GW - 28

MONITORING REPORTS

DATE:
1989

GW-28

GW Standard Exceedances - Health Standards

	Benzene (10 ppb)		Fluoride (1.6 mg/L)	1-methylnapth (30 ppb)	Arsenic (0.1 mg/L)
MW 2 (off prop.)			4.24 7/89 5.48 4/87		0.18 7/89
MW 3			2.75 7/89 2.15 4/87		
MW 4 (off prop)	51 45	11/87 8/87	~~5.1 11/87~~ ~~4.5 8/87~~ 1.94 11/87 1.63 4/87		98 8/87
MW 5 (on prop boundary)			2.75 7/89 3.08 6/88 3.48 11/87 2.62 4/87		
MW 6	26	7/89	3.14 7/89 3.1 6/88 4.04 4/87		114 7/89
OCD 1			3.00 7/89		
OCD 7			5.04 7/89 2.52 6/88		

	Benzene		Fluoride	
OC 5-8	70	6/88	2.22	7/89

	3	1	½		
	~~15~~	~~5~~	~~2~~		1 : 1
Bond	Na	Ca	Mg	/ Cl	SO_4
	2	1	1		
mw 1	Na	Ca	Mg	/	2 : 1
	2	1	1		Cl : SO_4
? och 1	Na	Mg	Ca		1 : 1
	Na	Ca	Mg		Cl SO_4
	4	1	1		
och 2	Na	Mg	Ca	/ Cl	SO_4
	Na	Mg	Ca	/ 1.1	1
	4	2	1		
och 3	Na	Ca	Mg	/ Cl	SO_4
	5	2	1		2.5 1
och 4	Na	Ca	Mg		Cl SO_4
och 5	5	2	1	/ 2	1
och 6	4	2	1	/	Cl : 2.5 : 1 SO_4
och 7	4	1.5	1	/	Na 1.1 Cl
och 8	2.5	1	1	/	SO_4 1 1

New Mexico Water Quality Control Commission Ground Water Standards

A. Human Health Standards-Ground water shall meet the standards of Section A and B unless otherwise provided. If more than one water contaminant affecting human health is present, the toxic pollutant criteria of Section 1-101.UU. for the combination of contaminants, or the Human Health Standard of Section 3-103.A. for each contaminant shall apply, whichever is more stringent.

Arsenic (As)	0.1 mg/l
Barium (Ba)	1.0 mg/l
Cadmium (Cd)	0.01 mg/l
Chromium (Cr)	0.05 mg/l
Cyanide (CN)	0.2 mg/l
Fluoride (F)	1.6 mg/l
Lead (Pb)	0.05 mg/l
Total Mercury (Hg)	0.002 mg/l
Nitrate (NO_3 as N)	10.0 mg/l
Selenium (Se)	0.05 mg/l
Silver (Ag)	0.05 mg/l
Uranium (U)	5.0 mg/l
Radioactivity: Combined Radium-226 and Radium-228	30.0 pCi/l
Benzene	0.01 mg/l
Polychlorinated biphenyls (PCB's)	0.001 mg/l
Toluene	0.75 mg/l
Carbon Tetrachloride	0.01 mg/l
1,2-dichloroethane (EDC)	0.01 mg/l
1,1-dichloroethylene (1, 1-DCE)	0.005 mg/l
1,1,2, 2-tetrachloroethylene (PCE)	0.02 mg/l
1,1, 2-trichloroethylene (TCE)	0.1 mg/l
ethylbenzene	0.75 mg/l
total xylenes	0.62 mg/l
methylene chloride	0.1 mg/l
chloroform	0.1 mg/l
1,1-dichloroethane	0.025 mg/l
ethylene dibromide (EDB)	0.0001 mg/l
1,1,1-trichloroethane	0.06 mg/l
1,1,2-trichloroethane	0.01 mg/l
1,1,2,2-tetrachloroethane	0.01 mg/l
vinyl chloride	0.001 mg/l
PAHs: total naphthalene plus monomethylnaphthalenes	0.03 mg/l
benzo-a-pyrene	0.0007 mg/l

B. Other Standards for Domestic Water Supply

Chloride (Cl)	250. mg/l
Copper (Cu)	1.0 mg/l
Iron (Fe)	1.0 mg/l
Manganese (Mn)	0.2 mg/l
Phenols	0.005 mg/l
Sulfate (SO_4)	600. mg/l
Total Dissolved Solids (TDS)	1000. mg/l
Zinc (Zn)	10.0 mg/l
pH	between 6 and 9

C. Standards for Irrigation Use - Ground water shall meet the standards of subsections A, B, and C unless otherwise provided.

Aluminum (Al)	5.0 mg/l
Boron (B)	0.75 mg/l
Cobalt (Co)	0.05 mg/l
Molybdenum (Mo)	1.0 mg/l
Nickel (Ni)	0.2 mg/l

COMPARISON OF N.M.WQCC GROUND-WATER STANDARDS AND U.S.EPA DRINKING-WATER STANDARDS & HEALTH ADVISORIES, OCTOBER 1988.

All units are mg/L unless otherwise specified. All standards listed are based upon health concerns except for the parameters followed by (a) aesthetic standard or (i) irrigation standard.

PARAMETER	N.M.WQCC	U.S.EPA Existing MCL	U.S.EPA MCLG	U.S.EPA Lifetime HA or Risk Level*
Inorganics				
Aluminum (i)	5.0			
Arsenic	0.1	0.05		0.05
Barium	1.0	1.0	1.5	1.5
Boron (i)	0.75			
Cadmium	0.01	0.01	0.005	0.005
Chloride (a)	250.	250.		
Chromium	0.05	0.05	0.12	0.12
Cobalt (i)	0.05			
Copper (a)	1.0	1.0	1.3	
Fluoride	1.6	4.0		
Gross Alpha (pCi/L)		15.		
Gross Beta (pCi/L)		50.		
Iron (a)	1.0	0.3		
Lead	0.05	0.05	0.02	0.02
Manganese (a)	0.2	0.05		
Mercury	0.002	0.002	0.003	0.003
Molybdenum (i)	1.0			
Nickel (i)	0.2			0.15
Nitrate-N	10.0	10.		10.0
Nitrite-N			1.0	1.0
pH (units) (a)	6-9	6.5-8.5		
Radium (226 & 228; pCi/L)	30.0	5.		
Selenium	0.05	0.01	0.045	
Silver	0.05	0.05		
Sulfate (a)	600.	250.		
TDS (a)	1000.	500.		
Uranium	5.0			
Zinc (a)	10.0	5.		
Benzenes				
Benzene	0.01	0.005		0.007*
Toluene	0.75		2.0	2.0
Ethylbenzene	0.75		0.68	0.68
Xylenes	0.62		0.44	0.44
Styrene			0.14	0.14*
Chlorobenzene			0.06	0.6
o-Dichlorobenzene			0.62	0.62
m-Dichlorobenzene				0.62
p-Dichlorobenzene		0.075		0.75
Hexachlorobenzene				0.0002*
Pentachlorophenol			0.22	0.22
Phenols (a)	0.005			

NOTE: 1 ppb = 1 ug/l = 1 microgram per liter (ppb = part per billion)
1000 ug/l = 1 mg/l = 1 ppm (ppm = part per million)

PARAMETER	N.M.WQCC	U.S.EPA Existing MCL	U.S.EPA MCLG	U.S.EPA Lifetime HA or Risk Level*
Other Pesticides continued				
Ammonium Sulfamate				1.5
Atrazine				0.003
Baygon				0.003
Bentazon				0.0175
Bromacil				0.08
Butylate				0.05
Carbaryl				0.7
Carbofuran			0.036	0.036
Carboxin				0.7
Chloramben				0.105
Chlordane			Zero	0.00027*
Chlorothalonil				0.015*
Cyanazine				0.009
2,4-D		0.1	0.07	0.07
Dacthal				3.5
Dalapon				0.56
Diazinon				0.00063
Dicamba				0.009
1,3-Dichloropropene				0.002*
Dieldrin				0.0000219
Dimethrin				2.1
Dinoseb				0.007
"Dioxin"				0.0000000022
Diphenamid				0.2
Disulfoton				0.0003
Diuron				0.014
Endothall				0.14
Endrin		0.0002		0.0002
Ethylene Thiourea				0.0024*
Fenamiphos				0.0018
Fluometuron				0.09
Fonofos				0.014
Glyphosate				0.7
Heptachlor			Zero	0.00076*
Heptachlor Epoxide			Zero	0.00038*
Hexazinone				0.21
Lindane		0.004	0.0002	0.002
Maleic Hydrazide				3.5
MCPA				0.0036
Methomyl				0.175
Methoxychlor		0.1	0.34	0.34
Methyl Parathion				0.002
Metolachlor				0.01
Metribuzin				0.175
Oxamyl				0.175
Paraquat				0.003
Picloram				0.49
Prometon				0.1
Pronamide				0.052
Propachlor				0.092

PARAMETER	N.M.WQCC	U.S.EPA Existing MCL	U.S.EPA MCLG	U.S.EPA Lifetime HA or Risk Level*
Other Pesticides continued				
Propham				0.12
Propazine				0.014
Simazine				0.035
2,4,5-T				0.021
Tebuthiuron				0.035
Terbacil				0.09
Terbufos				0.00018
Toxaphene		0.005	Zero	0.00031*
2,4,5-TP (Silvex)		0.01	0.052	0.052
Trifluralin				0.002

EXPLANATION FOR STANDARDS COMPARISON TABLE

Footnotes

* The concentration listed presents a theoretical additional lifetime cancer risk of one per 100,000 persons. The U.S. EPA Health Advisory documents also provide various concentrations posing risks of one per 10,000 through one per 10,000,000.

** The four regulated trihalomethanes are chloroform, dichlorobromomethane, dibromochloromethane and bromoform.

*** Naphthalene and monomethylnaphthalene isomers.

Abbreviations

2,4-D	2,4-dichlorophenoxyacetic acid
DBCP	1,2-dibromo-3-chloropropane
Dioxin	2,3,7,8-tetrachlorodibenzo-p-dioxin
EDB	ethylene dibromide, a synonym for 1,2-dibromoethane
EDC	ethylene dichloride, a synonym for 1,2-dichloroethane
HA	health advisory
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
MEK	methyl ethyl ketone
mg/L	milligrams per liter
N	nitrogen
N.M.WQCC	New Mexico Water Quality Control Commission
o	ortho
p	para
PCE	perchloroethylene, a synonym for tetrachloroethylene
pCi/L	picocuries per liter
PCBs	polychlorinated biphenyls
PDC	propylene dichloride, a synonym for 1,2-dichloropropane
TCE	trichloroethylene
TDS	total dissolved solids
2,4,5-T	2,4,5,-trichlorophenoxyacetic acid
2,4,5-TP	2,4,5-trichlorophenoxypropionic acid
U.S. EPA	United States Environmental Protection Agency

Use and Applicability of Standards

All N.M.WQCC standards are enforceable, including aesthetic and irrigation standards. The aesthetic standards of U.S.EPA are merely recommended limits.

U.S.EPA's MCLGs are set at levels that would result in no known or anticipated adverse health effects with an adequate margin of safety. MCLGs do not take treatment costs into consideration and are not enforceable. Final MCLs are enforceable. In addition to having set MCLGs for presently unregulated contaminants, the U.S. EPA has proposed to modify several existing MCLs.

U.S. EPA's HAs serve as informal technical guidance to assist Federal, State and local officials responsible for protecting public health when emergency spills or contamination situations occur. They are not to be construed as legally enforceable Federal standards and are subject to change as new information becomes available. HAs are developed for one-day, ten-day, 7-year and lifetime exposures. All HAs listed above are for lifetime exposure unless otherwise indicated. Lifetime HAs are not recommended by U.S. EPA for known or potential carcinogens. Instead, chemical concentrations are correlated with hypothetical excess lifetime cancer risks. See footnote (*) above.

Compiled by Dennis McQuillan
N.M. Health & Environment Dept.
Environmental Improvement Division
Ground Water Bureau
Santa Fe, NM 87503

DGGR

WELL: MW-4							WELL: OCD-8	
Date Sampled	*(8-6-86)*	*(8-12-87)*	*(11-12-87)*	*(3-16-88)*	*(6-1-88)*	*(6-22-89)*	*(6-1-88)*	*(6-22-89)*
Benzene	39 ppb	45 ppb	51 ppb	30 ppb	(1)	14 ppb	70 ppb	4.4 ppb
Toluene	140 ppb	280 ppb	25 ppb	220 ppb	"	160 ppb	115 ppb	41 ppb
Ethylbenzene	N.D.	130 ppb	156 ppb	78 ppb	"	65 ppb	Tr.	14 ppb
p-Xylene	N.D.	10 ppb	15 ppb	75 ppb	"	93 ppb*	35 ppb	35 ppb*
m-Xylene	N.D.	40 ppb	12 ppb	53 ppb	"	N.R.	35 ppb	N.R.
o-Xylene	N.D.	N.R.	32 ppb	75 ppb	"	N.R.	25 ppb	N.R.
1-Methylnapthalene	N.R.	98 ppb	N.D.	N.D.	N.R.	N.R.	N.D.	N.R.
Acenaphthylene	N.R.	31 ppb	N.D.	N.D.	N.R.	N.R.	N.D.	N.R.
unknown PAH's	N.R.	9700 ppb(3)	N.R.	N.R.	N.R.	N.R.	(2)	N.R.
TDS	N.R.	4730 ppm	4756 ppm	N.R.	4732 ppm	N.R.	9110 ppm	N.R.
Laboratory	RMAL	SLD	SLD	RMAL	SLD	RMAL	SLD	RMAL

(1) 15 compounds ranging from the aromatic screen region to the C3 substituted benzene region at less than 25 ppb to 50 ppb detected, but not identified by photoionization.

(2) 8 late eluting unsaturated compounds at 25-50 ppb, 5 compounds in the aromatic screen region at 25-50 ppb (one at approximately 200-300 ppb) detected by photoionization, but not identified.

(3) unknown calculated against chlorodane standard. unknown is a complex blend whose chromatigraphic fingerprint is similar to chlorodane, but not a good match. Besides PAH's, approximately 90 compounds are present in concentrations from trace levels to 250 ppb whose origin may have been gasoline.

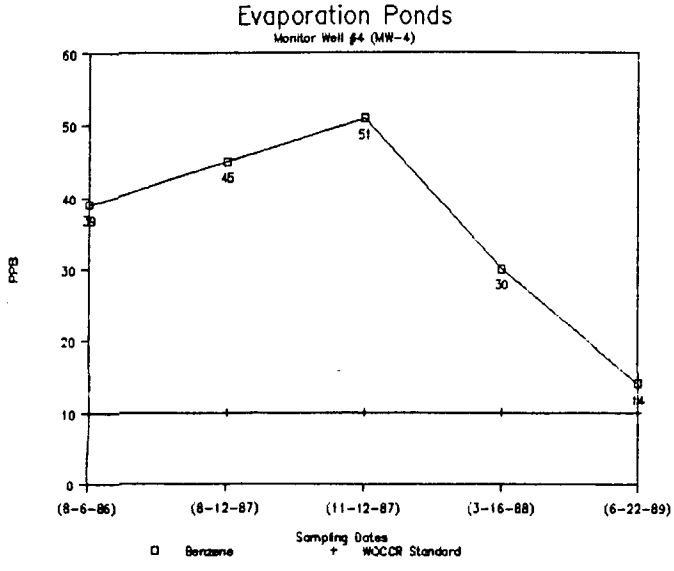
* Xylene reported as total instead of as isomers.

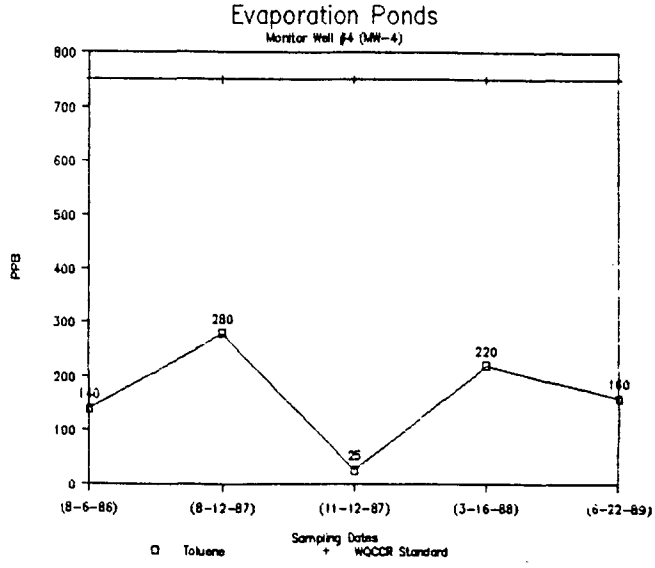
RMAL= Rocky Mountain Analytical Laboratory

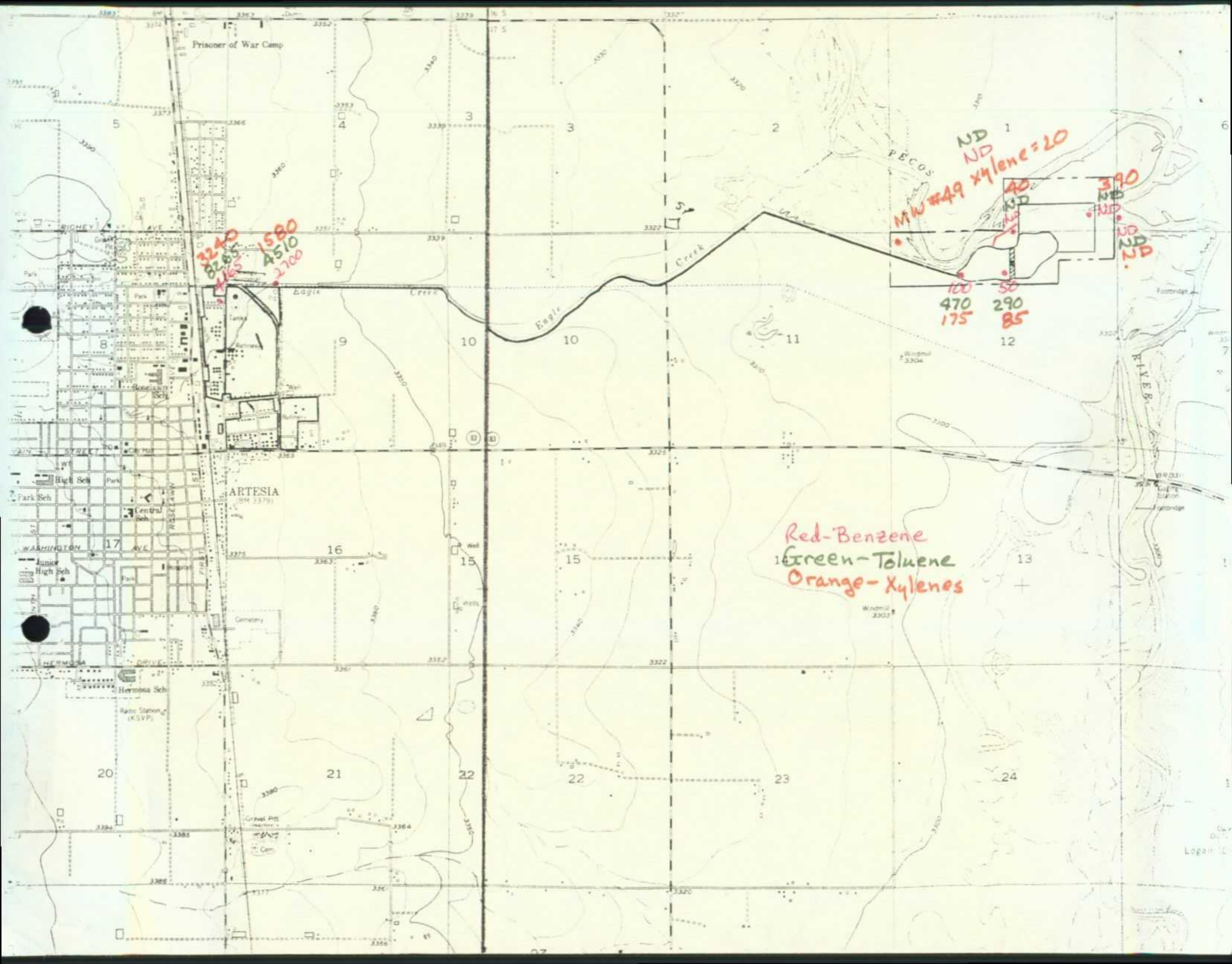
SLD= State Laboratory Division

N.D.= Not Detected

N.R.= Not Reported







Prisoner of War Camp
ARTESIA
PECOS
RIVER
Eagle Creek
MW #49 xylene = 20
3240
8265
4165
1580
4510
2700
ND
ND
40
ND
ND
390
ND
ND
ND
ND
ND
100
470
175
50
290
85
Red-Benzene
Green-Toluene
Orange-Xylenes
High Sch
Park Sch
Central Sch
Junior High Sch
Hermosa Sch
Radio Station (KSVP)
Cemetery
Gravel Pit
RICHEY AVE
WASHINGTON AVE
HERMOSA DRIVE

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. D. i V. Wastewater
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 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).

ICE: Sample stored in an ice bath.

HP-$Na_2O_3S_2$: 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
		Benzene etc.			

