3R - 246

REPORTS

DATE: 9 7 7



Certified Mail: #Z 295 387 297; #Z 295 387 296

RECEIVED

February 27, 1998

MAR 0 2 1998

Environmental Bureau
Oil Conservation Division

Mr. William C. Olson New Mexico Oil Conservation Division 2040 S. Pacheco Santa Fe, NM 87504

Re: 1997 Groundwater Annual Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for 57 groundwater impacted locations that were identified during our pit closure project of 1994/1995.

Of the 57 reports, EPFS hereby requests your approval for closure of 11 of these locations. The 11 reports for which EPFS requests closure, are in 2 separate binders entitled "Request for Closure".

After you have had an opportunity to review these updates, EPFS would like to schedule a meeting with you to discuss issues related to closure criteria for some of the more complex locations that are currently being addressed.

If you have any questions regarding this information, please call me at 505/599-2141. I will contact you within the next quarter to schedule a meeting.

Sincerely,

Sandra D. Miller

Environmental Manager

xc: Mr. Bill Liesse, BLM w/o enclosures

Simile I Willes

Mr. Denny Foust, NMOCD - Aztec w/enclosures; Certified Mail #Z 295 387 298; #Z 295 387 299

Ms. Charmaine Tso, Navajo EPA w/enclosures; Certified Mail #Z 295 387 292

SAN JUAN BASIN PIT CLOSURES San Juan Basin, New Mexico

El Paso Field Services Pit Project Groundwater Report Annual Report

March 1998

Prepared For

El Paso Field Services Farmington, New Mexico

Project 17520



EPFS GROUNDWATER PITS 1997 ANNUAL GROUNDWATER REPORT

VALDEZ GAS UNIT A #1E (CH) Meter/Line ID - 94298

SITE DETAILS

Legals - Twn: 29N

Rng: 11W

Sec: 24

Unit: G

NMOCD Hazard Ranking: 40

Land Type: FEE

Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Apr-94

Excavation: Apr-94 (80 cy)

Soil Boring: Jun-95

Monitor Well: Jun-95 Monitor Well: May-97 Re-Excavation: Nov-95 (1,548 cy)

Geoprobe: Oct-96

1997 ACTIVITIES

Monitor Well Installation - One groundwater monitor well was installed in the center of the former pit.

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring was initiated on 8/12/97. Groundwater analytical data are presented in Table 1.

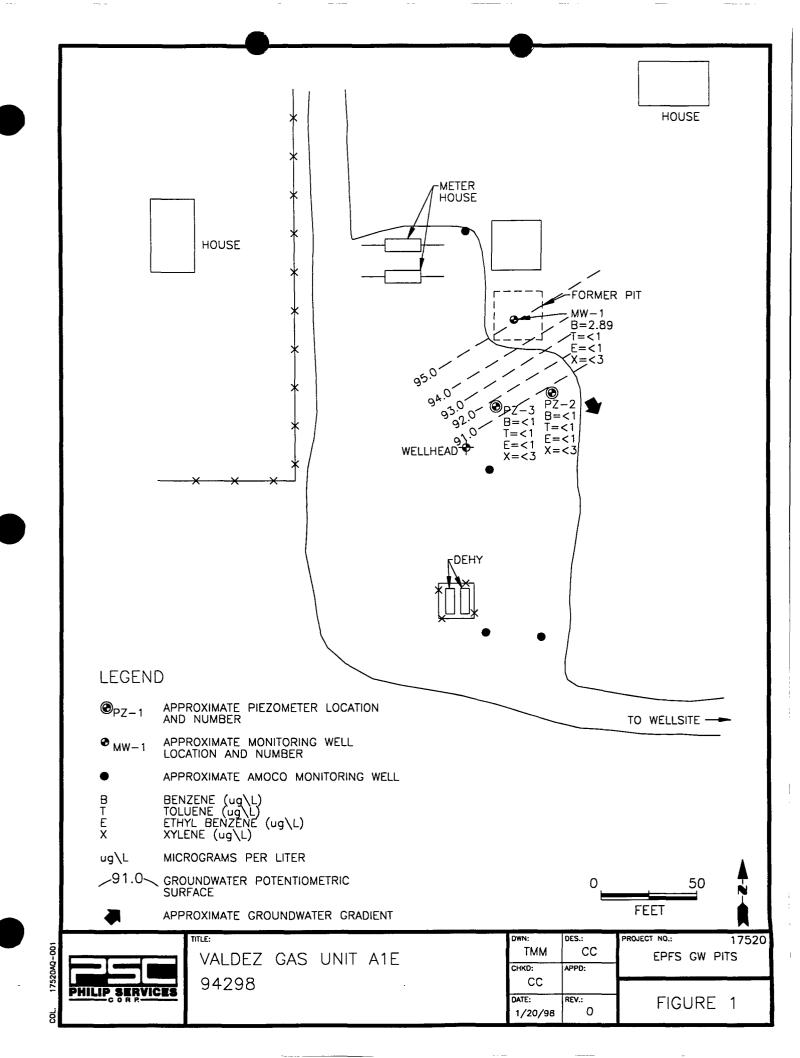
CONCLUSIONS

Based on groundwater levels collected from Geoprobe data, the groundwater flow trends to the southeast on this site, as presented in Figure 1. Groundwater analytical data from PZ-2 (downgradient of MW-1) were below standards for BTEX. One crossgradient groundwater sample was also below standards.

