	30 OCT 90-A

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DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: ALK-A Matrix: AQUEOUS QC Lot: 22 OCT 90-F Concentration Units: mg/L								
Alkalinity, Total as CaCO3 at pH 4.5	216	220	220	220	102	90-110	0.0	10
Category: CL-IC-A Matrix: AQUEOUS QC Lot: 24 OCT 90-N Concentration Units: mg/L								
Chloride	100	99.5	102	101	101	92-108	2.5	20
Category: F-A Matrix: AQUEOUS QC Lot: 08 NOV 90-A Concentration Units: mg/L								
Fluoride	4.1	3.90	3.93	3.92	95	88-112	0.8	15
Category: NH3-A Matrix: AQUEOUS QC Lot: 31 OCT 90-D Concentration Units: mg/L								
Ammonia as N	9.1	8.89	8.92	8.90	98	93-107	0.3	10
Category: NO3-A Matrix: AQUEOUS QC Lot: 03 NOV 90-A Concentration Units: mg/L								
Nitrate as N	3.8	3.60	3.74	3.67	97	91-109	3.8	10

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

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DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: PH-A Matrix: AQUEOUS QC Lot: 19 OCT 90-C Concentration Units: units								
pH	9.2	9.24	9.26	9.25	101	98-102	0.2	5
Category: SO4-IC-A Matrix: AQUEOUS QC Lot: 24 OCT 90-N Concentration Units: mg/L								
Sulfate	200	203	209	206	103	93-107	2.9	20
Category: COND-A Matrix: AQUEOUS QC Lot: 19 OCT 90-F Concentration Units: umhos/cm								
Specific Conductance at 25 deg.C	1910	1950	1950	1950	102	95-105	0.0	20
Category: TDS-A Matrix: AQUEOUS QC Lot: 30 OCT 90-A Concentration Units: mg/L								
Total Dissolved Solids	1490	1430	1440	1430	96	90-110	0.7	10

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

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METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: TDS-BAL-A			
Matrix: AQUEOUS			
QC Lot: 30 OCT 90-A QC Run: 30 OCT 90-A			
Total Dissolved Solids	20.0	mg/L	10.0

Rocky Mountain
Analytical Laboratory

Enseco

ANALYTICAL RESULTS

FOR

NAVAJO REFINING

ENSECO-RMAL NO. 011768

NOVEMBER 30, 1990

Reviewed by: Cindy Ingram
Cindy Ingram

Sue Dalla
Sue Dalla

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- Sample Description Information
- Analytical Test Requests
- Analytical Results
- Quality Control Report

The ion balance analysis was not performed since filtered samples are required. These samples were resubmitted and results will be provided under Enseco-Rocky Mountain Analytical Laboratory (RMAL) project #011889.

3,4-benzofluoranthene is the same compound as benzo(b)fluoranthene and is reported as benzo(b)fluoranthene for the GC/MS semivolatile analysis.

All analyses at Enseco are performed so that the maximum concentration of sample consistent with the method is analyzed. Dilutions are at times required to achieve linearity of the specific parameter or to reduce matrix interferences. In this event, reporting limits are adjusted proportionately. Surrogates may not be reportable in samples that have been diluted.

Sample 011768-0001 required a dilution for the GC/MS semivolatile analysis due to the presence of target compounds in the sample. This sample also required a dilution for the GC volatile analysis due to the presence of target compounds.

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

Enseco
A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
Navajo Refining Company

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
011768-0001-SA	1009901405 Evaporation Pond	AQUEOUS	09 OCT 90	14:05	10 OCT 90
011768-0002-SA	Trip Blank	AQUEOUS			10 OCT 90

Enseco
A Corning Company

ANALYTICAL TEST REQUESTS
for
Navajo Refining Company

Lab ID: 011768	Group Code	Analysis Description	Custom Test?
0001	A	Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)	N
		Phenolics (4-AAP)	N
		Cyanide, Total	N
		Semivolatile Organics Target Compound List (TCL)	N
		Prep - Semivolatile Organics by GC/MS	N
		Target Analyte List Metals by ICP, Total	Y
		Prep - Total Metals, ICP	N
		Arsenic by Graphite Furnace AA, Total	N
		Prep - Total Metals, Furnace AA	N
		Lead by Graphite Furnace AA, Total	N
		Selenium by Graphite Furnace AA, Total	N
		Mercury by Cold Vapor AA, Total	N
		Prep - Mercury, Cold Vapor AA (Total)	N
0002	B	Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)	N

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, May, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

Enseco
A Corning Company

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Navajo Refining Company
Client ID: 1009901405 Evaporation Pond
Lab ID: 011768-0001-SA
Matrix: AQUEOUS Sampled: 09 OCT 90 Received: 10 OCT 90
Authorized: 10 OCT 90 Prepared: 15 OCT 90 Analyzed: 24 OCT 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/L	500
Acenaphthylene	ND	ug/L	500
Anthracene	ND	ug/L	500
Benzo(a)anthracene	ND	ug/L	500
Benzo(b)fluoranthene	ND	ug/L	500
Benzo(k)fluoranthene	ND	ug/L	500
Benzo(g,h,i)perylene	ND	ug/L	500
Benzo(a)pyrene	ND	ug/L	500
Benzoic acid	ND	ug/L	2500
Benzyl alcohol	ND	ug/L	500
4-Bromophenyl phenyl ether	ND	ug/L	500
Butyl benzyl phthalate	ND	ug/L	500
4-Chloroaniline	ND	ug/L	500
bis(2-Chloroethoxy)-methane	ND	ug/L	500
bis(2-Chloroethyl) ether	ND	ug/L	500
bis(2-Chloroisopropyl)-ether	ND	ug/L	500
4-Chloro-3-methylphenol	ND	ug/L	500
2-Chloronaphthalene	ND	ug/L	500
2-Chlorophenol	ND	ug/L	500
4-Chlorophenyl phenyl ether	ND	ug/L	500
Chrysene	ND	ug/L	500
Dibenz(a,h)anthracene	ND	ug/L	500
Dibenzofuran	ND	ug/L	500
Di-n-butyl phthalate	ND	ug/L	500
1,2-Dichlorobenzene	ND	ug/L	500
1,3-Dichlorobenzene	ND	ug/L	500
1,4-Dichlorobenzene	ND	ug/L	500
3,3'-Dichlorobenzidine	ND	ug/L	1000
2,4-Dichlorophenol	ND	ug/L	500
Diethyl phthalate	ND	ug/L	500
2,4-Dimethylphenol	1100	ug/L	500
Dimethyl phthalate	ND	ug/L	500
4,6-Dinitro-2-methylphenol	ND	ug/L	2500
2,4-Dinitrophenol	ND	ug/L	2500
2,4-Dinitrotoluene	ND	ug/L	500
2,6-Dinitrotoluene	ND	ug/L	500

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Donna Reinwald Approved By: Jeff Lowry

Enseco
A Corning Company

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Navajo Refining Company
Client ID: 1009901405 Evaporation Pond
Lab ID: 011768-0001-SA
Matrix: AQUEOUS Sampled: 09 OCT 90 Received: 10 OCT 90
Authorized: 10 OCT 90 Prepared: 15 OCT 90 Analyzed: 24 OCT 90

Parameter	Result	Units	Reporting Limit
Di-n-octyl phthalate	ND	ug/L	500
bis(2-Ethylhexyl) phthalate	ND	ug/L	500
Fluoranthene	ND	ug/L	500
Fluorene	ND	ug/L	500
Hexachlorobenzene	ND	ug/L	500
Hexachlorobutadiene	ND	ug/L	500
Hexachlorocyclopentadiene	ND	ug/L	500
Hexachloroethane	ND	ug/L	500
Indeno(1,2,3-cd)pyrene	ND	ug/L	500
Isophorone	ND	ug/L	500
2-Methylnaphthalene	ND	ug/L	500
2-Methylphenol	1800	ug/L	500
4-Methylphenol	2600	ug/L	500
Naphthalene	ND	ug/L	500
2-Nitroaniline	ND	ug/L	2500
3-Nitroaniline	ND	ug/L	2500
4-Nitroaniline	ND	ug/L	2500
Nitrobenzene	ND	ug/L	500
2-Nitrophenol	ND	ug/L	500
4-Nitrophenol	ND	ug/L	2500
N-Nitrosodiphenylamine	ND	ug/L	500
N-Nitroso-di-n-propylamine	ND	ug/L	500
Pentachlorophenol	ND	ug/L	2500
Phenanthrene	ND	ug/L	500
Phenol	6100	ug/L	500
Pyrene	ND	ug/L	500
1,2,4-Trichlorobenzene	ND	ug/L	500
2,4,5-Trichlorophenol	ND	ug/L	2500
2,4,6-Trichlorophenol	ND	ug/L	500

Surrogate	Recovery		
Nitrobenzene-d5	ND	%	--
2-Fluorobiphenyl	ND	%	--
Terphenyl-d14	ND	%	--
Phenol-d5	ND	%	--
2-Fluorophenol	ND	%	--
2,4,6-Tribromophenol	ND	%	--

ND = Not detected
NA = Not applicable

Reported By: Donna Reinwald Approved By: Jeff Lowry

Enseco
A Corning Company

Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)

Method 8020

Client Name: Navajo Refining Company
Client ID: 1009901405 Evaporation Pond
Lab ID: 011768-0001-SA
Matrix: AQUEOUS Sampled: 09 OCT 90 Received: 10 OCT 90
Authorized: 10 OCT 90 Prepared: NA Analyzed: 13 OCT 90

Parameter	Result	Units	Reporting Limit
Benzene	290	ug/L	25
Toluene	660	ug/L	25
Ethylbenzene	210	ug/L	25
Xylenes (total)	450	ug/L	25

Surrogate	Recovery	
a,a,a-Trifluorotoluene	92	%

ND = Not detected
NA = Not applicable

Reported By: Garth Atkins Approved By: Jeff Lowry

Enseco
A Corning Company

Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)

Method 8020

Client Name: Navajo Refining Company
Client ID: Trip Blank
Lab ID: 011768-0002-SA
Matrix: AQUEOUS Sampled: Unknown Received: 10 OCT 90
Authorized: 10 OCT 90 Prepared: NA Analyzed: 13 OCT 90

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50

Surrogate	Recovery	
a,a,a-Trifluorotoluene	96	%

ND = Not detected
NA = Not applicable

Reported By: Garth Atkins Approved By: Jeff Lowry

Enseco
A Corning Company

Total Metals

Client Name: Navajo Refining Company
Client ID: 1009901405 Evaporation Pond
Lab ID: 011768-0001-SA
Matrix: AQUEOUS Sampled: 09 OCT 90 Received: 10 OCT 90
Authorized: 10 OCT 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Arsenic	0.084	mg/L	0.0050	7060	25 NOV 90	26 NOV 90
Barium	0.040	mg/L	0.010	6010	15 NOV 90	16 NOV 90
Cadmium	ND	mg/L	0.0050	6010	15 NOV 90	16 NOV 90
Chromium	0.50	mg/L	0.010	6010	15 NOV 90	16 NOV 90
Lead	0.011	mg/L	0.0050	7421	25 NOV 90	26 NOV 90
Mercury	ND	mg/L	0.00020	7470	30 OCT 90	31 OCT 90
Selenium	0.038	mg/L	0.0050	7740	25 NOV 90	26 NOV 90
Silver	ND	mg/L	0.010	6010	15 NOV 90	16 NOV 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones Approved By: Mary Grehl

Enseco
A Corning Company

General Inorganics

Client Name: Navajo Refining Company
Client ID: 1009901405 Evaporation Pond
Lab ID: 011768-0001-SA
Matrix: AQUEOUS Sampled: 09 OCT 90 Received: 10 OCT 90
Authorized: 10 OCT 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide	0.011	mg/L	0.010	9012	NA	17 OCT 90
Phenolics	10.1	mg/L	1.0	9065	NA	23 OCT 90

ND = Not detected
NA = Not applicable

Reported By: Tammy Bailey Approved By: Mary Grehl

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analyses of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data

2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix

3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and

4) provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/- 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot for which the DCS pair are not analyzed.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

Enseco
A Corning Company

QC LOT ASSIGNMENT REPORT
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
011768-0001-SA	AQUEOUS	625-A	14 OCT 90-A	15 OCT 90-A

Enseco
A Corning Company

DUPLICATE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: 625-A								
Matrix: AQUEOUS								
QC Lot: 14 OCT 90-A								
Concentration Units: ug/L								
Phenol	100	74.3	70.2	72.2	72	12- 89	5.7	42
2-Chlorophenol	100	79.8	74.2	77.0	77	27-123	7.3	40
1,4-Dichlorobenzene	50	32.7	29.8	31.2	63	36- 97	9.3	28
N-Nitroso-di-n-propylamine	50	40.6	39.1	39.8	80	41-116	3.8	38
1,2,4-Trichlorobenzene	50	33.1	31.3	32.2	64	39- 98	5.6	28
4-Chloro-3-methylphenol	100	77.4	75.6	76.5	77	23- 97	2.4	42
Acenaphthene	50	35.5	34.2	34.8	70	46-118	3.7	31
4-Nitrophenol	100	53.5	58.3	55.9	56	10- 80	8.6	50
2,4-Dinitrotoluene	50	39.9	38.9	39.4	79	24- 96	2.5	38
Pentachlorophenol	100	38.1	44.4	41.2	41	9-103	15	50
Pyrene	50	42.2	40.0	41.1	82	26-127	5.4	31

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

Enseco
A Corning Company

SINGLE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Category: 625-A
Matrix: AQUEOUS
QC Lot: 14 OCT 90-A QC Run: 15 OCT 90-A
Concentration Units: ug/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Nitrobenzene-d5	100	57.5	58	35-114
2-Fluorobiphenyl	100	52.3	52	43-116
Terphenyl-d14	100	64.5	64	33-141
2-Fluorophenol	200	108	54	21-100
Phenol-d5	200	109	54	10- 94
2,4,6-Tribromophenol	200	120	60	10-123

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

Enseco
A Corning Company

METHOD BLANK REPORT
Semivolatile Organics by GC/MS

Test: 8270CP-TCL-A
Matrix: AQUEOUS
QC Lot: 14 OCT 90-A QC Run: 15 OCT 90-A

Analyte	Result	Units	Reporting Limit
Acenaphthene	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Anthracene	ND	ug/L	10
Benzo(a)anthracene	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Benzoic acid	ND	ug/L	50
Benzyl alcohol	ND	ug/L	10
4-Bromophenyl phenyl ether	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
4-Chloroaniline	ND	ug/L	10
bis(2-Chloroethoxy)-methane	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
bis(2-Chloroisopropyl)-ether	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	10
2-Chloronaphthalene	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
4-Chlorophenyl phenyl ether	ND	ug/L	10
Chrysene	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Dibenzofuran	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
1,2-Dichlorobenzene	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	10
1,4-Dichlorobenzene	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	20
2,4-Dichlorophenol	ND	ug/L	10
Diethyl phthalate	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
4,6-Dinitro-2-methylphenol	ND	ug/L	50
2,4-Dinitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10

Enseco
A Corning Company

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Test: 8270CP-TCL-A
Matrix: AQUEOUS
QC Lot: 14 OCT 90-A QC Run: 15 OCT 90-A

Analyte	Result	Units	Reporting Limit
Di-n-octyl phthalate	ND	ug/L	10
bis(2-Ethylhexyl) phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Fluorene	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Methylnaphthalene	ND	ug/L	10
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
Naphthalene	ND	ug/L	10
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	50
Nitrobenzene	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
4-Nitrophenol	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
Pentachlorophenol	ND	ug/L	50
Phenanthrene	ND	ug/L	10
Phenol	ND	ug/L	10
Pyrene	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2,4,6-Trichlorophenol	ND	ug/L	10

Enseco
A Corning Company

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
011768-0001-SA	AQUEOUS	602-A	13 OCT 90-P	13 OCT 90-P
011768-0002-SA	AQUEOUS	602-A	13 OCT 90-P	13 OCT 90-P

Enseco
A Corning Company

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: 602-A								
Matrix: AQUEOUS								
QC Lot: 13 OCT 90-P								
Concentration Units: ug/L								
Benzene	5.0	5.29	5.17	5.23	105	80-120	2.3	15
Toluene	5.0	5.26	5.04	5.15	103	80-120	4.3	15
Ethylbenzene	5.0	5.08	4.86	4.97	99	80-120	4.4	15
Xylenes (total)	5.0	5.20	4.99	5.10	102	80-120	4.1	15
1,3-Dichlorobenzene	5.0	5.26	4.85	5.06	101	80-120	8.1	15

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

Enseco
A Corning Company

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 602-A				
Matrix: AQUEOUS				
QC Lot: 13 OCT 90-P QC Run: 13 OCT 90-P				
Concentration Units: ug/L				
a,a,a-Trifluorotoluene	30.0	29.5	98	20-160

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

Enseco
A Corning Company

METHOD BLANK REPORT
Volatile Organics by GC

Analyte	Result	Units	Reporting Limit
Test: 602-BTEX-AP			
Matrix: AQUEOUS			
QC Lot: 13 OCT 90-P QC Run: 13 OCT 90-P			
Benzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Test: 602-BTEX-AP			
Matrix: AQUEOUS			
QC Lot: 13 OCT 90-P QC Run: 13 OCT 90-P			
Benzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50

Enseco
A Corning Company

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
011768-0001-SA	AQUEOUS	ICP-AT	15 NOV 90-Z	15 NOV 90-Z
011768-0001-SA	AQUEOUS	AS-FAA-AT	25 NOV 90-R	25 NOV 90-R
011768-0001-SA	AQUEOUS	PB-FAA-AT	25 NOV 90-R	25 NOV 90-R
011768-0001-SA	AQUEOUS	SE-FAA-AT	25 NOV 90-R	25 NOV 90-R
011768-0001-SA	AQUEOUS	HG-CVAA-AT	30 OCT 90-A	30 OCT 90-A

Enseco
A Corning Company

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: ICP-AT								
Matrix: AQUEOUS								
QC Lot: 15 NOV 90-Z								
Concentration Units: mg/L								
Aluminum	2.0	1.92	1.96	1.94	97	75-125	1.7	20
Antimony	0.5	0.444	0.449	0.446	89	75-125	1.1	20
Arsenic	0.5	0.462	0.459	0.460	92	75-125	0.8	20
Barium	2.0	1.90	1.89	1.89	95	75-125	0.6	20
Beryllium	0.05	0.0480	0.0462	0.0471	94	75-125	3.8	20
Cadmium	0.05	0.0462	0.0497	0.0480	96	75-125	7.4	20
Calcium	100	98.3	98.8	98.6	99	75-125	0.5	20
Chromium	0.2	0.182	0.188	0.185	93	75-125	3.0	20
Cobalt	0.5	0.459	0.462	0.460	92	75-125	0.6	20
Copper	0.25	0.237	0.233	0.235	94	75-125	2.0	20
Iron	1.0	0.948	0.960	0.954	95	75-125	1.2	20
Lead	0.5	0.468	0.473	0.471	94	75-125	0.9	20
Magnesium	50	49.4	49.7	49.5	99	75-125	0.6	20
Manganese	0.5	0.470	0.473	0.472	94	75-125	0.6	20
Nickel	0.5	0.470	0.474	0.472	94	75-125	0.8	20
Potassium	50	47.5	47.5	47.5	95	75-125	0.1	20
Silver	0.05	0.0482	0.0467	0.0475	95	75-125	3.2	20
Sodium	100	98.8	98.2	98.5	98	75-125	0.6	20
Vanadium	0.5	0.495	0.489	0.492	98	75-125	1.2	20
Zinc	0.5	0.458	0.465	0.462	92	75-125	1.6	20
Category: AS-FAA-AT								
Matrix: AQUEOUS								
QC Lot: 25 NOV 90-R								
Concentration Units: mg/L								
Arsenic	0.04	0.0365	0.0376	0.0370	93	75-125	3.0	20
Category: PB-FAA-AT								
Matrix: AQUEOUS								
QC Lot: 25 NOV 90-R								
Concentration Units: mg/L								
Lead	0.02	0.0220	0.0187	0.0204	102	75-125	16	20

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

Enseco
A Corning Company

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: SE-FAA-AT Matrix: AQUEOUS QC Lot: 25 NOV 90-R Concentration Units: mg/L								
Selenium	0.01	0.0124	0.0121	0.0122	123	75-125	2.4	20
Category: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 30 OCT 90-A Concentration Units: mg/L								
Mercury	0.0010	0.00116	0.00118	0.00117	117	75-125	1.7	20

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

Enseco
A Corning Company

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: ICPOCP-TAL-AT			
Matrix: AQUEOUS			
QC Lot: 15 NOV 90-Z QC Run: 15 NOV 90-Z			
Barium	ND	mg/L	0.010
Cadmium	ND	mg/L	0.0050
Chromium	ND	mg/L	0.010
Silver	ND	mg/L	0.010
Test: GF-ASCP-TAL-AT			
Matrix: AQUEOUS			
QC Lot: 25 NOV 90-R QC Run: 25 NOV 90-R			
Arsenic	ND	mg/L	0.0050
Test: GF-PBCP-TAL-AT			
Matrix: AQUEOUS			
QC Lot: 25 NOV 90-R QC Run: 25 NOV 90-R			
Lead	ND	mg/L	0.0050
Test: GF-SECP-TAL-AT			
Matrix: AQUEOUS			
QC Lot: 25 NOV 90-R QC Run: 25 NOV 90-R			
Selenium	ND	mg/L	0.0050
Test: CV-HGCP-TAL-AT			
Matrix: AQUEOUS			
QC Lot: 30 OCT 90-A QC Run: 30 OCT 90-A			
Mercury	ND	mg/L	0.00020

Enseco
A Corning Company

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
011768-0001-SA	AQUEOUS	PHEN-A	21 OCT 90-B	21 OCT 90-B
011768-0001-SA	AQUEOUS	CN-A	17 OCT 90-A	17 OCT 90-A

Enseco
A Corning Company

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: PHEN-A Matrix: AQUEOUS QC Lot: 21 OCT 90-B Concentration Units: mg/L								
Phenolics	0.20	0.168	0.170	0.169	85	78-122	1.2	20
Category: CN-A Matrix: AQUEOUS QC Lot: 17 OCT 90-A Concentration Units: mg/L								
Cyanide	0.20	0.188	0.186	0.187	94	75-125	1.1	20

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

Enseco
A Corning Company

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: PHEN-SPEC-A			
Matrix: AQUEOUS			
QC Lot: 21 OCT 90-B QC Run: 21 OCT 90-B			
Phenolics	ND	mg/L	0.010
Test: CNTOT-TEC-A			
Matrix: AQUEOUS			
QC Lot: 17 OCT 90-A QC Run: 17 OCT 90-A			
Cyanide	ND	mg/L	0.010

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No. 78-524,67-013

OCD Sample No. 890726 1221 149759

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1221	Boyer, [illegible] /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: MW-4

Collection Site Description:

Township, Range, Section, Tract: 17S 26E 12 14

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

Water level: 11.84

Discharge: 7 gallons

Sample type: GRAB

pH(00400): 7.04

Conductivity (Uncorrected): 6000 µmho

Water Temp. (00010): 17°C

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: [illegible]

☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, very strong He like odor, brown greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

OF NEW MEXICO

ENERGY, MINERALS NATURAL RESOURCES DEPARTMENT

O SERVATION DIVISION

ANAL S REQUEST FORM

Contract Lab [illegible] Contract No. [illegible]

OCD Sample No. [illegible]

Collection Date	Collection Time	Collected by —Person/Agency
[illegible]	[illegible]	[illegible] /OCD

SITE INFORMATION

Sample location

Collection Site Description

Township, Range, Section, Tract: 17S+26E+12+1.4 2

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) [illegible]

Water Temp. (00010) [illegible]

Water level 11.84

Discharge 7 gallons

Sample type [illegible]

Conductivity (Uncorrected) [illegible] µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: [illegible]

☐ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS: [illegible]

clear water, very strong He like odor, brown greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 8907[illegible]22

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1221	Boyer; OCD

SITE INFORMATION

Sample location NAUR

Collection Site Description

Township. Range, Section, Tract: 17S 26E 12 14 2

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- ☐ **NF:** Whole sample (Non-filtered)
- ☐ **F:** Filtered in field with 0.45 μ membrane filter
- ☐ **PF:** Pre-filtered w/45 μ membrane filter

- ☐ **NA:** No acid added
- ☐ **A:** HCL
- ☐ **A:** 2ml H_2SO_4/L added
- ☐ **A:** 5ml conc. HNO_3 added
- ☐ **A:** 4ml fuming HNO_3 added

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

Water level 11.84

Discharge 7 gallons

Sample type GR

pH(00400) 7

Conductivity (Uncorrected) μmho

Water Temp. (00010) 70°C

Conductivity at 25° C μmho

FIELD COMMENTS:

clear water, very strong odor, brown greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☒ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LAB Contract No.

OCD Sample No. 8907261221

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1221	Boyce /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: MW-4

Collection Site Description

Township, Range, Section, Tract: 17S 26E 12 1 4 2

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NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.04

Water Temp. (00010) 17°C

Water level 11.84

Discharge 7 gallons

Sample type GRAB

Conductivity (Uncorrected) 6000 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, very strong H_2S like odor, brown greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☒ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LAB Contract No. 78-521.02-013

OCD Sample No. 8907261135

149760

Collection Date	Collection Time	Collected by —Person/Agency
07/26/89	1135	BOYER, [redacted] ENGLERT /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: MW-5

Collection Site Description:

Township, Range, Section, Tract: 17 S+2 6 E+1 2+2 1 4

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NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.04

Water Temp. (00010) 23°C

Water level 8.32

Discharge 6 gallons

Sample type GRAB

Conductivity (Uncorrected) 12500 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 2 V 12 ls

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☒ **A:** HCL
☒ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, very strong H2 like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab _____ Contract No. _____

OCD Sample No. _____

Collection Date	Collection Time	Collected by —Person/Agency
		/OCD

SITE INFORMATION

Sample location

Collection Site Description

Township, Range, Section, Tract: 17S 26E 12 14

SEND FINAL REPORT TO ▶
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NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400)

Water Temp. (00010)

Water level 8.32

Discharge 6 gallons

Sample type

Conductivity (Uncorrected) µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 bottles

☐ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, very strong Hc like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER _____	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LABS Contract No.

OCD Sample No. 890726 1135

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1135	BOYER, ENGLBRT /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY : MW-5

Collection Site Description

Township, Range, Section, Tract: 17S+26E+12+2 1 4

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400) 7.04

Water Temp. (00010) 23°C

Water level 8.32

Discharge 6 gallons

Sample type GRAB

Conductivity (Uncorrected) 12,500 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted:

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 µ membrane filter
- [ ] PF: Pre-filtered w/45 µ membrane filter

- [x] NA: No acid added
- [x] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, very strong Ac like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[x] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No. 78-521,07-013

OCD Sample No. 8907261424 149761

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1424	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVASO REFINERY : MW-6

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+23

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 μ membrane filter
- [ ] PF: Pre-filtered w/45 μ membrane filter

- [ ] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

Water level: 12.41

Discharge: 7 gallons

Sample type: GRAB

pH(00400): 7.02

Conductivity (Uncorrected): 4480 μmho

Water Temp. (00010): 25°C

Conductivity at 25° C: μmho

FIELD COMMENTS:

slightly turbid, strong HC like odor, brown, greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[x] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LABS Contract No.

OCD Sample No. 8907261424

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1424	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: MW-6

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+123

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 V12ls

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 μ membrane filter
- [ ] PF: Pre-filtered w/45 μ membrane filter

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

Water level: 12.41

Discharge: 7 gallons

Sample type: GRAB

pH(00400): 7.02

Conductivity (Uncorrected): 4400 μmho

Water Temp. (00010): 25°C

Conductivity at 25° C: μmho

- [ ] NA: No acid added
- [x] A: HCL
- [x] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, strong Hc like odor, brown greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[x] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LABS Contract No.

OCD Sample No. 8907261424

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1424	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: MW-6

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+123

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400): 7.02

Water Temp. (00010): 25°C

Water level: 12.41

Discharge: 7 gallons

Sample type: GRAB

Conductivity (Uncorrected): 4400 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 vials

☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, strong H2S like odor, brown greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LABS Contract No. 78-52/.07-013

OCD Sample No. 8907261053 149762

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1053	BOYER, ENGLERT /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: MW-7

Collection Site Description

Township, Range, Section, Tract: 17S+26E+12+2213

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.05

Water Temp. (00010) 22°C

Water level 7.61

Discharge 6.5+ gallons

Sample type GRAB

Conductivity (Uncorrected) 8250 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 2 vials

☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☐ NA: No acid added
☒ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, strong He like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

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ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 8907261053

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1053	Boyer, /OCD

SITE INFORMATION

Sample location NAVAJO MW-2

Collection Site Description

Township, Range, Section, Tract: 17 S 26 E 12 2 2 3

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.05

Water Temp. (00010) 22°C

Water level 7.61

Discharge 6.5+ gallons

Sample type GRAB

Conductivity (Uncorrected) 8250 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 5 vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, strong tk like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab _____ Contract No. _____

OCD Sample No.