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
benzene	4165		
toluene	8265		
ethyl benzene	1505		
p-xylene	475		
m-xylene	1730		
o-xylene	1035		
halogenated purgeables	none detected		
		* DETECTION LIMIT	50 ug/m/l

REMARKS: ~~Four~~ 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: A E Finney

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. 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. 85235

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) 8504100855 By (name) Boyer/Baca

pH= [redacted]; 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 1; 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- 328

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 ug/m/l

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: 28 Apr, 3 May 85 Analyst's signature: [signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [signature]

85-0337-C

REPORT TO:

David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY

LAB NUMBER ORG-339-17-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= 4056 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)

SD 1
djiw

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		
ethyl benzene	70		
p-Xylene	5		
m-Xylene	120		
o-Xylene	50		
		* DETECTION LIMIT	2 ugm/l

REMARKS: Twenty-four aromatic type compounds were also detected that were not identified, including one halogenated poly-substituted aromatic compounds

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: J. Turney

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. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

85-0333 C

LABORATORY

LAB NUMBER ORG. 333-17.B
4/12/85
SLD PRIORITY 3

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 1 outlet

City & County Navajo Refinery - Artesia, Eddy Cty

Collected (date & time) 850410/1414 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 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- 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		
ethyl-benzene	none detected		
p-xylene	6		
m-xylene	70		
o-xylene	9		
		* DETECTION LIMIT	1 ug/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: R Tunney

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. Boyd
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

85-0334-C

LABORATORY

LAB NUMBER ORG-334-17-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. Pond 3, N.E. Corner

City & County Navajo Refinery, Artesia Eddy Cty

Collected (date & time) 8504/0/1135 By (name) Boyd, 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 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- 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 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: J. Finney

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 Meyerhoff

REPORT TO:

David G. Boy
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/Boca

pH= 7.7 ; 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 North of new pond

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed David G. Boy

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 purgeables	none detected		
benzene	none detected		
toluene	none detected		
ethyl benzene	none detected		
p-xylene	none detected		
m-xylene	40		
o-xylene	none detected		
		* DETECTION LIMIT	1 ugm/l

REMARKS: Eleven 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 85. Analyst's signature: [signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [signature]

REPORT TO: David G. Boyd
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

85-0329-C

LABORATORY

LAB NUMBER ORG-329-17-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. 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 drawn 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 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).

I-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
		ALIPHATIC HYDROCARBON SCREEN
		AROMATIC HYDROCARBON SCREEN
		HALOGENATED HYDROCARBON SCREEN
		GAS CHROMATOGRAPH/MASS SPECTROMETER
		SPECIFIC COMPOUNDS

QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBONS
		CHLORINATED HYDROCARBON PESTICIDES
		CHLOROPHENOXY ACID HERBICIDES
		HYDROCARBON FUEL SCREEN
		ORGANOPHOSPHATE PESTICIDES
		POLYCHLORINATED BIPHENYLS (PCB's)
		POLYNUCLEAR AROMATIC HYDROCARBONS
		TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halogenated purgeables	none detected		
aromatic purgeables	none detected		
		* DETECTION LIMIT	1 ug/l

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: S Tunney

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 Meyerhoff

REPORT TO: David G. Boyd

85-0338-C

New Mexico Oil Conservation Division

P. O. Box 2088

Santa Fe, NM 87501

LABORATORY

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 #19, Navajo Refinery

City & County Artesia, Eddy Cty

Collected (date & time) 850411/0730 By (name) Boyd/Baca

pH= – ; Conductivity= 8200 umhb/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 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 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	1 ugm/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: 28 Apr 85. Analyst's signature: J. Tierney

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 Meyerhen

GW-28

River Sampling

River Sampling

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+4444

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 1 2 5

☒ **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.
(East of OCD #7 (AZB)

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	

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

08/17/89

RECEIVED
AUG 21 1989
OIL CONSERVATION DIV.
SANTA FE

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: River Pool Navajo Ref.
Flow or other on site data: 4 Vials Organic scum, HC Odor
Collected by: Boyer, Englert
Date & Time Taken: 07/26/89 1503
Additional Sample Information: 175-26E-01-444 Dipped 8200 NF 8020:A 8010:NA Ponded area on west bank of Pecos
Lab Sample Number: 149765 Received: 07/29/89

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
1,1,1-Trichloroethane, ug/l EPA Method 8010	<5		08/04/89	0256	BP
1,1,2,2-Tetrachloroethane, ug/l EPA Method 8010	<5		08/04/89	0256	BP
1,1,2-Trichloroethane, ug/l EPA Method 8010	<5		08/04/89	0256	BP
1,1-Dichloroethane, ug/l EPA Method 8010	<5		08/04/89	0256	BP
1,1-Dichloroethene, ug/l EPA Method 8010	<1		08/04/89	0256	BP
1,2-Dichloroethane, ug/l EPA Method 8010	<5		08/04/89	0256	BP
1,2-Dichloropropane, ug/l EPA Method 8010	<5		08/04/89	0256	BP
2-Chloroethylvinyl ether, ug/l EPA Method 8010	<10		08/04/89	0256	BP
Benzene, ug/l EPA Method 8020	<5		08/04/89	0256	BP
Bromodichloromethane, ug/l EPA Method 8010	<5		08/04/89	0256	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149765 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Bromoform, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Bromomethane, ug/l EPA Method 8010	<10		08/04/89	0256	BP
Carbon Tetrachloride, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Chlorobenzene, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Chloroethane, ug/l EPA Method 8010	<10		08/04/89	0256	BP
Chloroform, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Chloromethane, ug/l EPA Method 8010	<10		08/04/89	0256	BP
Cis-1,3-Dichloropropene, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Dibromochloromethane, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Ethyl benzene, ug/l EPA Method 8020	<5		08/04/89	0256	BP
Freon, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Methylene Chloride, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Tetrachloroethene, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Toluene, ug/l EPA Method 8020	<5		08/04/89	0256	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149765 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Trans-1,2-Dichloroethene, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Trans-1,3-Dichloropropene, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Trichloroethene, ug/l EPA Method 8010	<5		08/04/89	0256	BP
Vinyl Chloride, ug/l EPA Method 8010	<1		08/04/89	0256	BP
Xylenes, ug/l EPA Method 8020	<10		08/04/89	0256	BP

C. H. Whiteside, Ph.D., President

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. 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

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

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

FIELD COMMENTS:

flowing river water, organic odor

~~near [illegible]~~

(SouthEast of OCD #7 AMB)

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 ______	

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

08/17/89

RECEIVED
AUG 21 1989
OIL CONSERVATION DIV.
SANTA FE

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: Pecos River Navajo Ref.
Flow or other on site data: 4 Vials Low Flow, Organic Odor
Collected by: Boyer, Englert
Date & Time Taken: 07/26/89 1517
Additional Sample Information: 175-26E-01-444 Dipped pH 7.61 Temp 30 Cond 8200 NF 8020:A 8010:NA
Lab Sample Number: 149764 Received: 07/29/89

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
1,1,1-Trichloroethane, ug/l EPA Method 8010	(5		08/04/89	0217	BP
1,1,2,2-Tetrachloroethane, ug/l EPA Method 8010	(5		08/04/89	0217	BP
1,1,2-Trichloroethane, ug/l EPA Method 8010	(5		08/04/89	0217	BP
1,1-Dichloroethane, ug/l EPA Method 8010	(5		08/04/89	0217	BP
1,1-Dichloroethene, ug/l EPA Method 8010	(1		08/04/89	0217	BP
1,2-Dichloroethane, ug/l EPA Method 8010	(5		08/04/89	0217	BP
1,2-Dichloropropane, ug/l EPA Method 8010	(5		08/04/89	0217	BP
2-Chloroethylvinyl ether, ug/l EPA Method 8010	(10		08/04/89	0217	BP
Benzene, ug/l EPA Method 8020	(5		08/04/89	0217	BP
Bromodichloromethane, ug/l EPA Method 8010	(5		08/04/89	0217	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149764 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Bromoform, ug/l EPA Method 8010	(5		08/04/89	0217	BP
Bromomethane, ug/l EPA Method 8010	(10		08/04/89	0217	BP
Carbon Tetrachloride, ug/l EPA Method 8010	(5		08/04/89	0217	BP
Chlorobenzene, ug/l EPA Method 8010	(5		08/04/89	0217	BP
Chloroethane, ug/l EPA Method 8010	(10		08/04/89	0217	BP
Chloroform, ug/l EPA Method 8010	(5		08/04/89	0217	BP
Chloromethane, ug/l EPA Method 8010	(10		08/04/89	0217	BP
Cis-1,3-Dichloropropene, ug/l EPA Method 8010	(5		08/04/89	0217	BP
Dibromochloromethane, ug/l EPA Method 8010	(5		08/04/89	0217	BP
Ethyl benzene, ug/l EPA Method 8020	(5		08/04/89	0217	BP
Freon, ug/l EPA Method 8010	(5		08/04/89	0217	BP
Methylene Chloride, ug/l EPA Method 8010	(5		08/04/89	0217	BP
Tetrachloroethene, ug/l EPA Method 8010	(5		08/04/89	0217	BP
Toluene, ug/l EPA Method 8020	(5		08/04/89	0217	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149764 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Trans-1,2-Dichloroethene, ug/l EPA Method 8010	<5		08/04/89	0217	BP
Trans-1,3-Dichloropropene, ug/l EPA Method 8010	<5		08/04/89	0217	BP
Trichloroethene, ug/l EPA Method 8010	<5		08/04/89	0217	BP
Vinyl Chloride, ug/l EPA Method 8010	<1		08/04/89	0217	BP
Xylenes, ug/l EPA Method 8020	<10		08/04/89	0217	BP

C. H. Whiteside, Ph.D., President

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. 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 from approx 100 ft upstream from Highway 82 Bridge.

Township, Range, Section, Tract: 17S 27E 8 1 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

Water level:

Discharge:

Sample type: GRAB

pH(00400):

Conductivity (Uncorrected): // mho

Water Temp. (00010):

Conductivity at 25° C: μ mho

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	

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

08/17/89

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: River @ Br Navajo Ref.
Flow or other on site data: 4 Vials Flowing River Water
Collected by: Boyer
Date & Time Taken: 07/27/89 1749
Additional Sample Information: 175-27e-18-11 Dipped NF A Sample from ~100 ft upstream from hwy 82 bridge
Lab Sample Number: 149767 Received: 07/29/89

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
1,1,1-Trichloroethane, ug/l EPA Method 8010	<5		08/04/89	0414	BP
1,1,2,2-Tetrachloroethane, ug/l EPA Method 8010	<5		08/04/89	0414	BP
1,1,2-Trichloroethane, ug/l EPA Method 8010	<5		08/04/89	0414	BP
1,1-Dichloroethane, ug/l EPA Method 8010	<5		08/04/89	0414	BP
1,1-Dichloroethene, ug/l EPA Method 8010	<1		08/04/89	0414	BP
1,2-Dichloroethane, ug/l EPA Method 8010	<5		08/04/89	0414	BP
1,2-Dichloropropane, ug/l EPA Method 8010	<5		08/04/89	0414	BP
2-Chloroethylvinyl ether, ug/l EPA Method 8010	<10		08/04/89	0414	BP
Benzene, ug/l EPA Method 8020	<5		08/04/89	0414	BP
Bromodichloromethane, ug/l EPA Method 8010	<5		08/04/89	0414	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment ○ Disposal ○ Equipment Sales

Lab Sample Number: 149767 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Bromoform, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Bromomethane, ug/l EPA Method 8010	(10		08/04/89	0414	BP
Carbon Tetrachloride, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Chlorobenzene, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Chloroethane, ug/l EPA Method 8010	(10		08/04/89	0414	BP
Chloroform, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Chloromethane, ug/l EPA Method 8010	(10		08/04/89	0414	BP
Cis-1,3-Dichloropropene, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Dibromochloromethane, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Ethyl benzene, ug/l EPA Method 8020	(5		08/04/89	0414	BP
Freon, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Methylene Chloride, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Tetrachloroethene, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Toluene, ug/l EPA Method 8020	(5		08/04/89	0414	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149767 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Trans-1,2-Dichloroethene, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Trans-1,3-Dichloropropene, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Trichloroethene, ug/l EPA Method 8010	(5		08/04/89	0414	BP
Vinyl Chloride, ug/l EPA Method 8010	(1		08/04/89	0414	BP
Xylenes, ug/l EPA Method 8020	(10		08/04/89	0414	BP

C. H. Whiteside, Ph.D., President

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

HEALTH — NEW MEXICO

87-0741-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 741-A-B
DATE REC. 5/5/87
PRIORITY

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 4 2 9 1 6 3 0 A M B

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 1 7 S 2 6 E 0 1 4 4 4 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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: _____

FIELD DATA:

pH= 7 ; Conductivity= 1850 umho/cm at 20 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ _____/_____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____ - _____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Pecos River opposite Well #8, Navajo Refinery. River high, fast, brown turbid (*OCB #7 nearby)

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D.A. Boyer Method of Shipment to the Lab: State car

This form accompanies 2 Septum Vials, _____ Glass Jugs, and/or _____ _____

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 741

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✱	1 ppb	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/28/87. Analyst's signature: Gary L. Eden

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. Sherrell JUN 11 1987

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY
LAB NUMBER ORG-329-A-B 4/12/85
85-0329-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. Pecos River @ NW #7, Navajo Refinery
City & County Artesia, Eddy Cty
Collected (date & time) 850410/1142 By (name) Boyer/Baca
pH= 8.3; Conductivity= 2500 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
(* OCD #) nearby R18

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- 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/l

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: S Finney

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

Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
SAMPLE ID: 8907261517
SITE: Pecos River
LAB NO: F1816

DATE REPORTED: 08/21/89
DATE RECEIVED: 07/31/89
DATE COLLECTED: 07/26/89

Lab pH	8.05
Lab Conductivity, umhos/cm	10923
Lab resistivity, ohm-m	0.9155
Total Dissolved Solids (180), mg/l	8246
Total Dissolved Solids (calc), mg/l	7956
Total Alkalinity as CaCO3, mg/l	56.84
Total Acidity as CaCO3, mg/l	0.00
Total Hardness as CaCO3, mg/l	2955.73
Sodium Absorption Ratio	12.79
Fluoride, mg/l	0.64

	mg/l	meq/l
Bicarbonate as HCO3	69.34	1.14
Carbonate as CO3	0.00	0.00
Chloride	2913.99	82.20
Sulfate	2370.24	49.38
Calcium	783.97	39.12
Magnesium	243.13	19.99
Potassium	11.10	0.28
Sodium	1599.00	69.55
Major Cations		128.95
Major Anions		132.72
Cation/Anion Difference		1.44 %

C. Neal Schaeffer
Senior Chemist

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: 5 | 5 | 87 | LAB NO. 10C 1664 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 87/04/29
Collection TIME: 1630
Collected by — Person/Agency: Boyer / Anderson / OCD

SITE INFORMATION ►

Sample location: Pecos River, Opposite well #3
Collection site description: Navajo Refinery - Artesia

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code:
Owner:

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: High	Discharge:	Sample type: GRAB
pH (00400): 7 (strip)	Conductivity (Uncorrected): 1650 µmho	Water Temp. (00010): 20 °C	Conductivity at 25°C (00094): 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 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:* ☐ A: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	2101	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other pH	7.95		5/19
☐ Other:			
☐ Other:			

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:			

From F, NA Sample:

			Date Analyzed
☒ Calcium	316	mg/l	6/1
☒ Potassium	2.73	mg/l	5/20
☒ Magnesium	49	mg/l	6/1
☒ Sodium	87.4	mg/l	5/20
☒ Bicarbonate	132	mg/l	5/19
☒ Chloride	176	mg/l	5/26
☒ Sulfate	924	mg/l	5/20
☒ Total Solids	1724	mg/l	6/3
☒ Fluoride	0.55		5/27
☐			
☒ Cation/Anion Balance			

Analyst | Date Reported: 6 | 10 | 87 | Reviewed by

Laboratory remarks:

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	15.77	316.00	<3.0	HC03	2.16	132.00	<1.0
Mg	4.02	49.00	<0.3	SO4	19.25	924.00	<10.0
Na	3.80	87.40	<10.0	CL	4.96	176.00	<5.0
K	0.07	2.73	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	23.66	455.13			26.38	1232.00	

Total Dissolved Solids= 1728
Ion Balance = 89.71%

WC No. = 8701664
Date out/By 6/24/87

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 — Collection TIME: 1147 — Collected by — Person/Agency: Boyer/Roca Oc

SITE INFORMATION

Sample location: Pecos River at MW #NW 7

Collection site description: Site opposite NE corner Navajo Pond #3 & MW #7, Navajo Refinery

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): 8400 µmho	Water Temp. (00010): 21 °C	Conductivity at 25°C (00094): 9625 µmho

Field comments: NO odor Hydrocarbons

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	7.0		
☐ 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 F	none		6/5
☒	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: 6 | 10 | 85 | Reviewed by:

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
Collection DATE	04 | 10	USER CODE	☐ 59300 ☐ 59600 XX OTHER: 82235
Collection TIME	1147	SITE INFORMATION ►	Sample location: Pecos River at #W #N 7
Collected by — Person/Agency	Boyer/Baca OCD		Collection site description: Site opposite NE corner Navajo Pond #3 & #W #7, Navajo Refinery

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 Noaromatics

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)	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: 6 \| 25 \| 85
Reviewed by:

Laboratory remarks:

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106

HEAVY METAL ANALYSIS FORM

Telephone: (505)841-2553

Date Received: 07 31 89 | Lab No.: ICAP 447 | User Code: [X] 82235 [ ] Other:

COLLECTION DATE & TIME: yy 89 mm 07 dd 26 hh mm 1517

COLLECTION SITE DESCRIPTION: Navajo Refinery Pecos River

COLLECTED BY: Boyer, Englert

TO:

OWNER:

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg., PO Box 2088
SANTA FE, NM 87504-2088

ATTN: Dave Boyer
TELEPHONE: 827-5812

SITE LOCATION:
County: Eddy

Township, Range, Section, Tract: (10N06E24342)
17S+26E+01+4414

STATION/ WELL CODE:

LATITUDE, LONGITUDE:

SAMPLING CONDITIONS:

[ ] Bailed [ ] Pump [X] Dipped [ ] Tap	Water Level:	Discharge:	Sample Type: Grab
pH(00400): 7.61	Conductivity (Uncorr.): 8200 µmho	Water Temp. (00010): 30° °C	Conductivity at 25°C (00094): µmho

FIELD COMMENTS: flowing river water, organic odor very low flow

SAMPLE FIELD TREATMENT
Check proper boxes:

[ ] WPN: Water Preserved w/HNO_3 Non-Filtered

[X] WPF: Water Preserved w/HNO_3 Filtered

LAB ANALYSIS REQUESTED:

[X] ICAP Scan
Mark box next to metal if AA is required.

ANALYTICAL RESULTS (MG/L)

ELEMENT	ICAP VALUE	AA VALUE	ELEMENT	ICAP VALUE	AA VALUE
Aluminum	<0.1		Silicon	3.3	
Barium	<0.1		Silver	<0.1	[ ]
Beryllium	<0.1		Strontium	11.	
Boron	0.6		Tin	0.1	
Cadmium	<0.1	[ ]	Vanadium	<0.1	
Calcium	780.		Zinc	<0.1	
Chromium	<0.1	[ ]	Arsenic		[X] <0.005
Cobalt	<0.05		Selenium		[ ]
Copper	<0.1		Mercury		[ ]
Iron	<0.1				[ ]
Lead	<0.1	[ ]			[ ]
Magnesium	280.				[ ]
Manganese	0.07				[ ]
Molybdenum	<0.1				[ ]
Nickel	<0.1				[ ]

RECEIVED
OCT 10 1989
OIL CONSERVATION DIV.
SANTA FE

LAB COMMENTS: seal intact 7/31/89 [illegible]. Broken by JAH on 8/2/89. Digested.

For OCD Use:
Date Owner Notified:
Phone or Letter?
Initials:

ICAP Analyst: JAH
Date Analyzed: 8/28/89

Reviewer: Jim Ashley
Date Received: 10/2/89

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-1693 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 85 04 10 | Collection TIME 1142 | SITE INFORMATION ► | Collected by — Person/Agency Boyer/Boca OCD

Sample location: Pecos River at [redacted] #W 7

Collection site description: Site opposite NE corner Navajo POW #3 & [redacted] #W #7, Navajo Refinery

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): 8400 µmho	Water Temp. (00010): 21 °C	Conductivity at 25°C (00094): µmho

Field comments: No odor 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: 6 18 85 | Reviewed by: Jim Bobby

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: HM693

Sample Code: Pecos River at NM #7

Date Submitted: 4/12/85

Date Reported: 6/17/85

By: Boyer/Baca

By: J. Ashley

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

Pond/Ditch Sampling

Pond/Ditch Sampling

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. 8907261545

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: 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

pH(00400) 9.47

Water Temp. (00010) 45 °C

Water level

Discharge

Sample type GRAB

Conductivity (Uncorrected) 3870 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	

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

09/22/89

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: Pipe Outlet Navajo Ref.
Flow or other on site data: 4 Vials +1 Turbid, Strong HC
Collected by: Boyer
Date & Time Taken: 07/26/89 1545
Additional Sample Information: 175-26E-12-2 Dipped pH 9.47 Temp 45 Cond 3870 NF 8020:A 8010:NA
Lab Sample Number: 149763 Received: 07/29/89

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
1,1,1-Trichloroethane, ug/l EPA Method 8010	(5		08/04/89	0138	BP
1,1,2,2-Tetrachloroethane, ug/l EPA Method 8010	(5		08/04/89	0138	BP
1,1,2-Trichloroethane, ug/l EPA Method 8010	(5		08/04/89	0138	BP
1,1-Dichloroethane, ug/l EPA Method 8010	(5		08/04/89	0138	BP
1,1-Dichloroethene, ug/l EPA Method 8010	(1		08/04/89	0138	BP
1,2-Dichloroethane, ug/l EPA Method 8010	(5		08/04/89	0138	BP
1,2-Dichloropropane, ug/l EPA Method 8010	(5		08/04/89	0138	BP
2-Chloroethylvinyl ether, ug/l EPA Method 8010	(10		08/04/89	0138	BP
Benzene, ug/l EPA Method 8020	1200		08/04/89	0138	BP
Bromodichloromethane, ug/l EPA Method 8010	(5		08/04/89	0138	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149763 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Bromoform, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Bromomethane, ug/l EPA Method 8010	(10		08/04/89	0138	BP
Carbon Tetrachloride, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Chlorobenzene, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Chloroethane, ug/l EPA Method 8010	(10		08/04/89	0138	BP
Chloroform, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Chloromethane, ug/l EPA Method 8010	(10		08/04/89	0138	BP
Cis-1,3-Dichloropropene, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Dibromochloromethane, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Ethyl benzene, ug/l EPA Method 8020	600		08/04/89	0138	BP
Freon, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Methylene Chloride, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Tetrachloroethene, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Toluene, ug/l EPA Method 8020	1300		08/04/89	0138	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149763 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Trans-1,2-Dichloroethene, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Trans-1,3-Dichloropropene, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Trichloroethene, ug/l EPA Method 8010	(5		08/04/89	0138	BP
Vinyl Chloride, ug/l EPA Method 8010	(1		08/04/89	0138	BP
Xylenes, ug/l EPA Method 8020	1800		08/04/89	0138	BP