Groundwater analytical data has been below standards since quarterly sampling was initiated at MW-1. Minimal impact to groundwater has occurred at this site.

RECOMMENDATIONS

- Quarterly sampling will continue at MW-1 until 4 consecutive clean quarters are achieved.
- Following OCD approval for closure, MW-1 will be abandoned following OCD approved abandonment procedures.



Total BTEX	1	16	9	3
			Я	
otal Xylenes (PPB)		3	3	3
		V	V	
Ethyl Benzene (PPB)		-		-
		V	V	V
Toluene (PPB)		-		-
		V	V	· V
Benzene (PPB)		15.5	6.01	2.89
			11	į į
Project	Phase II Drilling - Initial	Phase IV Drilling - Initial	Sample 4 - 1st Qtr	Sample 4 - 2nd Qtr
ple Date NYW.#	1	1	1	-
Sample Date	7/15/95	5/21/97	8/12/97	11/6/97
Site Name	Valdez Gas Unit A #1E (CH)	94298 Valdez Gas Unit A #1E (CH)	Valdez Gas Unit A #1E (CH)	Valdez Gas Unit A #1E (CH)
Meter Line#	94298	94298	94298	94298
Sample#	970479	970479	970854	971193



Drilling Method

Air Monitoring Method

Borehole #

21/4" ID HSA

PID, CGI

94298 94298

RECORD OF SUBSURFACE EXPLORATION

Date/Time Started

Date/Time Completed

L/12/95 - /LOS

L/12/95 - /LOS

	•	Well #	
PHILIP ENVIR	ONMENTAL	Page / of	
4000 Monroe Road	1	• 1	
Farmington, New M	1exico 87401	Project Name EPNG PITS	
(606) 326-2262 F	AX (606) 326-2388	Project Number 14509 Phase 6000 / 77	
		Project Location Valdez Gas Vait A) = 97398	9
Elevation		Well Logged By CM Chance	
Borehole Locati	on	Personnel On-Site K. Pakilly, F. Rivera, D. Tsalate	_
GWL Depth		Contractors On-Site	
Logged By	CM CHANCE	Client Personnel On-Site	
Drilled By	MOONOHUE K. Pad: //a		

Sample Depth Depth Type & Sample Description uscs Lithology Air Monitoring **Drilling Conditions** Units: PPM (Feet) Number Interval Recovery Classification System: USCS Symbol Change s & Blow Counts 8Z вн (inches) (feet) Backfill + DIZ 387 -1192 K-BMG11.1, ٥ BIK siloy CLAY very soft, moist, strong oder 3" 11-13 1 15 CTNGs-Brailty CLAY, saturated -Cabbles 20 -ReFuelO20' TOB 20' 25 30 35

Comments:

Groundwarer (311.1' after Jonia No sande. 5 monitor wells on site. 1 is 15' NW of MW-1. 4 are South, Southwest, & Southcast of MW1 ~30-50 yds

Caslagies	Cianneuro
Geologist	Signature

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp. 4000 Monroe Road Formington, New Mexico 87401 (606) 326-2262 FAX (606) 326-2388

Elevation Well Location				
GWL Depth	7			
Installed By K. Pal	1114			
Date/Time Started	-67	12/	95-	1310
Date/Time Completed	Ы	ILI	95	147/2

	Borehole # BH Well # MW Page of
Project Name	EPNG PITS
Project Number Project Location	Valdez Gas Unis Alo 94298
On-Site Geologis Personnel On-Site Contractors On-Site Client Personnel	e K. Calilla, F. Kireca, O.75 ulas
Jient Personnei	On-Site

Depths in Reference to Ground S	urface		-		Top of Protective Casing Top of Riser	
ltem	Material	Depth			Ground Surface	0'
Top of Protective Casing		NY				
Bottom of Protective Casing Top of Permanent Borehole		Ν¥				
Casing Bottom of Permanent Borehole	 	Νĸ				
Casing		NI		1 }		
Top of Concrete		Νħ				
Bottom of Concrete	1	NA				
Top of Grout	NA	N/K				
Bottom of Grout	8,- 4, 9;4 NV	13.				
Top of Well Riser Bottom of Well Riser	Sch 40 PVC	3.7				
Top of Well Screen	15'010 slay 4" dia 5ch 40 PMC	3.7			Top of Seal	٥'
Bottom of Well Screen		18.7	() () ()		d	
Top of Pettonite Seal	1.5-50# 42	0') (b)	xx xxx	q'	21
Bottom of Peltonite Seal	Med. Enviroplus	۵′	Ø	₩ I.	a i	<u>a'</u> 3.7′
Top of Gravel Pack	20-50# bags	٦'			Top of Screen	<u> </u>
Bottom of Gravel Pack	Janl	19'		H		
Top of Natural Cave-In		19'		H		
Bottom of Natural Cave-In		70,		H		,
Top of Groundwater		11.1'			Bottom of Screen Bottom of Borehole	18.7
Total Depth of Borehole		20	}			

Comments: 4" botton cap. Bentonite hydratel of 10 cal potable vater. Well locked my

Geologist Signature

Cong Clary

ďζ

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL SERVICES INC.

