Indian Wells Valley Water Project Geochemical Water Sampling Data

Produced by

Charles Pierce

1995 - 1996

Isotope ratio data for samples submitted by CSU Bakersfield (cont)

SAMPLE	GGCID	Water			
		$\delta^{18}O$	$\delta^{18}O$ Dup	δD	δD Dup
		‰			
BR-10 D/M	3374-36	-13.1		-103	-102
BR-10 D	3374-37	-10.8		-93	-93
112495 PW	3374-38	-12.0		-94	-94
112495 JBW	3374-39	-11.9		-95	-96
112095 GVC	3374-40	-11.4	-11.4	-87	-86
112295 LMC	3374-41	-11.4		-81	-80
111895 IWC	3374-42	-11.3		-87	-88
012896 4KRG	3374-43	-6.6		-57	-58
012896 5MFR	3374-44	-12.4		-96	-96
011396 SHC	3374-45	-11.9		-95	-96
012896 5MFRL	3374-46	-12.2		-96	-95
012896 DFFR	3374-47	-11.5		-93	-93
120295 9MC	3374-48	-11.4		-92	-92
010696 NNC	3374-49	-11.8		-91	-91
012896 3.5KRG	3374-50	-5.2	-5.3	-50	-50
012896 4.5KRG	3374-51	-7.9		-69	-70
012896 3KRG	3374-52	-4.6		-49	-49
012896 5.8KRG	3374-53	-9.8		-67	-68
112195 5MC	3374-54	-12.2		-97	-97
STANDARD					
NH				35	
DL				-215	
NH-DUP				32	
DL-DUP				-214	
NI		-11.7			
NI-DUP		-11.7			

* Data are not available due to the presence of unknown contaminant(s)

3374ISO4.TBL

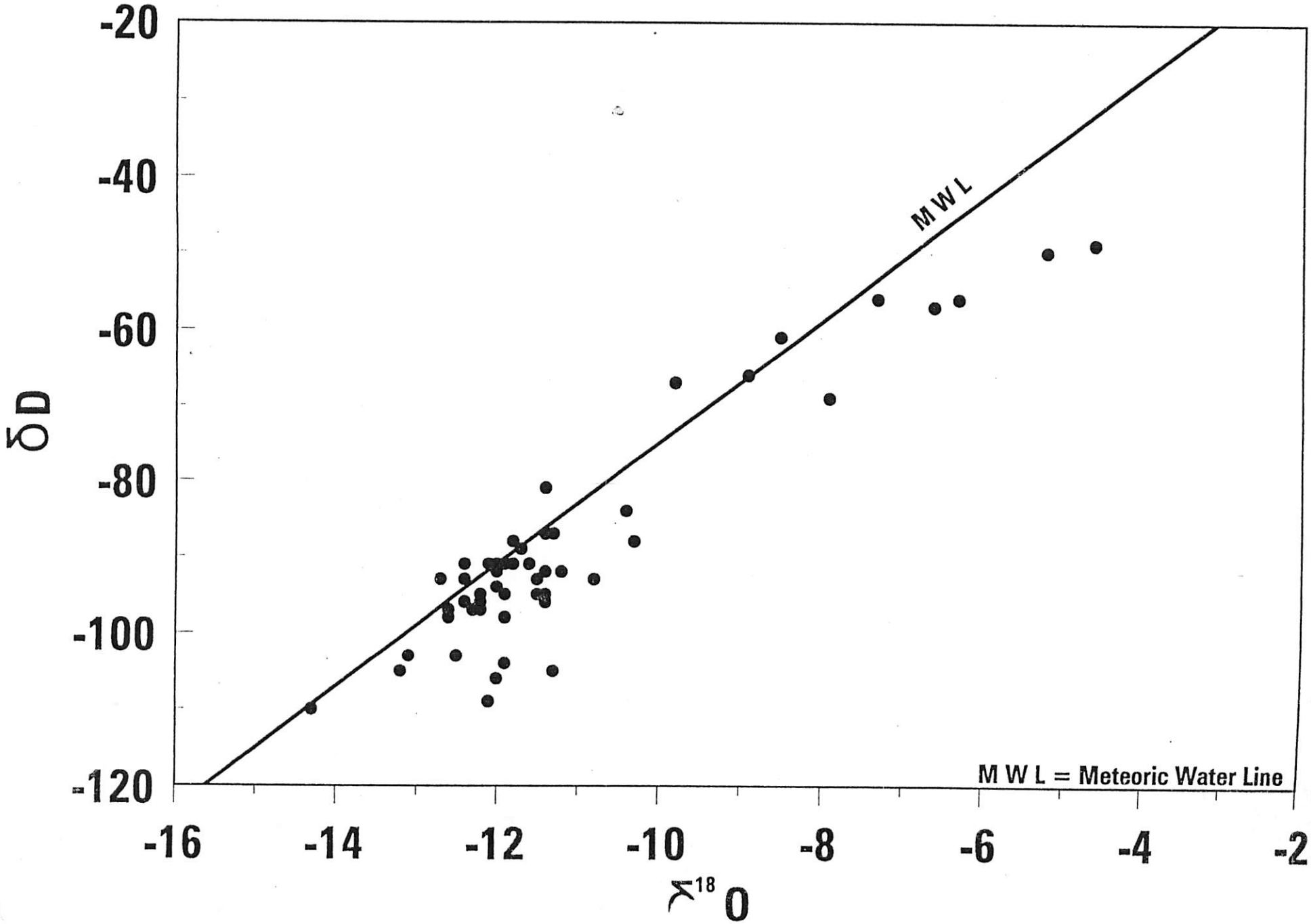
Supervisor

Isotope ratio data for samples submitted by CSU Bakersfield

SAMPLE	GGCID	Water			
		$\delta^{10}O$	$\delta^{18}O$ Dup	δD	δD Dup
		‰			
NR-1 S	3374-1	-11.9		-98	-95
NR-1 D	3374-2	*		-94	-91
NR-2 S	3374-3	-12.3		-97	-95
NR-2 M	3374-4	-13.2		-105	-106
NR-2 D	3374-5	-12.5		-103	-102
KNECHT WELL	3374-6	-14.3		-110	-109
HORSE CYN SPR	3374-7	-11.6		-91	-90
COW HEAVEN SPR	3374-8	-12.7		-93	-93
MCIVERS SPR	3374-9	-12.0		-92	-91
BIRD SPR	3374-10	-12.2	-12.3	-95	-95
SOLDIER SPR	3374-11	-12.6		-97	-97
IND WL CYN MSPR	3374-12	-12.0		-91	-91
SAGE CYN STREAM	3374-13	-12.1		-91	-91
BOULDER CYN SPR	3374-14	-11.9		-91	-91
IND WL CYN SPR	3374-15	-12.4		-91	-91
SAGE CYN SPRING	3374-16	-12.4		-93	-93
BLOOMFIELD RNCH	3374-17	-11.7		-89	-87
HORSE CYN WELL	3374-18	-11.8		-88	-87
WALKER PASS SPR	3374-19	-12.6		-98	-94
FREEMANCYN 4000	3374-20	-6.3	-6.2	-56	-56
FREEMANCYN 4500	3374-21	-7.3		-56	-54
FREEMANCYN 5000	3374-22	-8.5		-61	-60
FREEMANCYN 5500	3374-23	-8.9		-66	-66
BR-6 S	3374-24	-11.4		-96	-95
BR-6 M	3374-25	-11.3		-105	-102
BR-6 D	3374-26	-11.9		-104	-105
BR-5 S	3374-27	-11.2		-92	-91
BR-5 M	3374-28	-12.0		-106	-105
BR-5 D	3374-29	-12.1		-109	-106
112095 SAND CYN	3374-30	-10.4	-10.6	-84	-85
112195 DFC	3374-31	-10.3		-88	-88
112695 SMC LWR	3374-32	-11.9		-95	-96
112295 LWM	3374-33	-11.4		-81	-80
BR-10 S	3374-34	-11.5		-95	-94
BR-10 S/M	3374-35	-11.4		-95	-95

112695 SMCL
112295 LMW

Oxygen and Hydrogen Isotopic Composition of Water Samples submitted by CSU Bakersfield



3374MWL.PRE

June 22, 1995

Isotope ratio data for samples submitted by US Navy, China Lake, CA

SAMPLE	GGCID	Water			
		$\delta^{18}O$	$\delta^{18}O$ Dup	δD	δD Dup
		‰			
032895-LL CYN	3009-1	-12.0		-95	-96
032895-SSP	3009-2	-12.0		-94	-94
032895-BR1-DP	3009-3	-13.3		-103	-103
040295-DF	3009-4	-12.1		-96	-97
040295-NN	3009-5	-11.4		-89	-89
040295-NM LOWER	3009-6	-11.6		-93	-94
040295-KM	3009-7	-14.7		-112	-112
040295 KMECHT WELL	3009-8	-13.7		-107	-107
040295 IW CYN MINE SPR	3009-9	-11.8		-89	-89
040795-BR1-MD	3009-10	-13.5	-13.2	-102	-102
040795-BR1-MS	3009-11	-13.6		-103	-103
040795-BR1-S	3009-12	-13.3		-95	-95
040795-SC-S	3009-13	-11.3		-88	-89
040895-GV	3009-14	-11.7		-88	-90
040895-SAND	3009-15	-11.8		-85	-87
040895 DOVE SPR	3009-16	-11.1		-87	-89
040895 COW HVN CYN	3009-17	-12.5		-92	-93
040995 GENTRY WELL	3009-18	-11.5		-87	-88
040995 IW CYN STRM	3009-19	-11.5		-89	-88
040895 WALKER PASS SPR	3009-20	-12.2	-12.2	-92	-92
041495-BR10-S	3009-21	-11.9		-92	-94
041495-BR10-MS	3009-22	-11.9		-96	-97
041495-BR10-DM	3009-23	-11.7		-96	-97
041495-BR10-D	3009-24	-11.7		-92	-92
041495-24/39-34D	3009-25	-11.0		-94	-97
041595-25/39-31RI	3009-26	-12.4		-97	-96
041795-BR2-D	3009-27	-13.3		-103	-103
041895-BR2-M	3009-28	-12.9		-99	-102
041895-BR2-S	3009-29	-13.0		-106	-104
041995-BR3-SHALLOW	3009-30	-12.9	-12.8	-103	-103
041995-BR3-MED	3009-31	-11.8		-89	-96
042095-BR3-DEEP	3009-32	-11.2		-95	-96
042195-NR2-SHALLOW	3009-33	-12.2		-96	-95
042195-NR2-MED	3009-34	-12.8		-106	-104
042195-NR2-DEEP	3009-35	-12.1		-103	-104
042095-BR13-8	3009-36	-11.6		-92	-92
042195-25/39-30L1	3009-37	-10.4		-89	-92
042195-BR13-1	3009-38	-11.9		-97	-97
042195-BR13-3	3009-39	-11.4		-86	-96
040195-NM-U	3009-40	-12.6		-97	-98
042095-2-3600	3009-41	-8.9		-67	-69
042095-3-4000	3009-42	-8.2		-63	-64

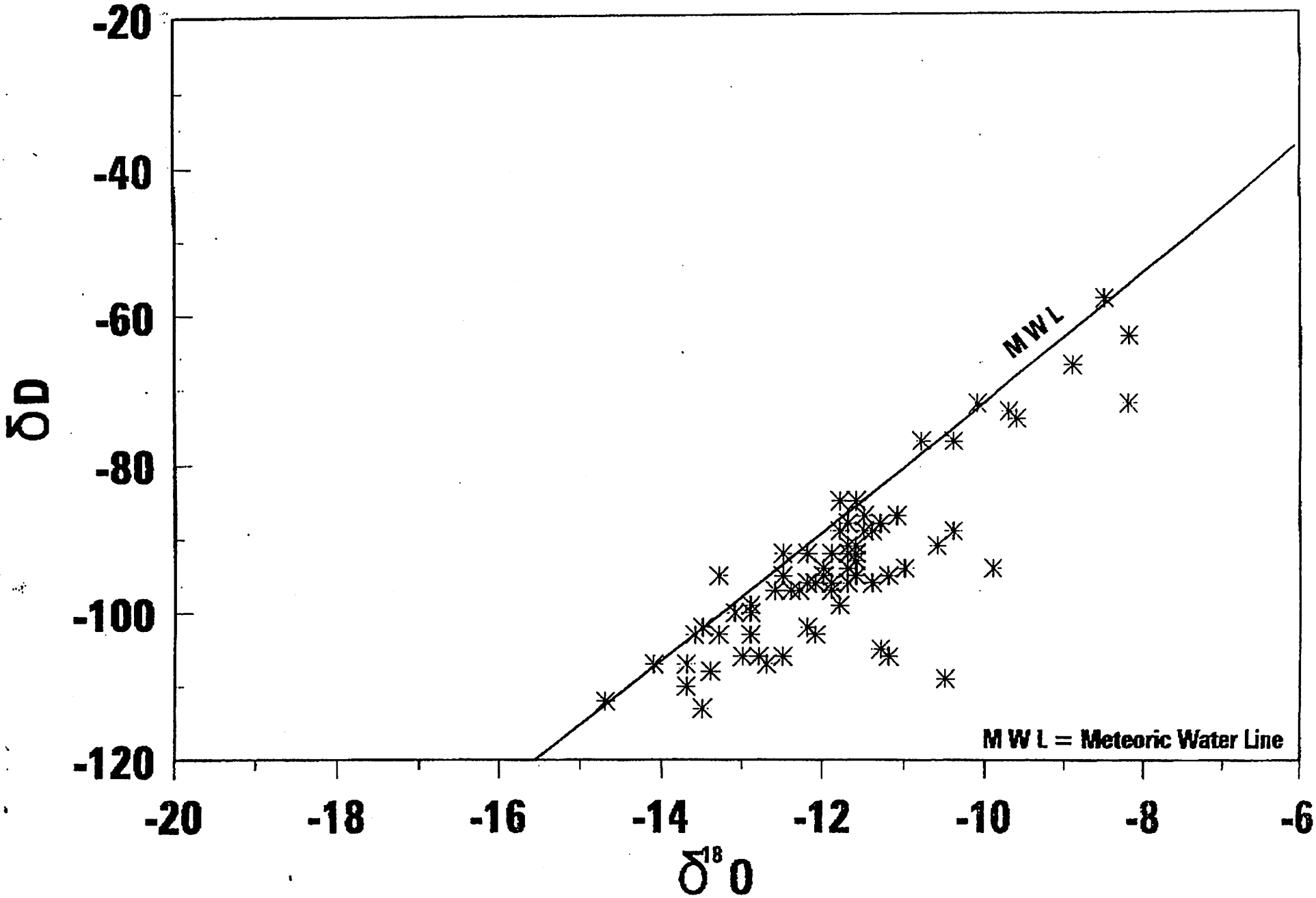
Isotope ratio data for samples submitted by US Navy, China Lake, CA (cont)

SAMPLE	GGCID	Water			
		$\delta^{18}O$	$\delta^{18}O$ Dup	δD	δD Dup
		‰			
042085-5-4800	3009-43	-9.6		-74	-75
042085-6-5200	3009-44	-9.7		-73	-73
042085-8-6400	3009-45	-8.2		-72	-72
042285-SAGE CYN CRK	3009-46	-11.7		-91	-91
042285-BLDR CYN CRK	3009-47	-11.6		-91	-91
042395-HRS CYN SPR	3009-48	-11.7		-94	-93
042395-BIRD SPR	3009-49	-12.0		-96	-98
042495-NR1 DEEP	3009-50	-12.2		-102	-103
042595-NR1 SHALLOW	3009-51	-11.6	-11.6	-95	-95
042595-MW-32 SHALLOW	3009-52	-12.5		-95	-94
042595-MW-32 MED-SHAL.	3009-53	-13.1		-100	-100
042695-MW-32 MED-DEEP	3009-54	-12.9		-100	-102
050495-BR4	3009-56	-13.7		-110	-111
050495-LITTLE LAKE	3009-57	-13.5		-113	-114
050595-BR6-SHALLOW	3009-58	-10.6		-91	-91
050595-BR6-MEDIUM	3009-59	-11.2		-106	-105
050595-BR6-DEEP	3009-60	-11.3	-11.3	-105	-105
050695-LL-W2	3009-61	-13.4		-108	-108
050695-LL-P1	3009-62	-12.7		-107	-110
050695-LL-W4	3009-63	-12.5		-106	-106
050695-LL-S1	3009-64	-9.9		-94	-94
050695-LL-W3	3009-65	-14.1		-107	-109
050695-LL-S2	3009-66	-10.5		-109	-108
051395-JMPR	3009-67	-12.3		-97	-97
F Cyn PPT 4500	3009-68	-9.6		-68	-68
F Cyn PPT 5000	3009-69	-10.4		-77	-73
F Cyn PPT 5500	3009-70	-10.1	-10.2	-72	-72
F Cyn PPT 6000	3009-71	-11.8		-86	-86
F Cyn PPT 6500	3009-72	-10.8		-77	-77
STANDARD					
DL				-215	
NH				33	
NH-Dup				35	
DL-Dup				-214	
NI		-11.6			
NI-Dup		-11.8			

3[illegible] SO4.TBL

Supervisor

Oxygen and Hydrogen Isotopic Composition of Water Samples submitted by US Navy, China Lake, CA



Established Standard Isotope Ratio Values

Standard	δD	$\delta^{18}O$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{34}S$	Ref.
	‰					
NH	34					SMOW
DL	-215					SMOW
NI		-11.6				SMOW
NBS	-120		-29.80			SMOW, PDB
STD	-150		-31.26			SMOW, PDB
TS		-2.2	-1.95			PDB
TN				-4.7		Air N_2
Air				0.0		Air N_2
KNN				-3.1		Air N_2
KN				-3.6		Air N_2
SW					20.6	CDT

Standardized QA/QC Acceptance Limits

Isotope Ratios	MS Internal Precision ‰	Duplicate Reproducibility ‰
$\delta^{13}C$ (as CO_2)	0.01	±0.10
$\delta^{18}O$ (as CO_2)	0.01	±0.15
$\delta^{15}N$ (as N_2)	0.01	±0.15
$\delta^{34}S$ (as SO_2)	0.02	±0.15
δD (as H_2)	0.20	±1.50

Samples below a threshold volume (usually 0.5 ml) will result in less accurate measurements.

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ► 4

To Jim Ostrick	From Steve Bjornstad
Dept./Agency Geology/Chem	Phone # 619 939 4048
Fax # 805 664-2040	Fax # 619 939 2449

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

iwv water sample data

04-Dec-95

Id Number:	1
Sample Number:	112095GVC
Sample Time:	12:08:00
Sample Date:	11/20/1995
Well:	No
Stream:	Yes
Latitude:	35,43,50 N
Longitude:	117,54,19 W
Location:	Grapevine Canyon,Beween aquaducts, 1st turnoff to
Elevation:	3400
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	17.6
Conductance of water:	906
ph:	7.48
Acid Units at ph 4:	237.777
Alkalinity:	580.177

		Grapevine Canyon			11/20/1995			
					Took 2 2l bottles			
	Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
	17.6		900					
	18							
	19.1	7.48						
	50 ml water sample from non-acid bottle				Temp:22.3			
	ml=reading/800			1.600 +/- .005N H_2SO_4				
		Reading	ph	Vol of Acid ml			Vol of Acid	ph
		0	7.73	0.000			0	7.73
		10	7.65	0.013			0.0125	7.65
		20	7.35	0.025			0.025	7.35
		30	7.25	0.038			0.0375	7.25
		40	7.16	0.050			0.05	7.16
		45	7.08	0.056			0.05625	7.08
		50	7.02	0.063			0.0625	7.02
		55	6.91	0.069			0.06875	6.91
		60	6.88	0.075			0.075	6.88
		65	6.86	0.081			0.08125	6.86
		70	6.81	0.088			0.0875	6.81
		75	6.78	0.094			0.09375	6.78
		80	6.74	0.100			0.1	6.74
		90	6.64	0.113			0.1125	6.64
		100	6.59	0.125			0.125	6.59
		110	6.54	0.138			0.1375	6.54
		120	6.43	0.150			0.15	6.43
		130	6.31	0.163			0.1625	6.31
		140	6.21	0.175			0.175	6.21
		150	6.11	0.188			0.1875	6.11
		160	6.05	0.200			0.2	6.05
		170	5.96	0.213			0.2125	5.96
		180	5.8	0.225			0.225	5.8
		190	5.71	0.238			0.2375	5.71
		200	5.57	0.250			0.25	5.57
		210	5.36	0.263			0.2625	5.36
		220	5.28	0.275			0.275	5.28
		240	3.84	0.300			0.3	3.84

$\frac{1.44}{90} = \frac{1.28}{x} = 17.777$

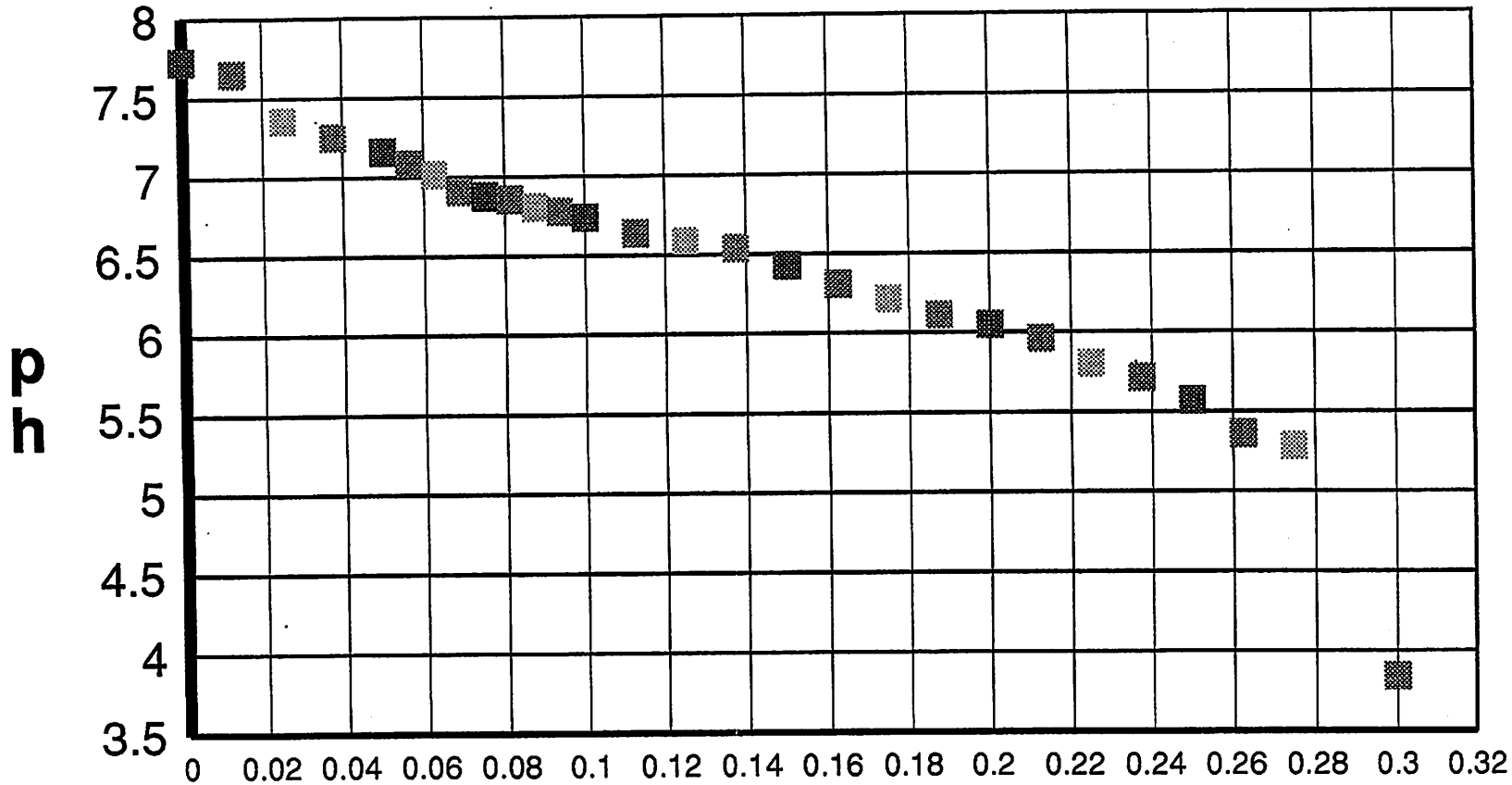
ACID = 237.777

580.77 mg/l HCO_3^-

Grapevine Canyon Stream

Alkalinity Titration

20 NOV 1995



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☐ Stream ☑ Name: GRAPEVINE CANYON STREAM			
Location	Latitude: 35° 43 50 N	Longitude: 117° 54 19 W	
	JETTUCK AQUADUCTS - 1ST TURN OFF TO CROSS CREEK		34001
Sample #: 112095 GVC		Sample Time: 1208	
Date: 11/20/95		Sampler: Charles C. Pierce	
Depth of Well		Perf	
Depth to Water			

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	17.6		900
Thermometer Weksler FPT	18		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	19.1	7.48	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml		Acid: 1.600+/-.005 N_2H_4SO	
Temperature 22.3 °C			
Acid Units	ph	Acid Units	ph
Inital	7.73	13 90	6.64
1 10	7.65	14 100	6.59
2 20	7.35	15 110	6.54
3 30	7.25	16 120	6.43
4 40	7.16	17 130	6.31
5 45	7.08	18 140	6.21
6 50	7.02	19 150	6.11
7 55	6.91	20 160	6.05
8 60	6.88	21 170	5.96
9 65	6.86	22 180	5.80
10 70	6.81	23 190	5.71
11 75	6.78	24 200	5.57
12 80	6.74	25 210	5.36

Comments: 220 | 5.28
240 | 3.85

Id Number:	2
Sample Number:	112095SC
Sample Time:	13:45:00
Sample Date:	11/20/1995
Well:	No
Stream:	Yes
Latitude:	35,46,35 N
Longitude:	117,54,49 W
Location:	Sand Canyon,Stream next to picnic area just downst
Elevation:	2900
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	17
Conductance of water:	910
ph:	7.47
Acid Units at ph 4:	218.9
Alkalinity:	509.75

		Sand Canyon			11/20/1995			
					Took 2 2l bottles			
	Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
	15		910					
	17							
	17	7.47						
	50 ml water sample from non-acid bottle				Temp:22.3			
	ml=reading/800				1.600 +/- .005N H_2SO_4			
		Reading	ph	Vol of Acid ml			Vol of Acid	ph
		0	7.62	0.000			0.000	7.62
		20	7.2	0.025			0.025	7.2
		30	7.08	0.038			0.038	7.08
		40	7.06	0.050			0.050	7.06
		50	7.02	0.063			0.063	7.02
		60	6.93	0.075			0.075	6.93
		70	6.82	0.088			0.088	6.82
		80	6.76	0.100			0.100	6.76
		90	6.66	0.113			0.113	6.66
		100	6.6	0.125			0.125	6.6
		110	6.52	0.138			0.138	6.52
		120	6.48	0.150			0.150	6.48
		130	6.41	0.163			0.163	6.41
		140	6.35	0.175			0.175	6.35
		150	6.33	0.188			0.188	6.33
		160	5.47	0.200			0.200	5.47
		170	5.46	0.213			0.213	5.46
		180	5.43	0.225			0.225	5.43
		190	5.35	0.238			0.238	5.35
		200	5.16	0.250			0.250	5.16
		210	4.74	0.263			0.263	4.74
		220	3.91	0.275	208.9	4	0.275	3.91
		230	3.79	0.288			0.288	3.79
	Alkalinity calculation from titration data: 509.75 mg/l [HCO3]							

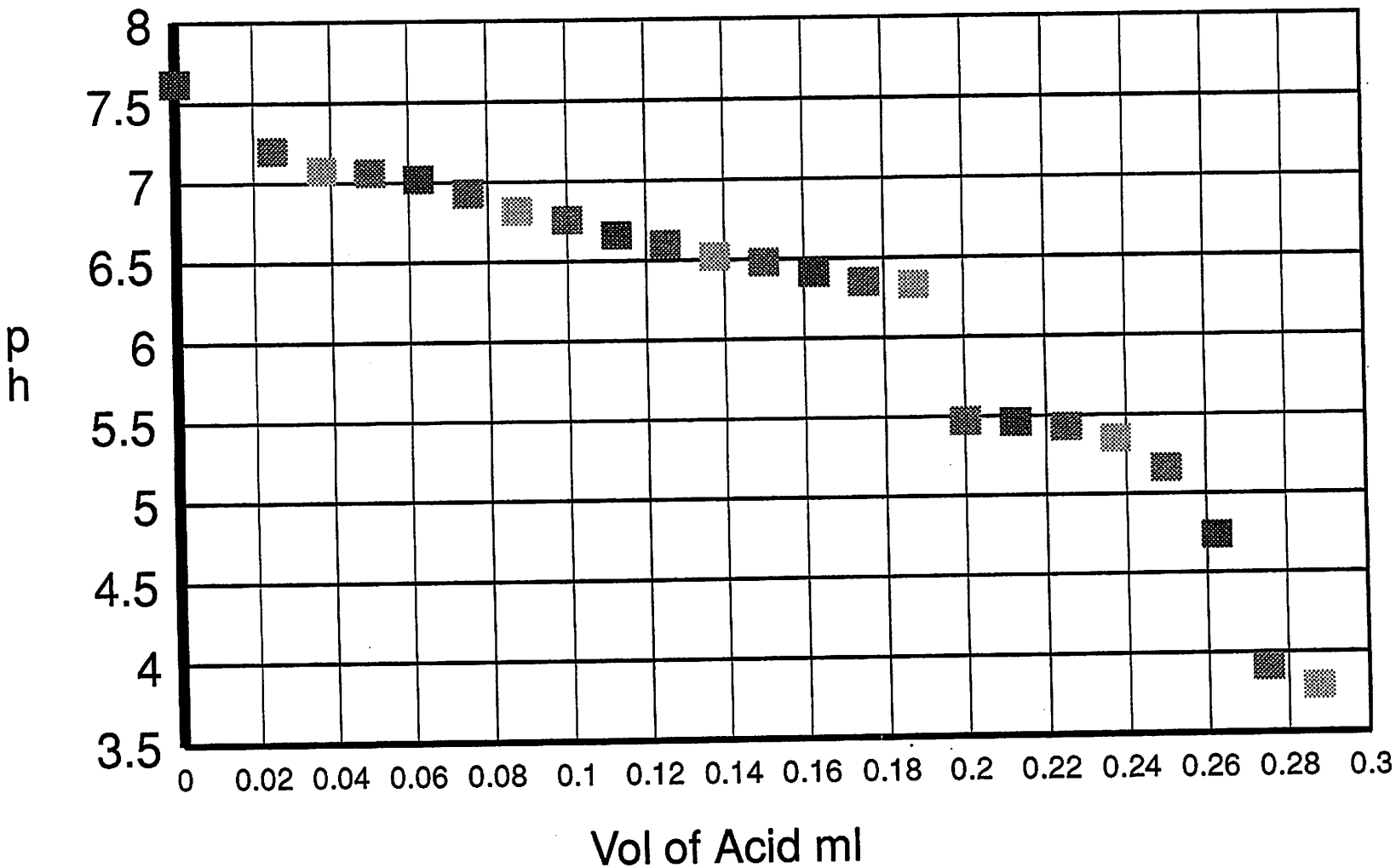
D= .83/10 + .74/x

21 8.9

Sand Canyon Stream Sample

Alkalinity Titration

20 NOV 1995



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☐ Stream ☒ Name: SAND CANYON			2900'
Location	Latitude: 35° 46 35 N	Longitude: 117° 54 49 W	
	STREAM NEXT TO PICNIC AREA JUST DOWN STREAM FROM UPPER AQUADUCT		
Sample #: 112095SC.		Sample Time: 1345	
Date: 11/20/95		Sampler: Charles C. Pierce	
Depth of Well		Perf	
Depth to Water			

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	15.5	~~7.7~~	910
Thermometer Weksler FPT	17.0		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	17.0	7.47	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005N H_2SO_4**

Temperature ~~18.2~~ 17.4

Acid Units	ph	Acid Units	ph
Inital	7.62	13 140	6.35
1 20	7.2~~0~~	14 150	6.33
2 30	7.08	15 160	5.4~~0~~
3 40	7.06	16 170	5.4~~0~~
4 50	7.02	17 180	5.43
5 60	6.93	18 190	5.35
6 70	6.82	19 200	5.16
7 80	6.76	20 210	4.74
8 90	6.66	21 220	~~4.0~~ 3.91
9 100	6.60	22 230	3.79
10 110	6.52	23	
11 120	6.48	24	
12 130	6.4	25	

Comments:

Id Number:	3
Sample Number:	111895 IWC
Sample Time:	11:30:00
Sample Date:	11/18/1995
Well:	No
Stream:	Yes
Latitude:	35, 41 00
Longitude:	117 55 06
Location:	Indian Wells Canyon, Stream where raod forks and
Elevation:	
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	15
Conductance of water:	670
ph:	8.33
Acid Units at ph 4:	173.164
Alkalinity:	422.52

Winter Water Data
Collected by Geoff Thyne and Charles Pierce — Indian Wells Canyon — 11/14/1995
Collected in creek where road branchs and crosses creek

	Temp. °C	ph	mmhos	
VSI Meter				Took 2 2l bottles
50ml water	15			one acidified with 10ml HNO_3
PH/Temp. meter	16.5		670	
	15.7	8.33		

11895IWC

Field titration — 50 ml water sample from non-acid bottle
Didital pipete — ml=reading/800
Temp. = 19.9 °C — 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml	ph	Vol of Acid ml
0	8.28	0.000	8.28	0.000
20	8.27	0.025	8.27	0.025
40	8.27	0.050	8.27	0.050
60	7.71	0.075	7.71	0.075
70	7.15	0.088	7.15	0.088
75	7.05	0.094	7.05	0.094
80	6.97	0.100	6.97	0.100
85	6.88	0.106	6.88	0.106
90	6.75	0.113	6.75	0.113
100	6.57	0.125	6.57	0.125
110	6.41	0.138	6.41	0.138
120	6.27	0.150	6.27	0.150
130	6.11	0.163	6.11	0.163
140	5.91	0.175	5.91	0.175
150	5.71	0.188	5.71	0.188
160	5.35	0.200	5.35	0.200
170	4.25	0.213	4.25	0.213
180	3.46	0.225	3.46	0.225
190	3.19	0.238	3.19	0.238
200	3.03	0.250	3.03	0.250
210	2.91	0.263	2.91	0.263

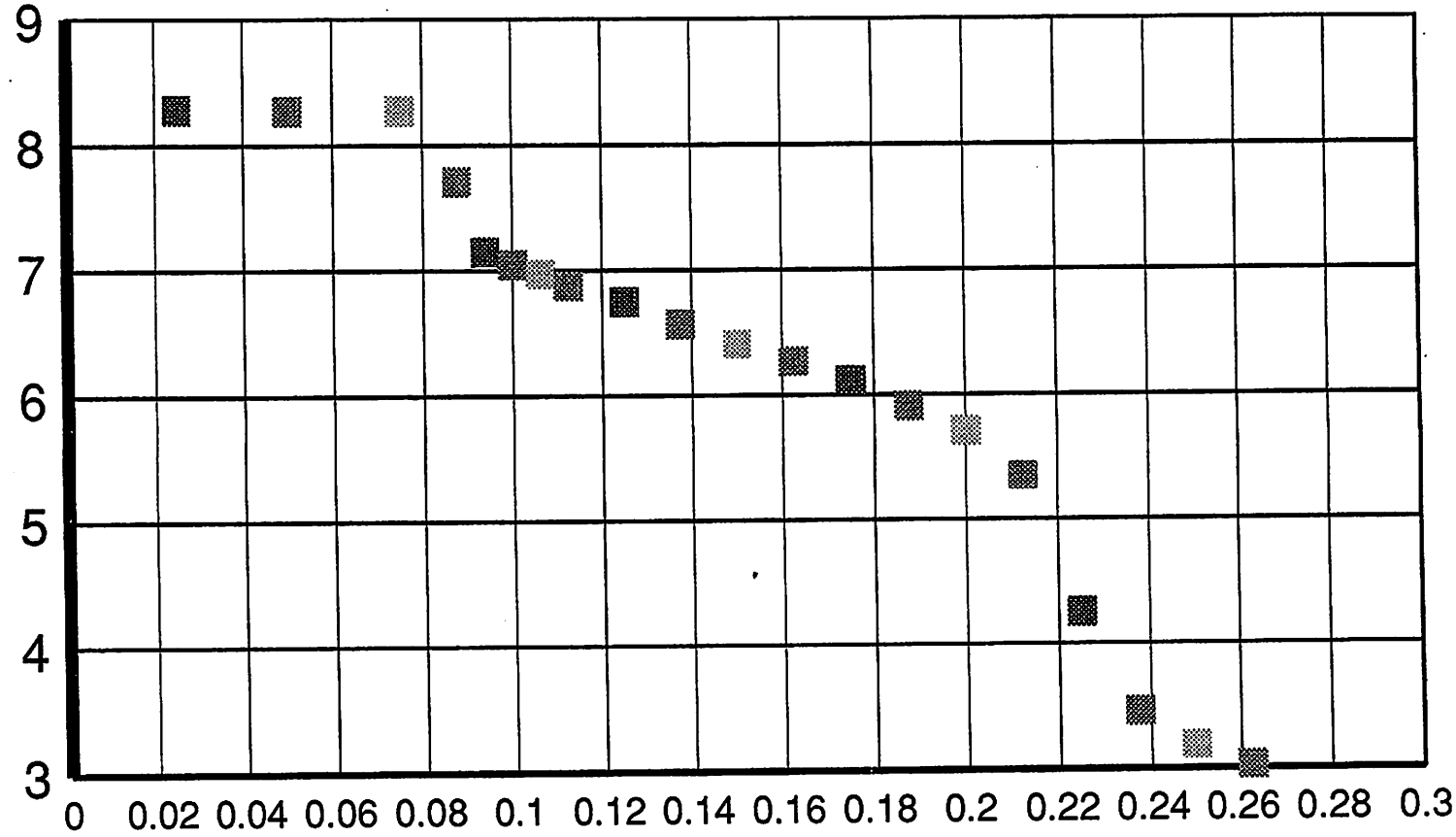
$\frac{.79}{1.0} = \frac{.25}{y} =$ 173.16 ph-4