C. H. Whiteside, Ph.D., President

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

754 wpu

88-0796-C

EXICO

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

RECEIVED
AUG 19 1988
OIL CONSERVATION DIVISION
SANTA FE

S.L.D. No. OR- 796 A+B
DATE REC. 6-3-88
PRIORITY 3

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 8 0 6 0 1 1 7 5 5 W + GB

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER:_____ CODE:

COUNTY: Eddy ; CITY: Artesia CODE:

LOCATION CODE: (Township-Range-Section-Tracts) 1 1 7 S + 2 6 1 E + 1 2 + 2 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: Not HCl preserved

FIELD DATA:

pH= 11 ; Conductivity= 8,700 umho/cm at 40 °C; Chlorine Residual=_____mg/l

Dissolved Oxygen=_____mg/l; Alkalinity=_____mg/l; Flow Rate_____ ____/____

Depth to water _____ft.; Depth of well_____ft.; Perforation Interval _____-_____ft.; Casing:_____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Navajo Refinery - Pipeline outfall, sample from outlet box, strong H/C odor. Black deposit on bank by outfall

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D. J. Boyd Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified 8/19/88 Phone or (Letter)? _____ Initials

ANALYSES PERFORMED

LAB. No.: OR- 796

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	see remarks		
benzene	7440		
toluene	11440		
ethylbenzene	1600		
p + m - xylene	3120		
o-xylene	2180		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	100 ppb	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: Two compounds in the aromatic screen region at approx 4000 - 20000 ppb and eleven late eluting compounds in the C3 substituted benzene region at 100 - 1000 ppb detected by the photoionization detector but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☐ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 6/4/88 . Analyst's signature: Gary L. Eden

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

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

754 WPU

87-1830-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 1830-A&B
DATE REC. 12-16-87
PRIORITY

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 1 1 1 2 1 0 5 0 A & B

SAMPLE TYPE: WATER [X] SOIL [ ], FOOD [ ], OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) _____ + _____ + _____ + _____ (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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: Not more than 10ppb D.L. if possible

FIELD DATA:

pH= 10 ; Conductivity= 420 umho/cm at 25 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ _____/_____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____-_____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Navajo Refinery - Pipeline Exit at Evappond

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D. Boyer Method of Shipment to the Lab: Car

This form accompanies 2 Septum Vials, _____ Glass Jugs, and/or _____ _____

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on _____/_____/_____ _____ and that the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures _____ _____

RECEIVED
DEC 18 1987
OIL CONSERVATION DIVISION
SANTA FE

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 1830

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	see remarks		
Benzene	4400		
Toluene	14000		
Ethyl Benzene	1780		
p-xylene	1080		
m-Xylene	3860		
o-Xylene	2120		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	200-400	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT
T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)
[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: Seven early eluting unsaturated compounds at 200-400 ppb; one large compound at approx 25000 - 30000 ppb and in the aromatic garden region and twelve late eluting compounds in the C3 substituted benzene region at 200-500 ppb detected by the photoionization detector but not identified

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☒ No ☐ Seal(s) broken by: [illegible] not sealed date: 4/19/87

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 4/18/87 . Analyst's signature: Mary C. Eben

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

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

764 WPU

87-1830-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088
PHONE(S): 827-5812

S.L.D. No. OR- 1830-A&B
DATE REC. 12-16-87
PRIORITY
USER CODE: 3 2 2 3 5

SUBMITTER: David Boyer CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 1 1 1 2 1 0 5 0 A & B

SAMPLE TYPE: WATER ☒ SOIL ☐, FOOD ☐, OTHER: CODE:

COUNTY: Eddy ; CITY: Artesia CODE:

LOCATION CODE: (Township-Range-Section-Tracts) (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: No more than 10ppb D.L. if possible

FIELD DATA:

pH= 10 ; Conductivity= 420 umho/cm at 25 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____ - _____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Navajo Refinery - Pipeline Exit at Evapond

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): [signature] Method of Shipment to the Lab: Car

This form accompanies 2 Septum Vials, 2 Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 1830

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [x] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] ____
- [ ] ____
- [ ] ____
- [ ] ____
- [ ] ____

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (758) Herbicides, Chlorophenoxy acid
- [ ] (759) Herbicides, Triasines
- [ ] (760) Organochlorine Pesticides
- [ ] (761) Organophosphate Pesticides
- [ ] (767) Polychlorinated Biphenyls (PCB's)
- [ ] (764) Polynuclear Aromatic Hydrocarbons
- [ ] (762) SDWA Pesticides & Herbicides

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	see remarks		
benzene	4400		
toluene	14000		
ethylbenzene	1780		
p-xylene	1080	} Values confirmed by	
m-xylene	3860	SLD 12/22/87	
o-xylene	2120		
halogenated purgeables	N.D.		
* DETECTION LIMIT *	200 ppb	+ DETECTION LIMIT +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: seven early eluting unsaturated compounds at 200-400 ppb one ~~large~~ compound at approx 25000-30000 ppb ~~and~~ in the aromatic [illegible] region and twelve late eluting compounds in the C3 substituted benzene region at 200-500 ppb detected by the photoionization detector but not identified

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes [ ] No [x] Seal(s) broken by: [signature] not sealed date: [illegible]

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 11/18/87 Analyst's signature: Gary C. [signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: [signature]

CLIENT: OCD
SAMPLE ID: 8907261545
SITE: Pipe Outlet
LAB NO: F1817
DATE REPORTED: 09/11/89
DATE EXTRACTED: 08/01/89
DATE RECEIVED: 07/31/89
DATE COLLECTED: 07/25/89
Analysis Requested: Polynuclear aromatic hydrocarbons in water.

Parameter	Concentration	Units
Acenaphthene	ND (1.8)	ug/l
Acenaphthylene	ND (2.3)	ug/l
Anthracene	ND (1.0)	ug/l
Benzo(a)Anthracene	ND (1.0)	ug/l
Benzo(a)pyrene	ND (1.0)	ug/l
Benzo(k)fluoranthene	ND (1.0)	ug/l
Benzo(g,h,i)perylene	ND (1.0)	ug/l
Dibenzo(a,h)anthracene	ND (1.0)	ug/l
Chrysene	ND (1.0)	ug/l
Fluoranthene	ND (1.0)	ug/l
Fluorene	ND (1.0)	ug/l
Indeno(1,2,3-cd)pyrene	ND (1.0)	ug/l
Naphthalene	ND (1.8)	ug/l
Phenanthrene	ND (1.0)	ug/l
Pyrene	ND (1.0)	ug/l
Benzo(b)fluoranthene	ND (1.0)	ug/l
Benzo(a)fluoranthene	ND (1.0)	ug/l
Benzo(j)fluoranthene	ND (1.0)	ug/l
Dibenzo(a,h)acridine	ND (1.0)	ug/l
Dibenzo(a,j)acridine	ND (1.0)	ug/l
Dibenzo(a,h)anthracene	ND (1.0)	ug/l
7H-dibenzo(c,g)carbazole	ND (1.0)	ug/l
Dibenzo(a,e)pyrene	ND (1.0)	ug/l
Dibenzo(a,h)pyrene	ND (1.0)	ug/l
Dibenzo(a,i)pyrene	ND (1.0)	ug/l
3-Methylcholanthrene	ND (1.0)	ug/l

Method:
8100 Polynuclear Aromatic Hydrocarbons, SW-846, USEPA (1982).
610 Polyaromatic Hydrocarbons, 40 CFR Part 136 (1984).

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

C. Neal Schaeffer
Senior Chemist

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

764 WEX

88-0805-B

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088
PHONE(S): 827-5812
SUBMITTER: David Boyer

S.L.D. No. OR- 805 A
DATE REC. 6-3-88
PRIORITY 3
USER CODE: 82235
CODE: 260

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 880601171555

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER:_____ CODE:____

COUNTY: Eddy ; CITY: Artesia CODE:____

LOCATION CODE: (Township-Range-Section-Tracts) 17S+26E+12+21 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☐ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: _____

FIELD DATA:

pH= 11 ; Conductivity= 8700 umho/cm at 40 °C; Chlorine Residual=_____mg/l

Dissolved Oxygen=_____mg/l; Alkalinity=_____mg/l; Flow Rate_____ ____/____

Depth to water _____ft.; Depth of well_____ft.; Perforation Interval _____-_____ft.; Casing:_____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Navajo Refinery - Pipeline outfall Stream
H/C odors ~~Pump @ 10 gallons~~ WRR

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D G Boyer Method of Shipment to the Lab: State Car

This form accompanies ____ Septum Vials, 11 Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified 8/19/88 Phone or (Letter)? _____ Initials WRR

ANALYSES PERFORMED

LAB. No.: OR- 805

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☐ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ ____
- ☐ ____
- ☐ ____
- ☐ ____
- ☐ ____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
LOST EXTRACT DUE TO INTERRUPTION OF COOLING WATER. PLEASE RESAMPLE.			
* DETECTION LIMIT * ✱		+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: ____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☐. Seal(s) broken by: NO SEALS date: ____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 6/14/88. Analyst's signature: [signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: ____

Inter-Mountain
Laboratories, Inc.

2508 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
SAMPLE ID: 8907261545
SITE: Pipe Outlet
LAB NO: F1817

DATE REPORTED: 08/21/89
DATE RECEIVED: 07/31/89
DATE COLLECTED: 07/25/89

Lab pH	9.80
Lab Conductivity, umhos/cm	3467
Lab resistivity, ohm-m	2.8843
Total Dissolved Solids (180), mg/l	2140
Total Dissolved Solids (calc), mg/l	2655
Total Alkalinity as CaCO3, mg/l	645.54
Total Acidity as CaCO3, mg/l	0.00
Total Hardness as CaCO3, mg/l	528.92
Sodium Absorption Ratio	12.41
Fluoride, mg/l	62.51

	mg/l	meq/l
Bicarbonate as HCO3	787.56	12.91
Carbonate as CO3	0.00	0.00
Chloride	577.18	16.28
Sulfate	860.04	17.92
Calcium	95.40	4.76
Magnesium	70.74	5.82
Potassium	8.80	0.23
Sodium	656.00	28.53
Major Cations		39.34
Major Anions		47.11
Cation/Anion Difference		8.99 % **

** This large ion % difference is most likely due to an abundance of metal cations which were not analyzed. All major ions were reanalyzed without significant changes.

C. Neal Schaeffer
Senior Chemist

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

864 WNF

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 6 3 88	LAB NO. WC-1972	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 6 1 01	SITE INFORM-ATION	Sample location Navajo Refinery - Pipeline Out Fall	
Collection TIME 1755		Collection site description	
Collected by — Person/Agency Boyd Anderson/OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

RECEIVED
AUG - 8 1988
OIL CONSERVATION DIVISION
SANTA FE

Station/ well code

Owner

SAMPLING CONDITIONS

☒ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level —	Discharge —	Sample type GRAB
pH (00400) 11	Conductivity (Uncorrected) 8700 µmho	Water Temp. (00010) 40 °C	Conductivity at 25°C (00094) µmho

Field comments Strong odor, Black deposit on pond banks below outfall

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	6440	µmho	6/30
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: Lab pH	9.79		7/14
☐ Other:			
☐ Other:			

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:			

From F, NA Sample:

			Date Analyzed
☒ Calcium	224	mg/l	7/15
☒ Potassium	8	mg/l	7/5
☒ Magnesium	41.5	mg/l	7/15
☒ Sodium	1328	mg/l	7/5
☒ Bicarbonate	<3	mg/l	7/14
☒ Chloride	1190	mg/l	6/23
☒ Sulfate	855	mg/l	6/23
☒ Total Solids	4392	mg/l	6/28
☒ Fluoride[b]	29.5		7/22
☐			
☒ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	7 27 88	CJ

Laboratory remarks [b] Predominately carbonate present see pH 9.79

FOR OCD USE -- Date Owner Notified 8/9/88 Phone or (Letter)? _____ Initals AMS

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	11.18	224.00	<3.0	HC03	0.05	3.00	<1.0
Mg	3.41	41.50	<0.3	SO4	17.81	855.00	<10.0
Na	57.76	1328.00	<10.0	CL	33.57	1190.00	<5.0
K	0.20	8.00	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	4.68	281.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	72.56	1601.50			56.11	2329.00	

Total Dissolved Solids= 4392

Ion Balance = 129.30%

WC No. = 8801972

Date out/By 7/29/88

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

WWN 864

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 11/16/87 | LAB NO. WC-5087 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 11/12 | Collection TIME 1050 | Collected by — Person/Agency Boyer / Bailey / OCD

SITE INFORMATION ►

Sample location: Navajo Refinery - Pipeline Exit

Collection site description: Concrete Box at evap pond

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code

Owner

SAMPLING CONDITIONS

☐ Bailed ☐ Pump ☒ Dipped ☐ Tap	Water level	Discharge ~400 gpm	Sample type GRAB
pH (00400) 9.2 Meter, 10 Strip	Conductivity (Uncorrected) — µmho	Water Temp. (00010) — °C	Conductivity at 25°C (00094) 4280 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 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:* ☐ A: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	4648	µmho	1/5
☐ Total non-filterable residue (suspended) (00530)	*	mg/l	
☒ Other: Lab pH	9.98		12/16
☐ Other:			
☐ Other:			

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:			

From NE, NA Sample:

			Date Analyzed
☒ Calcium	120	mg/l	12/29
☒ Potassium	6.24	mg/l	12/21
☒ Magnesium	36.6	mg/l	12/29
☒ Sodium	856	mg/l	12/21
☒ Bicarbonate	< det	mg/l	1/16
☒ Chloride	680	mg/l	1/11
☒ Sulfate	630	mg/l	1/11
☒ Total Solids	3060	mg/l	11
☒ Fluoride	26.6		12/31
☐			
☒ Cation/Anion Balance			

Analyst | Date Reported 1/11/88 | Reviewed by CG

Laboratory remarks: Suspect $^{(-)}OH$ present / affects Balance

* T = 16°C

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	5.99	120.00	<3.0	HC03	0.00	0.00	<1.0
Mg	3.01	36.60	<0.3	SO4	13.13	630.00	<10.0
Na	37.23	856.00	<10.0	CL	19.18	680.00	<5.0
K	0.16	6.24	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	46.39	1018.84			32.31	1310.00	

Total Dissolved Solids= 3060

Ion Balance = 143.58%

WC No. = 8705087

Date out/By 1/14/87

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106

HEAVY METAL ANALYSIS FORM

Telephone: (505)841-2553

Date Received	07/31/89	Lab No.	ICAP 446	User Code	☒ 82235 ☐ Other:

COLLECTION DATE & TIME: yy 89 mm 07 dd 26 hh 15 mm 45

COLLECTED BY: Boyer

COLLECTION SITE DESCRIPTION: NAVAJO REFINERY PIPE Outlet

OWNER:

RECEIVED
OCT 19 1989
OIL CONSERVATION DIV.

TO:
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION SANTA FE
State Land Office Bldg., PO Box 2088
SANTA FE, NM 87504-2088

ATTN: DAVE Boyer
TELEPHONE: 827-5812

SITE LOCATION:
County: Eddy

Township, Range, Section, Tract: (10N06E24342)
T17S+R26E+12+21-U

STATION/ WELL CODE:

LATITUDE, LONGITUDE:

SAMPLING CONDITIONS:

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water Level:	Discharge:	Sample Type: GRAB

pH(00400)	Conductivity(Uncorr.)	Water Temp.(00010)	Conductivity at 25°C (00094)
9.47	3870 µmho	45 °C	µmho

FIELD COMMENTS: turbid, no floating organics, strong odor
sample from end of grate

SAMPLE FIELD TREATMENT Check proper boxes:		LAB ANALYSIS REQUESTED:
☐ WPN: Water Preserved w/HNO_3 Non-Filtered	☒ WPF: Water Preserved w/HNO_3 Filtered	☒ ICAP Scan Mark box next to metal if AA is required.

ANALYTICAL RESULTS (MG/L)

ELEMENT	ICAP VALUE		AA VALUE	ELEMENT	ICAP VALUE		AA VALUE
Aluminum	0.1			Silicon	5.3		
Barium	<0.1			Silver	<0.1	☐	
Beryllium	<0.1			Strontium	1.3		
Boron	0.8			Tin	<0.1		
Cadmium	<0.1	☐		Vanadium	<0.1		
Calcium	59.			Zinc	<0.1		
Chromium	<0.1	☒	<0.005	Arsenic		☒	0.21
Cobalt	<0.05			Selenium		☐	
Copper	<0.1			Mercury		☐	
Iron	<0.1					☐	
Lead	<0.1	☒	<0.005			☐	
Magnesium	18.					☐	
Manganese	<0.05					☐	
Molybdenum	<0.1					☐	
Nickel	<0.1					☐	

LAB COMMENTS: sent instead 7/31/89 mjf. Broken by JAA on 8/2/89. DIGESTED.

For OCD Use:
Date Owner Notified:
Phone or Letter?
Initials:

ICAP Analyst JAA Reviewer
Date Analyzed 8/28/89 Date Received 10/16/89

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106

HEAVY METAL ANALYSIS FORM

Telephone: (505)841-2553

Date Received: 6/3/88 | Lab No. ICP-239 | User Code ☒ 82235 ☐ Other:

COLLECTION DATE & TIME: yy 88 mm 04 dd 04 hh 17 mm 55

COLLECTION SITE DESCRIPTION: Pipeline Outfall to ponds

COLLECTED BY: Boyd/Anderson/OCD

TO:

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg., PO Box 2088
SANTA FE, NM 87504-2088

ATTN: D. Boyd
TELEPHONE: 827-5812

RECEIVED AUG 17 1988 OIL CONSERVATION DIVISION SANTA FE

OWNER: Navajo Refinery

SITE LOCATION:
County: Eddy

Township, Range, Section, Tract: (10N06E24342)
17S+26E+12+21

STATION/ WELL CODE:

LATITUDE, LONGITUDE: -

SAMPLING CONDITIONS:

☐ Bailed ☐ Pump ☒ Dipped ☐ Tap | Water Level: 11 | Discharge: | Sample Type: Grab

pH(00400)	Conductivity(Uncorr.)	Water Temp.(00010)	Conductivity at 25°C (00094)
11	8700 µmho	40 °C	µmho

FIELD COMMENTS: Strong odor. Black deposit on pond bank below outfall

SAMPLE FIELD TREATMENT
Check proper boxes:
☐ WPN: Water Preserved w/HNO_3 Non-Filtered
☒ WPF: Water Preserved w/HNO_3 Filtered

LAB ANALYSIS REQUESTED:
☒ ICAP Scan
Mark box next to metal if AA is required.

ANALYTICAL RESULTS (MG/L)

ELEMENT	ICAP VALUE	AA VALUE	ELEMENT	ICAP VALUE	AA VALUE
Aluminum	<0.1		Silicon	3.5	
Barium	<0.1		Silver	<0.1	☐
Beryllium	<0.1		Strontium	3.1	
Boron	0.1		Tin	<0.1	
Cadmium	<0.1	☐	Vanadium	<0.1	
Calcium	190.		Zinc	<0.1	
Chromium	<0.1	☒ <0.005	Arsenic		☒ 0.22
Cobalt	<0.05		Selenium		☐
Copper	<0.1		Mercury		☐
Iron	<0.1				☐
Lead	<0.1	☒ <0.01			☐
Magnesium	36.				☐
Manganese	<0.05				☐
Molybdenum	<0.1				☐
Nickel	<0.1				☐

LAB COMMENTS: digest

For OCD Use:
Date Owner Notified: 8/19/88
Phone or Letter?
Initials: [illegible]

ICAP Analyst: JA
Date Analyzed: 6/7/88

Reviewer: Jim Ashley
Date Received: 8/10/88

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

SAMPLING CONDITIONS

☐ Bailed ☐ Pump
☒ Dipped ☐ Tap

pH(00400)

Water Temp. (00010) 26.5°C

Water level 7.61

Discharge 6.5+ gallons

Sample type GRAB

Conductivity (Uncorrected) 7100 µmho

Conductivity at 25° C µmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 2 U 12/5

☒ **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	

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

08/17/89

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: OCD East Pond 3 Navajo Ref.
Flow or other on site data: 4 Vials Clear, Strong HC Odor
Collected by: Boyer
Date & Time Taken: 07/25/89 1829
Additional Sample Information: 175-26E-01-4 Dipped NF A 6.5+ Temp 26.5 WL 7.61 Cond 7100
Lab Sample Number: 149770 Received: 07/29/89

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
1,1,1-Trichloroethane, ug/l EPA Method 8010	<5		08/05/89	2037	BP
1,1,2,2-Tetrachloroethane, ug/l EPA Method 8010	<5		08/05/89	2037	BP
1,1,2-Trichloroethane, ug/l EPA Method 8010	<5		08/05/89	2037	BP
1,1-Dichloroethane, ug/l EPA Method 8010	<5		08/05/89	2037	BP
1,1-Dichloroethene, ug/l EPA Method 8010	<1		08/05/89	2037	BP
1,2-Dichloroethane, ug/l EPA Method 8010	<5		08/05/89	2037	BP
1,2-Dichloropropane, ug/l EPA Method 8010	<5		08/05/89	2037	BP
2-Chloroethylvinyl ether, ug/l EPA Method 8010	<10		08/05/89	2037	BP
Benzene, ug/l EPA Method 8020	280		08/05/89	2037	BP
Bromodichloromethane, ug/l EPA Method 8010	<5		08/05/89	2037	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149770 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Bromoform, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Bromomethane, ug/l EPA Method 8010	<10		08/05/89	2037	BP
Carbon Tetrachloride, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Chlorobenzene, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Chloroethane, ug/l EPA Method 8010	<10		08/05/89	2037	BP
Chloroform, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Chloromethane, ug/l EPA Method 8010	<10		08/05/89	2037	BP
Cis-1,3-Dichloropropene, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Dibromochloromethane, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Ethyl benzene, ug/l EPA Method 8020	28		08/05/89	2037	BP
Freon, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Methylene Chloride, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Tetrachloroethene, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Toluene, ug/l EPA Method 8020	250		08/05/89	2037	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149770 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Trans-1,2-Dichloroethene, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Trans-1,3-Dichloropropene, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Trichloroethene, ug/l EPA Method 8010	<5		08/05/89	2037	BP
Vinyl Chloride, ug/l EPA Method 8010	<1		08/05/89	2037	BP
Xylenes, ug/l EPA Method 8020	<10		08/05/89	2037	BP

C. H. Whiteside, Ph.D., President

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

754 WPU

88-0789-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 789 A+B
DATE REC. 6-3-88
PRIORITY 3