4000 Monroe Road

Farmington, New Mexico 87401 (505) 326-2262 FAX (505) 326-2388

Elevation

Borehole Location GWL Depth
Logged By CM CHANCE

Drilled By K Padilla

Date/Time Started 5/7/97-0900
Date/Time Completed 5/7/97-1035

	Borehole #	,	BH-1	
	Well #		MW-1	
	Page	1	of	
			_	
GW P	ITS		_	
520	Phase		6001	
292	AIE .	942	398	
CM C	CHANCE			
D CH	ARLEY			

Drilling Method b 1/4 ID HSA

Air Monitoring Method PID

Project Name

Project Number Project Location

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Monitor nits: PP BH	Drilling Conditions & Blow Counts
10 15 20 25 30 35 40				BACKFIII to 141 Gray saturated clayerstand, F-ned send TOB 191				-GW@11.5

Comments:	No sample collected.	Rackfill to 14.	GW@11.5	

Geologist Signature

Coy Chang

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services, Inc.

4000 Monroe Rd.

Farmington, NM 87401

(505) 326-2262 FAX (505) 326-2388

Elevation

Well Location

GWL Depth

Installed By

Elevation

Taffs at R II LTR 6

S' B 65

K Padilla

Date/Time Started S/7/97-1035
Date/Time Completed S/7/97-1145

Borehole #	BH-1
Well #	MW-1
Page 1	of <u>1</u>

Project Name
Project Number
Site Location

On-Site Geologist
Personnel On-Site
Client Personnel On-Site

EPFS GW

17520
Phase 6002

CM CHANCE
D CHARLEY

Contractors On-Site
Client Personnel On-Site

Depths in Reference to G	round Surface		—		Top of Protective Casing	+3.1
Item	Material	Depth (feet)		\neg	Top of Riser Ground Surface	<u>+3</u> _0
Top of Protective Casing	8" steel well vault	+3.1				
Bottom of Protective Casing		2				
Top of Permanent Borehole Casing Bottom of		N/A				
Permanent Borehole Casing		N/A				
Top of Concrete		מא				
Bottom of Concrete	T 1/11 D11	NA				
Top of Grout	Type I/II Portland cement	MA				
Bottom of Grout	Powder Bentonite	NA				
Top of Well Riser	4" SCH 40 PVC	130				
Bottom of Well Riser	FLUSH THREAD	1.7				
Top of Well Screen	4" SCH 40 PVC	1.7			Top of Seal	
Bottom of Well Screen	0.01 SLOT FLUSH THREAD	16.7	X X X X	X X X X		
Top of Peltonite Seal	ENVIROPLUG	٥'	x x x x	x x x x		
Bottom of Peltonite Seal	10.00.00.00	0.7	X X	X X	Top of Gravel Pack	0.7
Top of Gravel Pack	10-20 SILICA SAND	0.7			Top of Screen	1. /
Bottom of Gravel Pack		16.7'				
Top of Natural Cave-In		16.7'				
Bottom of Natural Cave-In		19'				
Top of Groundwater		8.5			Bottom of Screen	16.7
Total Depth of Borehole		19			Bottom of Borehole	19

Placed on Well. GW @ 8.5 after well installed.

Geologist Signature

GEOPROBE

SITE ACTIVITIES

21-Feb-97

Meter/Line #: 94298

Location/Line #: Valdez A #1E

MW#:

Depth to GW:

Depth to Product:

Product Thickness:

Date: 10/28/96

Activity: Geoprobe

Comments: Installed 3 piezos. This site has 4 Amoco MW's.

PIEZOMETER INSTALLATION RECORD

PIEZOMETER INSTALLATION RECORD		Borehole # PZ -
Philip Environmental Services, Inc.		Well # Page 1 of 1
4000 Monroe Rd. Farmington, NM 87401 (606) 326-2262 FAX (606) 326-2388	Project Name Project Number 162 Site Location	EPFS PITS Phase 6 Alder Gas Unit Ale 94
Elevation Well Location GWL Depth Installed By K PADILLA	On-Site Geologist Personnel On-Site Contractors On-Site Client Personnel On-Si	CM CHANCE D CHARLEY
Date/Time Started 10/28/95 Date/Time Completed 10/28/95		

pths in Reference to Gro	und Surface			7	Top of Protective Casing Top of Riser	NA
Item	Material	Depth (feet)			Ground Surface	
Top of Protective Casing				H		
Bottom of Protective Casing Top of						
Permanent Borehole Casing		N/A				
Bottom of Permanent Borehole Casing		N/A				
Top of Concrete						
Bottom of Concrete						
Top of Grout						
Bottom of Grout						
Top of Well Riser			-			
Bottom of Well Riser						
Top of Well Screen					Top of Seal	
Bottom of Well Screen			[x x] [X X		
Top of Peltonite Seal			x x	X X		
Bottom of Peltonite Seal			[X X]	X X	Top of Gravel Pack	b. 5
Top of Gravel Pack					Top of Screen	
Bottom of Gravel Pack						
Top of Natural Cave-In						
Bottom of Natural Cave-In						
Top of Groundwater					Bottom of Screen	11.5
Total Depth of Borehole					Bottom of Borehole	

Comments:		 			