422.52 $[HCO_3^-]$ mg/l

Indian Wells Canyon

Titration Curve

Collected 18 NOV 1995



Vol of Acid ml

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☐ Stream ☒	Name: INDIAN Wells CANYON		
Location	Latitude: 35° N	Longitude: 117° W	
	STREAM WHERE ROAD FORKS AND RT. BRANCH CROSSES STREAM		
Sample #: #1895 IWC		Sample Time: 1130	
Date: 18 Nov 95		Sampler: Charles C. Pierce	
Depth of Well N/A		Perf N/A	
Depth to Water N/A			

Water Parameters

Instrument	Temp °C	ph	mmhos
VSI	15		670
Thermometer	16.5		
ph/Temp	15.7	8.33	

Alkalinity Titration

Sample filtered and measured with pipette

Volume measured: 50ml		Acid: 1.600+/-.005 N HNO_3	
Temperature 19.9°C		ml ACID = ACID UNITS / 200	
Acid Units	ph	Acid Units	ph
Inital	8.28	13 140	5.91
1 20	8.27	14 150	5.71
2 40	8.26	15 160	5.35
3 60	7.71	16 170	4.25
4 70	7.15	17 180	3.46
5 75	7.05	18 190	3.19
6 80	6.97	19 200	3.03
7 85	6.88	20 210	2.91
8 90	6.75	21	
9 100	6.57	22	
10 110	6.41	23	
11 120	6.27	24	
12 130	6.11	25	

Comments: SAMPLED WITH DR. GEOFF THYNE

Id Number:	4
Sample Number:	011296 SHC
Sample Time:	3:30:00 PM
Sample Date:	1/13/96
Well:	No
Stream:	Yes
Latitude:	35,42,38 N
Longitude:	117,55,05 w
Location:	Short Canyon, Drive up to 2nd aquaduct-left turn, go till road turns off to right,
Elevation:	3550
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	9
Conductance of water:	290
pH:	8.32
Acid Units at pH 4:	78.54
Alkalinity:	191.63

Winter Water Data Short Canyon 1/13/96
Collected by Charles Pierce and Maurice Crawford
Collected in creek at end of road Took 2 2l bottles
one acidified with 10ml HNO_3

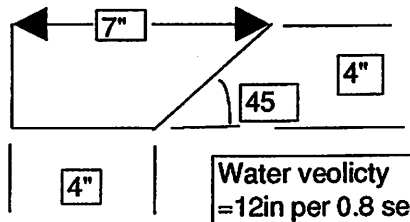
	Temp. °C	ph	mmhos
VSI Meter	9		290
50ml water			
PH/Temp. meter	8.8	8.32	

Field titration 50 ml water sample from non-acid bottle
Diditial pipete ml=reading/800 1.600 +/- .005N H_2SO_4

Temp. = 10.1

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	8.14	0.00	0.00	8.14
10	7.20	0.01	0.01	7.20
20	6.78	0.03	0.03	6.78
30	6.58	0.04	0.04	6.58
40	6.25	0.05	0.05	6.25
50	6.13	0.06	0.06	6.13
60	5.83	0.08	0.08	5.83
70	5.52	0.09	0.09	5.52
80	3.74	0.10	0.10	3.74
90	3.27	0.11	0.11	3.27
100	3.16	0.13	0.13	3.16

78.54 Acid Units at pH=4
191.63 mg/l CO_3^-



Area = 4x4+.5(3x4)
22 square inches

Short Canyon
21 Jan 1995 @ 1100

Water veolicty
=12in per 0.8 sec
Q=1.428 gal/sec
Q=85.7 gals/min

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☐ Stream ☒	Name: SHORT CYN				
Location	Latitude: 35° 42.631	N	Longitude: 117° 55.077	W	Elevation 3550

Sample #: ~~13 JAN 96~~ C11396 SHC	Sample Time: 1530
Date: 13 JAN 96	Sampler: Charles C. Pierce
Depth of Well	Perf
Depth to Water	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	9°		290
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	8.18°	8.32	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml		Acid: 1.600+/-.005 N H_2SO_4	
Temperature	10.1°		
Acid Units	ph	Acid Units	ph
Inital	8.14	13	
1	7.2	14	
2	6.78	15	
3	6.58	16	
4	6.25	17	
5	6.13	18	
6	5.83	19	
7	5.52	20	
8	3.74	21	
9	3.27	22	
10	3.16	23	
11		24	
12		25	

Comments: $\frac{1.78}{10} = \frac{1.52}{X} = 8.54$

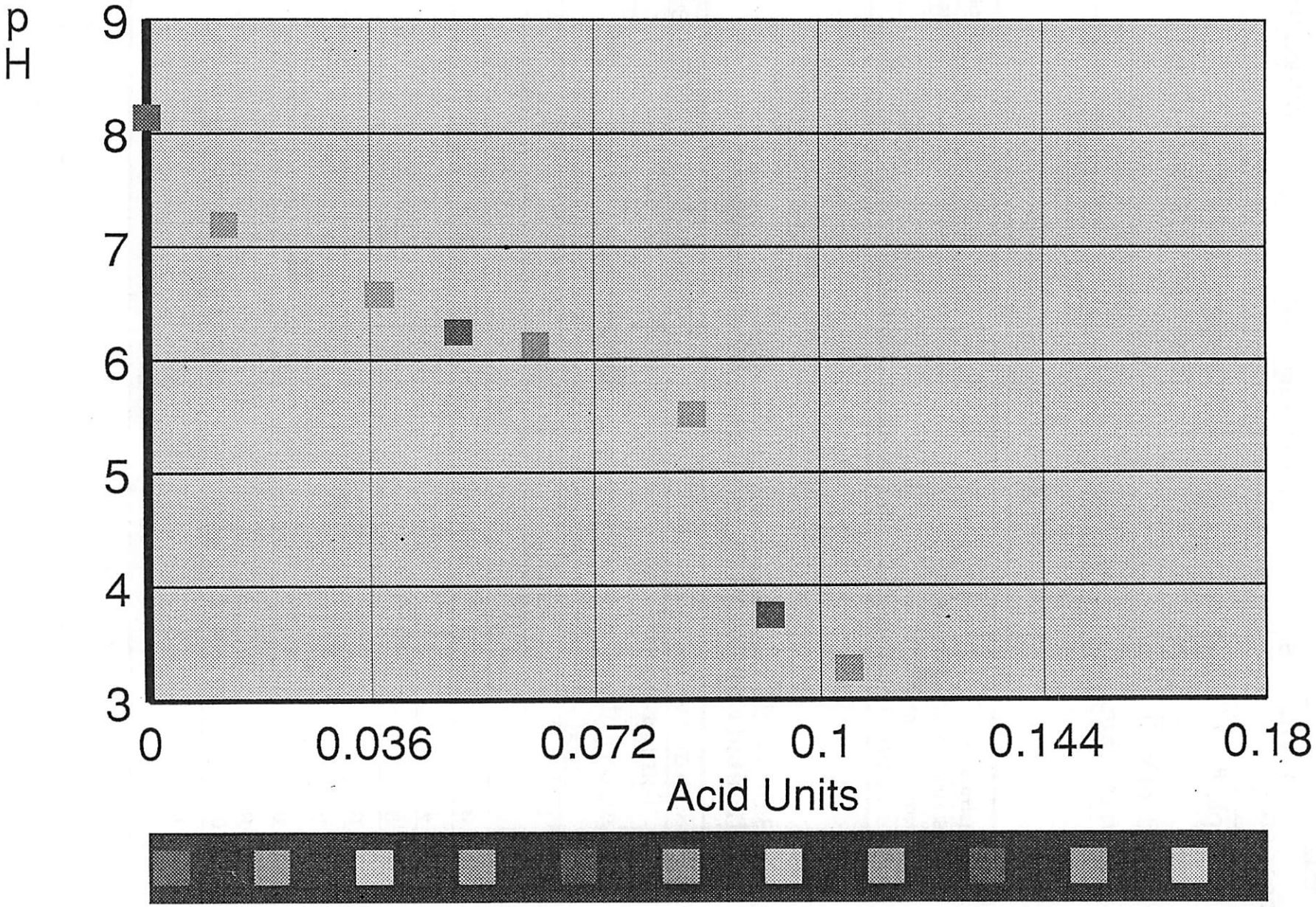
78.54 Acid Units @ pH=4

191.63 mg/l HCO_3^-

Short Canyon

Field Water Titration

1/13/96



Id Number:	5
Sample Number:	112195 5MC
Sample Time:	10:04:00
Sample Date:	11/21/1995
Well:	No
Stream:	Yes
Latitude:	35,52,56 N
Longitude:	117, 55,29 W
Location:	Five Mile Canyon,Where upper aquaduct road cross
Elevation:	3400
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	12.5
Conductance of water:	700
ph:	8.01
Acid Units at ph 4:	115.14
Alkalinity:	280.94

	Five Mile Canyon				11/21/1995			
					Took 2 2l bottles			
	Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
	12.5		700					
	12.5							
	12.5	8.01						
	50 ml water sample from non-acid bottle				Temp:11.8 start		12.1 finish	
	ml=reading/800			1.600 +/- .005N H_2SO_4				
		Reading	ph	Vol of Acid ml			Vol of Acid	ph
		0	8.21	0.000			0.000	8.21
		20	7.45	0.025			0.025	7.45
		30	6.71	0.038			0.038	6.71
		40	6.53	0.050			0.050	6.53
		50	6.45	0.063			0.063	6.45
		60	6.37	0.075			0.075	6.37
		70	6.09	0.088			0.088	6.09
		80	5.78	0.100			0.100	5.78
		90	5.58	0.113			0.113	5.58
		100	5.34	0.125			0.125	5.34
		110	4.53	0.138			0.138	4.53
		120	3.50	0.150			0.150	3.50
		130	3.38	0.163			0.163	3.38
		140	3.31	0.175			0.175	3.31
		150	3.16	0.188			0.188	3.16
		160	3.04	0.200			0.200	3.04
		170	2.93	0.213			0.213	2.93
		180	2.85	0.225			0.225	2.85
		190	2.78	0.238			0.238	2.78
		200	2.73	0.250			0.250	2.73

$\frac{103}{10} = \frac{53}{x}$ $x = 5,14$.

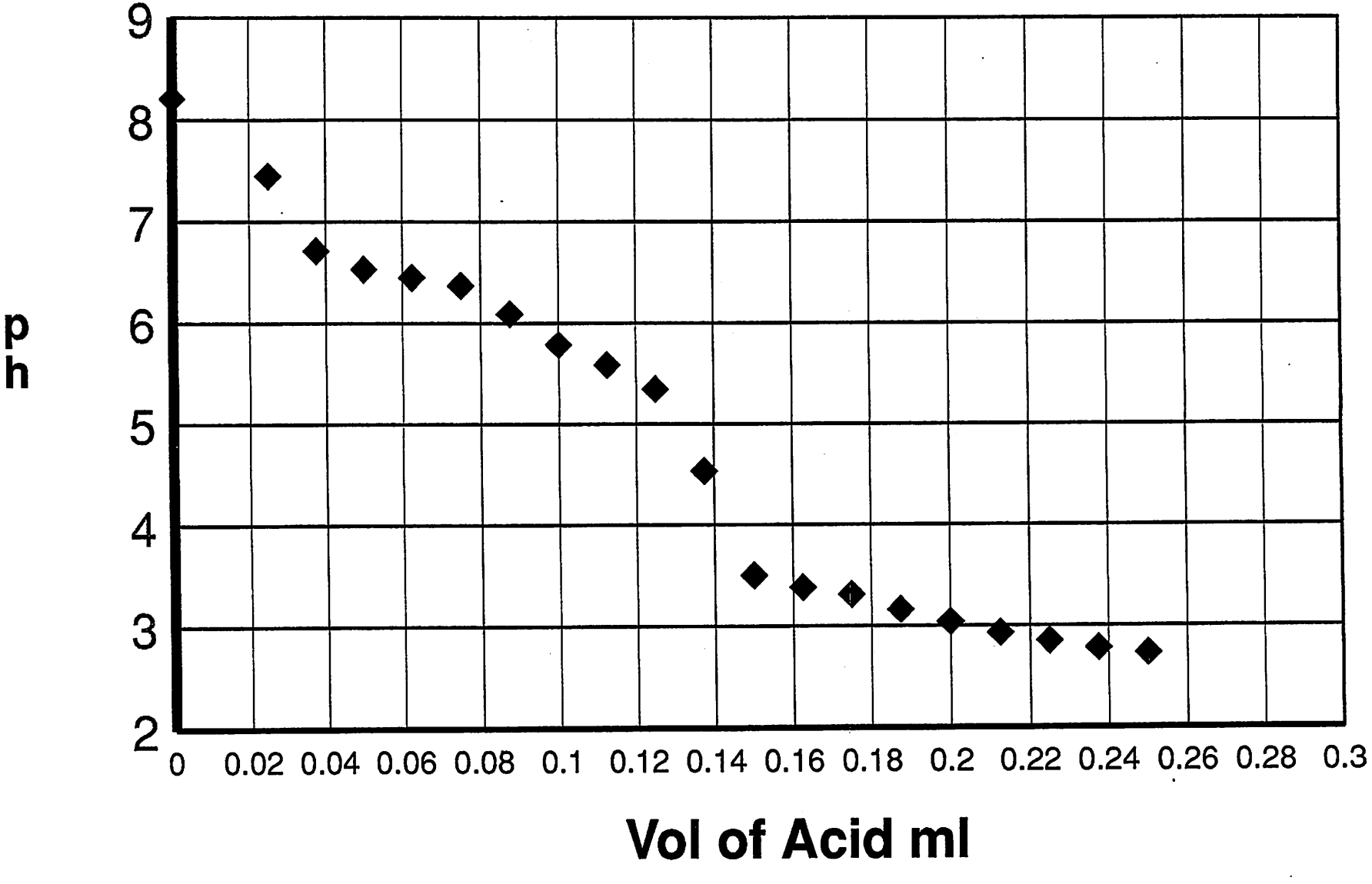
$(115,14)(2N) =$

280,94 $[HCO_3^-]$ mg/l

Five Mile Canyon Stream Sample

Alkalinity Titration

21 NOV 1995



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ▒ Stream ▒ Name: 5 MILE CANYON			
Location	Latitude: 35° 52 56 N	Longitude: 117° 55 29 W	
	WHERE UPPER AQUADUCT RD CROSSES CANYON - LEFT TURN - GO TO END ELEV: 3400'		
Sample #: 112195-5MC		Sample Time: 10:04 AM	
Date: 11/21/95		Sampler: Charles C. Pierce	
Depth of Well		Perf	
Depth to Water			

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	12.5		700
Thermometer Weksler FPT	12.5		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	12.9	8.01	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005N H_2SO_4**

Temperature 17.6 START FINISH: 20 °C

Acid Units	ph	Acid Units	ph
Inital	8.21	13 140	3.31
1 20	7.45	14 150	3.16
2 30	~~6.84~~ 6.71	15 160	3.04
3 40	6.53	16 170	2.93
4 50	6.45	17 180	2.85
5 60	6.37	18 190	2.78
6 70	6.09	19 200	2.73
7 80	5.78	20	
8 90	5.58	21	
9 100	5.34	22	
10 110	4.53	23	
11 120	3.50	24	
12 130	3.38	25	

Comments:

Id Number:	6
Sample Number:	112195 DFC
Sample Time:	09:01:00
Sample Date:	11/21/1995
Well:	No
Stream:	Yes
Latitude:	35,51,46 N
Longitude:	117, 55,19 W
Location:	Deadfoot Canyon,Where upper aquaduct road crosse
Elevation:	3400
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	10.2
Conductance of water:	730
ph:	8.55
Acid Units at ph 4:	158.01
Alkalinity:	385.549

	Deadfoot Canyon				11/21/1995			
					Took 2 2l bottles			
	Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
	9		730					
	10.5							
	10.2	8.55						
	50 ml water sample from non-acid bottle				Temp:11.8 start		12.1 finish	
	ml=reading/800			1.600 +/- .005N H_2SO_4				
		Reading	ph	Vol of Acid ml			Vol of Acid	ph
		0	8.59	0.000			0.000	8.59
		20	7.57	0.025			0.025	7.57
		30	7.26	0.038			0.038	7.26
		40	7.00	0.050			0.050	7.00
		50	6.82	0.063			0.063	6.82
		60	6.74	0.075			0.075	6.74
		80	6.55	0.100			0.100	6.55
		90	6.50	0.113			0.113	6.50
		100	6.31	0.125			0.125	6.31
		110	6.16	0.138			0.138	6.16
		120	5.96	0.150			0.150	5.96
		130	5.69	0.163			0.163	5.69
		140	5.45	0.175			0.175	5.45
		150	4.22	0.188			0.188	4.22
		160	3.55	0.200			0.200	3.55

$\frac{.67}{10} = \frac{.22}{x}$ 8.01

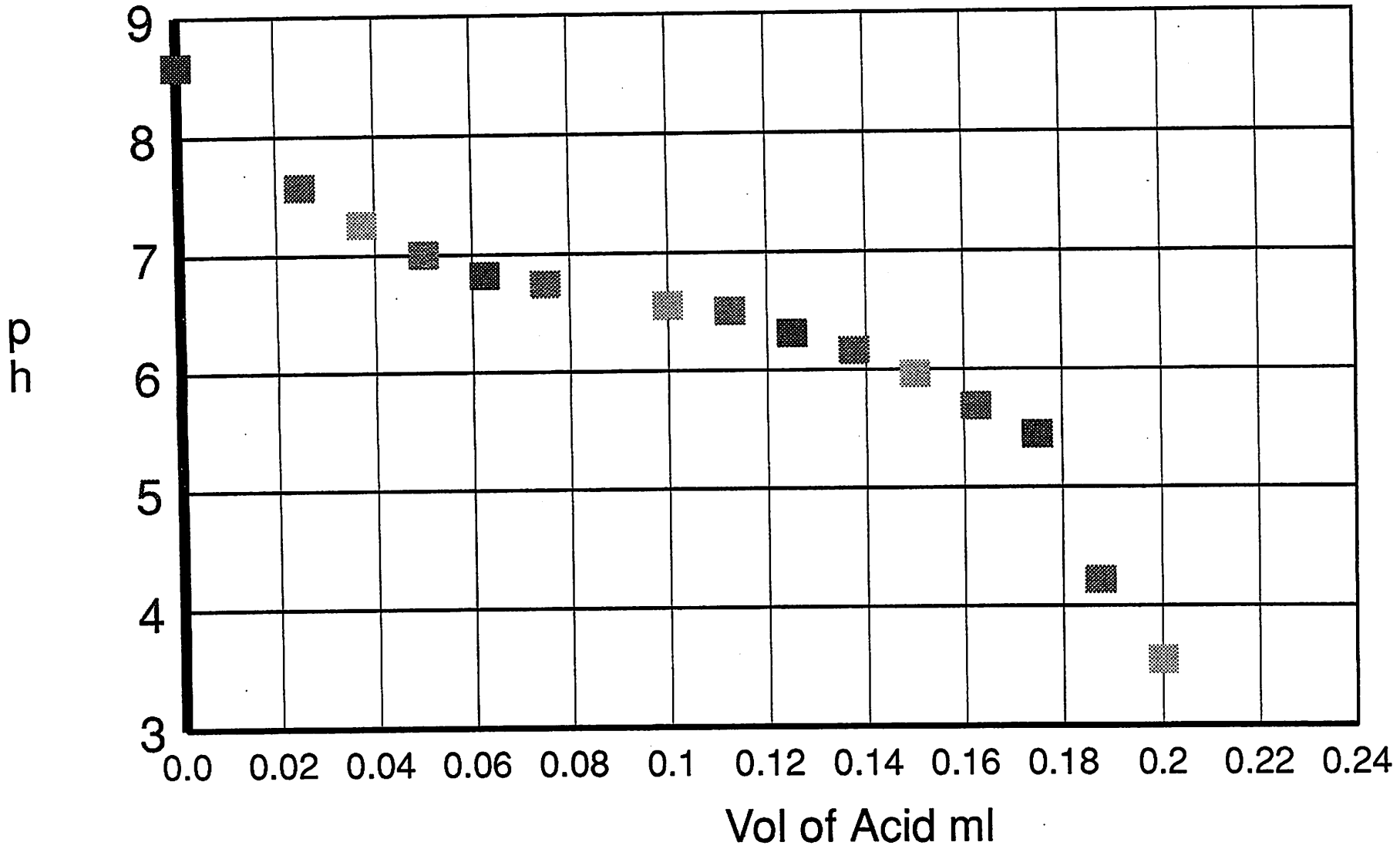
Acid = 158.01

385.5 mg $CaCO_3$ / l

Deadfoot Canyon Stream Sample

Alkalinity Titration

21 NOV 1995



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☐ Stream ☒	Name: DEADFOOT CANYON STREAM		
Location	Latitude: 35° 51' 46" N	Longitude: 117° 55" 19 W	
	WHERE UPPER AQUADUCT ROAD CROSSES STREAM ELV: 3400		
Sample #: 112195 DF		Sample Time: 9:01 AM	
Date: 11/21/95		Sampler: Charles C. Pierce	
Depth of Well		Perf	
Depth to Water			

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	9		730
Thermometer Weksler FPT	10.5		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	10.2	8.55	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 $N\ H_2SO_4$**

Temperature 11.8 START 12.1 FINISH

Acid Units		ph	Acid Units		ph
Inital		8.59	13	150	4.22
1	20	7.57	14	160	3.55
2	30	7.26	15		
3	40	7.00	16		
4	50	6.82	17		
5	60	6.74	18		
6	80	6.55	19		
7	90	6.50	20		
8	100	6.31	21		
9	110	6.16	22		
10	120	5.96	23		
11	130	5.69	24		
12	140	5.49	25		

Comments: IN SHADE

Id Number:	7
Sample Number:	112495PW
Sample Time:	09:04:00
Sample Date:	11/24/1995
Well:	Yes
Stream:	No
Latitude:	35,42 27 N
Longitude:	117,50 45 W
Location:	[redacted]
Elevation:	2200
Depth of Well:	300
Depth to Water:	169
Perf Section of Well:	240-300
Field temp of Water:	26
Conductance of water:	950
ph:	7.31
Acid Units at ph 4:	57.02
Alkalinity:	139.145

	Charles Pierce Well				11/24/1995			
					Took 2 2l bottles			
	Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
	26		950					
	26							
	25.6	7.31						
	50 ml water sample from non-acid bottle				Temp:24.4 start			
	ml=reading/800			1.600 +/- .005N H_2SO_4				
		Reading	ph	Vol of Acid ml			Vol of Acid	ph
		0	7.72	0.000			0.000	7.72
		10	7.15	0.013			0.013	7.15
		20	6.64	0.025			0.025	6.64
		30	6.36	0.038			0.038	6.36
		40	5.83	0.050			0.050	5.83
		50	4.52	0.063			0.063	4.52
		60	3.78	0.075			0.075	3.78
		70	3.54	0.088			0.088	3.54
		80	3.38	0.100			0.100	3.38
		90	3.31	0.113			0.113	3.31
		100	3.18	0.125			0.125	3.18
		110	3.10	0.138			0.138	3.10
		120	3.04	0.150			0.150	3.04
		130	2.99	0.163			0.163	2.99
		140	2.94	0.175			0.175	2.94
		150	2.90	0.188			0.188	2.90
		160	2.86	0.200			0.200	2.86

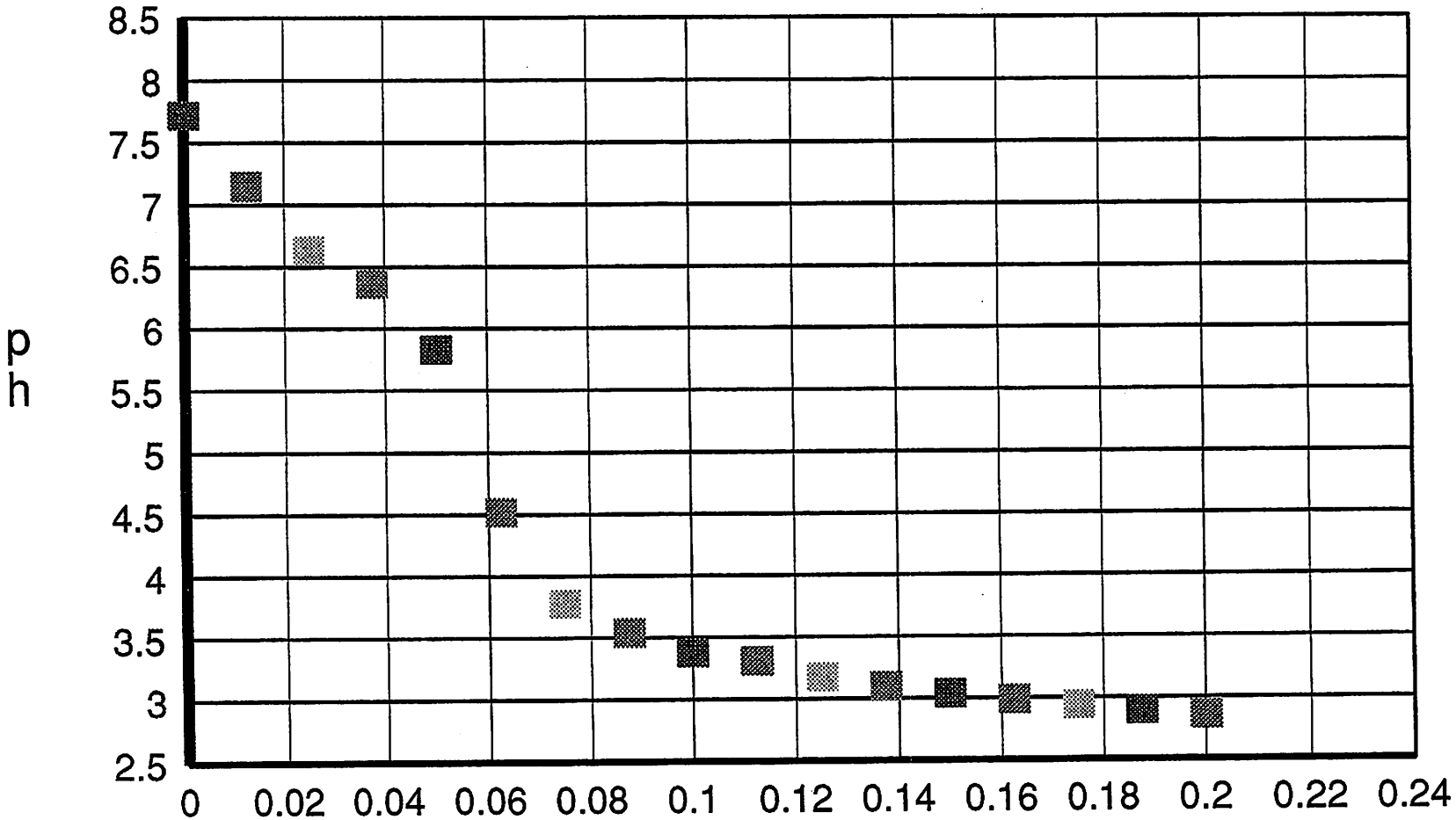
$\frac{.74}{10} = \frac{.52}{x}$ $x = 7.02$

$(57.02)(.002)(20)(61) = 139.145$ $[HCO_3^-]$

Charles Pierce Well

Alkalinity Titration

24 NOV 1995



Vol of Acid ml

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☒ **Stream** ☐ **Name:** CHARLES PIERCE WELL

Location Latitude: 35° 42 27 N Longitude: 117° 50 45 W Elevation 2200'

PIERCE well - 1000 Desert Holly - Inyokern

Sample #: 112495PW **Sample Time:** 9:04 AM

Date: 11/24/95 **Sampler:** Charles C. Pierce

Depth of Well 300' **Perf** 160 - 300'

Depth to Water 169' Pump set @ 189'

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	26		950
Thermometer Weksler FPT	26		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	25.6	7.31	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 24.4

Acid Units	ph	Acid Units	ph
Inital	7.72	13 130	2.99
1 10	7.15	14 140	2.94
2 20	6.64	15 150	2.90
3 30	6.36	16 160	2.86
4 40	5.83	17	
5 50	4.52	18	
6 60	3.78	19	
7 70	3.54	20	
8 80	3.38	21	
9 90	3.31	22	
10 100	3.18	23	
11 110	3.10	24	
12 120	3.04	25	

Comments:

Id Number:	8
Sample Number:	112295LMC
Sample Time:	12:40:00
Sample Date:	11/22/1995
Well:	No
Stream:	Yes
Latitude:	34 06 50 N
Longitude:	116 32 13 W
Location:	[redacted]
Elevation:	3200
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	18
Conductance of water:	600
ph:	8.1
Acid Units at ph 4:	142.35
Alkalinity:	347.3

Pierce Ranch Creek				11/22/1995			
112292LMC							
				Took 2 2l bottles			
Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
18		600					
18							
18.1	8.1						
50 ml water sample from non-acid bottle				Temp:19 start			
ml=reading/800			1.600 +/- .005N HCl				
	Reading	ph	Vol of Acid ml			Vol of Acid	ph
	0	8.20	0.000			0.000	8.20
	20	7.12	0.025			0.025	7.12
	30	7.01	0.038			0.038	7.01
	40	6.87	0.050			0.050	6.87
	50	6.76	0.063			0.063	6.76
	60	6.68	0.075			0.075	6.68
	70	6.47	0.088			0.088	6.47
	80	6.35	0.100			0.100	6.35
	90	6.25	0.113			0.113	6.25
	100	6.16	0.125			0.125	6.16
	110	5.95	0.138			0.138	5.95
	120	5.86	0.150			0.150	5.86
	130	5.18	0.163			0.163	5.18
	140	4.12	0.175			0.175	4.12
	150	3.61	0.188			0.188	3.61
	160	3.40	0.200			0.200	3.40
	170	3.27	0.213			0.213	3.27
	180	3.11	0.225			0.225	3.11
	190	3.05	0.238			0.238	3.05
	200	2.99	0.250			0.250	2.99
	210	2.94	0.263			0.263	2.94
	220	2.88	0.275			0.275	2.88
	230	2.83	0.288			0.288	2.83
	240	2.76	0.300			0.300	2.76

4.12
3.61
.51 = Δ10

.0051 = .1 acid

$\frac{.12}{x} = \frac{.51}{10}$

$x = 2.35$ units

140
2.35
142.35 Acid Units

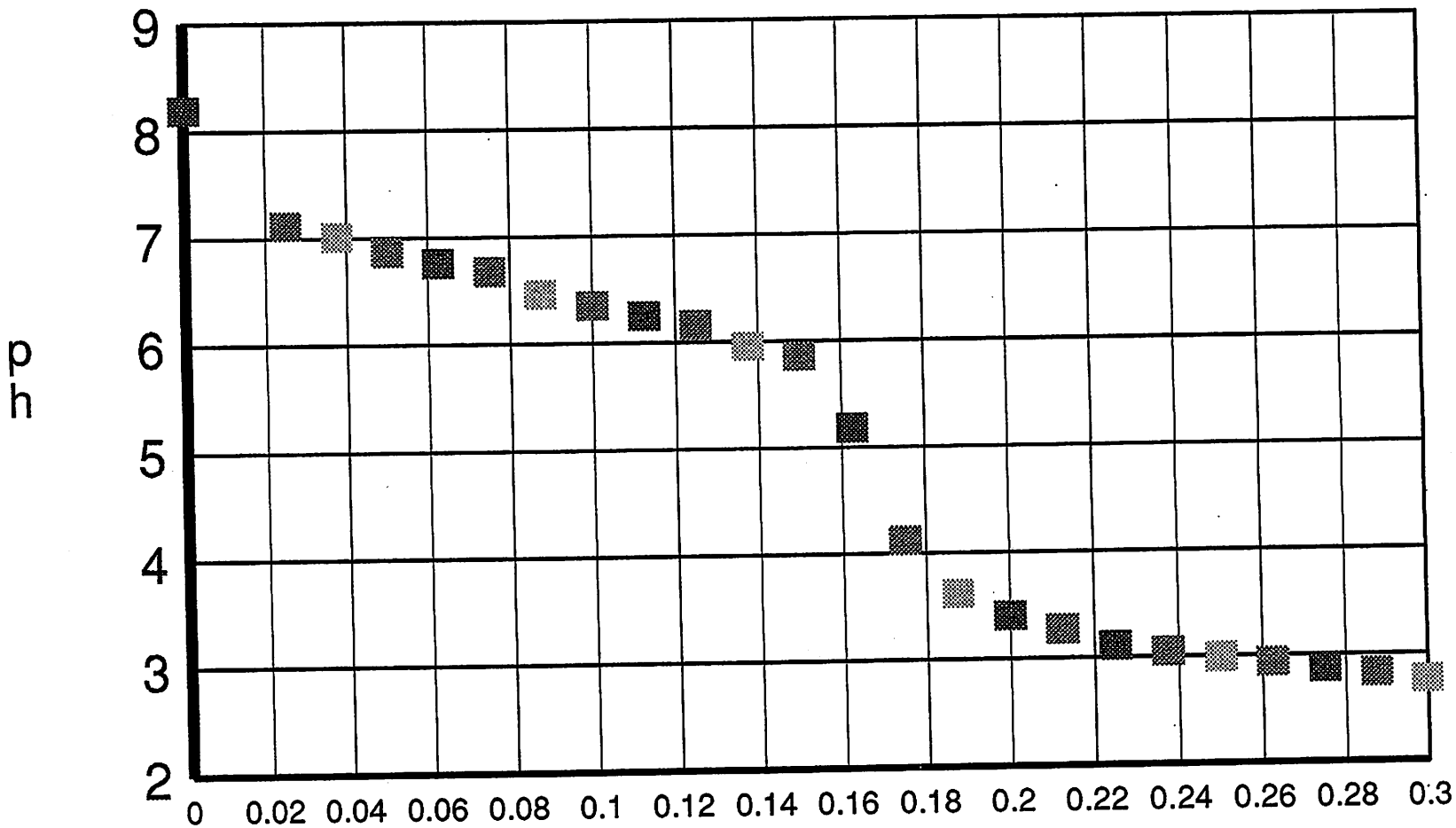
(142.35)(.002)(20)(50)

347.3 = mg [HCO_3]

Pierce Ranch Creek, Little Morongo Canyon

Alkalinity Titration

24 NOV 1995



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ▒ **Stream** ▒ **Name:** Little Morongo Creek			
Location	**Latitude:** ~~35°~~ 34 06 50 **N**	**Longitude:** ~~117°~~ 116 32 13 **W**	**Elevation** 3200
	IN FRONT OF House		
Sample #: 112295 LMC		**Sample Time:** 12:40 PM	
Date: 22 Nov 95		**Sampler:** Charles C. Pierce	
Depth of Well		**Perf**	
Depth to Water			

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	18		644
Thermometer Weksler FPT	18		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	18.8	8.20	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 19.8