Collection Date	Collection Time	Collected by—Person/Agency
		/OCD

SITE INFORMATION

Sample location

Collection Site Description

Township, Range, Section, Tract: 17S 26E 12 2 2 3

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- ☐ **NF:** Whole sample (Non-filtered)
- ☐ **F:** Filtered in field with 0.45 μ membrane filter
- ☐ **PF:** Pre-filtered w/45 μ membrane filter

- ☐ **NA:** No acid added
- ☐ **A:** HCL
- ☐ **A:** 2ml H_2SO_4/L added
- ☐ **A:** 5ml conc. HNO_3 added
- ☐ **A:** 4ml fuming HNO_3 added

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

Water level: 7.61

Discharge: 6.5+ gallons

Sample type: GRAB

pH(00400): 7.05

Conductivity (Uncorrected): 8250 μmho

Water Temp. (00010): 22°C

Conductivity at 25° C: μmho

FIELD COMMENTS:

clear water, strong Hc like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☒ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER _____	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LAB Contract No. 78-521.07-013

OCD Sample No. 89072 149763

Collection Date	Collection Time	Collected by—Person/Agency
2/26/89	1545	BOYER /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: PIPE Outlet

Collection Site Description: Taken from end of grate

Township, Range, Section, Tract: 17S 26E 12

SEND FINAL REPORT TO: ENVIRONMENTAL BUREAU, NM OIL CONSERVATION DIVISION, PO Box 2088, Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

Water level:

Discharge:

Sample type: GRAB

pH(00400): 9.47

Conductivity (Uncorrected): 3870 µmho

Water Temp. (00010): 45°C

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 1

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

Turbid, no floating product, strong odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☒ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab [illegible] Contract No: [illegible]

OCD Sample No. [illegible]

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1545	[illegible] /OCD

SITE INFORMATION

Sample location [illegible]

Collection Site Description

Taken from end of grate

Township, Range, Section, Tract: 17S 26E 12 -1

SEND FINAL REPORT TO:
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400)

Water Temp. (00010)

Water level

Discharge

Sample type

Conductivity (Uncorrected) µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: [illegible]

☐ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

Turbid, no floating product, strong odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab _____ Contract No. _____

OCD Sample No.

Collection Date	Collection Time	Collected by —Person/Agency
		/OCD

SITE INFORMATION

Sample location

Collection Site Description

taken from end of grate

Township, Range, Section, Tract: 17S 26E 12 21

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400)

Water Temp. (00010)

Water level

Discharge

Sample type 1B

Conductivity (Uncorrected) µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted:

☐ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

Turbid, no floating product, strong odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER _____	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab Ana LAB Contract No. 78-521-07-013

OCD Sample No. 9707261517 149784

Collection Date	Collection Time	Collected by—Person/Agency
[illegible]	[illegible]	Bower, Englert /OCD

SITE INFORMATION

Sample location Refinery Pa

Collection Site Description

Township, Range, Section, Tract: 17S 26E 01 444

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400)

Water Temp. (00010) 36 C

Water level —

Discharge —

Sample type GRAB

Conductivity (Uncorrected) 8200 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 3 bottles

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

flowing river water, organic odor
very low flow

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	As	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab [illegible] Contract No. [illegible]

OCD Sample No. [illegible]

Collection Date	Collection Time	Collected by —Person/Agency
9/26/93	1510	[illegible] /OCD

SITE INFORMATION

Sample location [illegible]

Collection Site Description

Township, Range, Section, Tract: 17S 26E 01 444

SEND FINAL REPORT TO ▶
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 3 vials

- ☐ **NF:** Whole sample (Non-filtered)
- ☐ **F:** Filtered in field with 0.45 μ membrane filter
- ☐ **PF:** Pre-filtered w/45 μ membrane filter

- ☐ **NA:** No acid added
- ☑ **A:** HCL
- ☐ **A:** 2ml H_2SO_4/L added
- ☐ **A:** 5ml conc. HNO_3 added
- ☐ **A:** 4ml fuming HNO_3 added

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

Water level	—
Discharge	—
Sample type	[illegible]
pH(00400)	[illegible]
Conductivity (Uncorrected)	[illegible] μmho
Water Temp. (00010)	[illegible]
Conductivity at 25° C	μmho

FIELD COMMENTS: [illegible]

flowing river water, organic odor
very low flow

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☑ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☑ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LABS Contract No. 78-54.07-013

OCD Sample No. 8907261503 149765

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1503	Boyer, [illegible] /OCD

SITE INFORMATION

Sample location [illegible]

Collection Site Description

ponded area on west bank of Pecos

Township, Range, Section, Tract: 17S+26E+01+444

SEND FINAL REPORT TO ▸

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400)

Water Temp. (00010)

Water level

Discharge

Sample type GRAB

Conductivity (Uncorrected) µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: [illegible]

☐ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☒ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

Organic sheen on water, slight Hc like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LABS Contract No.

OCD Sample No. 8907261503

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1503	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: RIVER POOL

Collection Site Description: ~~West bank~~, ponded area on west bank of Pecos

Township, Range, Section, Tract: 17S+26E+01+444

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

Water level

Discharge

Sample type: GRAB

pH(00400)

Conductivity (Uncorrected) µmho

Water Temp. (00010)

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☒ **A:** HCL
☒ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

Organic scum on water, slight Hc like odor.

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No. 78-521,87-013

OCD Sample No. 8907270806 149766

Collection Date	Collection Time	Collected by —Person/Agency
7/27/89	0806	Anderson /OCD

SITE INFORMATION

Sample location D/S WASH water

Collection Site Description

Sample from valve at base of waste water tank North of wash pad.

Township, Range, Section, Tract: | | | + | | + | + | | |

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400)

Water Temp. (00010)

Water level

Discharge

Sample type GRAB

Conductivity (Uncorrected) µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 Vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LAB Contract No. 78-521.07-013

OCD Sample No. 8907271749

149767

Collection Date	Collection Time	Collected by —Person/Agency
7/27/89	1749	Boyer /OCD

SITE INFORMATION

Sample location: NAVATO REFINERY: PECOS RIVER @ BRIDGE

Collection Site Description: Sample from approx 100 ft upstream from Highway 82 Bridge

Township, Range, Section, Tract: 17S-27E-18-11

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted:

- ☐ NF: Whole sample (Non-filtered)
- ☐ F: Filtered in field with 0.45 μ membrane filter
- ☐ PF: Pre-filtered w/45 μ membrane filter

- ☐ NA: No acid added
- ☐ A: HCL
- ☐ A: 2ml H_2SO_4/L added
- ☐ A: 5ml conc. HNO_3 added
- ☐ A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

- ☐ Bailed ☐ Pump
- ☒ Dipped ☐ Tap

Water level

Discharge

Sample type GRAB

Conductivity (Uncorrected) μmho

Conductivity at 25° C μmho

pH(00400)

Water Temp. (00010)

FIELD COMMENTS:

free flowing river water

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab AMA-LAB Contract No.

OCD Sample No. 8907271749

Collection Date	Collection Time	Collected by—Person/Agency
7/27/89	1749	BoyER /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: PECOS RIVER @ BRIDGE

Collection Site Description

Sample taken approx 100 ft upstream from US 82 bridge

Township, Range, Section, Tract: 17S+27E+18+11

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400)

Water Temp. (00010)

Water level

Discharge

Sample type GRAB

Conductivity (Uncorrected) µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 VIALS

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

free flowing river water

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab _____ Contract No. 78-521.07-013

OCD Sample No. 149778

Collection Date	Collection Time	Collected by —Person/Agency
2/25/00	1825	[illegible] /OCD

SITE INFORMATION

Sample location: Navajo [illegible] Energy: East Pond

Collection Site Description: East side opposite OCD #7 well

Township, Range, Section, Tract: 17S 26E 01 4

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400)

Water Temp. (00010)

Water level: 7.61

Discharge: 6.5 + gallons

Sample type

Conductivity (Uncorrected) µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 3 minerals

☐ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, strong HC like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER _____	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LAB Contract No.

OCD Sample No. 890725 1829

Collection Date	Collection Time	Collected by —Person/Agency
7/25/89	1829	Boyer /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY + EAST Pond 3

Collection Site Description: East Side opposite OCD #7 well

Township, Range, Section, Tract: 17 S 26 E 01 4 - -

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 vials

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 μ membrane filter
- [ ] PF: Pre-filtered w/45 μ membrane filter

- [x] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

- [ ] Bailed
- [ ] Pump
- [x] Dipped
- [ ] Tap

Water level: 7.61

Discharge: 6.5+ gallons

Sample type: GRAB

pH(00400):

Conductivity (Uncorrected): 7160 μmho

Water Temp. (00010): 26.5°C

Conductivity at 25° C: μmho

FIELD COMMENTS:

clear water, strong Hc like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[x] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[x] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

Extra (Navajo)

Inter-Mountain Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 8907261257
SITE: MW-3
LAB NO: F1830

DATE REPORTED: 08/22/89
DATE EXTRACTED: 08/07/89
DATE RECEIVED: 08/02/89
DATE COLLECTED: 07/26/89

Analysis Requested: Purgeable halocarbons in water.

Parameter	Concentration	Units
Bromobenzene	ND (1.0)	ug/l
Bromodichloromethane	ND (1.0)	ug/l
Bromoform	ND (1.0)	ug/l
Carbon Tetrachloride	ND (1.0)	ug/l
Chlorobenzene	ND (1.0)	ug/l
Chloroethane	ND (1.0)	ug/l
Chloroform	ND (1.0)	ug/l
Chloromethane	ND (1.0)	ug/l
Dibromochloromethane	ND (1.0)	ug/l
Dibromomethane	ND (1.0)	ug/l
1,2-Dichlorobenzene	ND (1.0)	ug/l
1,3-Dichlorobenzene	ND (1.0)	ug/l
1,4-Dichlorobenzene	ND (1.0)	ug/l
Dichlorodifluoromethane	ND (1.0)	ug/l
1,1-Dichloroethane	ND (1.0)	ug/l
1,2-Dichloroethane	ND (1.0)	ug/l
1,1-Dichloroethene	ND (1.0)	ug/l
trans-1,2-Dichloroethene	ND (1.0)	ug/l
1,2-Dichloropropane	ND (1.0)	ug/l
1,3-Dichloropropylene	ND (1.0)	ug/l
2,2-Dichloropropane	ND (1.0)	ug/l
Dichloromethane	ND (1.0)	ug/l
1,1,1,2-Tetrachloroethane	ND (1.0)	ug/l
1,1,2,2-Tetrachloroethane	ND (1.0)	ug/l
Tetrachloroethene	ND (1.0)	ug/l
1,1,1-Trichloroethane	ND (1.0)	ug/l
1,1,2-Trichloroethane	ND (1.0)	ug/l
Trichloroethene	ND (1.0)	ug/l
Trichlorofluoromethane	ND (1.0)	ug/l
1,2,3-Trichloropropane	ND (1.0)	ug/l

Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

Benzyl Chloride	ND	(1.0)	ug/l
bis(2-chloroethoxy)methane	ND	(1.0)	ug/l
bis(2-Cloroisopropyl)ether	ND	(1.0)	ug/l
Bromomethane	ND	(1.0)	ug/l
Chloracetaldehyde	ND	(1.0)	ug/l
1-Chlorohexane	ND	(1.0)	ug/l
1-Chloroethyl Vinyl Ether	ND	(1.0)	ug/l
Chloromethyl methyl ether	ND	(1.0)	ug/l
Chlorotoluene	ND	(1.0)	ug/l
1,3-Dichloropropene	ND	(1.0)	ug/l

Method:
8010 Halogenated Volatile Organics, SW-846, USEPA (1982).

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

C. Neal Schaeffer
Senior Chemist

Inter-Mountain Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
SAMPLE: 8907261257
SITE: MW-3
LAB NO: F1830

DATE REPORTED: 08/21/89
DATE RECEIVED: 07/31/89
DATE COLLECTED: 07/26/89

Lab pH	8.05
Lab Conductivity, umhos/cm	7877
Lab resistivity, ohm-m	1.2695
Total Dissolved Solids (180), mg/l	7082
Total Dissolved Solids (calc), mg/l	6776
Total Alkalinity as CaCO3, mg/l	316.68
Total Acidity as CaCO3, mg/l	0.00
Total Hardness as CaCO3, mg/l	2701.65
Sodium Absorption Ratio	10.07
Fluoride, mg/l	2.75

	mg/l	meq/l
Bicarbonate as HCO3	386.35	6.33
Carbonate as CO3	0.00	0.00
Chloride	1265.57	35.70
Sulfate	3218.75	67.06
Calcium	605.61	30.22
Magnesium	289.57	23.81
Potassium	3.70	0.09
Sodium	1203.00	52.33
Major Cations		106.45
Major Anions		109.09
Cation/Anion Difference		1.22 %

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SANTA FE

Trace metals (Dissolved Concentration), mg/l

Aluminum	0.10	Lead	<0.02
Arsenic	0.079	Manganese	4.07
Boron	1.16	Molybdenum	0.05
Barium	<0.50	Nickel	<0.01
Cadmium	<0.002	Selenium	<0.005
Chromium	0.02	Silicon	7.7
Copper	0.03	Zinc	<0.01
Iron	1.70	Uranium	<0.10
Silver	<0.01	Titanium	<0.05
Cobalt	<0.01		

C. Neal Schaeffer
Senior Chemist

Inter-Mountain
Laboratories, Inc.

2508 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 8907261221
SITE: MW-4
LAB NO: F1829

DATE REPORTED: 08/22/89
DATE EXTRACTED: 08/07/89
DATE RECEIVED: 08/02/89
DATE COLLECTED: 07/26/89

Analysis Requested: Purgeable halocarbons in water.

Parameter	Concentration	Units
Bromobenzene	ND (1.0)	ug/l
Bromodichloromethane	ND (1.0)	ug/l
Bromoform	ND (1.0)	ug/l
Carbon Tetrachloride	ND (1.0)	ug/l
Chlorobenzene	ND (1.0)	ug/l
Chloroethane	ND (1.0)	ug/l
Chloroform	ND (1.0)	ug/l
Chloromethane	ND (1.0)	ug/l
Dibromochloromethane	ND (1.0)	ug/l
Dibromomethane	ND (1.0)	ug/l
1,2-Dichlorobenzene	ND (1.0)	ug/l
1,3-Dichlorobenzene	ND (1.0)	ug/l
1,4-Dichlorobenzene	ND (1.0)	ug/l
Dichlorodifluoromethane	ND (1.0)	ug/l
1,1-Dichloroethane	ND (1.0)	ug/l
1,2-Dichloroethane	ND (1.0)	ug/l
1,1-Dichloroethene	ND (1.0)	ug/l
trans-1,2-Dichloroethene	ND (1.0)	ug/l
1,2-Dichloropropane	ND (1.0)	ug/l
1,3-Dichloropropylene	ND (1.0)	ug/l
2,2-Dichloropropane	ND (1.0)	ug/l
Dichloromethane	ND (1.0)	ug/l
1,1,1,2-Tetrachloroethane	ND (1.0)	ug/l
1,1,2,2-Tetrachloroethane	ND (1.0)	ug/l
Tetrachloroethene	ND (1.0)	ug/l
1,1,1-Trichloroethane	ND (1.0)	ug/l
1,1,2-Trichloroethane	ND (1.0)	ug/l
Trichloroethene	ND (1.0)	ug/l
Trichlorofluoromethane	ND (1.0)	ug/l
1,2,3-Trichloropropane	ND (1.0)	ug/l

Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

Benzyl Chloride	ND	(1.0)	ug/l
bis(2-chloroethoxy)methane	ND	(1.0)	ug/l
bis(2-Cloroisopropyl)ether	ND	(1.0)	ug/l
Bromomethane	ND	(1.0)	ug/l
Chloracetaldehyde	ND	(1.0)	ug/l
1-Chlorohexane	ND	(1.0)	ug/l
1-Chloroethyl Vinyl Ether	ND	(1.0)	ug/l
Chloromethyl methyl ether	ND	(1.0)	ug/l
Chlorotoluene	ND	(1.0)	ug/l
1,3-Dichloropropene	ND	(1.0)	ug/l

Method:
8010 Halogenated Volatile Organics, SW-846, USEPA (1982).

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

C. Neal Schaeffer
Senior Chemist

Inter-Mountain Laboratories, Inc.

2508 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 8907261135
SITE: MW-5
LAB NO: F1828

DATE REPORTED: 08/22/89
DATE EXTRACTED: 08/07/89
DATE RECEIVED: 08/02/89
DATE COLLECTED: 07/26/89

Analysis Requested: Purgeable halocarbons in water.

Parameter	Concentration	Units
Bromobenzene	ND (1.0)	ug/l
Bromodichloromethane	ND (1.0)	ug/l
Bromoform	ND (1.0)	ug/l
Carbon Tetrachloride	ND (1.0)	ug/l
Chlorobenzene	ND (1.0)	ug/l
Chloroethane	ND (1.0)	ug/l
Chloroform	ND (1.0)	ug/l
Chloromethane	ND (1.0)	ug/l
Dibromochloromethane	ND (1.0)	ug/l
Dibromomethane	ND (1.0)	ug/l
1,2-Dichlorobenzene	ND (1.0)	ug/l
1,3-Dichlorobenzene	ND (1.0)	ug/l
1,4-Dichlorobenzene	ND (1.0)	ug/l
Dichlorodifluoromethane	ND (1.0)	ug/l
1,1-Dichloroethane	ND (1.0)	ug/l
1,2-Dichloroethane	ND (1.0)	ug/l
1,1-Dichloroethene	ND (1.0)	ug/l
trans-1,2-Dichloroethene	ND (1.0)	ug/l
1,2-Dichloropropane	ND (1.0)	ug/l
1,3-Dichloropropylene	ND (1.0)	ug/l
2,2-Dichloropropane	ND (1.0)	ug/l
Dichloromethane	ND (1.0)	ug/l
1,1,1,2-Tetrachloroethane	ND (1.0)	ug/l
1,1,2,2-Tetrachloroethane	ND (1.0)	ug/l
Tetrachloroethene	ND (1.0)	ug/l
1,1,1-Trichloroethane	ND (1.0)	ug/l
1,1,2-Trichloroethane	ND (1.0)	ug/l
Trichloroethene	ND (1.0)	ug/l
Trichlorofluoromethane	ND (1.0)	ug/l
1,2,3-Trichloropropane	ND (1.0)	ug/l

Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

Benzyl Chloride	ND	(1.0)	ug/l
bis(2-chloroethoxy)methane	ND	(1.0)	ug/l
bis(2-Cloroisopropyl)ether	ND	(1.0)	ug/l
Bromomethane	ND	(1.0)	ug/l
Chloracetaldehyde	ND	(1.0)	ug/l
1-Chlorohexane	ND	(1.0)	ug/l
1-Chloroethyl Vinyl Ether	ND	(1.0)	ug/l
Chloromethyl methyl ether	ND	(1.0)	ug/l
Chlorotoluene	ND	(1.0)	ug/l
1,3-Dichloropropene	ND	(1.0)	ug/l

Method:
8010 Halogenated Volatile Organics, SW-846, USEPA (1982).

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

C. Neal Schaeffer
Senior Chemist

Inter-Mountain Laboratories, Inc.

2508 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 8907261424
SITE: MW-6
LAB NO: F1827

DATE REPORTED: 08/22/89
DATE EXTRACTED: 08/07/89
DATE RECEIVED: 08/02/89
DATE COLLECTED: 07/26/89

Analysis Requested: Purgeable halocarbons in water.

Parameter	Concentration	Units
Bromobenzene	ND (1.0)	ug/l
Bromodichloromethane	ND (1.0)	ug/l
Bromoform	ND (1.0)	ug/l
Carbon Tetrachloride	ND (1.0)	ug/l
Chlorobenzene	ND (1.0)	ug/l
Chloroethane	ND (1.0)	ug/l
Chloroform	ND (1.0)	ug/l
Chloromethane	ND (1.0)	ug/l
Dibromochloromethane	ND (1.0)	ug/l
Dibromomethane	ND (1.0)	ug/l
1,2-Dichlorobenzene	ND (1.0)	ug/l
1,3-Dichlorobenzene	ND (1.0)	ug/l
1,4-Dichlorobenzene	ND (1.0)	ug/l
Dichlorodifluoromethane	ND (1.0)	ug/l
1,1-Dichloroethane	ND (1.0)	ug/l
1,2-Dichloroethane	ND (1.0)	ug/l
1,1-Dichloroethene	ND (1.0)	ug/l
trans-1,2-Dichloroethene	ND (1.0)	ug/l
1,2-Dichloropropane	ND (1.0)	ug/l
1,3-Dichloropropylene	ND (1.0)	ug/l
2,2-Dichloropropane	ND (1.0)	ug/l
Dichloromethane	ND (1.0)	ug/l
1,1,1,2-Tetrachloroethane	ND (1.0)	ug/l
1,1,2,2-Tetrachloroethane	ND (1.0)	ug/l
Tetrachloroethene	ND (1.0)	ug/l
1,1,1-Trichloroethane	ND (1.0)	ug/l
1,1,2-Trichloroethane	ND (1.0)	ug/l
Trichloroethene	ND (1.0)	ug/l
Trichlorofluoromethane	ND (1.0)	ug/l
1,2,3-Trichloropropane	ND (1.0)	ug/l

Inter-Mountain
Laboratories, Inc.

2508 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

Benzyl Chloride	ND	(1.0)	ug/l
bis(2-chloroethoxy)methane	ND	(1.0)	ug/l
bis(2-Cloroisopropyl)ether	ND	(1.0)	ug/l
Bromomethane	ND	(1.0)	ug/l
Chloracetaldehyde	ND	(1.0)	ug/l
1-Chlorohexane	ND	(1.0)	ug/l
1-Chloroethyl Vinyl Ether	ND	(1.0)	ug/l
Chloromethyl methyl ether	ND	(1.0)	ug/l
Chlorotoluene	ND	(1.0)	ug/l
1,3-Dichloropropene	ND	(1.0)	ug/l

Method:
8010 Halogenated Volatile Organics, SW-846, USEPA (1982).

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

C. Neal Schaeffer
Senior Chemist

Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 8907251553
SITE: OCD-8
LAB NO: F1825

DATE REPORTED: 08/22/89
DATE EXTRACTED: 08/07/89
DATE RECEIVED: 08/02/89
DATE COLLECTED: 07/25/89

Analysis Requested: Purgeable halocarbons in water.

Parameter	Concentration	Units
Bromobenzene	ND (1.0)	ug/l
Bromodichloromethane	ND (1.0)	ug/l
Bromoform	ND (1.0)	ug/l
Carbon Tetrachloride	ND (1.0)	ug/l
Chlorobenzene	ND (1.0)	ug/l
Chloroethane	ND (1.0)	ug/l
Chloroform	ND (1.0)	ug/l
Chloromethane	ND (1.0)	ug/l
Dibromochloromethane	ND (1.0)	ug/l
Dibromomethane	ND (1.0)	ug/l
1,2-Dichlorobenzene	ND (1.0)	ug/l
1,3-Dichlorobenzene	ND (1.0)	ug/l
1,4-Dichlorobenzene	ND (1.0)	ug/l
Dichlorodifluoromethane	ND (1.0)	ug/l
1,1-Dichloroethane	ND (1.0)	ug/l
1,2-Dichloroethane	ND (1.0)	ug/l
1,1-Dichloroethene	ND (1.0)	ug/l
trans-1,2-Dichloroethene	ND (1.0)	ug/l
1,2-Dichloropropane	ND (1.0)	ug/l
1,3-Dichloropropylene	ND (1.0)	ug/l
2,2-Dichloropropane	ND (1.0)	ug/l
Dichloromethane	ND (1.0)	ug/l
1,1,1,2-Tetrachloroethane	ND (1.0)	ug/l
1,1,2,2-Tetrachloroethane	ND (1.0)	ug/l
Tetrachloroethene	ND (1.0)	ug/l
1,1,1-Trichloroethane	ND (1.0)	ug/l
1,1,2-Trichloroethane	ND (1.0)	ug/l
Trichloroethene	ND (1.0)	ug/l
Trichlorofluoromethane	ND (1.0)	ug/l
1,2,3-Trichloropropane	ND (1.0)	ug/l

Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

Benzyl Chloride	ND	(1.0)	ug/l
bis(2-chloroethoxy)methane	ND	(1.0)	ug/l
bis(2-Cloroisopropyl)ether	ND	(1.0)	ug/l
Bromomethane	ND	(1.0)	ug/l
Chloracetaldehyde	ND	(1.0)	ug/l
1-Chlorohexane	ND	(1.0)	ug/l
1-Chloroethyl Vinyl Ether	ND	(1.0)	ug/l
Chloromethyl methyl ether	ND	(1.0)	ug/l
Chlorotoluene	ND	(1.0)	ug/l
1,3-Dichloropropene	ND	(1.0)	ug/l

Method:
8010 Halogenated Volatile Organics, SW-846, USEPA (1982).

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

C. Neal Schaeffer
Senior Chemist

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab [illegible] Contract No. 78-521, 07-013

OCD Sample No. [illegible] 149748

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1204	Boyer, E. [illegible] OCD

SITE INFORMATION

Sample location Navajo Refinery

Collection Site Description

Township, Range, Section, Tract: 17S 26E 06 3

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400)

Water Temp. (00010) 20°C

Water level 12.64

Discharge 6 gallons

Sample type

Conductivity (Uncorrected) 10,000 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 3 wells

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS: [illegible]

clear water, no odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-1-AO Contract No.

OCD Sample No. 8907251204

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1204	Bayse /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY

Collection Site Description

Township, Range, Section, Tract: 17S 26E 06

SEND FINAL REPORT TO ▸

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.05

Water Temp. (00010) 21°C

Water level 12.64

Discharge 6 gallons

Sample type G.R.A.

Conductivity (Uncorrected) 12,9[illegible] µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 Vials

☐ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, no odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LABS Contract No. 78-521.07-013

OCD Sample No. 8907251126

149747

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1126	Boyer, Engiert /OCD

SITE INFORMATION

Sample location NAVAGO REFINERY OCD-3

Collection Site Description

Township, Range, Section, Tract: 17S+27E+06+3

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.04

Water Temp. (00010) 22° C

Water level 12.90

Discharge 6 gallons

Sample type GRAB

Conductivity (Uncorrected) 8900 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☒ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

turbid water, no odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA - LABS Contract No. 78-521-07-013

OCD Sample No. 8907251126 149747

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1126	BOYER, ENGLERT /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY OCD-3

Collection Site Description

Township, Range, Section, Tract: 17S+27E+06+3

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.04

Water Temp. (00010) 22°C

Water level 12.90

Discharge 6 gallons

Sample type GRAB

Conductivity (Uncorrected) 8900 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

turbid water, no odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	As	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No. 78-521.07-013

OCD Sample No. 8907891333

149750

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1333	Boyer, Englert /OCD

SITE INFORMATION

Sample location NAVAJO Refinery - OCD-5

Collection Site Description

Township, Range, Section, Tract: 17 S 27 E 06 3

SEND FINAL REPORT TO ▸
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

Water level 11.01

Discharge 6+ gallons

Sample type GRAB

pH(00400) 7.01

Conductivity (Uncorrected) 9250 µmho

Water Temp. (00010) 19°C

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 Vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☒ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, slight Hc odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 8907251333

Collection Date	Collection Time	Collected by—Person/Agency
07/25/89	1333	Boyer, Englert /OCD

SITE INFORMATION

Sample location NAVATO REFINERY - OCD-5

Collection Site Description

Township, Range, Section, Tract: 17S-27E-03

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

Water level 11.01

Discharge 6+ gallons

Sample type GRAB

pH(00400) 7.01

Conductivity (Uncorrected) 9250 µmho

Water Temp. (00010) 19°C

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, slight Hc odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No. 78-521.07-013

OCD Sample No. 8907251354 149751

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1354	Boyer, Englert /OCD

SITE INFORMATION

Sample location NAVAJO Refinery: OCD-6

Collection Site Description

Township, Range, Section, Tract: 17S+27E+06+3-1

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 6.95

Water Temp. (00010) 18°C

Water level 11.36

Discharge 8 gallons

Sample type GRAB

Conductivity (Uncorrected) 8500 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 Vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

turbid water, H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab 85 Contract No.

OCD Sample No.