Geologist Signature

PIEZOMETER INSTALLATION RECORD

Date/Time Completed

Borehole # Well # Page 1 Philip Environmental Services, Inc. 4000 Monroe Rd. Project Name EPFS PITS Farmington, NM 87401 Project Number 16297 (606) 326-2262 FAX (606) 326-2388 Site Location CM CHANCE Elevation On-Site Geologist Well Location SE of PRI Personnel On-Site D CHARLEY GWL Depth _ Contractors On-Site Installed By K PADILLA Client Personnel On-Site 10/28/96 Date/Time Started

				_	Top of Riser	
Item	Material	Depth (feet)			Ground Surface	
Top of Protective Casing						
Bottom of Protective Casing						
Top of Permanent Borehole Casing		N/A				
Bottom of Permanent Borehole Casing		N/A				
Top of Concrete						
Bottom of Concrete						
Top of Grout						
Bottom of Grout	·					
Top of Well Riser						
Bottom of Well Riser	<u>.</u>					
Top of Well Screen	· · · · · · · · · · · · · · · · · · ·			x x	Top of Seal	
Bottom of Well Screen			X	X X X X		
Top of Peltonite Seal			x x x x	x x x x	T (0 10 1	
Bottom of Peltonite Seal					Top of Gravel Pack	8.35
Top of Gravel Pack					Top of Screen	<u>_0.J_</u>
Bottom of Gravel Pack						
Top of Natural Cave-In				 		
Bottom of Natural Cave-In						
Top of Groundwater	·]	Bottom of Screen	15.8
Total Depth of Borehole					Bottom of Borehole	

Geologist Signature	

PZ - A

Phase 6004

Comments:

PIEZOMETER INSTALLATION RECORD

Well # Philip Environmental Services, Inc. Page _1 of _1 4000 Monroe Rd. EPFS PITS Project Name Farmington, NM 87401 16297 Phase 6004 (506) 326-2262 FAX (506) 326-2388 **Project Number** Site Location CM CHANCE **On-Site Geologist** Elevation SW of PZ Personnel On-Site D CHARLEY Well Location **GWL Depth Contractors On-Site** Installed By K PADILLA Client Personnel On-Site 10128/96 Date/Time Started 10/28/96 Date/Time Completed

Borehole #

PZ - J

pths in Reference to Gro	und Surface		—	=	Top of Protective Casing	NA
Item	Material	Depth (feet)			Top of Riser Ground Surface	
Top of Protective Casing						
Bottom of Protective Casing Top of						
Permanent Borehole Casing		N/A				
Bottom of Permanent Borehole Casing		N/A				
Top of Concrete						
Bottom of Concrete						
Top of Grout						
Bottom of Grout						
Top of Well Riser						
Bottom of Well Riser						
Top of Well Screen					Top of Seal	
Bottom of Well Screen			X X X X	X X		
Top of Peltonite Seal			X X X X	X X X X		
Bottom of Peltonite Seal			X X	X X	Top of Gravel Pack	6.51
Top of Gravel Pack					Top of Screen	0.3
Bottom of Gravel Pack	······································					
Top of Natural Cave-In						
Bottom of Natural Cave-In	· · · · · · · · · · · · · · · · · · ·			41		
Top of Groundwater				၂	Bottom of Screen	11.51
Total Depth of Borehole					Bottom of Borehole	

Comments:			 	 	 	
	 		 	 	 	

Geologist Signature



SAMPLE IDENTIFICATION

	Field ID	Lab ID
• SAMPLE NUMBER:	CMC234	947965
MTR CODE SITE NAME:	94298	Vaidez Gas Unit A #1E
SAMPLE DATE TIME (Hrs):	10/28/96	1325
PROJECT:	Ge	oprobe
DATE OF BTEX EXT. ANAL.:	10/29/96	10/29/96
TYPE DESCRIPTION:	PZ1	Water

Field Remarks:			

RESULTS

PARAMETER	RESULT	UNITS		QUALIFI	:RS	
			DF	α		
BENZENE	<1	PPB				
TOLUENE	5.73	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	5.73	PPB				

-BTEX is by EPA Method 8020 -

The Surrogate Recovery was at	115	% for this sample	All QA/QC was acceptable.
DF = Dilution Factor Used		_	

Narrative:			
	ρ		

Approved By:



SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC235	947966
MTR CODE SITE NAME:	94298	Valdez Gas Unit A #1E
SAMPLE DATE TIME (Hrs):	10/28/96	1430
PROJECT:	G€	oprobe
DATE OF BTEX EXT. ANAL.:	10/29/96	10/29/96
TYPE DESCRIPTION:	PZ2	Water

Field Remarks:	

RESULTS

PARAMETER	RESULT	UNITS	UALIFIERS	1
BENZENE	<1	PPB	0	
TOLUENE	<1	РРВ		
ETHYL BENZENE	<1	PPB		ļ
TOTAL XYLENES	<3	PPB		
TOTAL BTEX	<6	PPB		

-BTEX is by EPA Method 8020 --

The Surrogate Recovery was at	113	% for this sample	All QA/QC was acceptable
DE - Dilution Factor Head			

Narrative:			
Approved Du	S. Sind	Date: Co/3Nale	



SAMPLE IDENTIFICATION

	Pield (D	Leb ID
SAMPLE NUMBER:	CMC236	947967
MTR CODE SITE NAME:	94298	Veldez Gas Unit A #1E
SAMPLE DATE TIME (Hrs):	10/28/96	1505
PROJECT:	Ge	oprobe
DATE OF BTEX EXT. ANAL.:	10/29/96	10/29/96
TYPE DESCRIPTION:	PZ3	Water

Field	Remarks:
-------	----------

RESULTS

PARAMETER	RESULT	UNITS		QUALIFIE	RS	
BENZENE			ĐF			
TOLUENE	<1	PPB PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	РРВ				
TOTAL BTEX	<6	PPB				

-BTEX is by EPA Method 8020 -

The Surrogate Recovery was at DF = Dilution Factor Used

114

% for this sample All QA/QC was acceptable.