Acid Units	ph	Acid Units	ph
Inital	8.20	13 140	4.12
1 20	7.12	14 150	3.61
2 30	7.01	15 160	3.40
3 40	6.87	16 170	3.27
4 50	6.76	17 180	3.11
5 60	6.68	18 190	3.05
6 70	6.47	19 200	2.99
7 80	6.35	20 210	2.94
8 90	6.25	21 220	2.88
9 100	6.16	22 230	2.83
10 110	5.95	23 246	2.76
11 120	5.86	24	
12 130	5.18	25	

Comments:

Id Number:	9
Sample Number:	112295LMW
Sample Time:	14:00:00
Sample Date:	11/22/1995
Well:	Yes
Stream:	No
Latitude:	34 06 54 N
Longitude:	116 32 14 W
Location:	[redacted]
Elevation:	3200
Depth of Well:	269
Depth to Water:	200
Perf Section of Well:	No caseing, in fractured granit
Field temp of Water:	20
Conductance of water:	910
ph:	7.03
Acid Units at ph 4:	187.02
Alkalinity:	456.345

Pierce Ranch Well				11/22/1995			
112292LMW							
				Took 2 2l bottles			
Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
20		910					
20							
20	7.03						
50 ml water sample from non-acid bottle				Temp:20 start		19.9 finish	
ml=reading/800			1.600 +/- .005N H_2SO_4				
	Reading	ph	Vol of Acid ml			Vol of Acid	ph
	0	7.48	0.000			0.000	7.48
	10	7.40	0.013			0.013	7.40
	20	7.30	0.025			0.025	7.30
	30	7.16	0.038			0.038	7.16
	40	7.08	0.050			0.050	7.08
	50	6.93	0.063			0.063	6.93
	60	6.89	0.075			0.075	6.89
	70	6.77	0.088			0.088	6.77
	80	6.72	0.100			0.100	6.72
	90	6.70	0.113			0.113	6.70
	100	6.45	0.125			0.125	6.45
	110	6.39	0.138			0.138	6.39
	120	6.33	0.150			0.150	6.33
	130	6.26	0.163			0.163	6.26
	140	6.16	0.175			0.175	6.16
	150	6.03	0.188			0.188	6.03
	160	5.96	0.200			0.200	5.96
	170	5.45	0.213			0.213	5.45
	180	4.52	0.225			0.225	4.52
	190	3.78	0.238			0.238	3.78
	200	3.64	0.250			0.250	3.64
	210	3.56	0.263			0.263	3.56
	220	3.40	0.275			0.275	3.40
	230	3.34	0.288			0.288	3.34
	240	3.29	0.300			0.300	3.29
	250	3.22	0.313			0.313	3.22
	260	3.15	0.325			0.325	3.15
	270	3.12	0.338			0.338	3.12
	280	3.07	0.350			0.350	3.07
	290	3.05	0.363			0.363	3.05
	300	3.02	0.375			0.375	3.02
	310	2.98	0.388			0.388	2.98
	320	2.94	0.400			0.400	2.94
	330	2.92	0.413			0.413	2.92
	340	2.91	0.425			0.425	2.91
	350	2.90	0.438			0.438	2.90

$\frac{.70}{10} = \frac{.52}{x}$

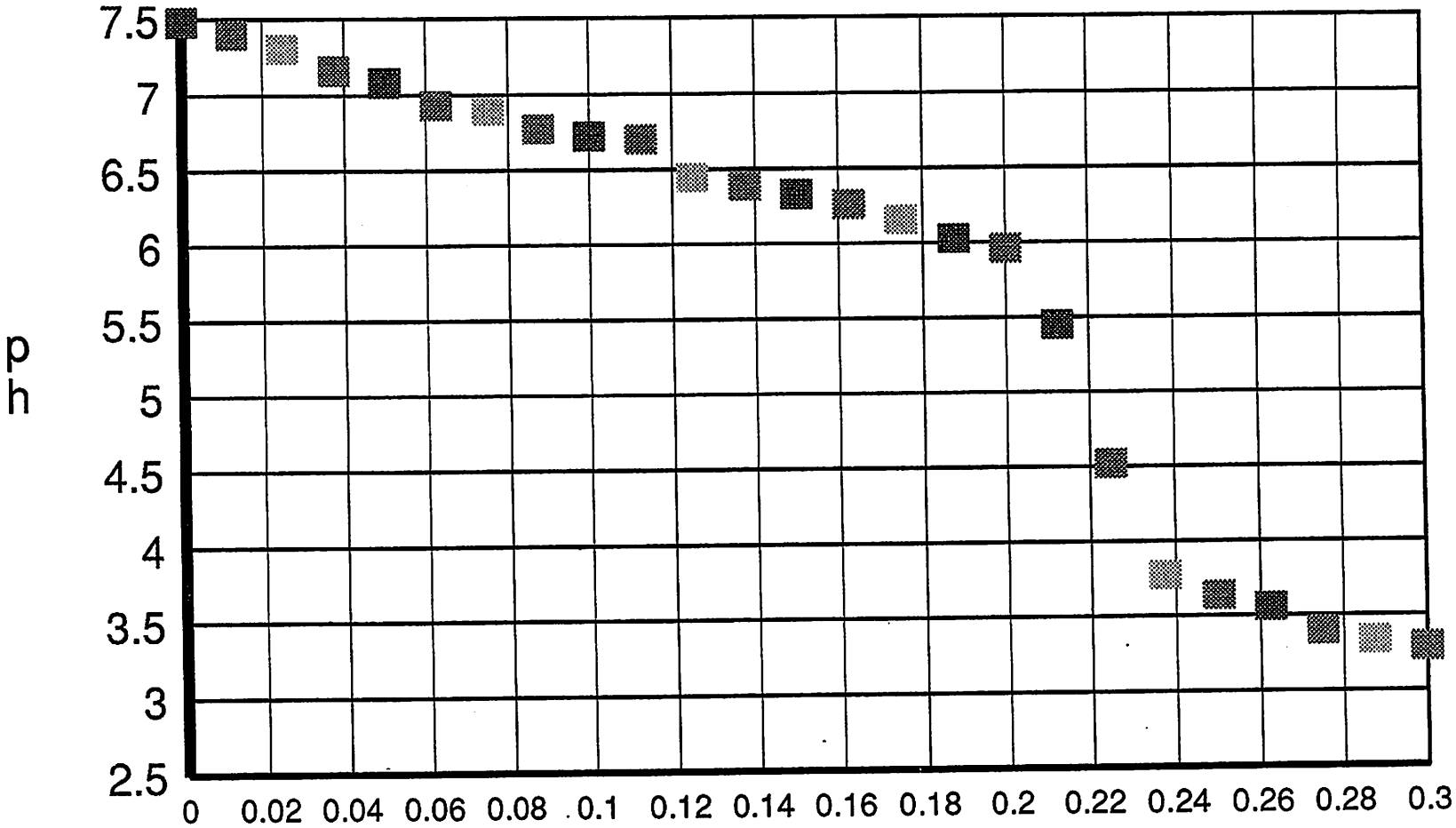
Δ 7.02

$(187.02)(.002)(2)(61) = 456.395$ mg/l $[HCO_3]$

Pierce Ranch Well, Little Morongo

Alkalinity Titration

24 NOV 1995



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] **Stream** [ ] **Name:** Little Morongo Well (Pierce Ranch)

Location **Latitude:** ~~35°~~ 34 06 ~~ST~~ N **Longitude:** ~~117°~~ 116 32 14 W **Elevation** 3200

#2 well (Lower)

Sample #: 11.22.95 LMW **Sample Time:** 1400

Date: 11/22/95 **Sampler:** Charles C. Pierce

Depth of Well 269' **Perf** NO CASING - FRACTURED GRANIT

Depth to Water 200 Pump at 247'

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	20		910
Thermometer Weksler FPT	20		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	20.0	7.43	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 20.0 FINISH 19.9

Acid Units	ph	Acid Units	ph
Inital	7.48	13 130	6.26
1 10	7.40	14 140	6.16
2 20	7.30	15 150	6.03
3 30	7.16	16 160	5.96
4 40	7.08	17 170	5.83
5 50	6.93	18 180	5.69
6 60	6.89	19 190	5.45
7 70	6.77	20 200	4.52
8 80	6.72	21 210	3.78
9 90	6.70	22 220	3.64
10 100	6.45	23 230	3.56
11 110	6.39	24 240	3.40
12 120	6.33	25 250	3.34

Comments:

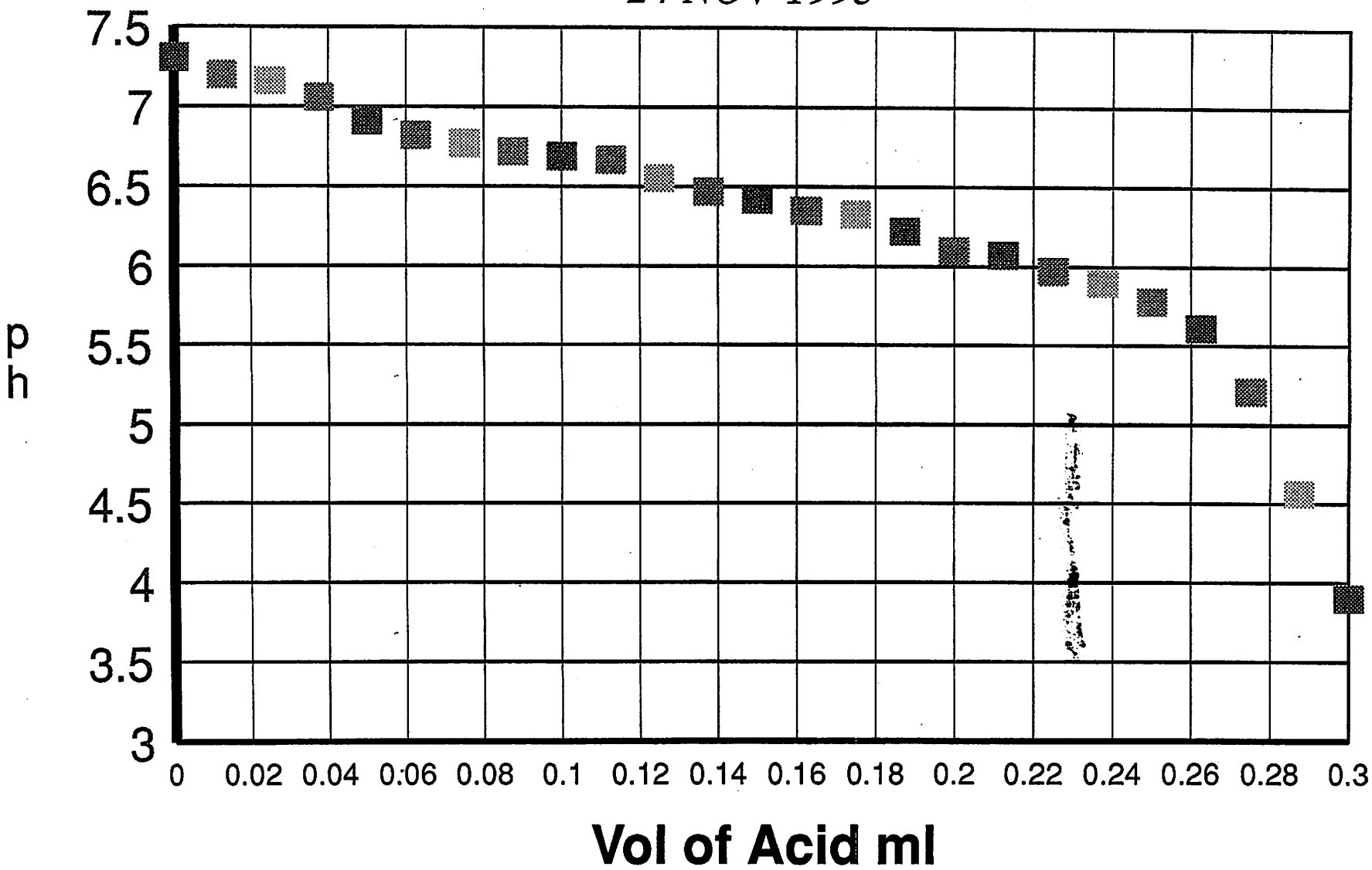
260	3.29	310	3.05	400 2.8
270	3.22	320	3.02	
280	3.15	340	~~3.04~~ 2.98	
290	3.12	350	~~2.98~~ 2.94	
300	3.07	360	2.92	
		370	2.91	
		380	2.90	

Id Number:	10
Sample Number:	112495JBW
Sample Time:	14:30:00
Sample Date:	11/24/1995
Well:	Yes
Stream:	No
Latitude:	35 46 54 N
Longitude:	117 50 53 W
Location:	[redacted]
Elevation:	2250
Depth of Well:	300
Depth to Water:	200
Perf Section of Well:	240-300
Field temp of Water:	24
Conductance of water:	1420
ph:	7.02
Acid Units at ph 4:	238.48
Alkalinity:	569.68

Johan Beyer Well

Alkalinity Titration

24 NOV 1995



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☒ Stream ☐ Name: Jerman Beyer Well

Location	Latitude: 35° 46 54 N	Longitude: 117° 50 53 W	Elevation 2250
	8800 Hill Road		

Sample #: 11295 JBW	Sample Time: 1430
Date: 11/29/95	Sampler: Charles C. Pierce
Depth of Well 300	Perf 240 - 300
Depth to Water 200'	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	24		1420
Thermometer Weksler FPT	24		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	24.3	7.02	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature 23.3

Acid Units	ph	Acid Units	ph
Inital	7.31	13 130	6.35
1 10	7.2-	14 140	6.33
2 20	7.16	15 150	6.22
3 30	7.06	16 160	6.10
4 40	6.91	17 170	6.07
5 50	6.82	18 180	5.97
6 60	6.77	19 190	5.90
7 70	6.72	20 200	5.76
8 80	6.69	21 210	5.61
9 90	6.67	22 220	5.21
10 100	6.55	23 230	4.56
11 110	6.47	24 240	3.90
12 120	6.42	25 250	3.66

Comments:

260	3.56
270	3.45
280	3.40
290	3.35
300	3.32
310	3.30

Id Number:	11
Sample Number:	112695 -5MC Lower
Sample Time:	07:00:00
Sample Date:	11/26/1995
Well:	No
Stream:	Yes
Latitude:	35 52 25
Longitude:	117 53 20
Location:	Where 5 Mile creek crosses the freeway
Elevation:	2825
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	9
Conductance of water:	750
ph:	8.45
Acid Units at ph 4:	164.69
Alkalinity:	401.8436

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☐ **Stream** ☐ **Name:** 5MILE CANYON - LOWER

Location	**Latitude:** 35° 52 25 N	**Longitude:** 117° 53 20 W	**Elevation** ~~3825~~
	WHERE 5mile CANYON CREEK REACHES FREEWAY		

Sample #: 112695-5MC-LOWER	**Sample Time:** 0700
Date: 11/26/95	**Sampler:** Charles C. Pierce
Depth of Well	**Perf**
Depth to Water	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	9		754
Thermometer Weksler FPT	9		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	9.4	8.45	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 14.3

Acid Units	ph	Acid Units	ph
Inital	8.65	13 ○	5.94
1 ○	8.53	14 ○	5.75
2 ○	8.11	15 ○	5.15
3 ○	7.44	16 ○	4.38
4 ○	7.29	17 ○	3.57
5 ○	7.17	18 ○	3.37
6 ○	6.93	19 ○	3.37
7 ○	6.82	20 ○	3.16
8 ○	6.65	21 ○	3.07
9 ○	6.55	22	2.98
10 ○	6.41	23	
11	6.28	24	
12	6.17	25	

Comments:

$HCO_3 = 401.843$

1.38 − 3.57 = .81 = 10

.81/10 = .38/X = 4.69

	Five Mile Canyon-Lower @ Freeway				11/26/1995			
	Collected 0700							
					Took 2 2l bottles			
	Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
	9		750					
	9							
	9.4	8.45						
	50 ml water sample from non-acid bottle				Temp:11.8 start		12.1 finish	
	ml=reading/800			1.600 +/- .005N H_2SO_4				
		Reading	ph	Vol of Acid ml			Vol of Acid	ph
		0	8.66	0.000			0.000	8.66
		10	8.53	0.013			0.013	8.53
		20	8.11	0.025			0.025	8.11
		30	7.44	0.038			0.038	7.44
		40	7.29	0.050			0.050	7.29
		50	7.17	0.063			0.063	7.17
		60	6.93	0.075			0.075	6.93
		70	6.82	0.088			0.088	6.82
		80	6.65	0.100			0.100	6.65
		90	6.55	0.113			0.113	6.55
		100	6.41	0.125			0.125	6.41
		110	6.28	0.138			0.138	6.28
		120	6.17	0.150			0.150	6.17
		130	5.94	0.163			0.163	5.94
		140	5.75	0.175			0.175	5.75
		150	7.15	0.188			0.188	7.15
		160	4.38	0.200			0.200	4.38
		170	3.57	0.213			0.213	3.57
		180	3.37	0.225			0.225	3.37
		190	3.33	0.238			0.238	3.33
		200	3.16	0.250			0.250	3.16
		210	3.07	0.263			0.263	3.07
		220	2.98	0.275			0.275	2.98

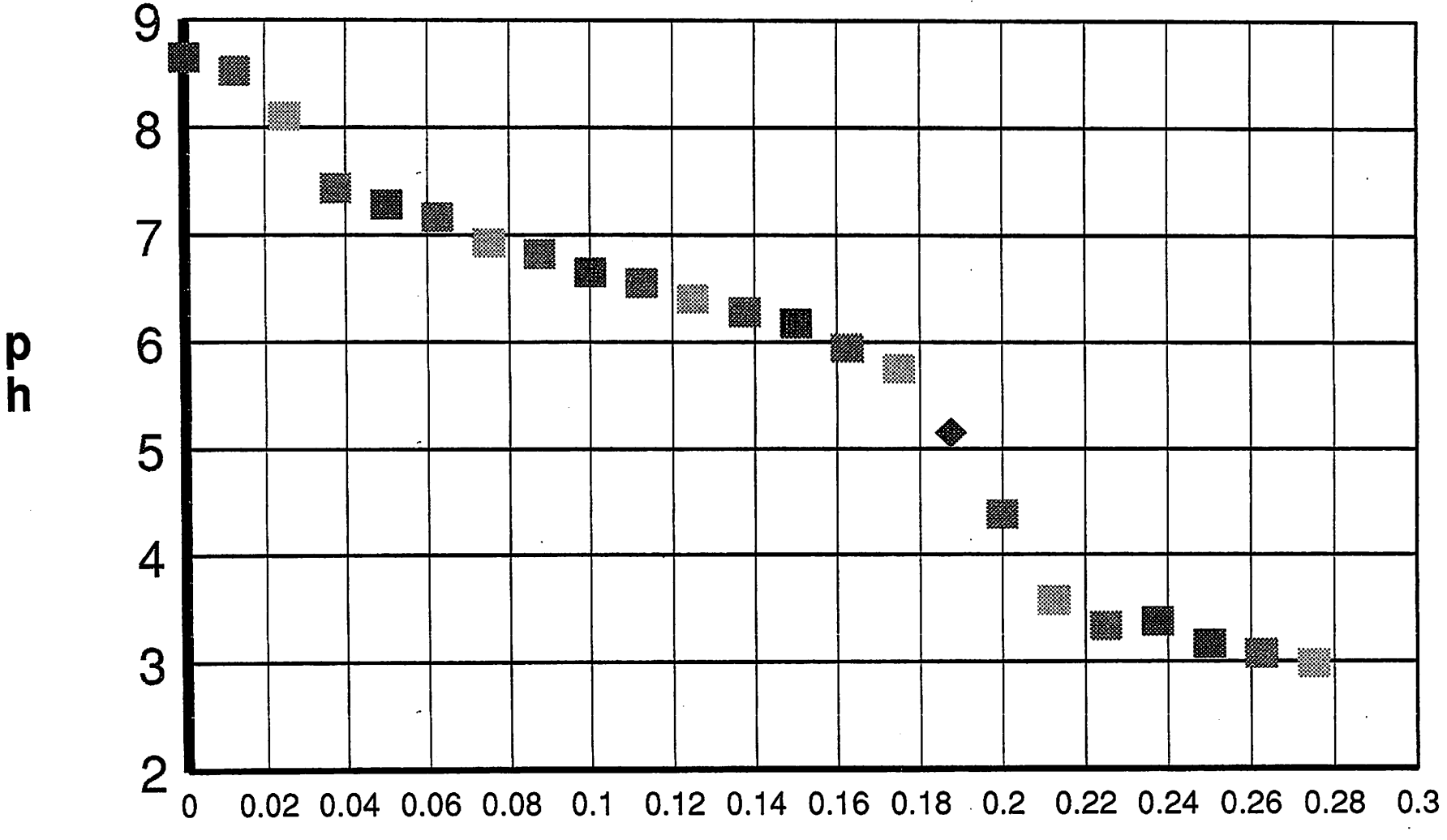
$A = \frac{.81}{10} = \frac{.38}{x}$ =

$[HCO_3^-]$ mg/l = 401.84

Five Mile Canyon Stream Sample-Lower @ Freeway

Alkalinity Titration

26 NOV 1995



Id Number:	12
Sample Number:	113095 BR-10 S
Sample Time:	09:00:00
Sample Date:	11/30/1995
Well:	Yes
Stream:	No
Latitude:	35 50 31 N
Longitude:	117 52 19 W
Location:	MONITORING WELL BR-10 EAST END OF KE
Elevation:	2486
Depth of Well:	660
Depth to Water:	313.41
Perf Section of Well:	640-660'
Field temp of Water:	23
Conductance of water:	1670
ph:	8.07
Acid Units at ph 4:	265.98
Alkalinity:	649

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ] Name: MONITORING WELL BR-10

Location: Latitude: 35° 50' 31" N Longitude: 117° 52' 19" W Elevation: 2486'

Sample #: 113095 BR-10 S

Date: 30 NOV 1995

Sample Time: 0930

Depth of Well: 1950'

Sampler: Charles C. Pierce

Depth to Water: 313.41'

Perf: 640'-660'

649 mg/l HCO_3^-

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	~~23~~		~~1660~~
Thermometer Weksler FPT	23		1670
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	23.0	8.07	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature 24.8

Acid Units	ph	Acid Units	ph
Inital	8.18	13	6.37
1	8.16	14	6.30
2	7.96	15	6.22
3	7.73	16	6.18
4	7.36	17	6.03
5	7.25	18	5.91
6	7.15	19	5.86
7	6.98	20	5.80
8	6.87	21	5.64
9	6.76	22	5.50
10	6.70	23	5.40
11	6.62	24	5.27
12	6.45	25	4.89

Comments:

260	4.59
270	3.61 (3.61)
280	3.05
290	3.01
302	2.93
	2.97

Pumped 90 gal Before sample

Monitoring Well BR-10 S				11/30/1995			
Sample No.	113095 BR-10 S			0930 HOURS			
				Took 2 2l bottles			
Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
23		1670					
23							
23	8.07						
Depth to Water=313.41'		Depth of Well: 660'					
Perf section: 640'-660'							
50 ml water sample from non-acid bottle				Temp:21.8 start			
ml=reading/800			1.600 +/- .005N H_2SO_4				
	Reading	ph	Vol of Acid ml			Vol of Acid	ph
	0	8.18	0.000			0.000	8.18
	10	8.16	0.013			0.013	8.16
	20	7.96	0.025			0.025	7.96
	30	7.73	0.038			0.038	7.73
	40	7.36	0.050			0.050	7.36
	50	7.25	0.063			0.063	7.25
	60	7.15	0.075			0.075	7.15
	70	6.98	0.088			0.088	6.98
	80	6.87	0.100			0.100	6.87
	90	6.76	0.113			0.113	6.76
	100	6.70	0.125			0.125	6.70
	110	6.62	0.138			0.138	6.62
	120	6.45	0.150			0.150	6.45
	130	6.37	0.163			0.163	6.37
	140	6.30	0.175			0.175	6.30
	150	6.22	0.188			0.188	6.22
	160	6.18	0.200			0.200	6.18
	170	6.03	0.213			0.213	6.03
	180	5.91	0.225			0.225	5.91
	190	5.86	0.238			0.238	5.86
	200	5.80	0.250			0.250	5.80
	210	5.64	0.263			0.263	5.64
	220	5.50	0.275			0.275	5.50
	230	5.40	0.288			0.288	5.40
	240	5.27	0.300			0.300	5.27
	250	4.89	0.313			0.313	4.89
	260	4.59	0.325			0.325	4.59
	270	3.61	0.338			0.338	3.61
	280	3.05	0.350	$A = 6.02$		0.350	3.05
	290	3.01	0.363			0.363	3.01
	300	2.93	0.375			0.375	2.93
	310	2.87	0.388			0.388	2.87
Pumped 90 Gallons before sample was taken							

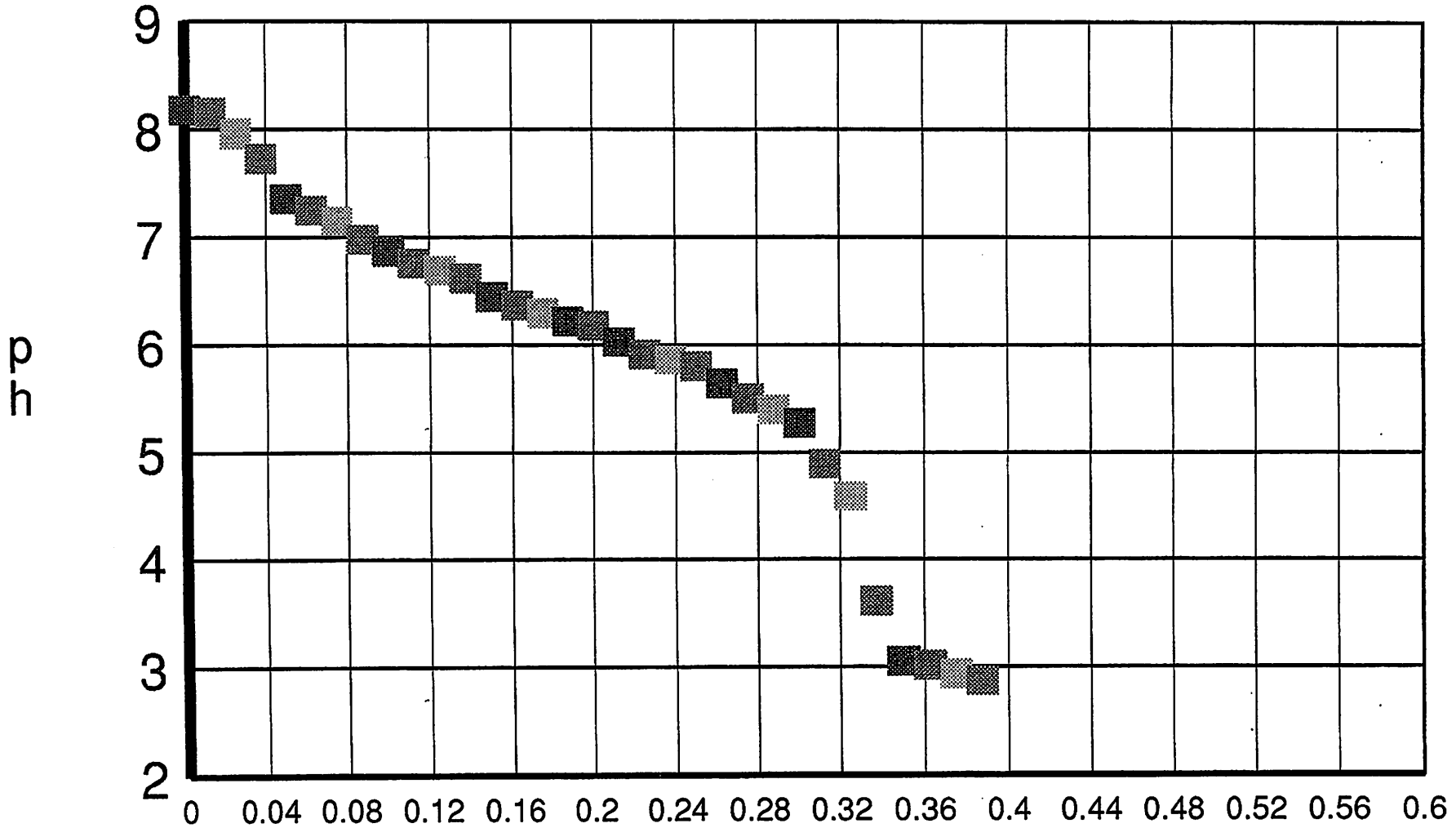
459

649 mg/L HCO_3

Monitoring Well BR-10 Shallow

Alkalinity Titration

30 NOV 1995



Id Number:	13
Sample Number:	113095 BR-10 MS
Sample Time:	11:45:00
Sample Date:	11/30/1995
Well:	Yes
Stream:	No
Latitude:	35 50 31 N
Longitude:	117 52 19 W
Location:	MONITORING WELL BR-10 EAST END OF KE
Elevation:	2486
Depth of Well:	12000
Depth to Water:	336.1
Perf Section of Well:	1180-1200
Field temp of Water:	26.1
Conductance of water:	1700
ph:	8.21
Acid Units at ph 4:	168.45
Alkalinity:	411.02

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X]	Stream [ ]	Name:		
Location	Latitude: 35° 50' 31"	N	Longitude: 117° 52' 19"	W	Elevation: 2486'

Sample #: 113095 BR-10 MS	Sample Time: 1145
Date: 30 NOV 1995	Sampler: Charles C. Pierce
Depth of Well: 1950'	Perf: 1180'-1200'
Depth to Water: 336.1'	

411 mg/l HCO_3^-

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	25.2		~~1400~~
Thermometer Weksler FPT			1400
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	26.1	8.21	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 25.5

Acid Units x10	ph	Acid Units	ph
Inital	8.29 ~~8.36~~	13	~~6.01~~ 5.87
1	~~7.68~~ 7.62	14	~~5.79~~ 5.76
2	~~7.31~~ 7.35	15	~~5.72~~ 5.52
3	~~7.05~~ 7.16	16	~~5.14~~ 5.14
4	6.91 7.03	17	3.79
5	6.79 6.90	18	3.52
6	6.65 6.74	19	3.37
7	6.59 6.63	20	3.27
8	6.52 6.56	21	3.20
9	6.38 6.39	22	3.15
10	6.20 6.30	23	
11	6.14 6.18	24	
12	6.06 6.05	25	

Comments:

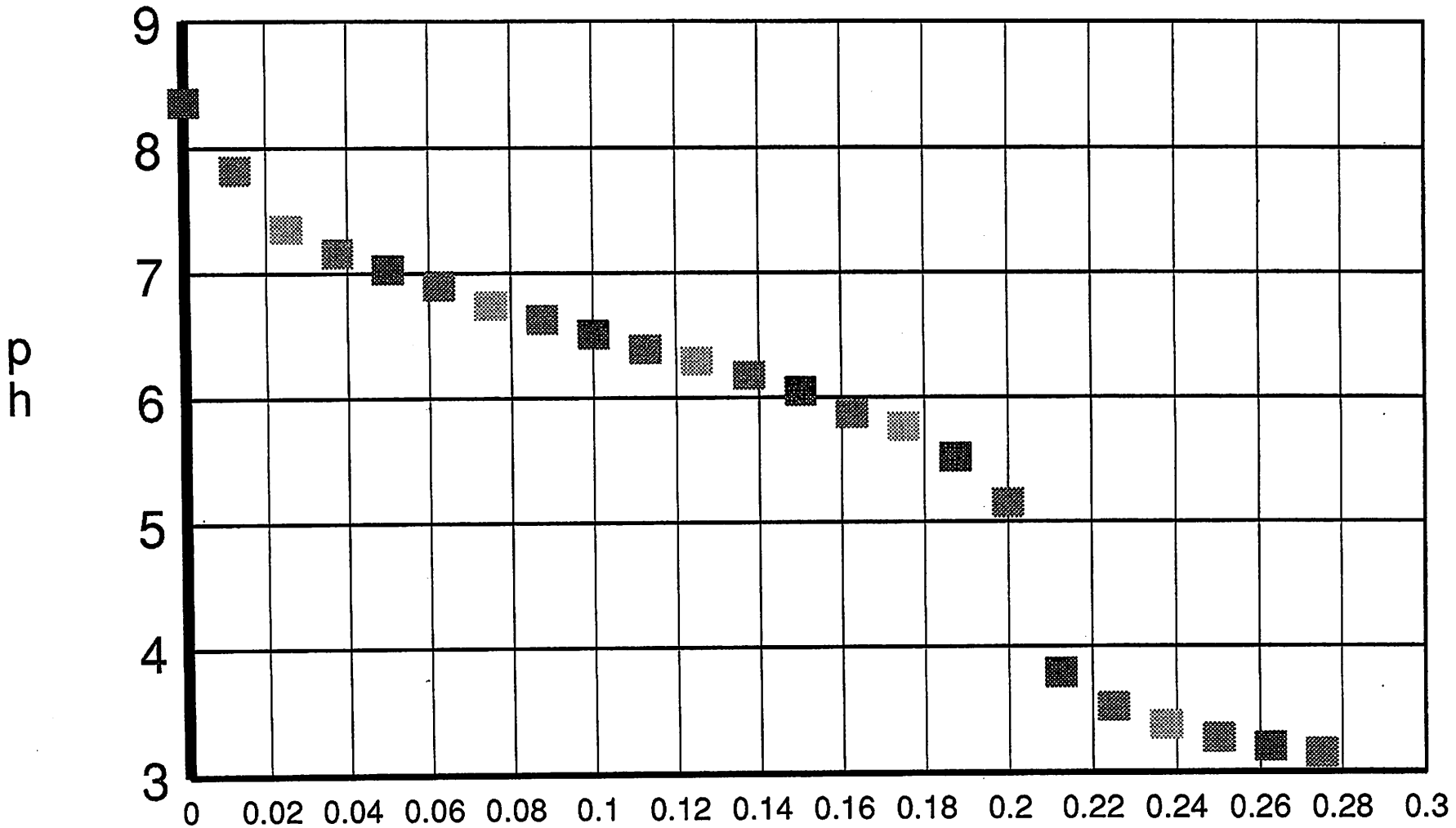
422 gal - 3 well bore Pumped 530 gal Before Sample
TAKES 140 gal/well bore 1.7 hours

Monitoring Well BR-10 MS				11/30/1995				
Sample No.	113095 BR-10 MS			1145HOURS				
				Took 2 2l bottles				
Temp. °C	ph	mmhos		one acidified with 10ml HNO_3				
25.2		1700						
25.2								
26.1	8.21							
Depth to Water=336.1'		Depth of Well: 1200'						
Perf section: 1180-1200'								
50 ml water sample from non-acid bottle				Temp:25.5 start				
ml=reading/800			1.600 +/- .005N H_2SO_4					
	Reading	ph	Vol of Acid ml			Vol of Acid	ph	
	0	8.36	0.000			0.000	8.36	
	10	7.82	0.013			0.013	7.82	
	20	7.35	0.025			0.025	7.35	
	30	7.16	0.038			0.038	7.16	
	40	7.03	0.050			0.050	7.03	
	50	6.90	0.063			0.063	6.90	
	60	6.74	0.075			0.075	6.74	
	70	6.63	0.088			0.088	6.63	
	80	6.51	0.100			0.100	6.51	
	90	6.39	0.113			0.113	6.39	
	100	6.30	0.125			0.125	6.30	
	110	6.18	0.138			0.138	6.18	
	120	6.05	0.150			0.150	6.05	
	130	5.87	0.163			0.163	5.87	
	140	5.76	0.175			0.175	5.76	
	150	5.52	0.188			0.188	5.52	
	160	5.15	0.200			0.200	5.15	
	170	3.79	0.213			0.213	3.79	
	180	3.52	0.225			0.225	3.52	
	190	3.37	0.238			0.238	3.37	
	200	3.27	0.250			0.250	3.27	
	210	3.20	0.263			0.263	3.20	
	220	3.15	0.275			0.275	3.15	
10	x	= 8.45						
1.36	= 1.15							
			411.02	mg/l H_2O				
Pumped 330 Gallons before sample was taken								
Smell of H2S in Sample								

Monitoring Well BR-10 Medium Shallow

Alkalinity Titration

30 NOV 1995



Id Number:	14
Sample Number:	113095 BR-10 MD
Sample Time:	03:00:00
Sample Date:	11/30/1995
Well:	Yes
Stream:	No
Latitude:	35 50 31 N
Longitude:	117 52 19 W
Location:	MONITORING WELL BR-10 EAST END OF KE
Elevation:	2486
Depth of Well:	15800
Depth to Water:	315.45
Perf Section of Well:	1560-1580
Field temp of Water:	25.4
Conductance of water:	2450
ph:	7.75
Acid Units at ph 4:	552.46
Alkalinity:	1348