Collection Date	Collection Time	Collected by —Person/Agency
		/OCD

SITE INFORMATION

Sample location

Collection Site Description

Township, Range, Section, Tract: 17 S 27 E 06 3

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted:

- ☐ **NF:** Whole sample (Non-filtered)
- ☐ **F:** Filtered in field with 0.45 μ membrane filter
- ☐ **PF:** Pre-filtered w/45 μ membrane filter

- ☐ **NA:** No acid added
- ☐ **A:** HCL
- ☐ **A:** 2ml H_2SO_4/L added
- ☐ **A:** 5ml conc. HNO_3 added
- ☐ **A:** 4ml fuming HNO_3 added

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

Water level 11.36

Discharge 8 gal

Sample type

pH(00400) 6.95

Conductivity (Uncorrected) μmho

Water Temp. (00010) 18 C

Conductivity at 25° C μmho

FIELD COMMENTS:

turbid water, Hc like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No. 78-521.07-013

OCD Sample No. 8907251613

149752

Collection Date	Collection Time	Collected by —Person/Agency
07 25 89	1613	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO Refinery + OCD-7

Collection Site Description:

Township, Range, Section, Tract: 17S 26E 01 4

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400): 7

Water Temp. (00010): 19°C

Water level: 7.56

Discharge: ~~8~~ gallons 5

Sample type: GRAB

Conductivity (Uncorrected): 6000 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 Vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µmembrane filter
☐ **PF:** Pre-filtered w/45 µmembrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

turbid, H2S like odor.

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 8907251613

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1613	Bayer, Englert /OCD

SITE INFORMATION

Sample location NAVAJO Refinery - OCD-7

Collection Site Description

Township, Range, Section, Tract: 17S 26E 01 4

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7

Water Temp. (00010) 19°C

Water level 7.56

Discharge 5 gallons

Sample type GRAB

Conductivity (Uncorrected) 6000 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 Vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☒ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

Turbid, H2S like odor.

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LABS Contract No. 78-521.07-613

OCD Sample No. 8907251553 149753

Collection Date	Collection Time	Collected by—Person/Agency
07/25/89	1553	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO Refinery: OCD-8

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+2

SEND FINAL REPORT TO ▸
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400): 6.91

Water Temp. (00010): 21°C

Water level: 8.22

Discharge: 7 gallons

Sample type: GRAB

Conductivity (Uncorrected): 6800 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 2 Vials

- [x] **NF:** Whole sample (Non-filtered)
- [ ] **F:** Filtered in field with 0.45 µ membrane filter
- [ ] **PF:** Pre-filtered w/45 µ membrane filter

- [ ] **NA:** No acid added
- [x] **A:** HCL
- [ ] **A:** 2ml H_2SO_4/L added
- [ ] **A:** 5ml conc. HNO_3 added
- [ ] **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[x] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab _____ Contract No. _____

OCD Sample No. 1953

Collection Date	Collection Time	Collected by —Person/Agency
		/OCD

SITE INFORMATION

Sample location: NAVATO Refinery: OCD-8

Collection Site Description

Township, Range, Section, Tract: 17 S 26 E 12 -

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NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400)

Water Temp. (00010) 21°C

Water level 8.22

Discharge 7 gallons

Sample type

Conductivity (Uncorrected) µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted:

☐ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µmembrane filter
☐ **PF:** Pre-filtered w/45 µmembrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, He like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No. 78-521.07-013

OCD Sample No. 8907251736

149754

Collection Date	Collection Time	Collected by—Person/Agency
07/25/89	1736	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY : OCD-1

Collection Site Description:

Township, Range, Section, Tract: 17S 26E 01 4

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400): 7.07

Water Temp. (00010): 21°C

Water level: 10.49

Discharge: 8 gallons

Sample type: GRAB

Conductivity (Uncorrected): 8000 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 Vials

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 µmembrane filter
- [ ] PF: Pre-filtered w/45 µmembrane filter

- [ ] NA: No acid added
- [x] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

foamy, turbid water, strong H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[x] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab: ANA-LAB Contract No.:

OCD Sample No.: 890725173b

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1736	Boyer, Engler- /OCD

SITE INFORMATION

Sample location: Refinery - OCD-1

Collection Site Description:

Township, Range, Section, Tract: 17 S+2 6 E+D 1+4

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400): 7.07

Water Temp. (00010): 21°C

Water level: 10.49

Discharge: 8 gallons

Sample type:

Conductivity (Uncorrected): 2000 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 2 vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

foamy, turbid water, strong H2 like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No. 78-521-07-013

OCD Sample No. 8907251728 149755

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1728	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY : OCD-2

Collection Site Description:

Township, Range, Section, Tract: 17S-26E-01-H

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 6.97

Water Temp. (00010) 19°C

Water level 12.14

Discharge 7 gallons

Sample type GRAB

Conductivity (Uncorrected) 9250 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☒ **A:** HCL
☒ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

turbid water, slight H_2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 8907251728

Collection Date	Collection Time	Collected by —Person/Agency
07 25 89	1728	Boyer, E. /OCD

SITE INFORMATION

Sample location NAVAJO Refiner : OCD-2

Collection Site Description

Township, Range, Section, Tract: 17S 26E 01 - -

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 6.97

Water Temp. (00010) 19°C

Water level 12.16

Discharge 7 gallons

Sample type GRAB

Conductivity (Uncorrected) 9250 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 2 vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

turbid water, slight Hc like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No. 78-521, 87-013

OCD Sample No. 8907260919

149756

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	0919	Boyer; Englert /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: MW-2

Collection Site Description

Township, Range, Section, Tract: 17 S 26 E 01 3 4 4

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.06

Water Temp. (00010) 21°C

Water level 8.64

Discharge 6 gallons

Sample type GRAB

Conductivity (Uncorrected) 7000 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 2 vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, very strong H2 like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab Analab Contract No.

OCD Sample No. 8907260919

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	0919	Boyer, Engelhart /OCD

SITE INFORMATION

Sample location: Navajo Refinery MW-2

Collection Site Description:

Township, Range, Section, Tract: 17S 26E 01 34

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400): 7.2

Water Temp. (00010): 21°C

Water level: 8.64

Discharge: 6 gallons

Sample type: 24hr

Conductivity (Uncorrected): µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 vials

- [x] **NF:** Whole sample (Non-filtered)
- [ ] **F:** Filtered in field with 0.45 µ membrane filter
- [ ] **PF:** Pre-filtered w/45 µ membrane filter

- [ ] **NA:** No acid added
- [x] **A:** HCL
- [ ] **A:** 2ml H_2SO_4/L added
- [ ] **A:** 5ml conc. HNO_3 added
- [ ] **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, very strong H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[x] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA - LAB Contract No. 98-521.07-013

OCD Sample No. 8907261009

149757

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1009	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: MW-1

Collection Site Description:

Township, Range, Section, Tract: 17S 26E 21 1

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400): 6.92

Water Temp. (00010): 21°C

Water level: 11.44'

Discharge: 7 gallons

Sample type: GRAB

Conductivity (Uncorrected): 9800 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

cleared clear water, slight Hc like odor, scum developed on water surface

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 8907261009

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1009	Boyer, Engler /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY MW-1

Collection Site Description

Township, Range, Section, Tract: 17S+26E+12+11

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 6.96

Water Temp. (00010) 21°C

Water level 11.44

Discharge 7 gallons

Sample type GRAB

Conductivity (Uncorrected) 9800 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 2 VOAs

☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☐ NA: No acid added
☒ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, slight H2 ~~SO~~ like odor, scum developed on water surface

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LAB Contract No. 878-521,07-013

OCD Sample No. 890726 1257 189758

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1257	BOYER, ENGELBERT /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY : MW3

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+124

SEND FINAL REPORT TO
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 vials

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 μ membrane filter
- [ ] PF: Pre-filtered w/45 μ membrane filter

- [ ] NA: No acid added
- [x] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400) 6.96

Water Temp. (00010) 16.5°C

Water level 9.22

Discharge 8 gallons

Sample type GRAB

Conductivity (Uncorrected) 5250 μmho

Conductivity at 25° C μmho

FIELD COMMENTS:

slightly turbid, strong H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[x] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LAB Contract No. [illegible]

OCD Sample No. 890726 1257 [illegible]

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	12.57	Boyer, Eng[illegible] /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY [illegible]

Collection Site Description

Township, Range, Section, Tract: 17S+26E+12+24

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) [illegible]

Water Temp. (00010) 16.5°C

Water level 9.22

Discharge 8 gallons

Sample type GRAB

Conductivity (Uncorrected) [illegible] µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: [illegible]

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turpid, strong He like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☒ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA - LAB Contract No.

OCD Sample No. 8907261257

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1257	BOYER, ENGERT /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: MW-3

Collection Site Description

Township, Range, Section, Tract: 17S 26E 12 4

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 6.96

Water Temp. (00010) 16.5°C

Water level 9.22

Discharge 8 gallons

Sample type GRAB

Conductivity (Uncorrected) 5250 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 1

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, strong H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☒ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 900801 1720

Collection Date	Collection Time	Collected by—Person/Agency
8/1/90	1720	ANDERSON/OLSON /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY

Collection Site Description: WINDMILL SOUTH OF WEST END OF EVAP POND

Township, Range, Section, Tract:

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 VIALS + 1 QT

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 μ membrane filter
- [ ] PF: Pre-filtered w/45 μ membrane filter

- [x] NA: No acid added
- [x] A: HCL (1 VIAL)
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

- [ ] Bailed
- [ ] Pump
- [x] Dipped
- [ ] Tap

Water level

Discharge

Sample type

pH(00400)

Conductivity (Uncorrected) μmho

Water Temp. (00010)

Conductivity at 25° C μmho

FIELD COMMENTS:

CLEAN STOCK WATER — LOW DETECTION LIMITS

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☒ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 9007311045

Collection Date	Collection Time	Collected by —Person/Agency
7/31/90	1045	ANDERSON/OLSON /OCD

SITE INFORMATION

Sample location PARABO DISPOSAL

Collection Site Description LIQUID SLUDGE FROM BOTTOM OF TREATING TANK No 210

Township, Range, Section, Tract:

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 MASON JAR

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 μ membrane filter
- [ ] PF: Pre-filtered w/45 μ membrane filter

- [x] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

- [ ] Bailed
- [ ] Pump
- [x] Dipped
- [ ] Tap

Water level —

Discharge —

Sample type GRAB

pH(00400) —

Conductivity (Uncorrected) μmho

Water Temp. (00010) —

Conductivity at 25° C μmho

FIELD COMMENTS: OILY SLUDGE

TCLP FOR BENZENE AND METALS

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	[x]	OTHER TCLP BENZENE & METALS	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 9007301445

Collection Date	Collection Time	Collected by —Person/Agency
7/30/90	1445	ANDERSON/OLSON /OCD

SITE INFORMATION

Sample location AM-BETT TREATING PLANT

Collection Site Description THIEF SAMPLE OF SLUDGE FROM BOTTOM OF THIRD TANK OF 4 TANK BATTERY (3rd FROM NORTH)

NO WATER AVAILABLE

Township, Range, Section, Tract:

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400) —

Water Temp. (00010) —

Water level —

Discharge —

Sample type GRAB

Conductivity (Uncorrected) — μmho

Conductivity at 25° C μmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 MASON JAR

☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 μ membrane filter
☐ PF: Pre-filtered w/45 μ membrane filter

☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS: OILY SLUDGE

TCLP FOR BENZENE AND METALS

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☒	OTHER TCLP BENZENE AND METALS	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 9007301600

Collection Date	Collection Time	Collected by—Person/Agency
7/30/90	1600	ANDERSON/OLSON /OCD

SITE INFORMATION

Sample location PARABO DISPOSAL -

Collection Site Description WATER PHASE FROM TREATING TANK 211

Township, Range, Section, Tract: | | | + | | + | + | | |

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 VIALS

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 μ membrane filter
- [ ] PF: Pre-filtered w/45 μ membrane filter

- [x] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

- [ ] Bailed
- [ ] Pump
- [x] Dipped
- [ ] Tap

Water level

Discharge

Sample type GRAB

pH(00400)

Conductivity (Uncorrected) μmho

Water Temp. (00010)

Conductivity at 25° C μmho

FIELD COMMENTS:

WATER PHASE WILL SEPARATE FROM IRON SULFIDES. ANALYSIS OF WATER PHASE ONLY

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[x] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LABS Contract No.

OCD Sample No. 9007310800

Collection Date	Collection Time	Collected by—Person/Agency
7/31/90	0800	ANDERSON/OLSON /OCD

SITE INFORMATION

Sample location: AA TREATING PLANT

Collection Site Description: WATER PHASE FROM N.E. LOW 500 BBL TANK

Township, Range, Section, Tract: + + +

SEND FINAL REPORT TO:
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [ ] Bailed
- [ ] Pump
- [x] Dipped
- [ ] Tap

pH(00400)

Water Temp. (00010)

Water level

Discharge

Sample type: GRAB

Conductivity (Uncorrected) μmho

Conductivity at 25° C μmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 - VIALS

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 μ membrane filter
- [ ] PF: Pre-filtered w/45 μ membrane filter

- [x] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[x] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 9008011125

Collection Date	Collection Time	Collected by —Person/Agency
8/1/90	1125	ANDERSON/OLSON /OCD

SITE INFORMATION

Sample location: LOCO HILLS DISPOSAL

Collection Site Description: WATER FROM MONITOR WELL MH-12

Township, Range, Section, Tract:

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400): 7

Water Temp. (00010): 25°C

Water level: ~

Discharge:

Sample type: GRAB

Conductivity (Uncorrected): µmho

Conductivity at 25° C: 110,000 µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 VIALS + 1 QT

☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS: APP 6 ft H_2O IN HOLE

BAILED 6 GAL BEFORE SAMPLING - WELL WENT DRY - DID NOT RECOVER - CLEAN WATER

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☒ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

CLEAN WATER - LOW DETECTION LIMITS PLEASE

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LAB Contract No.

OCD Sample No. 9007311400

Collection Date	Collection Time	Collected by—Person/Agency
7/31/90	1400	ANDERSON/OLSON /OCD

SITE INFORMATION

Sample location: LOCO HILLS TREATING PLANT

Collection Site Description: SLUDGE SAMPLE FROM NORTH SEPARATOR PIT

Township, Range, Section, Tract:

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400) —

Water Temp. (00010) —

Water level —

Discharge —

Sample type GRAB

Conductivity (Uncorrected) — μmho

Conductivity at 25° C — μmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 JAR

☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 μ membrane filter
☐ PF: Pre-filtered w/45 μ membrane filter

☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

OILY SLUDGE (PARAFINS)

TCLP FOR BENZENE + METALS

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☒	OTHER TCLP BENZENE + METALS	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LAB Contract No.

OCD Sample No. 9008011640

Collection Date	Collection Time	Collected by —Person/Agency
8/1/90	1640	ANDERSON/OLSON /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY

Collection Site Description DISCHARGE PIPE AT OUTFALL INTO EVAP POND

Township, Range, Section, Tract:

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400)

Water Temp. (00010)

Water level

Discharge

Sample type GRAB

Conductivity (Uncorrected) μmho

Conductivity at 25° C μmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2-VIALS

☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 μ membrane filter
☐ PF: Pre-filtered w/45 μ membrane filter

☐ NA: No acid added
☒ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1818

ANALYSIS REQUEST FORM

Contract Lab Inter-Mountain Contract No.

OCD Sample No. 8907 251736

Collection Date	Collection Time	Collected by —Person/Agency
07 25 89	1736	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY : OCD-1

Collection Site Description:

Township, Range, Section, Tract: 17S 26E 01 A

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400): 7.07

Water Temp. (00010): 21°C

Water level: 10.49

Discharge: 8 gallons

Sample type: GRAB

Conductivity (Uncorrected): 8000 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- [ ] NF: Whole sample (Non-filtered)
- [x] F: Filtered in field with 0.45 µ membrane filter
- [ ] PF: Pre-filtered w/45 µ membrane filter

- [ ] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

foamy, turbid water, strong H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[x] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[x] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[x] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1819

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 890725-1728

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1728	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO Refinery; OCD-2

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+01+4

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400) 6.97

Water Temp. (00010) 19°C

Water level 12.16

Discharge 7 gallons

Sample type GRAB

Conductivity (Uncorrected) 9250 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- [ ] NF: Whole sample (Non-filtered)
- [x] F: Filtered in field with 0.45 µ membrane filter
- [ ] PF: Pre-filtered w/45 µ membrane filter

- [ ] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [x] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

turbid water, slight H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[x] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[x] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[x] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1820

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Labs Contract No.

OCD Sample No. 8907251126

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1126	Boyer, Englert /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY OCD-3

Collection Site Description

Township, Range, Section, Tract: 1 7 S 2 7 E 0 6 3 - -

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- ☐ NF: Whole sample (Non-filtered)
- ☒ F: Filtered in field with 0.45 μ membrane filter
- ☐ PF: Pre-filtered w/45 μ membrane filter

- ☒ NA: No acid added
- ☐ A: HCL
- ☐ A: 2ml H_2SO_4/L added
- ☐ A: 5ml conc. HNO_3 added
- ☐ A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.04

Water Temp. (00010) 22 °C

Water level 12.90

Discharge 6 gallons

Sample type GRAB

Conductivity (Uncorrected) 8900 μmho

Conductivity at 25° C μmho

FIELD COMMENTS:

turbid water, no odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☒	OTHER Floride	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

1821

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab Inter-Mountain Contract No.

OCD Sample No. 890725 1204

Collection Date	Collection Time	Collected by—Person/Agency
07/25/89	1204	Boyer, Englert /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: OCD-4

Collection Site Description

Township, Range, Section, Tract: 17S-27E-06-3

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.05

Water Temp. (00010) 21°C

Water level 12.64

Discharge 6 gallons

Sample type GRAB

Conductivity (Uncorrected) 10,900 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ NF: Whole sample (Non-filtered)
☒ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, no odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☒	OTHER Flouride	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1822

ANALYSIS REQUEST FORM

Contract Lab Inter-Mountain Contract No.

OCD Sample No. 890725 1333

Collection Date	Collection Time	Collected by—Person/Agency
07/25/89	1333	Boyer, Englert /OCD

SITE INFORMATION

Sample location NAVAJO Refinery: OCD-5

Collection Site Description

Township, Range, Section, Tract: 17S+27E+06+3

SEND FINAL REPORT TO: ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.01

Water Temp. (00010) 19°C

Water level 11.01

Discharge 6+ gallons

Sample type GRAB

Conductivity (Uncorrected) 9250 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ NF: Whole sample (Non-filtered)
☒ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, slight Hc odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER Flounde	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1823

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 8907251354

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1354	Boyer, ANDERSON /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: OCD-6

Collection Site Description

Township, Range, Section, Tract: 17S+27E+06+3 - -

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 6.95

Water Temp. (00010) 18°C

Water level 11.36

Discharge 8 gallons

Sample type GRAB

Conductivity (Uncorrected) 8500 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ NF: Whole sample (Non-filtered)
☒ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☐ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☒ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

turbid water, He like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☒ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☒ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☒ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1829

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Lab Contract No.

OCD Sample No. 890725

Collection Date	Collection Time	Collected by—Person/Agency
08/25/89	1613	Bill Englert /OCD

SITE INFORMATION

Sample location Bloomfield Landfarm Cell #7

Collection Site Description

Township, Range, Section, Tract: 17S 26E 01 4

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

Water level 7.56

Discharge 5 gallons

Sample type BAB

pH(00400)

Conductivity (Uncorrected) 2000 µmho

Water Temp. (00010) 19°C

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ NF: Whole sample (Non-filtered)
☒ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

Turbid, H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	C&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☒	OTHER Flouride	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1825

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 8907251553

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1553	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO Refinery : OCD-8

Collection Site Description:

Township, Range, Section, Tract: 1 7 S 2 6 E H 2 2 - -

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 6.91

Water Temp. (00010) 21°C

Water level 8.22

Discharge 7 gallons

Sample type GRAB

Conductivity (Uncorrected) 6800 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 3 Vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☒ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, H2 like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☒ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1825

ANALYSIS REQUEST FORM

Contract Lab INTER Mountain Contract No.

OCD Sample No. 890725 1553

Collection Date	Collection Time	Collected by—Person/Agency
7/25/89	1553	BOYER, ENGLERT /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: OCD-8

Collection Site Description

Township, Range, Section, Tract: 17S 26E 12 -

SEND FINAL REPORT TO
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NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 6.91

Water Temp. (00010) 21°C

Water level ∅ 8.22

Discharge 7 gallons

Sample type GRAB

Conductivity (Uncorrected) 6800 μmho

Conductivity at 25° C μmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted:

☐ **NF:** Whole sample (Non-filtered)
☒ **F:** Filtered in field with 0.45 μ membrane filter
☐ **PF:** Pre-filtered w/45 μ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☒	OTHER Florida	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1836

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 8907261257

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1257	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO Refinery: MW-3

Collection Site Description:

Township, Range, Section, Tract: 1 2 S+2 6 E+1 2+1 2 4

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

Water level: 9.22

Discharge: 8 gallons

Sample type: GRAB

pH(00400): 6.96

Conductivity (Uncorrected): 5250 µmho

Water Temp. (00010): 16.5°C

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 µ membrane filter
- [ ] PF: Pre-filtered w/45 µ membrane filter

- [x] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, strong H_2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☒ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1830

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 8907261257

Collection Date	Collection Time	Collected by —Person/Agency
7 26 89	1257	Boyer, Englert /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: MW3

Collection Site Description

Township, Range, Section, Tract: 17S 26E 12 24

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 6.96

Water Temp. (00010) 16.5°C

Water level 9.22

Discharge 8 gallons

Sample type GRAB

Conductivity (Uncorrected) 5250 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ **NF:** Whole sample (Non-filtered)
☒ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, strong Hc like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☒	OTHER Flow Rate	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1830

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 8907261257

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1257	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: MW3

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+12

SEND FINAL REPORT TO ▶ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 6.96

Water Temp. (00010) 16.5°C

Water level 9.22

Discharge 8 gallons

Sample type GRAB

Conductivity (Uncorrected) 5250 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ NF: Whole sample (Non-filtered)
☒ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☐ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☒ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, strong H_2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☒ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☒ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☒ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☒ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1629

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 8907261221

Collection Date	Collection Time	Collected by —Person/Agency
7 26 89	1221	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY MW-4

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+14 2

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400): 7.04

Water Temp. (00010): 17°C

Water level: 11.84

Discharge: 7 gallons

Sample type: GRAB

Conductivity (Uncorrected): 6000 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 3 Vials

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 µ membrane filter
- [ ] PF: Pre-filtered w/45 µ membrane filter

- [x] NA: No acid added
- [2] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, very strong Hc like odor, brown greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[x] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	[illegible]	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	[illegible]	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1828

ANALYSIS REQUEST FORM

Contract Lab INTER Mountain Contract No.

OCD Sample No. 8907261221

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1221	BOYER, ENGLERT /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY : MW-4

Collection Site Description:

Township, Range, Section, Tract: 17 S+26 E+12+7 42

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NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- ☐ NF: Whole sample (Non-filtered)
- ☒ F: Filtered in field with 0.45 μ membrane filter
- ☐ PF: Pre-filtered w/45 μ membrane filter

- ☐ NA: No acid added
- ☐ A: HCL
- ☐ A: 2ml H_2SO_4/L added
- ☐ A: 5ml conc. HNO_3 added
- ☒ A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

- ☒ Bailed ☐ Pump
- ☐ Dipped ☐ Tap

Water level: 11.84

Discharge: 7 gallons

Sample type: GRAB

pH(00400): 7.04

Conductivity (Uncorrected): 6000 μmho

Water Temp. (00010): 17°C

Conductivity at 25° C: μmho

FIELD COMMENTS:

clear water, very strong Hc like odor, brown greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☒ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☒ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

1828

Contract Lab INTER Mountain Contract No.

OCD Sample No. 8907261135

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1135	BOYER, ENGLERT /OCD

SITE INFORMATION

Sample location NAVATO REFINERY: MW-5 [redacted]

Collection Site Description

Township, Range, Section, Tract: 17 S+26 E+1 2+2 1 4

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 3 Vials

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 μ membrane filter
- [ ] PF: Pre-filtered w/45 μ membrane filter

- [x] NA: No acid added
- [x] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

Water level 8.32

Discharge 6 gallons

Sample type GRAB

pH(00400) 7.04

Conductivity (Uncorrected) 12000 μmho

Water Temp. (00010)

Conductivity at 25° C μmho

FIELD COMMENTS:

clear water, very strong H2S like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[x] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1828

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 890726 1135

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1135	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY MW-5

Collection Site Description:

Township, Range, Section, Tract: 17S 26E 12 1 4

SEND FINAL REPORT TO ▸
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400): 7.04

Water Temp. (00010): 23°C

Water level: 8.32

Discharge: 6 gallons

Sample type: GRAB

Conductivity (Uncorrected): 12,500 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- [ ] NF: Whole sample (Non-filtered)
- [x] F: Filtered in field with 0.45 µ membrane filter
- [ ] PF: Pre-filtered w/45 µ membrane filter

- [x] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, very strong He like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[x] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[x]	OTHER Flouride	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1828

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 8907261135

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1135	BOYER, ENGLERT /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY : MW-5

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+14

SEND FINAL REPORT TO
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400): 7.04

Water Temp. (00010): 23°C

Water level: 8.32

Discharge: 6 gallons

Sample type: GRAB

Conductivity (Uncorrected): 12,500 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 1

- [ ] NF: Whole sample (Non-filtered)
- [x] F: Filtered in field with 0.45 µ membrane filter
- [ ] PF: Pre-filtered w/45 µ membrane filter

- [ ] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [x] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, very strong HC like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[x] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[x] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[x] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1827

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 890726 1424

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1424	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: MW-6

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+12 3

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.02

Water Temp. (00010) 25°C

Water level 12.41

Discharge 7 gallons

Sample type GRAB

Conductivity (Uncorrected) 4400 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, strong He like odor, brown, greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☒ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

1827

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 890726 1424

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1424	Boyer Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: MW-6

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+123

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NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [x] Bailed
- [ ] Pump
- [ ] Dipped
- [ ] Tap

pH(00400): 7.02

Water Temp. (00010): 25°C

Water level: 12.41

Discharge: 7 gallons

Sample type: GR

Conductivity (Uncorrected): µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- [ ] NF: Whole sample (Non-filtered)
- [x] F: Filtered in field with 0.45 µ membrane filter
- [ ] PF: Pre-filtered w/45 µ membrane filter

- [x] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, strong H2S like odor, brown greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[x] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[x]	OTHER Flouride	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1827

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 8907261424

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1424	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY : MW6

Collection Site Description:

Township, Range, Section, Tract: 17S+26E+12+123

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400): 7.02

Water Temp. (00010): 25°C

Water level: 12.41

Discharge: 7 gallons

Sample type: GRAB

Conductivity (Uncorrected): 4400 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ NF: Whole sample (Non-filtered)
☒ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☐ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☒ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

slightly turbid, strong H2S like odor, brown greasy film on pump

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☒ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☒ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☒ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1826

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 8907261053

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1053	Boyer Englert /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY #-7

Collection Site Description

~~East side opposite OCD #7 well~~ AVS

Township, Range, Section, Tract: 17 S 26 E 12 23

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400)

Water Temp. (00010)

Water level 7.61

Discharge 6.5 + gallons

Sample type GRA

Conductivity (Uncorrected) 8.50 mho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water strong He like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☒ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	603	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1826

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 890726 1053

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1053	Boyer, Englert /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: MW-7

Collection Site Description

~~East side opposite OCD #7 well~~

Township, Range, Section, Tract: 17S+2 6E+1 2+2 2 3

SEND FINAL REPORT TO

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NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☒ Bailed ☐ Pump
☐ Dipped ☐ Tap

pH(00400) 7.05

Water Temp. (00010) 22°C

Water level 7.61

Discharge 6.5+ gallons

Sample type GRAB

Conductivity (Uncorrected) 8250 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT— *Check proper boxes*

No. of samples submitted: 1

☐ **NF:** Whole sample (Non-filtered)
☒ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☒ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

clear water, strong Hc like odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☒ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☒ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☒ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT 1815

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab Inter-Mountain Contract No.

OCD Sample No. 8907251224

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1224	Boyer, Englert /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: Windmill

Collection Site Description Pond Windmill

Township, Range, Section, Tract: 17S 26E 12 41

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☒ Pump
☐ Dipped ☐ Tap

pH(00400) 7

Water Temp. (00010) 20 °C

Water level Pumping

Discharge

Sample type GRAB

Conductivity (Uncorrected) 4350 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☒	OTHER Flouride	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT 1816

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 8907261517

Collection Date	Collection Time	Collected by—Person/Agency
7/26/89	1517	Boyer, Englert /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: PECOS RIVER

Collection Site Description:

Township, Range, Section, Tract: 17S 26E 01 444

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400) 7.61

Water Temp. (00010) 30°C

Water level —

Discharge —

Sample type GRAB

Conductivity (Uncorrected) 8200 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted:

☐ NF: Whole sample (Non-filtered)
☒ F: Filtered in field with 0.45 µ membrane filter
☐ PF: Pre-filtered w/45 µ membrane filter

☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H_2SO_4/L added
☐ A: 5ml conc. HNO_3 added
☐ A: 4ml fuming HNO_3 added

FIELD COMMENTS:

flowing river water, organic odor
very low flow

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER Flouride	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1817

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 890726 1545

Collection Date	Collection Time	Collected by —Person/Agency
7/26/89	1545	Boyer /OCD

SITE INFORMATION

Sample location: NAVAJO REFINERY: PIPE Outlet

Collection Site Description: taken from end of grate

Township, Range, Section, Tract: 17 S+2 6E+1 2+2 -+

SEND FINAL REPORT TO: ENVIRONMENTAL BUREAU, NM OIL CONSERVATION DIVISION, PO Box 2088, Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- [ ] Bailed
- [ ] Pump
- [x] Dipped
- [ ] Tap

pH(00400): 7.47

Water Temp. (00010): 15°C

Water level:

Discharge:

Sample type: GRA

Conductivity (Uncorrected): 3 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

- [x] **NF:** Whole sample (Non-filtered)
- [ ] **F:** Filtered in field with 0.45 µ membrane filter
- [ ] **PF:** Pre-filtered w/45 µ membrane filter

- [x] **NA:** No acid added
- [ ] **A:** HCL
- [ ] **A:** 2ml H_2SO_4/L added
- [ ] **A:** 5ml conc. HNO_3 added
- [ ] **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

turbid, no floating product, strong odor

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[ ] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

1817

ANALYSIS REQUEST FORM

Contract Lab Inter Mountain Contract No.