Narrative:

Approved By: Jakan Jakan

947966.XLS,10/30/96

1997 GROUNDWATER ANALYTICAL

DRILLING INITIAL WELL SAMPLE

S EIL JSD Natural Gas Company

CHAIN OF CUSTODY RECORD

ECEIVED OF LABORATORY BY: (Signature) VALDEZ GAS LINIT A #18 CH - 94298 EL PASO NATURAL GAS COMPANY P. O. BOX 4990 FARMINGTON, NEW MEXICO 87499 FAX: 505-599-2261 h6868 FIELD SERVICES LABORATORY RECEIVED BY: (Signature) J REMARKS # 41A CONTRACT LABORATORY P. O. NUMBER 155146125 HAMMONAD DATE/TIME DATE/TIME RESULTS & INVOICES TO: 505-599-2144 # SEONENCE REQUESTED ANALYSIS RELINQUISHED BY: (Signature) RELINQUISHED BY: (Signature) GIA BAJ X3T8 0208 A93 × × 1.814 A93 HqT SAMPLE 39YT SAMPLE RECEIPT REMARKS TOTAL NUMBER OF CONTAINERS 2 2 RECEIVED BY: (Signature) RECEIVED BY: (Signature) TRIP BLANK CHARGE CODE 12-51 FIELD ID RT3 RTZ 5-21-97 1435 DATE DATE/TIME PROJECT NAME
PIT Closure Project MATRIX H20 1420 TIME 970479 5-15-19 1355 S:51-91 103S SAMPLETS: (Signatura) "Dampso 970480 Bz1.71 DATE REQUESTED TURNAROUND TIME: O RUSH 970478 PROJECT NUMBER # 24324 <u>2</u>80 CARRIER CO. O ROUTINE BILL NO:





	SAMPLE	IDENTIFICAT	TION		
	Fie	ld ID		Ļab ID	
SAMPLE NUMBER:	R	Т3	_	970479	
MTR CODE SITE NAME:	94	298	Valdez	Gas Unit A #1E (CH)	
SAMPLE DATE TIME (Hrs):	5/2	1/97		1355	
PROJECT:		Phase W Drilli	ng - Initial		F1/30/97
DATE OF BTEX EXT. ANAL.:	5/2:	3/97		5/23/97	19/17
TYPE DESCRIPTION:	Monite	or Well	 	Water	
Field Remarks:		RESULTS			
PARAMETER	RESULT	UNITS	DF	QUALIFIERS	
BENZENE	15.5	PPB	2	D	
TOLUENE	<1	PPB	2	D	
ETHYL BENZENE	<1	РРВ	2	D	
TOTAL XYLENES	<3	PPB	2	D	
TOTAL BTEX	15.5	PPB			
The Surrogate Recovery was at DF = Dilution Factor Used	96.5	for this sample	All QA/QC	was acceptable.	
The "D" qualifier indiciates that the a	nalyte calculated	is based on a seco	ondary diluti	on factor.	
Varrative:					
approved By:	wh	<u> </u>	Date:	6/3/97	

970479,6/2/97

Well Number MW	Serial No. WDPD-	FS GW PITS
PHLIF	ENVIRONMENTA	Project Name PPFS CW

WELL DEVELOPMENT AND PURGING DATA

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2	\dashv
פאכו	Page _
_ _	_

FILLD SCENICES

Project No. 17520

Project Manager Cory CHANCE

Phase.Task No. 603.

J GAS UNIT A#18 Site Name VALDEZ

PASO

Client Company EL

Development Criteria

Stabilization of Indicator Parameters

Other

Methods of Development

NN Site Address SAN JUAN CO.

XpH Meter Instruments

Serial No. (If applicable)

OYSTRE K Conductivity Meter

Gallons to be

Water Volume in Well

Removed

Gallons

Cubic Feet

□ DO Monitor

8.69

Height of Water Column in Well (feet) nitial Depth to Water (feet) 9.76

Diameter (inches): Well_

200

18.45

Water Volume Calculation Initial Depth of Well (feet) __ **Gravel Pack**

OYSTER P **d** Temperature Meter

Other

GROUND Water Disposal ΝO

28.35

Total

Drilling Fluids Gravel Pack Well Casing E E

Ø Bottom Valve □ Double Check Valve □ Stainless-steel Kemmerer

☐ Submersible

☐ Peristaltic

Other,

☐ Centrifugal

Water Removal Data

		3												
		Development Method		Removal Intake Depth Rate (feet)	Mater Depth	Water Volt	Water Volume Removed (gallons)		Product Volume Removed (gallons)	Temperature (°C)	На	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/t.)	Comments
Date	Time	Pump Bailer	-			Increment	Cumulative	Incremen	Incremen Cumulative					
5.21.97 1201	1201	×				5	5			13.9	6.94	oohl		DARK BROWN- SILTY
5.21.97	1216	×				5	01			14.0	6.85	2320		DARK BRUNN-SILTY
5.21.97	/253	×				h	<i>h/</i>			13.1	16.91	09/12		OARK BROWN - SILT
5.21.97	1330	×				h	8/			13.2	96.90	2460		DARK BROW SILTY
and single formation that the development class	owil hous	1000041104	o toomoole	iloria are me	 -									

Circle the date and time that the development criteria are met.