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X]	Stream [ ]	Name:			
Location	Latitude: 35° 50' 31"	N	Longitude: 117° 52' 19"	W	Elevation: 2486'

Sample #: 113095 BR-10 MD	Sample Time: 1500
Date: 30 NOV 1995	Sampler: Charles C. Pierce
Depth of Well: 1950'	Perf: 1560'-1580'
Depth to Water: 315.45'	

1348 mg/l HCO_3^-

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	25.5		2050
Thermometer Weksler FPT	25.5		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	25.4	7.15	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 20.8

Acid Units	ph	Acid Units	ph
Inital	7.83	13	6.80
1	7.65	14	6.75
2	7.46	15	6.73
3	7.35	16	6.69
4	7.25	17	6.65
5	7.16	18	6.62
6	7.10	19	6.59
7	7.05	20	6.56
8	7.00	21	6.53
9	6.97	22	6.50
10	6.93	23	6.47
11	6.89	24	6.44
12	6.85	25	641

6.39
6.37
6.34
6.31
6.28
6.25
6.22
6.19
6.15
6.13
6.09
6.06
6.04
6.01
5.97 (40
5.94
5.90
5.87
5.84
5.81
5.77
5.69
564

Comments: - Smell of H_2O in Sample -

206 gal/well bore	480	5.58	4.21	
	490	5.51	3.63	
	500	5.42	3.33	
	510	5.28	3.17 (570)	
		5.15		
		4.93	3.04 (580)	

Monitoring Well BR-10 MD				11/30/1995			
Sample No	113095 BR-10 MD			1500 HOURS			
				Took 2 2l bottles			
Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
25.5		2450					
25.5							
25.4	7.75						
Depth to Water=315.45'		Depth of Well: 1580'					
Perf section: 1560-1580'							
Pumped 385 gallons before sample - 2.3 hours							
50 ml water sample from non-acid bottle				Temp:20.8			
ml=reading/800			1.600 +/- .005N H_2SO_4				
	Reading	ph	Vol of Acid ml			Vol of Acid	ph
	0	7.83	0.000			0.000	7.83
	10	7.65	0.013			0.013	7.65
	20	7.46	0.025			0.025	7.46
	30	7.35	0.038			0.038	7.35
	40	7.25	0.050			0.050	7.25
	50	7.16	0.063			0.063	7.16
	60	7.10	0.075			0.075	7.10
	70	7.05	0.088			0.088	7.05
	80	7.00	0.100			0.100	7.00
	90	6.97	0.113			0.113	6.97
	100	6.93	0.125			0.125	6.93
	110	6.89	0.138			0.138	6.89
	120	6.85	0.150			0.150	6.85
	130	6.80	0.163			0.163	6.80
	140	6.75	0.175			0.175	6.75
	150	6.73	0.188			0.188	6.73
	160	6.69	0.200			0.200	6.69
	170	6.65	0.213			0.213	6.65
	180	6.62	0.225			0.225	6.62
	190	6.59	0.238			0.238	6.59
	200	6.56	0.250			0.250	6.56
	210	6.53	0.263			0.263	6.53
	220	6.50	0.275			0.275	6.50
	230	6.47	0.288			0.288	6.47
	240	6.44	0.300			0.300	6.44
	250	6.41	0.313			0.313	6.41
	260	6.39	0.325			0.325	6.39
	270	6.37	0.338			0.338	6.37
	280	6.34	0.350			0.350	6.34
	290	6.31	0.363			0.363	6.31
	300	6.28	0.375			0.375	6.28
	310	6.25	0.388			0.388	6.25
	320	6.22	0.400			0.400	6.22
	330	6.19	0.413			0.413	6.19
	340	6.15	0.425			0.425	6.15
	350	6.13	0.438			0.438	6.13
	360	6.09	0.450	Pumped 330 Gallons bef		0.45	6.09

	370	6.09	0.463			0.4625	6.09
	380	6.04	0.475			0.475	6.04
	390	6.01	0.488			0.4875	6.01
	400	5.97	0.500			0.5	5.97
	410	5.94	0.513			0.5125	5.94
	420	5.90	0.525			0.525	5.90
	430	5.84	0.538			0.5375	5.84
	440	5.81	0.550			0.55	5.81
	450	5.77	0.563			0.5625	5.77
	460	5.69	0.575			0.575	5.69
	470	5.69	0.588			0.5875	5.69
	480	5.64	0.600			0.6	5.64
	490	5.58	0.613			0.6125	5.58
	500	5.51	0.625			0.625	5.51
	510	5.42	0.638			0.6375	5.42
	520	5.28	0.650			0.65	5.28
	530	5.15	0.663			0.6625	5.15
	540	4.93	0.675			0.675	4.93
	550	4.21	0.688			0.6875	4.21
	560	3.36	0.700			0.7	3.36
	570	3.33	0.713			0.7125	3.33
	580	3.17	0.725			0.725	3.17
	590	3.04	0.738			0.7375	3.04

550 - 4.21
560 - 3.36

$\frac{10}{.85} = \frac{x}{.21}$

$\frac{2.1}{.85}$ $\Delta_{ACID} = 2.47$

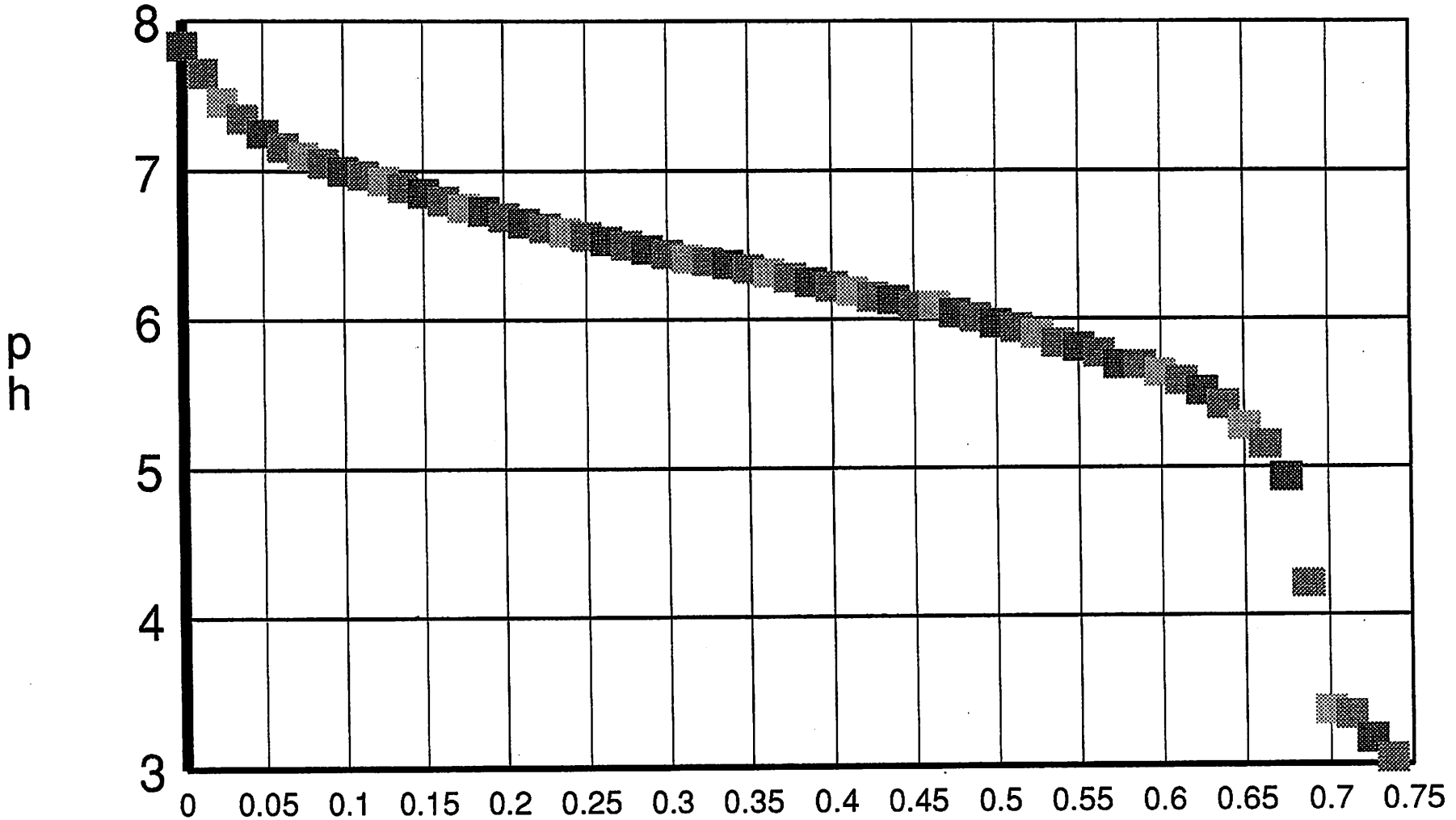
$(552.47)(.002)(20)(61)$

$Alk = 1348$ mg/L HCO_3^-

Monitoring Well BR-10 Medium Deep

Alkalinity Titration

30 NOV 1995



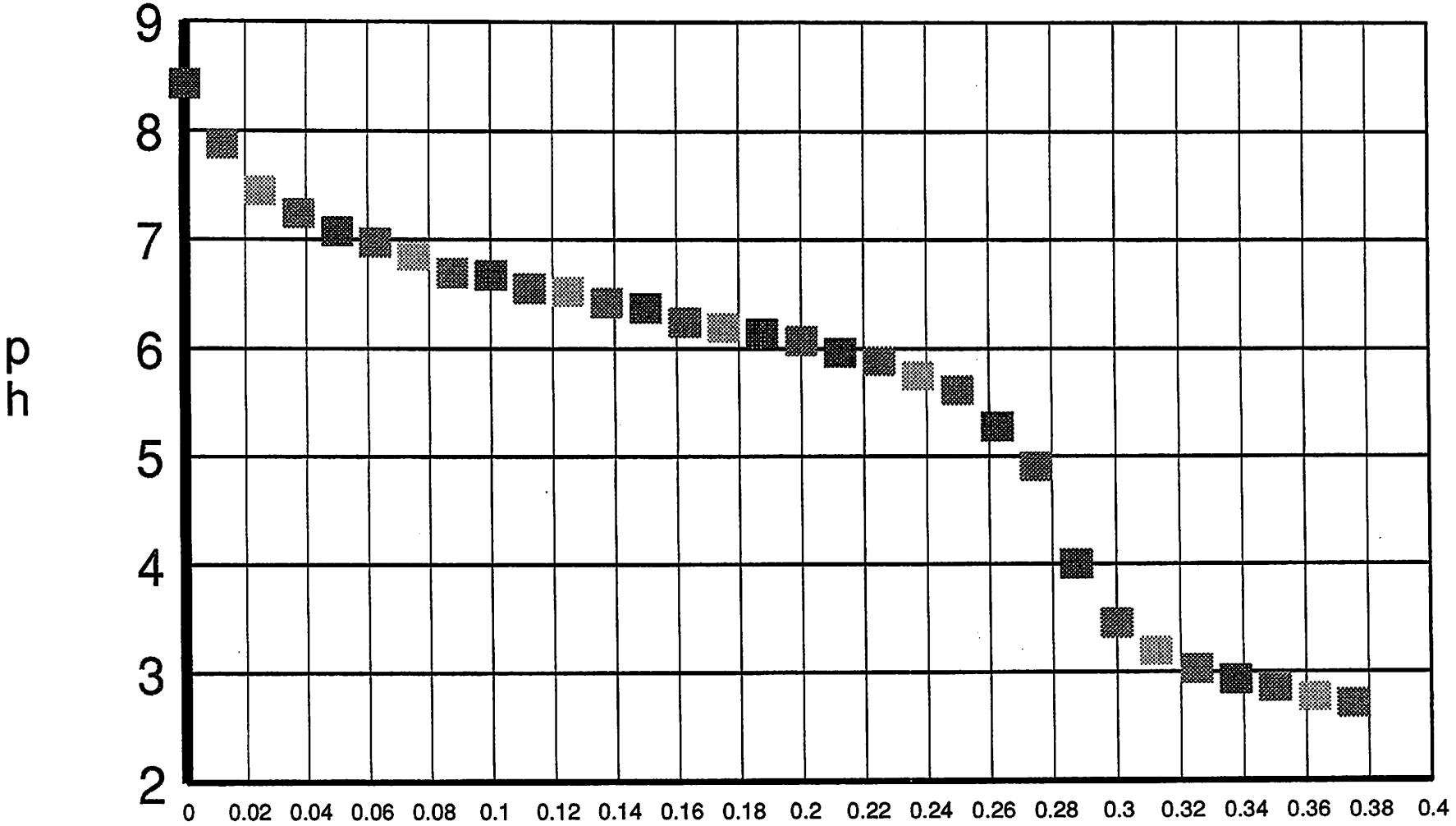
Id Number:	15
Sample Number:	120195 BR-10 D
Sample Time:	11:20:00
Sample Date:	12/1/1995
Well:	Yes
Stream:	No
Latitude:	35 50 31 N
Longitude:	117 52 19 W
Location:	MONITORING WELL BR-10 EAST END OF KE
Elevation:	2486
Depth of Well:	1950
Depth to Water:	317.09
Perf Section of Well:	1930-1950'
Field temp of Water:	24
Conductance of water:	1800
ph:	8.38
Acid Units at ph 4:	229.9
Alkalinity:	561

Monitoring Well BR-10 DEEP				12/1/1995			
Sample No	113095 BR-10 D			1120 HOURS			
				Took 2 2l bottles			
Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
23		1800					
24							
24.3	8.38						
Depth to Water=317.09		Depth of Well: 1950					
Perf section: 1930-1950							
Pumped 550 gallons before sample - 3.3 hours							
50 ml water sample from non-acid bottle				Temp:20.8			
ml=reading/800			1.600 +/- .005N H_2SO_4				
	Reading	ph	Vol of Acid ml			Vol of Acid	ph
	0	8.43	0.000			0.000	8.43
	10	7.88	0.013			0.013	7.88
	20	7.45	0.025			0.025	7.45
	30	7.24	0.038			0.038	7.24
	40	7.08	0.050			0.050	7.08
	50	6.97	0.063			0.063	6.97
	60	6.85	0.075			0.075	6.85
	70	6.69	0.088			0.088	6.69
	80	6.67	0.100			0.100	6.67
	90	6.55	0.113			0.113	6.55
	100	6.52	0.125			0.125	6.52
	110	6.42	0.138			0.138	6.42
	120	6.37	0.150			0.150	6.37
	130	6.24	0.163			0.163	6.24
	140	6.19	0.175			0.175	6.19
	150	6.14	0.188			0.188	6.14
	160	6.07	0.200			0.200	6.07
	170	5.96	0.213			0.213	5.96
	180	5.88	0.225			0.225	5.88
	190	5.75	0.238			0.238	5.75
	200	5.61	0.250			0.250	5.61
	210	5.27	0.263			0.263	5.27
	220	4.90	0.275			0.275	4.90
	230	4.00	0.288			0.288	4.00
	240	3.45	0.300			0.300	3.45
	250	3.20	0.313			0.313	3.20
	260	3.03	0.325			0.325	3.03
	270	2.93	0.338			0.338	2.93
	280	2.86	0.350			0.350	2.86
	290	2.77	0.363			0.363	2.77
	300	2.71	0.375			0.375	2.71
Aklinity=561.c mg/liter HCO_3^-							

Monitoring Well BR-10 Deep

Alkalinity Titration

1 DEC 1995



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ] Name: Monitoring Well BR-10

Location	Latitude: 35° 50' 31" N	Longitude: 117° 52' 19" W	Elevation: 2486'
	EAST END of 9 mile canyon ROAD		

Sample #: ~~113095BR-10D~~ 120195 BR-10D Sample Time: 11:20

Date: ~~30-NOV-1995~~ 12/01/95 Sampler: Charles C. Pierce

Depth of Well: 1950' Perf: 1930'-1950'

Depth to Water: 317.09

#120195 BR-10D

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	23		1800
Thermometer Weksler FPT	24		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	24.3	8.38	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature

Acid Units	ph	Acid Units	ph
Inital		13	
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

Comments:

266 gal/well Bore
STARTED PUMPING @ 0850
PUMPED 550 gals BEFORE Sample

ALKALINITY = 561

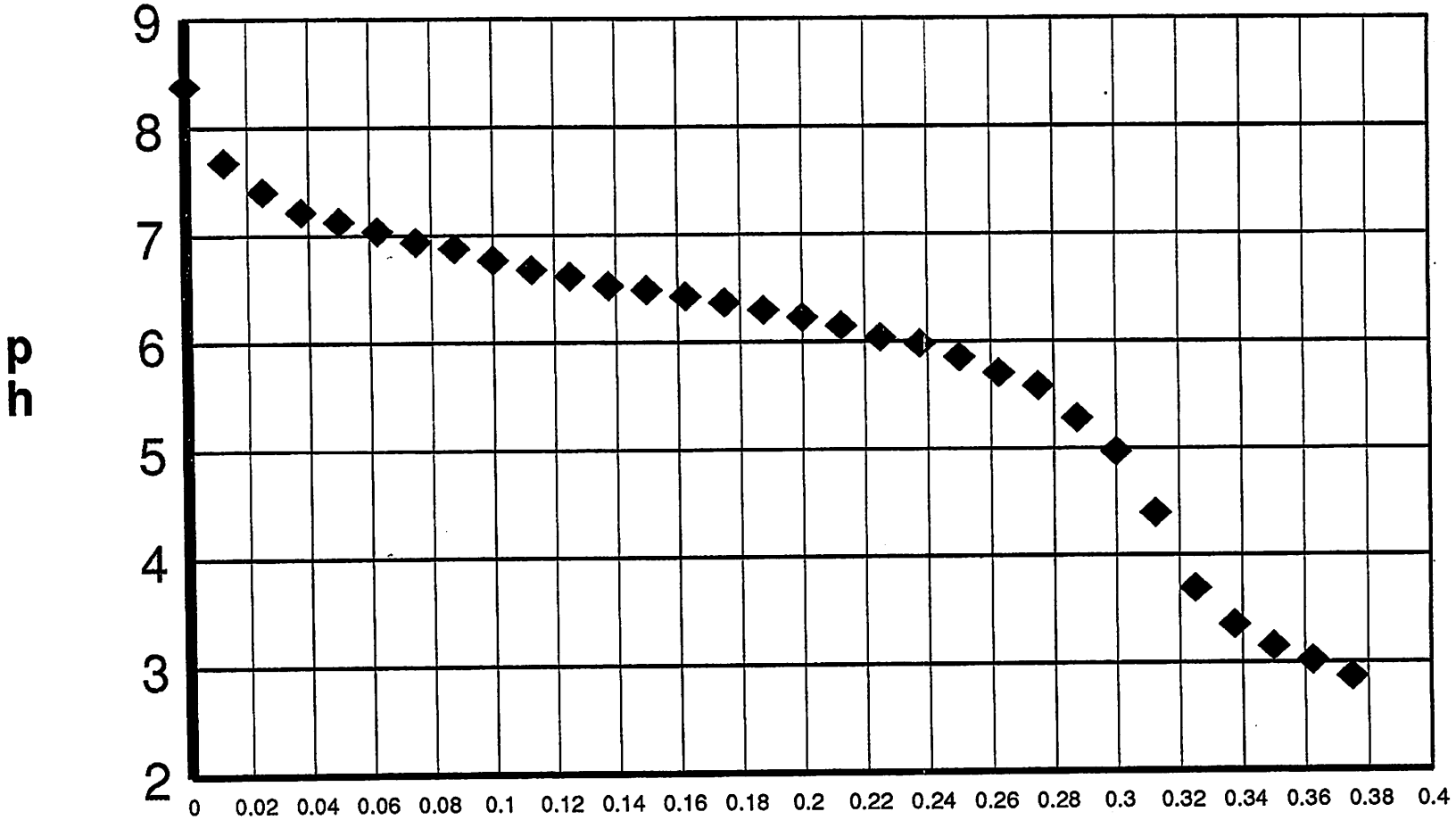
20.8 °C

0	8.43
10	7.88
20	7.45
30	7.24
40	7.08
50	6.97
60	6.85
70	6.69
80	6.67
90	6.55
100	6.52
110	6.42
120	6.37
30	6.24
40	6.19
50	6.14
60	6.07
70	5.96
80	5.88
90	5.75
200	5.61
10	5.27
20	4.90
30	4.00
40	3.45
50	3.20
60	3.03
70	2.93
80	2.86
90	2.77
300	2.71

Nine Mile Canyon Stream Sample

Alkalinity Titration

2 DEC1995



		250	4.39	0.3125			0.313	4.39
		260	3.69	0.3250			0.325	3.69
		270	3.35	0.3375			0.338	3.35
		280	3.15	0.3500			0.350	3.15
		290	3.02	0.3625			0.363	3.02
		300	2.87	0.3750			0.375	2.87
	Alkalinity calculation from titration data: 623.594 mg/l [HCO3]$^-$							

		Nine Mile Canyon			12/2/1995			
					Took 2 2l bottles			
	Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
	12		950					
	12							
	12.2	8.37						
	50 ml water sample from non-acid bottle				Temp:15.7			
	ml=reading/800			1.600 +/- .005N H_2SO_4				
		Reading	ph	Vol of Acid ml			Vol of Acid	ph
		0	8.38	0.000			0.000	8.38
		10	7.68	0.013			0.013	7.68
		20	7.41	0.025			0.025	7.41
		30	7.22	0.038			0.038	7.22
		40	7.13	0.050			0.050	7.13
		50	7.04	0.063			0.063	7.04
		60	6.94	0.075			0.075	6.94
		70	6.88	0.088			0.088	6.88
		80	6.77	0.100			0.100	6.77
		90	6.68	0.113			0.113	6.68
		100	6.62	0.125			0.125	6.62
		110	6.53	0.138			0.138	6.53
		120	6.49	0.150			0.150	6.49
		130	6.43	0.163			0.163	6.43
		140	6.37	0.175			0.175	6.37
		150	6.3	0.188			0.188	6.3
		160	6.23	0.200			0.200	6.23
		170	6.15	0.213			0.213	6.15
		180	6.04	0.225			0.225	6.04
		190	5.98	0.238			0.238	5.98
		200	5.85	0.250			0.250	5.85
		210	5.7	0.263			0.263	5.7
		220	5.58	0.275			0.275	5.58
		230	5.28	0.288			0.288	5.28
		240	4.97	0.3000			0.300	4.97

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☐ Stream ☑ Name: 9 MILE CANYON CREEK

Location: Latitude: 35° 50 33 N Longitude: 117° 55 35 W Elevation 3350

UPPER AQUEDUCT Rd CROSSES CREEK @ PIPE

Sample #: 120295 9MC

Sample Time: 1400

Date: 12-2-95

Sampler: Charles C. Pierce

Depth of Well

Perf

Depth to Water

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	12°	~~8.37~~	950
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	12.2	8.37	~~955~~

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature 15.7

Acid Units x10	ph	Acid Units	ph	
Inital	8.38	13	6.43	3.69
1	7.68	14	6.37	3.35
2	7.41	15	6.30	3.15
3	7.22	16	6.23	3.02
4	7.13	17	6.15	2.87
5	7.04	18	6.04	
6	6.94	19	5.98	
7	6.88	20	5.85	
8	6.77	21	5.70	
9	6.68	22	5.58	
10	6.62	23	5.28	
11	6.53	24	4.97	
12	6.49	25	4.39	

Comments:

623 mg/L HCO_3^-

4.39 − 3.69 = .7 ; .7/10 = .39/x

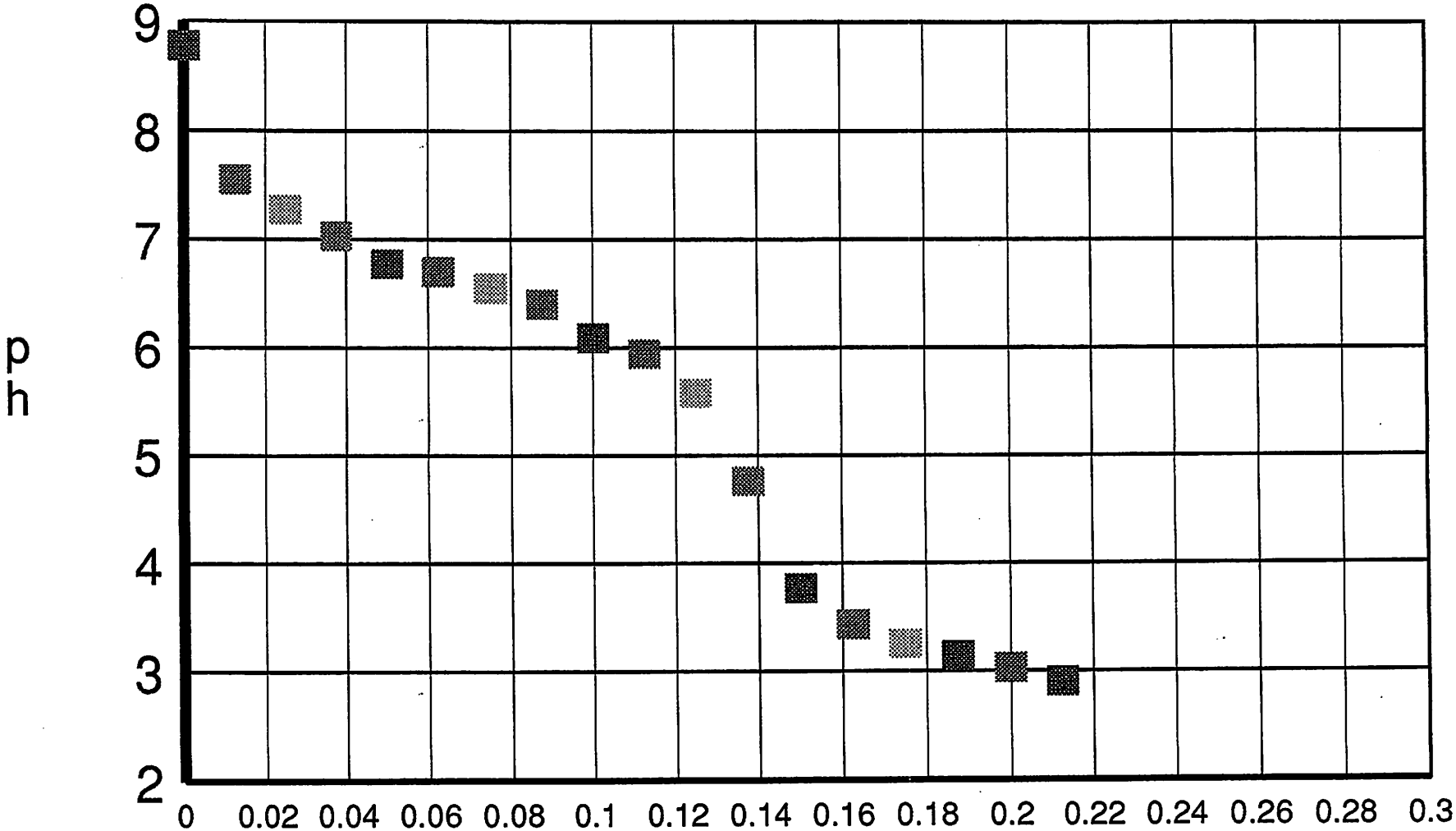
255.5

Id Number:	16
Sample Number:	120295 9MC
Sample Time:	14:00:00
Sample Date:	12/2/1995
Well:	No
Stream:	Yes
Latitude:	35 50 33 N
Longitude:	117 55 35 W
Location:	Where upper Aquaduct road crosses stream in botto
Elevation:	0
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	12
Conductance of water:	950
ph:	8.37
Acid Units at ph 4:	255.57
Alkalinity:	623

Monitoring Well BR-5 Shallow

Alkalinity Titration

1 DEC 1995



hallow				12/1/1995				
Sample No	120195 BR-5 S			1410 Hours				
				Took 2 2l bottles				
Temp. °C	ph	mmhos		one acidified with 10ml HNO_3				
27		920						
27								
27	8.7							
Depth to Water=337.9		Depth of Well:870			Aklinity=278.11 mg/liter HCO_3^-			
Perf section:850-870'								
Pumped 250 gallons before sample - 1.7 hours								
50 ml water sample from non-acid bottle			Temp: 23					
ml=reading/800			1.600 +/- .005N H_2SO_4					
	Reading	ph	Vol of Acid ml			Vol of Acid	ph	
	0	8.77	0.000			0.000	8.77	
	10	7.55	0.013			0.013	7.55	
	20	7.28	0.025			0.025	7.28	
	30	7.03	0.038			0.038	7.03	
	40	6.77	0.050			0.050	6.77	
	50	6.70	0.063			0.063	6.70	
	60	6.55	0.075			0.075	6.55	
	70	6.40	0.088			0.088	6.40	
	80	6.09	0.100			0.100	6.09	
	90	5.94	0.113			0.113	5.94	
	100	5.58	0.125			0.125	5.58	
	110	4.76	0.138			0.138	4.76	
	120	3.77	0.150			0.150	3.77	
	130	3.43	0.163			0.163	3.43	
	140	3.25	0.175			0.175	3.25	
	150	3.14	0.188			0.188	3.14	
	160	3.03	0.200			0.200	3.03	
	170	2.90	0.213			0.213	2.90	

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X]	Stream [ ]	Name: Monitoring Well BR-5			
Location	Latitude: 35° 43' 05"	N	Longitude: 117° 52' 18"	W	Elevation: 2550'
	½ mile north of Keeler on old 395 next to John Oberhouse's place (south)				
Sample #:120195 BR-5 S			Sample Time: 1410		
Date: 1 DEC 1995			Sampler: Charles C. Pierce		
Depth of Well: 1980'			Perf: 850'-870'		
Depth to Water: 337.92					

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	27		9.20
Thermometer Weksler FPT	27		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	27	8.70	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 23

Acid Units	ph	Acid Units	ph
Inital	8.77	13	3.43
1	7.55	14	3.25
2	7.28	15	3.14
3	7.03	16	3.03
4	6.77	17	2.90
5	6.70	18	
6	6.55	19	
7	6.40	20	
8	6.09	21	
9	5.94	22	
10	5.58	23	
11	4.76	24	
12	3.77	25	

Comments:

Well Bore vol H_2O = 86 gal.
Pumped 250 gal
1.7 Hrs

$\Delta = \frac{.99}{10} = .76$ x

Acid Alkalinity = 117.67 Acc = 287.11

Id Number:	17
Sample Number:	120195 BR-5 S
Sample Time:	14:10:00
Sample Date:	12/1/1995
Well:	Yes
Stream:	No
Latitude:	35 43 05 N
Longitude:	117 52 184 W
Location:	.5 Mile north of Leliter Road on old 395, just south
Elevation:	2550
Depth of Well:	870
Depth to Water:	337.92
Perf Section of Well:	850-870'
Field temp of Water:	27
Conductance of water:	920
ph:	8.7
Acid Units at ph 4:	117.67
Alkalinity:	287.11

Id Number:	18
Sample Number:	120795 BR-5 M
Sample Time:	10:45:00
Sample Date:	12/7/1995
Well:	Yes
Stream:	No
Latitude:	35 43 05 N
Longitude:	117 52 184 W
Location:	.5 Mile north of Leliter Road on old 395, just south
Elevation:	2550
Depth of Well:	1610
Depth to Water:	345.5
Perf Section of Well:	1590-1610
Field temp of Water:	28.5
Conductance of water:	2000
ph:	8.57
Acid Units at ph 4:	441.579
Alkalinity:	1077.5

BR-5 Medium				12/7/1995			
Sample No	120795 BR-5 M			1045 Hours			
				Took 2 2l bottles			
Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
28.5		2000					
28.5							
28.5	8.57						
Depth to Water=345.5		Depth of Well:1610'			Aklinity=1077.5 mg/liter HCO_3^-		
Perf section:1590'-1610'							
Pumped 440gallons before sample - 1.5 hours							
50 ml water sample from non-acid bottle				Temp: 23			
ml=reading/800			1.600 +/- .005N H_2SO_4				
	Reading	ph	Vol of Acid ml			Vol of Acid	ph
	0	8.58	0.000			0.000	8.58
	10	8.43	0.013			0.013	8.43
	20	8.16	0.025			0.025	8.16
	30	7.88	0.038			0.038	7.88
	40	7.67	0.050			0.050	7.67
	50	7.45	0.063			0.063	7.45
	60	7.25	0.075			0.075	7.25
	70	7.19	0.088			0.088	7.19
	80	7.08	0.100			0.100	7.08
	90	7.03	0.113			0.113	7.03
	100	7.00	0.125			0.125	7.00
	110	6.96	0.138			0.138	6.96
	120	6.86	0.150			0.150	6.86
	130	6.81	0.163			0.163	6.81
	140	6.76	0.175			0.175	6.76
	150	6.71	0.188			0.188	6.71
	160	6.69	0.200			0.200	6.69
	170	6.66	0.213			0.213	6.66
	180	6.62	0.225			0.225	6.62
	190	6.58	0.238			0.238	6.58
	200	6.54	0.250			0.250	6.54
	210	6.51	0.263			0.263	6.51
	220	6.48	0.275			0.275	6.48
	230	6.40	0.288			0.288	6.40
	240	6.33	0.300			0.300	6.33
	250	6.30	0.313			0.313	6.30
	260	6.31	0.325			0.325	6.31
	270	6.28	0.338			0.338	6.28
	280	6.26	0.350			0.350	6.26
	290	6.23	0.363			0.363	6.23
	300	6.20	0.375			0.375	6.20
	310	6.16	0.388			0.388	6.16
	320	6.11	0.400			0.400	6.11
	330	6.07	0.413			0.413	6.07
	340	6.01	0.425			0.425	6.01
	350	5.95	0.438			0.438	5.95
	360	5.91	0.450			0.450	5.91

	370	5.85	0.463			0.4625	5.85
	380	5.74	0.475			0.475	5.74
	390	5.68	0.488			0.4875	5.68
	400	5.59	0.500			0.5	5.59
	410	5.45	0.513			0.5125	5.45
	420	5.32	0.525			0.525	5.32
	430	5.01	0.538			0.5375	5.01
	440	4.12	0.550			0.55	4.12
	450	3.36	0.563			0.5625	3.36
	460	3.34	0.575			0.575	3.34
	470	3.07	0.588			0.5875	3.07
	480	2.96	0.600			0.6	2.96
	490	2.86	0.613			0.6125	2.86
	500	2.75	0.625			0.625	2.75

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ] Name:

Location	Latitude: 35° 43' 05" N	Longitude: 117 52' 18" W	Elevation: 2550'
	½ N of Leliter on 395 – Next to John Overhouse's place		377-5.07

BC 17

Sample #: 120795 BR-5 M	Sample Time: 10:45
Date: 7 DEC 1995	Sampler: Charles C. Pierce
Depth of Well: 1980'	Perf: 1590'-1610'
Depth to Water: 345.50'	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	28.5°		2000
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	28° C	8.54	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 24.8 °C

Acid Units X10	ph	Acid Units X 10	ph	
Inital	8.58	13	6.81	6.31 5.68
1	8.43	14	6.76	6.28 5.59
2	8.16	15	6.71	6.26 5.45
3	7.88	16	6.69	6.23 5.32
4	7.67	17	6.66	6.20 5.01
5	7.45	18	6.62	6.16 4.12
6	7.27	19	6.58	6.11 3.63
7	7.19	20	6.54	6.07 3.34
8	7.08	21	6.50	6.01 3.07
9	7.03	22	6.48	5.95 2.96
10	7.00	23	6.40	5.91 2.86
11	6.96	24	6.33	5.85 2.78 (500)
12	6.86	25	6.30	(360) 5.74

Comments:

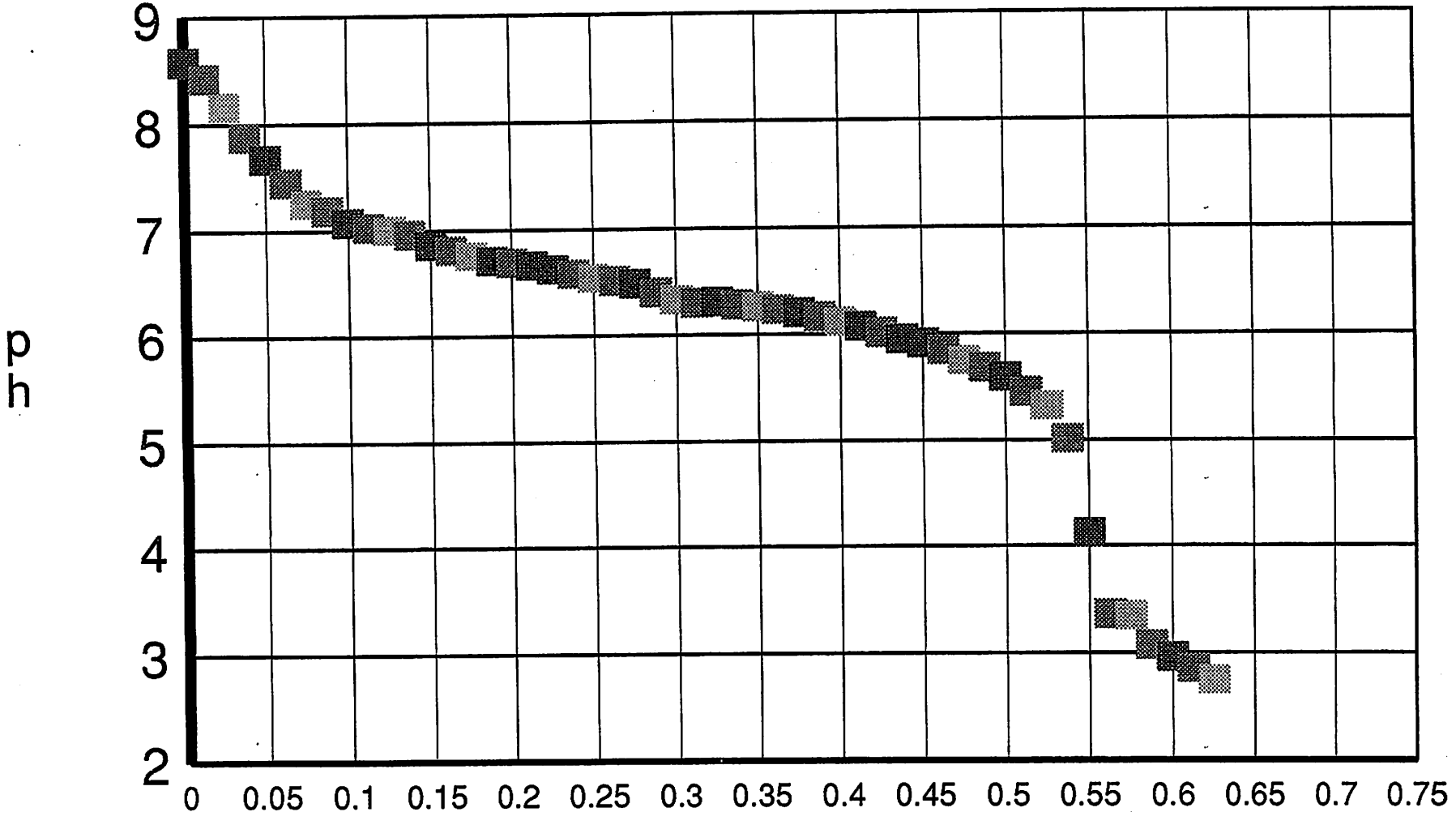
WELL BORE 206 gals
Pumped 440 gal Before Sample
1.5 hr

1 = 5 mg/

Monitoring Well BR-5 Medium

Alkalinity Titration

7 DEC 1995



Id Number:	22
Sample Number:	121595 NR1-D
Sample Time:	1:45:00 PM
Sample Date:	12/15/95
Well:	Yes
Stream:	No
Latitude:	35 43 56 N
Longitude:	117 49 52 W
Location:	NW Corner of East field on Neal Ranch
Elevation:	2268
Depth of Well:	1980
Depth to Water:	261
Perf Section of Well:	1960-1980
Field temp of Water:	25.9
Conductance of water:	0
ph:	9.82
Acid Units at ph 4:	0
Alkalinity:	0

INDIAN WELLS VALLEY PROJECT
GEOCHEMICAL/WATER SAMPLING DATA SHEET

WELL: NR-1 DEEP	
SAMPLE #:	SAMPLE TIME: 13:45
DATE: 12-15-95	SAMPLER: OSTDICK / TRUJILLO
DEPTH OF WELL: 1980	Well Volume Calculation:
DEPTH TO GROUNDWATER 261	1719 X .174 = 299.1 gal
WATER COLUMN HEIGHT (h): 1719	
GAL./FT. Conv. Factor: 2.0" sch.40 pipe = .174	
WELL PURGE	

Start time:	Volume (gal.)	Q	Hose Depth
12:51	–		400'
12:58	55		
13:03	55		
13:09	55		
13:14	55		
13:21	55		
13:26	55		

13:28 55
13:31 55
13:35 55
13:42 55
13:45 55

WATER PARAMETERS

	Time	Volume (gal.)	Temp.	Ph.	TDS (ppm)	CND
1	13:15	175	26.7°C	10.12	10,000+	10+ mS/cm
2	13:31	440	25.9°C	9.82		
3						
4						
5						
6						
8						
9						

ALKALINITY TITRATION

Filter sample and measure sample with a pipette.