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 8 0 6 0 1 1 0 1 0 0 A & B

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 1 1 7 S + 2 6 E + 0 1 + 4 . (10N06E24342)

OIL CONSERVATION DIVISION
SANTA FE

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (761) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: Not HCl preserved

FIELD DATA:

pH= 7 ; Conductivity= 7602 umho/cm at 24 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ _____/_____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____-_____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Navajo Pond - East side opposite OCD #7 Well (Pond 3)

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): W. Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, _____ Glass Jugs, and/or _____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

For OCD Use: Date Owner Notified 6/19/88 Phone or Letter? _____ Initials WB

ANALYSES PERFORMED

LAB. No.: OR- 789

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
halogenated purgeables	N.D.		
aromatic purgeables			
benzene	T.R.		
toluene	T.R.		
p + m - xylene	6.5		
o-xylene	T.R.		
* DETECTION LIMIT * ✳	5 ug/L	+ DETECTION LIMIT + ┼	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT
T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)
[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: four compounds in the aromatic screen region at approx 5 ppb detected by the photoionization detector but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 6/10/88. Analyst's signature: Mary C. Eden

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

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY
LAB NUMBER ORC-334-F-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 (Opposite Navajo #7 Well)

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed Donald 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- 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 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: J. Tinney

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

864 WNF

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED: 6 3188 | LAB NO.: WC-1983 | USER CODE: ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 880601 | Collection TIME: 1000 | Collected by — Person/Agency: Boyer/Anderson/OCD

SITE INFORMATION ►

Sample location: Navajo Pond - East Side Opposite oct #7

Collection site description: (Pond 3)

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

RECEIVED
AUG - 8 1988
OIL CONSERVATION DIVISION
SANTA FE

Station/ well code:

Owner:

SAMPLING CONDITIONS

☒ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: —	Sample type: Grab
pH (00400): 7	Conductivity (Uncorrected): 7600 µmho	Water Temp. (00010): 24 °C	Conductivity at 25°C (00094): µmho

Field comments: Hydrocarbon 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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	9282	µmho	7/5
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: Lab pH	7.75		7/15
☐ Other:			
☐ Other:			

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:			

From F, NA Sample:

			Date Analyzed
☒ Calcium	288	mg/l	7/18
☒ Potassium	30	mg/l	7/5
☒ Magnesium	104.9	mg/l	7/18
☒ Sodium	1690	mg/l	7/5
☒ Bicarbonate	167	mg/l	7/15
☒ Chloride	2050	mg/l	7/26
☒ Sulfate	1980	mg/l	7/26
☒ Total Solids	6146	mg/l	6/30
☒ Fluoride	17.6		7/22
☐			
☒ Cation/Anion Balance			

Analyst | Date Reported: 7/27/88 | Reviewed by

Laboratory remarks: 1998

FOR OCD USE -- Date Owner Notified 8/19/88 Phone or (Letter)? _____ Initals KVS

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	14.37	288.00	<3.0	HC03	2.74	167.00	<1.0
Mg	8.62	105.00	<0.3	SO4	41.25	1980.00	<10.0
Na	73.51	1690.00	<10.0	CL	57.83	2050.00	<5.0
K	0.77	30.00	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	97.27	2113.00			101.81	4197.00	

Total Dissolved Solids= 6146

Ion Balance = 95.54%

WC No. = 8801983

Date out/By 7/24/84

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-1706 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 85/04/10
Collection TIME 1135
Collected by — Person/Agency: Boyer/Baca OCD

SITE INFORMATION ►
Sample location: NE Corner Pond #3 Navajo Refinery
Collection site description: Corner near MW #7 (Navajo Well #7, AYR)

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) 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

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		μmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	9.18		6/10
☐ 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

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: 6/11/85 | Reviewed by: [signature]

Laboratory remarks:

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

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-1699 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 04 | 10 | 85

Collection TIME: 1135

Collected by — Person/Agency: Boyer/Baca Ocb

SITE INFORMATION ►

Sample location: NE Corner Pond #3 Navajo Refinery

Collection site description: Corner near MW #7

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			Date analyzed
☒ Nitrate-N +, Nitrate-N total (00630)	0.08	mg/l	4/23
☒ Ammonia-N total (00610)	7.53	mg/l	4/14
☒ Total Kjeldahl-N ( )	10.6	mg/l	5/29
☒ 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: 6 | 25 | 85

Reviewed by:

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

HEAVY METAL ANALYSIS FORM

Telephone: (505)841-2553

Date Received: 6/3/88 Lab No. ICP-247 User Code ☒ 82235 ☐ Other:

COLLECTION DATE & TIME: yy 88 mm 06 dd 01 hh 10 mm 00

COLLECTION SITE DESCRIPTION: Navajo Pond - East Side (Pond 3) Opposite OCD #7

COLLECTED BY:

OWNER: Navajo Refinery

TO:

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg., PO Box 2088
SANTA FE, NM 87504-2088

RECEIVED AUG 17 1988 OIL CONSERVATION DIVISION SANTA FE

ATTN: D. Boyer
TELEPHONE: 827-5812

SITE LOCATION:
County: Eddy
Township, Range, Section, Tract: (10N06E24342) 17S+26E+01+4

STATION/ WELL CODE:

LATITUDE, LONGITUDE:

SAMPLING CONDITIONS:

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water Level: —	Discharge: —	Sample Type: Grab

pH(00400)	Conductivity(Uncorr.)	Water Temp.(00010)	Conductivity at 25°C (00094)
7	7600 µmho	24 °C	µmho

FIELD COMMENTS: Hydrocarbon odor

SAMPLE FIELD TREATMENT
Check proper boxes:

☐ WPN: Water Preserved w/HNO_3 Non-Filtered

☒ WPF: Water Preserved w/HNO_3 Filtered

LAB ANALYSIS REQUESTED:

☒ ICAP Scan
Mark box next to metal if AA is required.

ANALYTICAL RESULTS (MG/L)

ELEMENT	ICAP VALUE	AA VALUE	ELEMENT	ICAP VALUE	AA VALUE
Aluminum	<0.1		Silicon	0.9	
Barium	<0.1		Silver	<0.1	☐
Beryllium	<0.1		Strontium	4.4	
Boron	0.4		Tin	<0.1	
Cadmium	<0.1	☐	Vanadium	<0.1	
Calcium	220.		Zinc	<0.1	
Chromium	<0.1	☒ 0.010	Arsenic		☒ 0.59
Cobalt	<0.05		Selenium		☐
Copper	<0.1		Mercury		☐
Iron	0.1				☐
Lead	<0.1	☒ <0.01			☐
Magnesium	97.				☐
Manganese	0.12				☐
Molybdenum	<0.1				☐
Nickel	<0.1				☐

LAB COMMENTS: digest.

For OCD Use:
Date Owner Notified: 8/19/88
Phone or Letter?
Initials: DGB

ICAP Analyst JB
Date Analyzed 7/13/88

Reviewer J. Ashby
Date Received 8/10/88

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 03 | 04 | 10	SITE INFORM-ATION ►	Sample location NE Corner Pond #3 Navajo Refinery	
Collection TIME 1135		Collection site description Corner near MW #7	
Collected by — Person/Agency Boyer, Baca Ab			

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

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	0.611	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 6 \| 18 \| 85 | Reviewed by Jim Ashley

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

Date Submitted: 4/12/85

By: Boyer/Baca

Sample Code: NE Corner of Pond #3

Date Reported: 6/18/85

By: Jim Ashley

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

88-0799-C

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

754 wpu

HEALTH ENVI... NEW MEXICO

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

RECEIVED AUG 19 1988 OIL CONSERVATION DIVISION SANTA FE

S.L.D. No. OR- 799 A+B

DATE REC. 6-3-88

PRIORITY 3

PHONE(S): 327-5812 USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 880601161010A+B

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: ____ CODE: ____

COUNTY: Eddy ; CITY: Artesia CODE: ____

LOCATION CODE: (Township-Range-Section-Tracts) 17S+26E+01+4 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] ____
- [ ] ____
- [ ] ____
- [ ] ____
- [ ] ____

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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: Not HCl preserved

FIELD DATA:

pH=____; Conductivity=____umho/cm at ____°C; Chlorine Residual=____mg/l

Dissolved Oxygen=____mg/l; Alkalinity=____mg/l; Flow Rate ____ ____/____

Depth to water ____ft.; Depth of well____ft.; Perforation Interval ____-____ft.; Casing:____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Navajo Refinery - Pond Sample, NW Corner #3 pond by Navajo #5 well

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from ____ to ____

at (location) ____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures ____ ____

For OCD Use: Date Owner Notified 8/19/88 Phone or Letter? ____ Initials DB

ANALYSES PERFORMED

LAB. No.: OR- 799

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
halogenated purgeables	N.D.		
aromatic purgeables			
benzene	10		
toluene	14		
ethylbenzene	T.R.		
p + m - xylene	13		
o - xylene	7		
* DETECTION LIMIT *	5 ug/L	+ DETECTION LIMIT +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 6/10/88 . Analyst's signature: Mary C. Eller

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

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

HEALTH ENVIRONMENT

87-0754-C NEW MEXICO

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 754-A·B
DATE REC. 5-5-87
PRIORITY

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 5 0 1 1 0 5 5 2 W B

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) _____ + _____ + _____ + _____ (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: _____

FIELD DATA:

pH= 7 ; Conductivity= 8100 umho/cm at 24.9 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ _____/_____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____ - _____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Pond 3 - North End - Navajo Refinery (3/10 Mile from N.E. Corner)
Dipped - odor, no sheen

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): W Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, 1 Glass Jugs, and/or _____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 754

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatics purgeables	see remark		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	2-4 ppb	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: Fifteen compounds (at 2-4 ppb) and two (at 30-40 ppb) in the aromatics screen region detected with the photoionization detector but not identified. Seven late eluting compounds in the C3 substituted benzene region detected with the photoionization detector (at less than 2 ppb) but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/29/87 Analyst's signature: Mary C. Eden

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: C. Sherrod JUN 11 1987

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: 5 | 5 | 87 — LAB NO. WC 1660 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 870501 — Collection TIME: 1055 — Collected by — Person/Agency: Boyer / Anderson / OCD

SITE INFORMATION ►

Sample location: Pond 3 - North End Navajo Refinery

Collection site description:

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/well code:

Owner:

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level	Discharge	Sample type: GRAB
pH (00400): 7 (strip)	Conductivity (Uncorrected): 8100 µmho	Water Temp. (00010): 24.9 °C	Conductivity at 25°C (00094): 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 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:* ☐ A: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	8405	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other:	7.25		5/12
☐ Other:			
☐ Other:			

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:			

From NE, NA Sample:			Date Analyzed
☒ Calcium	152	mg/l	6/1
☒ Potassium	17.2	mg/l	5/20
☒ Magnesium	54	mg/l	6/1
☒ Sodium	1596	mg/l	5/20
☒ Bicarbonate	128	mg/l	5/12
☒ Chloride	1869	mg/l	5/26
☒ Sulfate	1355	mg/l	5/20
☒ Total Solids	5328	mg/l	5/27
☒ Fluoride	30.1		5/27
☐			
☒ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	6 | 2 | 87	CJ

Laboratory remarks

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	7.58	152.00	<3.0	HC03	2.10	128.00	<1.0
Mg	4.44	54.00	<0.3	SO4	28.23	1355.00	<10.0
Na	69.42	1596.00	<10.0	CL	52.72	1869.00	<5.0
K	0.44	17.20	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	81.88	1819.20			83.05	3352.00	

Total Dissolved Solids= 5328

Ion Balance = 98.59%

WC No. = 8701660

Date out/By CO 6/2/87

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

754 wpw

87-1352-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088
PHONE(S): 827-5812
SUBMITTER: David Boyer

S.L.D. No. OR- 1352 A & B
DATE REC. 8-14-87
PRIORITY
USER CODE: 82235
CODE: 260

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 870801211505DGB

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: _____ CODE: _____

COUNTY: EDDY ; CITY: ARTESIA CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 17S+26E+12+ (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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: Detection limit 100 or less if possible

FIELD DATA:

pH= 7 ; Conductivity= 10,100 umho/cm at 30 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____-_____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

NEW POND OPPOSITE MW-7, NAVAJO REFINERY. OIL ON WATER & ON BANKS DUE TO CUT IN POND 1 DIKE

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D H Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 1352

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	TR.		
toluene	~~37~~		
m-xylene	TR 37		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	10 ug/L	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: Five early eluting unsaturated compounds at approx 1 ppb detected by the photoionization detector but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 8/17/87 . Analyst's signature: Mary C. Eslen

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

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

87-0764-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088
PHONE(S): 827-5812
SUBMITTER: David Boyer

S.L.D. No. OR- 764-A-B
DATE REC. 5/5/87
PRIORITY
USER CODE: 82235
CODE: 260

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 870429101545AWS

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 175+26E+12+214 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: _____

FIELD DATA:

pH= 7 ; Conductivity= 1800 umho/cm at 21.5°C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval ____-____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

~~Well #6~~, Navajo Refinery, New Pond, S. bank N of Well #7
Water Brownish, clear, No sheen

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): WD Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 764

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	see remarks		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	10-49/L	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: Three compounds at approx. 10 ppb in the aromatic screen region detected by the photoionization detector but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑. Seal(s) broken by: not sealed date: /

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/29/87. Analyst's signature: Gary C. Eden

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. Sorrell JUN 11 1987

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY

LAB NUMBER ORG-331-17B 4/12/85

85-0331-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 #4 (New Pond) Navajo Refinery

City & County Artesia, Eddy Cty

Collected (date & time) 8504101201 By (name) Boyer/Baca

pH= 7.7 ; 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 North of new pond

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- 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
		ALIPHATIC HYDROCARBON SCREEN
		AROMATIC HYDROCARBON SCREEN
		HALOGENATED HYDROCARBON SCREEN
		GAS CHROMATOGRAPH/MASS SPECTROMETER
		SPECIFIC COMPOUNDS

QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBONS
		CHLORINATED HYDROCARBON PESTICIDES
		CHLOROPHENOXY ACID HERBICIDES
		HYDROCARBON FUEL SCREEN
		ORGANOPHOSPHATE PESTICIDES
		POLYCHLORINATED BIPHENYLS (PCB's)
		POLYNUCLEAR AROMATIC HYDROCARBONS
		TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halogenated purgeables	none detected		
benzene	none detected		
toluene	none detected		
ethylbenzene	none detected		
p-xylene	none detected		
m-xylene	40		
o-xylene	none detected		
		* DETECTION LIMIT	1 ug/m/l

REMARKS: Eleven 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 85. Analyst's signature: G Finney

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 Meyerhoff

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570 764 WEY

HEALTH ENVIRONMENT — STATE OF NEW MEXICO

87-1370-B

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 1370 A
DATE REC. 8-14-87
PRIORITY ______

PHONE(S): 827-5812 USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 8 1 1 2 1 1 5 0 D G B

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: ______ CODE: ______

COUNTY: EDDY ; CITY: ARTESIA CODE: ______

LOCATION CODE: (Township-Range-Section-Tracts) 1 7 S + 2 6 E + 1 2 + (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [ ] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] ______
- [ ] ______
- [ ] ______
- [ ] ______
- [ ] ______

EXTRACTABLE SCREENS

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

Remarks: ______

FIELD DATA:

pH= 7 ; Conductivity= 10,100 umho/cm at 30 °C; Chlorine Residual= ______ mg/l

Dissolved Oxygen= ______ mg/l; Alkalinity= ______ mg/l; Flow Rate ______ ____/____

Depth to water ______ ft.; Depth of well ______ ft.; Perforation Interval ____-____ ft.; Casing: ______

Sampling Location, Methods and Remarks (i.e. odors, etc.)

NEW POND OPPOSITE MW-7, NAVAJO REFINERY. OIL ON WATER & ON BANKS DUE TO CUT IN POND 1 DIKE

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D G Boyer Method of Shipment to the Lab: State Car

This form accompanies ____ Septum Vials, 1 Glass Jugs, and/or ______

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from ______ to ______

at (location) ______ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures ______ ______

For OCD Use: Date Owner Notified ______ Phone or Letter? ______ Initials ______

ANALYSES PERFORMED

LAB. No.: OR- 1370

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☐ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☑ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
Mineral Oil MDL = 1000 ppb	3970 ppb		
PNA's MDL = 10 ppb	ND < 10		
* DETECTION LIMIT * ✱		+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

Sample 1000 ml

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☐. Seal(s) broken by: NO SEALS date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 9/4/87. Analyst's signature: DS Gurney

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: 5 | 5 | 87 — LAB NO. WC 1647 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 87/04/29 — Collection TIME: 1045 — Collected by — Person/Agency: Boyer / Anderson / OCD

SITE INFORMATION ►

Sample location: New Pond, Navajo Refinery

Collection site description: New disposal pond, South Bank

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code

Owner

SAMPLING CONDITIONS

☐ Bailed ☐ Pump ☒ Dipped ☐ Tap	Water level	Discharge	Sample type: GRAB
pH (00400): 7	Conductivity (Uncorrected): 7800 µmho	Water Temp. (00010): 21.5 °C	Conductivity at 25°C (00094): µmho

Field comments: See VOC sheet for comments

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	8372	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.80		5/12
☐ Other:			
☐ Other:			

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:			

From E, NA Sample:

			Date Analyzed
☒ Calcium	164	mg/l	6/1
☒ Potassium	17.2	mg/l	5/19
☒ Magnesium	56	mg/l	6/1
☒ Sodium	1450	mg/l	5/19
☒ Bicarbonate	172	mg/l	5/12
☒ Chloride	1517	mg/l	5/26
☒ Sulfate	1127	mg/l	5/20
☒ Total Solids	5454	mg/l	5/27
☒ Fluoride	32.8		5/27
☐			
☒ Cation/Anion Balance			

Analyst | Date Reported: 6 | 2 | 87 | Reviewed by

Laboratory remarks

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	8.18	164.00	<3.0	HC03	2.82	172.00	<1.0
Mg	4.60	56.00	<0.3	SO4	23.48	1127.00	<10.0
Na	63.07	1450.00	<10.0	CL	42.79	1517.00	<5.0
K	0.44	17.20	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	76.29	1687.20			69.09	2816.00	

Total Dissolved Solids= 5454

Ion Balance = 110.43%

WC No. = 8701647

Date out/By CO 6/2/87

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metal
~~GENERAL WATER CHEMISTRY and NITROGEN~~ ANALYSIS

DATE RECEIVED 5 5 87	LAB NO. ICAP 245	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 4 29	SITE INFORMATION ►	Sample location New Pond, Navajo Refinery	
Collection TIME 1045		Collection site description New Disposal pond, South Bank	
Collected by — Person/Agency Boyer / Anderson / OCD			

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088
Attn: David Boyer
Phone: 827-5812

Station/ well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level	Discharge	Sample type GRAB
pH (00400) 7	Conductivity (Uncorrected) 7800 µmho	Water Temp. (00010) 21.5 °C	Conductivity at 25°C (00094) µmho
Field comments See VOC sheet for comments			

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: 5ml conc. HNO_3 added ☒ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho	
☐ Total non-filterable residue (suspended) (00530)	mg/l	
☒ Other: Pb by AA	<0.01	
☒ Other: Cr by AA	0.013	
☒ Other: ICAP		

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:		

From ____, NA Sample:		Date Analyzed
☐ Calcium	mg/l	
☐ Potassium	mg/l	
☐ Magnesium	mg/l	
☐ Sodium	mg/l	
☐ Bicarbonate	mg/l	
☐ Chloride	mg/l	
☐ Sulfate	mg/l	
☐ Total Solids	mg/l	
☐		
☐		
☐ Cation/Anion Balance		

Analyst	Date Reported	Reviewed by
	7 9 87	Jim Ashby

Laboratory remarks

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

ICAP SCAN

SLD Lab No. ICP245 Reviewed by: Jim Ashley

Analyst JB Date Reported: 7/9/87

Date Analyzed 5/7/87

ELEMENT	ICAP VALUE(mg/l)	AA VALUE(mg/l)
Aluminum	<0.1	
Barium	<0.1	
Beryllium	<0.1	
Boron	0.3	
Cadmium	<0.1	
Calcium	140.	
Chromium	<0.1	0.013
Cobalt	<0.05	
Copper	<0.1	
Iron	<0.1	
Lead	<0.1	<0.01
Magnesium	60.	
Manganese	0.28	
Molybdenum	<0.1	
Nickel	<0.1	
Silicon	7.5	
Silver	<0.1	
Strontium	3.3	
Tin	<0.1	
Vanadium	<0.1	
Zinc	<0.1	
Arsenic		
Selenium		
Mercury		

Sampling Prior
to WWTP
Construction

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-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. ~~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. D. V. Wastewater
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 L 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- 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
		Benzene etc.			

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
benzene	4165		
toluene	8265		
ethyl benzene	1505		
p-xylene	475		
m-xylene	1730		
o-xylene	1035		
halogenated purgeables	none detected		
		* DETECTION LIMIT	50 ug/m/l

REMARKS: Four 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: M. Finney

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. ALC-1713 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 85 04 10 | Collection TIME 0835 | Collected by — Person/Agency Boyer/Bloomfield

SITE INFORMATION ►

Sample location: N. Div. API Effluent

Collection site description: At weir at start of ditch at Navajo Refinery prior to confluence

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): 2305 QAB 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: 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)	3.17	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
☒ F	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: 6/10/85 | Reviewed by

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 10697	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 8504 10	SITE INFORM-ATION	Sample location N. Div. API Effluent	
Collection TIME 0935		Collection site description At weir at start of ditch at Navajo Refinery prior to confluence	
Collected by — Person/Agency Boyer/Bace 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) 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	0.009	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 18 85	Jim Ashby

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. API effluent

Date Reported: 6/18/85

By: Jim Kelly

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. 82236

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) 8504100855 By (name) Boyer/Baca

pH= 8.5; 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 hydrocarbons more before weir strong odor.