OCD Sample No. 890726 1545

Collection Date	Collection Time	Collected by —Person/Agency
7 26 89	1545	Boyer /OCD

SITE INFORMATION

Sample location: NAVASU REFINERY: Pipe Outlet

Collection Site Description: Taken from end of grate

Township, Range, Section, Tract: 17 S+2 6 E+1 2+2 - -

SEND FINAL REPORT TO ▸
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400): 9.47

Water Temp. (00010): 4.0°C

Water level: —

Discharge: —

Sample type: GRAB

Conductivity (Uncorrected): 3470 µmho

Conductivity at 25° C: µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ **NF:** Whole sample (Non-filtered)
☒ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☒ **NA:** No acid added
☐ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

Turbid, no floating product, strong odor,

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☒	OTHER Fluoride	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA LAB Contract No. 78-521.07-013

OCD Sample No. 8907251224

149749

Collection Date	Collection Time	Collected by—Person/Agency
07/25/89	1224	Boyer, Englert /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: Windmill

Collection Site Description Pond windmill

Township, Range, Section, Tract: 17S 26E 12 41

SEND FINAL REPORT TO ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 Vials

- [x] NF: Whole sample (Non-filtered)
- [ ] F: Filtered in field with 0.45 μ membrane filter
- [ ] PF: Pre-filtered w/45 μ membrane filter

- [x] NA: No acid added
- [ ] A: HCL
- [ ] A: 2ml H_2SO_4/L added
- [ ] A: 5ml conc. HNO_3 added
- [ ] A: 4ml fuming HNO_3 added

SAMPLING CONDITIONS

- [ ] Bailed
- [x] Pump
- [ ] Dipped
- [ ] Tap

Water level Pumping

Discharge

Sample type GRAB

pH(00400) 7

Conductivity (Uncorrected) 4350 μmho

Water Temp. (00010) 20°C

Conductivity at 25° C μmho

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
[ ] 001	VOA	8020	[ ] 013	PHENOL	604	[ ] 026	Cd	7130
[ ] 002	VOA	602	[ ] 014	VOC	8240	[ ] 027	Pb	7421
[x] 003	VOH	8010	[ ] 015	VOC	624	[ ] 028	Hg(L)	7470
[ ] 004	VOH	601	[ ] 016	SVOC	8250	[ ] 031	Se	7740
[ ] 005	SUITE	8010-8020	[ ] 017	SVOC	625	[ ] 032	ICAP	6010
[ ] 006	SUITE	601-602	[ ] 018	VOC	8260	[ ] 033	CATIONS/ANIONS	
[ ] 007	HEADSPACE		[ ] 019	SVOC	8270	[ ] 034	N SUITE	
[ ] 008	PAH	8100	[ ] 020	O&G	9070	[ ] 035	NITRATE	
[ ] 009	PAH	610	[ ] 022	AS	7060	[ ] 036	NITRITE	
[ ] 010	PCB	8080	[ ] 023	Ba	7080	[ ] 037	AMMONIA	
[ ] 011	PCB	608	[ ] 024	Cr	7190	[ ] 038	TKN	
[ ] 012	PHENOL	8040	[ ] 025	Cr6	7198	[ ]	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab ANA-LABS Contract No.

OCD Sample No. 8907251224

Collection Date	Collection Time	Collected by —Person/Agency
07/25/89	1224	BOYER, ~~[illegible]~~ Englert /OCD

SITE INFORMATION

Sample location NAVAJO REFINERY: Windmill

Collection Site Description Pond Windmill

Township, Range, Section, Tract: 17S+26E+12+14

SEND FINAL REPORT TO ▸ ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

☐ Bailed ☒ Pump
☐ Dipped ☐ Tap

Water level Pumping

Discharge

Sample type GRAB

pH(00400) 7

Conductivity (Uncorrected) 4350 µmho

Water Temp. (00010) 20 °C

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 Vials

☒ **NF:** Whole sample (Non-filtered)
☐ **F:** Filtered in field with 0.45 µ membrane filter
☐ **PF:** Pre-filtered w/45 µ membrane filter

☐ **NA:** No acid added
☒ **A:** HCL
☐ **A:** 2ml H_2SO_4/L added
☐ **A:** 5ml conc. HNO_3 added
☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
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☐ 006	SUITE	601-602	☐ 018	VOC	8260	☐ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
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☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO DEPARTMENT OF HEALTH
SCIENTIFIC LABORATORY DIVISION
P.O. Box 4700 700 Camino de Salud, NE
Albuquerque, NM 87196-4700 [505]-841-2500
ORGANIC CHEMISTRY SECTION [505]-841-2570

June 16, 1993

Request
ID No. 022258

ANALYTICAL REPORT
SLD Accession No. OR-93-1092

Distribution
(__) User 70320
(■) Submitter 260
(※) SLD Files

To: David Boyer
NM Oil Consv. Div.
State Land Office Bldg.
P.O. Box 2088
Santa Fe, NM 87504-2088

From: Organic Chemistry Section
Scientific Laboratory Div.
700 Camino de Salud, NE
Albuquerque, NM 87106

Re: **A water, purgeable sample submitted to this laboratory on May 14, 1993**

DEMOGRAPHIC DATA

COLLECTION		*LOCATION*
On: 13-May-93	*By:* Bro . . .	Pond Effluent
At: 9:00 hrs.	*In/Near:* Artesia	

ANALYTICAL RESULTS: Aromatic & Halogenated Purgeable [EPA-601/2] Screen (754)

Parameter	Value	Note	MDL	Units
Halogenated Volatiles (42)	0.00	N	200.00	ppb

See Laboratory Remarks for Additional Information

Notations & Comments:

MDL = Minimal Detectable Level.

A = Approximate Value; N = None Detected above Detection Limit; P = Compound Present, but not quantified;
T = Trace (<Detection Limit); U = Compound Identity Not Confirmed.

Evidentiary Seals: Not Sealed ☑; Intact: No☐, Yes☐ & Broken By: _____ Date: _____

Laboratory Remarks:

Two compounds eluting from near toluene through o-xylene at approximately 200-500 ppb were detected by the photoionization detector but not identified.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: NM SCIENTIFIC LABORATORY DIVISION Contract: N/A
Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A
Matrix: (soil/water) Water Lab Sample ID: OR-93-1092
Sample wt/vol: 5.0 (g/mL) mL SLD Batch No: 162
Level: (low/med) Low Date Received: 05/14/93
% Moisture: not dec. N/A dec. N/A Date Extracted: N/A
Extraction: (SepF/Cont/Sonc) N/A Date Analyzed: 05/28/93
GPC Cleanup: (Y/N) No pH: ____ Dilution Factor: 1/200
CONCENTRATION UNITS:

(Continued on page 2.)

(ug/L or ug/Kg): ug/L

This sample was analyzed for the following compounds using EPA Methods 601 & 602

CAS NO.	COMPOUND	CONC.	Q	PQL
67-64-1	Acetone		U	1000.0
71-43-2	Benzene		U	200.0
108-86-1	Bromobenzene		U	200.0
74-97-5	Bromochloromethane		U	200.0
75-27-4	Bromodichloromethane		U	200.0
75-25-2	Bromoform		U	200.0
78-93-3	2-Butanone (MEK)		U	1000.0
104-51-8	n-Butylbenzene		U	200.0
135-98-8	sec-Butylbenzene		U	200.0
98-06-6	tert-Butylbenzene		U	200.0
1634-04-4	tert-Butyl methyl ether (MTBE)		U	1000.0
56-23-5	Carbon tetrachloride		U	200.0
108-90-7	Chlorobenzene		U	200.0
67-66-3	Chloroform		U	200.0
95-49-8	2-Chlorotoluene		U	200.0
106-43-4	4-Chlorotoluene		U	200.0
96-12-8	1,2-Dibromo-3-chloropropane		U	200.0
124-48-1	Dibromochloromethane		U	200.0
106-93-4	1,2-Dibromoethane		U	200.0
74-95-3	Dibromomethane		U	200.0
95-50-1	1,2-Dichlorobenzene		U	200.0
541-73-1	1,3-Dichlorobenzene		U	200.0
106-46-7	1,4-Dichlorobenzene		U	200.0
75-71-8	Dichlorodifluoromethane		U	200.0
75-34-3	1,1-Dichloroethane		U	200.0
107-06-2	1,2-Dichloroethane		U	200.0
75-35-4	1,1-Dichloroethene		U	200.0
156-59-4	cis-1,2-Dichloroethene		U	200.0
156-60-5	trans-1,2-Dichloroethene		U	200.0
78-87-5	1,2-Dichloropropane		U	200.0
142-28-9	1,3-Dichloropropane		U	200.0
590-20-7	2,2-Dichloropropane		U	200.0
563-58-6	1,1-Dichloropropene		U	200.0
1006-01-5	cis-1,3-Dichloropropene		U	200.0
1006-02-6	trans-1,3-Dichloropropene		U	200.0
100-41-4	Ethylbenzene		U	200.0
87-68-3	Hexachlorobutadiene		U	200.0

(Continued on page 3.)

98-82-8	Isopropylbenzene		U	200.0
99-87-6	4-Isopropyltoluene		U	200.0
75-09-2	Methylene chloride		U	200.0
90-12-0	1-Methylnaphthalene		U	200.0
91-57-6	2-Methylnaphthalene		U	200.0
91-20-3	Naphthalene		U	200.0
103-65-1	n-Propylbenzene		U	200.0
100-42-5	Styrene		U	200.0
630-20-6	1,1,1,2-Tetrachloroethane		U	200.0
79-34-5	1,1,2,2-Tetrachloroethane		U	200.0
127-18-4	Tetrachloroethene		U	200.0
109-99-9	Tetrahydrofuran (THF)		U	1000.0
108-88-3	Toluene		U	200.0
87-61-5	1,2,3-Trichlorobenzene		U	200.0
120-82-1	1,2,4-Trichlorobenzene		U	200.0
71-55-6	1,1,1-Trichloroethane		U	200.0
79-00-5	1,1,2-Trichloroethane		U	200.0
79-01-6	Trichloroethene		U	200.0
75-69-4	Trichlorofluoromethane		U	200.0
96-18-4	1,2,3-Trichloropropane		U	200.0
95-63-6	1,2,4-Trimethylbenzene		U	200.0
108-67-8	1,3,5-Trimethylbenzene		U	200.0
75-01-4	Vinyl chloride		U	200.0
95-47-6	o-Xylene		U	200.0
N/A	p- & m-Xylene		U	200.0

* CONC = CONCENTRAION DETERMINED
  PQL = Practical Quantitation Limit (Approximately 10 times MDL)
* Q = Qualifier Definitions:
B - Indicates compound was detected in the Lab Blank as well as in the sample.
D - Indicates value taken from a secondary (diluted) sample analysis.
E - Indicates compound concentration exceeded the range of the standard curve.
J - Indicates an estimated value for tentatively identified compounds, or for compounds detected and identified but present at a concentration less than the quantitation limit.
N - Indicates that more than one peak was used for quantitation.
U - Indicates compound was analyzed for, but not detected above the concentration listed (Quantitation Limit).

(Continued on page 4.)

QUALITY CONTROL SUMMARY FOR VOLATILES SCREEN

METHOD BLANK: A laboratory method blank was analyzed along with this sample to assure the absence of interfering contaminants from lab reagents, instruments, or the general laboratory environment. Unless listed below, no contaminants were detected in this blank above the reported detection limit.

COMPOUND DETECTED	CONCENTRATION (PPB)
1,1-dichloroethene	0.2
methylene chloride	0.4

SURROGATE RECOVERIES:

SURROGATE	CONCENTRATION	% RECOVERY
Bromofluorobenzene	25.0 ppb	114.7
2-Bromo-1-chloropropane	25.0 ppb	101.2

SPIKE RECOVERY: The % recoveries for compounds in the batch spike were from 80% to 120% with the exception of the compounds listed below:

COMPOUND	CONCENTRATION	% RECOVERY
trichloroethene	25.0 ppb	138.4
1,1,2,2-tetrachloroethane	25.3 ppb	71.1

Analyst: Gary C. Eden
Analyst, Organic Chemistry

Reviewed By: Richard F. Meyerhein 06/16/93
Supervisor, Organic Chemistry Section

ORGANIC CHEMISTRY ANALYTICAL REQUEST FORM

SCIENTIFIC LABORATORY DIVISION
700 CAMINO DE SALUD N.E., ALBUQUERQUE, NM 87106
Organic Chemistry Section - Telephone: (505) 841-2570

SLD No. OR93 1092 C

Request ID No. 022258-C

Date Received: 5/14/93

2 User Code #: 7 0 3 2 0

3 Request ID No.:

4 Priority Code #: [If "1" or "2", call EID-SLD Coordinator]

5 Facility Name: Navajo Refinery

6 County: Eddy

7 City: Artesia

8 State: NM

9 Sample Location: Pond Effluent

10 Collected By: Kathy Brown (First / Last.....) On: 93/05/13 (Date: YY/MM/DD) At: 0900 hrs. (Time: 24 hr. clock 3:00 pm = 1500 hrs.)

11 Codes: Submitter / WSS # / Organization

12 Latitude (DDMMSS) ° ' "
Longitude (DDDMMSS) ° ' "
2 Digit ID (If needed)

13 Report To: Name: David G. Boyer
Address: New Mexico Oil Conservation Division
P. O. Box 2088
City, State Zip: Santa Fe, New Mexico 87504-2088

14 Phone #: (505) 827-5812

15 Sample Purpose:
- ☐ Compliance
- ☐ Check
- ☐ Monitoring
- ☐ Special

Sampling Information:
- ☐ Grab
- ☐ Composite _____ (Composite Time Period)
  - ☐ Flow Proportioned
  - ☐ Equal Aliquot
- ☐ Sample Split w/Permittee
- ☐ Chain of Custody

16 Field Data: pH: _____, Conductivity: 9500 umhos @ _____ °C, Temperature: 28.5 °C, Chlorine Residual: _____ mg/l, Flow: _____

17 Sample Source:
- ☐ Stream
- ☐ Lake
- ☐ Drain
- ☐ Pool
- ☐ WWTP
- ☐ Well; Depth: _____
- ☐ Spring
- ☐ Distribution
- ☐ Point-of-Entry
- ☐ Other: Pond

18 Field Notes/ Sample #:

19 Sample Type: ☐ Water, ☐ Soil, ☐ Food, ☐ Wastewater, ☐ Other _____

This form accompanies a single sample consisting of:
2 - septum vial(s) (volume = 40 ml each)
____ - glass jugs (volume = _____)
____ - _____ (volume = _____)

20 Preservation:
- ☐ NP — No Preservation; Sample stored at room temperature
- ☐ P-Ice — Sample stored in an ice bath (Not Frozen)
- ☐ P-TS — Sample Preserved with Sodium Thiosulfate to remove chlorine residual
- ☐ P-HCl — Sample Preserved with Hydrochloric Acid (2 drops/40 ml)
- ☐ Other: $HgCl_2$

21 Analyses Requested: Please check the appropriate box(es) below to indicate the type of analytical screen(s) required. Whenever possible, list specific compounds suspected or required.

Volatile Screens:
- ☐ - (753) Aliphatic Headspace (1-5 Carbons)
- ☐ - (754) Aromatic & Halogenated Purgeables (EPA 601 & 602)
- ☐ - (765) Mass Spectrometer Purgeables (EPA 624)
- ☐ - (766) SDWA Total Trihalomethanes (EPA 501.1)
- ☐ - (774) SDWA VOC's I [8 Regulated +] (EPA 502.2)
- ☐ - (775) SDWA VOC's II [EDB & DBCP] (EPA 504)

Other Specific Compounds or Classes:
- ☐ - ( ) _____
- ☐ - ( ) _____
- ☐ - ( ) _____

Semivolatile Screens:
- ☐ - (763) Acid Extractables
- ☐ - (751) Aliphatic Hydrocarbons
- ☐ - (755) Base/Neutral Extractables (EPA 625)
- ☐ - (756) Base/Neutral/Acid Extractables (EPA 8270)
- ☐ - (758) Herbicides, Chlorophenoxy Acid
- ☐ - (759) Herbicides, Triazines
- ☐ - (760) Organochlorine Pesticides
- ☐ - (761) Organophosphate Pesticides
- ☐ - (767) Polychlorinated Biphenyls (PCB's)
- ☐ - (764) Polynuclear Aromatic Hydrocarbons
- ☐ - (762) SDWA Pesticides & Herbicides

Remarks:

STATE OF NEW MEXICO DEPARTMENT OF HEALTH
SCIENTIFIC LABORATORY DIVISION
P.O. Box 4700 700 Camino de Salud, NE
Albuquerque, NM 87196-4700 [505]-841-2500
ORGANIC CHEMISTRY SECTION [505]-841-2570

June 16, 1993

Request ID No. 022261

ANALYTICAL REPORT
SLD Accession No. OR-93-1091

Distribution
(_) User 70320
(■) Submitter 260
(※) SLD Files

To: David Boyer
NM Oil Consv. Div.
State Land Office Bldg.
P.O. Box 2088
Santa Fe, NM 87504-2088

From: Organic Chemistry Section
Scientific Laboratory Div.
700 Camino de Salud, NE
Albuquerque, NM 87106

Re: **A water, purgeable sample submitted to this laboratory on May 14, 1993**

DEMOGRAPHIC DATA

COLLECTION		*LOCATION*
On: 13-May-93	*By:* Bro . . .	NE Pond Effluent
At: 9:30 hrs.	*In/Near:* Artesia	

ANALYTICAL RESULTS: Aromatic & Halogenated Purgeable [EPA-601/2] Screen {754}

Parameter	Value	Note	MDL	Units
Halogenated Volatiles (42)	0.00	N	25.00	ppb
See Laboratory Remarks for Additional Information				

Notations & Comments:

MDL = Minimal Detectable Level.

A = Approximate Value; N = None Detected above Detection Limit; P = Compound Present, but not quantified;
T = Trace (<Detection Limit); U = Compound Identity Not Confirmed.

Evidentiary Seals: Not Sealed[X]; Intact: No[ ], Yes[ ] & Broken By: _____ Date: _____

Laboratory Remarks:

One compound eluting near o-xylene at 25-50 ppb was detected by the photoionization detector but not identified.

Foamy sample; unable to achieve a lower detection limit.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: NM SCIENTIFIC LABORATORY DIVISION Contract: N/A
Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A
Matrix: (soil/water) Water Lab Sample ID: OR-93-1091
Sample wt/vol: 5.0 (g/mL) mL SLD Batch No: 162
Level: (low/med) Low Date Received: 05/14/93
% Moisture: not dec. N/A dec. N/A Date Extracted: N/A
Extraction: (SepF/Cont/Sonc) N/A Date Analyzed: 05/28/93
GPC Cleanup: (Y/N) No pH: ____ Dilution Factor: ~~1~~ 25

(Continued on page 2.)

CONCENTRATION UNITS:
(ug/L or ug/Kg): ug/L

This sample was analyzed for the following compounds using EPA Methods 601 & 602

CAS NO.	COMPOUND	CONC.	Q	PQL
67-64-1	Acetone		U	125.0
71-43-2	Benzene		U	25.0
108-86-1	Bromobenzene		U	25.0
74-97-5	Bromochloromethane		U	25.0
75-27-4	Bromodichloromethane		U	25.0
75-25-2	Bromoform		U	25.0
78-93-3	2-Butanone (MEK)		U	125.0
104-51-8	n-Butylbenzene		U	25.0
135-98-8	sec-Butylbenzene		U	25.0
98-06-6	tert-Butylbenzene		U	25.0
1634-04-4	tert-Butyl methyl ether (MTBE)		U	125.0
56-23-5	Carbon tetrachloride		U	25.0
108-90-7	Chlorobenzene		U	25.0
67-66-3	Chloroform		U	25.0
95-49-8	2-Chlorotoluene		U	25.0
106-43-4	4-Chlorotoluene		U	25.0
96-12-8	1,2-Dibromo-3-chloropropane		U	25.0
124-48-1	Dibromochloromethane		U	25.0
106-93-4	1,2-Dibromoethane		U	25.0
74-95-3	Dibromomethane		U	25.0
95-50-1	1,2-Dichlorobenzene		U	25.0
541-73-1	1,3-Dichlorobenzene		U	25.0
106-46-7	1,4-Dichlorobenzene		U	25.0
75-71-8	Dichlorodifluoromethane		U	25.0
75-34-3	1,1-Dichloroethane		U	25.0
107-06-2	1,2-Dichloroethane		U	25.0
75-35-4	1,1-Dichloroethene		U	25.0
156-59-4	cis-1,2-Dichloroethene		U	25.0
156-60-5	trans-1,2-Dichloroethene		U	25.0
78-87-5	1,2-Dichloropropane		U	25.0
142-28-9	1,3-Dichloropropane		U	25.0
590-20-7	2,2-Dichloropropane		U	25.0
563-58-6	1,1-Dichloropropene		U	25.0
1006-01-5	cis-1,3-Dichloropropene		U	25.0
1006-02-6	trans-1,3-Dichloropropene		U	25.0
100-41-4	Ethylbenzene		U	25.0

(Continued on page 3.)

87-68-3	Hexachlorobutadiene		U	25.0
98-82-8	Isopropylbenzene		U	25.0
99-87-6	4-Isopropyltoluene		U	25.0
75-09-2	Methylene chloride		U	25.0
90-12-0	1-Methylnaphthalene		U	25.0
91-57-6	2-Methylnaphthalene		U	25.0
91-20-3	Naphthalene		U	25.0
103-65-1	n-Propylbenzene		U	25.0
100-42-5	Styrene		U	25.0
630-20-6	1,1,1,2-Tetrachloroethane		U	25.0
79-34-5	1,1,2,2-Tetrachloroethane		U	25.0
127-18-4	Tetrachloroethene		U	25.0
109-99-9	Tetrahydrofuran (THF)		U	125.0
108-88-3	Toluene		U	25.0
87-61-5	1,2,3-Trichlorobenzene		U	25.0
120-82-1	1,2,4-Trichlorobenzene		U	25.0
71-55-6	1,1,1-Trichloroethane		U	25.0
79-00-5	1,1,2-Trichloroethane		U	25.0
79-01-6	Trichloroethene		U	25.0
75-69-4	Trichlorofluoromethane		U	25.0
96-18-4	1,2,3-Trichloropropane		U	25.0
95-63-6	1,2,4-Trimethylbenzene		U	25.0
108-67-8	1,3,5-Trimethylbenzene		U	25.0
75-01-4	Vinyl chloride		U	25.0
95-47-6	o-Xylene		U	25.0
N/A	p- & m-Xylene		U	25.0

* CONC = CONCENTRAION DETERMINED
  PQL = Practical Quantitation Limit (Approximately 10 times MDL)
* Q = Qualifier Definitions:

B - Indicates compound was detected in the Lab Blank as well as in the sample.
D - Indicates value taken from a secondary (diluted) sample analysis.
E - Indicates compound concentration exceeded the range of the standard curve.
J - Indicates an estimated value for tentatively identified compounds, or for compounds detected and identified but present at a concentration less than the quantitation limit.
N - Indicates that more than one peak was used for quantitation.
U - Indicates compound was analyzed for, but not detected above the concentration listed (Quantitation Limit).

(Continued on page 4.)

QUALITY CONTROL SUMMARY FOR VOLATILES SCREEN

METHOD BLANK: A laboratory method blank was analyzed along with this sample to assure the absence of interfering contaminants from lab reagents, instruments, or the general laboratory environment. Unless listed below, no contaminants were detected in this blank above the reported detection limit.

COMPOUND DETECTED	CONCENTRATION (PPB)
1,1-dichloroethene	0.2
methylene chloride	0.4

SURROGATE RECOVERIES:

SURROGATE	CONCENTRATION	% RECOVERY
Bromofluorobenzene	25.0 ppb	100.1
2-Bromo-1-chloropropane	25.0 ppb	102.6

SPIKE RECOVERY: The % recoveries for compounds in the batch spike were from 80% to 120% with the exception of the compounds listed below:

COMPOUND	CONCENTRATION	% RECOVERY
trichloroethene	25.0 ppb	138.4
1,1,2,2-tetrachloroethane	25.3 ppb	71.1

Analyst: Gary C. Eden
Analyst, Organic Chemistry

Reviewed By: Richard F. Meyerhein 06/16/93
Supervisor, Organic Chemistry Section

ORGANIC CHEMISTRY ANALYTICAL REQUEST FORM

SCIENTIFIC LABORATORY DIVISION
700 CAMINO DE SALUD N.E., ALBUQUERQUE, NM 87106
Organic Chemistry Section - Telephone: (505) 841-2570

SLD No. OR93 1091 C

Date Received: 5/14/93

Request ID No. 022261-C

2 User Code #: 7 0 3 2 0

3 Request ID No.:

4 Priority Code #: [If "1" or "2", call EID-SLD Coordinator]

5 Facility Name: Navajo Refinery

6 County: Eddy ~~Artesia~~

7 City: Artesia

8 State: NM

9 Sample Location: NE POND EFFLUENT

10 Collected By: Kathy (First) Brown (Last) On: 93/05/13 (Date: YY/MM/DD) At: 0930 hrs. (Time: 24 hr. clock 3:00 pm = 1500 hrs.)

11 Codes: Submitter / WSS # / Organization

12 Latitude (DDMMSS) ° ' "
Longitude (DDDMMSS) ° ' "
2 Digit ID (If needed)

13 Report To: Name: David G. Boyer
Address: New Mexico Oil Conservation Division
P. O. Box 2088
City, State Zip: Santa Fe, New Mexico 87504-2088

14 Phone #: (505) 827-5812

15 Sampling Information:
☑ - Grab
☐ - Composite _____ (Composite Time Period)
☐ - Flow Proportioned
☐ - Equal Aliquot
☐ - Sample Split w/Permittee
☐ - Chain of Custody

Sample Purpose:
☑ - Compliance
☐ - Check
☑ - Monitoring
☐ - Special

16 Field Data: pH: ____, Conductivity: 10900 umhos @ ____ °C, Temperature: 23 °C, Chlorine Residual: ____ mg/l, Flow: ____

17 Sample Source:
☐ -Stream
☐ -Lake
☐ -Drain
☐ -Pool
☐ -WWTP
☐ -Well; Depth: ____
☐ -Spring
☐ -Distribution
☐ -Point-of-Entry
☑ -Other: Pond

18 Field Notes/ Sample #:

19 Sample Type: ☐ -Water, ☐ -Soil, ☐ -Food, ☑ -Wastewater, ☐ -Other ____
This form accompanies a single sample consisting of:
2 - septum vial(s) (volume = 40 ml each)
____ - glass jugs (volume = ____)
____ - ____ (volume = ____)

20 Preservation:
☐ - NP No Preservation; Sample stored at room temperature
☐ - P-Ice Sample stored in an ice bath (Not Frozen)
☐ - P-TS Sample Preserved with Sodium Thiosulfate to remove chlorine residual
☐ - P-HCl Sample Preserved with Hydrochloric Acid (2 drops/40 ml)
☑ - Other HgCl2

21 Analyses Requested: Please check the appropriate box(es) below to indicate the type of analytical screen(s) required. Whenever possible, list specific compounds suspected or required.