Voume measured: 50 ml.	
Acid: H2SO4 1.6N +/- .005	Digits = mg/l CaCO3 in 100 ml: Digits x 0.002 = meq

	Acid Units	pH
1	initial	9.82
2	50	9.69
3	150	9.68
4	300	9.65
5	600	9.57
6	1000	9.46
7	2000	9.14
8	2500	8.94
9	3000	8.68
10	3600	8.16
11	4000	7.41
12	4500	7.01
13		
14		

	Acid Units	pH
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		

COMMENTS: FIRST BRRL DARK, SUDSY, HDROCRBN ODOR VERY STRONG, 3RD BRRL SAME – TD + CND TOO HIGH FOR INSTRUMENTS, 8th BRRL COLOR TURNING GREY-GREEN, STILL STRONG ODOR, COULD NOT TITRATE BELOW 7.01

CND METER MALFUNCTIONED

Winter Water Data — Neal Ranch 1-Shallow — 12/15/95
Collected by Jim Ostdick and Ray Trujillo — Time: 13:35
Took 2 2l bottles

	Temp. °C	ph	mmhos	one acidified with 10ml HNO_3
VSI Meter				
50ml water				
PH/Temp. meter	24.2	9.41		

Field titration — 50 ml water sample from non-acid bottle
Diditial pipete — ml=reading/800 — 1.600 +/- .005N H_2SO_4

Temp. =25.9 °C

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	9.82	0.000	0.000	9.82
50	9.69	0.063	0.063	9.69
150	9.68	0.188	0.188	9.68
300	9.65	0.375	0.375	9.65
600	9.57	0.750	0.750	9.57
1000	9.46	1.250	1.250	9.46
2000	9.14	2.500	2.500	9.14
2500	8.94	3.125	3.125	8.94
3000	8.68	3.750	3.750	8.68
3600	8.16	4.500	4.500	8.16
4000	7.41	5.000	5.000	7.41
4500	7.01	5.625	5.625	7.01

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ] Name: IWVWD WELL NEAL RANCH-1

Location	Latitude: 35° 43' 56" N	Longitude: 117° 49' 52" W	Elevation: 2268'

Sample #: NR-1 D	Sample Time:
Date:	Sampler: Charles C. Pierce
Depth of Well: 2001'	Perf: 1960'-1980'
Depth to Water: 261.0'	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210			
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812			

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature

Acid Units	ph	Acid Units	ph
Inital		13	
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

Comments:

Id Number:	23
Sample Number:	121595 NR-2S
Sample Time:	11:40:00 AM
Sample Date:	12/15/95
Well:	Yes
Stream:	No
Latitude:	35 43 10 N
Longitude:	117 50 33 W
Location:	South West corner of Neal Ranch on west side of Le
Elevation:	2268
Depth of Well:	350
Depth to Water:	136.1
Perf Section of Well:	330-350
Field temp of Water:	23.9
Conductance of water:	0
ph:	8.44
Acid Units at ph 4:	148.83
Alkalinity:	363

Winter Water Data — Neal Ranch 2-Shallow — 12/15/95
Collected by Jim Ostdick and Ray Trujillo — Time: 11:40
Took 2 2l bottles

	Temp. °C	ph	mmhos	one acidified with 10ml HNO_3
VSI Meter				
50ml water				
PH/Temp. meter	23.9	8.44		

Field titration — 50 ml water sample from non-acid bottle
Diditial pipete — ml=reading/800 — 1.600 +/- .005N H_2SO_4

Temp. = 23.9 °C

363 mg/l [HCO_3]

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	8.37	0.000	0.000	9.41
50	7.22	0.063	0.063	8.93
65	6.84	0.081	0.125	7.82
75	6.65	0.094	0.156	7.29
100	6.29	0.125	0.188	7.12
125	5.79	0.156	0.219	6.96
135	5.41	0.169	0.250	6.83
145	4.36	0.181	0.281	6.73
150	3.89	0.188	0.313	6.63

INDIAN WELLS VALLEY PROJECT
GEOCHEMICAL/WATER SAMPLING DATA SHEET

WELL: NR2 - SHALLOW	
SAMPLE #:	SAMPLE TIME: 11:40
DATE: 12-15-95	SAMPLER: OSTDICK / TRUJILLO
DEPTH OF WELL: 350	Well Volume Calculation:
DEPTH TO GROUNDWATER 135	215 x .174 = 37.4 gal
WATER COLUMN HEIGHT (h): 215	
GAL./FT. Conv. Factor: 2.0" sch.40 pipe = .174	
WELL PURGE	

Start time:	Volume (gal.)	Q	Hose Depth
11:31	—		300'
11:35	55		
11:38	55		
11:40	55		

WATER PARAMETERS

	Time	Volume (gal.)	Temp.	Ph.	TDS (ppm)	CND
1	11:35	55	24.2° C	8.46	630	1.26 mS/cm
2	11:38	110	25.4° C	8.45	500	1.00 mS/cm
3	11:40	165	23.9° C	8.44	490	0.98 mS/cm
4						
5						
6						
8						
9						

ALKALINITY TITRATION

Filter sample and measure sample with a pipette.

Voume measured: 50 ml.	
Acid: H2SO4 1.6N +/- .005	Digits = mg/l CaCO3 in 100 ml: Digits x 0.002 = meq

	Acid Units	pH
1	initial	8.37
2	50	7.22
3	65	6.84
4	75	6.65
5	100	6.29
6	125	5.79
7	135	5.41
8	145	4.36
9	150	3.89
10		
11		
12		
13		
14		

Δ

	Acid Units	pH
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		

COMMENTS: 11:31 START NO ODOR FIRST BARREL GRAY, 2nd CLEAR

$\frac{.47}{5} = \frac{.36}{x}$ $x = 3.83$

Acid: 148.83

$HCO_3 = [148.83] \cdot 2.44 = 363$ mg/l $[HCO_3]$

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ]	Name: IWVWD WELL NEAL RANCH-2			
Location	Latitude: 35° 43' 10" N	Longitude: 117° 50' 33" W	Elevation: 2268'	

Sample #: NR-2 S	Sample Time:
Date:	Sampler: Charles C. Pierce
Depth of Well: 1950'	Perf: 330'-350'
Depth to Water: 136.1'	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210			
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812			

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml		Acid: 1.600+/-.005 N H_2SO_4	
Temperature			
Acid Units	ph	Acid Units	ph
Inital		13	
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

Comments:

Id Number:	19
Sample Number:	120795 BR-5 D
Sample Time:	14:20:00
Sample Date:	12/7/1995
Well:	Yes
Stream:	No
Latitude:	35 43 05 N
Longitude:	117 52 184 W
Location:	.5 Mile north of Leliter Road on old 395, just south
Elevation:	2550
Depth of Well:	1980
Depth to Water:	347.9
Perf Section of Well:	1960-1980
Field temp of Water:	27
Conductance of water:	2160
ph:	8.68
Acid Units at ph 4:	473.035
Alkalinity:	1154.2

BR-5 Deep				12/7/1995			
Sample No	120795 BR-5 D			1420 Hours			
				Took 2 2l bottles			
Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
27		2160					
27							
27	8.68						
Depth to Water=347.90'		Depth of Well:1980'			Aklinity=1154.2 mg/liter HCO_3^-		
Perf section:1960'-1980'							
Pumped 550gallons before sample -2.5 hours							
50 ml water sample from non-acid bottle				Temp: 22.8			
ml=reading/800			1.600 +/- .005N H_2SO_4				
	Reading	ph	Vol of Acid ml			Vol of Acid	ph
	0	8.77	0.000			0.000	8.77
	10	8.65	0.013			0.013	8.65
	20	8.47	0.025			0.025	8.47
	30	8.05	0.038			0.038	8.05
	40	7.85	0.050			0.050	7.85
	50	7.65	0.063			0.063	7.65
	60	7.40	0.075			0.075	7.40
	70	7.33	0.088			0.088	7.33
	80	7.23	0.100			0.100	7.23
	90	7.14	0.113			0.113	7.14
	100	7.08	0.125			0.125	7.08
	110	7.02	0.138			0.138	7.02
	120	6.96	0.150			0.150	6.96
	130	6.90	0.163			0.163	6.90
	140	6.85	0.175			0.175	6.85
	150	6.79	0.188			0.188	6.79
	160	6.75	0.200			0.200	6.75
	170	6.70	0.213			0.213	6.70
	180	6.67	0.225			0.225	6.67
	190	6.65	0.238			0.238	6.65
	200	6.61	0.250			0.250	6.61
	210	6.56	0.263			0.263	6.56
	220	6.52	0.275			0.275	6.52
	230	6.50	0.288			0.288	6.50
	240	6.46	0.300			0.300	6.46
	250	6.41	0.313			0.313	6.41
	260	6.36	0.325			0.325	6.36
	270	6.31	0.338			0.338	6.31
	280	6.28	0.350			0.350	6.28
	290	6.26	0.363			0.363	6.26
	300	9.21	0.375			0.375	9.21
	310	6.17	0.388			0.388	6.17
	320	6.13	0.400			0.400	6.13
	330	6.11	0.413			0.413	6.11
	340	6.07	0.425			0.425	6.07
	350	6.01	0.438			0.438	6.01
	360	5.97	0.450			0.450	5.97

	370	5.91	0.463			0.463	5.91
	380	5.85	0.475			0.475	5.85
	390	5.82	0.488			0.488	5.82
	400	5.71	0.500			0.500	5.71
	410	5.64	0.513			0.513	5.64
	420	5.56	0.525			0.525	5.56
	430	5.33	0.538			0.538	5.33
	440	5.11	0.550			0.550	5.11
	450	4.81	0.563			0.563	4.81
	460	4.17	0.575			0.575	4.17
	470	3.61	0.588			0.588	3.61
	480	3.34	0.600			0.600	3.34
	490	3.16	0.613			0.613	3.16
	500	3.04	0.625			0.625	3.04
	510	2.90	0.638			0.638	2.90
	520	2.79	0.650			0.650	2.79

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ]	Name: BR-5 Deep Monitoring well		
Location	Latitude: 35° 43' 05" N	Longitude: 117° 52' 18" W	Elevation: 2550'
	½ N of Lelinge on 395 Next to John Overhalser's place		
Sample #: 120195 BR-5 D		Sample Time: 1420	
Date: 1 DEC 1995		Sampler: Charles C. Pierce	
Depth of Well: 1980'		Perf: 1960'-1980'	
Depth to Water: 347.90'			

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	27		2160
Thermometer Weksler FPT	25		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	27	8.68	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature

Acid Units	ph	Acid Units	ph
Inital		13	
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

Comments: 266 gal in well bore
Pump 10 Barrels for 2 well volumes
2.5 hours

Well: BR-10D Data Sheet 7 Dec 95 Date

22.4 °C

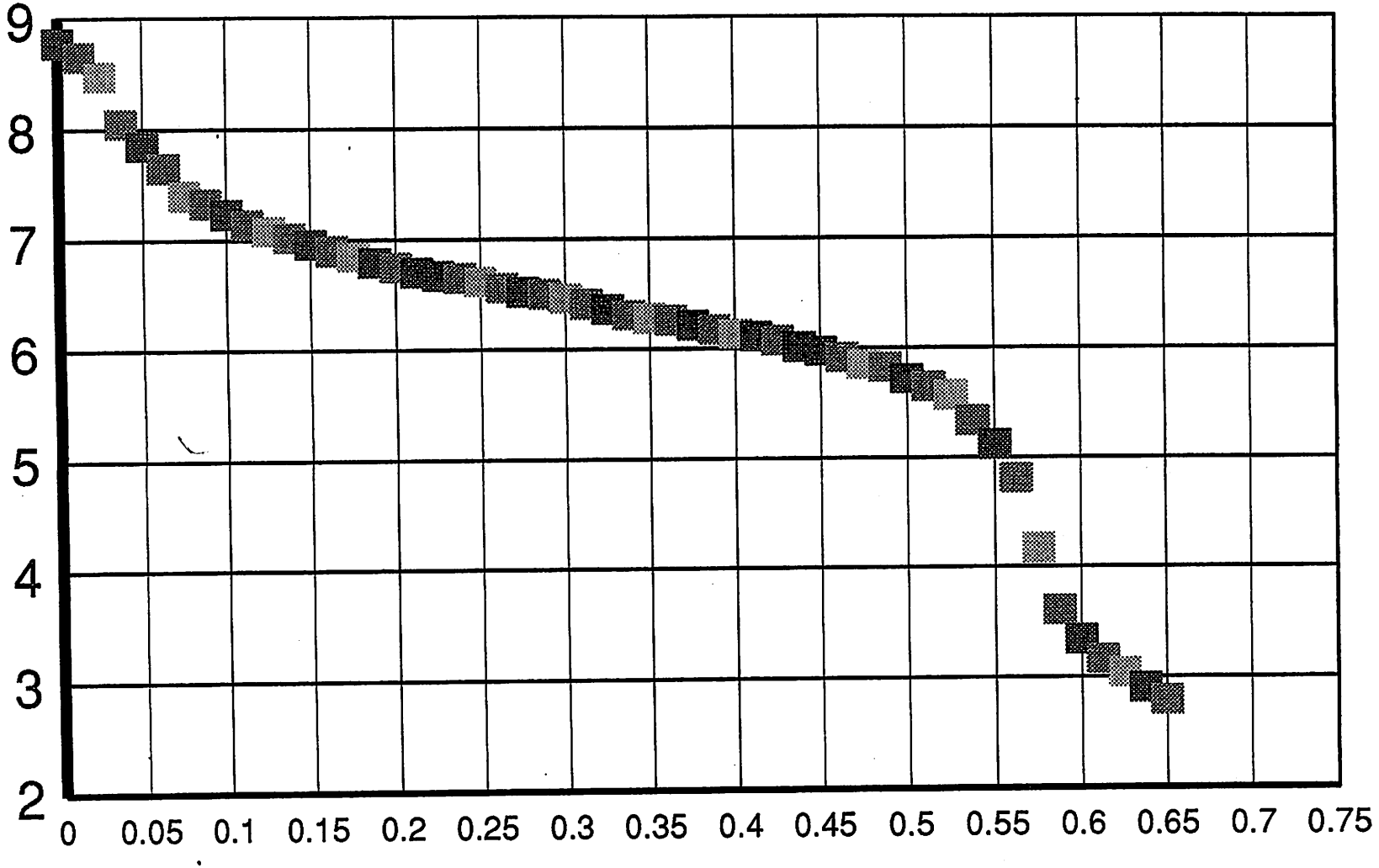
Acid Units	ph	Acid Units	ph	Acid Units	ph
Initial	8.77	310	6.17	620	
10	8.65	320	6.13	630	
20	8.47	330	6.11	640	
30	8.25	340	6.07	650	
40	7.85	350	6.01	660	
50	7.65	360	5.97	670	
60	7.40	370	5.91	680	
70	7.33	380	5.85	690	
80	7.23	390	5.82	700	
90	7.14	400	5.71	710	
100	7.08	410	5.64	720	
110	7.02	420	5.56	730	
120	6.96	430	5.45	740	
130	6.90	440	5.33	750	
140	6.85	450	5.11	760	
150	6.79	460	4.81	770	
160	6.75	470	4.17	780	
170	6.70	480	3.61	790	
180	6.67	490	3.34	800	
190	6.65	500	3.16	810	
200	6.61	510	3.09	820	
210	6.56	520	2.90	830	
220	6.52	530	2.79	840	
230	6.50	540		850	
240	6.46	550		860	
250	6.41	560		870	
260	6.36	570		880	
270	6.31	580		890	
280	6.28	590		900	
290	6.26	600		910	
300	6.21	610		920	

Acid Titration Charles C. Pierce

Monitoring Well BR-5 Deep

Alkalinity Titration

7 DEC 1995



Vol of Acid ml

Id Number:	21
Sample Number:	121595 NR1-S
Sample Time:	2:35:00 PM
Sample Date:	12/15/95
Well:	Yes
Stream:	No
Latitude:	35 43 56 N
Longitude:	117 49 52 W
Location:	NW Corner of East field on Neal Ranch
Elevation:	2268
Depth of Well:	270
Depth to Water:	96.95
Perf Section of Well:	250-270
Field temp of Water:	24.2
Conductance of water:	0
ph:	9.41
Acid Units at ph 4:	487.24
Alkalinity:	1188.87

INDIAN WELLS VALLEY PROJECT
GEOCHEMICAL/WATER SAMPLING DATA SHEET

WELL: NR-1 SHALLOW			
SAMPLE #:		SAMPLE TIME: 14:35	
DATE: 12-15-95	SAMPLER:	OSTDICK / TRUJILLO	
DEPTH OF WELL: 270		Well Volume Calculation:	
DEPTH TO GROUNDWATER 97		.173 x .174 = 30 gal	
WATER COLUMN HEIGHT (h): 173			
GAL./FT. Conv. Factor: 2.0" sch.40 pipe = .174			
WELL PURGE			

Start time:	Volume (gal.)	Q	Hose Depth
14:25	-		260'
14:30	55		
14:35	55		

WATER PARAMETERS

	Time	Volume (gal.)	Temp.	Ph.	TDS (ppm)	CND
1	14:35	110	24.2°C	9.41		
2						
3						
4						
5						
6						
8						
9						

ALKALINITY TITRATION

Filter sample and measure sample with a pipette.

Voume measured:	50 ml.
Acid:	H2SO4 1.6N +/- .005

Digits = mg/l CaCO3 in 100 ml: Digits x 0.002 = meq

	Acid Units	pH
1	initial	9.41
2	50	8.93
3	100	7.82
4	125	7.29
5	150	7.12
6	175	6.96
7	200	6.83
8	225	6.73
9	250	6.63
10	300	6.41
11	325	6.32
12	350	6.21
13	375	6.08
14	400	5.92

	Acid Units	pH
15	410	5.86
16	420	5.78
17	430	5.69
18	440	5.58
19	450	5.45
20	460	5.31
21	470	5.04
22	480	4.46
23	485	4.13
24	490	3.84
25		
26		
27		
28		

] Δ = .29

COMMENTS: No odor, slight greenish color, clearing

$\frac{.29}{5} = \frac{.13}{x}$ $x = 2.24$

Acid = 485 + 2.24 = 487.24

(487.24)(.002)(20)(61) = 1188.87 mg/l [illegible]

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ] Name: IWVWD WELL NEAL RANCH-1

Location	Latitude: 35° 43' 56" N	Longitude: 117° 49' 52" W	Elevation: 2268'

Sample #: NR-1 S	Sample Time:
Date:	Sampler: Charles C. Pierce
Depth of Well: 2001'	Perf: 250'-270'
Depth to Water: 96.95'	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210			
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812			

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature

Acid Units	ph	Acid Units	ph
Inital		13	
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

Comments:

Id Number:	20
Sample Number:	010696NNC
Sample Time:	11:00:00 AM
Sample Date:	1/6/96
Well:	No
Stream:	Yes
Latitude:	
Longitude:	
Location:	No Name Canyon where upper aquaduct road crosse
Elevation:	3400
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	15.6
Conductance of water:	1400
ph:	7.9
Acid Units at ph 4:	310.434
Alkalinity:	757.459

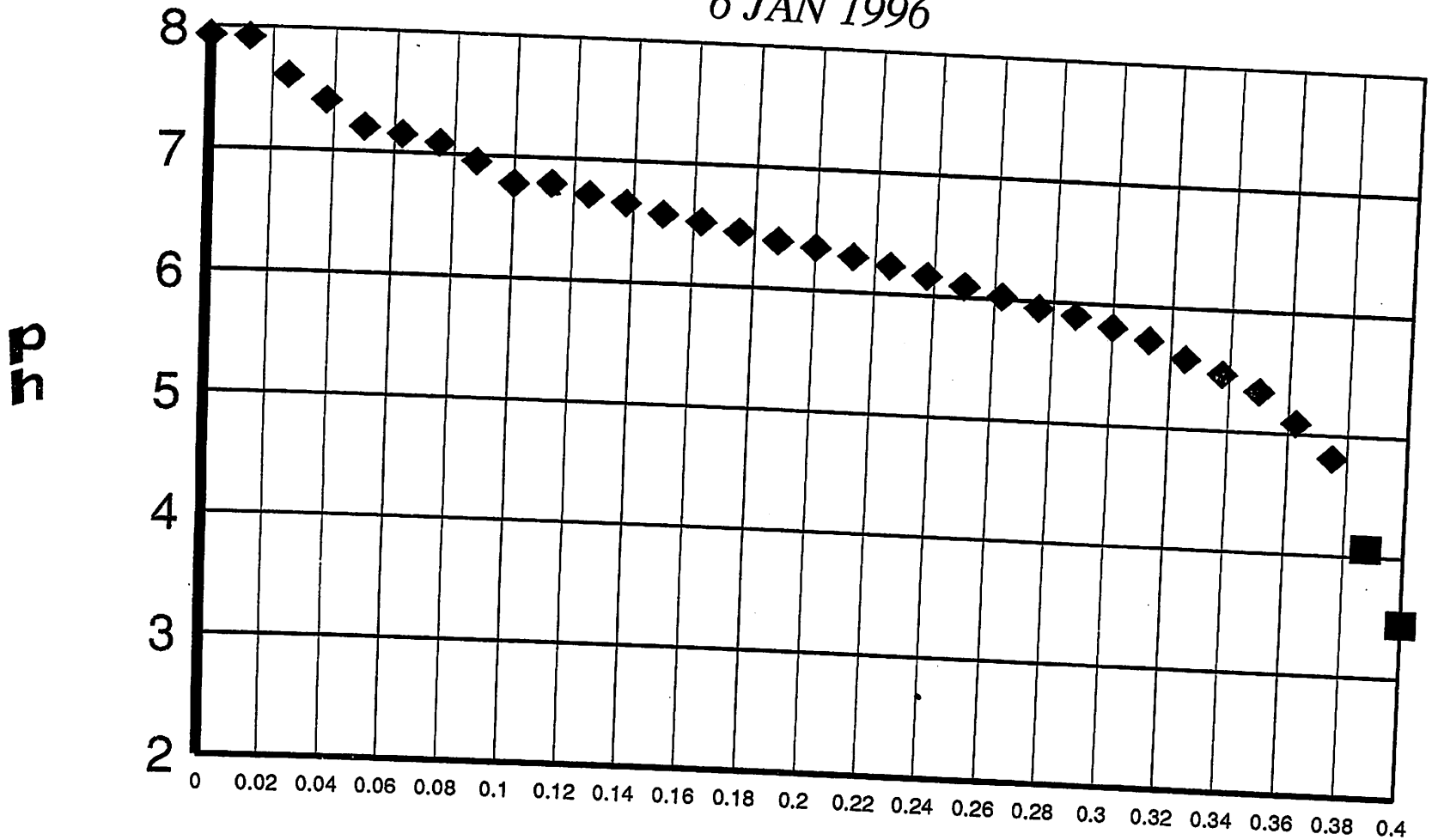
Winter Water Data		No Name Canyon		06-Jan-96			
Collected by Charles Pierce							
Collected in creek where upper aqueduct road crosses creek				Took 2 2l bottles			
	Temp. °C	pH	mmhos	one acidified with 10ml HNO_3			
VSI Meter	16.5		1400				
50ml water	16.5						
pH/Temp. meter	15.6	7.9					
Field titration	50 ml water sample from non-acid bottle						
Digital pipette	ml=reading/800			1.600 +/- .005N H_2SO_4			
Temp. = 15.8	Reading	pH	Vol. of Acid ml	Vol of Acid	p		
	0	7.93	0.000	0.000	7.93		
	10	7.92	0.013	0.013	7.92		
	20	7.61	0.025	0.025	7.61		
	30	7.41	0.038	0.038	7.41		
	40	7.2	0.050	0.050	7.2		
	50	7.15	0.063	0.063	7.15		
	60	7.09	0.075	0.075	7.09		
	70	6.95	0.088	0.088	6.95		
	80	6.78	0.100	0.100	6.78		
	90	6.79	0.113	0.113	6.79		
	100	6.71	0.125	0.125	6.71		
	110	6.65	0.138	0.138	6.65		
	120	6.57	0.150	0.150	6.57		
	130	6.52	0.163	0.163	6.52		
	140	6.45	0.175	0.175	6.45		
	150	6.39	0.188	0.188	6.39		
	160	6.35	0.200	0.200	6.35		
	170	6.29	0.213	0.213	6.29		
	180	6.23	0.225	0.225	6.23		
	190	6.16	0.238	0.238	6.16		
	200	6.09	0.250	0.250	6.09		
	210	6.02	0.263	0.263	6.02		
	220	5.94	0.275	0.275	5.94		
	230	5.89	0.288	0.288	5.89		
	240	5.81	0.300	0.300	5.81		
	250	5.72	0.313	0.313	5.72		
	260	5.58	0.325	0.325	5.58		
	270	5.47	0.338	0.338	5.47		
	280	5.34	0.350	0.350	5.34		
	290	5.09	0.363	0.363	5.09		
	300	4.81	0.375	0.375	4.81		
	310	4.07	0.388	0.388	4.07		
	320	3.45	0.400	0.400	3.45		
	330	3.12	0.413	0.413	3.12		
	340	2.97	0.425	0.425	2.97		
	350	2.84	0.438	0.438	2.84		

Alkalinity calculation from titration data: 757.459 mg/l [HCO3]

NoNameCanyon Stream Sample

Alkalinity Titration

6 JAN 1996



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☐ Stream ☐ Name: No Name Canyon

Location: Latitude: 35° N Longitude: 117° W Elevation 3400

WHERE UPPER AQUADUCT ROAD CROSSES STEAM

Sample #: 01Ø696 NNC

Sample Time: 1100

Date: 6 JAN 96

Sampler: Charles C. Pierce

Depth of Well

Perf

Depth to Water

Water Parameters

	Temp °C	ph	mmhos
Instrument			
YSI Model 33 S-C-T Meter: S/N1210	16.5		1400
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	15.6	7.9	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature 15.8°C

Acid Units × 10 Inital ×	ph	Acid Units × 10 PH		Acid ~~ph~~ PH	
1	7.93	13	6.52	26	5.58
2	7.93	14	6.45	27	5.47
3	7.61	15	6.39	28	5.34
4	7.41	16	6.35	29	5.09
5	7.20	17	6.29	30	4.81
6	7.15	18	6.23	310	4.07
7	7.09	19	6.16	320	3.45
8	6.95	20	6.09	33	3.17
9	6.87	21	6.04	34	2.97
10	6.79	22	5.94	35	2.84
11	6.71	23	5.89		
12	6.65	24	5.81		
	6.57	25	5.72		

.62

Comments: NO WATER IN STREAM ON 9 Dec 95 - CROSSED COHEN MAPPING

$\Delta = \frac{.62}{10} = \frac{.07}{x} \quad x = .434$ @ ph 4

Acid Units = 310 + .434 = (310.434)(.002)(5.2)

Id Number:	25
Sample Number:	121595 NR-2D
Sample Time:	10:00:00 AM
Sample Date:	12/15/95
Well:	Yes
Stream:	No
Latitude:	35 43 10 N
Longitude:	117 50 33 W
Location:	South West corner of Neal Ranch on west side of Le
Elevation:	2268
Depth of Well:	1950
Depth to Water:	148.65
Perf Section of Well:	1910-1930
Field temp of Water:	30.2
Conductance of water:	
ph:	8.12
Acid Units at ph 4:	1191.35
Alkalinity:	2906.9

INDIAN WELLS VALLEY PROJECT
GEOCHEMICAL/WATER SAMPLING DATA SHEET

ELL: NR-2 DEEP

AMPLE #:	SAMPLE TIME:
DATE: 12-15-95 SAMPLER:	OSTDICK / TRUJILLO
DEPTH OF WELL: 1920	Well Volume Calculation:
DEPTH TO GROUNDWATER 1495	1770.5 x .174 = 308.1 gal.
WATER COLUMN HEIGHT (h): 1770.5	
GAL/FT. Conv. Factor: 2.0" sch.40 pipe = .174	
WELL PURGE	

Start time:	Volume (gal.)	Q	Hose Depth
08:55	-		438'
09:17	55		
09:26	55		
09:35	55		
09:34	55		
09:44	55		
9:46	55		

9:48	55
9:50	55
9:54	55
9:57	55

WATER PARAMETERS

	Time	Volume (gal.)	Temp.	Ph.	TDS (ppm)	CND
1	09:35	250	22.5°C	8.67	2730	5.46 mS/cm
2	09:49	400	30.6°C	8.08	2750	5.38 mS/cm
3	09:53	490	30.4°C	8.14	2790	5.57 mS/cm
4	09:56	520	30.3°C	8.07	2900	5.77 mS/cm
5	09:59	600	30.2°C	8.12	2800	5.57 mS/cm
6						
9						

ALKALINITY TITRATION

Filter sample and measure sample with a pipette.

Voume measured: 50 ml.	
Acid: H2SO4 1.6N +/- .005	Digits = mg/l CaCO3 in 100 ml: Digits x 0.002 = meq

	Acid Units	pH
1	initial	8.17
2	20	7.89
3	30	7.77
4	45	7.69
5	55	7.66
6	70	7.59
7	85	7.54
8	100	7.49
9	115	7.44
10	130	7.40
11	150	7.35
12	165	7.32
13	180	7.29
14	195	7.25

	Acid Units	pH
15	220	7.2
16	240	7.1
17	320	7.0
18	380	6.9
19	430	6.2
20	500	6.7
21	600	6.6
22	700	6.5
23	750	6.48
24	800	6.43
25	900	6.2
26	1000	5.9
27	1100	5.6
28	1150	5.1

1200 3.77

NOT GOOD DATA TO FAR APROAD

Δ - 50

COMMENTS: START 8:55, STOPPED 8:58 STARTED 9:01 OFF 9:08, ON 9:15
WATER COMING UP CLEAR. H_2S odor WARM

$\frac{\$0.33}{50} = \frac{1.1}{x} = 41.35$

Acid = 1150 + 41.35 = 1191.35

$[HCO_3^-]$ = 2906.9 mg/l

Winter Water Data		Neal Ranch 1-Deep			12/15/95		
Collected by Jim Ostdick and Ray Trujillo				Time:	10:00		
					Took 2 2l bottles		
		Temp. °C	ph	mmhos		one acidified with 10ml HNO_3	
VSI Meter							
50ml water							
PH/Temp. meter		30.2	8.12				
Field titration		50 ml water sample from non-acid bottle					
Diditial pipete		ml=reading/800			1.600 +/- .005N H_2SO_4		
29.7			Reading	ph	Vol of Acid ml	Vol of Acid	ph
			0	8.17	0.000	0.000	8.17
			20	7.89	0.025	0.025	7.89
			30	7.77	0.038	0.038	7.77
			45	7.69	0.056	0.056	7.69
			55	7.66	0.069	0.069	7.66
			70	7.59	0.088	0.088	7.59
			85	7.54	0.106	0.106	7.54
			100	7.49	0.125	0.125	7.49
			115	7.44	0.144	0.144	7.44
			130	7.40	0.163	0.163	7.40
			150	7.35	0.188	0.188	7.35
			165	7.32	0.206	0.206	7.32
			180	7.29	0.225	0.225	7.29
			195	7.25	0.244	0.244	7.25
			220	7.20	0.275	0.275	7.20
			240	7.10	0.300	0.300	7.10
			320	7.00	0.400	0.400	7.00
			380	6.90	0.475	0.475	6.90
			430	6.80	0.538	0.538	6.80
			500	6.70	0.625	0.625	6.70
			600	6.60	0.750	0.750	6.60
			700	6.50	0.875	0.875	6.50
			750	6.48	0.938	0.9375	6.48
2906.9 mg/l $[HCO_3]$			800	6.43	1.000	1	6.43
			900	6.20	1.125	1.125	6.20
			1000	5.90	1.250	1.25	5.90
			1100	5.60	1.375	1.375	5.60
			1150	5.10	1.438	1.4375	5.10
			1200	3.77	1.500	1.5	3.77

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ]	Name: IWVWD WELL NEAL RANCH-2		
Location	Latitude: 35° 43' 10" N	Longitude: 117° 50' 33" W	Elevation: 2268'

Sample #: NR-2 D	Sample Time:
Date:	Sampler: Charles C. Pierce
Depth of Well: 1950'	Perf: 1910'-1930'
Depth to Water: 148.65'	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210			
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812			

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml		Acid: 1.600+/-.005 N H_2SO_4	
Temperature			
Acid Units	ph	Acid Units	ph
Inital		13	
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

Comments:

Id Number:	24
Sample Number:	121595 NR-2M
Sample Time:	11:06:00 AM
Sample Date:	12/15/95
Well:	Yes
Stream:	No
Latitude:	35 43 10 N
Longitude:	117 50 33 W
Location:	South West corner of Neal Ranch on west side of Le
Elevation:	2268
Depth of Well:	1560
Depth to Water:	148
Perf Section of Well:	1540-1560
Field temp of Water:	29.7
Conductance of water:	
ph:	8.79
Acid Units at ph 4:	905.88
Alkalinity:	2210.4

INDIAN WELLS VALLEY PROJECT
GEOCHEMICAL/WATER SAMPLING DATA SHEET

WELL: IIR-2 MEDIUM	
SAMPLE #:	SAMPLE TIME: 11:06
DATE: 12-15-95	SAMPLER: OSTDICK / TRUJILLO
DEPTH OF WELL: 1560	Well Volume Calculation:
DEPTH TO GROUNDWATER 148	1412 x .174 = 245.7 gal
WATER COLUMN HEIGHT (h): 1412	
GAL/FT. Conv. Factor: 2.0" sch.40 pipe = .174	

WELL PURGE

Start time:	Volume (gal.)	Q	Hose Depth
10:28	–		400'
10:45	55		
10:47	55		
10:50	55		
10:53	55		
10:55	55		
10:58	55		

11:00	55
11:02	55
11:05	55
11:06	25

WATER PARAMETERS

	Time	Volume (gal.)	Temp.	Ph.	TDS (ppm)	CND
1	10:51	180	27.0° C	10.05	2310	4.64 mS/cm
2	10:56	275	28.5° C	9.06	2620	5.26 mS/cm
3	10:59	350	21.4° C	8.91	2480	4.95 mS/cm
4	11:02	440	30.3° C	8.83	2430	4.91 mS/cm
5	11:06	520	29.7° C	8.79	2470	5.01 mS/cm
6						
8						
9						

ALKALINITY TITRATION

Filter sample and measure sample with a pipette.