GAL. LET RECOVEE 30 MIN. BALED AN ADDITIONAL 4 CAL. WELL BAILED DRY þ Comments WELL BAILED DRY AT

MINI BAILED ANOTHER Y GAL. WELL BAILED DRY AGAIN. LET RECOVER & SAMPLED. RECOVER AGAIN- LET

Developer's Signature(s)_

Date

Reviewer

Date S-21-97

PHI	LI	Location	on No	Mu	ر – ر	\		_		V	V A	TER S	SA	MPLI	NG DATA
ENVIRON	MENTA	Serial N	o. <u>WSD-</u>									G	roup	List Nun	nber
Sample Ty	/pe:	፟፟ ⊠ Groundv	vater	□ Surfa	ace V	Vate	r 🗅	Oth	ner					Date<	5-21.97
roject Na	me_S	PES GW	_											_	7520
roject Ma	anager_	CORY CH	HANCE									P	hase	.Task No	.6003.77
ite Name	VAL	DEZ G	AS	UNIT	_A										
Requeste Depth Requeste	d Samp Interva d Wait I	ifications ling al (feet) Following /Purging (he	TOP 3		_	lr	Time Initia	e Ela	ater De	rom epth	Final	9	16_	TOR	(hours) <u>25 /</u>
Vater Q	uality/	Water Co	llection	n								DO = Diss	olved	Oxygen; C	ond. = Conductivit
Date	Time	Sample: Initials	w	ater Qu	ality	Reac	lings			W	ater C	Collection	Data	1	Notes (Explain in Commer Below)
			Temp.	рН		O g/L)	Conc (µmhos,	- 1	Volume Removed (gallons)	4 1	:moval Rate al/min)	Pump intake Depth (ft)	Bail	Final Water Depth ft)	
	SEE	WELL	Den	ELOPA	EN.		AN	٥	fure	SIN	6	DATA	51	EET	
										+					
	 		-	 				\dashv		+					
		_		 	 	\dashv		\dashv		╁					
Analyti Paramete	cal	(Containe	er		Filt	eld ered		l>SO4: A	Co Du Colle	oled ring ection) = Other (5	Specify ———	Commer	
BTEX		Number 2	Type	Volume		Yes	No X		Н	Yes X	No	SAMA	۾ع ر	AT /	355
<u> </u>			- 									Site			
									_						
				ļ											
				<u> </u>	i										
		NONE							hain-of-	·Cus	tody	Form Nur	nber	EFF	
			<u> </u>												
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Form A0202 Rev.5/10/95

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El Paso Natural Gas Company

2055 4

\$ 1. 1. 2. INLOSO GAS UNTA MEMO 94298 MW-1 Received by: (Signature) Received by: (Signature) Remarks Date Results Reported / by: (Signature) Date/Time Date/Time Requested Analysis Remarks: Relinquished by: (Signature) Relinquished by: (Signature) 8/3/97 0750 CHAIN OF CUSTODY RECORD noileviese i eupinhae i Oate/Time Type and No. of Sample Contain-ers 73 Received for Laboratory by: (Signature) Received by: (Signature) Received by: (Signature) BANKIEN PIDEUNE 970854 Sample Number Project Names 868 KB Date/Time Date/Time Time Comp. GRAB ATTES RE-97 1535 Relinquished by: (Signature) Relinquisfied by: (Signature) Relinquished by: (Signature) Samplers: (Signature) Date Air Bill No.: Project No. Carrier Co: ALTERNY .





SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970854
MTR CODE SITE NAME:	94298	Valdez A #1E-CH
SAMPLE DATE TIME (Hrs):	8/12/97	1535
PROJECT:	Sample 4 -	1st Quarter
DATE OF BTEX EXT. ANAL.:	8/13/97	8/13/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:	

RESULTS

PARAMETER	RESULT	UNITS		QUALIF	ERS.	
			DF	<u> </u>	T	
BENZENE	6.01	РРВ				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	6	PPB				

-BTEX is by EPA Method 8020 --% for this sample All QA/QC was acceptable. The Surrogate Recovery was at 87.6 DF = Dilution Factor Used

Narrative: du Land

970854BTEX,8/27/97





Field Services Laboratory Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970854	
DATE SAMPLED:	08/12/97	
TIME SAMPLED (Hrs):	1535	
SAMPLED BY:	DB	
MATRIX:	Water	
METER CODE:	97298	
SAMPLE SITE NAME:	Valdez A #1-CH	\Box
SAMPLE POINT:	MW-1	