Volatile Screens:

☐ - (753) Aliphatic Headspace (1-5 Carbons)
☑ - (754) Aromatic & Halogenated Purgeables (EPA 601 & 602)
☐ - (765) Mass Spectrometer Purgeables (EPA 624)
☐ - (766) SDWA Total Trihalomethanes (EPA 501.1)
☐ - (774) SDWA VOC's I [8 Regulated +] (EPA 502.2)
☐ - (775) SDWA VOC's II [EDB & DBCP] (EPA 504)

Other Specific Compounds or Classes:

☐ - ( ) ____
☐ - ( ) ____
☐ - ( ) ____

Semivolatile Screens:

☐ - (763) Acid Extractables
☐ - (751) Aliphatic Hydrocarbons
☐ - (755) Base/Neutral Extractables (EPA 625)
☐ - (756) Base/Neutral/Acid Extractables (EPA 8270)
☐ - (758) Herbicides, Chlorophenoxy Acid
☐ - (759) Herbicides, Triazines
☐ - (760) Organochlorine Pesticides
☐ - (761) Organophosphate Pesticides
☐ - (767) Polychlorinated Biphenyls (PCB's)
☐ - (764) Polynuclear Aromatic Hydrocarbons
☐ - (762) SDWA Pesticides & Herbicides

Remarks:

STATE OF NEW MEXICO DEPARTMENT OF HEALTH
SCIENTIFIC LABORATORY DIVISION
P.O. Box 4700 700 Camino de Salud, NE
Albuquerque, NM 87196-4700 [505]-841-2500
ORGANIC CHEMISTRY SECTION [505]-841-2570

June 16, 1993

Request
ID No. 022263

ANALYTICAL REPORT
SLD Accession No. OR-93-1089

Distribution
(_) User 70320
(■) Submitter 260
(※) SLD Files

To: David Boyer
NM Oil Consv. Div.
State Land Office Bldg.
P.O. Box 2088
Santa Fe, NM 87504-2088

From: Organic Chemistry Section
Scientific Laboratory Div.
700 Camino de Salud, NE
Albuquerque, NM 87106

Re: **A water, purgeable sample submitted to this laboratory on May 14, 1993**

DEMOGRAPHIC DATA

COLLECTION		*LOCATION*
On: 13-May-93	*By:* Bro . . .	Monitor Well No 18
At: 13:45 hrs.	*In/Near:* Artesia	

ANALYTICAL RESULTS: Aromatic & Halogenated Purgeable [EPA-601/2] Screen {754}

Parameter	Value	Note	MDL	Units
EPA 601/2 Volatiles (60)	0.00	N	1.00	ppb

See Laboratory Remarks for Additional Information

Notations & Comments:

MDL = Minimal Detectable Level.

A = Approximate Value; N = None Detected above Detection Limit; P = Compound Present, but not quantified;
T = Trace (<Detection Limit); U = Compound Identity Not Confirmed.

Evidentiary Seals: Not Sealed [X]; Intact: No [ ], Yes [ ] & Broken By: _____ Date: _____

Laboratory Remarks:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: NM SCIENTIFIC LABORATORY DIVISION Contract: N/A
Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A
Matrix: (soil/water) Water Lab Sample ID: OR-93-1089
Sample wt/vol: 5.0 (g/mL) mL SLD Batch No: 162
Level: (low/med) Low Date Received: 05/14/93
% Moisture: not dec. N/A dec. N/A Date Extracted: N/A
Extraction: (SepF/Cont/Sonc) N/A Date Analyzed: 05/27/93
GPC Cleanup: (Y/N) No pH: ____ Dilution Factor: 1
CONCENTRATION UNITS:
(ug/L or ug/Kg): ug/L

This sample was analyzed for the following compounds
using EPA Methods 601 & 602

CAS NO.	COMPOUND	CONC.	Q	PQL

(Continued on page 2.)

67-64-1	Acetone		U	5.0
71-43-2	Benzene		U	1.0
108-86-1	Bromobenzene		U	1.0
74-97-5	Bromochloromethane		U	1.0
75-27-4	Bromodichloromethane		U	1.0
75-25-2	Bromoform		U	1.0
78-93-3	2-Butanone (MEK)		U	5.0
104-51-8	n-Butylbenzene		U	1.0
135-98-8	sec-Butylbenzene		U	1.0
98-06-6	tert-Butylbenzene		U	1.0
1634-04-4	tert-Butyl methyl ether (MTBE)		U	5.0
56-23-5	Carbon tetrachloride		U	1.0
108-90-7	Chlorobenzene		U	1.0
67-66-3	Chloroform		U	1.0
95-49-8	2-Chlorotoluene		U	1.0
106-43-4	4-Chlorotoluene		U	1.0
96-12-8	1,2-Dibromo-3-chloropropane		U	1.0
124-48-1	Dibromochloromethane		U	1.0
106-93-4	1,2-Dibromoethane		U	1.0
74-95-3	Dibromomethane		U	1.0
95-50-1	1,2-Dichlorobenzene		U	1.0
541-73-1	1,3-Dichlorobenzene		U	1.0
106-46-7	1,4-Dichlorobenzene		U	1.0
75-71-8	Dichlorodifluoromethane		U	1.0
75-34-3	1,1-Dichloroethane		U	1.0
107-06-2	1,2-Dichloroethane		U	1.0
75-35-4	1,1-Dichloroethene		U	1.0
156-59-4	cis-1,2-Dichloroethene		U	1.0
156-60-5	trans-1,2-Dichloroethene		U	1.0
78-87-5	1,2-Dichloropropane		U	1.0
142-28-9	1,3-Dichloropropane		U	1.0
590-20-7	2,2-Dichloropropane		U	1.0
563-58-6	1,1-Dichloropropene		U	1.0
1006-01-5	cis-1,3-Dichloropropene		U	1.0
1006-02-6	trans-1,3-Dichloropropene		U	1.0
100-41-4	Ethylbenzene		U	1.0
87-68-3	Hexachlorobutadiene		U	1.0
98-82-8	Isopropylbenzene		U	1.0
99-87-6	4-Isopropyltoluene		U	1.0
75-09-2	Methylene chloride		U	1.0
90-12-0	1-Methylnaphthalene		U	1.0
91-57-6	2-Methylnaphthalene		U	1.0

(Continued on page 3.)

91-20-3	Naphthalene		U	1.0
103-65-1	n-Propylbenzene		U	1.0
100-42-5	Styrene		U	1.0
630-20-6	1,1,1,2-Tetrachloroethane		U	1.0
79-34-5	1,1,2,2-Tetrachloroethane		U	1.0
127-18-4	Tetrachloroethene		U	1.0
109-99-9	Tetrahydrofuran (THF)		U	5.0
108-88-3	Toluene		U	1.0
87-61-5	1,2,3-Trichlorobenzene		U	1.0
120-82-1	1,2,4-Trichlorobenzene		U	1.0
71-55-6	1,1,1-Trichloroethane		U	1.0
79-00-5	1,1,2-Trichloroethane		U	1.0
79-01-6	Trichloroethene		U	1.0
75-69-4	Trichlorofluoromethane		U	1.0
96-18-4	1,2,3-Trichloropropane		U	1.0
95-63-6	1,2,4-Trimethylbenzene		U	1.0
108-67-8	1,3,5-Trimethylbenzene		U	1.0
75-01-4	Vinyl chloride		U	1.0
95-47-6	o-Xylene		U	1.0
N/A	p- & m-Xylene		U	1.0

* CONC = CONCENTRAION DETERMINED
PQL = Practical Quantitation Limit (Approximately 10 times MDL)
* Q = Qualifier Definitions:
B - Indicates compound was detected in the Lab Blank as well as in the sample.
D - Indicates value taken from a secondary (diluted) sample analysis.
E - Indicates compound concentration exceeded the range of the standard curve.
J - Indicates an estimated value for tentatively identified compounds, or for compounds detected and identified but present at a concentration less than the quantitation limit.
N - Indicates that more than one peak was used for quantitation.
U - Indicates compound was analyzed for, but not detected above the concentration listed (Quantitation Limit).

QUALITY CONTROL SUMMARY FOR VOLATILES SCREEN

METHOD BLANK: A laboratory method blank was analyzed along with this sample to assure the absence of interfering contaminants from lab reagents, instruments, or the general laboratory

(Continued on page 4.)

environment. Unless listed below, no contaminants were detected in this blank above the reported detection limit.

COMPOUND DETECTED	CONCENTRATION (PPB)
1,1-dichloroethene	0.2
methylene chloride	0.4

SURROGATE RECOVERIES:

SURROGATE	CONCENTRATION	% RECOVERY
Bromofluorobenzene	25.0 ppb	105.0
2-Bromo-1-chloropropane	25.0 ppb	104.8

SPIKE RECOVERY: The % recoveries for compounds in the batch spike were from 80% to 120% with the exception of the compounds listed below:

COMPOUND	CONCENTRATION	% RECOVERY
trichloroethene	25.0 ppb	138.4
1,1,2,2-tetrachloroethane	25.3 ppb	71.1

Analyst: Gary C. Eden
Analyst, Organic Chemistry

Reviewed By: Richard F. Meyerhein 06/16/93
Supervisor, Organic Chemistry Section

ORGANIC CHEMISTRY ANALYTICAL REQUEST FORM

SCIENTIFIC LABORATORY DIVISION
700 CAMINO DE SALUD N.E., ALBUQUERQUE, NM 87106
Organic Chemistry Section - Telephone: (505) 841-2570

SLD No OR93 1089 C

Date Received: 5/14/93

Request ID No. 022263-C

2 User Code #: 7 0 3 2 0

3 Request ID No.:

4 Priority Code #: [If "1" or "2", call EID-SLD Coordinator]

5 Facility Name: Navajo Refinery

6 County: Eddy

7 City: Artesia

8 State: NM

9 Sample Location: Monitor Well No 18

10 Collected By: Kathy (First) Brown (Last.....) On: 93/05/13 (Date: YY/MM/DD) At: 1345 hrs. (Time: 24 hr. clock 3:00 pm = 1500 hrs.)

11 Codes: Submitter / WSS # / Organization

12 Latitude (DDMMSS) ° ' "
Longitude (DDDMMSS) ° ' "
2 Digit ID (If needed)

13 Report To: Name: David G. Boyer
Address: New Mexico Oil Conservation Division
P. O. Box 2088
City, State Zip: Santa Fe, New Mexico 87504-2088

14 Phone #: (505) 827-5812

15 Sample Purpose:
- [x] Compliance
- [ ] Check
- [x] Monitoring
- [ ] Special

Sampling Information:
- [ ] Grab
- [ ] Composite _____ (Composite Time Period)
  - [ ] Flow Proportioned
  - [ ] Equal Aliquot
- [ ] Sample Split w/Permittee
- [ ] Chain of Custody

16 Field Data: pH: _____, Conductivity: _____ umhos @ _____ °C, Temperature: _____ °C, Chlorine Residual: _____ mg/l, Flow: _____

17 Sample Source:
- [ ] Stream
- [ ] Lake
- [ ] Drain
- [ ] Pool
- [ ] WWTP
- [x] Well; Depth: TD 22.07' DTW 16.55'
- [ ] Spring
- [ ] Distribution
- [ ] Point-of-Entry
- [ ] Other: _____

18 Field Notes/ Sample #:

19 Sample Type: [ ] Water, [ ] Soil, [ ] Food, [ ] Wastewater, [ ] Other _____

This form accompanies a single sample consisting of:
2 - septum vial(s) (volume = 40 ml each)
____ - glass jugs (volume = _____)
____ - _____ (volume = _____)

20 Preservation:
- [ ] NP — No Preservation; Sample stored at room temperature
- [ ] P-Ice — Sample stored in an ice bath (Not Frozen)
- [ ] P-TS — Sample Preserved with Sodium Thiosulfate to remove chlorine residual
- [ ] P-HCl — Sample Preserved with Hydrochloric Acid (2 drops/40 ml)
- [x] Other — H_2O_2

21 Analyses Requested: Please check the appropriate box(es) below to indicate the type of analytical screen(s) required. Whenever possible, list specific compounds suspected or required.

Volatile Screens:

- [ ] (753) Aliphatic Headspace (1-5 Carbons)
- [x] (754) Aromatic & Halogenated Purgeables (EPA 601 & 602)
- [ ] (765) Mass Spectrometer Purgeables (EPA 624)
- [ ] (766) SDWA Total Trihalomethanes (EPA 501.1)
- [ ] (774) SDWA VOC's I [8 Regulated +] (EPA 502.2)
- [ ] (775) SDWA VOC's II [EDB & DBCP] (EPA 504)

Other Specific Compounds or Classes:

- [ ] - ( ) _____
- [ ] - ( ) _____
- [ ] - ( ) _____

Semivolatile Screens:

- [ ] (763) Acid Extractables
- [ ] (751) Aliphatic Hydrocarbons
- [ ] (755) Base/Neutral Extractables (EPA 625)
- [ ] (756) Base/Neutral/Acid Extractables (EPA 8270)
- [ ] (758) Herbicides, Chlorophenoxy Acid
- [ ] (759) Herbicides, Triazines
- [ ] (760) Organochlorine Pesticides
- [ ] (761) Organophosphate Pesticides
- [ ] (767) Polychlorinated Biphenyls (PCB's)
- [ ] (764) Polynuclear Aromatic Hydrocarbons
- [ ] (762) SDWA Pesticides & Herbicides

Remarks:

STATE OF NEW MEXICO DEPARTMENT OF HEALTH
SCIENTIFIC LABORATORY DIVISION
P.O. Box 4700 700 Camino de Salud, NE
Albuquerque, NM 87196-4700 [505]-841-2500
ORGANIC CHEMISTRY SECTION [505]-841-2570

June 16, 1993

Request
ID No. 022262

ANALYTICAL REPORT
SLD Accession No. OR-93-1090

Distribution
(_) User 70320
(■) Submitter 260
(※) SLD Files

To: David Boyer
NM Oil Consv. Div.
State Land Office Bldg.
P.O. Box 2088
Santa Fe, NM 87504-2088

From: Organic Chemistry Section
Scientific Laboratory Div.
700 Camino de Salud, NE
Albuquerque, NM 87106

Re: **A water, purgeable sample submitted to this laboratory on May 14, 1993**

DEMOGRAPHIC DATA

COLLECTION		*LOCATION*
On: 13-May-93	*By:* Bro . . .	Monitor Well No. 46
At: 11:40 hrs.	*In/Near:* Artesia	

ANALYTICAL RESULTS: Aromatic & Halogenated Purgeable [EPA-601/2] Screen {754}

Parameter	Value	Note	MDL	Units
Halogenated Volatiles (42)	0.00	N	25.00	ppb

See Laboratory Remarks for Additional Information

Notations & Comments:
MDL = Minimal Detectable Level.
A = Approximate Value; N = None Detected above Detection Limit; P = Compound Present, but not quantified;
T = Trace (<Detection Limit); U = Compound Identity Not Confirmed.
Evidentiary Seals: Not Sealed ☒; Intact: No☐, Yes☐ & Broken By: _____ Date: _____

Laboratory Remarks:

One compound eluting near o-xylene at 25-50 ppb was detected by the photoionization detector but not identified.

Foamy sample; unable to achieve a lower detection limit.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: NM SCIENTIFIC LABORATORY DIVISION Contract: N/A
Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A
Matrix: (soil/water) Water Lab Sample ID: OR-93-1090
Sample wt/vol: 5.0 (g/mL) mL SLD Batch No: 162
Level: (low/med) Low Date Received: 05/14/93
% Moisture: not dec. N/A dec. N/A Date Extracted: N/A
Extraction: (SepF/Cont/Sonc) N/A Date Analyzed: 05/28/93
GPC Cleanup: (Y/N) No pH: _____ Dilution Factor: ~~1~~ 25

(Continued on page 2.)

CONCENTRATION UNITS:
(ug/L or ug/Kg): ug/L

This sample was analyzed for the following compounds using EPA Methods 601 & 602

CAS NO.	COMPOUND	CONC.	Q	PQL
67-64-1	Acetone		U	125.0
71-43-2	Benzene		U	25.0
108-86-1	Bromobenzene		U	25.0
74-97-5	Bromochloromethane		U	25.0
75-27-4	Bromodichloromethane		U	25.0
75-25-2	Bromoform		U	25.0
78-93-3	2-Butanone (MEK)		U	125.0
104-51-8	n-Butylbenzene		U	25.0
135-98-8	sec-Butylbenzene		U	25.0
98-06-6	tert-Butylbenzene		U	25.0
1634-04-4	tert-Butyl methyl ether (MTBE)		U	125.0
56-23-5	Carbon tetrachloride		U	25.0
108-90-7	Chlorobenzene		U	25.0
67-66-3	Chloroform		U	25.0
95-49-8	2-Chlorotoluene		U	25.0
106-43-4	4-Chlorotoluene		U	25.0
96-12-8	1,2-Dibromo-3-chloropropane		U	25.0
124-48-1	Dibromochloromethane		U	25.0
106-93-4	1,2-Dibromoethane		U	25.0
74-95-3	Dibromomethane		U	25.0
95-50-1	1,2-Dichlorobenzene		U	25.0
541-73-1	1,3-Dichlorobenzene		U	25.0
106-46-7	1,4-Dichlorobenzene		U	25.0
75-71-8	Dichlorodifluoromethane		U	25.0
75-34-3	1,1-Dichloroethane		U	25.0
107-06-2	1,2-Dichloroethane		U	25.0
75-35-4	1,1-Dichloroethene		U	25.0
156-59-4	cis-1,2-Dichloroethene		U	25.0
156-60-5	trans-1,2-Dichloroethene		U	25.0
78-87-5	1,2-Dichloropropane		U	25.0
142-28-9	1,3-Dichloropropane		U	25.0
590-20-7	2,2-Dichloropropane		U	25.0
563-58-6	1,1-Dichloropropene		U	25.0
1006-01-5	cis-1,3-Dichloropropene		U	25.0
1006-02-6	trans-1,3-Dichloropropene		U	25.0
100-41-4	Ethylbenzene		U	25.0

(Continued on page 3.)

87-68-3	Hexachlorobutadiene		U	25.0
98-82-8	Isopropylbenzene		U	25.0
99-87-6	4-Isopropyltoluene		U	25.0
75-09-2	Methylene chloride		U	25.0
90-12-0	1-Methylnaphthalene		U	25.0
91-57-6	2-Methylnaphthalene		U	25.0
91-20-3	Naphthalene		U	25.0
103-65-1	n-Propylbenzene		U	25.0
100-42-5	Styrene		U	25.0
630-20-6	1,1,1,2-Tetrachloroethane		U	25.0
79-34-5	1,1,2,2-Tetrachloroethane		U	25.0
127-18-4	Tetrachloroethene		U	25.0
109-99-9	Tetrahydrofuran (THF)		U	125.0
108-88-3	Toluene		U	25.0
87-61-5	1,2,3-Trichlorobenzene		U	25.0
120-82-1	1,2,4-Trichlorobenzene		U	25.0
71-55-6	1,1,1-Trichloroethane		U	25.0
79-00-5	1,1,2-Trichloroethane		U	25.0
79-01-6	Trichloroethene		U	25.0
75-69-4	Trichlorofluoromethane		U	25.0
96-18-4	1,2,3-Trichloropropane		U	25.0
95-63-6	1,2,4-Trimethylbenzene		U	25.0
108-67-8	1,3,5-Trimethylbenzene		U	25.0
75-01-4	Vinyl chloride		U	25.0
95-47-6	o-Xylene		U	25.0
N/A	p- & m-Xylene		U	25.0

* CONC = CONCENTRAION DETERMINED
  PQL = Practical Quantitation Limit (Approximately 10 times MDL)
* Q = Qualifier Definitions:

B - Indicates compound was detected in the Lab Blank as well as in the sample.
D - Indicates value taken from a secondary (diluted) sample analysis.
E - Indicates compound concentration exceeded the range of the standard curve.
J - Indicates an estimated value for tentatively identified compounds, or for compounds detected and identified but present at a concentration less than the quantitation limit.
N - Indicates that more than one peak was used for quantitation.
U - Indicates compound was analyzed for, but not detected above the concentration listed (Quantitation Limit).

(Continued on page 4.)

QUALITY CONTROL SUMMARY FOR VOLATILES SCREEN

METHOD BLANK: A laboratory method blank was analyzed along with this sample to assure the absence of interfering contaminants from lab reagents, instruments, or the general laboratory environment. Unless listed below, no contaminants were detected in this blank above the reported detection limit.

COMPOUND DETECTED	CONCENTRATION (PPB)
1,1-dichloroethene	0.2
methylene chloride	0.4

SURROGATE RECOVERIES:

SURROGATE	CONCENTRATION	% RECOVERY
Bromofluorobenzene	25.0 ppb	105.2
2-Bromo-1-chloropropane	25.0 ppb	106.1

SPIKE RECOVERY: The % recoveries for compounds in the batch spike were from 80% to 120% with the exception of the compounds listed below:

COMPOUND	CONCENTRATION	% RECOVERY
trichloroethene	25.0 ppb	138.4
1,1,2,2-tetrachloroethane	25.3 ppb	71.1

Analyst: Gary C. Eden
Analyst, Organic Chemistry

Reviewed By: Richard F. Meyerhein 06/16/93
Supervisor, Organic Chemistry Section

ORGANIC CHEMISTRY ANALYTICAL REQUEST FORM

SCIENTIFIC LABORATORY DIVISION
700 CAMINO DE SALUD N.E., ALBUQUERQUE, NM 87106
Organic Chemistry Section - Telephone: (505) 841-2570

SLD No OR93 1090 C

Date Received: 5/14/93

Request ID No. 022262-C

2 User Code #: 7 0 3 2 0

3 Request ID No.:

4 Priority Code #: [If "1" or "2", call EID-SLD Coordinator]

5 Facility Name: Navajo Refinery

6 County: Eddy

7 City: Artesia

8 State: NM

9 Sample Location: MONITOR WELL NO. 46

10 Collected By: Kathy (First) Brown (Last.....) On: 93/05/13 (Date: YY/MM/DD) At: 1140 hrs. (Time: 24 hr. clock 3:00 pm = 1500 hrs.)

11 Codes: Submitter | WSS # | Organization

12 Latitude (DDMMSS) ° ' "
Longitude (DDDMMSS) ° ' "
2 Digit ID (If needed)

13 Report To: Name: David G. Boyer

14 Phone #: (505) 827-5812

Address: New Mexico Oil Conservation Division
P. O. Box 2088

City, State Zip: Santa Fe, New Mexico 87504-2088

15 Sampling Information:
Sample Purpose:
- [x] Compliance
- [ ] Check
- [x] Monitoring
- [ ] Special

Sampling Information:
- [ ] Grab
- [ ] Composite _____ (Composite Time Period)
  - [ ] Flow Proportioned
  - [ ] Equal Aliquot
- [ ] Sample Split w/Permittee
- [ ] Chain of Custody

16 Field Data: pH: _____, Conductivity: 4600 umhos @ _____ °C, Temperature: 19 °C, Chlorine Residual: _____ mg/l, Flow: _____

17 Sample Source:
- [ ] Stream
- [ ] Lake
- [ ] Drain
- [ ] Pool
- [ ] WWTP
- [x] Well; Depth: TD 19.77' DTW 10.52'
- [ ] Spring
- [ ] Distribution
- [ ] Point-of-Entry
- [ ] Other: _____

18 Field Notes/ Sample #:

19 Sample Type: [x] Water, [ ] Soil, [ ] Food, [ ] Wastewater, [ ] Other _____

This form accompanies a single sample consisting of:
2 - septum vial(s) (volume = 40 ml each)
____ - glass jugs (volume = _____)
____ - _____ (volume = _____)

20 Preservation:
- [ ] NP — No Preservation; Sample stored at room temperature
- [ ] P-Ice — Sample stored in an ice bath (Not Frozen)
- [ ] P-TS — Sample Preserved with Sodium Thiosulfate to remove chlorine residual
- [ ] P-HCl — Sample Preserved with Hydrochloric Acid (2 drops/40 ml)
- [x] Other — $HgCl_2$

21 Analyses Requested: Please check the appropriate box(es) below to indicate the type of analytical screen(s) required. Whenever possible, list specific compounds suspected or required.

Volatile Screens:
- [ ] (753) Aliphatic Headspace (1-5 Carbons)
- [x] (754) Aromatic & Halogenated Purgeables (EPA 601 & 602)
- [ ] (765) Mass Spectrometer Purgeables (EPA 624)
- [ ] (766) SDWA Total Trihalomethanes (EPA 501.1)
- [ ] (774) SDWA VOC's I [8 Regulated +] (EPA 502.2)
- [ ] (775) SDWA VOC's II [EDB & DBCP] (EPA 504)

Other Specific Compounds or Classes:
- [ ] ( ) _____
- [ ] ( ) _____
- [ ] ( ) _____

Semivolatile Screens:
- [ ] (763) Acid Extractables
- [ ] (751) Aliphatic Hydrocarbons
- [ ] (755) Base/Neutral Extractables (EPA 625)
- [ ] (756) Base/Neutral/Acid Extractables (EPA 8270)
- [ ] (758) Herbicides, Chlorophenoxy Acid
- [ ] (759) Herbicides, Triazines
- [ ] (760) Organochlorine Pesticides
- [ ] (761) Organophosphate Pesticides
- [ ] (767) Polychlorinated Biphenyls (PCB's)
- [ ] (764) Polynuclear Aromatic Hydrocarbons
- [ ] (762) SDWA Pesticides & Herbicides

Remarks:

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry • Waste Treatment & Disposal • Equipment Sales

10/09/90

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: #9008011640 Navajo Refinery
Collected By: Anderson/Olson
Date & Time Taken: 08/01/90 1640
Other:
Discharge pipe at outfall into evap Pond.

Lab Sample Number: 170087 **Received:** 08/03/90 Client: SNM1

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
Acrolein	<200	ug/l	1544	09/26/90	EPA Method 8240	PM
Acrylonitrile	<200	ug/l	1544	09/26/90	EPA Method 8240	PM
Benzene	1740	ug/l	1544	09/26/90	EPA Method 8240	PM
Bromoform	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Bromomethane	<20	ug/l	1544	09/26/90	EPA Method 8240	PM
Carbon Tetrachloride	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Chlorobenzene	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Chloroethane	<20	ug/l	1544	09/26/90	EPA Method 8240	PM
2-Chloroethylvinyl ether	<20	ug/l	1544	09/26/90	EPA Method 8240	PM
Chloroform	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Chloromethane	<20	ug/l	1544	09/26/90	EPA Method 8240	PM
Dibromochloromethane	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Bromodichloromethane	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
1,1-Dichloroethane	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
1,2-Dichloroethane	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
1,1-Dichloroethene	<10	ug/l	1544	09/26/90	EPA Method 8240	PM

Continued

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2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry • Waste Treatment & Disposal • Equipment Sales

170087 Continued

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
trans-1,2-Dichloroethene	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
1,2-Dichloropropane	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
cis-1,3-Dichloropropene	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Ethyl benzene	194	ug/l	1544	09/26/90	EPA Method 8240	PM
Methylene Chloride	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
1,1,2,2-Tetrachloroethane	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Tetrachloroethene	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Toluene	2232	ug/l	1544	09/26/90	EPA Method 8240	PM
1,1,1-Trichloroethane	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
1,1,2-Trichloroethane	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Trichloroethene	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Vinyl Chloride	<20	ug/l	1544	09/26/90	EPA Method 8240	PM
trans-1,3-Dichloropropene	<10	ug/l	1544	09/26/90	EPA Method 8240	PM
Xylenes	850	ug/l	1544	09/26/90	EPA Method 8240	PM

Bill Peery

C. H. Whiteside, Ph.D., President

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry • Waste Treatment & Disposal • Equipment Sales

10/09/90

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: #9008011720 Navajo Refinery
Collected By: Anderson/Olson
Date & Time Taken: 08/01/90 1720
Other:
Windmill South of West end of evap. Pond. Clean stock water. Low detection limits.