Voume measured: 50 ml.	
Acid: H2SO4 1.6N +/- .005	Digits = mg/l CaCO3 in 100 ml: Digits x 0.002 = meq

	Acid Units	pH
1	initial	8.75
2	50	8.09
3	100	7.55
4	120	7.41
5	140	7.33
6	155	7.28
7	170	7.23
8	200	7.12
9	220	7.08
10	245	7.02
11	275	6.95
12	300	6.89
13	330	6.83
14	360	6.77

	Acid Units	pH
15	400	6.69
16	425	6.65
17	460	6.59
18	500	6.51
19	530	6.46
20	560	6.40
21	600	6.32
22	630	6.26
23	660	6.19
24	685	6.15
25	720	6.03
26	740	5.98
27	760	5.91
28	780	5.82

800	5.7
820	5.6
840	5.5
860	5.4
880	5.0
900	4.2
910	3.8

$\Delta = 10$

COMMENTS: 10:28 START, 10:34 STOP, 10:37 START [illegible]

first H₂S odor, grey-green color, soapy foam, hydrocarbon smell at ~ 250 gal, color and odor persist throughout process

$\frac{.34}{10} = \frac{.2}{x} = 5.88$

Acid = 905.88 HCO_3 = 2210.4 mg/l

Winter Water Data		Neal Ranch -2 medium			12/15/95		
Collected by Jim Ostdick and Ray Trujillo				Time:	11:06		
					Took 2 2l bottles		
	Temp. °C	ph	mmhos		one acidified with 10ml HNO_3		
VSI Meter							
50ml water							
PH/Temp. meter	29.7	8.79	5.01 mS/cm				
Field titration	50 ml water sample from non-acid bottle						
Diditial pipete	ml=reading/800			1.600 +/- .005N H_2SO_4			
Temp. = 29.7°C		Reading	ph	Vol of Acid ml		Vol of Acid	ph
		0	8.75	0.000		0.000	8.75
		50	8.09	0.063		0.063	8.09
		100	7.55	0.125		0.125	7.55
		120	7.41	0.150		0.150	7.41
		140	7.33	0.175		0.175	7.33
		155	7.28	0.194		0.194	7.28
		170	7.23	0.213		0.213	7.23
		200	7.12	0.250		0.250	7.12
		220	7.08	0.275		0.275	7.08
		245	7.02	0.306		0.306	7.02
		275	6.95	0.344		0.344	6.95
		300	6.89	0.375		0.375	6.89
		330	6.83	0.413		0.413	6.83
		360	6.77	0.450		0.450	6.77
		400	6.69	0.500		0.500	6.69
		425	6.65	0.531		0.531	6.65
		460	6.59	0.575		0.575	6.59
		500	6.51	0.625		0.625	6.51
		530	6.46	0.663		0.663	6.46
		560	6.4	0.700		0.700	6.4
		600	6.32	0.750		0.750	6.32
		630	3.26	0.788		0.7875	3.26
		660	6.19	0.825		0.825	6.19
		685	6.15	0.856		0.85625	6.15
		720	6.03	0.900		0.9	6.03
		740	5.98	0.925		0.925	5.98
		760	5.91	0.950		0.95	5.91
		780	5.82	0.975		0.975	5.82
		800	5.76	1.000		1	5.76
		820	5.60	1.025		1.025	5.60
		840	5.50	1.050		1.05	5.50
2210 mg/l [HCO_3]		860	5.45	1.075		1.075	5.45
		880	5.07	1.100		1.1	5.07
		900	4.20	1.125		1.125	4.20
		910	3.86	1.138		1.1375	3.86

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ]	Name: IWVWD WELL NEAL RANCH-2		
Location	Latitude: 35° 43' 10" N	Longitude: 117° 50' 33" W	Elevation: 2268'

Sample #: NR-2 M	Sample Time:
Date:	Sampler: Charles C. Pierce
Depth of Well: 1950'	Perf: 1540'-1560'
Depth to Water: 146.95	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210			
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812			

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature

Acid Units	ph	Acid Units	ph
Inital		13	
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

Comments:

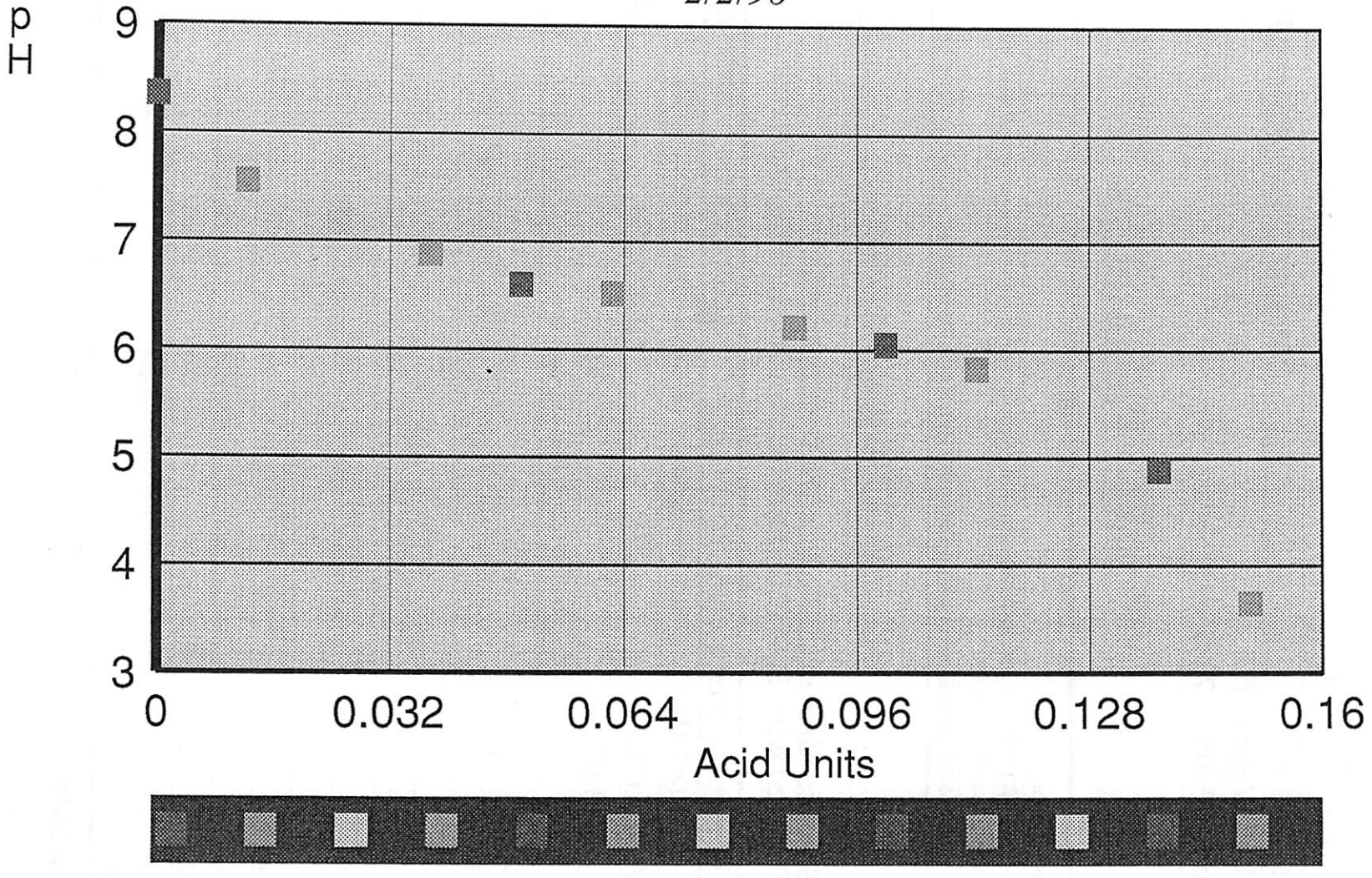
Id Number:	26
Sample Number:	020296 BR6-S
Sample Time:	9:45:00 AM
Sample Date:	2/2/96
Well:	Yes
Stream:	No
Latitude:	35 46 35
Longitude:	117 50 27
Location:	End of road going east by Larry Meads field and Dr. Beryes house
Elevation:	2354
Depth of Well:	1660
Depth to Water:	170.27
Perf Section of Well:	330-350
Field temp of Water:	24
Conductance of water:	1000
pH:	8.35
Acid Units at pH 4:	117
Alkalinity:	280

Shallow				2/2/96			
Sample No	020296 BR-6 S			0945 Hours			
				Took 2 2l bottles			
Temp. °C	ph	mmhos		one acidified with 10ml HNO_3			
27		920					
27							
27	8.7						
Depth to Water=170.27		Depth of Well:350			Aklinity=278.11 mg/liter HCO_3^-		
Perf section:330-350'							
Pumped 110 gallons before sample - 15 min							
50 ml water sample from non-acid bottle				Temp: 24			
ml=reading/800			1.600 +/- .005N H_2SO_4				
	Reading	ph	Vol of Acid ml			Vol of Acid	ph
	0	8.35	0.000			0.000	8.35
	10	7.55	0.013			0.013	7.55
	20	7.17	0.025			0.025	7.17
	30	6.88	0.038			0.038	6.88
	40	6.60	0.050			0.050	6.60
	50	6.52	0.063			0.063	6.52
	60	6.38	0.075			0.075	6.38
	70	6.21	0.088			0.088	6.21
	80	6.05	0.100			0.100	6.05
	90	5.83	0.113			0.113	5.83
	100	5.52	0.125			0.125	5.52
	110	4.88	0.138			0.138	4.88
	120	3.65	0.150			0.150	3.65

Monitoring Well BR-6 Shallow

Field Water Titration

2/2/96



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well X	Stream	Name: Monitoring Well BR-6	
Location	Latitude: 35° 46' 35" N	Longitude: 117 50' 27" W	Elevation: 2354'
	END OF BROWN ROAD - EAST ON BASE		

Sample #: 020296 BR-6 S	Sample Time: 0945
Date: 2 FEB 96	Sampler: Charles C. Pierce
Depth of Well: 1660'	Perf: 330'-350'
Depth to Water: 171.1' 170.29	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	24.5		1000
Thermometer Weksler FPT	24		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	23.5	8.35	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml		Acid: 1.600+/-.005 N H_2SO_4	
Temperature	23.5 START		
Acid Units	ph	Acid Units	ph
Inital	8.35	13	
1	7.55	14	
2	7.17	15	86
3	6.88	16 1.23 =	4
4	6.60	17 10	
5	6.52	18	
6	6.38	19	pH = 4
7	~~6.18~~ 6.21	20 117 units @	280 mg HCO₃
8	~~6.00~~ 6.05	21	
9	~~5.58~~ 5.83	22	
10	~~5.11~~ 5.52	23	
11	~~3.77~~ 4.88	24	
12	3.65	25	

Comments: Muddy H₂O Grey, Temp 21°C 1st BARREL 800 μmhos · PUMPED 110 gal

Id Number:	27
Sample Number:	020296 BR-6M
Sample Time:	10:30:00 AM
Sample Date:	2/2/96
Well:	Yes
Stream:	No
Latitude:	35 46 35
Longitude:	117 50 27
Location:	End of road going east by Larry Meads field and Dr. Beryes house
Elevation:	2354
Depth of Well:	1660
Depth to Water:	167.3
Perf Section of Well:	1191-1210
Field temp of Water:	27
Conductance of water:	1600
pH:	8.87
Acid Units at pH 4:	355
Alkalinity:	852

Medium 2/2/96
Sample No. 020296 BR-6 M 1030 Hours
Took 2 2l bottles

Temp. °C ph mmhos one acidified with 10ml HNO_3
27 920
27
27 8.7

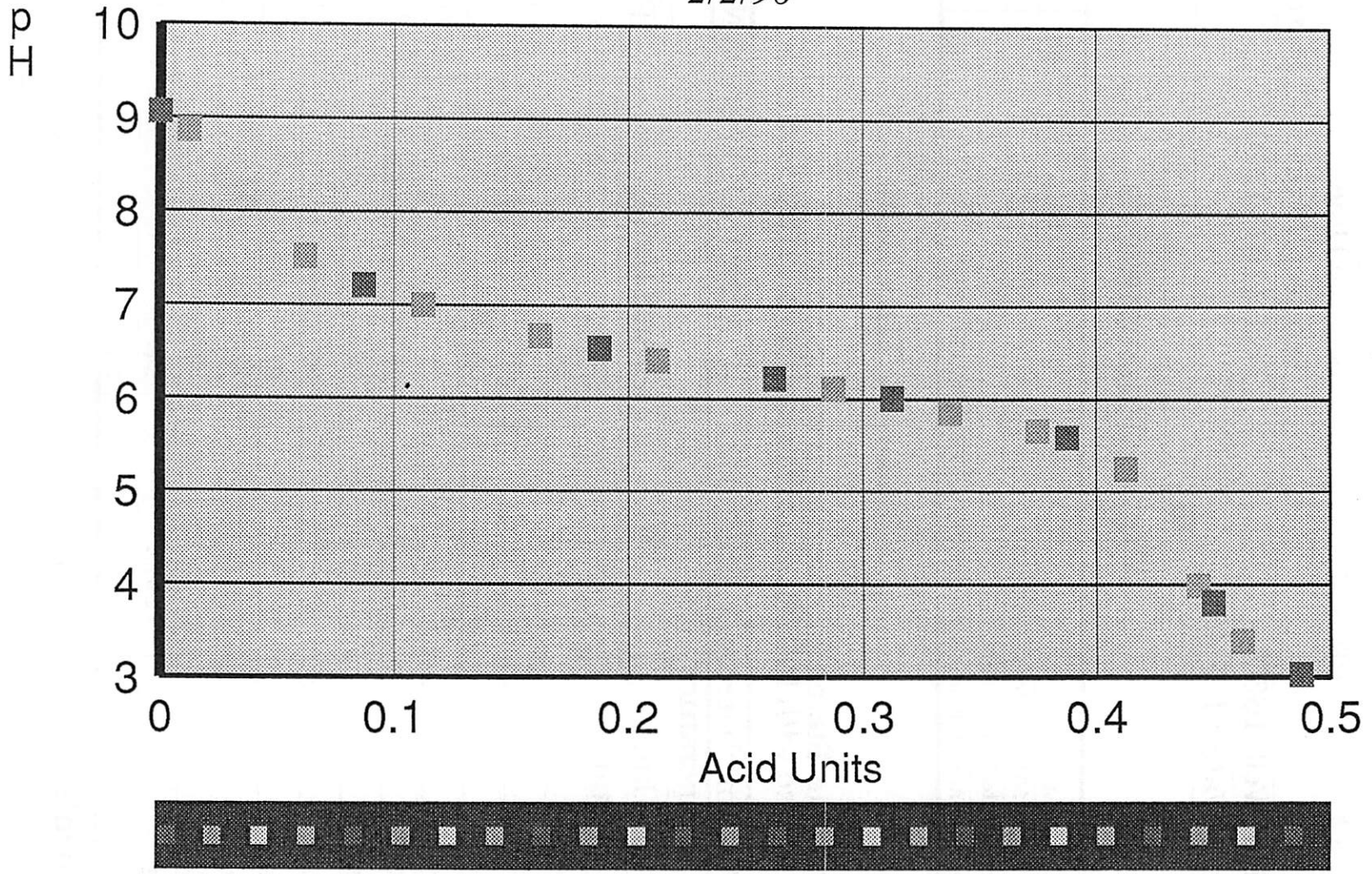
Depth to Water=167.3 Depth of Well:1210 Aklinity=852 mg/liter HCO_3^-
Perf section:1191-1210
Pumped 385 gallons before sample - 15 min
50 ml water sample from non-acid bottle Temp: 27
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	9.06	0.000	0.000	9.06
10	8.87	0.013	0.013	8.87
30	8.22	0.038	0.038	8.22
50	7.52	0.063	0.063	7.52
70	7.21	0.088	0.088	7.21
90	7.00	0.113	0.113	7.00
110	6.82	0.138	0.138	6.82
130	6.67	0.163	0.163	6.67
150	6.54	0.188	0.188	6.54
170	6.41	0.213	0.213	6.41
190	6.32	0.238	0.238	6.32
210	6.22	0.263	0.263	6.22
230	6.11	0.288	0.288	6.11
250	6.01	0.313	0.313	6.01
270	5.85	0.338	0.338	5.85
290	5.73	0.363	0.363	5.73
300	5.66	0.375	0.375	5.66
310	5.58	0.388	0.388	5.58
330	5.24	0.413	0.413	5.24
350	4.72	0.438	0.438	4.72
355	3.99	0.444	0.444	3.99
360	3.80	0.450	0.450	3.80
370	3.39	0.463	0.463	3.39
380	3.18	0.475	0.475	3.18
390	3.03	0.488	0.488	3.03

Monitoring Well BR-6 Medium

Field Water Titration

2/2/96



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well ☒	**Stream** ☐	**Name: Monitoring Well BR-6**

Location	**Latitude: 35° 46' 35" N**	**Longitude: 117 50' 27" W**	**Elevation: 2354'**

Sample #: BR-6 M	**Sample Time:** 1030
Date:	**Sampler: Charles C. Pierce**
Depth of Well: 1660'	**Perf: 1191'-1210'**
Depth to Water: 167.43' 167.3	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	26.		1600
Thermometer Weksler FPT	27		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	~~8.87~~ 27.1	8.87	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 20.7 °C start

Acid Units	ph	Acid Units	ph	~~320~~	
Inital	~~9.06~~ 9.06	13	6.67	330	5.24
1	8.87	14		340	4.72
2		15	6.54	~~340~~	
3	8.22	16		355	3.99
4		17	6.41	360	3.86
5	7.52	~~18~~ 190	6.32	370	3.39
6		~~19~~ 210	6.22	380	3.18
7	7.21	~~20~~ 230	6.11	390	3.03
8		~~21~~ 250	6.01		
9	7.00	~~22~~ 270	5.85		
10		~~23~~ 290	5.73		
11	6.82	~~24~~ 300	5.66		
12		~~25~~ 310	5.58		

Comments: Pumped 5x55' gal - Temp 23°C 1050 µmhos

pH 4 - 852 mg/l HCO_3

Id Number:	28
Sample Number:	020296 BR-6D
Sample Time:	12:30:00 PM
Sample Date:	2/2/96
Well:	Yes
Stream:	No
Latitude:	35 46 35
Longitude:	117 50 27
Location:	End of road going east by Larry Meads field and Dr. Beryes house
Elevation:	2354
Depth of Well:	1660
Depth to Water:	151.3
Perf Section of Well:	1640-1660
Field temp of Water:	32
Conductance of water:	1200
pH:	8.7
Acid Units at pH 4:	211.83
Alkalinity:	508

DEEP 2/2/96
Sample Nc 020296 BR-6 D 1230 Hours
Took 2 2l bottles
one acidified with 10ml HNO_3

Temp. °C	ph	mmhos
32		1200
31		
31	8.7	

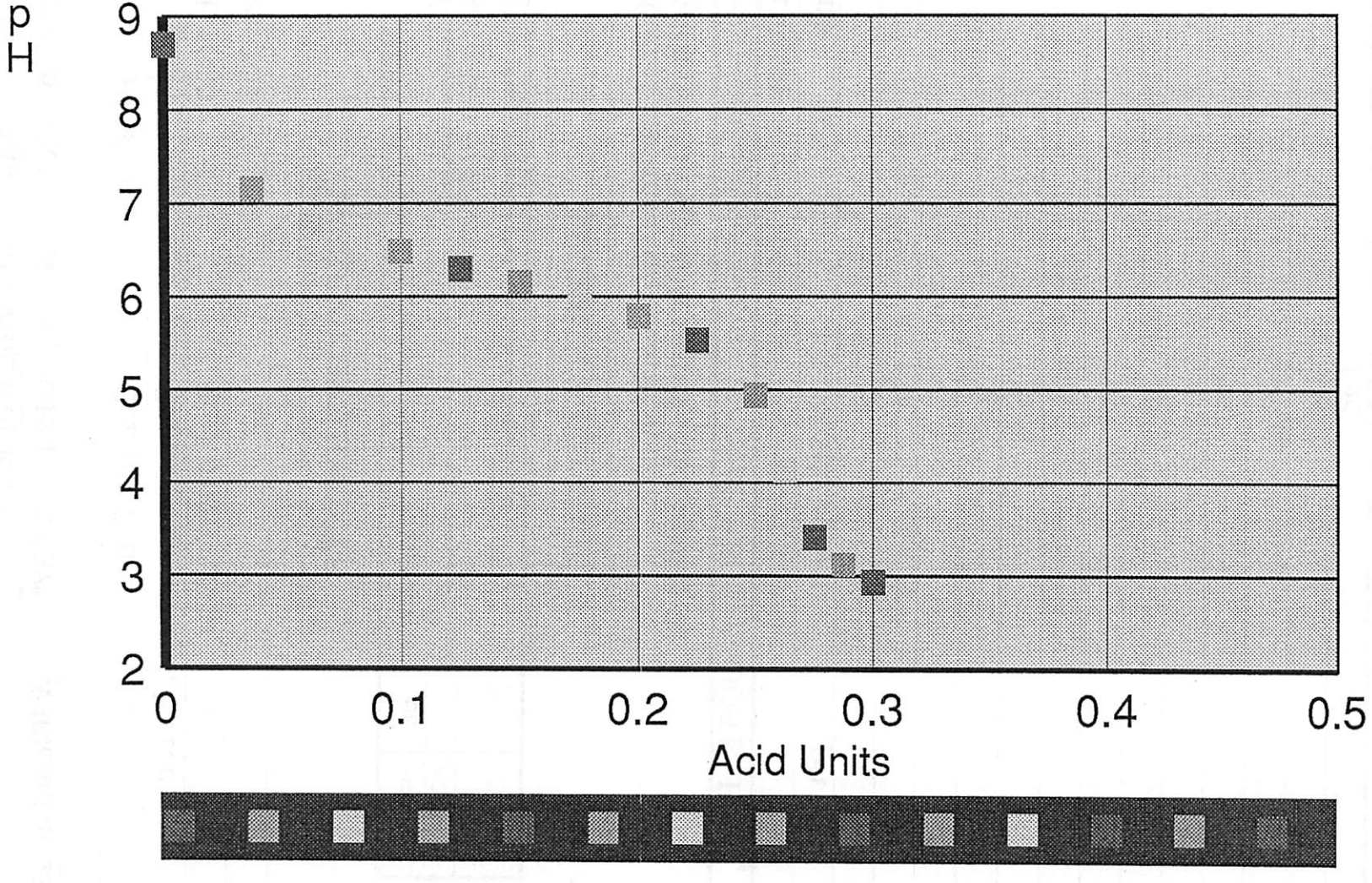
Depth to Water=151.3 Depth of Well:1660 Aklinity=508 mg/liter HCO_3^-
Perf section:1640-1660
Pumped 555 gallons before sample - 45 min
50 ml water sample from non-acid bottle Temp: 32
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	8.70	0.000	0.000	8.70
30	7.16	0.038	0.038	7.16
50	6.76	0.063	0.063	6.76
80	6.48	0.100	0.100	6.48
100	6.29	0.125	0.125	6.29
120	6.14	0.150	0.150	6.14
140	6.00	0.175	0.175	6.00
160	5.79	0.200	0.200	5.79
180	5.53	0.225	0.225	5.53
200	4.94	0.250	0.250	4.94
210	4.13	0.263	0.263	4.13
220	3.42	0.275	0.275	3.42
230	3.12	0.288	0.288	3.12
240	2.93	0.300	0.300	2.93

Monitoring Well BR-6 Deep

Field Water Titration

2/2/96



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ] Name: Monitoring Well BR-6

Location	Latitude: 35° 46' 35" N	Longitude: 117° 50' 27" W	Elevation: 2354'

Sample #: 020296 BR-6 D	Sample Time: 1230
Date: 2 FEB 96	Sampler: Charles C. Pierce
Depth of Well: 1660'	Perf: 1640'-1660'
Depth to Water: ~~167.43'~~ 151.3	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	32		1200
Thermometer Weksler FPT	31		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	31	8.7	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature

Acid Units	ph	Acid Units	ph
Inital		13	
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

Comments: Pumped 500 gal.

Well: BR6 - Deep Data Sheet 2 FEB 96 Date

19.3°C

Acid Units	ph	Acid Units	ph	Acid Units	ph
Initial	8.74	310		620	
10		320		630	
20		330		640	
30	7.16	340		650	
40		350		660	
50	6.76	360		670	
60		370		680	
70		380		690	
80	6.48	390		700	
90		400		710	
100	6.29	410		720	
110		420		730	
120	6.14	430		740	
130		440		750	
140	6.00	450		760	
150		460		770	
160	5.79	470		780	
170		480		790	
180	5.53	490		800	
190		500		810	
200	4.94	510		820	
210	4.18	520		830	
220	3.42	530		840	
230	3.12	540		850	
240	2.93	550		860	
250		560		870	
260		570		880	
270		580		890	
280		590		900	
290		600		910	
300		610		920	

215 - 3.81

.71/10 = .13/x

x = 1.83

PH4 = 211.83

HCO3 = 503

Id Number:	29
Sample Number:	040296 Fracture
Sample Time:	10:30:00 AM
Sample Date:	2/4/96
Well:	No
Stream:	Yes
Latitude:	35 42.217
Longitude:	117 54.420
Location:	Fracture spring-Upper Aqueduct Road north from Sand Canyon
Elevation:	3400
Depth of Well:	0
Depth to Water:	0
Perf Section of Well:	
Field temp of Water:	0
Conductance of water:	0
pH:	0
Acid Units at pH 4:	0
Alkalinity:	0

Id Number:	30
Sample Number:	080296MW-32S
Sample Time:	9:30:00 AM
Sample Date:	2/8/96
Well:	Yes
Stream:	No
Latitude:	35 38.90 N
Longitude:	117 46.493 W
Location:	In IWVWD Victor St. property,
Elevation:	2415
Depth of Well:	380
Depth to Water:	245.84
Perf Section of Well:	360-380
Field temp of Water:	23
Conductance of water:	700
pH:	8.37
Acid Units at pH 4:	4.674
Alkalinity:	11.2

Monitoring Well BR-10 S
Sample No. 080296 MW-32S

2/8/96
Sampled by C.C. Pierce 0930 HOURS
Took 2 2l bottles

Temp. °C	ph	mmhos	one acidified with 10ml HNO_3
23.5		700	
23			
24.6	8.37		

Depth to Water=245.84 Depth of Well: 380
Perf section:360-380

50 ml water sample from non-acid bottle Temp:23.9
ml=reading/800 1.600 +/- .005N H_2SO_4

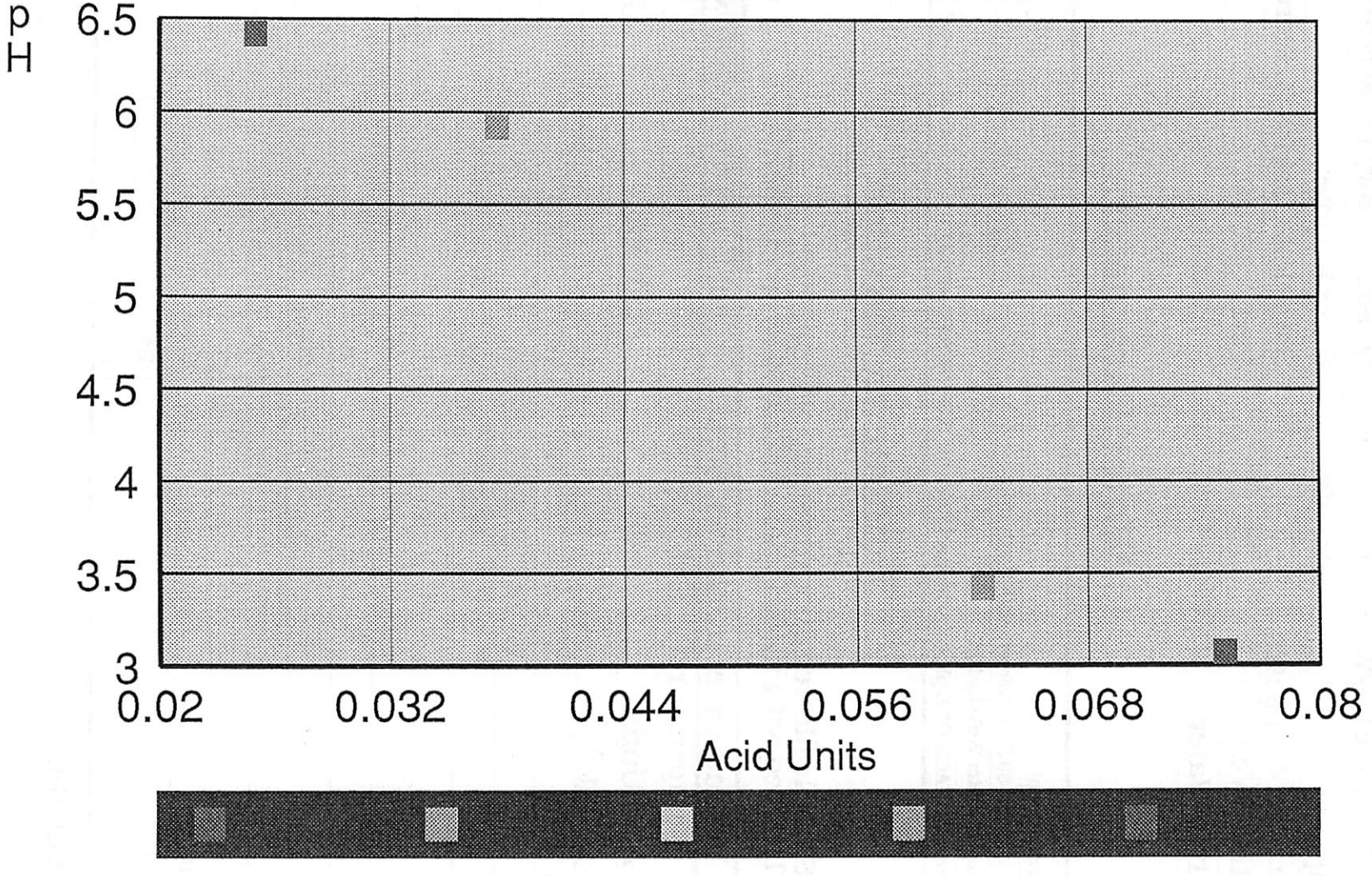
Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	8.30	0.000	0.000	8.30
10	6.77	0.013	0.013	6.77
20	6.42	0.025	0.025	6.42
30	5.92	0.038	0.038	5.92
40	5.20	0.050	0.050	5.20
50	3.42	0.063	0.063	3.42
60	3.07	0.075	0.075	3.07

Pumped 110 Gallons before sample was taken
Acid Units at pH4=4.674 $[HCO_3]^-$ =11.2 mg/l

Monitoring Well MW-32 Shallow

Field Water Titration

2/8/96



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well X	Stream	Name: Monitoring Well MW-32 Shallow

Location	Latitude: 35° 38.40 N Longitude: 117° 46.493 W Elevation
	In the IWVWD Victor Street property. South of Hwy 178 at Buttermilk Acres.