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed Harry D. 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- 328

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
		ALIPHATIC HYDROCARBON SCREEN
		AROMATIC HYDROCARBON SCREEN
		HALOGENATED HYDROCARBON SCREEN
		GAS CHROMATOGRAPH/MASS SPECTROMETER
		SPECIFIC COMPOUNDS

QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBONS
		CHLORINATED HYDROCARBON PESTICIDES
		CHLOROPHENOXY ACID HERBICIDES
		HYDROCARBON FUEL SCREEN
		ORGANOPHOSPHATE PESTICIDES
		POLYCHLORINATED BIPHENYLS (PCB's)
		POLYNUCLEAR AROMATIC HYDROCARBONS
		TRIAZINE HERBICIDES
		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 ug/m/l

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: 28Apr, 3May85 Analyst's signature: T. Finney

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. WC-1709 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 85 04 10

Collection TIME 0855

SITE INFORMATION ►

Sample location: Wastewater Ditch, N. end of refinery

Collection site description: From Weir at ditch at N END of Navajo refinery property on N. side of road crossing (near old sewer 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 ☐ Pump ☒ Dipped ☐ 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) 6019 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	6.23		
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☒ Calcium (00915)	208	mg/l	5/7
☒ 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

14.8

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 6 10 85 | Reviewed by CJ

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-0691 USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 85 | 04 | 10

Collection TIME 0855

SITE INFORMATION ►

Sample location Wastewater Ditch, N. end of refinery

Collection site description From Weir at Ditch at N END of Navajo refinery property on N. side of road crossing (near old sewer plant)

Collected by — Person/Agency Boyer/Baca ab

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	5/17
☐ 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 6 | 18 | 85 | Reviewed by Jim Ashby

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: 6/18/85

By: Boyer/Baca

By: Jim Colby

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

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

HEALTH ENVIRONMENT MEXICO

87-1359-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088
PHONE(S): 827-5812
SUBMITTER: David Boyer

S.L.D. No. OR- 1359 AB
DATE REC. 8-14-87
PRIORITY
USER CODE: 8 2 2 3 5
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 8 1 4 0 9 4 5 N W R

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 1 1 7 S + 2 6 E + 1 2 + 1 1 1 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: _____

FIELD DATA:

pH= _____; Conductivity= 3000 umho/cm at 32 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval ____-____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Wastewater ditch opposite MW 1. Oil, water emulsions, sheen, odor, etc.

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): W D Boyer Method of Shipment to the Lab: State Car

This form accompanies ____ Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 1359

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
halogenated purgeables *	N.D.		
aromatic purgeables *	see remarks		
benzene	147		
toluene	418		
ethylbenzene	208		
m-xylene	328		
o-xylene	158		
* DETECTION LIMIT *	25 ppb	+ DETECTION LIMIT +	~~ppb~~

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT
T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)
[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: Twelve late eluting compounds in the C3 substituted benzene region at 100-200 ppb detected by the photoionization detector but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 9/15/87. Analyst's signature: Gary C. Eden

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 Meyerhein

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

STATE OF NEW MEXICO ENVIRONMENT

WET 264

87-1365-B

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 1365 A

DATE REC. 8-14-87

PRIORITY

PHONE(S): 827-5812

USER CODE: 82235

SUBMITTER: David Boyer

CODE: 2160

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 870811209454RR

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 17S+26E+12+1111 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [ ] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

EXTRACTABLE SCREENS

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

Remarks: _____

FIELD DATA:

pH=_____; Conductivity=3000 umho/cm at 32 °C; Chlorine Residual=_____ mg/l

Dissolved Oxygen=_____ mg/l; Alkalinity=_____ mg/l; Flow Rate_____ ____/____

Depth to water _____ ft.; Depth of well_____ ft.; Perforation Interval _____-_____ ft.; Casing:_____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Wastewater ditch opposite MW 1. Oil, water emulsions, sheen, odor, etc. Navajo Refinery

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): W E Boyer Method of Shipment to the Lab: Fed Ex

This form accompanies _____ Septum Vials, _____ Glass Jugs, and/or _____

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter?_____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 1365

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☐ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☑ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☑ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
ALIPHATIC HYDROCARBONS			
GASOLINE MDL = 1000PPB }	27000 PPB		
DIESEL MDL = 1000PPB }			
KEROSENE MDL = 1000PPB	ND <1000		
PNA's - See Results			
* DETECTION LIMIT * ✳		+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

Sample 88 oml

LABORATORY REMARKS:

Unable to determine PNA in fuel oil matrix below 10000 PPB by gas chromatography

No Charge for Analysis

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☐. Seal(s) broken by: NO SEALS date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 9/1/87. Analyst's signature: DS Barney

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 Meyerhein

85-0337-C

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY

LAB NUMBER ORG-339-17-B
4/12/85
SLD PRIORITY 3
SLD Users Code No. 85235

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 Refining, Artesia, Eddy Cty

Collected (date & time) ~~8504101055~~ By (name) Boyer/Baca

pH= 8.5; Conductivity= 4056 umho/cm at 17.5 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate= ~300gpm

Sampling Location, Methods & Remarks (i.e. odors etc.)

~~Collect~~ Downstream of road culvert 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		
ethyl-benzene	70		
p-xylene	5		
m-xylene	120		
o-xylene	50		
		* DETECTION LIMIT	2 ugm/l

REMARKS: Twenty-four aromatic type compounds were also detected that were not identified, including one halogenated poly-substituted aromatic compounds

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: J.A. Tunney

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-1712 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 04 10 85 | Collection TIME 1035 | Collected by — Person/Agency Boyer/Lucas

SITE INFORMATION ►

Sample location: Pond #1 Inlet, Navajo Refinery

Collection site description: Culvert (downstream side) at ditch inlet to pond #1

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

F, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.12		6/6
☐ 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)	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	5/21
☒ 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			
☐ 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

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-1698 USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE: 04 | 10 | 85
Collection TIME: 1055
Collected by — Person/Agency: Boyer/Bacca

SITE INFORMATION
Sample location: Pond #1 Inlet, Navajo Refinery
Collection site description: Culvert (down & cream side) at ditch inlet to pond #1

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 ( )	88	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: 7 | 29 | 85 | Reviewed by:

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-0695 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 04 | 10 | 85 — Collection TIME 1055 — Collected by — Person/Agency Boyer/Bacca

SITE INFORMATION

Sample location: Pond #1 Inlet, Navajo Refinery

Collection site description: Culvert (downstream side) at ditch inlet to pond #1

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	0.399	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: 6 | 18 | 85 | Reviewed by: Jim Ashby

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 Ashby

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

ANALYSIS REQUEST / REPORT
LABORATORY SECTION - HOUSTON BRANCH
S. AND A. DIVISION - REGION VI - U.S.E.P.A.

1. Laboratory Number	2. Source of sample	3. Permit Number	4. Outfall Number
AR0901	Navajo Refinery Pond #1		

5. Sample Type	6. Date Collected	7. Time Collected (hrs.)	8. Collected By
Water + Sediment	6/25/84	15:27	BARR

9. Date Received	10. Time Received (hrs.)	11. Received By	12. Report Date
6/27/84	10:30	L. Carter	9/13/84

13. Collector's and/or Requestor's Remarks

Semi-volatiles, Acid extractables, Base/Neutrals and EPTOX on Sediment

14. Requestor's Signature

15. LABORATORY DATA

PARAMETER	METHOD USED (STORET NUMBER)	CONCENTRATION FOUND (in mg per liter unless stated otherwise)
A/BN	See enclosed	
EPTOX	See enclosed	with sample AR0912
	This Sample was not collected for EPTOX	

16. Laboratory Remarks

17. Reviewed By

18. Approved By Kendall Young

R6 - 54 (Jan. 1976)

ORGANIC ANALYSIS DATA

SEQUENTIAL SAMPLE NO.: AR0901 FIELD SAMPLE NO.(TAG NO.) :
SOURCE: Navajo Refinery, Pond #1 influent surface water

SAMPLE TYPE: Aqueous
DATE/TIME COLLECTED: 6/25/84 1527-1529 COLLECTED BY:

BASE/NEUTRAL COMPOUNDS BY METHOD 625 ********

PP#	CAS#		UG/L
(1B)	83-32-9	acenathene	ND DL= 20
(5B)	92-87-5	benzidine	ND DL=200
(8B)	120-82-1	1,2,4-trichlorobenzene	ND DL= 20
(9B)	118-74-1	hexachlorobenzene	ND DL= 20
(12B)	67-72-1	hexachloroethane	ND DL= 20
(18B)	111-44-4	bis(2-chloroethyl)ether	ND DL= 20
(20B)	91-58-7	2-chloronapthalene	ND DL= 20
(25B)	95-50-1	1,2-dichlorobenzene	ND DL= 20
(26B)	541-73-1	1,3-dichlorobenzene	ND DL= 20
(27B)	106-46-7	1,4-dichlorobenzene	ND DL= 20
(28B)	91-94-1	3,3'-dichlorobenzidine	ND DL=100
(35B)	121-14-2	2,4-dinitrotoluene	ND DL= 60
(36B)	606-20-2	2,6-dinitrotoluene	ND DL= 60
(37B)	122-66-7	1,2-diphenylhydrazine	ND DL= 40
(39B)	206-44-0	fluoranthene	ND DL= 20
(40B)	7005-72-3	4-chlorophenyl phenyl ether	ND DL= 40
(41B)	101-55-3	4-bromophenyl phenyl ether	ND DL= 40
(42B)	39638-32-9	bis(2-chloroisopropyl)ether	ND DL= 20
(43B)	111-91-1	bis(2-chloroethoxy)methane	ND DL= 20
(52B)	87-68-3	hexachlorobutadiene	ND DL= 20
(53B)	77-47-4	hexachlorocyclopentadiene	ND DL=100
(54B)	78-59-1	isophorone	ND DL= 40
(55B)	91-20-3	napthalene	64
(56B)	98-95-3	nitrobenzene	ND DL= 20
(62B)	86-30-6	N-nitrosodiphenylamine	ND DL= 40
(63B)	621-64-7	N-nitrosodipropylamine	ND DL= 60
(66B)	117-81-7	bis(2-ethylhexyl)phthalate	< 40
(67B)	85-68-7	butyl benzy phthalate	ND DL= 40
(68B)	84-74-2	di-n-butyl phthalate	ND DL= 20
(69B)	117-84-0	di-n-octyl phthalate	ND DL= 40
(70B)	84-66-2	diethyl phthalate	ND DL= 40
(71B)	131-11-3	dimethyl phthalate	ND DL= 20
(72B)	56-55-3	benzo(a)anthracene	ND DL= 80
(73B)	50-32-8	benzo(a)pyrene	ND DL= 80
(74B)	205-99-2	benzo(b)fluoranthene	ND DL= 80
(75B)	207-08-9	benzo(k)fluoranthene	ND DL= 80
(76B)	218-01-9	chrysene	< 80
(77B)	208-96-8	acenapthylene	ND DL= 20
(78B)	120-12-7	anthracene	250
(79B)	191-24-2	benzo(g,h,i)perylene	ND DL= 80
(80B)	86-73-7	fluorene	46
(81B)	85-01-8	phenanthrene	ND DL= 20
(82B)	53-70-3	dibenzo(a,h)anthracene	ND DL= 80
(83B)	193-39-5	indeno(1,2,3-c,d)pyrene	ND DL= 80
(84B)	120-00-0	pyrene	120

ORGANIC ANALYSIS DATA

6E[redacted]L SAMPLE NO.: AR0901 FIELD SAMPLE NO.(TAG NO.) :
SOURCE: Navajo Refinery, Pond #1 influent surface water

SAMPLE TYPE: Aqueous
DATE/TIME COLLECTED: 6/25/84 1527-1529 COLLECTED BY:

ACID COMPOUNDS BY METHOD 625 ********

PP#	CAS#		UG/L
(21A)	88-06-2	2,4,6 trichlorophenol	ND DL= 60
(22A)	59-50-7	p-chloro-m-cresol	ND DL= 80
(24A)	95-57-8	2-chlorophenol	ND DL= 40
(31A)	120-83-2	2,4-dichlorophenol	ND DL= 60
(34A)	105-67-9	2,4-dimethylphenol	2300
(57A)	88-75-5	2-nitrophenol	ND DL=100
(58A)	100-02-7	4-nitrophenol	ND DL=200
(59A)	51-28-5	2,4-dinitrophenol	ND DL=300
(60A)	534-52-1	4,6-dinitro-2-methylphenol	ND DL=200
(64A)	87-86-5	pentachlorophenol	ND DL=150
(65A)	108-95-2	phenol	31200

******DIOXINS******

PP[redacted]	CAS#		UG/L
(1[redacted])	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	Not Analyzed

ORGANIC ANALYSIS DATA

LAB SAMPLE NO.: AR090(1 FIELD SAMPLE NO.(TAG NO.) :
SOURCE: Navajo Refinery, Pond #1 influent surface water

SAMPLE TYPE: Aqueous
DATE/TIME COLLECTED: 6/25/84 1527-1529 COLLECTED BY:

HAZARDOUS SUBSTANCE LIST COUMPOUNDS

CAS#	**VOLATILE COMPOUNDS BY METHOD 625**********	UG/L
67-64-1	acetone	Not Analyzed
78-93-3	2-butanone	Not Analyzed
75-15-0	carbondisulfide	Not Analyzed
519-78-6	2-hexanone	Not Analyzed
108-10-1	4-methyl-2-pentanone	Not Analyzed
100-42-5	styrene	Not Analyzed
108-05-4	vinyl acetate	Not Analyzed
108-38-3	m-xylene	Not Analyzed
95-47-6	o-xylene and/or	
106-42-3	p-xylene	Not Analyzed

CAS#	**BASE/NEUTRAL COMPOUNDS BY METHOD 625*	UG/L
62-53-3	aniline	ND DL= 40
100-51-6	benzyl alcohol	ND DL= 40
106-47-8	4-chloroaniline	ND DL= 40
132-64-9	dibenzofuran	38
91-57-6	2-methylnapthalene	210
88-74-4	2-nitroaniline	ND DL= 80
99-09-2	3-nitroaniline	ND DL= 80
100-01-6	4-nitroaniline	ND DL= 80

CAS#	**ACID COMPOUNDS BY METHOD 625*********	UG/L
65-85-0	benzoic acid	ND DL=100
95-48-7	2-methylphenol	8200
108-39-4	4-methylphenol	16100
95-95-4	2,4,5-trichlorophenol	ND DL= 60

ORGANIC ANALYSIS DATA

6ES-HL SAMPLE NO.: AR0901 FIELD SAMPLE NO.(TAG NO.) :
SOURCE: Navajo Refinery, Pond #1 influent surface water

SAMPLE TYPE: Aqueous
DATE/TIME COLLECTED: 6/25/84 1527-1529 COLLECTED BY:

*****TENATIVELY IDENTIFIED COMPOUNDS*****

CAS#	COMPOUND NAME	FRACTION	SCAN# OR RET.T.	MATCH	ESTIMATED UG/L
	Phenol, ethyl	BNA	640	92	480
	Phenol, ethyl	BNA	682	96	1700
95-65-8	Phenol, 3,4-dimethyl	BNA	713	92	290
3855-26-3	Phenol, 2-ethyl-4-methyl	BNA	794	64	190
	Napthalene, dimethyl	BNA	832	--	170
	Unidentified Hydrocarbon	BNA	943	--	200
	Napthalene, dimethyl	BNA	960	95	210
	Unidentified Hydrocarbon	BNA	1041	--	230
	Unidentified hydrocarbon	BNA	1132	--	180
	Unidentified Hydrocarbon	BNA	1218	--	190
	Unidentified Hydrocarbon	BNA	1298	--	200
	Unidentified Hydrocarbon	BNA	1375	--	200
7372-88-5	Dibenzothiophen, 3-methyl	BNA	1360	87	170
	Phenanthrene/Anthracene, methyl	BNA	1401	83	180
	Unidentified Hydrocarbon	BNA	1448	--	290
	Phenanthrene, dimethyl	BNA	1499	86	270
	Unidentified Hydrocarbon	BNA	1518	--	220
	Unidentified Hydrocarbon	BNA	1584	--	280
	Unidentified Hydrocarbon	BNA	1648	--	200

Report Prepared By: L. Garner, B. Morey, K. Young Date: 9/13/84

REPORT TO: Hazardous Waste Sec[illegible]
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 mp

Sample Number: #1 Location: NAVAJO EVAP POND NE 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, mb REVIEWER mp

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 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	0.096	Chromium	2.66	Selenium	<0.005
Barium	0.48	Lead	0.41	Silver	<0.001
Cadmium	0.001	Mercury	<0.001		

ANALYST mtc, jfb, 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 MJ

COMMENTS:

* >5.00 ppm. Therefore, requires speciation for Cr^{+6}.

Cr^{+6} <0.5 ppm (Method 3060/7196)

REPORT TO: Hazardous Waste Section
Environmental Improv ent 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 mo 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 152
DATE RECEIVED 1/25/85
DATE REPORTED 4/2/85

Sample Number: #5 Location: NAVAJO API DITCHES N100' 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. Therefor requires Speciation for Cr^{+6}.
Cr^{+6} <0.5 ppm (Method 3060/7196)

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY
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 COLLECT... 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 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- 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	9		
		* DETECTION LIMIT	1 ug/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 dat on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 28Apr & 3May85. Analyst's signature: [signature]

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 8504 10

Collection TIME 1114

SITE INFORMATION ►

Sample location: Pond #1 Outlet, Navajo Refinery

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): 5700 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:			

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)	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
☒	61.6		5/13

7.76

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:

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: 8504 10
Collection TIME: 1114
SITE INFORMATION ►
Sample location: Pond #1 Outlet, Navajo Refinery
Collection site description: Downstream Z 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 ( )	13.9	mg/l	5/29
☒ 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: 7 | 29 | 85
Reviewed by:

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

Henry 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/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): — µmho

Field comments: Strong aromatic odor

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples omitted: 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	0.99 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: 6 18 85 | Reviewed by: Jim Ashby

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

Sample Code: Pond #1 Outlet

Date Submitted: 4/12/85

Date Reported: 6/18/85

By: Boyer/Baca

By: Jim Ashley

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

Refinery Sampling

Refinery Sampling

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

STATE OF NEW MEXICO

87-0738-C

RECEIVED
JUN 26 1987
OIL CONSERVATION DIVISION

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 738-A-B
DATE REC. 5/5/87
PRIORITY

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 4 2 8 1 4 1 0 A M E

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 1 7 S + 2 6 E + 0 9 + 3 1 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: _____

FIELD DATA:

pH= 11.5 ; Conductivity= 5700 umho/cm at 23.5 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____-_____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Navajo Refinery old Fire Pond - From Dump at North End - Receives Boiler effluent

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): L. E. Boyer Method of Shipment to the Lab: State car

This form accompanies 2 Septum Vials, _____ Glass Jugs, and/or _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 738

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	1 ppb	+ DETECTION LIMIT + ✚	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑. Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/20/87. Analyst's signature: Henry C. Eden

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. Sherrell JUN 11 1987

85-0336-C

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY

LAB NUMBER ORG-336-M-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) 8504101037 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 Phillip 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 purgeables	none detected		
Benzene	none detected		
Toluene	none detected		
Ethyl-benzene	none detected		
p-Xylene	none detected		
m-Xylene	none detected		
o-Xylene	none detected		
		* DETECTION LIMIT	1 ug/l

REMARKS: One aromatic type compound was also detected that 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: M Finney

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: 5 | 5 | 87 — LAB NO. WC-1663 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 5 | 04 | 28

Collection TIME: 1410

Collected by — Person/Agency: Bruce Hinkerton / OCD

SITE INFORMATION ►

Sample location: Old Five Pond - Navajo Refinery

Collection site description:

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code:

Owner:

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level: —	Discharge: —	Sample type: GRAB
pH (00400): 11.5	Conductivity (Uncorrected): 5700 µmho	Water Temp. (00010): 23.5°C	Conductivity at 25°C (00094): µmho

Field comments: See Vac Sheet for comments

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	5778	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	11.29		5/19
☐ Other:			
☐ Other:			

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:			

From F, NA Sample:			Date Analyzed
☒ Calcium	< 1	mg/l	6/1
☒ Potassium	3.90	mg/l	5/20
☒ Magnesium	< 1	mg/l	6/1
☒ Sodium	1281	mg/l	5/20
☒ Bicarbonate	interference	mg/l	
☒ Chloride	321	mg/l	5/26
☒ Sulfate	1718	mg/l	5/20
☒ Total Solids	3538	mg/l	5/27
☒ Fluoride	3.36		5/27
☐			
☒ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	6 | 2 | 87	CG

Laboratory remarks: T=24°C . (OH^- interference w/ HCO_3^- determination)

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	0.00	0.00	<3.0	HC03	10.98	670.00	<1.0
Mg	0.00	0.00	<0.3	SO4	35.79	1718.00	<10.0
Na	55.72	1281.00	<10.0	CL	9.06	321.00	<5.0
K	0.10	3.90	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	55.82	1284.90			55.83	2709.00	

Total Dissolved Solids= 3538

Ion Balance = 99.99%

WC No. = 8701663

Date out/By 6/2/87

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. GC-1714 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 85 | 04 | 10

Collection TIME: 0937

SITE INFORMATION ►

Sample location: Navajo Refinery Fire Pond

Collection site description: From Ramp at N. end of pond

Collected by — Person/Agency: Boyer / Bca 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): 7220 µmho

Field comments: Slight oil on 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=11.0	mg/l	6/5
☒ Chloride (00940)	235.9	mg/l	6/5
☒ Sulfate (00945)	4983	mg/l	5/8
☒ Total filterable residue (dissolved) (70300)	4628	mg/l	
☒ Other: CO_3	425.2		6/5
☒ HCO_3	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: 6 | 10 | 85 | Reviewed by:

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

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED: 4 | 12 | 85 — LAB NO. WC-1695 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 85 | 04 | 10 — Collection TIME: 0937

SITE INFORMATION ►

Sample location: Navajo Refinery Fire Pond

Collection site description: From Ramp at N. end of pond

Collected by — Person/Agency: Boyer / Aztec 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 oil 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)	0.51	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: 7 | 10 | 85 | Reviewed by

Laboratory remarks

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

ICP7- 0247

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metal ~~GENERAL WATER CHEMISTRY and NITROGEN~~ ANALYSIS

DATE RECEIVED 5 5 87	LAB NO. ~~HM 520~~	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 87 04 28	ICP 247 SITE INFORMATION ►	Sample location: Old Fire Pond - Navajo Refinery	
Collection TIME 14 10		Collection site description	
Collected by — Person/Agency Jerry Henderson /OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code

Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped ☐ Pump ☐ Tap	Water level —	Discharge —	Sample type GRAB
pH (00400) 11.5	Conductivity (Uncorrected) 5700 µmho	Water Temp. (00010) 23.5°C	Conductivity at 25°C (00094) µmho