Lab Sample Number: 170088 **Received:** 08/03/90 Client: SNM1

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
Alkalinity	170	mg/l	0930	08/14/90	EPA Method 310.1	DG
Cation-Anion Balance	78.74/ 77.96	meq/meq	1600	08/21/90		NT
Carbonate	1.4	mg/l	1200	08/20/90	APHA Method 263	DG
Chloride	900	mg/l	1030	08/14/90	EPA Method 325.3	SW
Specific Conductance	6,000	Micromhos	1600	08/07/90	EPA Method 120.1	GS
Bicarbonate	160	mg/l	1200	08/20/90	APHA Method 263	DG
Sulfate	2000	mg/l	1100	08/16/90	EPA Method 375.4	DG
Total Dissolved Solids	4600 ***	mg/l	1100	10/09/90	EPA Method 160.1	WJP
pH	7.8	SU	1407	08/10/90	EPA Method 150.1	LW
Dissolved Calcium	390	mg/l	1815	08/13/90	EPA Method 215.1	GK
Dissolved Iron	<.05	mg/l	2145	08/09/90	EPA Method 236.1	GK
Dissolved Potassium	6.2	mg/l	1500	08/13/90	EPA Method 258.1	CD
Dissolved Magnesium	190	mg/l	1700	08/13/90	EPA Method 242.1	GK
Dissolved Sodium	1000	mg/l	2245	08/09/90	EPA Method 273.1	GK
Acrolein	<100	ug/l	1434	09/25/90	EPA Method 8240	PM
Acrylonitrile	<100	ug/l	1434	09/25/90	EPA Method 8240	PM

Continued

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Analytical Chemistry • Waste Treatment & Disposal • Equipment Sales

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
Benzene	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Bromoform	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Bromomethane	<10	ug/l	1434	09/25/90	EPA Method 8240	PM
Carbon Tetrachloride	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Chlorobenzene	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Chloroethane	<10	ug/l	1434	09/25/90	EPA Method 8240	PM
2-Chloroethylvinyl ether	<10	ug/l	1434	09/25/90	EPA Method 8240	PM
Chloroform	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Chloromethane	<10	ug/l	1434	09/25/90	EPA Method 8240	PM
Dibromochloromethane	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Bromodichloromethane	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
1,1-Dichloroethane	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
1,2-Dichloroethane	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
1,1-Dichloroethene	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
trans-1,2-Dichloroethene	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
1,2-Dichloropropane	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
cis-1,3-Dichloropropene	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Ethyl benzene	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Methylene Chloride	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
1,1,2,2-Tetrachloroethane	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Tetrachloroethene	<5	ug/l	1434	09/25/90	EPA Method 8240	PM

Continued

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2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry • Waste Treatment & Disposal • Equipment Sales

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
Toluene	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
1,1,1-Trichloroethane	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
1,1,2-Trichloroethane	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Trichloroethene	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Vinyl Chloride	<10	ug/l	1434	09/25/90	EPA Method 8240	PM
trans-1,3-Dichloropropene	<5	ug/l	1434	09/25/90	EPA Method 8240	PM
Xylenes	<5	ug/l	1434	09/25/90	EPA Method 8240	PM

*** Calculated Value

C. H. Whiteside, Ph.D., President

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry • Waste Treatment & Disposal • Equipment Sales

Ana-Lab Corporation Laboratory
Balance for Sample 170088 #9008011720 Navajo Refinery

Test	Name	Result (mg/l)	Cation (meq/l)	Anion (meq/l)
Cl-	Chloride	900		25.38100
HCO3	Bicarbonate	160		2.62300
SO4	Sulfate	2000		49.96300
*CaD	Dissolved Calcium	390	19.46100	
*FeD	Dissolved Iron	<.05	.00000	
*KD	Dissolved Potassium	6.2	.15900	
*MgD	Dissolved Magnesium	190	15.62500	
*NaD	Dissolved Sodium	1000	43.49700	
			78.742	77.966

Cation/Anion % Difference is 0.49
Calculated TDS is 4646.20
Analyzed TDS is 11000.00
% Difference is 40.61

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Harry McKelt
~~GENERAL WATER CHEMISTRY~~ ~~AND NITROGEN ANALYSIS~~

DATE RECEIVED	4 / 12 / 85	LAB NO. HM-0692	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 04/10/85		SITE INFORMATION ►	Sample location: Recovery System #4, Navajo Refinery
Collection TIME 0955			Collection site description: Water Pipe from water pump prior to discharge to ditch
Collected by — Person/Agency: Boyer/Beck OCD			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☐ Dipped ☒ Pump ☐ Tap	Water level —	Discharge —	Sample type Grab
pH (00400) 6.75	Conductivity (Uncorrected) 2300 µmho	Water Temp. (00010) 19 °C	Conductivity at 25°C (00094) 2610 µmho

Field comments: Aromatic odor (could be from ditch also)

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☒ Other-*specify:* A HNO_3

ANALYTICAL RESULTS from SAMPLES

NF, NA HNO_3		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: ICAP SCAN			
☒ Other: As	0.03	mg/l	5-17
☐ Other:			

F, NA		Units	Date analyzed
☐ Calcium (00915)		mg/l	
☐ Magnesium (00925)		mg/l	
☐ Sodium (00930)		mg/l	
☐ Potassium (00935)		mg/l	
☐ Bicarbonate (00440)		mg/l	
☐ Chloride (00940)		mg/l	
☐ Sulfate (00945)		mg/l	
☐ Total filterable residue (dissolved) (70300)		mg/l	
☐ Other:			

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6 / 12 / 85	Jim [illegible]

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

ICAP SCREEN

Lab Number: #M692

Date Submitted: 4/12/85

By: Boger/Baca

Sample Code: Recovery Sep #4

Date Reported: 6/13/85

By: Jim Pelley

Determination	Concentration (µg/ml)
Aluminum	<.10
Barium	.13
Beryllium	<.10
Boron	.20
Cadmium	<.10
Calcium	260.
Chromium	<.10
Cobalt	<.10
Copper	<.10
Iron	<.10
Lead	<.10
Magnesium	140.
Manganese	.42
Molybdenum	<.10
Nickel	<.10
Silicon	43.
Silver	<.10
Strontium	4.8
Tin	<.10
Vanadium	<.10
Yttrium	<.10
Zinc	<.10

ATOMIC ABSORPTION ANALYSES

Arsenic .03 µg/ml

Selenium _____ µg/ml

Mercury _____ µg/ml

REPORT TO: David G. [illegible]yer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

[illegible]BORATORY
LAB NUMBER ORC-334-17-B 4/12/85
85-0334-C
SLD PRIORITY 3
SLD Users Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. Pond 3, N.E. Corner

City & County Navajo Refinery, Artesia Eddy Cty

Collected (date & time) 850410/1135 By (name) Boyer/Baca

pH= 7.6 ; Conductivity= 6900 umho/cm at 19 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods & Remarks (i.e. odors etc.)

Sample opposite MW #7 at NE corner
Aromatic odor

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed David G Boyer

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip L. Baca

Method of Shipment to Laboratory Hand Carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:
specimen ✓; duplicate ✓; triplicate ; blank(s) ,
and amber glass jug(s) with teflon-lined cap(s) identified as ,
and other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).
P-ICE: Sample stored in an ice bath.
P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

ANALYSES REQUESTED

LAB. No.: ORG- 334

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
		HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halogenated purgeables	none detected		
benzene	none detected		
toluene	none detected		
ethylbenzene	none detected		
p-xylene	200		
m-xylene	190		
o-xylene	none detected		
		* DETECTION LIMIT	1 ug/l

REMARKS: Twenty-seven aromatic tube compounds were also detected that were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO X. Seal(s) broken by:_____ date:_____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 29 Apr & 3 May 85 Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R Meyerhen

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4 / 12 / 85	LAB NO. NC-1706	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85/04/10	SITE INFORMATION ►	Sample location: NE Corner Pond #3 Navajo Refinery	
Collection TIME 1135		Collection site description: Corner near MW #7	
Collected by — Person/Agency: Boyer/Baca Ocb			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: —	Sample type: GRAB
pH (00400): 7.6	Conductivity (Uncorrected): 6900 µmho	Water Temp. (00010): 19 °C	Conductivity at 25°C (00094): 7840 µmho

Field comments: Strong odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 ☐ NF: Whole sample (Non-filtered) ☐ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

F, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.18		4/10
☐ Other:			
☐ Other:			

NF, A-H_2SO_4		Units	Date analyzed
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☒ Calcium (00915)	99.7	mg/l	5/2
☒ Magnesium (00925)	72.0	mg/l	5/2
☒ Sodium (00930)	1907	mg/l	4/16
☒ Potassium (00935)	18.3	mg/l	4/16
☒ Bicarbonate (00440)	274.9	mg/l	6/5
☒ Chloride (00940)	2037.6	mg/l	6/5
☒ Sulfate (00945)	2162	mg/l	5/8
☒ Total filterable residue (dissolved) (70300)	5752	mg/l	5/29
☒ Other: CO_3	15.1		6/5
☒ F	31.0		5/3

F, A-H_2SO_4		Units	Date analyzed
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6 / 11 / 85	

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4/12/85	LAB NO. LC-1699	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85/04/10	SITE INFORMATION ►	Sample location: NE Corner Pond #3 Navajo Refinery	
Collection TIME 1135		Collection site description: Corner near MW #7	
Collected by — Person/Agency: Boyer/Baca Ob			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: —	Sample type: GRAB
pH (00400): 7.6	Conductivity (Uncorrected): 6900 µmho	Water Temp. (00010): 19 °C	Conductivity at 25°C (00094): — µmho

Field comments: Strong odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 ☐ NF: Whole sample (Non-filtered) ☐ F: Filtered in field with 0.45 µmembrane filter ☒ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☐ Other:			
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☐ Calcium (00915)		mg/l	
☐ Magnesium (00925)		mg/l	
☐ Sodium (00930)		mg/l	
☐ Potassium (00935)		mg/l	
☐ Bicarbonate (00440)		mg/l	
☐ Chloride (00940)		mg/l	
☐ Sulfate (00945)		mg/l	
☐ Total filterable residue (dissolved) (70300)		mg/l	
☐ Other:			

NF, A-H_2SO_4			
☒ Nitrate-N +, Nitrate-N total (00630)	0.08	mg/l	4/23
☒ Ammonia-N total (00610)	7.53	mg/l	5/14
☒ Total Kjeldahl-N ( )	[illegible]	mg/l	5/14
☒ Chemical oxygen demand (00340)	300	mg/l	5/17
☒ Total organic carbon ( )	12.5	mg/l	6/12
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6/25/85	[illegible]

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metals
~~GENERAL WATER CHEMISTRY~~ ~~AND NITROGEN ANALYSIS~~

DATE RECEIVED	4 / 12 / 85	LAB NO. HM-0694	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 85/04/10	SITE INFORMATION ►	Sample location NE Corner Pond #3 Navajo Refinery	
Collection TIME 1135		Collection site description Corner near MW #7	
Collected by — Person/Agency Boyer/Baca Ob			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level –	Discharge –	Sample type GRAB
pH (00400) 7.6	Conductivity (Uncorrected) 6900 µmho	Water Temp. (00010) 19 °C	Conductivity at 25°C (00094) – µmho

Field comments Strong odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted 1 | ☐ NF: Whole sample (Non-filtered) | ☒ F: Filtered in field with 0.45 µmembrane filter | ☐ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☒ Other-*specify:* A HNO_3

ANALYTICAL RESULTS from SAMPLES

F, A HNO_3	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho	
☐ Total non-filterable residue (suspended) (00530)	mg/l	
☒ Other: ICAP SCAN		
☒ Other: As	0.01 mg/l	5/13
☐ Other:		

F, NA	Units	Date analyzed
☐ Calcium (00915)	mg/l	
☐ Magnesium (00925)	mg/l	
☐ Sodium (00930)	mg/l	
☐ Potassium (00935)	mg/l	
☐ Bicarbonate (00440)	mg/l	
☐ Chloride (00940)	mg/l	
☐ Sulfate (00945)	mg/l	
☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Other:		

NF, A-H_2SO_4	Units	Date analyzed
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	
☐ Ammonia-N total (00610)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	
☐ Total organic carbon ( )	mg/l	
☐ Other:		
☐ Other:		

F, A-H_2SO_4	Units	Date analyzed
☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l	
☐ Other:		

Analyst	Date Reported	Reviewed by
	6 / 13 / 85	Jim Cadley

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

ICAP SCREEN

Lab Number: HM 694

Sample Code: NE Corner of Pond

Date Submitted: 4/12/85

Date Reported: 6/18/85

By: Boyer/Baca

By: Jim Reddy

Determination	Concentration (µg/ml)
Aluminum	<.10
Barium	.11
Beryllium	<.10
Boron	.34
Cadmium	<.10
Calcium	87.
Chromium	<.10
Cobalt	<.10
Copper	<.10
Iron	.11
Lead	<.10
Magnesium	62.
Manganese	.13
Molybdenum	<.10
Nickel	<.10
Silicon	8.6
Silver	<.10
Strontium	2.6
Tin	<.10
Vanadium	<.10
Yttrium	<.10
Zinc	<.10

ATOMIC ABSORPTION ANALYSES

Arsenic .611 µg/ml

Selenium _____ µg/ml

Mercury _____ µg/ml

REPORT TO: David G. [illegible]yer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

85-0331-C

LABORATORY
LAB NUMBER ORG-331-17B 4/12/85
SLD PRIORITY 3
SLD Users Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. Pond #4 (New Pond) Navajo Refinery

City & County Artesia, Eddy Cty

Collected (date & time) 850410/1201 By (name) Boyer/Baca

pH= 77 ; Conductivity= 8200 umho/cm at 19 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods & Remarks (i.e. odors etc.)

Sample from Nend of new pond

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed David A. Boyer

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip L. Baca

Method of Shipment to Laboratory Hand carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:
specimen x ; duplicate x ; triplicate ; blank(s) ,
and amber glass jug(s) with teflon-lined cap(s) identified as ,
and other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).
P-ICE: Sample stored in an ice bath.
P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

ANALYSES REQUESTED

LAB. No.: ORG- 331.

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
		HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
Halogenated Aliphatics	none detected		
benzene	none detected		
toluene	none detected		
ethylbenzene	none detected		
o-xylene	none detected		
m-xylene	HC		
p-xylene	none detected		
		* DETECTION LIMIT	1 ppb

REMARKS: Eleven aromatic type compounds were also detected but were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO X. Seal(s) broken by:_____ date:_____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 25 thru 85. Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R Meyerhen

REPORT TO: David G. [illegible]yer 85-0338-C
New Mexico Oil Conse[illegible]tion Division
P. O. Box 2088
Santa Fe, NM 87501

[illegible]BORATORY
LAB NUMBER

SLD PRIORITY 3

SLD Users Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. MW #49, Navajo Refinery

City & County Artesia, Eddy Cty

Collected (date & time) 850411/0730 By (name) Boyd/Baca

pH= – ; Conductivity= 8200 umho/cm at 15 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods & Remarks (i.e. odors etc.)

Sample from well drilled 4/9, Well drilled at NW corner of propert between #1 & #2

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed Jamie H Boyd

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip L. Baca

Method of Shipment to Laboratory Hand carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:
specimen X ; duplicate X ; triplicate ; blank(s) ,
and amber glass jug(s) with teflon-lined cap(s) identified as ,
and other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).
P-ICE: Sample stored in an ice bath.
P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from _____ to _____ at (location) _____ on (date & time) _____ and that the statements in this block are correct.

Disposition of Sample _____. Seal(s) Intact: Yes ☐ No ☐ .

Signature(s) _____ _____

I (we) certify that this sample was transferred from _____ to _____ at (location) _____ on (date & time) _____ and that the statements in this block are correct.

Disposition of Sample _____. Seal(s) Intact: Yes ☐ No ☐ .

Signature(s) _____ _____

ANALYSES REQUESTED

LAB. No.: ORG- 338

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
		HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halogenated purgeables	none detected		
benzene	none detected		
toluene	none detected		
ethyl-benzene	none detected		
p-xylene	none detected		
m-xylene	20		
o-xylene	none detected		
		* DETECTION LIMIT	5 ug/m/l

REMARKS: Five aromatic type compounds were also detected that were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO X. Seal(s) broken by:_____ date:_____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 25 Aug 85. Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: L Meyerhem

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4/12/85	LAB NO. WC-1705	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 05/04/11	SITE INFORMATION ►	Sample location MW #49, NW corner of Pond Area	
Collection TIME 0730		Collection site description from Weekly New MW drilled 4/9	
Collected by — Person/Agency Boyer/Boca			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer

Station/well code

Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped ☐ Pump ☐ Tap	Water level 11', 10" Below	Discharge Steel Pipe	Sample type Grab
pH (00400) —	Conductivity (Uncorrected) 8200 µmho	Water Temp. (00010) 15 °C	Conductivity at 25°C (00094) 10225 µmho

Field comments

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted 1 | ☒ NF: Whole sample (Non-filtered) | ☐ F: Filtered in field with 0.45 µ membrane filter | ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:* Small sample - do TFR, Cl, SO4 first

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.3		
☐ Other:			
☐ Other:			

NA NF		Units	Date analyzed
☒ Calcium (00915)	734	mg/l	5/2
☒ Magnesium (00925)	226	mg/l	5/2
☒ Sodium (00930)	1757	mg/l	4/16
☒ Potassium (00935)	16.8	mg/l	4/16
☒ Bicarbonate (00440)	190.3	mg/l	6/5
☒ Chloride (00940)	1909.1	mg/l	6/5
☒ Sulfate (00945)	4166	mg/l	5/8
☒ Total filterable residue (dissolved) (70300)	7605	mg/l	5/29
☒ Other: CO_3	neg.		6/5
☒ F	0.94		5/3

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6/10/85	[illegible]

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

REPORT TO: David G. [redacted]ver
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

85-0329-C

[redacted]BORATORY

LAB NUMBER ORG-329-A-B 4/12/85

SLD PRIORITY 3

SLD Users Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. Pecos River @ MW #7, Navajo Refinery

City & County Artesia, Eddy Cty

Collected (date & time) 850410/1142 By (name) Boyd/Baca

pH= 8.3; Conductivity= 8900 umho/cm at 21 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods & Remarks (i.e. odors etc.)

Sample obtained from W. Bank at well #7. No aromatic odor

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed David G. Boyd

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip L. Baca

Method of Shipment to Laboratory Hand carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:
specimen ✓; duplicate ✓; triplicate ; blank(s) ,
and amber glass jug(s) with teflon-lined cap(s) identified as ,
and other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).
P-ICE: Sample stored in an ice bath.
P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

ANALYSES REQUESTED

LAB. No.: ORG- 329

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
		HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
Halogenated Purgeables	none detected		
Aromatic Purgeables	none detected		
		* DETECTION LIMIT	1 ug/m³

REMARKS: No purgeables detected*

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO X. Seal(s) broken by:_____ date:_____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 28 May 85. Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyerhen

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4/12/85	LAB NO. WC-1715	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85/04/10	SITE INFORMATION ►	Sample location: Pecos River at MW #N 7	
Collection TIME 1147		Collection site description: Site opposite NE corner Navajo pond #3 & MW #7, Navajo Refinery	
Collected by — Person/Agency: Boyer/Roca OCD			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code:
Owner:

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level	Discharge	Sample type: Grab
pH (00400): 8.3	Conductivity (Uncorrected): 8900 µmho	Water Temp. (00010): 21 °C	Conductivity at 25°C (00094): 9625 µmho

Field comments: No odor or aromatics

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.0		
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☒ Calcium (00915)	650	mg/l	5/2
☒ Magnesium (00925)	281	mg/l	5/2
☒ Sodium (00930)	1329	mg/l	4/16
☒ Potassium (00935)	14.0	mg/l	4/16
☒ Bicarbonate (00440)	105.0	mg/l	6/5
☒ Chloride (00940)	2413.6	mg/l	6/5
☒ Sulfate (00945)	2913	mg/l	5/8
☒ Total filterable residue (dissolved) (70300)	7383	mg/l	5/29
☒ Other: CO_3	none		6/5
☒ F	0.81		5/3

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6/10/85	[illegible]

Laboratory remarks:

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	4 / 12 / 85	LAB NO.	WC-1696
USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235		
Collection DATE	85/04/10	SITE INFORMATION ►	Sample location: Pecos River at MW #N 7
Collection TIME	1147		Collection site description: Site opposite NE corner Navajo Pond #3 & MW #7, Navajo Refinery
Collected by — Person/Agency	Boyer/Roca OCD		

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer

Station/well code:

Owner:

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level	Discharge	Sample type: Grab
pH (00400): 8.3	Conductivity (Uncorrected): 8900 µmho	Water Temp. (00010): 21 °C	Conductivity at 25°C (00094): µmho

Field comments: No odor or aromatics

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µ membrane filter ☐ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☐ Other:			
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☐ Calcium (00915)		mg/l	
☐ Magnesium (00925)		mg/l	
☐ Sodium (00930)		mg/l	
☐ Potassium (00935)		mg/l	
☐ Bicarbonate (00440)		mg/l	
☐ Chloride (00940)		mg/l	
☐ Sulfate (00945)		mg/l	
☐ Total filterable residue (dissolved) (70300)		mg/l	
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☒ Chemical oxygen demand (00340)	249	mg/l	5/17
☒ Total organic carbon ( )	21.3	mg/l	6/13
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☒ Nitrate-N +, Nitrate-N dissolved (00631)	0.05	mg/l	4/23
☒ Ammonia-N dissolved (00608)	0.24	mg/l	5/14
☒ Total Kjeldahl-N ( )	0.77	mg/l	5/29
☐ Other:			

Analyst	Date Reported	Reviewed by
	6 / 5 / 85	[illegible]

Laboratory remarks:

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID. GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Mary Metals
~~GENERAL WATER CHEMISTRY~~
~~and NITROGEN ANALYSIS~~

DATE RECEIVED 4 / 12 / 85	LAB NO. HM-1693	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85/04/10	SITE INFORMATION ►	Sample location: Pecos River at MW #7	
Collection TIME 1147		Collection site description: Site opposite NE corner Navajo Pond #3 & MW #7, Navajo Refinery	
Collected by — Person/Agency: Boyer/Baca OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer

Station/well code

Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level	Discharge	Sample type: Grab
pH (00400): 8.3	Conductivity (Uncorrected): 8700 µmho	Water Temp. (00010): 21 °C	Conductivity at 25°C (00094) µmho

Field comments: No odor of aromatics

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☒ Other-*specify*: A HNO_3

ANALYTICAL RESULTS from SAMPLES

~~NF, NA~~ F, A-HNO_3

		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: ICAP SCAN			
☐ Other:			
☐ Other:			

F, NA

		Units	Date analyzed
☐ Calcium (00915)		mg/l	
☐ Magnesium (00925)		mg/l	
☐ Sodium (00930)		mg/l	
☐ Potassium (00935)		mg/l	
☐ Bicarbonate (00440)		mg/l	
☐ Chloride (00940)		mg/l	
☐ Sulfate (00945)		mg/l	
☐ Total filterable residue (dissolved) (70300)		mg/l	
☐ Other:			

NF, A-H_2SO_4

☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, A-H_2SO_4

☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6 / 18 / 85	Jim [illegible]

Laboratory remarks: See attached List

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

ICAP SCREEN

Lab Number: HM693

Sample Code: Pecos River at NW10 #

Date Submitted: 4/12/85

Date Reported: 6/17/85

By: Boyer/Baca

By: J. [illegible]

Determination	Concentration (µg/ml)
Aluminum	<.10
Barium	<.10
Beryllium	<.10
Boron	.59
Cadmium	<.10
Calcium	740.
Chromium	<.10
Cobalt	<.10
Copper	<.10
Iron	<.10
Lead	<.10
Magnesium	250.
Manganese	.15
Molybdenum	<.10
Nickel	<.10
Silicon	2.3
Silver	<.10
Strontium	11.
Tin	<.10
Vanadium	<.10
Yttrium	<.10
Zinc	<.10

ATOMIC ABSORPTION ANALYSES

Arsenic _____ µg/ml

Selenium _____ µg/ml

Mercury _____ µg/ml

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY
LAB NUMBER ORG-332-F-B 4/12/85
85-0332-C SLD PRIORITY 3
...ers Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. Bore Hole AJ, Navajo Refinery

City & County Artesia, Eddy Cty

Collected (date & time) 850410/0915 By (name) Boyer/Baca

pH= — ; Conductivity= 6900 umho/cm at 17 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods & Remarks (i.e. odors etc.)

18 ft borehole drilled on 4/9. On 4/10 had 2 feet H_2O, 4 ft product. Hole on N. side of tank 439

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed David G. Boyer

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip F. Boyer

Method of Shipment to Laboratory Hand carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:
specimen ✓; duplicate ✓; triplicate ; blank(s) ,
and amber glass jug(s) with teflon-lined cap(s) identified as ,
and other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).
P-ICE: Sample stored in an ice bath.
P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

ANALYSES REQUESTED LAB. No.: ORG- 332

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
		HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
Halogenated purgeables	were detected		
Benzene	6236 C		
Toluene	18450		
Ethyl-benzene	1440		
p-xylene	400		
m-xylene	830		
o-xylene	465		
		* DETECTION LIMIT	100 ug/L

REMARKS: Eight aromatic type compounds were also detected that were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO X. Seal(s) broken by:_____ date:_____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 26 Apr & 3 May 85 Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyerhen

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4/12/85	LAB NO. WC-1704	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 8504 10	SITE INFORMATION ►	Sample location: BoreHole AJ, Navajo Refinery	
Collection TIME 0915		Collection site description: Hole Located N of Tank 439	
Collected by — Person/Agency: Boyer/Beca OCD			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped ☐ Pump ☐ Tap	Water level —	Discharge —	Sample type GRAB
pH (00400) —	Conductivity (Uncorrected) 6900 µmho	Water Temp. (00010) 17 °C	Conductivity at 25°C (00094) 8200 DTR µmho

Field comments: Product in hole

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted 1 | ☒ NF: Whole sample (Non-filtered) | ☐ F: Filtered in field with 0.45 µmembrane filter | ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.0		
☐ Other:			
☐ Other:			

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

☒ NA NF		Units	Date analyzed
☒ Calcium (00915)	464	mg/l	5/2
☒ Magnesium (00925)	589	mg/l	5/2 71.6
☒ Sodium (00930)	651	mg/l	4/16
☒ Potassium (00935)	0.78	mg/l	4/16
☒ Bicarbonate (00440)	442.2	mg/l	6/5
☒ Chloride (00940)	2156.8	mg/l	6/5
☒ Sulfate (00945)	1699	mg/l	5/8
☒ Total filterable residue (dissolved) (70300)	5420	mg/l	5/29
☒ Other: CO_3	None		6/5
☒ F	1.58		5/3

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6/10/85	

Laboratory remarks

85-0336

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY

LAB NUMBER ORG-336-A.B 4/12/85

SLD PRIORITY 3

SLD Users Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. Fire Pond, Navajo Refinery

City & County Artesia, Navajo Refinery

Collected (date & time) 850410/0937 By (name) Boyer/Baca

pH= 11.8; Conductivity= 6000 umho/cm at 16.5 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods & Remarks (i.e. odors etc.)

Sample from pond ramp, N. end of pond, Little odor

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed David G. Boyer

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip S. Baca

Method of Shipment to Laboratory Hand carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:
specimen x; duplicate x; triplicate ; blank(s) ,
and ____ amber glass jug(s) with teflon-lined cap(s) identified as ,
and ____ other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).

P-ICE: Sample stored in an ice bath.

P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from ____ to ____ at (location) ____ on (date & time) ____ and that the statements in this block are correct.

Disposition of Sample ____. Seal(s) Intact: Yes ☐ No ☐ .

Signature(s) ____ ____

I (we) certify that this sample was transferred from ____ to ____ at (location) ____ on (date & time) ____ and that the statements in this block are correct.

Disposition of Sample ____. Seal(s) Intact: Yes ☐ No ☐ .