Sample #: 08 02 96 MW-32S	Sample Time: 0930
Date: 08 FEB 1996	Sampler: Charles C. Pierce
Depth of Well 380′	Perf 360′-380′
Depth to Water 245.84′	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	23.5		700
Thermometer Weksler FPT	23		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	24.6	9.37	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml		Acid: 1.600+/-.005 N H_2SO_4	
Temperature	23.9		
Acid Units	ph	Acid Units	ph
Inital	8.3	13	
1	6.77	14	
2	6.42	15	
3	5.92	16	
4	5.20	17	
5	3.42	18	
6	3.07	19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

Comments: Vol = 21.8 gal - pump 2 [illegible]
Hose Broke in well while Reeling up - Expect N.A Chem will get it out - ck Before sounding next time could hang up sounder

Acid Units @ pH=4 = 4.674 [HCO_3] mg/l = 11.2

Monitoring Well BR-10 MS
Sample No. 080296 MW-32 MS

2/8/96
Sampled by C.C. Pierce 1550 HOURS
Took 2 2l bottles
one acidified with 10ml HNO_3

Temp. °C	ph	mmhos
25		500
25		
25.3	8.25	

Depth to Water=251.29 Depth of Well: 900
Perf section: 880-900

50 ml water sample from non-acid bottle Temp:23.9
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	8.36	0.000	0.000	8.36
10	6.89	0.013	0.013	6.89
20	6.37	0.025	0.025	6.37
30	5.55	0.038	0.038	5.55
35	5.09	0.044	0.044	5.09
40	3.58	0.050	0.050	3.58
50	3.11	0.063	0.063	3.11

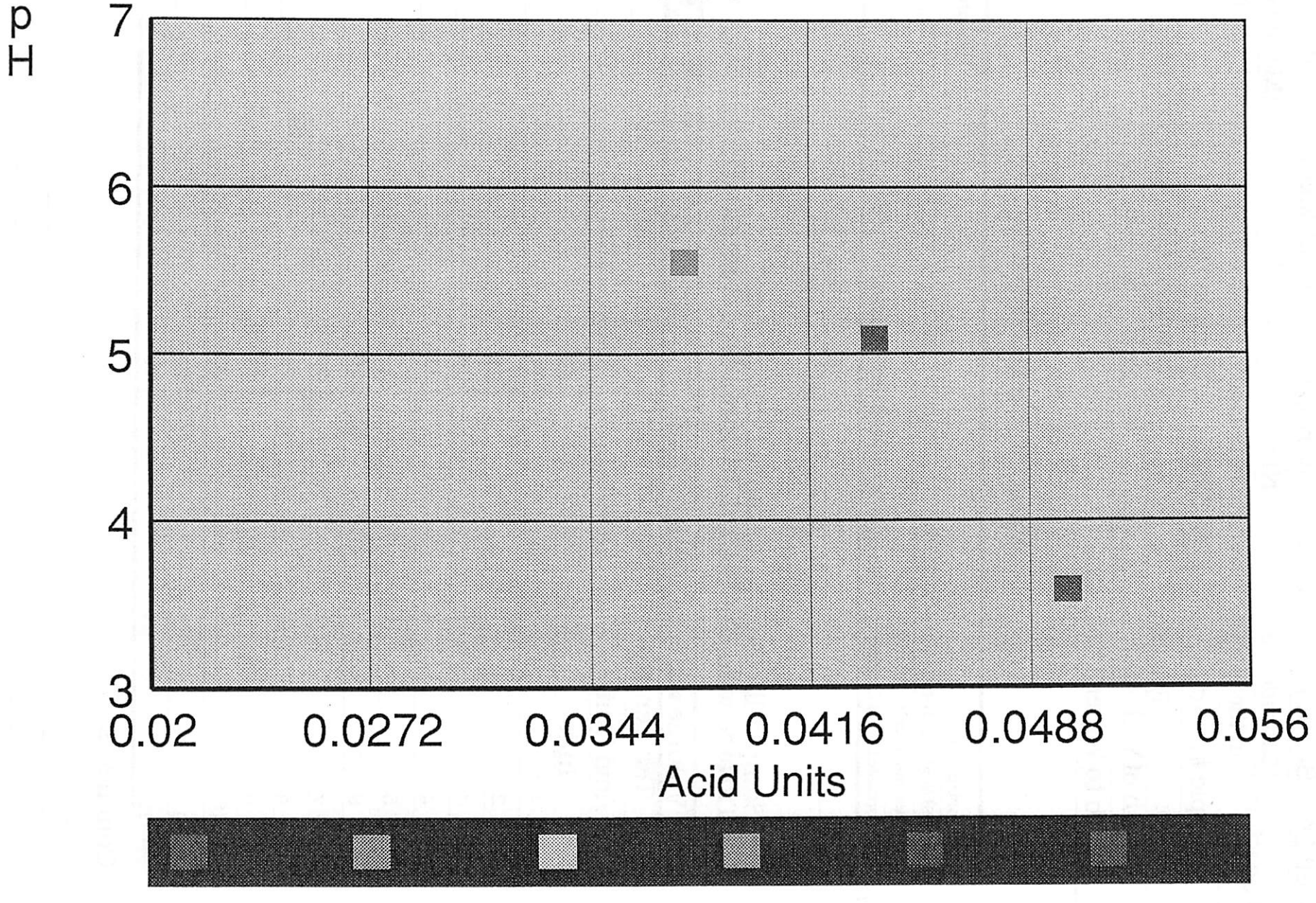
Pumped210 Gallons before sample was taken
Acid Units at pH4=38.6 $[HCO_3]^-$ =92.64 mg/l

Id Number:	31
Sample Number:	080296 MW-32MS
Sample Time:	3:50:00 PM
Sample Date:	2/8/96
Well:	Yes
Stream:	No
Latitude:	35 38.90 N
Longitude:	117 46.493 W
Location:	In IWVWD Victor St. property,
Elevation:	2415
Depth of Well:	900
Depth to Water:	251.29
Perf Section of Well:	880-900
Field temp of Water:	25
Conductance of water:	500
pH:	8.25
Acid Units at pH 4:	38.6
Alkalinity:	92.64

Monitoring Well MW-32 Medium Shallow

Field Water Titration

2/8/96



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ] Name: Monitoring Well MW-32 Medium Shallow

Location	Latitude: 35° 38.90 N	Longitude: 117° 46.493 W	Elevation
	In the IWVWD Victor Street property. South of Hwy 178 at Buttermilk Acres.		

Sample #: 080296 MW-32MS	Sample Time: 1550
Date: 8 FEB 1996	Sampler: Charles C. Pierce
Depth of Well 900'	Perf 880'-900'
Depth to Water 251.29	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	25		500
Thermometer Weksler FPT	25		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	25.3	5.25	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 24

Acid Units	ph	Acid Units	ph
Inital	8.36	13	
1	6.89	14	
2	6.37	15	
3	5.55	16	
~~4~~ 35	5.09	17	
~~5~~ 40	3.58	18	
~~6~~ 50	3.11	19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

Comments: pumped 210 gal

Acid @ pH = 4 = 38.6 $[HCO_3]$ mg/L = 92.64

Id Number:	32
Sample Number:	090296 MW-32 MD
Sample Time:	9:20:00 AM
Sample Date:	2/9/96
Well:	Yes
Stream:	No
Latitude:	35 38.90 N
Longitude:	117 46.493 W
Location:	In IWVWD Victor St. property,
Elevation:	2415
Depth of Well:	1260
Depth to Water:	247.5
Perf Section of Well:	1240-1260
Field temp of Water:	24
Conductance of water:	320
pH:	8.71
Acid Units at pH 4:	37.35
Alkalinity:	89.35

Monitoring Well BR-10 MD
Sample No. 090296 MW-32 MD

2/9/96
Sampled by C.C. Pierce 0920 HOURS
Took 2 2l bottles
one acidified with 10ml HNO_3

Temp. °C	ph	mmhos
24		320
24		
25.2	8.71	

Depth to Water=247.5 Depth of Well: 1260
Perf section: 1240*1260

50 ml water sample from non-acid bottle Temp:24
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml
0	8.66	0.000
10	6.73	0.013
15	6.14	0.019
20	5.85	0.025
25	5.55	0.031
30	5.30	0.038
35	4.24	0.044
40	3.73	0.050
45	3.38	0.056
50	3.22	0.063
55	3.02	0.069
60	2.91	0.075

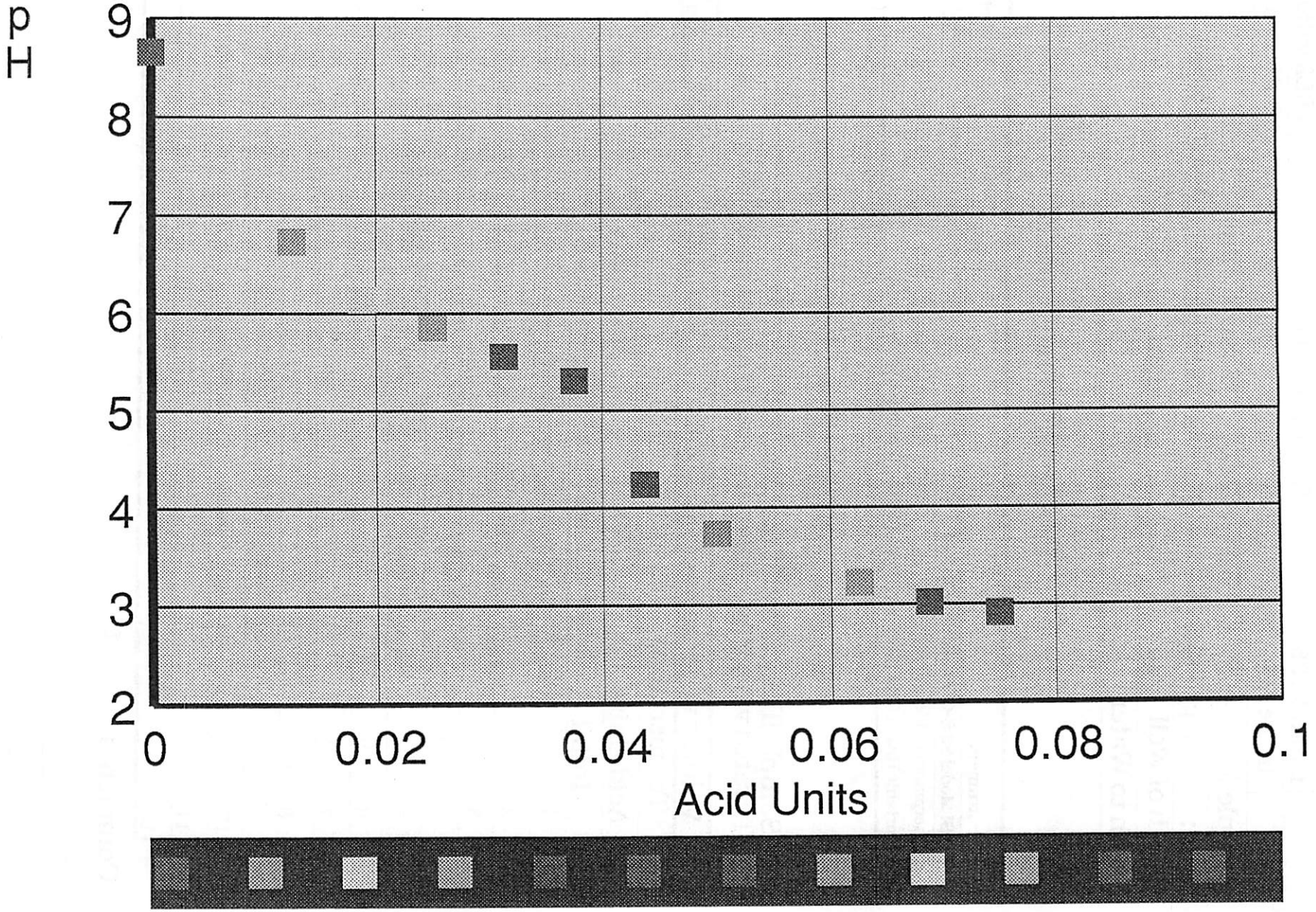
Vol of Acid	ph
0.000	8.66
0.013	6.73
0.019	6.14
0.025	5.85
0.031	5.55
0.038	5.30
0.044	4.24
0.050	3.73
0.056	3.38
0.063	3.22
0.069	3.02
0.075	2.91

Pumped 220 Gallons before sample was taken
Acid Units at pH4=37.35 $[HCO_3]^-$ =89.64 mg/l

Monitoring Well MW-32 Medium deep

Field Water Titration

2/9/96



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ] Name: Monitoring Well MW-32 Medium Deep

Location	Latitude: 35° 38.90 N	Longitude: 117° 46.493 W	Elevation
	In the IWVWD Victor Street property. South of Hwy 178 at Buttermilk Acres.		

Sample #: 0902 96 MW-32MD	Sample Time: 0920
Date: 9 FEB 1996	Sampler: Charles C. Pierce
Depth of Well 1260'	Perf 1240'-1260'
Depth to Water 247.5	Vol = 165 gal

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	24		320
Thermometer Weksler FPT	24		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	25.2	8.71	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml Acid: 1.600+/-.005 N H_2SO_4

Temperature 24.3 24.8 FINISH

Acid Units	ph	Acid Units	ph
Inital	5.66	13	
1	6.73	14	
2 15	6.14	15	
3 20	5.85	16	
4 25	5.55	17	
5 30	5.30	18	
6 35	4.24	19	
7 40	3.73	20	
8 45	3.38	21	
9 50	3.22	22	
10 55	3.02	23	
11 60	2.91	24	
12		25	

Comments: Pump 4 55gpm 6 Barrels min pumped 920 gals

Acid Unit @ pH 4.4 = 37.35 $[HCO_3^-]$ = 89.64 mg/l

Id Number:	33
Sample Number:	090296 MW-32 D
Sample Time:	10:20:00 AM
Sample Date:	~~2/8/96~~ 2/9/96
Well:	Yes
Stream:	No
Latitude:	35 38.90 N
Longitude:	117 46.493 W
Location:	In IWVWD Victor St. property,
Elevation:	2415
Depth of Well:	1920
Depth to Water:	246
Perf Section of Well:	1900-1920
Field temp of Water:	27
Conductance of water:	1000
pH:	9.58
Acid Units at pH 4:	119.28
Alkalinity:	285.9

Monitoring Well BR-10 D
Sample Nc 090296 MW-32 D

2/9/96
Sampled by C.C. Pierce
1040 HOURS
Took 2 2l bottles
one acidified with 10ml HNO_3

Temp. °C	ph	mmhos
27		1000
27		
26.3	9.58	

Depth to Water=246.15 Depth of Well: 1920
Perf section: 1900-1920

50 ml water sample from non-acid bottle Temp:26
ml=reading/800 1.600 +/- .005N H_2SO_4

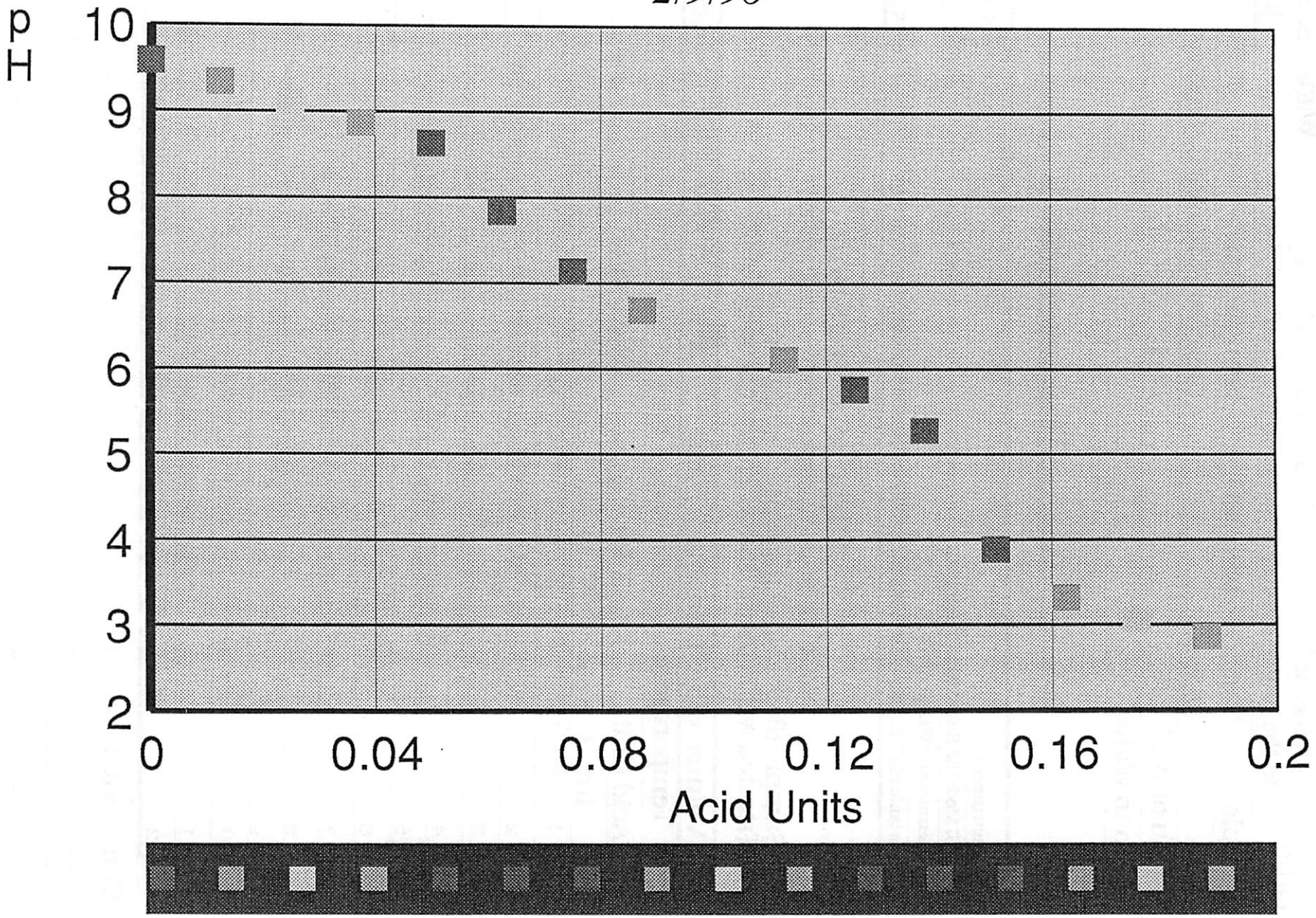
Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	9.58	0.000	0.000	9.58
10	9.34	0.013	0.013	9.34
20	9.13	0.025	0.025	9.13
30	8.87	0.038	0.038	8.87
40	8.64	0.050	0.050	8.64
50	7.84	0.063	0.063	7.84
60	7.14	0.075	0.075	7.14
70	6.69	0.088	0.088	6.69
80	6.40	0.100	0.100	6.40
90	6.11	0.113	0.113	6.11
100	5.76	0.125	0.125	5.76
110	5.28	0.138	0.138	5.28
120	3.88	0.150	0.15	3.88
130	3.32	0.163	0.1625	3.32
140	3.05	0.175	0.175	3.05
150	2.86	0.188	0.1875	2.86

Pumped 330 gallon before sample
Acid Units @ pH 4=119.14 $[HCO_3]^-$ = 140.71 mg/l

Monitoring Well MW-32 Deep

Field Water Titration

2/9/96



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ]	Name: Monitoring Well MW-32 Deep		
Location	Latitude: 35° 38.90 N	Longitude: 117° 46.493 W	Elevation
	In the IWVWD Victor Street property. South of Hwy 178 at Buttermilk Acres.		
Sample #: 090296 MW-32D		Sample Time: 1040	
Date: 9 FEB 1996		Sampler: Charles C. Pierce	
Depth of Well 1920'		Perf 1900'-1920'	
Depth to Water 246.15 (237 gals well vol)			

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	27		1000
Thermometer Weksler FPT	27		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	26.3	4.87	9.56

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml		Acid: 1.600+/-.005 N H_2SO_4	
Temperature			
Acid Units	ph	Acid Units	ph
Inital	9.58	13	3.32
1	9.34	14	3.05
2	9.13	15	2.86
3	8.87	16	
4	8.64	17	
5	7.84	18	
6	7.14	19	
7	6.69	20	
8	6.4	21	
9	6.11	22	
10	5.76	23	
11	5.28	24	
12	3.88	25	

Comments: Pump 6 barrels 330 gal -

Acid Units @ pH=4 = 119.14 HCO_3^- = 285.9 mg/l

Id Number:	34
Sample Number:	090296 BR-3 S
Sample Time:	12:15:00 PM
Sample Date:	2/9/96
Well:	Yes
Stream:	No
Latitude:	35 36.424 N
Longitude:	117 45.299 W
Location:	50 ft. South of Bowman Rd, 1500 ft East of 395
Elevation:	2508
Depth of Well:	670
Depth to Water:	333.15
Perf Section of Well:	650-670
Field temp of Water:	26
Conductance of water:	9200
pH:	6.75
Acid Units at pH 4:	6.2
Alkalinity:	14.88

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ]	Name: Monitoring Well BR-3		
Location	Latitude: 35° 36.424 N	Longitude: 117° 45.299 W	Elevation
	50 feet south of Bowman Road, 1500 feet east of HWY 395		
Sample #: 090296 BR-3S		Sample Time: 1215	
Date: 9 FEB 1996		Sampler: Charles C. Pierce	
Depth of Well 670"		Perf 650'-670'	
Depth to Water 533.15 well vol 55 gal			

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	26		9200
Thermometer Weksler FPT	26		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	26.4	6.75	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 25.7

Acid Units	ph	Acid Units	ph
Inital	~~6.72~~ 6.69	~~13~~ 15	3.39
~~1~~ 5	~~6.72~~	14	
~~2~~ 10	5.74	15	
~~3~~ 15		16	
4 20	6.69	17	
5 ~~25~~	~~5.06~~	18	
6 ~~30~~ ~~35~~	~~4.50~~	19	
7 ~~40~~ 45	4.31	20	
8 ~~50~~ 55	4.02	21	
9 ~~60~~ 65	3.92	22	
10 ~~70~~ 75	3.68	23	
11 ~~80~~ 85	3.76	24	
12 90	3.71	25	

Comments: pump 3 bar. WATER VERY DIRTY - BLACK - Smells oily

Acid Unit @ pH 4 = 6.2 HCO_3^- = 14.88

Id Number:

Sample Number: 090296 BR-3 M

Sample Time: 2:00:00 PM

Sample Date: 2/9/96

Well: Yes

Stream: No

Latitude: 35 36.424 N

Longitude: 117 45.299 W

Location: 50 ft. South of Bowman Rd, 1500 ft East of 395

Elevation:	2508
Depth of Well:	1340
Depth to Water:	333.4
Perf Section of Well:	1320-1340
Field temp of Water:	25.5
Conductance of water:	500
pH:	8.37
Acid Units at pH 4:	58.63
Alkalinity:	140.71

BR-3 M

Monitoring Well BR-3 Medium
Sample Nc 090296 BR-3 m

2/2/96
1400 Hours
Took 2 2l bottles
one acidified with 10ml HNO_3

Temp. °C	ph	mmhos
25.5		
25		500
27	8.37	

Depth to Water= 333.4 Depth of Well: 1340
Perf section: 1320-1340
Pumped 275 gallons before sample
50 ml water sample from non-acid bottle
ml=reading/800

Aklinity=140.71 mg/liter HCO_3^-

Temp:24.1
1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml
0	8.46	0.000
11	7.07	0.014
20	6.59	0.025
30	6.27	0.038
40	5.94	0.050
50	5.48	0.063
55	4.61	0.069
60	3.77	0.075
70	3.26	0.088
80	3.03	0.100

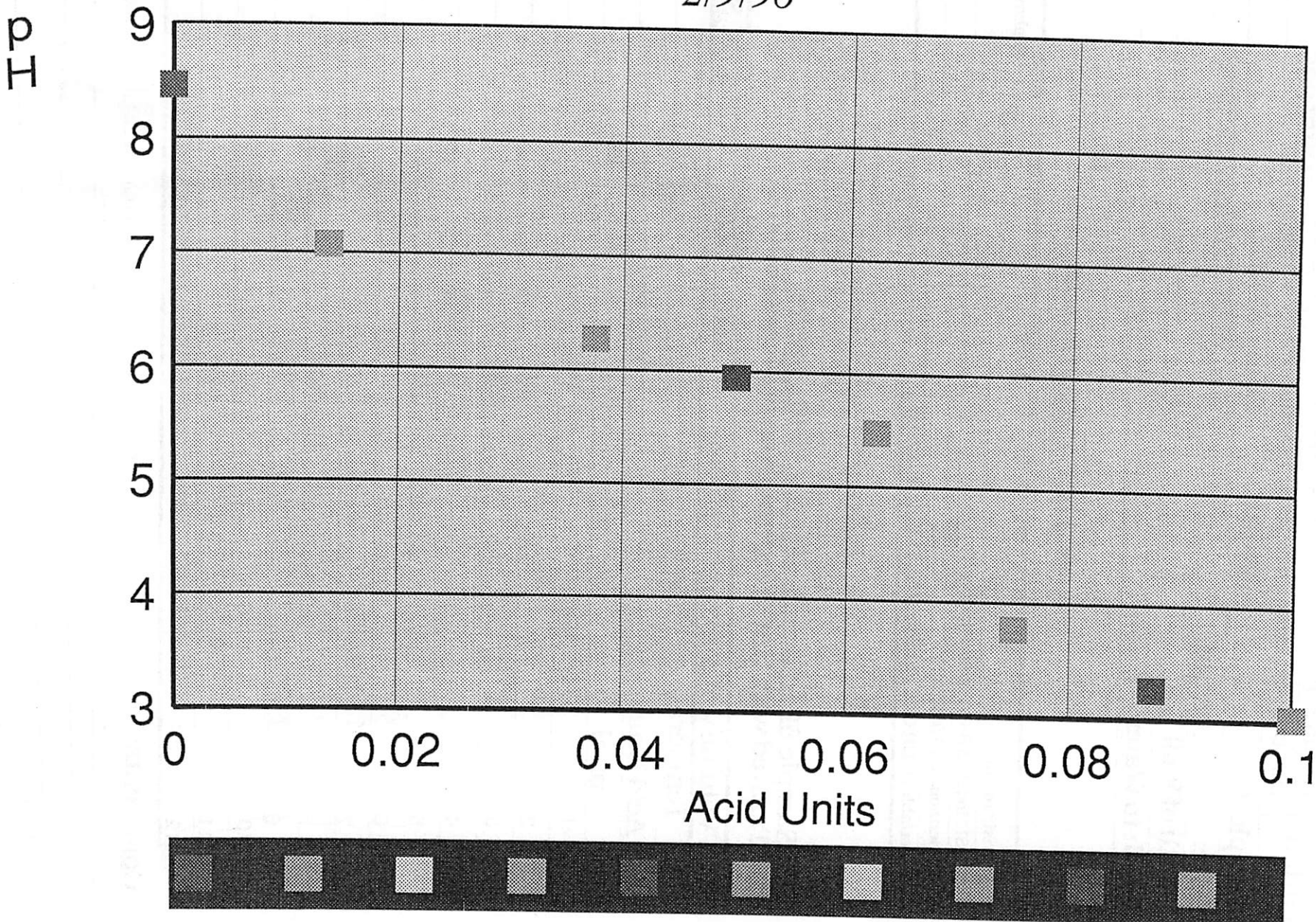
Vol of Acid	ph
0.000	8.46
0.014	7.07
0.025	6.59
0.038	6.27
0.050	5.94
0.063	5.48
0.069	4.61
0.075	3.77
0.088	3.26
0.100	3.03

Pumped 165 gallons, first 3 barrels very black, left mud in barrel last two light brown
color - well needs work, much more pumping.
Acid units @ pH 4=6.2 $[HCO_3]^-$ = 14.88 mg/l

Monitoring Well BR-3 Medium

Field Water Titration

2/9/96



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

ell [X]	Stream [ ]	Name: Monitoring Well BR-3 Medium	
cation	Latitude: 35° 36.424 N	Longitude: 117° 45.299 W	Elevation
	50 feet south of Bowman Road, 1500 feet east of HWY 395		
Sample #: 090296 BR-3M		Sample Time: 1400	
Date: 9 FEB 1996		Sampler: Charles C. Pierce	
Depth of Well 1340'		Perf 1320'-1340'	
Depth to Water 333.4	well vol = 164 gal		

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	25.5		500
Thermometer Weksler FPT	25		
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	27	8.37	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature ~~23.8~~ 24.1

Acid Units X10	ph	Acid Units	ph
Inital	8.46	13	
~~1~~ 11	7.07	14	
2	6.59	15	
3	6.24	16	
4	5.94	17	
5	5.48	18	
6 55	4.61	19	
7 60	3.77	20	
8 70	3.26	21	
9 80	3.03	22	
10		23	
11		24	
12		25	

Comments: pump 5h - first 3 barrels very black H2O - left most in barrel. Last two light brn color - well needs work - more pumping

Fact 1246

Acid Units @ pH 4 = 5863

Id Number:	38
Sample Number:	090296 BR-3 D
Sample Time:	4:30:00 PM
Sample Date:	2/9/96
Well:	Yes
Stream:	No
Latitude:	35 36.424 N
Longitude:	117 45.299 W
Location:	50 ft. South of Bowman Rd, 1500 ft East of 395
Elevation:	2508
Depth of Well:	1870
Depth to Water:	311.8
Perf Section of Well:	1850-1870
Field temp of Water:	24
Conductance of water:	1250
pH:	7.32
Acid Units at pH 4:	9.66
Alkalinity:	23.2

Monitoring Well BR-3 Deep
Sample Nc 090296 BR-3 D

2/9/96
1630 Hours
Took 2 2l bottles
one acidified with 10ml HNO_3

Temp. °C ph mmhos
24 1250

24 7.65

Depth to Water= 311.8 Depth of Well: 1870

Aklinity=23.2 mg/liter HCO_3^-

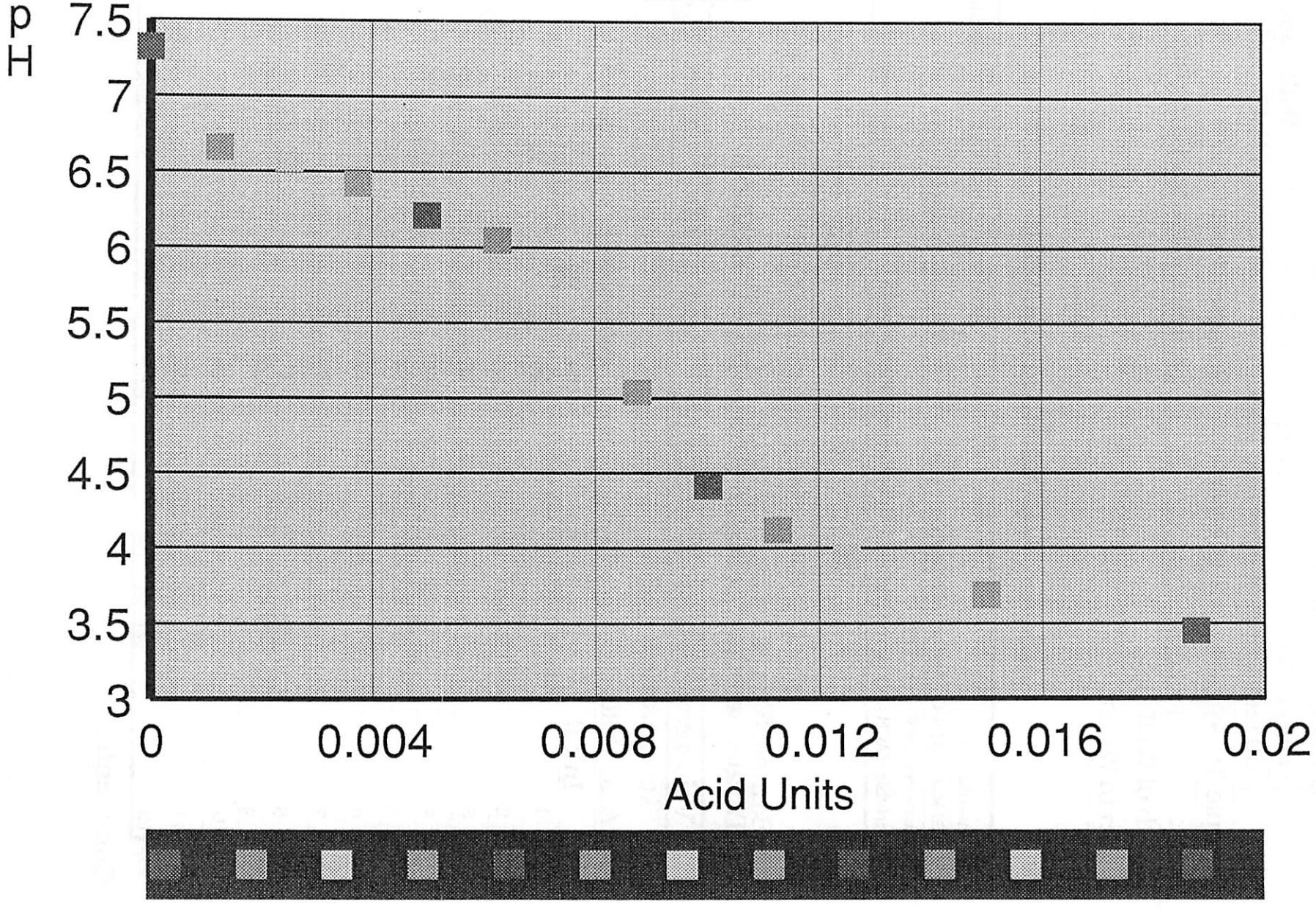
Perf section: 1850-1870
Pumped 275 gallons before sample
50 ml water sample from non-acid bottle Temp:20.8
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	7.32	0.000	0.000	7.32
1	6.66	0.001	0.001	6.66
2	6.58	0.003	0.003	6.58
3	6.42	0.004	0.004	6.42
4	6.21	0.005	0.005	6.21
5	6.05	0.006	0.006	6.05
6	5.81	0.008	0.008	5.81
7	5.04	0.009	0.009	5.04
8	4.41	0.010	0.010	4.41
9	4.12	0.011	0.011	4.12
10	3.94	0.013	0.013	3.94
12	3.69	0.015	0.015	3.69
15	3.45	0.019	0.019	3.45

Monitoring Well BR-3 Deep

Field Water Titration

2/9/96



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X]	Stream [ ]	Name: Monitoring Well BR-3 Deep	
Location	Latitude: 35° 36.424 N	Longitude: 117° 45.299 W	Elevation
	50 feet south of Bowman Road, 1500 feet east of HWY 395		
Sample #: ~~090296~~ 090296 BR-3D		Sample Time: 1630	
Date: 9 FEB 1996		Sampler: Charles C. Pierce	
Depth of Well 1870'		Perf 1850'-1870'	
Depth to Water 311.8	(754.4 gal) well vol		

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	24		1250
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	24	7.65	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 20.8

Acid Units		ph	Acid Units		ph
Inital		7.32	13	0	7.32
1		3.77	14	1	6.66
2	1		15	2	6.58
3	2		16	3	6.42
4	3		17	4	6.21
5	4		18	5	6.05
6	5		19	6	5.81
7	6		20	7	5.04
8	7		21	8	4.41
9	8		22	9	4.12
10	9		23	10	3.94
11	10		24	12	3.69
12			25	15	3.45

Comments: pump 15 first 2 B very Black H_2O, 3rd yellow H_2O
2 1/2 Hours

Acid Units @ pH 4 = 9.666 HCO_3 = 23.2

Id Number:	39
Sample Number:	160296 BR-2S
Sample Time:	3:30:00 PM
Sample Date:	2/16/96
Well:	Yes
Stream:	No
Latitude:	35 37.344 N
Longitude:	117 51.475 W
Location:	1.25 Miles so of hwy 178 at end of Serria Vista RD, IYK
Elevation:	2655.9
Depth of Well:	640
Depth to Water:	277
Perf Section of Well:	620-640
Field temp of Water:	27
Conductance of water:	1500
pH:	11.51
Acid Units at pH 4:	164.5
Alkalinity:	393.6

Monitoring Well BR-2S
Sample No. 160296 BR-2S

2/16/96
1530 Hours
Took 2 2l bottles
one acidified with 10ml HNO_3

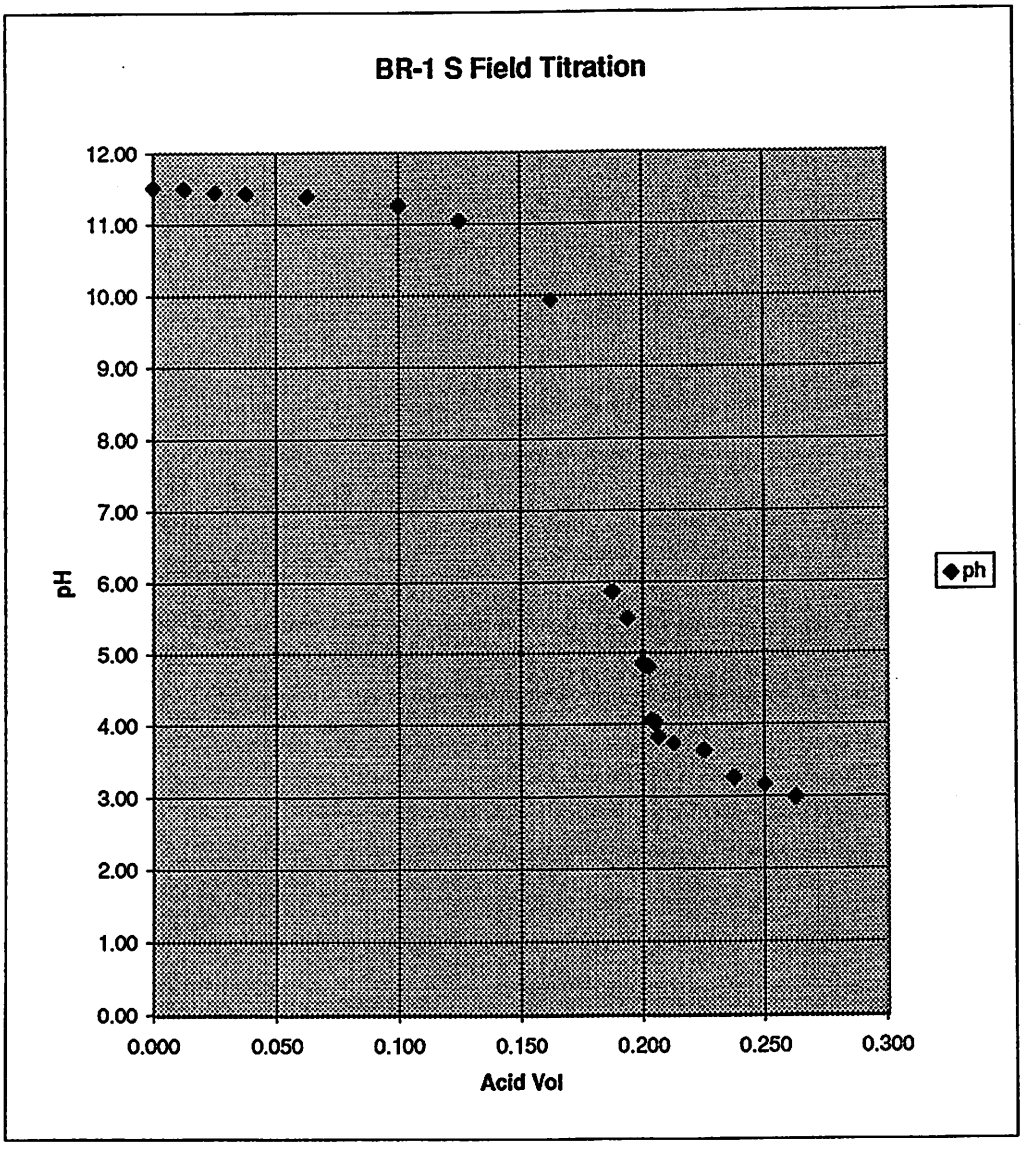
Temp. °C	ph	mmhos
27		1500
26	11.35	

Depth to Water=277 Depth of Well: 640 Aklinity=393.6 mg/liter HCO_3^-
Perf section: 1850-1870
Pumped 275 gallons before sample
50 ml water sample from non-acid bottle Temp:23
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	11.51	0.000	0.000	11.51
10	11.50	0.013	0.013	11.50
20	11.45	0.025	0.025	11.45
30	11.43	0.038	0.038	11.43
50	11.39	0.063	0.063	11.39
80	11.26	0.063	0.063	11.26
100	11.05	0.100	0.100	11.05
130	9.93	0.125	0.125	9.93
150	5.86	0.163	0.163	5.86
155	5.48	0.188	0.188	5.48
160	4.84	0.194	0.194	4.84
161	4.82	0.200	0.200	4.82
162	4.81	0.201	0.201	4.81
163	4.05	0.203	0.203	4.05
164	4.02	0.204	0.204	4.02
165	3.83	0.205	0.205	3.83
170	3.74	0.206	0.206	3.74
180	3.64	0.213	0.213	3.64
190	3.26	0.225	0.225	3.26
200	3.16	0.238	0.238	3.16
210	2.99	0.250	0.250	2.99

Well volume is 60 gallons,pumped 495 gallons, all the water pumped was clear.