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	6.86	Units	08/14/97
Alkalinity as C0 ₃	0	РРМ	08/14/97
Alkalinity as HC0 ₃	1830	PPM	08/14/97
Calcium as Ca	365	PPM	08/13/97
Magnesium as Mg	73.7	PPM	08/13/97
Total Hardness as CaC0 ₃	1,215	PPM	08/13/97
Chloride as Cl	152	PPM	08/13/97
Sulfate as S0 ₄	157	PPM	08/13/97
Fluoride as F	<0.1	PPM	08/14/97
Nitrate as N0 ₃ -N	<0.6	PPM	08/13/97
Nitrite as N0 ₂ -N	<0.6	PPM	08/13/97
Ammonium as NH ₄ ⁺	37.0	PPM	08/13/97
Phosphate as PO ₄	<0.6	PPM	08/13/97
Potassium as K	14.1	PPM	08/13/97
Sodium as Na	287	PPM	08/13/97
Total Dissolved Solids	2,020	PPM	08/14/97
Conductivity	2,920	umhos/cm	08/14/97
Anion/Cation %	2.1%	%, <5.0 Accepted	09/09/97

Lab Remarks:

Reported By: M

Approved By: John Jarolla



FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

970854 **SAMPLE NUMBER:** 08/12/97 SAMPLE DATE: 0015 SAMPLE TIME (Hrs): SAMPLED BY: D. Bird Water MATRIX: 94298 METER CODE: Valdez Gas Unit A #1E SAMPLE SITE NAME: SAMPLE POINT: MW-1

REMARKS:

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WOCC LIMIT (mg/L)
ARSENIC (As)	0.033	0.100
BARIUM (Ba)	0.75	1.00
CADMIUM (Cd)	<0.0002	0.010
CHROMIUM (Cr)	<0.004	0.050
LEAD (Pb)	<0.003	0.050
MERCURY (Hg)	<0.0002	0.002
SELENIUM (Se)	<0.011	0.050
SILVER (Ag)	<0.0004	0.050

References:

Method 3015, Microwave Assisted Acid Digestion of Aqueous Samples and Extracts, Test Methods for Evaluating Solid Waste, SW-846, Sept., 1994.

Method 7061A, Arsenic (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Method 7081, Barium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.

Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.

Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.

Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.

pd 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.

od 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Approved By: John Labelu. Reported By: CV



QUALITY CONTROL REPORT

Sample ID: 970854 Date Reported: 09/05/97

STANDARD REFERENCE MATERIAL

Analyte	Found Result (mg/L)	Known Value (mg/L)	% Recovery
Arsenic	0.031	0.032	94.4%
Barium	0.064	0.065	98.8%
Cadmium	0.0013	0.0012	110%
Chromium	0.008	0.007	103%
Lead	0.044	0.042	105%
Mercury	0.0041	0.0046	89.3%
Selenium	0.040	0.041	98.8%
Silver	0.0062	0.0068	91.2%

DUPLICATE ANALYSIS (mg/L)

	DOI DONIE MINE IO	io (ing/c)	
Analyte	Original Sample Result	Duplicate Sample Result	%RPD
Arsenic	0.008	0.008	0.8%
Barium	0.106	0.114	7.3%
Cadmium	ND	ND	NA NA
Chromium	0.004	0.005	4.7%
Lead	ND	ND	NA .
Mercury	ND	ND	NA I
Selenium	ND	ND	NA I
Silver	ND	ND	NA NA

SPIKE ANALYSIS (mg/L)

	OF THE PROPERTY.	(1119/2)		
Analyse	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	0.008	0.118	0.100	107%
Barium	0.106	0.997	1.00	89.1%
Cadmium	ND	0.0105	0.010	99.7%
Chromium	0.004	0.052	0.050	94.9%
Lead	ND	0.054	0.050	102%
Mercury	NĐ	0.0017	0.0020	89.0%
Selenium	ND	0.054	0.050	105%
Silver	ND	0.0393	0.005	78.4%

METHOD BLANK

	METHOD BEATER	
Analyte	Found Result (mg/L)	Defection Level (mg/L)
Arsenic	l ND	0.004
Barium	l ND	0.019
Cadmium	ND	0.0002
Chromium	ND ND	0.004
Lead	ND ND	0.003
Mercury	ND	0.00019
Selenium	ND	0.011
Silver	ND	0.0004

ND: Not Detected at stated detection level.

NA: Not Applicable.

Reported By: MN

Approved By:

Solution Date

Date: 9-8-97



Well Development and Purging Data

Development Purging	
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CAS UNIT	of Water Removel
WLDE	Development Criteria X 3 to 5 Casino Volumes of Water Removel
Site Name_	Developn

3 to 5 Casing Volumes of Water Removel	Stabilization of Indicator Parameters	Other
X		

Stabilization of Indicator Parameter Other	

pment	Bailer Bottor		Stain
Methods of Development	Pump Centrifugal] Submersible] Peristaltic
Metho	Ц	L	

X Bottom Valve	Double Check	Stainless-stee
X		
Centrifugal	Submersible	Derietaltic

gu	ing Volumes of Water Removei	Water Vo	Water Volume Calculation	ulation	
o of	n of Indicator Parameters	Initial Depth of	Initial Depth of Well (feet)	20.40	
		Initial Depth to Water (feet)	Water (feet)	1255	
		Height of Water	Height of Water Column in Weil (feet)	(feet) Z	582
Ž,	velopment	Diameter (inches): Well	se): Well	Gravel Pack	8
	Bailer		Water Volume in Well	ne in Well	B
_	X Bottom Valve	Item	Cubic Feet	Gallons	Rei
용	Double Check Valve	Well Casing		5.2	5)
	Stainless-steel Kemmerer	Gravel Pack			
		Drilling Fluids			