Field comments See Voc Sheet for comments

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:** 5ml conc. HNO_3 added ☒ **A:** 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho	
☐ Total non-filterable residue (suspended) (00530)	mg/l	
☒ Other: TAP		
☒ Other: Pb by AA	<0.01	
☒ Other: CR by AA	<0.005	

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:		

From ____, NA Sample:

		Date Analyzed
☐ Calcium	mg/l	
☐ Potassium	mg/l	
☐ Magnesium	mg/l	
☐ Sodium	mg/l	
☐ Bicarbonate	mg/l	
☐ Chloride	mg/l	
☐ Sulfate	mg/l	
☐ Total Solids	mg/l	
☐		
☐		
☐ Cation/Anion Balance		

Analyst	Date Reported	Reviewed by
	7 9 87	Jim Ashby

Laboratory remarks

FOR OCD USE -- Date Owner Notified_____ Phone or Letter?_____ Initals_____

ICAP SCAN

SLD Lab No. ICP 247 Reviewed by: Jim Ashby

Analyst JB/JK Date Reported: 7/9/87

Date Analyzed 5/7/87

ELEMENT	ICAP VALUE(mg/l)	AA VALUE(mg/l)
Aluminum	<0.1	
Barium	<0.1	
Beryllium	<0.1	
Boron	0.1	
Cadmium	<0.1	
Calcium	3.0	
Chromium	<0.1	<0.005
Cobalt	<0.05	
Copper	<0.1	
Iron	0.2	
Lead	<0.1	<0.01
Magnesium	0.4	
Manganese	<0.05	
Molybdenum	<0.1	
Nickel	<0.1	
Silicon	23.	
Silver	<0.1	
Strontium	<0.1	
Tin	<0.1	
Vanadium	<0.1	
Zinc	<0.1	
Arsenic		
Selenium		
Mercury		

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 INFORM-ATION ► 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) 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

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	0.02 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 6 | 17 | 85 | Reviewed by Jim Ashley

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

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

HEALTH ... EW MEXICO

87-0761-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088
PHONE(S): 827-5812

S.L.D. No. OR- 761-A-B
DATE REC. 5-5-87
PRIORITY
USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 4 2 8 1 4 2 5 DB

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: _____ CODE: _____

COUNTY: EDDY ; CITY: ARTESIA CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 1 7 S + 2 6 E + 1 2 + 3 1 _ _ (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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: NAVAJO REFINERY
Product RECOVERY WELL 4

FIELD DATA:

pH= 7 ; Conductivity= 2300 umho/cm at 21 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____ - _____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Recovery Well, hydrocarbon odor

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): J.W. Boyer Method of Shipment to the Lab: Hand carried

This form accompanies 2 Septum Vials, _____ Glass Jugs, and/or _____ _____

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 761

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	see remarks	halogenated purgeables	
benzene	3600	1,2-Dichloroethane	T.R.
Toluene	2100		
ethylbenzene	200		
p-xylene	125		
m-xylene	175		
o-xylene	125		
methyl-t-butyl ether	3700		
* DETECTION LIMIT *	25 ppb	+ DETECTION LIMIT +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT
T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)
[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: Nine compounds in the C3 substituted benzene region detected by the photoionization detector but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/29/87 Analyst's signature: Gary C. Eden

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. Sherrell JUN 11 1987

REPORT TO: David G. Boyer 85-0335-C

New Mexico Oil Conservation Division

P. O. Box 2088

Santa Fe, NM 87501

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) 8504 10/0955 By (name) Boyer/Boco

pH=6.8; Conductivity=2300 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 storage 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 Phillip L. Boyer

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/m/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: 28Apr&3May85 Analyst's signature: J. Tierney

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

465 WNW

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 8 | 14 | 87	LAB NO. WC3705	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 08 | 12 | 87	SITE INFORM-ATION	Sample location NAVAJO REFINERY	
Collection TIME 0835		Collection site description RECOVERY WELL #4	
Collected by — Person/Agency BOYER /OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code

Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Pump ☐ Dipped ☐ Tap	Water level	Discharge	Sample type GRAB
pH (00400) 7	Conductivity (Uncorrected) 2200 µmho	Water Temp. (00010) 22 °C	Conductivity at 25°C (00094) 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 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:* ☐ A: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	2206	µmho	10/1
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH Lab	7.76		8/26
☐ Other:			
☐ Other:			

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:			

From NF, NA Sample:			Date Analyzed
☒ Calcium	184	mg/l	9/18
☒ Potassium	0.78	mg/l	8/31
☒ Magnesium	144	mg/l	9/18
☒ Sodium	196	mg/l	8/31
☒ Bicarbonate	804	mg/l	8/26
☒ Chloride	253	mg/l	9/2
☒ Sulfate	585	mg/l	9/29
☒ Total Solids	1706	mg/l	10/2
☒ FLUORide	0.73		9/8
☐			
☒ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	10 | 7 | 87	CJ

Laboratory remarks

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	9.18	184.00	<3.0	HC03	13.18	804.00	<1.0
Mg	11.83	144.00	<0.3	SO4	12.19	585.00	<10.0
Na	8.53	196.00	<10.0	CL	7.14	253.00	<5.0
K	0.02	0.78	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	29.55	524.78			32.50	1642.00	

Total Dissolved Solids= 1706
Ion Balance = 90.94%

WC No. = 8703705
Date out/By 10/23/87

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. WE-1710 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 04 | 10 | 85 — Collection TIME: 09.55 — Collected by — Person/Agency: Boyer/Baca a&b

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

F, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	6.14		6/1
☐ 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: 6 | 1 | 85 | Reviewed by:

Laboratory remarks: From Chris Dean SLD:
* Not analyzed ** 2670.0 on 6/5 AJB 8/19/85

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 metal ~~GENERAL WATER CHEMISTRY and NITROGEN~~ ANALYSIS

DATE RECEIVED 5 5 87	LAB NO. ICAP246	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 87 04 28
Collection TIME 1425 (1425)
Collected by — Person/Agency Boyer / Anderson /OCD

SITE INFORMATION ►
Sample location: Recovery well #4 - Navajo Refinery
Collection site description:

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088
Attn: David Boyer
Phone: 827-5812

Station/well code: Recovery #4
Owner:

SAMPLING CONDITIONS

☐ Bailed ☒ Pump ☐ Dipped ☐ Tap	Water level	Discharge	Sample type Grab
pH (00400) 7	Conductivity (Uncorrected) 2300 µmho	Water Temp. (00010) 21 °C	Conductivity at 25°C (00094) µmho

Field comments: See VOC sheet for comments

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: 5ml conc. HNO_3 added ☒ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NF		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: ICAP			
☒ Other: Pb by AA	<0.01		
☒ Other: Cd [illegible]	<0.005		

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:			

From ____, NA Sample:

		Units	Date Analyzed
☐ Calcium		mg/l	
☐ Potassium		mg/l	
☐ Magnesium		mg/l	
☐ Sodium		mg/l	
☐ Bicarbonate		mg/l	
☐ Chloride		mg/l	
☐ Sulfate		mg/l	
☐ Total Solids		mg/l	
☐			
☐			
☐ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	7 9 87	Jim Ashby

Laboratory remarks:

FOR OCD USE -- Date Owner Notified ________ Phone or Letter? ________ Initals ________

ICAP SCAN

SLD Lab No. ICP 246 Reviewed by: Jim Ashby

Analyst JB/JK Date Reported: 7/9/87

Date Analyzed 5/7/87

ELEMENT	ICAP VALUE(mg/l)	AA VALUE(mg/l)
Aluminum	<0.1	
Barium	0.1	
Beryllium	<0.1	
Boron	0.3	
Cadmium	<0.1	
Calcium	260.	
Chromium	<0.1	<0.005
Cobalt	<0.05	
Copper	<0.1	
Iron	<0.1	
Lead	<0.1	<0.01
Magnesium	140.	
Manganese	0.39	
Molybdenum	<0.1	
Nickel	<0.1	
Silicon	42.	
Silver	<0.1	
Strontium	5.0	
Tin	0.1	
Vanadium	<0.1	
Zinc	<0.1	
Arsenic		
Selenium		
Mercury		

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-0692 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 04 10 85
Collection TIME 0955
Collected by — Person/Agency Boyer/Baca Ocb

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): 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: 6 18 85 | Reviewed by: Jim Ashby

☐ 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

Sample Code: Recovery Sys #4

Date Submitted: 4/12/85

Date Reported: 6/18/85

By: Boger/Baca

By: Jim Kelly

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

REPORT TO: David G. Boyer
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

LABORATORY

LAB NUMBER ORG-332-A-B 4/2/85

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 #1, Navajo Refinery

City & County Artesia, Eddy Cty

Collected (date & time) 850410/0915V 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... 4 ft products. 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 Hazel L Boyer

I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed Phillip F. Ba...

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- 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
		ALIPHATIC HYDROCARBON SCREEN
		AROMATIC HYDROCARBON SCREEN
		HALOGENATED HYDROCARBON SCREEN
		GAS CHROMATOGRAPH/MASS SPECTROMETER
		SPECIFIC COMPOUNDS

QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBONS
		CHLORINATED HYDROCARBON PESTICIDES
		CHLOROPHENOXY ACID HERBICIDES
		HYDROCARBON FUEL SCREEN
		ORGANOPHOSPHATE PESTICIDES
		POLYCHLORINATED BIPHENYLS (PCB's)
		POLYNUCLEAR AROMATIC HYDROCARBONS
		TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halogenated purgeables	none detected		
benzene	62360		
toluene	18950		
ethyl-benzene	1440		
p-xylene	400		
m-xylene	830		
o-xylene	465		
		* DETECTION LIMIT	100 ug/m/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: 28 Apr & 3 May 85 Analyst's signature: R. Tinney

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: 4/10 | Collection TIME: 0915

SITE INFORMATION ►

Sample location: Bore Hole AJ, Navajo Refinery

Collection site description: Hole Located W of Tank 439

Collected by — Person/Agency: Boyer/Boca 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): 6500 µmho	Water Temp. (00010): 17 °C	Conductivity at 25°C (00094): 8200 DK 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:			

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

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: 6/10/85

Reviewed by:

Laboratory remarks:

SLD 726 (12/84) *DISTRIBUTION:* **WHITE** — EID, GW&HW Bureau **CANARY** — WS System **PINK** — EID Local Office **GOLDENROD** — SLD

Groundwater - East of Refin.

Groundwater East of Refinery

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

87-0771-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088
PHONE(S): 827-5812

S.L.D. No. OR- 771-A-B
DATE REC. 5/5/87
PRIORITY
USER CODE: 8 2 2 3 5
SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 5 0 1 1 0 2 0 2 G 2

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 1 7 S + 2 6 E + 1 2 + 3 1 1 1 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: _____

FIELD DATA:

pH= ~ ; Conductivity= 2150 umho/cm at 16 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ _____/_____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____-_____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

3304 Windmill - Repeat Sampling

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D. W. Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, _____ Glass Jugs, and/or _____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on _____/_____/_____ - _____:_____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 771

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✱	1 ppb	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 6/1/87 . Analyst's signature: Nancy C. Eby

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: Kr. Russell

JUN 11 1987

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

NEW MEXICO HEALTH EN

87-0746-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088
PHONE(S): 827-5812

S.L.D. No. OR- 746-A-B
DATE REC. 5/5/87
PRIORITY
USER CODE: 8 2 2 3 5
SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 4 2 9 1 8 3 0 A M B

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 1 7 S + 2 6 E + 1 2 + 3 1 1 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: _____

FIELD DATA:

pH= 7 ; Conductivity= 540 umho/cm at 19 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water 4' 2½" ft.; Depth of well 28' 3" ft.; Perforation Interval ____-____ ft.; Casing: Steel

Sampling Location, Methods and Remarks (i.e. odors, etc.)

"3304" Windmill, Dry at 1 casing volume, sampled during recovery (Pumped 27 gallons)

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D G Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 746

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✱	1 ug/L	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/28/87. Analyst's signature: Mary C. Eblen

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. Sherrell JUN 11 1987

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: 5 | 5 | 87 — LAB NO. WC/6441
USER CODE: ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE: 05/01/87
Collection TIME: 1020
SITE INFORMATION ►
Sample location: @ 3304 Windmill Repeat Samples
Collection site description:
Collected by — Person/Agency: Boyd Anderson /OCD

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088
Attn: David Boyer
Phone: 827-5812

Station/well code:
Owner:

SAMPLING CONDITIONS

☐ Bailed ☒ Pump ☐ Dipped ☐ Tap	Water level	Discharge	Sample type: GRAB
pH (00400): —	Conductivity (Uncorrected): 2150 µmho	Water Temp. (00010): 16 °C	Conductivity at 25°C (00094): 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 µmembrane filter ☐ A: 2 ml H_2SO_4/L added

☒ NA: No acid added ☐ Other-*specify:* ☐ A: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	2678	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.56		5/12
☐ Other:			
☐ Other:			

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:			

From NF, NA Sample:

			Date Analyzed
☒ Calcium	320	mg/l	5/29
☒ Potassium	10.1	mg/l	
☒ Magnesium	122	mg/l	5/29
☒ Sodium	136	mg/l	
☒ Bicarbonate	174	mg/l	5/12
☒ Chloride	369	mg/l	5/26
☒ Sulfate	767	mg/l	5/20
☒ Total Solids	2114	mg/l	5/27
☒ Fluoride	0.50		5/27
☐			
☒ Cation/Anion Balance			

Analyst: | Date Reported: 6 | 2 | 87 | Reviewed by:

Laboratory remarks:

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	15.97	320.00	<3.0	HC03	2.85	174.00	<1.0
Mg	10.02	122.00	<0.3	SO4	15.98	767.00	<10.0
Na	5.92	136.00	<10.0	CL	10.41	369.00	<5.0
K	0.26	10.10	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	32.16	588.10			29.24	1310.00	

Total Dissolved Solids= 2114

Ion Balance = 110.00%

WC No. = 8701641

Date out/By CG 6/2/87

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: 5 | 5 | 87 — LAB NO. WC 11,649 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 8/04/29 — Collection TIME: 1630 — Collected by — Person/Agency: Boyd Anderson / OCD

SITE INFORMATION ► Sample location: "3304" Windmill Navajo Refinery

Collection site description:

SEND FINAL REPORT TO ►
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code:

Owner:

SAMPLING CONDITIONS

☐ Bailed ☐ Dipped ☒ Pump ☐ Tap	Water level	Discharge	Sample type: GRAB
pH (00400): 7	Conductivity (Uncorrected): 540 µmho	Water Temp. (00010): 19 °C	Conductivity at 25°C (00094): µmho

Field comments: See VOC sheet for comment

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	649	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	8.46		5/12
☐ Other:			
☐ Other:			

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:			

From F, NA Sample:

			Date Analyzed
☒ Calcium	42	mg/l	6/1
☒ Potassium	16.8	mg/l	5/19
☒ Magnesium	13	mg/l	6/1
☒ Sodium	46	mg/l	5/19
☒ Bicarbonate	267	mg/l	5/12
☒ Chloride	62	mg/l	5/26
☒ Sulfate	21	mg/l	5/20
☒ Total Solids	384	mg/l	5/27
☒ Fluoride	0.50		5/27
☐			
☒ Cation/Anion Balance			

Analyst: | Date Reported: 6 | 2 | 87 | Reviewed by:

Laboratory remarks: (CO_3) = 6 mg/l

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	2.10	42.00	<3.0	HC03	4.38	267.00	<1.0
Mg	1.07	13.00	<0.3	SO4	0.44	21.00	<10.0
Na	2.00	46.00	<10.0	CL	1.75	62.00	<5.0
K	0.43	16.80	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	5.59	117.80			6.56	350.00	

Total Dissolved Solids= 384

Ion Balance = 85.25%

WC No. = 8701649

Date out/By CD 6/2/87

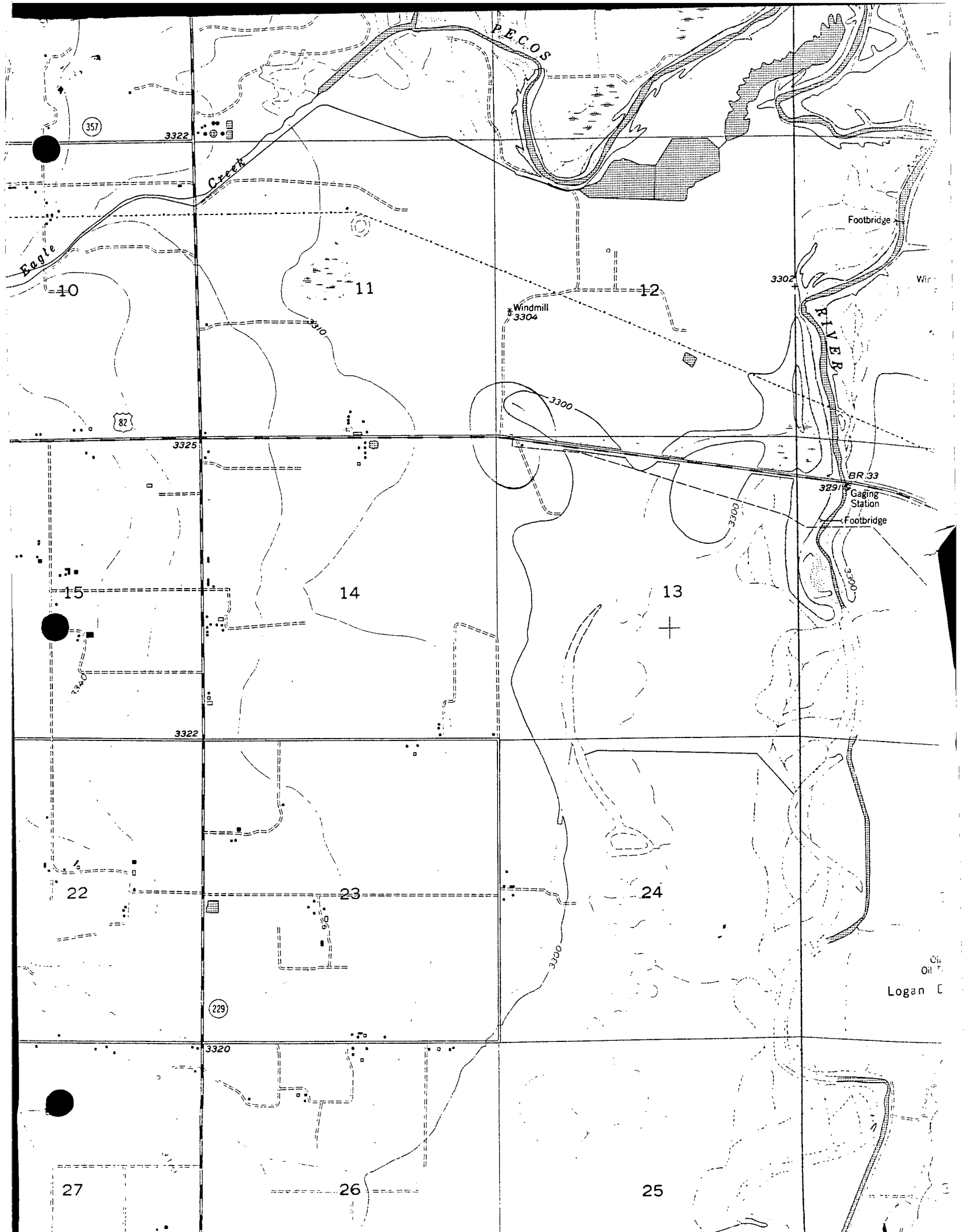
Memo

From
DAVID G. BOYER
Hydrogeologist

To Map

North side of Highway
Pipeline –
Bill board by
Wolf Most bridge
Highway side of
Painted Face section

Late 84 18,000 TDS


PECOS
Eagle Creek
Footbridge
Windmill
3304
RIVER
BR 33
Gaging Station
Footbridge
Logan
10
11
12
13
14
15
22
23
24
25
26
27
3322
3325
3322
3320
3310
3300
3340
3302
3291
357
82
229

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

HEALTH

87-1360-C

OF NEW MEXICO

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 1360 A,B
DATE REC. 8-14-87
PRIORITY

PHONE(S): 827-5812
USER CODE: 82235
SUBMITTER: David Boyer
CODE: 260

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 870812141401D6B

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: EDDY ; CITY: ARTESIA CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 17S+26E+18+1111 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: Detection limit 10 or less if possible

FIELD DATA:

pH= _____; Conductivity= 14,000 umho/cm at 24 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ _____/_____

Depth to water 10.45 ft.; Depth of well 14.07 ft.; Perforation Interval _____-_____ ft.; Casing: GAL. STEEL

Sampling Location, Methods and Remarks (i.e. odors, etc.)