Signature(s) ____ ____

ANALYSES REQUESTED LAB. No.: ORG- 336

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
		HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halogenated purgeable	none detected		
benzene	none detected		
toluene	none detected		
ethylbenzene	none detected		
p-xylene	none detected		
m-xylene	none detected		
o-xylene	none detected		
		* DETECTION LIMIT	1 ug/ml

REMARKS: One aromatic type compound was also detected but was not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 28 APR 85. Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: K Meyerhen

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4 / 12 / 85	LAB NO. 48-1714	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85/04/10	SITE INFORMATION ►	Sample location: Navajo Refinery Fire Pond	
Collection TIME 0937		Collection site description: From Ramp at N. end of pond	
Collected by — Person/Agency: Boyer / Boca Oil			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer

Station/well code

Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level —	Discharge —	Sample type GRAB
pH (00400) 11.8	Conductivity (Uncorrected) 6000 µmho	Water Temp. (00010) 16.5 °C	Conductivity at 25°C (00094) 7220 µmho

Field comments: Slight or no odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	11.0		
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☒ Calcium (00915)	<0.1	mg/l	5/2
☒ Magnesium (00925) *	<0.1	mg/l	5/2 .07
☒ Sodium (00930)	1530	mg/l	4/16
☒ Potassium (00935)	8.19	mg/l	4/16
☒ Bicarbonate (00440)	none, pH=11.09	mg/l	6/5
☒ Chloride (00940)	235.9	mg/l	6/5
☒ Sulfate (00945)	4983	mg/l	5/8
☒ Total filterable residue (dissolved) (70300)	4625	mg/l	
☒ Other: CO_3	425.2		6/5
	4.48		5/3/85

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6 / 10 / 85	

Laboratory remarks: Possible interferences

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metals
~~GENERAL WATER CHEMISTRY AND NITROGEN ANALYSIS~~

DATE RECEIVED 4 / 12 / 85	LAB NO. HM-0698	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85/04/10	SITE INFORMATION ►	Sample location: Navajo Refinery Fire Pond	
Collection TIME 0937		Collection site description: From Ramp at N. end of pond	
Collected by — Person/Agency: Boyer / Box OCD			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: —	Sample type: GRAB
pH (00400): 11.8	Conductivity (Uncorrected): 6000 µmho	Water Temp. (00010): 16.5 °C	Conductivity at 25°C (00094): µmho

Field comments: Slight or no odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☒ Other-*specify*: A HNO_3

ANALYTICAL RESULTS from SAMPLES

F, A HNO_3		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: ICAP SCAN			
☒ Other: As	Co 0.2 mg/ml		5/17/85
☐ Other:			

F, NA		Units	Date analyzed
☐ Calcium (00915)		mg/l	
☐ Magnesium (00925)		mg/l	
☐ Sodium (00930)		mg/l	
☐ Potassium (00935)		mg/l	
☐ Bicarbonate (00440)		mg/l	
☐ Chloride (00940)		mg/l	
☐ Sulfate (00945)		mg/l	
☐ Total filterable residue (dissolved) (70300)		mg/l	
☐ Other:			

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6 / 17 / 85	[illegible]

Laboratory remarks: See attached sheet

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

ICAP SCREEN

Lab Number: HM 698

Date Submitted: 4/12/85

By: Boyer/Baca

Sample Code: Navajo Refinery Fire Pond

Date Reported: 6/17/85

By: Jim Ashby

Date Analyzed: 6/12/85

Determination	Concentration (µg/ml)
Aluminum	<0.10
Barium	<0.10
Beryllium	<0.10
Boron	0.19
Cadmium	<0.10
Calcium	3.4
Chromium	<0.10
Cobalt	<0.10
Copper	<0.10
Iron	0.10
Lead	<0.10
Magnesium	0.35
Manganese	<0.05
Molybdenum	<0.10
Nickel	<0.10
Silicon	30.
Silver	<0.10
Strontium	<0.10
Tin	<0.10
Vanadium	<0.10
Yttrium	<0.10
Zinc	<0.10

ATOMIC ABSORPTION ANALYSES

Determination	Concentration (µg/ml)
Arsenic	0.02
Selenium	
Mercury	

*High Sodium Level >1000

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4 / 12 / 85	LAB NO. WC-7695	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85/04/10	SITE INFORMATION ►	Sample location: Navajo Refinery Fire Pond	
Collection TIME 0937		Collection site description: From Ramp at N. end of pond	
Collected by — Person/Agency: Boyer / Box OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer

Station/well code

Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: —	Sample type: GRAB
pH (00400): 11.8	Conductivity (Uncorrected): 6000 µmho	Water Temp. (00010): 16.5 °C	Conductivity at 25°C (00094): µmho

Field comments: Slight or no odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☒ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☐ Other:			
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☐ Calcium (00915)		mg/l	
☐ Magnesium (00925)		mg/l	
☐ Sodium (00930)		mg/l	
☐ Potassium (00935)		mg/l	
☐ Bicarbonate (00440)		mg/l	
☐ Chloride (00940)		mg/l	
☐ Sulfate (00945)		mg/l	
☐ Total filterable residue (dissolved) (70300)		mg/l	
☐ Other:			

☒ F, A-H_2SO_4			
☒ Nitrate-N +, Nitrate-N total (00630)	7.51	mg/l	4/23
☒ Ammonia-N total (00610)	10.06	mg/l	5/14
☒ Total Kjeldahl-N ( )	10.0	mg/l	5/29
☒ Chemical oxygen demand (00340)	120	mg/l	5/17
☒ Total organic carbon ( )	10.9	mg/l	6/10
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	7/10/85	[illegible]

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

ICAP SCREEN

Lab Number: HM 697

Date Submitted: 4/12/85

By: Bayer/Baca

Sample Code: N Div. APIeffluent

Date Reported: 6/18/85

By: [illegible]

Determination	Concentration (µg/ml)
Aluminum	<.10
Barium	<.10
Beryllium	<.10
Boron	<.10
Cadmium	<.10
Calcium	130.
Chromium	<.10
Cobalt	<.10
Copper	<.10
Iron	<.10
Lead	<.10
Magnesium	37.
Manganese	<.05
Molybdenum	<.10
Nickel	<.10
Silicon	7.4
Silver	<.10
Strontium	1.5
Tin	<.10
Vanadium	<.10
Yttrium	<.10
Zinc	<.10

ATOMIC ABSORPTION ANALYSES

Arsenic .009 µg/ml

Selenium _____ µg/ml

Mercury _____ µg/ml

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

85-0328-C

LABORATORY

LAB NUMBER ORG-328-A-B 4-12

SLD PRIORITY 3

SLD Users Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. Refinery Ditch at N. Div. Property boundary

City & County Navajo Refinery, Artesia

Collected (date & time) 850410 0855 By (name) Boyer/Baca

pH= 8.6; Conductivity= 7000 umho/cm at 28 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate= 300 gpm

Sampling Location, Methods & Remarks (i.e. odors etc.)

Sample from weir on N. side of road crossing. Weir trapped oil, some lighter fractions moved over weir strong odor

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed David G. Boyer

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip L. Baca

Method of Shipment to Laboratory Hand carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:
specimen ✓; duplicate ✓; triplicate ; blank(s) ,
and amber glass jug(s) with teflon-lined cap(s) identified as ,
and other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).
P-ICE: Sample stored in an ice bath.
P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from _____ to _____ at (location) _____ on (date & time) _____ and that the statements in this block are correct.

Disposition of Sample _____. Seal(s) Intact: Yes ☐ No ☐ .

Signature(s) _____ _____

I (we) certify that this sample was transferred from _____ to _____ at (location) _____ on (date & time) _____ and that the statements in this block are correct.

Disposition of Sample _____. Seal(s) Intact: Yes ☐ No ☐ .

Signature(s) _____ _____

ANALYSES REQUESTED

LAB. No.: ORG- 32E

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
		HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
Halogenated purgeables	none detected		
benzene	2700		
toluene	4510		
ethyl-benzene	1110		
p-xylene	none detected		
m-xylene	1050		
o-xylene	530		
		* DETECTION LIMIT	25 ppb

REMARKS: Sixteen aromatic type compounds were also detected that were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO X. Seal(s) broken by:_____ date:_____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 29 Apr, 3 May 85 Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyerhen

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4 / 12 / 85	LAB NO. WC-1709	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85 04 10	SITE INFORMATION ►	Sample location: Wastewater Ditch, N. end of refinery	
Collection TIME 0855		Collection site description: From Weir at Ditch at N END of Navajo refinery property on N. Side of road crossing (near old sewage plant)	
Collected by — Person/Agency: Boyer/Bova			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level	Discharge ~300 gpm	Sample type Grab
pH (00400) 8.6	Conductivity (Uncorrected) 7000 µmho	Water Temp. (00010) 28 °C	Conductivity at 25°C (00094) 6601 µmho

Field comments: Strong aromatic odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted 1 | ☐ NF: Whole sample (Non-filtered) | ☒ F: Filtered in field with 0.45 µmembrane filter | ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	6.23		
☐ Other:			
☐ Other:			

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☒ Calcium (00915)	208	mg/l	5/2
☒ Magnesium (00925)	53.5	mg/l	5/2
☒ Sodium (00930)	1175	mg/l	4/16
☒ Potassium (00935)	8.47	mg/l	4/16
☒ Bicarbonate (00440)	1.0	mg/l	6/5
☒ Chloride (00940)	1789.6	mg/l	6/5
☒ Sulfate (00945)	1162	mg/l	5/3
☒ Total filterable residue (dissolved) (70300)	4413	mg/l	6/5
☒ Other: CO_3	none		6/5
F	23.5		5/20

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6 / 10 / 85	CJ

Laboratory remarks

14.

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metals
~~GENERAL WATER CHEMISTRY~~
~~and NITROGEN ANALYSIS~~

DATE RECEIVED 4 / 12 / 85	LAB NO. HM-0691	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85 04 10	SITE INFORMATION ►	Sample location: Wastewater Ditch, N. end of refinery	
Collection TIME 0855		Collection site description: From Weir at Ditch at N END of Navajo refinery property on N. Side of road crossing (near old sewage plant)	
Collected by — Person/Agency: Boyer/Baca			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level	Discharge ~300 gpm	Sample type Grab
pH (00400) 8.6	Conductivity (Uncorrected) 7000 µmho	Water Temp. (00010) 28 °C	Conductivity at 25°C (00094) µmho

Field comments: Strong aromatic odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted 1 | ☐ NF: Whole sample (Non-filtered) | ☒ F: Filtered in field with 0.45 µmembrane filter | ☐ A: 2 ml H_2SO_4/L added

☐ NA: No acid added | ☒ Other-specify: A HNO_3

ANALYTICAL RESULTS from SAMPLES

NF, A HNO_3	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho	
☐ Total non-filterable residue (suspended) (00530)	mg/l	
☒ Other: ICAPSCAN		
☒ Other: As	0.392 mg/L	5/7
☐ Other:		

F, NA	Units	Date analyzed
☐ Calcium (00915)	mg/l	
☐ Magnesium (00925)	mg/l	
☐ Sodium (00930)	mg/l	
☐ Potassium (00935)	mg/l	
☐ Bicarbonate (00440)	mg/l	
☐ Chloride (00940)	mg/l	
☐ Sulfate (00945)	mg/l	
☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Other:		

NF, A-H_2SO_4	Units	Date analyzed
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	
☐ Ammonia-N total (00610)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	
☐ Total organic carbon ( )	mg/l	
☐ Other:		
☐ Other:		

F, A-H_2SO_4	Units	Date analyzed
☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l	
☐ Other:		

Analyst	Date Reported	Reviewed by
	6 / 13 / 85	[illegible]

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

ICAP SCREEN

Lab Number: HM691

Sample Code: Waste Water ditch

Date Submitted: 4/12/85

Date Reported: 6/12/85

By: Boyer/Baca

By: [illegible]

Determination	Concentration (µg/ml)
Aluminum	<.10
Barium	<.10
Beryllium	<.10
Boron	.20
Cadmium	<.10
Calcium	150.
Chromium	<.10
Cobalt	<.10
Copper	<.10
Iron	<.10
Lead	<.10
Magnesium	56.
Manganese	.07
Molybdenum	<.10
Nickel	<.10
Silicon	6.6
Silver	<.10
Strontium	2.2
Tin	<.10
Vanadium	<.10
Yttrium	<.10
Zinc	<.10

ATOMIC ABSORPTION ANALYSES

Arsenic .392 µg/ml

Selenium _____ µg/ml

Mercury _____ µg/ml

85-0337-C

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY

LAB NUMBER DRG-337-17-B 4/12/85

SLD PRIORITY 3

SLD Users Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. ~~8504101055~~ Pond #1 inlet

City & County Navajo Refinery, Artesia, Eddy Cty

Collected (date & time) 8504101055 By (name) Boyer/Baca

pH= 8.5; Conductivity= 4055 umho/cm at 17.5 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate= ~300gpm

Sampling Location, Methods & Remarks (i.e. odors etc.)

~~Culvert~~ Downstream of road culvert at Ditch, Very Strong aromatic odor.

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed David G. Boyer

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip L. Baca

Method of Shipment to Laboratory Hand carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:

specimen X; duplicate X; triplicate ; blank(s) ,

and amber glass jug(s) with teflon-lined cap(s) identified as ,

and other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).

P-ICE: Sample stored in an ice bath.

P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from to

at (location) on

(date & time) and that the statements in this block are correct.

Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .

Signature(s)

I (we) certify that this sample was transferred from to

at (location) on

(date & time) and that the statements in this block are correct.

Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .

Signature(s)

ANALYSES REQUESTED

LAB. No.: ORG- 337

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
		HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halogenated purgeables	none detected		
benzene	100		
toluene	470		
ethylbenzene	70		
p-xylene	5		
m-xylene	120		
o-xylene	50		
		* DETECTION LIMIT	2 ug/l

REMARKS: Twenty-four aromatic type compounds were also detected that were not identified, including one halogenated poly-substituted aromatic compound.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 25 Apr + 3 May 85. Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyerhem

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4/12/85	LAB NO. WC-1712	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 04/10/85	SITE INFORMATION ►	Sample location: Pond #1 Inlet, Navajo Refinery	
Collection TIME 1055		Collection site description: Culvert (downstream side) at ditch inlet to pond #1	
Collected by — Person/Agency: Boyer/Box & OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer

Station/well code

Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: –	Discharge: ~300 gpm	Sample type: Grab
pH (00400): 8.5	Conductivity (Uncorrected): 4050 µmho	Water Temp. (00010): 17.3 °C	Conductivity at 25°C (00094): 4780 µmho

Field comments: Strong aromatic odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.12		6/14
☐ Other:			
☐ Other:			

NF, A-H_2SO_4		Units	Date analyzed
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☒ Calcium (00915)	126	mg/l	5/2
☒ Magnesium (00925)	64.4	mg/l	5/2
☒ Sodium (00930)	803	mg/l	4/16
☒ Potassium (00935)	5.85	mg/l	4/16
☒ Bicarbonate (00440)	50.7	mg/l	6/6
☒ Chloride (00940)	209.8	mg/l	6/21
☒ Sulfate (00945)	980	mg/l	5/8
☒ Total filterable residue (dissolved) (70300)	3263	mg/l	5/29
☒ Other: CO_3	none		6/6
☒ F	63.7		5/3

F, A-H_2SO_4		Units	Date analyzed
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6/18/85	[signature]

Laboratory remarks

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4 / 12 / 85	LAB NO. WC-7648	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 04/10/85	SITE INFORMATION ►	Sample location: Pond #1 Inlet, Navajo Refinery	
Collection TIME 1055		Collection site description: Culvert (downstream side) at ditch inlet to pond #1	
Collected by — Person/Agency: Boyer/Bass OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer

Station/well code

Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: ~300 gpm	Sample type: Grab
pH (00400): 8.5	Conductivity (Uncorrected): 4050 µmho	Water Temp. (00010): 17.3 °C	Conductivity at 25°C (00094): — µmho

Field comments: Strong aromatic odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☒ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☐ Other:			
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☐ Calcium (00915)		mg/l	
☐ Magnesium (00925)		mg/l	
☐ Sodium (00930)		mg/l	
☐ Potassium (00935)		mg/l	
☐ Bicarbonate (00440)		mg/l	
☐ Chloride (00940)		mg/l	
☐ Sulfate (00945)		mg/l	
☐ Total filterable residue (dissolved) (70300)		mg/l	
☐ Other:			

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☒ Chemical oxygen demand (00340)	443	mg/l	5/17
☒ Total organic carbon ( )	85	mg/l	7/25
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☒ Nitrate-N +, Nitrate-N dissolved (00631)	1.24	mg/l	4/23
☒ Ammonia-N dissolved (00608)	13.5	mg/l	6/28
☒ Total Kjeldahl-N ( )	15.0	mg/l	5/29
☐ Other:			

Analyst	Date Reported	Reviewed by
	7 / 29 / 85	[illegible]

Laboratory remarks

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metals
~~GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS~~

DATE RECEIVED 4 / 12 / 85	LAB NO. HM-1695	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 04/10/85	SITE INFORMATION ►	Sample location: Pond #1 Inlet, Navajo Refinery	
Collection TIME 1055		Collection site description: Culvert (downstream side) at ditch inlet to pond #1	
Collected by — Person/Agency: Boyer/Bacon			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: ~300 gpm	Sample type: Grab
pH (00400): 8.5	Conductivity (Uncorrected): 4050 µmho	Water Temp. (00010): 17.3 °C	Conductivity at 25°C (00094): — µmho

Field comments: Strong aromatic odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 | ☐ NF: Whole sample (Non-filtered) | ☒ F: Filtered in field with 0.45 µmembrane filter | ☐ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☒ Other-*specify*: A HNO_3

ANALYTICAL RESULTS from SAMPLES

F, A HNO_3	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho	
☐ Total non-filterable residue (suspended) (00530)	mg/l	
☒ Other: ICAP SCAN		
☒ Other: As	0.339 mg/l	5-17
☐ Other:		

F, NA	Units	Date analyzed
☐ Calcium (00915)	mg/l	
☐ Magnesium (00925)	mg/l	
☐ Sodium (00930)	mg/l	
☐ Potassium (00935)	mg/l	
☐ Bicarbonate (00440)	mg/l	
☐ Chloride (00940)	mg/l	
☐ Sulfate (00945)	mg/l	
☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Other:		

NF, A-H_2SO_4	Units	Date analyzed
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	
☐ Ammonia-N total (00610)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	
☐ Total organic carbon ( )	mg/l	
☐ Other:		
☐ Other:		

F, A-H_2SO_4	Units	Date analyzed
☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l	
☐ Other:		

Analyst | Date Reported: 6 / 12 / 85 | Reviewed by: Jim Kelly

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

ICAP SCREEN

Lab Number: HM 695

Sample Code: Pond #1 Inlet

Date Submitted: 4/12/85

Date Reported: 6/18/85

By: Boyer/Baca

By: Jim Dalby

Determination	Concentration (µg/ml)
Aluminum	<.10
Barium	<.10
Beryllium	<.10
Boron	.23
Cadmium	<.10
Calcium	133.
Chromium	<.10
Cobalt	<.10
Copper	<.10
Iron	.15
Lead	<.10
Magnesium	56.
Manganese	.10
Molybdenum	<.10
Nickel	<.10
Silicon	15.
Silver	<.10
Strontium	2.2
Tin	<.10
Vanadium	<.10
Yttrium	<.10
Zinc	<.10

ATOMIC ABSORPTION ANALYSES

Arsenic .399 µg/ml

Selenium _____ µg/ml

Mercury _____ µg/ml

REPORT TO: David G. [illegible]yer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

[illegible]BORATORY
LAB NUMBER ORG 333-17.B 4/12/85
SLD PRIORITY 3

85-0333 -C Users Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLE[illegible] REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. Pond 1 outlet

City & County Navajo Refinery - Artesia, Eddy Cty

Collected (date & time) 850410/1114 By (name) Boyer / Baca

pH= 9.7; Conductivity= 5900 umho/cm at 19 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods & Remarks (i.e. odors etc.)

Sample from pond 1 outlet pipe downstream of pond dike
Heavy aromatic odor

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed [illegible]

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip L. Baca

Method of Shipment to Laboratory Hand carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:
specimen X; duplicate X; triplicate ; blank(s) ,
and ____ amber glass jug(s) with teflon-lined cap(s) identified as ,
and ____ other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).
P-ICE: Sample stored in an ice bath.
P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

ANALYSES REQUESTED

LAB. No.: ORG- 333

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
		HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halogenated Purgeables	none detected		
benzene	50		
toluene	290		
ethylbenzene	none detected		
p-xylene	6		
m-xylene	70		
o-xylene	4		
		* DETECTION LIMIT	1-2 ppb/L

REMARKS: Twenty-Six aromatic type compounds were also detected that were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO X. Seal(s) broken by:_____ date:_____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 28 Apr & 3 May 85. Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R Meyerhen

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4/12/85	LAB NO. WC-1711	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85/04/10	SITE INFORMATION ►	Sample location: Pond #1 Outlet, Navajo Refinery	
Collection TIME 1114		Collection site description: Downstream of outlet valve/pipe	
Collected by — Person/Agency: Boyer/Baca			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level —	Discharge ~ 300 gpm	Sample type GRAB
pH (00400) 9.7	Conductivity (Uncorrected) 5500 µmho	Water Temp. (00010) 19 °C	Conductivity at 25°C (00094) 6700 µmho

Field comments: Strong aromatic odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

F, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	6.5		
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☒ Calcium (00915)	44.6	mg/l	5/2
☒ Magnesium (00925)	67.2	mg/l	5/2
☒ Sodium (00930)	1318	mg/l	4/16
☒ Potassium (00935)	15.2	mg/l	4/16
☒ Bicarbonate (00440)	151.7	mg/l	6/5
☒ Chloride (00940)	1420.7	mg/l	6/5
☒ Sulfate (00945)	1273	mg/l	5/8
☒ Total filterable residue (dissolved) (70300)	4535	mg/l	5/29
☒ Other: CO_3	none		6/5
☒ F	61.6		5/3

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6/10/85	

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4 / 12 / 85	LAB NO. WC-1697	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85/04/10	SITE INFORMATION ►	Sample location: Pond #1 Outlet, Navajo Refinery	
Collection TIME 1114		Collection site description: Downstream of outlet valve/pipe	
Collected by — Person/Agency: Boyer/Boca			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: ~ 300 gpm	Sample type: GRAB
pH (00400): 9.7	Conductivity (Uncorrected): 5500 µmho	Water Temp. (00010): 19 °C	Conductivity at 25°C (00094): — µmho

Field comments: Strong aromatic odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☒ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☐ Other:			
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☐ Calcium (00915)		mg/l	
☐ Magnesium (00925)		mg/l	
☐ Sodium (00930)		mg/l	
☐ Potassium (00935)		mg/l	
☐ Bicarbonate (00440)		mg/l	
☐ Chloride (00940)		mg/l	
☐ Sulfate (00945)		mg/l	
☐ Total filterable residue (dissolved) (70300)		mg/l	
☐ Other:			

F, A-H_2SO_4			
☒ Nitrate-N +, Nitrate-N total (00630)	0.21	mg/l	4/23
☒ Ammonia-N total (00610)	10.66	mg/l	5/14
☒ Total Kjeldahl-N ( )	[illegible]	mg/l	[illegible]
☒ Chemical oxygen demand (00340)	554	mg/l	5/17
☒ Total organic carbon ( )	119	mg/l	7/25
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	7/29/85	[illegible]

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metals
~~GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS~~

DATE RECEIVED 4 / 12 / 85	LAB NO. HM-0696	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 85 04 10	SITE INFORMATION ►	Sample location: Pond #1 Outlet, Navajo Refinery	
Collection TIME 1114		Collection site description: Downstream of outlet valve/p, etc	
Collected by — Person/Agency: Boyer/Boca			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: ~ 300 gpm	Sample type: GRAB
pH (00400): 9.7	Conductivity (Uncorrected): 5500 µmho	Water Temp. (00010): 19 °C	Conductivity at 25°C (00094): — µmho

Field comments: Strong aromatic odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☒ Other-*specify*: A HNO_3

ANALYTICAL RESULTS from SAMPLES

NF, A HNO_3	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho	
☐ Total non-filterable residue (suspended) (00530)	mg/l	
☒ Other: ICAP SCAN		
☒ Other: AS	0.49 mg/l	5-17
☐ Other:		

F, NA	Units	Date analyzed
☐ Calcium (00915)	mg/l	
☐ Magnesium (00925)	mg/l	
☐ Sodium (00930)	mg/l	
☐ Potassium (00935)	mg/l	
☐ Bicarbonate (00440)	mg/l	
☐ Chloride (00940)	mg/l	
☐ Sulfate (00945)	mg/l	
☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Other:		

NF, A-H_2SO_4	Units	Date analyzed
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	
☐ Ammonia-N total (00610)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	
☐ Total organic carbon ( )	mg/l	
☐ Other:		
☐ Other:		

F, A-H_2SO_4	Units	Date analyzed
☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l	
☐ Other:		

Analyst | Date Reported: 6 / 18 / 85 | Reviewed by: [signature]

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

ICAP SCREEN

Lab Number: HM # 696

Date Submitted: 4/12/85

By: Boyer / Baca

Sample Code: Pond #1 Outlet

Date Reported: 6/13/85

By: Jim Cobley

Determination	Concentration (µg/ml)
Aluminum	<.10
Barium	<.10
Beryllium	<.10
Boron	.27
Cadmium	<.10
Calcium	60.
Chromium	<.10
Cobalt	<.10
Copper	<.10
Iron	<.10
Lead	<.10
Magnesium	73.
Manganese	.05
Molybdenum	<.10
Nickel	<.10
Silicon	8.0
Silver	<.10
Strontium	2.2
Tin	<.10
Vanadium	<.10
Yttrium	<.10
Zinc	<.10

ATOMIC ABSORPTION ANALYSES

Arsenic 0.49 µg/ml

Selenium _____ µg/ml

Mercury _____ µg/ml

REPORT TO: David G. Boyer

New Mexico Oil Conservation Division

P. O. Box 2088

Santa Fe, NM 87501

85-0335-C

LABORATORY

LAB NUMBER DRG-335-A-B 4/12/85

SLD PRIORITY 3

SLD Users Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. Recovery Well #4

City & County Navajo Refinery, Artesia, Eddy Cty.

Collected (date & time) 850410/0955 By (name) Boyer/Baca

pH= 6.8; Conductivity= 2380 umho/cm at 19 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods & Remarks (i.e. odors etc.)

Well at product loading area, sample from pipe at S. Wastewater ditch, aromatic odor

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed David G. Boyer

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip R. Baca

Method of Shipment to Laboratory Hand carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:

specimen X; duplicate X; triplicate ; blank(s) ,

and amber glass jug(s) with teflon-lined cap(s) identified as ,

and other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).

P-ICE: Sample stored in an ice bath.

P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from to

at (location) on

(date & time) and that the statements in this block are correct.

Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .

Signature(s)

I (we) certify that this sample was transferred from to

at (location) on

(date & time) and that the statements in this block are correct.

Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .

Signature(s)

ANALYSES REQUESTED LAB. No.: ORG- 335

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
		HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
1,2-dichloroethane	20		
benzene	3285		
Toluene	2845		
ethyl-benzene	390		
p-xylene	200		
m-xylene	120		
o-xylene	90		
		* DETECTION LIMIT	10 ug/l

REMARKS: Fourteen aromatic type compounds were also detected that were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO X. Seal(s) broken by:_____ date:_____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 28 April 3 May 85 Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: L Meyerhem

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	9/12/85	LAB NO.	WC-1710
Collection DATE	04/10/85		
Collection TIME	09.55		
Collected by — Person/Agency	Boyer/Baca OCD		

USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

SITE INFORMATION ►

Sample location: Recovery System #4, Navajo Refinery

Collection site description: Water Pipe from water pump prior to discharge to ditch

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer

Station/well code:

Owner:

SAMPLING CONDITIONS

☐ Bailed ☒ Pump ☐ Dipped ☐ Tap	Water level: –	Discharge: –	Sample type: Grab
pH (00400): 6.75	Conductivity (Uncorrected): 2300 µmho	Water Temp. (00010): 19 °C	Conductivity at 25°C (00094): µmho

Field comments: Aromatic odor (could be from ditch also)

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	6.14		5/1
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☒ Calcium (00915)	241	mg/l	5/2
☒ Magnesium (00925)	148	mg/l	5/2
☒ Sodium (00930)	189	mg/l	4/16
☒ Potassium (00935)	1.17	mg/l	4/16
☒ Bicarbonate (00440)	243.0	mg/l	8/1
☒ Chloride (00940) *		mg/l	6/5
☒ Sulfate (00945)	663	mg/l	5/8
☒ Total filterable residue (dissolved) (70300)	** 26700	mg/l	
☒ Other: CO_3	0		8/1
☒ F	0.59		5/3

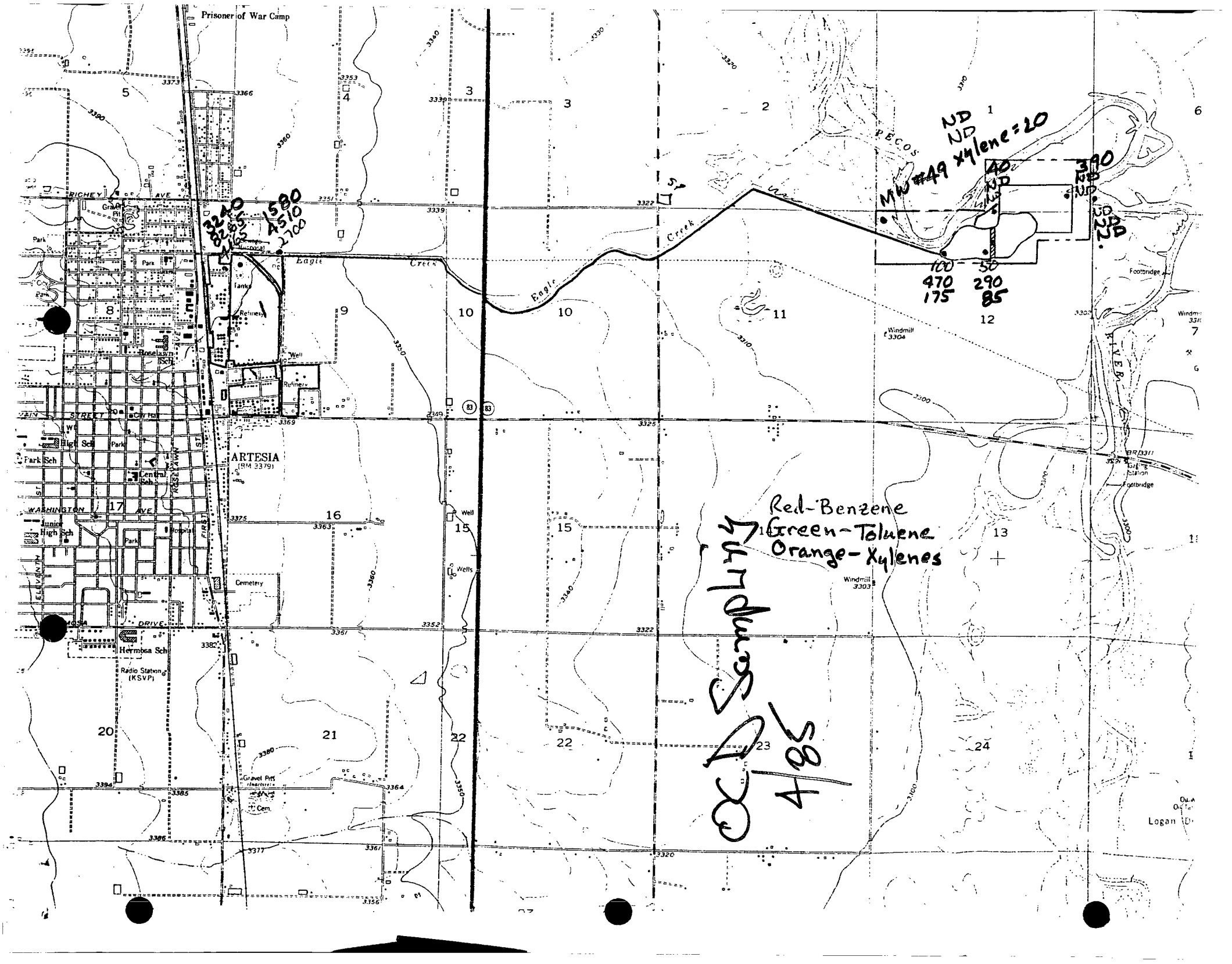
NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6/1/85	[illegible]

Laboratory remarks: From Chris Dean SLD:
* Not analyzed ** 26700 on 6/5 [illegible] 8/13/85

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD


Prisoner of War Camp
RICHEY AVE
Gravel Pit
Park
City Park
Tanks
Refinery
Eagle Creek
Roselawn Sch
Well
Refinery
MAIN STREET
City Hall
High Sch
Park
Park Sch
ARTESIA
(BM 3379)
Central Sch
ROSELAWN ST
WASHINGTON AVE
Junior High Sch
Hospital
Park
ELEVENTH ST
Cemetery
MESA DRIVE
Hermosa Sch
Radio Station (KSVP)
Gravel Pits
Cem.
Well
Wells
Windmill
3304
Windmill
3303
Footbridge
Footbridge
Gasoline Station
PECOS RIVER
Logan
MW #49 Xylene = 20
ND
ND
40
ND
ND
390
ND
ND
ND
ND
100
470
175
50
290
85
3240
8285
1105
1580
4510
2700
Red-Benzene
Green-Toluene
Orange-Xylenes
Sampling 4/85

85-0330-C

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY

LAB NUMBER URG-330-F,B 4/12/85

SLD PRIORITY 3

SLD Users Code No. 82235

ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE".