Instruments A 3H Meter

Water Volume Calculation

	Met
Monitor	luctivity
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	X

Meter	
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X	2

S remperature Meter KIT A sther BCTS KIT

Water Disposal KUTZ SSpARATOR

Water Removal Data

Gther

Water Removal Data	מאסווט	ם בשום														
		Development	_	Removal	Intake	Intake Ending Water	Water Volume	olume	Product	Product Volume	Temperature		Conductivity Dissolved	Dissolved		
Date	Time	Method	8	Rate	Depth	Depth	Removed (gal)	ed (gal)	Removed (gallons)	(gallons)	ပ္	표	hmho/cm Oxygen	Oxygen	Comments	
		dwnd	Bailer	(gal/min)	(feet)	(feet)	Increment	Increment Cumulative Increment Cumulative	Increment	Cumulative				mg/L		
8-12 1451	1462										25.5 6.80	22.9	5461			
81397 1500	1500						50 50	5.0			206	6.72	2470			
815.97 1515	1212						2.0	7.0			19.7	623	2390	51		
COMMENTS WELL BAILED OPY O	7HE	122/1	181	711CE	1 OP	1070	7.0 SALLONS.	3/12·				;				
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110 CO ONY	Bied
WELL BA	dennio
Comments 746	Developer's Signature 6

Date \$12-97 Reviewer

SAMPLE 4 2MOSTR

El Paso Natural Gas Company

A 2132

WALDEZ GAS UNITA #16 Received by: (Signature) Received by: (Signature) Remarks Date Results Reported / by: (Signature) Date/Time Date/Time Requested Analysis Remarks: Relinquished by: (Signature) Relinquished by: (Signature) 21/0/20 CHAIN OF CUSTODY RECORD Date/Time olievesela Lechologia euplologia 400 Type and No. of Sample Contain-Received for Laboratory by: (Signature) ঠ Date: 11-6-9+7 Received by: (Signature) Received by: (Signature) Sample Number Project Name MC # 94298 16697 1712 Date/Time Date/Time unio Bird Time Comp. GRAB WATER 11-6-91 1420 Relinquished by: (Signature) Relinquished by: (Signature) Relinguished by: (Signature) Samplers: (Signature) Date Air Bill No.: Carrier Co: MATRIX



SAMPLE IDENTIFICATION

_	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971193
MTR CODE SITE NAME:	94298	Valdez Gas Unit A #1E
SAMPLE DATE TIME (Hrs):	11/6/97	1420
PROJECT:	Sample 4	2nd Quarter
DATE OF BTEX EXT. ANAL.:	11/7/97	11/7/97
TYPE DESCRIPTION:	MW-1	Water

Field Remarks:	 		
	 RESULT	<u> </u>	

PARAMETER	RESULT	UNITS		QUALIF	IERS	
			DF	Q		
BENZENE	2.89	PPB				
TOLUENE	<1	PPB			ļ	
ETHYL BENZENE	<1	PPB			ļ	
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	3	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at	95.5	% for this sample	All QA/QC was acceptable
DF = Dilution Factor Used		_	

Narrative:					
Approved By:	John Lalle	971193BTEXMW,11/10/97	Date: _	11/12/97	



Well Development and Purging Data

					<u></u>	:			הוא	Jara			
Site Nam	e DAC	Site Name DALOEZ SAS UNIT AME	545 L	MIT	J#B		□ \	Development Purging	Well	Well Number MW Meter Code 94298	11M-1		
Development Criteria	nent Cri	iteria											
X	3 to 5 Casing	3 to 5 Casing Volumes of Water Removel	ater Removel		Water Vo	Water Volume Calculation	culation			instru	Instruments		
	other	otabilization of indicator Parameters Other	meters	1	Initial Depth of Well (feet) Initial Depth to Water (feet)	Well (feet) Water (feet)	70.56				pH Meter		
Methods	of Deve	Methods of Development			Height of Water Column Diameter (inches): Well	Height of Water Column in Well (feet)	ell (feet) Z.	782		י גבשע	Conductivity Meter	ty Meter	
[Pump	Bailer				Water Volume in Well	me in Well	Gallons to be	a a	ŊĽ		Other OO CHEMETS KIT	AT 1/1
	Centrifugal	X Bottom Valve	Valve		ltem	Cubic Feet	Gallons	Removed		S	7	111111111111111111111111111111111111111	(1)
	Submersible		Double Check Valve	ø	Well Casing		5.2	15.5		Water	Water Disposal		
Ò	Peristaltic	Stainle	Stainless-steel Kemmerer	merer	Gravel Pack					5	58 29	KUTO SEMARATOR	2
					Drilling Fluids								
	Other				Total								
Water Removal Data	moval	Jata											
	-	Douglopmont	L Borne	1.4-1									
Date	Time	letho	Rate	Depth	Ending Water Depth	Water Volume Removed (gal)	Nater Volume Removed (gal)	Product Volume Removed (gallons)	me Temperature	ature	Conductivity		4.00
*	-	Pump Bailer	(gal/min)	(feet)	(feet)	Increment	lative	Increment Cum	ě			mg/L	
11-647	1334								1,55/	1 674	27/6		
146.97	134/					30	3.0		17.	999	3100		
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Developer's Signature_	gnature_	Lymnie	18	100			۵	Date //-6.7/ Reviewer	Reviewer	'			C2/4/11 oten