USGS PIEZOMETER HP-1, NAVAJO REFINERY, BAILED 1 CSG VOL, SAMPLES ON 2d CASG VOL

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D J Boyer Method of Shipment to the Lab: Telecon

This form accompanies 2 Septum Vials, _____ Glass Jugs, and/or _____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on _____/_____/_____ - _____:_____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 1360

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables *	see remarks		
halogenated purgeables *	N.D.		
* DETECTION LIMIT *	1 ug/L	+ DETECTION LIMIT +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: Five compounds in the aromatic screen region at less than 1 ppb detected by the photoionization detector but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 9/14/87 . Analyst's signature: Gary C. Glen

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 Meyerhein

754
WPW

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

HEALTH ... NEW MEXICO

87-0907-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 907 A+B
DATE REC. 6-1-87
PRIORITY ______

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 5 2 6 1 1 0 5 D A&B

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: ______ CODE: ______

COUNTY: Eddy ; CITY: Artesia CODE: ______

LOCATION CODE: (Township-Range-Section-Tracts) 17 S + 27 E + 18 + 1 1 1 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] ______
- [ ] ______
- [ ] ______
- [ ] ______
- [ ] ______

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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

RECEIVED ... 3 1987 OIL CONSERVATION DIVISION SANTA FE

Remarks: ______

FIELD DATA:

pH= — ; Conductivity= 14,000 umho/cm at 19.5 °C; Chlorine Residual= ______ mg/l

Dissolved Oxygen= ______ mg/l; Alkalinity= ______ mg/l; Flow Rate ______ ______/______

Depth to water ______ ft.; Depth of well ______ ft.; Perforation Interval ______-______ ft.; Casing: ______

Sampling Location, Methods and Remarks (i.e. odors, etc.) Navajo Refinery USGS Piezometer HP-1 Bailed 3 casing volumes (5 quarts) then took sample. No odor. Sheen from desorping particles

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): David W Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ______ Glass Jugs, and/or ______ ______

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from ______ to ______

at (location) ______ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures ______ ______

For OCD Use: Date Owner Notified ______ Phone or Letter? ______ Initials ______

ANALYSES PERFORMED

LAB. No.: OR- 907

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	10 ug/L	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 6/19/87. Analyst's signature: Mary C. Eden

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

860 WNW

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED: 6 11 87	LAB NO. WC-1982	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE: 870526	SITE INFORMATION ►	Sample location: Navajo Refinery HP-1	
Collection TIME: 1105		Collection site description: USGS Well Point	
Collected by — Person/Agency: Boyer/Anderson/OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code:

Owner:

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped ☐ Pump ☐ Tap	Water level	Discharge	Sample type: GRAB
pH (00400): F	Conductivity (Uncorrected): 14,000 µmho	Water Temp. (00010): 19.5 °C	Conductivity at 25°C (00094): µmho

Field comments: See VOC sheet for comments

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	16,020	µmho	6/19
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH, Lab	6.99		6/10
☐ Other:			
☐ Other:			

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:			

From NE, NA Sample:

			Date Analyzed
☒ Calcium	1020	mg/l	6/17
☒ Potassium	10.5	mg/l	6/14
☒ Magnesium	566	mg/l	6/17
☒ Sodium	2183	mg/l	6/16
☒ Bicarbonate	311	mg/l	6/10
☒ Chloride	4234	mg/l	6/10
☒ Sulfate	3453	mg/l	6/12
☒ Total Solids	13188	mg/l	6/14
☒ Fluoride	0.78		6/18
☐			
☒ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	6 19 87	CO

Laboratory remarks:

FOR OCD USE -- Date Owner Notified_____ Phone or Letter?_____ Initals_____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	50.90	1020.00	<3.0	HC03	5.10	311.00	<1.0
Mg	46.49	566.00	<0.3	SO4	71.94	3453.00	<10.0
Na	94.95	2183.00	<10.0	CL	119.44	4234.00	<5.0
K	0.27	10.50	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	192.61	3779.50			196.47	7998.00	

Total Dissolved Solids= 13188

Ion Balance = 98.04%

WC No. = 8701982

Date out/By CD 6/14/87

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

87-1356-C

754 wpk

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 1356 AB
DATE REC. 8-14-87
PRIORITY

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5
SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 8 1 2 1 5 5 0 D 6 B

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: ___

COUNTY: EDDY ; CITY: ARTESIA CODE: ____

LOCATION CODE: (Township-Range-Section-Tracts) 1 7 S+2 6 E+ 1 3+2 2 1 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: detection limit 10 or less if possible

FIELD DATA:

pH= 7.5 ; Conductivity= 24,600 umho/cm at 20.5 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water 9.59 ft.; Depth of well 15.65 ft.; Perforation Interval ____-____ ft.; Casing: GAL. STEEL

Sampling Location, Methods and Remarks (i.e. odors, etc.)

USGS PIEZOMETER HP-2 PURGED 1CSG VOL SLOW RECOVERY

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D G Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials ____

ANALYSES PERFORMED

LAB. No.: OR- 1356

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables *			
[acetone]	200		
toluene	2.1		
halogenated purgeables *	N.D		
* DETECTION LIMIT *	1.0/L	+ DETECTION LIMIT +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 9/14/87. Analyst's signature: Mary C. Eldon

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 Meyerhein

754 WPW

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

87-0905-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 905 A+B
DATE REC. 6-1-87
PRIORITY

PHONE(S): 827-5812
USER CODE: 82235
SUBMITTER: David Boyer
CODE: 260

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 870526120100A&B

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 17S+26E+13+211 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: _____

FIELD DATA:

pH= ~ ; Conductivity= 4,800 umho/cm at 22 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval ____-____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.) Navajo Refineries
USGS Piezometer HP-2. Sample after one casing volume purged (Start of 2nd) due to slow recovery. No odor, clear from desorption Particles

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): David G Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 905

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
halogenated purgeables	N.D.		
aromatic purgeables	N.D.		
* DETECTION LIMIT * ✳	10 ppb	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 6/19/87 Analyst's signature: Mary C. Eblen

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 Megahan

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

WNW 465

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 8 | 14 | 87 | LAB NO. WC 3704 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 08 | 12 | 87

Collection TIME 1550

SITE INFORMATION ►

Sample location: NAVAJO REFINERY

Collected by — Person/Agency: BOYER /OCD

Collection site description: USGS HP-2

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code

Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Pump ☐ Dipped ☐ Tap	Water level: 9.59	Discharge	Sample type: GRAB
pH (00400): 7.5	Conductivity (Uncorrected): 24,600 µmho	Water Temp. (00010): 20.5 °C	Conductivity at 25°C (00094): µmho

Field comments: PURGED 1 CSG VOL - VERY SLOW RECOVERY

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	33619	µmho	10/1
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: Lab pH	7.75		8/20
☐ Other:			
☐ Other:			

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:			

From NF, NA Sample:

			Date Analyzed
☒ Calcium	568	mg/l	9/18
☒ Potassium	31.2	mg/l	8/31
☒ Magnesium	2582	mg/l	9/18
☒ Sodium	15847	mg/l	8/31
☒ Bicarbonate	1032	mg/l	8/26
☒ Chloride	7350	mg/l	9/29
☒ Sulfate	18,100	mg/l	9/29
☒ Total Solids	40,000	mg/l	10/2
☒ Fluoride	1.58		9/18/87
☐			
☒ Cation/Anion Balance			

Analyst | Date Reported: 10 | 6 | 87 | Reviewed by: CG

Laboratory remarks

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	28.34	568.00	<3.0	HC03	16.91	1032.00	<1.0
Mg	212.07	2582.00	<0.3	SO4	377.08	18100.00	<10.0
Na	689.30	15847.00	<10.0	CL	207.33	7350.00	<5.0
K	0.80	31.20	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	930.51	19028.20			601.33	26482.00	

Total Dissolved Solids= 40000

Ion Balance = 154.74%

WC No. = 8703704

Date out/By 10/27/87

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

754 wpw

87- 1350 -C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 1350 A+B
DATE REC. 8-14-87
PRIORITY

PHONE(S): 827-5812
USER CODE: 82235
SUBMITTER: David Boyer
CODE: 260

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 870812152500B

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: _____ CODE: _____

COUNTY: EDDY ; CITY: ARTESIA CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 17S+26E+1312 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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: Detection limit 10 or less if possible

FIELD DATA:

pH=_____; Conductivity= 7600 umho/cm at 21 °C; Chlorine Residual=_____mg/l

Dissolved Oxygen=_____mg/l; Alkalinity=_____mg/l; Flow Rate_____ ____/____

Depth to water 6.10 ft.; Depth of well 13.24 ft.; Perforation Interval ____-____ft.; Casing: GAL STEEL

Sampling Location, Methods and Remarks (i.e. odors, etc.)

USGS PIEZOMETER HP-3, NAVAJO REFINERY, PURGED 3 CSG VOL - SHEEN ON WATER, ODOR

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D L Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter?_____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 1350

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	1 ug/L	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 8/17/87. Analyst's signature: Mary C. Eden

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

754
WPA

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

HEALTH ENVIRONMENT NEW MEXICO

87-0906-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 906 A+B

DATE REC. 6-1-87

PRIORITY ______

PHONE(S): 827-5812 USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 5 2 6 1 2 3 5 R G B

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: ______ CODE: ______

COUNTY: Eddy ; CITY: Artesia CODE: ______

LOCATION CODE: (Township-Range-Section-Tracts) 1 7 S + 2 6 E + 1 3 + 1 2 4 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] ______
- [ ] ______
- [ ] ______
- [ ] ______
- [ ] ______

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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

RECEIVED
AUG - 3 1987
OIL CONSERVATION DIVISION
SANTA FE

Remarks: ______

FIELD DATA:

pH=______; Conductivity=7000 umho/cm at 16°C; Chlorine Residual=______ mg/l

Dissolved Oxygen=______ mg/l; Alkalinity=______ mg/l; Flow Rate ______ ______/______

Depth to water ______ ft.; Depth of well ______ ft.; Perforation Interval ______-______ ft.; Casing: ______

Sampling Location, Methods and Remarks (i.e. odors, etc.) Navajo Refinery USGS Piezometer HP-3. Slight HC odor, rainbow sheen trace (Location near old pipeline leak). Bailed 3 casing volumes

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): David G Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ______ Glass Jugs, and/or ______ ______

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from ______ to ______

at (location) ______ on ___/___/___ - ___:___ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures ______ ______

For OCD Use: Date Owner Notified ______ Phone or Letter?______ Initials ______

ANALYSES PERFORMED

LAB. No.: OR- 907906

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	10 ug/L	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑. Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 6/19/87. Analyst's signature: Mary C. Eden

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 Meyerhoen

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

865 WNN

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 8 14 87	LAB NO. WC 3703	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 08 12 87	SITE INFORM-ATION ►	Sample location NAVAJO REFINERY	
Collection TIME 1525		Collection site description USGS MP-3	
Collected by — Person/Agency BOYER /OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code

Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped ☐ Pump ☐ Tap	Water level 6.1	Discharge	Sample type GRAB
pH (00400)	Conductivity (Uncorrected) 7600 µmho	Water Temp. (00010) 21 °C	Conductivity at 25°C (00094) µmho

Field comments PURGED 3 CSG VOL - SHEEN ON WATER - 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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	9455	µmho	10/1
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: Lab pH	7.68		8/26
☐ Other:			
☐ Other:			

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:			

From NF, NA Sample:

			Date Analyzed
☒ Calcium	580	mg/l	9/18
☒ Potassium	12.5	mg/l	8/31
☒ Magnesium	732	mg/l	9/18
☒ Sodium	1155	mg/l	8/31
☒ Bicarbonate	789	mg/l	8/26
☒ Chloride	1240	mg/l	9/29
☒ Sulfate	4880	mg/l	9/29
☒ Total Solids	9540	mg/l	10/2
☒ Fluoride	2.40		9/8
☐			
☒ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	10 7 87	CO

Laboratory remarks

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	28.94	580.00	<3.0	HC03	12.93	789.00	<1.0
Mg	60.12	732.00	<0.3	SO4	101.67	4880.00	<10.0
Na	50.24	1155.00	<10.0	CL	34.98	1240.00	<5.0
K	0.32	12.50	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	139.62	2479.50			149.58	6909.00	

Total Dissolved Solids= 9540

Ion Balance = 93.35%

WC No. = 8703703

Date out/By 10/7/87

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

860 WNW

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 6 | 1 | 87 LAB NO. WC-1981 USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 87 | 05 | 26

Collection TIME 1235

SITE INFORMATION ►

Sample location: Navajo Refinery HP-3

Collection site description: USGS well point

Collected by — Person/Agency: Boyer/Anderson/OCD

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code

Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped ☐ Pump ☐ Tap	Water level	Discharge	Sample type: Grab
pH (00400): —	Conductivity (Uncorrected): 7000 µmho	Water Temp. (00010): 16 °C	Conductivity at 25°C (00094): µmho

Field comments: See VOC sheet for comments

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	7985	µmho	6/19
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH, Lab	7.50		6/10
☐ Other:			
☐ Other:			

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:			

From NE, NA Sample:			Date Analyzed
☒ Calcium	560	mg/l	6/17
☒ Potassium	10.?	mg/l	6/14
☒ Magnesium	769	mg/l	6/17
☒ Sodium	909	mg/l	
☒ Bicarbonate	455	mg/l	6/10
☒ Chloride	1062	mg/l	6/10
☒ Sulfate	4512	mg/l	6/12
☒ Total Solids	8605	mg/l	6/14
☒ Flouride	2.38		6/18
☐			
☒ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	6 | 19 | 87	CO

Laboratory remarks

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	27.94	560.00	<3.0	HC03	7.46	455.00	<1.0
Mg	63.16	769.00	<0.3	SO4	94.00	4512.00	<10.0
Na	39.54	909.00	<10.0	CL	29.96	1062.00	<5.0
K	0.28	10.90	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	130.92	2248.90			131.41	6029.00	

Total Dissolved Solids= 8605

Ion Balance = 99.63%

WC No. = 8701981

Date out/By CQ 6/24/97

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

87-0766-C

NEW MEXICO HEALTH & ENVIRONMENT

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 766-A-B
DATE REC. 5-5-87
PRIORITY

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5
SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 4 3 0 1 8 2 5 A B

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 1 7 S+2 6 E+0 3+3 3 3 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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: _____

FIELD DATA:

pH= 7 ; Conductivity= 3200 umho/cm at 18.5 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____-_____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Heldeman Well to Pond. Said to be shallow - Pumping at 80'
Turbine pump badly leaking oil to ground (section 3)

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D J Boyer Method of Shipment to the Lab: State car

This form accompanies 2 Septum Vials, 1 Glass Jugs, and/or _____ _____

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 766

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✱	1 ug/L	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/29/87 . Analyst's signature: Mary C. Colleen

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. Sherrell JUN 11 1987

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: 5 | 5 | 87 — LAB NO. WC 1667 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 5 | 4 | 87 — Collection TIME: 1325 — Collected by — Person/Agency: Boyer / Anderson / OCD

SITE INFORMATION — Sample location: Section 3 Irrigation well — Collection site description:

SEND FINAL REPORT TO ▶
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088
Attn: David Boyer
Phone: 827-5812

Station/well code:
Owner: Vance Haldeman

SAMPLING CONDITIONS

☐ Bailed ☐ Pump ☒ Dipped ☐ Tap	Water level	Discharge	Sample type: GRAB
pH (00400): 7 strip	Conductivity (Uncorrected): 3200 µmho	Water Temp. (00010): 18.5 °C	Conductivity at 25°C (00094): µmho

Field comments: Sample from end of Pipe - See WQC Sheet for other comments

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	3887	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.79		5/19
☐ Other:			
☐ Other:			

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:			

From NF, NA Sample:

			Date Analyzed
☒ Calcium	560	mg/l	6/2
☒ Potassium	1.95	mg/l	5/20
☒ Magnesium	171	mg/l	6/2
☒ Sodium	198	mg/l	5/20
☒ Bicarbonate	227	mg/l	5/19
☒ Chloride	241	mg/l	5/26
☒ Sulfate	2154	mg/l	5/20
☒ Total Solids	3644	mg/l	5/22
☒ Fluoride	0.86		5/27
☐			
☒ Cation/Anion Balance			

Analyst | Date Reported: 6 | 4 | 87 | Reviewed by: CO

Laboratory remarks

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	27.94	560.00	<3.0	HC03	3.72	227.00	<1.0
Mg	14.05	171.00	<0.3	SO4	44.88	2154.00	<10.0
Na	8.61	198.00	<10.0	CL	6.80	241.00	<5.0
K	0.05	1.95	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	50.65	930.95			55.39	2622.00	

Total Dissolved Solids= 384
Ion Balance = 91.44%

WC No. = 8701667
Date out/By 6/4 CO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

87-0748-C

OF NEW MEXICO

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088
PHONE(S): 827-5812

S.L.D. No. OR- 748-A-B
DATE REC. 5-5-87
PRIORITY
USER CODE: 82235
CODE: 260

SUBMITTER: David Boyer

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 870430/1B35AA B

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: _____ CODE: ___

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 17S+26E+10+2113 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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: _____

FIELD DATA:

pH= ~ ; Conductivity= 3350 umho/cm at 18.5 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____-_____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Haldeman Domestic Well - Section 10. Next to house (SE corner)
Used for domestic use except drinking. Said deeper than irrigation well

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D.M. Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 748

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	1 µg/L	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/28/87 . Analyst's signature: Gary C. Eden

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. Sherrell JUN 11 1987

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: 5 | 5 | 87 — LAB NO. WC1662 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 87/04/30 — Collection TIME: 1835

SITE INFORMATION ►

Sample location: Haldeman Domestic Well-Sec 10

Collection site description:

Collected by — Person/Agency: Boyer/Anderson/OCD

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/well code:

Owner: Vance Haldeman

SAMPLING CONDITIONS

☐ Bailed ☐ Pump ☐ Dipped ☒ Tap	Water level	Discharge	Sample type: GRAB
pH (00400): NA	Conductivity (Uncorrected): 3350 µmho	Water Temp. (00010): 18.5 °C	Conductivity at 25°C (00094): µmho

Field comments: see VOC sheet for comments

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	3887	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.96		5/12
☐ Other:			
☐ Other:			

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:			

From NF, NA Sample:

			Date Analyzed
☒ Calcium	680	mg/l	6/1
☒ Potassium	1.95	mg/l	5/20
☒ Magnesium	98	mg/l	6/1
☒ Sodium	173	mg/l	5/20
☒ Bicarbonate	197	mg/l	5/12
☒ Chloride	480	mg/l	5/26
☒ Sulfate	1840	mg/l	5/20
☒ Total Solids	3606	mg/l	5/27
☒ Fluoride	0.67		5/27
☐			
☒ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	6 / 2 / 87	CC

Laboratory remarks

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	33.93	680.00	<3.0	HC03	3.23	197.00	<1.0
Mg	8.05	98.00	<0.3	SO4	38.33	1840.00	<10.0
Na	7.53	173.00	<10.0	CL	13.54	480.00	<5.0
K	0.05	1.95	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	49.56	952.95			55.10	2517.00	

Total Dissolved Solids= 3606

Ion Balance = 89.94%

WC No. = 8701662

Date out/By CO 6/4/97

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

87-0755-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 755-A-B
DATE REC. 5-5-87
PRIORITY

PHONE(S): 827-5812
USER CODE: 82235

SUBMITTER: David Boyer
CODE: 2610

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 870430/1845 AVB

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: Eddy ; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 17S26E10212 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: _____

FIELD DATA:

pH= 7 ; Conductivity= 4100 umho/cm at 19 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval ____-____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Haldeman Sec ID Irrigation Well (shallower than domestic well) Sheen on water - oil may leak from turbine pump. Pad at well base sunk 8-10 feet

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D.H. Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 755

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	see remarks		
halogenated purgeables	N.D.		
* DETECTION LIMIT *	1 ppb	+ DETECTION LIMIT +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT
T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)
[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: One compound at 1 ppb in the aromatic screen region detected with the photoionization detector but not identified. Four compounds in the C3 substituted benzene region at less than 1 ppb detected with the photoionization detector but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/29/87. Analyst's signature: Gary C. Eden

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. Sharrell JUN 11 1987

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 5 5 87 | LAB NO. WC 1666 | USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 87 04 30 | Collection TIME 1845 | Collected by — Person/Agency Boyer/Anderson/OCD

SITE INFORMATION ►

Sample location: Haldeman Sec 10 Irrigation Well

Collection site description:

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/well code:

Owner: Vance Haldeman

SAMPLING CONDITIONS

☐ Bailed ☐ Pump ☒ Dipped ☐ Tap	Water level	Discharge	Sample type: GRAB
pH (00400)	Conductivity (Uncorrected) µmho	Water Temp. (00010) °C	Conductivity at 25°C (00094) µmho

Field comments: Coal from line into concrete ditch - See VOC sheet for other comments

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	4728	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.65		5/19
☐ Other:			
☐ Other:			

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:			

From N/S, NA Sample:

			Date Analyzed
☒ Calcium	640	mg/l	6/2
☒ Potassium	2.73	mg/l	5/20
☒ Magnesium	220	mg/l	6/2
☒ Sodium	324	mg/l	5/20
☒ Bicarbonate	249	mg/l	5/19
☒ Chloride	557	mg/l	5/26
☒ Sulfate	1919	mg/l	5/20
☒ Total Solids	4158	mg/l	5/27
☒ Fluoride	0.62		5/27
☐			
☒ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	6 2 87	

Laboratory remarks:

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	31.94	640.00	<3.0	HC03	4.08	249.00	<1.0
Mg	18.07	220.00	<0.3	SO4	39.98	1919.00	<10.0
Na	14.09	324.00	<10.0	CL	15.71	557.00	<5.0
K	0.07	2.73	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	64.17	1186.73			59.77	2725.00	

Total Dissolved Solids= 4158

Ion Balance = 107.36%

WC No. = 8701666

Date out/By CO 6/2/87

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

87-0760-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088
PHONE(S): 827-5812
SUBMITTER: David Boyer

S.L.D. No. OR- 760-A-B
DATE REC. 5-5-87
PRIORITY
USER CODE: 82235
CODE: 260

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 870430115AW B

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: _____ CODE: _____

COUNTY: Eddy; CITY: Artesia CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 175+26E+11+31/17 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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: _____

FIELD DATA:

pH= 7; Conductivity= 4000 umho/cm at 18 °C; Chlorine Residual= _____ mg/l

Dissolved Oxygen= _____ mg/l; Alkalinity= _____ mg/l; Flow Rate _____ ____/____

Depth to water _____ ft.; Depth of well _____ ft.; Perforation Interval _____ - _____ ft.; Casing: _____

Sampling Location, Methods and Remarks (i.e. odors, etc.) irrigation and/or Haldeman Water Well - For oil industry use? Said to be pumping from about 100' (Section 11)

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D.L. Boyer Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter? _____ Initials _____

ANALYSES PERFORMED

LAB. No.: OR- 760

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☑ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✱	1-98/L	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/29/87 Analyst's signature: Mary C. Eblen

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. Sherrell JUN 11 1987

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: 5 | 5 | 87 — LAB NO. WC 1643 — USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE: 5 | 04 | 87
Collection TIME: 1815
Collected by — Person/Agency: Boyer/Anderson/OCD

SITE INFORMATION ►

Sample location: Section 11, Irrigation Well

Collection site description:

T17S, R26E, Sec 11, 3N

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code:

Owner: Vance Haldeman

SAMPLING CONDITIONS

☐ Bailed ☐ Dipped ☐ Pump ☒ Tap	Water level:	Discharge:	Sample type: GRAB
pH (00400): 7 (Strips)	Conductivity (Uncorrected): 4000 µmho	Water Temp. (00010): 18 °C	Conductivity at 25°C (00094): µmho

Field comments: See VOC sheet For Comments

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	4635	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.88		5/12
☐ Other:			
☐ Other:			

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:			

From NF, NA Sample:

			Date Analyzed
☒ Calcium	580	mg/l	6/1
☒ Potassium	2.34	mg/l	5/22
☒ Magnesium	273	mg/l	6/1
☒ Sodium	327	mg/l	5/22
☒ Bicarbonate	301	mg/l	5/12
☒ Chloride	306	mg/l	5/26
☒ Sulfate	2479	mg/l	5/20
☒ Total Solids	4534	mg/l	5/27
☒ Fluoride	0.83		5/27
☐			
☒ Cation/Anion Balance			

Analyst | Date Reported: 6 | 2 | 87 | Reviewed by

Laboratory remarks:

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	28.94	580.00	<3.0	HC03	4.93	301.00	<1.0
Mg	22.42	273.00	<0.3	SO4	51.65	2479.00	<10.0
Na	14.22	327.00	<10.0	CL	8.63	306.00	<5.0
K	0.06	2.34	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	65.65	1182.34			65.21	3086.00	

Total Dissolved Solids= 4534

Ion Balance = 100.67%

WC No. = 8701643

Date out/By 6/2/87

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 5 | 5 | 87 LAB NO. WC 1642 USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235

Collection DATE 5/04/87

Collection TIME 1600

Collected by (Person/Agency) Roy Anderson / OCD

SITE INFORMATION ►

Sample location: Hobbs Section 14 Irrigation well

Collection site description: For spigot at base of pipe at well head

T 17 S, R 36 E, 14 - 11

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code

Owner: Vance Haldeman

SAMPLING CONDITIONS

☐ Bailed ☐ Dipped ☒ Pump ☐ Tap	Water level	Discharge	Sample type: GRAB
pH (00400): 7 (strip)	Conductivity (Uncorrected): 2900 µmho	Water Temp. (00010): 17.5 °C	Conductivity at 25°C (00094): µmho

Field comments: Depth of well said to be approx 100' 30 yrs. & old.