CERTIFICATE OF FIELD PERSONNEL

Sample Type: Water ☒ Soil ☐ Other

Water Supply and/or Code No. ~~Navajo~~ North Division API@ Weir

City & County Navajo Refinery, Artesia, Eddy Cty.

Collected (date & time) 850410 0835 By (name) Boyer / Baca

pH= 8.5 ; Conductivity= 3270 umho/cm at 45 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods & Remarks (i.e. odors etc.)

Sample from weir prior to confluence of S. Div. Waterway
Very aromatic odor, light volatiles, little oil

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed David G Boyer

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Philip F Baca

Method of Shipment to Laboratory Hand Carried.

THIS FORM ACCOMPANIES 2 septum vials with teflon-lined discs identified as:
specimen X ; duplicate X ; triplicate ; blank(s) ,
and amber glass jug(s) with teflon-lined cap(s) identified as ,
and other container(s) (describe) identified as .

Containers are marked as follows to indicate preservation (circle):

NP: No preservation; sample stored at room temperature (~20°C).
P-ICE: Sample stored in an ice bath.
P-$Na_2O_3S_2$: Sample preserved with 3 mg $Na_2O_3S_2$/40 ml and stored at room temperature.

CERTIFICATE(S) OF SAMPLE RECEIPT

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

I (we) certify that this sample was transferred from to
at (location) on
(date & time) and that the statements in this block are correct.
Disposition of Sample . Seal(s) Intact: Yes ☐ No ☐ .
Signature(s)

ANALYSES REQUESTED

LAB. No.: ORG- 330

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS
		Bromopentane			

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
benzene	4165		
toluene	8265		
ethyl-benzene	1505		
o-xylene	475		
m-xylene	1730		
p-xylene	1035		
halogenated purgeables	none detected		
		* DETECTION LIMIT	50 ppb

REMARKS: Many aromatic type compounds were also detected that were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 28 Apr & 5 May 85 Analyst's signature: [illegible]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R Meyerhen

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4/12/85	LAB NO. NC-1713	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 8504 10	SITE INFORMATION ►	Sample location: N. Div. API Effluent	
Collection TIME 0835		Collection site description: AT weir at start of ditch at Navajo Refinery prior to confluence	
Collected by — Person/Agency: Boyer/Bice OCD			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: —	Sample type: G2 25
pH (00400): 8.5	Conductivity (Uncorrected): 3270 µmho	Water Temp. (00010): 45 °C	Conductivity at 25°C (00094): 2305 µmho

Field comments: Strong odor!

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µ membrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	5.5		
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☒ Calcium (00915)	114	mg/l	5/2
☒ Magnesium (00925)	38.4	mg/l	5/2 8.85
☒ Sodium (00930)	315	mg/l	4/16
☒ Potassium (00935)	3.12	mg/l	4/16
☒ Bicarbonate (00440)	1.9	mg/l	6/5
☒ Chloride (00940)	148.5	mg/l	6/5
☒ Sulfate (00945)	814	mg/l	5/8
☒ Total filterable residue (dissolved) (70300)	1703	mg/l	5/29
☒ Other: CO_3	none		6/5
☒	1.35		5/3

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)	—	mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	6/10/85	

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metals
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED 4 12 85	LAB NO. H 110697	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 8504 10	SITE INFORMATION ►	Sample location N. Div. API Effluent	
Collection TIME 0835		Collection site description AT weir at start of ditch at Navajo Refinery prior to confluence	
Collected by — Person/Agency Boyer/Bce OCD			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501
Attn: David Boyer

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level —	Discharge —	Sample type Grab
pH (00400) 8.5	Conductivity (Uncorrected) 3270 µmho	Water Temp. (00010) 45 °C	Conductivity at 25°C (00094) — µmho

Field comments Strong odor!

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted 1 ☐ NF: Whole sample (Non-filtered) ☒ F: Filtered in field with 0.45 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☐ NA: No acid added ☒ Other-*specify:* A HNO_3

ANALYTICAL RESULTS from SAMPLES

NF, NA HNO_3	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho	
☐ Total non-filterable residue (suspended) (00530)	mg/l	
☒ Other: ICAP SCAN		
☒ Other: As	0.019 mg/l	5-17
☐ Other:		

F, NA	Units	Date analyzed
☐ Calcium (00915)	mg/l	
☐ Magnesium (00925)	mg/l	
☐ Sodium (00930)	mg/l	
☐ Potassium (00935)	mg/l	
☐ Bicarbonate (00440)	mg/l	
☐ Chloride (00940)	mg/l	
☐ Sulfate (00945)	mg/l	
☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Other:		

NF, A-H_2SO_4	Units	Date analyzed
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	
☐ Ammonia-N total (00610)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	
☐ Total organic carbon ( )	mg/l	
☐ Other:		
☐ Other:		

F, A-H_2SO_4	Units	Date analyzed
☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l	
☐ Other:		

Analyst	Date Reported	Reviewed by
	6 10 85	Jim Dinkey

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

REPORT TO: Hazardous Waste Section
Environmental Improvement Division
P.O. Box 968
Santa Fe, New Mexico 87504

Attn: ANN CLAASSEN
SLD USER CODE NUMBER 53300

METALS ANALYSIS REQUEST

LAB NUMBER HM 154

DATE RECEIVED 1/25/85

DATE REPORTED 4/2/85 MJ

Sample Number: #1 Location: NAVAJO EVAP POND NR INFLUENT, NORTH SIDE

Sample Type: ☐ water ☐ soil ☐ sediment ☒ sludge ☐ other

Collected (date & time) 1/24/85 9:00 AM by: ANN CLAASSEN

Temperature: celcius conductivity: umhos/cm pH:

Sample container: ☐ 1-liter cubitainer(s) ☒ 1-quart glass jar(s) ☐ other

Treatment: ☐ Filtered ☐ 2 ml HNO3 ☐ ice ☐ other NONE

RECEIVED
APR 05 1985
HAZARDOUS WASTE SECTION

☐ WATER ANALYSIS FOR ☐ dissolved ☐ suspended ☐ total

☒ SOIL ANALYSIS FOR ☐ supernatant ☐ total digestion ☒ EP Toxicity

☐ ICAP SCAN UG/ML OR UG/G DATE ANALYZED

Aluminum		Copper		Silicon	
Barium		Iron		Silver	
Berrylium		Lead		Strontium	
Boron		Magnesium		Tin	
Cadmium		Manganese		Vanadium	
Calcium		Molybdenum		Yttrium	
Chromium		Nickel		Zinc	
Cobalt					

☐ ATOMIC ABSORPTION UG/ML OR UG/G DATE ANALYZED

Arsenic		Selenium		Mercury	

☒ EP TOXICITY (MG/L) DATE ANALYZED

Arsenic	0.058	Chromium	* 13.5	Selenium	<0.005
Barium	0.38	Lead	0.017	Silver	<0.001
Cadmium	<0.001	Mercury	<0.001		

ANALYST MK, JB, MD REVIEWER MJ

COMMENTS:

* > 5.0 ppm. Therefore requires speciation for Cr^{+6}.

Cr^{+6} <0.5 ppm (Method 3060/7196).

REPORT TO: Hazardous Waste Section
Environmental Improvement Division
P.O. Box 968
Santa Fe, New Mexico 87504

Attn: ANN CLAASSEN
SLD USER CODE NUMBER 53300

METALS ANALYSIS REQUEST

LAB NUMBER HM 155

DATE RECEIVED 1/25/85

DATE REPORTED 4/2/85

Sample Number: # 2 Location: NAVAJO EVAP POND, N SIDE, DREDGED MATERIAL

Sample Type: ☐ water ☐ soil ☐ sediment ☒ sludge ☐ other

Collected (date & time) 1/24/85 9:00 AM by: ANN CLAASSEN

Temperature: celcius conductivity: umhos/cm pH:

Sample container: ☐ 1-liter cubitainer(s) ☒ 1-quart glass jar(s) ☐ other

Treatment: ☐ Filtered ☐ 2 ml HNO3 ☐ ice ☐ other NONE

RECEIVED
APR 05 1985
HAZARDOUS WASTE SECTION

☐ WATER ANALYSIS FOR ☐ dissolved ☐ suspended ☐ total

☒ SOIL ANALYSIS FOR ☐ supernatant ☐ total digestion ☒ EP Toxicity

☐ ICAP SCAN UG/ML OR UG/G DATE ANALYZED

Aluminum		Copper		Silicon	
Barium		Iron		Silver	
Berrylium		Lead		Strontium	
Boron		Magnesium		Tin	
Cadmium		Manganese		Vanadium	
Calcium		Molybdenum		Yttrium	
Chromium		Nickel		Zinc	
Cobalt					

☐ ATOMIC ABSORPTION UG/ML OR UG/G DATE ANALYZED

Arsenic		Selenium		Mercury	

☒ EP TOXICITY (MG/L) DATE ANALYZED

Arsenic	0.096	Chromium	2.66	Selenium	<0.005
Barium	0.48	Lead	0.41	Silver	<0.001
Cadmium	0.001	Mercury	<0.001		

ANALYST mk, JB, mo REVIEWER mf

COMMENTS:

REPORT TO: Hazardous Waste Section
Environmental Improvement Division
P.O. Box 968
Santa Fe, New Mexico 87504

Attn: ANN CLAASSEN
SLD USER CODE NUMBER 53300

METALS ANALYSIS REQUEST

LAB NUMBER: HM 156
DATE RECEIVED: 1/25/85
DATE REPORTED: 4/2/85

Sample Number: # 3 Location: NAVASO EVAP POND NR INFLUENT, SOUTH SIDE

Sample Type: ☐ water ☐ soil ☐ sediment ☒ sludge ☐ other

Collected (date & time) 1/24/85 9:30 AM by:

Temperature: celcius conductivity: umhos/cm pH:

Sample container: ☐ 1-liter cubitainer(s) ☒ 1-quart glass jar(s) ☐ other

Treatment: ☐ Filtered ☐ 2 ml HNO3 ☐ ice ☐ other NONE

RECEIVED
APR 0 5 1985
HAZARDOUS WASTE SECTION

☐ WATER ANALYSIS FOR ☐ dissolved ☐ suspended ☐ total

☒ SOIL ANALYSIS FOR ☐ supernatant ☐ total digestion ☒ EP Toxicity

☐ ICAP SCAN UG/ML OR UG/G DATE ANALYZED

Aluminum		Copper		Silicon	
Barium		Iron		Silver	
Berrylium		Lead		Strontium	
Boron		Magnesium		Tin	
Cadmium		Manganese		Vanadium	
Calcium		Molybdenum		Yttrium	
Chromium		Nickel		Zinc	
Cobalt					

☐ ATOMIC ABSORPTION UG/ML OR UG/G DATE ANALYZED

Arsenic		Selenium		Mercury	

☒ EP TOXICITY (MG/L) DATE ANALYZED

Arsenic	0.138	Chromium	* 7.40	Selenium	<0.005
Barium	0.530	Lead	0.010	Silver	<0.001
Cadmium	<0.001	Mercury	<0.001		

ANALYST mk, JB, md REVIEWER MP

COMMENTS:

* >5.00 ppm. Therefore, requires Speciation for Cr^{+6}.

Cr^{+6} <0.5 ppm (Method 3060/7196)

REPORT TO: Hazardous Waste Section
Environmental Improvement Division
P.O. Box 968
Santa Fe, New Mexico 87504

Attn: ANN CLAASSEN
SLD USER CODE NUMBER 53300

METALS ANALYSIS REQUEST

LAB NUMBER HM 157
DATE RECEIVED 1/25/85
DATE REPORTED 4/2/85

Sample Number: # 4 Location: NAVAJO API DITCH AT HWY 82 BYPASS
Sample Type: ☐ water ☐ soil ☐ sediment ☒ sludge ☐ other
Collected (date & time) 1/24/85 10:00 AM by: ANN CLAASSEN
Temperature: celcius conductivity: umhos/cm pH:
Sample container: ☐ 1-liter cubitainer(s) ☒ 1-quart glass jar(s) ☐ other
Treatment: ☐ Filtered ☐ 2 ml HNO3 ☐ ice ☐ other

RECEIVED
APR 0 5 1985
HAZARDOUS WASTE SECTION

☐ WATER ANALYSIS FOR ☐ dissolved ☐ suspended ☐ total
☒ SOIL ANALYSIS FOR ☐ supernatant ☐ total digestion ☒ EP Toxicity

☐ ICAP SCAN UG/ML OR UG/G DATE ANALYZED

Aluminum		Copper		Silicon	
Barium		Iron		Silver	
Berrylium		Lead		Strontium	
Boron		Magnesium		Tin	
Cadmium		Manganese		Vanadium	
Calcium		Molybdenum		Yttrium	
Chromium		Nickel		Zinc	
Cobalt					

☐ ATOMIC ABSORPTION UG/ML OR UG/G DATE ANALYZED

Arsenic		Selenium		Mercury	

☒ EP TOXICITY (MG/L) DATE ANALYZED

Arsenic	0.044	Chromium	3.86	Selenium	<0.005
Barium	0.53	Lead	0.22	Silver	<0.001
Cadmium	<0.001	Mercury	<0.001		

ANALYST mk, mc, jb REVIEWER mf

COMMENTS:

REPORT TO: Hazardous Waste Section
Environmental Improvement Division
P.O. Box 968
Santa Fe, New Mexico 87504

Attn: ANN CLAASSEN
SLD USER CODE NUMBER 53300

METALS ANALYSIS REQUEST

LAB NUMBER HM 158

DATE RECEIVED 1/25/85

DATE REPORTED 4/2/85

Sample Number: #5 Location: NAVAJO API DITCHES ~100' BLW CONFLUENCE

Sample Type: ☐ water ☐ soil ☐ sediment ☒ sludge ☐ other

Collected (date & time) 1/24/85 10:20AM by: ANN CLAASSEN

Temperature: _____ celcius conductivity: _____ umhos/cm pH: _____

Sample container: ☐ 1-liter cubitainer(s) ☒ 1-quart glass jar(s) ☐ other

Treatment: ☐ Filtered ☐ 2 ml HNO3 ☐ ice ☐ other

☐ WATER ANALYSIS FOR ☐ dissolved ☐ suspended ☐ total

☒ SOIL ANALYSIS FOR ☐ supernatant ☐ total digestion ☒ EP Toxicity

RECEIVED
APR 0 5 1985
HAZARDOUS WASTE SECTION

☐ ICAP SCAN UG/ML OR UG/G DATE ANALYZED _____

Aluminum		Copper		Silicon	
Barium		Iron		Silver	
Berrylium		Lead		Strontium	
Boron		Magnesium		Tin	
Cadmium		Manganese		Vanadium	
Calcium		Molybdenum		Yttrium	
Chromium		Nickel		Zinc	
Cobalt					

☐ ATOMIC ABSORPTION UG/ML OR UG/G DATE ANALYZED _____

Arsenic		Selenium		Mercury	

☒ EP TOXICITY (MG/L) DATE ANALYZED _____

Arsenic	0.124	Chromium	* 7.60	Selenium	<0.005
Barium	0.830	Lead	0.13	Silver	<0.001
Cadmium	<0.001	Mercury	<0.001		

ANALYST mk, JB, mo REVIEWER mf

COMMENTS:

* > 5.00 ppm. Therefore requires Speciation for Cr^{+6}.

Cr^{+6} <0.5 ppm (Method 3060/7196)

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED		LAB NO.	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER:
Collection DATE		SITE INFORMATION ►	Sample location
Collection TIME			Collection site description
Collected by — Person/Agency			

SEND FINAL REPORT TO ►
GROUND WATER & HAZARDOUS WASTE BUREAU
NM ENVIRONMENT IMPROVEMENT DIVISION/HED
Crown Building, PO Box 968
Santa Fe, NM 87504-0968
Attn: _____

Station/well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☐ Dipped ☐ Pump ☒ Tap	Water level	Discharge	Sample type
pH (00400)	Conductivity (Uncorrected) µmho	Water Temp. (00010) °C	Conductivity at 25°C (00094) µmho

Field comments

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted ☒ **NF:** Whole sample (Non-filtered) ☐ **F:** Filtered in field with 0.45 µmembrane filter ☒ **A:** 2 ml H_2SO_4/L added

☐ **NA:** No acid added ☐ Other-*specify:*

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☐ Other:			
☐ Other:			
☐ Other:			

NF, A-H_2SO_4		Units	Date analyzed
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☐ Calcium (00915)		mg/l	
☐ Magnesium (00925)		mg/l	
☐ Sodium (00930)		mg/l	
☐ Potassium (00935)		mg/l	
☐ Bicarbonate (00440)		mg/l	
☐ Chloride (00940)		mg/l	
☐ Sulfate (00945)		mg/l	
☐ Total filterable residue (dissolved) (70300)		mg/l	
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by

Laboratory remarks

GEOLOGY
VALUATION

NEW MEXICO REGISTERED PROFESSIONAL ENGINEER
AND LAND SURVEYOR
CERTIFIED PROFESSIONAL GEOLOGIST

EDWARD E. KINNEY
CONSULTANT
MINING - OIL - WATER
Box 526
ARTESIA, NEW MEXICO 88210

LEASES
TAXATION

205 AMERICAN HOME
SECURITY LIFE BLDG.

PHONE 746-3171

June 1, 1981

Oil & Gas Division
Box 2088
Santa Fe, N M 87501

Attention: Oscar Simpson

Gentlemen:

Apropos your concern over whether or not the water samples from Navajo's observation wells are representative, I submit the following table showing analysis of Chloride and Total Dissolved Solids as reported by Controls for Environmental Pollution, Inc., over a span of $3\frac{1}{2}$ years:

Well #	Chloride			Total Dissolved Solids		
	Sep '77	Nov '80	Apr '81	Sep '77	Nov '80	Apr '81
1		5800 ppm	8313 ppm		15 800ppm	19 700 ppm
3	1180 ppm	2200	2652	6 777ppm	7 640	7 730
5	4565	8600	7089	7 367	21 100	16 800
7	8075	3400	3570	28 050	21 500	14 200
9		2200	2703		9 820	10 400
12	7300	6700	8058	29 840	29 000	28 900
13	123	380	357	2 531	3 060	3 200

These data demonstrate that water is freely moving through the casing slots and the well bore otherwise the water in the observation wells would be stagnate and the analysis virtually the same.

Sincerely,

Edward E. Kinney

from

PATRICK G. JUAREZ May 30, 1980

TO DGGr

Subject: Water Samples From Test Holes Near Ponds.

Sample	pH	ppm F^-	ppm Phenol	TDS
#3.	7.050	4.825 ppm	0 ppm	4,286 ppm
#5	7.045	1.525 ppm	0 ppm	12,242 ppm
#7	7.599	1.877 ppm	0 ppm	8,537 ppm
#9	7.313	3.070 ppm	0 ppm	8,477 ppm
#12	7.424	3.050 ppm	0 ppm	15,824 ppm
#13	7.184	4.150 ppm	0 ppm	2,511 ppm

Patrick G. Juarez

from

JAMES L. BROWN April 2, 1980

To Water Samples Sampled 4-1-80

	P Alk	M Alk	Acidity	pH	Hardness	Chlorides	F	S	Phenol
Pecos River above Ponds	0	118	0	8.125	2940	3530	0.3	0	0
Pecos River at Bridge	0	122	0	8.125	2880	2820	0.4	0	0
Water Well	not available								
West Pond	0	144	0	7.350	700	1240	83	0	12+
Middle Pond	0	102	0	6.981	870	1200	81	0	1
East Pond	0	86	0	7.024	950	1410	79	0	0
Total Effluent	108	514	0	9.030	400	500	80	160	12+
API Separator	0	352	0	8.328	680	430	83	128	12+
N. D. Tray	0	234	0	8.248	510	300	1	54	10
S. D. Tray	0	178	0	7.782	420	510	0.8	0	0
City Water	0	180	0	7.044	630	28	0.4	0	0

Jim B.

from

PATRICK G. JUAREZ April 2, 1980

TO Water Samples Sampled 4-1-80

	Fe	Cu	Ni	Zn	Pb	Cr	Cd
PECOS RIVER ABOVE PONDS	0.08	0.04	0.07	0.19	0.25	0.00	0.03
PECOS RIVER AT BRIDGE	0.12	0.05	0.10	0.05	0.40	0.00	0.03
WEST POND	0.23	0.02	0.04	0.04	0.19	0.15	0.007
MIDDLE POND	0.23	0.02	0.04	0.05	0.25	0.13	0.005
EAST POND	0.23	0.04	0.07	0.19	0.16	0.05	0.001
TOTAL EFFLUENT	0.06	0.02	0.05	0.04	0.06	0.06	0.01
A.P.I. SEPARATOR	0.01	0.003	0.04	0.04	0.04	0.14	0.007
NORTH DIVISION TRAP	0.07	0.02	0.06	0.04	0.31	0.33	0.001
SOUTH DIVISION TRAP	0.03	0.005	0.005	0.04	0.30	0.18	0.000
CITY WATER	0.03	0.01	0.01	0.53	0.00	0.01	0.000

Water well — not available

Patrick G. Juarez

from

JAMES L. BROWN 3-12, 1980

To B.C.S. Sampled 3-11-80

	P Alk.	M. Alk.	Acidity	pH	Hardness	Chloride	Chromate	Sulfide	Phenol
Pecos River above Ponds	0	138	0	8.034	3520	2600	0.74	0	0
Pecos River at Bridge	0	140	0	7.993	3550	2590	0.69	0	0
Water Well									
West Pond	0	100	0	7.485	1230	1170	46	0	12+
Middle Pond	0	104	0	7.044	1100	1150	39	0	7
East Pond	0	80	0	7.135	1150	1210	33	0	0
Total Effluent	1760	3230	0	11.331	180	350	300	806	0
API Separator	102	482	0	9.064	640	230	70	138	12+
N.D. Trap	44	236	0	8.867	1650	1690	1.10	22	6
S.D. Trap	0	154	0	8.121	1970	900	2.18	0	0
City Water	0	176	0	7.173	686	26	0.69	0	0

Jim Brown

from

PATRICK G. JUAREZ 3-12, 19 80

TO BCG. Sampled 3-11-80

ELEMENTS IN PPm	Cu	Fe	Ni	Pb	Zn	Cd	Cr		
Pecos River Above Ponds	0.010	0.215	0.045	0.200	0.00	0.030	0.037		
Pecos River At Bridge	0.010	0.200	0.061	0.200	0.000	0.022	0.037		
N.D TRAPS	0.000	0.092	0.045	0.066	0.003	0.011	0.000		
West Pond	0.000	0.308	0.045	0.066	0.021	0.019	0.037		
Middle Pond	0.000	0.446	0.045	0.066	0.026	0.034	0.074		
East Pond	0.000	0.231	0.015	0.066	0.036	0.007	0.037		
Total Effluent	0.010	0.092	0.061	0.066	0.096	0.007	0.037		
API Separator	0.000	0.108	0.028	0.000	0.023	0.007	6.103		
S D TRAPS	0.000	0.092	0.030	0.066	0.049	0.015	0.000		
City Water	0.010	0.123	0.061	0.066	0.473	0.000	0.000		

Patrick G. Juarez

from

JAMES L. BROWN 2-12, 19 80

To BCB.-D.Br. Sampled 2-11-80

	P Alk.	M Alk.	Acidity	pH	Hardness	Chloride	Fluoride	Sulfide	Phenol
Pecos River above Ponds	0	166	0	8.157	2310	1830	1.80	0	0
Pecos River at Bridge	0	166	0	8.162	2280	1850	1.70	0	0
Water Well (Windmill)	not available								
West Pond	0	12	0	7.575	820	1040	82	0	50
Middle Pond	0	90	0	6.785	710	960	92	0	20
East Pond	0	144	0	7.053	770	1090	74	0	2
Total Effluent	0	42	0	5.921	3200	360	87	0	1.6
API Separator	0	0	80	3.417	11200	380	150	3.2	2
N. Div. Trap	0	180	0	8.404	550	120	4.20	32	6
S. Div Trap	0	178	0	7.728	930	260	3.85	0	0
City Water	0	174	0	7.023	668	32	2.45	0	0

from

PATRICK G. JUAREZ 2-12, 19 80

TO BCA - D.G.Cr Sampled 2-11-80

ppm	Fe	Cu	Ni	Cd	Zn	Pb	Cr
Pecos River above Ponds	0.07	0.06	0.00	0.02	0.01	0.22	0.00
Pecos River At Bridge	0.03	0.07	0.25	0.03	0.04	0.11	0.00
water well (windmill)		NOT	AVAILABLE				
west Pond	9.51	0.06	0.33	0.01	0.36	0.22	0.14
Middle Pond	0.44	0.06	0.25	0.12	0.05	0.00	0.07
East Pond	0.12	0.06	0.00	0.02	0.03	0.22	0.07
Total Effluent	0.71	0.07	0.17	0.02	0.01	0.00	0.55
API Separator	1.20	0.06	0.00	0.01	0.15	0.00	0.51
N. D. TRAP	0.24	0.07	0.17	0.01	0.01	0.11	0.07
S. Div. TRAP	0.17	0.07	0.08	0.01	0.01	0.11	0.17
City Water	0.22	0.08	0.25	0.00	0.42	0.11	0.17

from

JAMES L. BROWN 1-9, 1980

To BCB- DBG Sampled 1-7-80

	P alk	M alk	Acidity	pH	Hardness	Chlorides	F^-	$S^=$	Phenol
Pecos River above pond	0	162	0	8.276	2300	1840	1.42	0	0
Pecos River at bridge	0	162	0	8.234	2330	1860	1.46	0	0
Water Well	not available								
West Pond	0	54	0	7.388	680	810	50.5	0	25+
Middle Pond	0	196	0	7.483	690	950	35.0	0	25
East Pond	0	222	0	7.442	840	1160	44.0	0	4
Total Effluent	10	238	0	8.473	1940	1780	34.8	205	20
API Separator	16	312	0	8.671	680	80	40.0	230	24
N.D. Trap	0	192	0	8.185	850	1400	1.98	230	1
S.D. Trap	0	158	0	7.264	10400	13200	1.90	170	0
City Water	0	184	0	7.178	716	28	1.95	0	0

Jim Brown

from

JAMES L. BROWN 1-7, 1980

To Results in ppm - by AA

	Iron	Copper	Nickel	Zinc	Lead	Chromium	Arsenic	
Pecos River above ponds	.065	.028	.076	.000	.071	.000	—	
Pecos River at bridge	.049	.047	.076	.000	.071	.062		
Water Well								
West Pond	.098	.000	.030	.0079	.071	.000	—	
Middle Pond	.065	.009	.030	.000	.071	.000	—	
East Pond	.147	.009	.030	.000	.071	.000	—	
Total Effluent	.065	.000	.106	.000	.142	.000	—	
API Separator	.033	.000	.015	.000	.000	.000	—	
N. D. Trap	.033	.000	.030	.000	.000	.000	—	
S. D. Trap	.180	.028	.287	.1597	.356	.000	—	
City Water	.000	.009	.000	.3968	.071	.000	—	