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: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NA		Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095)	3399	µmho	5/13
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☒ Other: pH	7.77		5/12
☐ Other:			
☐ Other:			

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:			

From NF, NA Sample:

			Date Analyzed
☒ Calcium	412	mg/l	6/1
☒ Potassium	1.95	mg/l	5/19
☒ Magnesium	139	mg/l	6/1
☒ Sodium	212	mg/l	5/19
☒ Bicarbonate	227	mg/l	5/12
☒ Chloride	381	mg/l	5/26
☒ Sulfate	1297	mg/l	5/20
☒ Total Solids	2952	mg/l	5/27
☒ Fluoride	0.44		5/27
☐			
☒ Cation/Anion Balance			

Analyst	Date Reported	Reviewed by
	6 | 2 | 87	CJ

Laboratory remarks

FOR OCD USE -- Date Owner Notified _____ Phone or Letter? _____ Initals _____

CATIONS				ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca	20.56	412.00	<3.0	HC03	3.72	227.00	<1.0
Mg	11.42	139.00	<0.3	SO4	27.02	1297.00	<10.0
Na	9.22	212.00	<10.0	CL	10.75	381.00	<5.0
K	0.05	1.95	<0.3				
Mn	0.00	0.00		NO3	0.00	0.00	< 0.
Fe	0.00	0.00		C03	0.00	0.00	< 1.
				NH3	0.00	0.00	< 0.
				PO4	0.00	0.00	< 0.
SUMS	41.25	764.95			41.49	1905.00	

Total Dissolved Solids= 2952

Ion Balance = 99.42%

WC No. = 8701642

Date out/By 6/2/87

Field Blanks/Chain Cust.

Fidd blanks

Chain Cust.

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

08/17/89

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: Feild Blank Navajo Ref.
Flow or other on site data: 2 Vials
Collected by: Boyer
Date & Time Taken: 07/25/89 1200
Additional Sample Information:
Lab Sample Number: 149768 Received: 07/29/89

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
1,1,1-Trichloroethane, ug/l EPA Method 8010	<5		08/04/89	0453	BP
1,1,2,2-Tetrachloroethane, ug/l EPA Method 8010	<5		08/04/89	0453	BP
1,1,2-Trichloroethane, ug/l EPA Method 8010	<5		08/04/89	0453	BP
1,1-Dichloroethane, ug/l EPA Method 8010	<5		08/04/89	0453	BP
1,1-Dichloroethene, ug/l EPA Method 8010	<1		08/04/89	0453	BP
1,2-Dichloroethane, ug/l EPA Method 8010	<5		08/04/89	0453	BP
1,2-Dichloropropane, ug/l EPA Method 8010	<5		08/04/89	0453	BP
2-Chloroethylvinyl ether, ug/l EPA Method 8010	<10		08/04/89	0453	BP
Benzene, ug/l EPA Method 8020	<5		08/04/89	0453	BP
Bromodichloromethane, ug/l EPA Method 8010	<5		08/04/89	0453	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149768 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Bromoform, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Bromomethane, ug/l EPA Method 8010	<10		08/04/89	0453	BP
Carbon Tetrachloride, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Chlorobenzene, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Chloroethane, ug/l EPA Method 8010	<10		08/04/89	0453	BP
Chloroform, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Chloromethane, ug/l EPA Method 8010	<10		08/04/89	0453	BP
Cis-1,3-Dichloropropene, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Dibromochloromethane, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Ethyl benzene, ug/l EPA Method 8020	<5		08/04/89	0453	BP
Freon, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Methylene Chloride, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Tetrachloroethene, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Toluene, ug/l EPA Method 8020	<5		08/04/89	0453	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal — Equipment Sales

RECEIVED

AUG 21 1989

OIL CONSERVATION DIV.
SANTA FE

Lab Sample Number: 149768 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Trans-1,2-Dichloroethene, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Trans-1,3-Dichloropropene, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Trichloroethene, ug/l EPA Method 8010	<5		08/04/89	0453	BP
Vinyl Chloride, ug/l EPA Method 8010	<1		08/04/89	0453	BP
Xylenes, ug/l EPA Method 8020	<10		08/04/89	0453	BP

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

08/17/89

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: Trip Blank Navajo Ref.
Flow or other on site data: 4 Vials
Collected by: Boyer, Englert
Date & Time Taken: 07/28/89 1111
Additional Sample Information:
Lab Sample Number: 149769 Received: 07/29/89

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
1,1,1-Trichloroethane, ug/l EPA Method 8010	<5		08/04/89	2033	BP
1,1,2,2-Tetrachloroethane, ug/l EPA Method 8010	<5		08/04/89	2033	BP
1,1,2-Trichloroethane, ug/l EPA Method 8010	<5		08/04/89	2033	BP
1,1-Dichloroethane, ug/l EPA Method 8010	<5		08/04/89	2033	BP
1,1-Dichloroethene, ug/l EPA Method 8010	<1		08/04/89	2033	BP
1,2-Dichloroethane, ug/l EPA Method 8010	<5		08/04/89	2033	BP
1,2-Dichloropropane, ug/l EPA Method 8010	<5		08/04/89	2033	BP
2-Chloroethylvinyl ether, ug/l EPA Method 8010	<10		08/04/89	2033	BP
Benzene, ug/l EPA Method 8020	<5		08/04/89	2033	BP
Bromodichloromethane, ug/l EPA Method 8010	<5		08/04/89	2033	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0277

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149769 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Bromoform, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Bromomethane, ug/l EPA Method 8010	(10		08/04/89	2033	BP
Carbon Tetrachloride, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Chlorobenzene, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Chloroethane, ug/l EPA Method 8010	(10		08/04/89	2033	BP
Chloroform, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Chloromethane, ug/l EPA Method 8010	(10		08/04/89	2033	BP
Cis-1,3-Dichloropropene, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Dibromochloromethane, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Ethyl benzene, ug/l EPA Method 8020	(5		08/04/89	2033	BP
Freon, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Methylene Chloride, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Tetrachloroethene, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Toluene, ug/l EPA Method 8020	(5		08/04/89	2033	BP

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD – KILGORE, TEXAS 75662 – 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 149769 Continued

PARAMETER:	RESULTS	QUALITY CONTROL	ANALYZED ON	AT	ANALYST
Trans-1,2-Dichloroethene, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Trans-1,3-Dichloropropene, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Trichloroethene, ug/l EPA Method 8010	(5		08/04/89	2033	BP
Vinyl Chloride, ug/l EPA Method 8010	(1		08/04/89	2033	BP
Xylenes, ug/l EPA Method 8020	(10		08/04/89	2033	BP

C. H. Whiteside, Ph.D., President

Inter·Mountain
Laboratories, Inc.

2508 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CLIENT: OCD
ID: 890725 Field Blank
SITE: N/A
LAB NO: F1833
DATE REPORTED: 08/22/89
DATE EXTRACTED: 08/08/89
DATE RECEIVED: 08/02/89
DATE COLLECTED: 07/25/89

Analysis Requested: Purgeable aromatics in water.

Parameter	Concentration	Units
Benzene	0.32 (0.2)	ug/l
Ethylbenzene	0.52 (0.2)	ug/l
Toluene	0.26 (0.2)	ug/l
1,2-Dichlorobenzene	ND (0.2)	ug/l
1,3-Dichlorobenzene	ND (0.2)	ug/l
1,4-Dichlorobenzene	ND (0.2)	ug/l
Chlorobenzene	ND (0.2)	ug/l
m-Xylene	0.33 (0.2)	ug/l
o-Xylene	0.19 (0.2)	ug/l
p-Xylene	0.13 (0.2)	ug/l

Method:
8020 Aromatic 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: 890725 Field Blank
SITE: N/A
LAB NO: F1833
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 Schaefer
Senior Chemist

CLIENT: OCD
SAMPLE ID: N/A
SITE: N/A
LAB NO: Laboratory blank
DATE REPORTED: 09/11/89
DATE EXTRACTED: 08/02/89
DATE RECEIVED: N/A
DATE COLLECTED: N/A
Analysis Requested: Polynuclear aromatic hydrocarbons in water.

Parameter	Concentration	Units
Acenaphthene	ND (1.8)	ug/l
Acenaphthylene	ND (2.3)	ug/l
Anthracene	ND (1.0)	ug/l
Benzo(a)Anthracene	ND (1.0)	ug/l
Benzo(a)pyrene	ND (1.0)	ug/l
Benzo(k)fluoranthene	ND (1.0)	ug/l
Benzo(g,h,i)perylene	ND (1.0)	ug/l
Dibenzo(a,h)anthracene	ND (1.0)	ug/l
Chrysene	ND (1.0)	ug/l
Fluoranthene	ND (1.0)	ug/l
Fluorene	ND (1.0)	ug/l
Indeno(1,2,3-cd)pyrene	ND (1.0)	ug/l
Naphthalene	ND (1.8)	ug/l
Phenanthrene	ND (1.0)	ug/l
Pyrene	ND (1.0)	ug/l
Benzo(b)fluoranthene	ND (1.0)	ug/l
Benzo(a)fluoranthene	ND (1.0)	ug/l
Benzo(j)fluoranthene	ND (1.0)	ug/l
Dibenzo(a,h)acridine	ND (1.0)	ug/l
Dibenzo(a,j)acridine	ND (1.0)	ug/l
Dibenzo(a,h)anthracene	ND (1.0)	ug/l
7H-dibenzo(c,g)carbazole	ND (1.0)	ug/l
Dibenzo(a,e)pyrene	ND (1.0)	ug/l
Dibenzo(a,h)pyrene	ND (1.0)	ug/l
Dibenzo(a,i)pyrene	ND (1.0)	ug/l
3-Methylcholanthrene	ND (1.0)	ug/l

Method:
8100 Polynuclear Aromatic Hydrocarbons, SW-846, USEPA (1982).
610 Polyaromatic Hydrocarbons, 40 CFR Part 136 (1984).

(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: Method blank
SITE: N/A
LAB NO: N/A
DATE REPORTED: 09/26/89
DATE EXTRACTED: 08/02/89
DATE RECEIVED: N/A
DATE COLLECTED: N/A
Analysis Requested: Phenols in water.

Parameter	Concentration	Units
4-Chloro-3-methylphenol	ND (1.0)	ug/l
2-Chlorophenol	ND (1.0)	ug/l
2,4-Dichlorophenol	ND (1.0)	ug/l
2,4-Dimethylphenol	ND (1.0)	ug/l
2,4-Dinitrophenol	ND (15.0)	ug/l
2-Methyl-4,6-dinitrophenol	ND (15.0)	ug/l
2-Nitrophenol	ND (1.0)	ug/l
4-Nitrophenol	ND (3.0)	ug/l
Pentachlorophenol	ND (8.0)	ug/l
Phenol	ND (1.0)	ug/l
2,4,6-Trichlorophenol	ND (1.0)	ug/l
2-sec-Butyl-4,6-dinitrophenol	ND (1.0)	ug/l
Cresols (methyl phenols)	ND (1.0)	ug/l
2-Cyclohexyl-4,6-dinitrophenol	ND (1.0)	ug/l
2,6-Dichlorophenol	ND (1.0)	ug/l
Tetrachlorophenols	ND (1.0)	ug/l
Trichlorophenols	ND (1.0)	ug/l

Method:
8040 Phenols, SW-846, USEPA (1982).
604 Phenols, 40 CFR Part 136 (1984).

(Detection limit in parenthesis.)
ND - Parameter not detected at the stated detection limit.

C. Neal Schaefer
Senior Chemist

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

HEALTH ENV ... OF NEW MEXICO

87-0768-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 768-A-B
DATE REC. 5/5/87
PRIORITY

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 7 0 4 2 8 2 0 5 0

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER:_____ CODE:

COUNTY:_____; CITY: _____ CODE:

LOCATION CODE: (Township-Range-Section-Tracts) ___ + ___ + ___ + ___ (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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:_____

FIELD DATA:

pH=_____; Conductivity=_____umho/cm at _____°C; Chlorine Residual=_____mg/l

Dissolved Oxygen=_____mg/l; Alkalinity=_____mg/l; Flow Rate_____ ____/____

Depth to water _____ft.; Depth of well_____ft.; Perforation Interval ____-____ft.; Casing:_____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Field Blank ~ 100ml Denature Alcohol with Deionized H_2O to 1 liter

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D.K. Boyer Method of Shipment to the Lab: Telecopy

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ____ _____

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (Not Frozen).
- ☐ P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____ _____

For OCD Use: Date Owner Notified _____ Phone or Letter?_____ Initials ____

ANALYSES PERFORMED

LAB. No.: OR- 768

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	see remarks		
halogenated purgeables	N.D.		
* DETECTION LIMIT * ✳	50 ug/L	+ DETECTION LIMIT + +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: Three compounds at 1-3 ppb in the aromatic screen region detected by the photoionization detector but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 6/1/87. Analyst's signature: Mary C. Eckes

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: D. Russell JUN 11 1987

SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

HEALTH NEW MEXICO

87-0749-C

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 749-A-B
DATE REC. 5-5-87
PRIORITY ______

PHONE(S): 827-5812 USER CODE: 8 2 2 3 5
SUBMITTER: David Boyer CODE: 2 6 0
SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8704281204 5AWB

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: ______ CODE: ______
COUNTY: ______; CITY: ______ CODE: ______
LOCATION CODE: (Township-Range-Section-Tracts) ___ + ___ + ___ + ___ (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes
- [ ] ______
- [ ] ______
- [ ] ______
- [ ] ______
- [ ] ______

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (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: ______

FIELD DATA:

pH= ______; Conductivity= ______ umho/cm at ______ °C; Chlorine Residual= ______ mg/l

Dissolved Oxygen= ______ mg/l; Alkalinity= ______ mg/l; Flow Rate ______ ____/____

Depth to water ______ ft.; Depth of well ______ ft.; Perforation Interval ____-____ ft.; Casing: ______

Sampling Location, Methods and Remarks (i.e. odors, etc.)
Field Blank - EID Deionized Water

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D G Boyer Method of Shipment to the Lab: Hand carried

This form accompanies 2 Septum Vials, ____ Glass Jugs, and/or ______

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from ______ to ______

at (location) ______ on ___/___/___ - ___:___ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures ______ ______

For OCD Use: Date Owner Notified ______ Phone or Letter? ______ Initials ______

ANALYSES PERFORMED

LAB. No.: OR- 749

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (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

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables			
Chloroform	13		
Dichlorobromomethane	6		
Dibromochloromethane	3		
Bromoform	TR		
* DETECTION LIMIT * ✳	1 ug/L	+ DETECTION LIMIT + ✚	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: _____

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☑ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 5/28/87. Analyst's signature: Gary C. Eden

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. Sherrell JUN 11 1987

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CHAIN OF CUSTODY RECORD — To ANA LAB

PROJ. NO. | PROJECT NAME

SAMPLERS: (Signature) Oil Conservation Division

DATE	TIME	STATION LOCATION	NO. OF CONTAINERS	VOA 8020	VOH 8010	PAH	Diesel			REMARKS: LAB Numbers
890725	1126	NAVAJO REF OCD-3	4 Vials	2	2					149747
890725	1204	NAVAJO REF OCD-4	4 Vials	2	2					149748
890725	1224	NAVAJO REF Windmill	4 Vials	2	2					149749
890725	1333	NAVAJO REF OCD-5	4 Vials	2	2					149750
890725	1354	NAVAJO REF OCD-6	4 Vials	2	2					149751
890725	1613	NAVAJO REF OCD-7	4 Vials	2	2					149752
890725	1653	NAVAJO REF OCD-8	4 Vials	2	2					149753
890725	1736	NAVAJO REF OCD-1	4 Vials	2	2					149754
890725	1728	NAVAJO REF OCD-2	4 Vials	2	2					149755
890726	0919	NAVAJO REF MW2	4 Vials	2	2					149756
890726	1009	NAVAJO REF MW1	4 Vials	2	2					149757
890726	1257	NAVAJO REF MW3	4 Vials +1	2	2		1			149758
890726	1221	NAVAJO REF MW4	4 Vials +1	2	2	1	1			149759
890726	1135	NAVAJO REF MW5	4 Vials +1	2	2		1			149760
890726	1424	NAVAJO REF MW6	4 Vials +1	2	2		1			149761

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: (Signature) Bill Peavy
		07/27/89 1100

SEALS INTACT ☑ YES ☐ NO : (Signature) Bill Peavy : (Signature)

Remarks

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CHAIN OF CUSTODY RECORD To ANA LAB

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	VOA	VOH	PAH	Phenol			REMARKS
SAMPLERS: (Signature)									PAGE 2
DATE TIME	STATION LOCATION								
890725 1053	NAVASO REF MW-7	4 VIALS +1 4 VIALS	2	2		1			149762
890726 1545	NAVAJO REF: Bips Outlet	+1	2	2		1			149763
890726 1517	NAVAJO REF: PECOS RIVER	4 VIALS	2	2					149764
890726 1503	NAVAJO REF: RIVER POOL	4 VIALS	2	2					149765
890727 0806	D/S WASH WATER	2 VIALS		2					149766
890727 1249	NAVASO REF: RIVER@Br	4 VIALS	2	2					149767
890725 1200	FIELD BLANK	2 VIALS							149768
890728 1111	TRIP BLANK	4 VIALS	2	2					149769
890725 1829	EAST Pond 3								149770

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: (Signature) Bill Peace

SEALS INTACT ☑ YES ☐ NO : (Signature) Bill Peace : (Signature)

Date / Time 8/29/89 1120

Remarks

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CHAIN OF CUSTODY RECORD To IML

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	Cation/Anion + Fe	As + Pb + Cr	ICAP	8020/8010	PAH	Phenol	REMARKS
SAMPLERS: (Signature)									
DATE TIME	STATION LOCATION								IML Sample #
890725 1126	NAVAJO REF OCD 3	1	1						1820
890725 1204	" " OCD 4	2	1	1					1821
890725 1224	" " Windmill	1	1						1815
890725 1333	" " OCD 5	1	1						1822
890725 133354	" " OCD 6	2	1	1					1823
890725 1613	" " OCD 7	1	1						1824
890725 1553	" " OCD 8	2+3Vials	1	1		3			1825
890725 1736	" " OCD 1	2	1	1					1818
890725 1728	" " OCD 2	2	1	1					1819
890726 0919	" " MW 2	1	1						1831
890726 1009	" " MW 1	1	1						1832
890726 1257	" " MW 3	3 Vials +3	1	1		3	1		1830
890726 1221	" " MW 4	3 Vials +4	1	1		3	1	1	1829
890726 1135	" " MW 5	3 Vials +3	1	1		3	1		1828
890726 1424	" " MW 6	3 Vials +3	1	1		3	1		1827

RECEIVED
SEP - 1 1989
OIL CONSERVATION DIV.
SANTA FE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David Englert OCD	7/31/89 1730	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)
	7/31/89 1730	

SEALS INTACT ☑ YES ☐ NO
Hand delivered

: (Signature)

: (Signature)

Date / Time

Remarks

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CHAIN OF CUSTODY RECORD To IML

PROJ. NO.	PROJECT NAME									
SAMPLERS: (Signature)										
DATE TIME	STATION LOCATION	NO. OF CONTAINERS	Cation/Anion+F	As, Pb, Cr	ICAP	8020/8010	PAH	Phenol	REMARKS
890726 1053	NAVAJO REF MW7	3	1	1			1		1826
890726 1545	" " Pipe Outlet	2	1				1		1817
890726 1517	" " Pecos River	1	1						1816
890725	FIELD BLANK	3 Vials				2			1833 RECEIVED
890728	TRIP BLANK	3 Vials				2			
									SEP - 1 1989
									OIL CONSERVATION DIV. SANTA FE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)		
David Englert OCD	7/31/89 1730	[signature]	SEALS INTACT ☑ YES ☐ NO Hand delivered	: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)		: (Signature)
Relinquished by: (Signature)	Date / Time 7/31/89 1730	Received for Laboratory by: (Signature) [signature]	Date / Time	Remarks

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CHAIN OF CUSTODY RECORD To SLD

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	HM + As+Pb+Cr						REMARKS
SAMPLERS: (Signature)									
DATE TIME	STATION LOCATION								
890725 1126	NAVAJO REF OCD 3	1	1						
890725 1333	NAVAJO REF OCD 5	1	1						
890726 0919	NAVAJO REF MW 2	1	1						
890726 1009	" " MW 1	1	1						
890726 1257	" " MW 3	1	1						
890725 1613	" " OCD 7	1	1						
890726 1545	" " Pipe Out	1	1						
890726 1517	" " RIVER	1	1						
890725	~~FIELD BLANK~~								

Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	7/31/89 2:45	[signature]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)

SEALS INTACT ☑ YES ☐ NO

: (Signature)

: (Signature)

Date / Time

Remarks

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files