Acid units @ pH 4=164 $[HCO_3]^-$ = 393.3 mg/l


BR-1 S Field Titration
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
pH
0.000
0.050
0.100
0.150
0.200
0.250
0.300
Acid Vol
ph

INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ]	Name: Monitoring Well BR2 Shallow		
Location	Latitude: 35° 37.344 N	Longitude: 117° 51.475 W	Elevation 2655.9
	1-1/4 miles south of Hwy. 178 at the end of Sierra Vista Rd, Inyokern		
Sample #: 160296 BR-2S		Sample Time: 1530	
Date: 16 FEB 1996		Sampler: Charles C. Pierce	
Depth of Well 640'		Perf 620'-640'	
Depth to Water 277.00'	1/6.1 = ~~[illegible]~~ 59.2 gal		

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	27		1500
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	26	11.28	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Digits = .002 meq

Volume water measured: 50ml		Acid: 1.600+/-.005 N H_2SO_4	
Temperature	23		
Acid Units	ph	Acid Units	ph
Inital	11.51	13 162	4.81
1	11.50	14 1.63	4.05
2	11.45	15 164	4.02
3	11.43	16 165	3.83
4		17 170	3.74
5	11.39	18 180	3.64
6 80	11.26	19 190	3.26
7 100	11.05	20 200	3.16
8 130	9.93	21 210	2.99
9 150	5.86	22	
10 155	5.48	23	
11 160	4.87	24	
12 161	4.62	25	

Comments: WATER CLEAR FROM START - PUMPED 9 BAR.

HCO_3 = 393.4 mg/l

Monitoring Well BR-2M
Sample No. 160296 BR-2M

2/16/96
1230 Hours
Took 2 2l bottles
one acidified with 10ml HNO_3

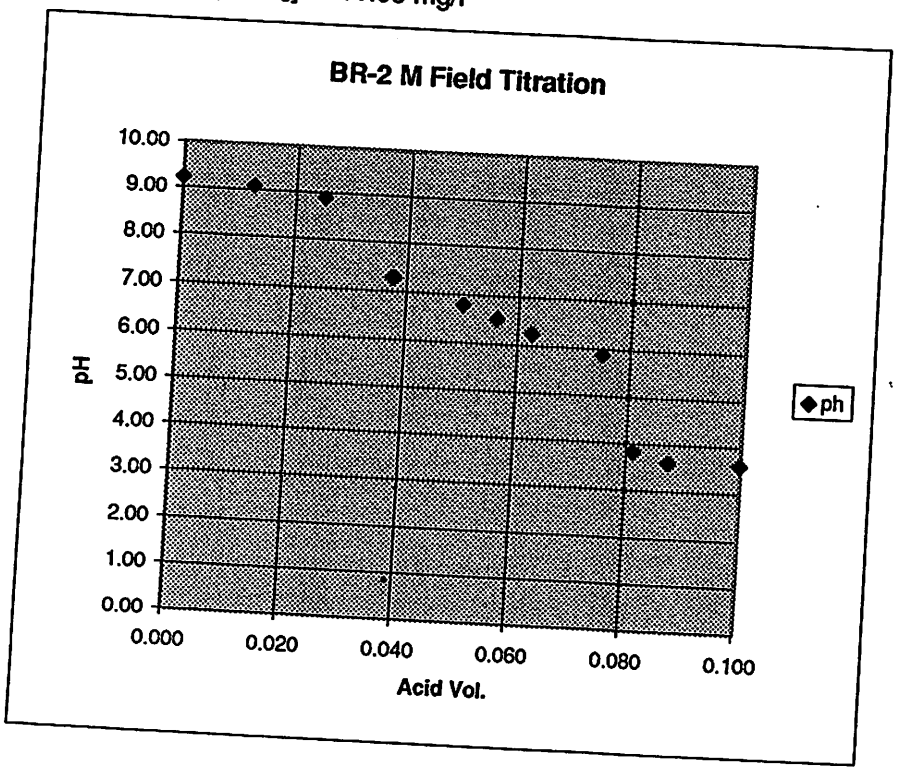
Temp. °C	ph	mmhos
32		350
32	9.27	

Depth to Water=273.3 Depth of Well: 1480'
Perf section: 1460-1480
Aklinity=11.05 mg/liter HCO_3^-
Pumped 440 gallons before sample
Well volume =195 GAL
50 ml water sample from non-acid bottle
Temp:28.5
ml=reading/800
1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml
0	9.22	0.000
10	9.08	0.013
20	8.89	0.025
30	7.29	0.038
40	6.78	0.050
45	6.52	0.056
50	6.24	0.063
60	5.87	0.075
65	3.84	0.081
70	3.61	0.088
80	3.60	0.100

Vol of Acid	ph
0.000	9.22
0.013	9.08
0.025	8.89
0.038	7.29
0.050	6.78
0.056	6.52
0.063	6.24
0.075	5.87
0.081	3.84
0.088	3.61
0.100	3.60

Well volume is 195 gallons,pumped 440 gallons, all the water pumped was grey, looks like drilling mud it took three filters to get a 2 l sample..
Acid units @ pH 4=64.6 $[HCO_3]^-$ = 11.05 mg/l



Id Number:	40
Sample Number:	160296 BR-2M
Sample Time:	12:30:00 PM
Sample Date:	2/16/96
Well:	Yes
Stream:	No
Latitude:	35 37.344 N
Longitude:	117 51.475 W
Location:	1.25 Miles so of hwy 178 at end of Serria Vista RD, IYK
Elevation:	2655.9
Depth of Well:	14800
Depth to Water:	273.3
Perf Section of Well:	1460-1480
Field temp of Water:	32
Conductance of water:	350
pH:	9.27
Acid Units at pH 4:	64.606
Alkalinity:	11.05

Id Number:	41
Sample Number:	160296 BR-2D
Sample Time:	10:10:00 AM
Sample Date:	2/16/96
Well:	Yes
Stream:	No
Latitude:	35 37.344 N
Longitude:	117 51.475 W
Location:	1.25 Miles so of hwy 178 at end of Serria Vista RD; IYK
Elevation:	2655.9
Depth of Well:	1960
Depth to Water:	282.5
Perf Section of Well:	1940-1960
Field temp of Water:	30
Conductance of water:	350
pH:	8.46
Acid Units at pH 4:	42.625
Alkalinity:	102.3

Monitoring Well BR-2D
Sample No. 160296 BR-2D

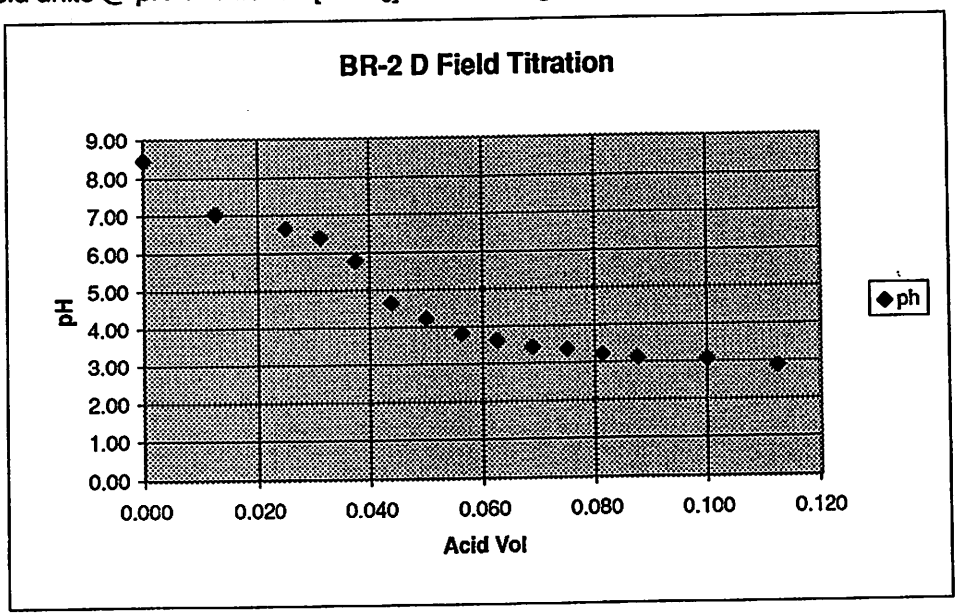
2/16/96
1010
Took 2 2l bottles
one acidified with 10ml HNO_3

Temp. °C	ph	mmhos
30		650
26	8.46	

Depth to Water=282.5 Depth of Well: 1960 Aklinity=11.05 mg/liter HCO_3^-
Perf section: 1940-1960
Pumped 550 gallons before sample Well volume =274 GAL
50 ml water sample from non-acid bottle Temp:28.5
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	8.46	0.000	0.000	8.46
10	7.04	0.013	0.013	7.04
20	6.64	0.025	0.025	6.64
25	6.40	0.031	0.031	6.40
30	5.77	0.038	0.038	5.77
35	4.64	0.044	0.044	4.64
40	4.21	0.050	0.050	4.21
45	3.81	0.056	0.056	3.81
50	3.62	0.063	0.063	3.62
55	3.43	0.069	0.069	3.43
60	3.37	0.075	0.075	3.37
65	3.22	0.081	0.081	3.22
70	3.13	0.088	0.088	3.13
80	3.07	0.100	0.100	3.07
90	2.89	0.113	0.113	2.89

Well volume is 274 gallons,pumped 550 gallons, frist 3 barrels were back and stinky.
The remaining barrels were brown and looked muddy.
Acid units @ pH 4=42.625 $[HCO_3]^-$ = 102.3 mg/l



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well X	Stream	Name: Monitoring Well BR2 Deep	
Location	Latitude: 35° 31.344N	Longitude: 117° 51.475 W	Elevation 2655.9
	1-1/4 miles south of Hwy. 178 at the end of Sierra Vista Rd, Inyokern		

Sample #: 160296 BR-2D	Sample Time: 1010
Date: 16 FEB 1996	Sampler: Charles C. Pierce
Depth of Well 1960′	Perf 1940′-1960′
Depth to Water 282.50′ Well vol = 274 gal : 5 [illegible]	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	30		650
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	26	~~8.46~~ 8.46	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml		Acid: 1.600+/-.005 N H_2SO_4	
Temperature 25.1			
Acid Units	ph	Acid Units	ph
Inital	8.46	13 70	3.13
1	~~[illegible]~~ 7.04	14 80	3.07
2 ~~15~~		15 90	2.89
3 20	6.64	16 ~~100~~	
4 25	6.40	17	
5 30	5.77	18	
6 35	4.64	19	
7 40	4.21	20	
8 45	3.81	21	
9 50	3.62	22	
10 55	3.43	23	
11 60	3.37	24	
12 65	3.22	25	

Comments: Pump [illegible]

$\frac{.4}{5} = \frac{.21}{x}$ -2.62

Acid Units = 42.625 HCO_3^- = 102.3 mg/l

Id Number:	42
Sample Number:	190296 BR-1S
Sample Time:	9:30:00 AM
Sample Date:	2/19/96
Well:	Yes
Stream:	No
Latitude:	35 34.173 N
Longitude:	117 51.765 W
Location:	200' west of RedRock/IYK rd, 6 miles so of Hwy 178
Elevation:	2848.3
Depth of Well:	6350
Depth to Water:	185.5
Perf Section of Well:	615-635
Field temp of Water:	27
Conductance of water:	400
pH:	9.36
Acid Units at pH 4:	90.575
Alkalinity:	217.38

Monitoring Well BR-1S
Sample No. 190296 BR-1S

2/19/96
0930 Hours
Took 2 2l bottles
one acidified with 10ml HNO_3

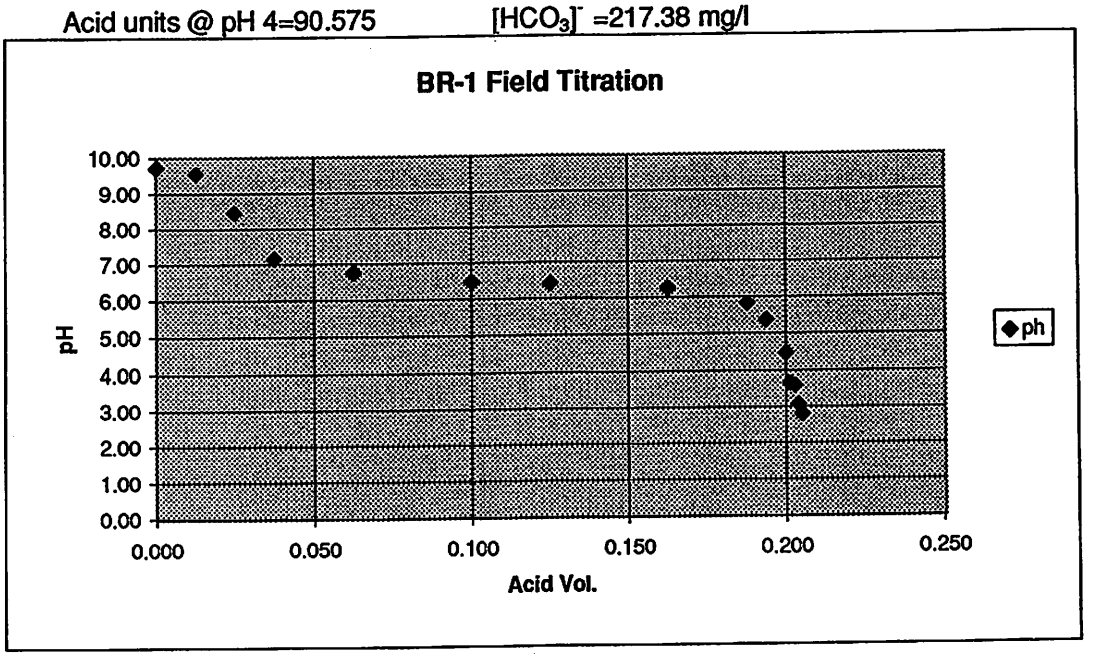
Temp. °C	ph	mmhos
27		400
26	6.36	

Depth to Water=185.5 Depth of Well: 635 Aklinity=217.38 mg/liter HCO_3^-
Perf section: 615-635 Vol=74 gals
Pumped 275 gallons before sample
50 ml water sample from non-acid bottle Temp:18.4
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	9.72	0.000	0.000	9.72
10	9.56	0.013	0.013	9.56
20	8.44	0.025	0.025	8.44
30	7.15	0.038	0.038	7.15
50	6.75	0.063	0.063	6.75
80	6.47	0.100	0.100	6.47
100	6.42	0.125	0.125	6.42
130	6.25	0.163	0.163	6.25
150	5.83	0.188	0.188	5.83
155	5.35	0.194	0.194	5.35
160	4.46	0.200	0.200	4.46
161	3.66	0.201	0.201	3.66
162	3.60	0.203	0.203	3.60
163	3.06	0.204	0.204	3.06
164	2.80	0.205	0.205	2.80

Well volume is 74 gallons,pumped 275 gallons, 1st barrel was clear, rest had drilling mud

Acid units @ pH 4=90.575 $[HCO_3]^-$ =217.38 mg/l



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] **Stream** [ ] **Name: Monitoring Well BR-1 Shallow**

Location | **Latitude: 35° 34.173 N** | **Longitude: 117° 51.765 W** | **Elevation: 2843.3**

200' west of Red Rock IYK Rd, 5.2 miles south of Hwy 178

Sample #: 190296 **BR-1S**	**Sample Time:** 0930
Date: 19 FEB 1996	**Sampler: Charles C. Pierce**
Depth of Well 635'	**Perf** 615'-635'
Depth to Water 185.5	1/2 = 74 gal

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	24		400
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	27°	9.36	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 18.4

Acid Units		ph	Acid Units		ph
Inital		9.72	13	110	3.06
1	0	9.56	14	120	2.80
2		8.44	15		
3		7.15	16		
4		6.75	17		
5		6.47	18		
6		6.42	19		
7		6.25	20		
8		5.83	21		
9	85	5.35	22		
10	90	4.46	23		
11	91	3.66	24		
12	100	3.60	25		

Comments: 1st BARREL WAS CLEAR - REST OF BARRELS WERE GRAY - DRILLING MUD. PUMPED 5 BARRELS

.5 / 1 = .46 / x Acidity @ pH=4 90.575 217.38 HCO_3^- mg/l

Id Number:	42
Sample Number:	190296 BR-1S
Sample Time:	9:30:00 AM
Sample Date:	2/19/96
Well:	Yes
Stream:	No
Latitude:	35 34.173 N
Longitude:	117 51.765 W
Location:	200' west of RedRock/IYK rd, 6 miles so of Hwy 178
Elevation:	2848.3
Depth of Well:	6350
Depth to Water:	185.5
Perf Section of Well:	615-635
Field temp of Water:	27
Conductance of water:	400
pH:	9.36
Acid Units at pH 4:	90.575
Alkalinity:	217.38

Monitoring Well BR-1S
Sample No. 190296 BR-1S

2/19/96
0930 Hours
Took 2 2l bottles
one acidified with 10ml HNO_3

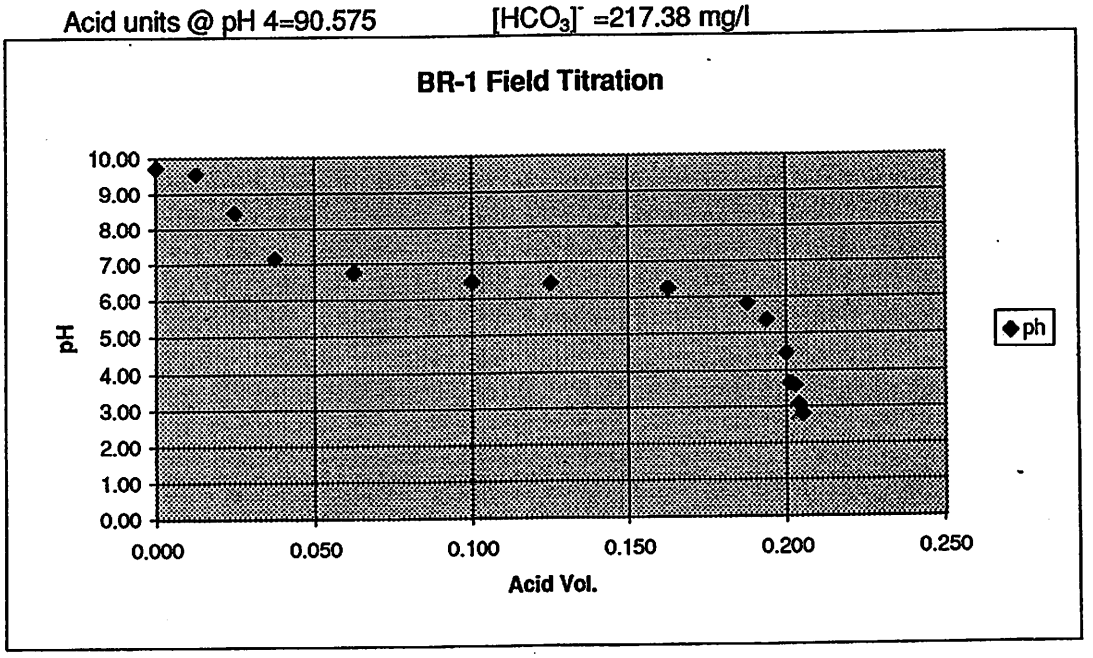
Temp. °C	ph	mmhos
27		400
26	6.36	

Depth to Water=185.5 Depth of Well: 635 Aklinity=217.38 mg/liter HCO_3^-
Perf section: 615-635 Vol=74 gals
Pumped 275 gallons before sample
50 ml water sample from non-acid bottle Temp:18.4
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml	Vol of Acid r	ph
0	9.72	0.000	0.000	9.72
10	9.56	0.013	0.013	9.56
20	8.44	0.025	0.025	8.44
30	7.15	0.038	0.038	7.15
50	6.75	0.063	0.063	6.75
80	6.47	0.100	0.100	6.47
100	6.42	0.125	0.125	6.42
130	6.25	0.163	0.163	6.25
150	5.83	0.188	0.188	5.83
155	5.35	0.194	0.194	5.35
160	4.46	0.200	0.200	4.46
161	3.66	0.201	0.201	3.66
162	3.60	0.203	0.203	3.60
163	3.06	0.204	0.204	3.06
164	2.80	0.205	0.205	2.80

Well volume is 74 gallons,pumped 275 gallons, 1st barrel was clear, rest had drilling mud

Acid units @ pH 4=90.575 $[HCO_3]^-$ =217.38 mg/l



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ]	Name: Monitoring Well BR-1 Shallow				
Location	Latitude: 35° 34.173	N	Longitude: 117° 51.765	W	Elevation: 2848.3
	200' west of Red Rock IYK Rd, 5.2 miles south of Hwy 178				

Sample #: 190296 BR-1S	Sample Time: 0930
Date: 19 FEB 1996	Sampler: Charles C. Pierce
Depth of Well 635'	Perf 615'-635'
Depth to Water 185.5	1/2 = 74 GAL

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	24		400
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	27°	8.36	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml **Acid: 1.600+/-.005 N H_2SO_4**

Temperature 18.4

Acid Units		ph	Acid Units		ph
Inital		9.72	13	110	3.06
1	0	9.56	14	120	2.80
2		8.44	15		
3		7.15	16		
4		6.75	17		
5		6.47	18		
6		6.42	19		
7		6.25	20		
8		5.83	21		
9	85	5.35	22		
10	90	4.46	23		
11	91	3.66	24		
12	100	3.60	25		

Comments: 1st BARREL WAS CLEAR - REST OF BARRELS WERE GREY - DRILLING MUD. PUMPED 5 BARRELS

.5 / 1 = 46 / x Acidity @ pH=4 90.575 217.38 HCO_3^- mg/l

Id Number:	43
Sample Number:	190296 BR-2MS
Sample Time:	11:00:00 AM
Sample Date:	2/19/96
Well:	Yes
Stream:	No
Latitude:	35 34.173 N
Longitude:	117 51.765 W
Location:	200' west of RedRock/IYK rd, 6 miles so of Hwy 178
Elevation:	2848.3
Depth of Well:	1060
Depth to Water:	183.7
Perf Section of Well:	1040-1060
Field temp of Water:	28
Conductance of water:	410
pH:	9.48
Acid Units at pH 4:	104.48
Alkalinity:	250.75

Monitoring Well BR-1SM
Sample No. 190296 BR-1SM

2/19/96
1100 Hours
Took 2 2l bottles
one acidified with 10ml HNO_3

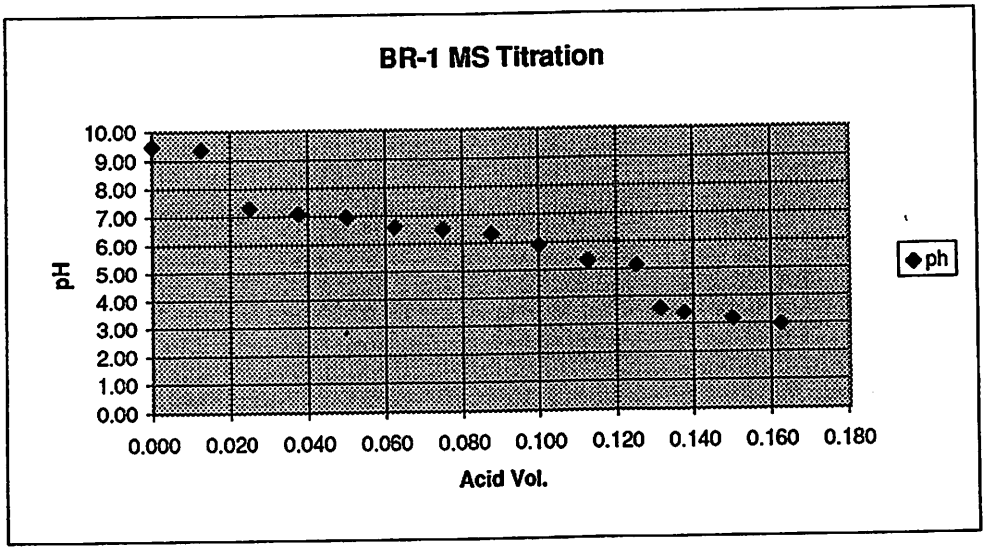
Temp. °C	ph	mmhos
28		410
29	9.48	

Depth to Water=183.7 Depth of Well: 1060 Aklinity=217.38 mg/liter HCO_3^-
Perf section: 1040-1060 Vol=143 gals
Pumped 495 gallons before sample
50 ml water sample from non-acid bottle
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml
0	9.48	0.000
10	9.36	0.013
20	7.29	0.025
30	7.09	0.038
40	6.95	0.050
50	6.59	0.063
60	6.50	0.075
70	6.31	0.088
80	5.91	0.100
90	5.33	0.113
100	5.14	0.125
105	3.58	0.131
110	3.40	0.138
120	3.19	0.150
130	2.97	0.163

Vol of Acid	ph
0.000	9.48
0.013	9.36
0.025	7.29
0.038	7.09
0.050	6.95
0.063	6.59
0.075	6.50
0.088	6.31
0.100	5.91
0.113	5.33
0.125	5.14
0.131	3.58
0.138	3.40
0.150	3.19
0.163	2.97

Well volume is 143 gallons,pumped 495 gallons, 1st barrel clear,all the rest of the water pumped was clear.
Acid units @ pH 4=104.48 $[HCO_3]^-$ = 250.75 mg/l



Id Number:	44
Sample Number:	190296 BR-1md
Sample Time:	1:00:00 PM
Sample Date:	2/19/96
Well:	Yes
Stream:	No
Latitude:	35 34.173 N
Longitude:	117 51.765 W
Location:	200' west of RedRock/IYK rd, 6 miles so of Hwy 178
Elevation:	2848.3
Depth of Well:	1520
Depth to Water:	187.2
Perf Section of Well:	1500-1520
Field temp of Water:	27
Conductance of water:	450
pH:	9.66
Acid Units at pH 4:	110.5
Alkalinity:	265.2

Monitoring Well BR-1MD
Sample Nc 190296 BR-1MD

2/19/96
1300 Hours
Took 2 2l bottles
one acidified with 10ml HNO_3

Temp. °C	ph	mmhos
27		450
28.1	9.66	

Depth to Water=187.2 Depth of Well: 1520 Aklinity=265.2 mg/liter HCO_3^-

Perf section: 1500-1520 Vol=222.4 gals

Pumped 880 gallons before sample

50 ml water sample from non-acid bottle

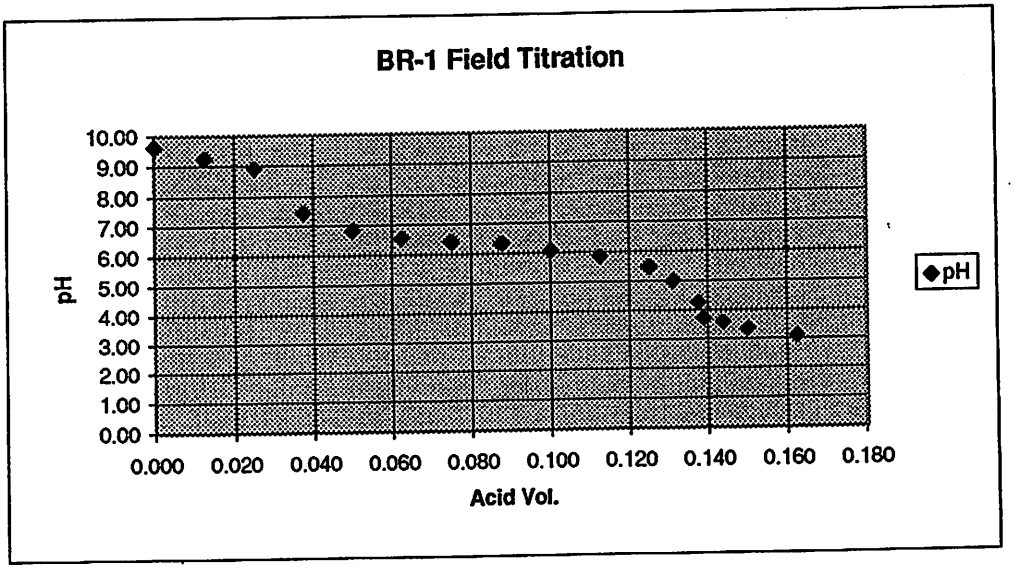
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml
0	9.62	0.000
10	9.23	0.013
20	8.90	0.025
30	7.45	0.038
40	6.83	0.050
50	6.56	0.063
60	6.42	0.075
70	6.34	0.088
80	6.06	0.100
90	5.85	0.113
100	5.48	0.125
105	5.01	0.131
110	4.25	0.138
111	3.71	0.139
115	3.58	0.144
120	3.34	0.150
130	3.08	0.163

Vol of Acid	pH
0.000	9.62
0.013	9.23
0.025	8.90
0.038	7.45
0.050	6.83
0.063	6.56
0.075	6.42
0.088	6.34
0.100	6.06
0.113	5.85
0.125	5.48
0.131	5.01
0.138	4.25
0.139	3.71
0.144	3.58
0.150	3.34
0.163	3.08

Well volume is 222.4 gallons,pumped 880 gallons, 1st 4 barrels were clear all the rest were grey with drilling mud.

Acid units @ pH 4= 110.5 $[HCO_3]^-$ = 265.2 mg/l



Id Number:	45
Sample Number:	190296 BR-1D
Sample Time:	4:00:00 PM
Sample Date:	2/19/96
Well:	Yes
Stream:	No
Latitude:	35 34.173 N
Longitude:	117 51.765 W
Location:	200' west of RedRock/IYK rd, 6 miles so of Hwy 178
Elevation:	2848.3
Depth of Well:	1770
Depth to Water:	190.5
Perf Section of Well:	1750-1770
Field temp of Water:	25
Conductance of water:	400
pH:	9.55
Acid Units at pH 4:	120.4
Alkalinity:	288.96

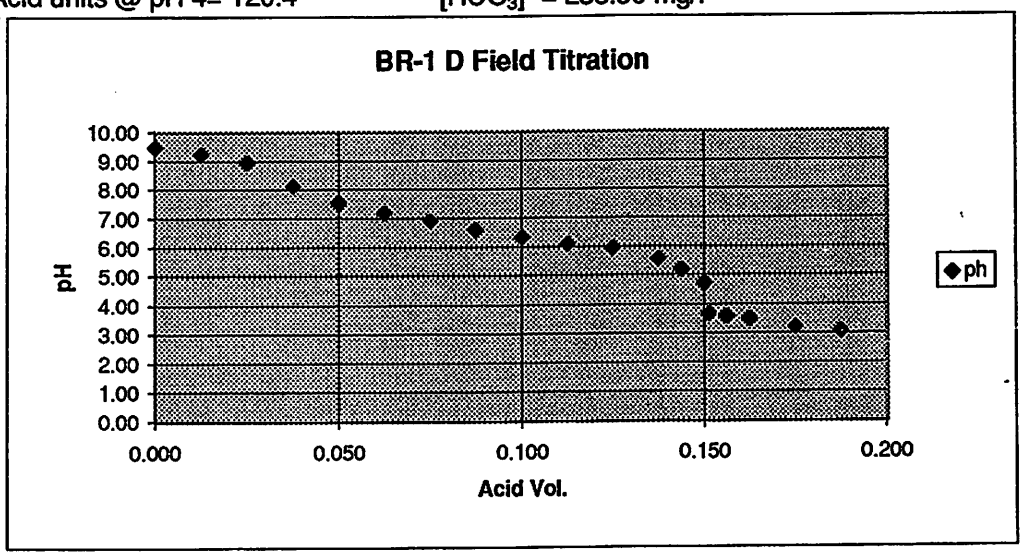
Monitoring Well BR-1d 2/19/96
Sample No. 190296 BR-1 D 1300 Hours
Took 2 2l bottles
one acidified with 10ml HNO_3

Temp. °C	ph	mmhos
25		400
25	9.55	

Depth to Water=190.5 Depth of Well: 1770 Aklinity=288.96 mg/liter HCO_3^-
Perf section: 1750-1770 Vol= 258 gals
Pumped 660 gallons before sample
50 ml water sample from non-acid bottle
ml=reading/800 1.600 +/- .005N H_2SO_4

Reading	ph	Vol of Acid ml	Vol of Acid	ph
0	9.47	0.000	0.000	9.47
10	9.25	0.013	0.013	9.25
20	8.95	0.025	0.025	8.95
30	8.13	0.038	0.038	8.13
40	7.55	0.050	0.050	7.55
50	7.19	0.063	0.063	7.19
60	6.92	0.075	0.075	6.92
70	6.59	0.088	0.088	6.59
80	6.32	0.100	0.100	6.32
90	6.10	0.113	0.113	6.10
100	5.95	0.125	0.125	5.95
110	5.56	0.138	0.138	5.56
115	5.19	0.144	0.144	5.19
120	4.73	0.150	0.150	4.73
121	3.67	0.151	0.151	3.67
125	3.57	0.156	0.156	3.57
130	3.49	0.163	0.163	3.49
140	3.21	0.175	0.175	3.21
150	3.07	0.188	0.188	3.07

Well volume is 258 gallons,pumped 660 gallons, 1st barrels was black
2-5 were semi clear, all the rest were grey with drilling mud.
Acid units @ pH 4= 120.4 $[HCO_3]^-$ = 288.96 mg/l



INDIAN WELL VALLEY WATER PROJECT
GEOCHEMICAL WATER SAMPLING DATA SHEET

Well [X] Stream [ ]	Name: Monitoring Well BR-1 Deep	
Location	Latitude: 35° 34.173 N Longitude: 117° 51: 76 5 W	Elevation: 2848.3
	200' west of Red Rock IYK Rd, 5.2 miles south of Hwy 178	
Sample #: 190296 BR-1D	Sample Time: 1600	
Date: 19 FEB 1996	Sampler: Charles C. Pierce	
Depth of Well 1770'	Perf 1750'-1770'	
Depth to Water 190.5	Vol = 257.8 gal = 4.7 Barrels	

Water Parameters

Instrument	Temp °C	ph	mmhos
YSI Model 33 S-C-T Meter: S/N1210	25		400
Thermometer Weksler FPT			
Portable HACH ONE ph meter Model 43800-00: S/N 930300019812	25	9.55	

Alkalinity Titration

Sample filtered and measured with pipette
Titrated with HACH Digital Titrator Model 16900-01

Volume water measured: 50ml		Acid: 1.600+/-.005 N H_2SO_4	
Temperature			
Acid Units	ph	Acid Units	ph
Inital	9.47	13 ~~115~~ 120	4.73
1	9.25	14 121	3.67
2	8.95	15 125	3.57
3	8.13	16 130	3.49
4	7.55	17 140	3.21
5	7.19	18 150	3.07
6	6.92	19	
7	6.59	20	
8	6.32	21	
9	6.10	22	
10	5.95	23	
11	5.56	24	
12 115	5.19	25	

Comments: 1st Barrel black - 2-5 semi clear - 5 → grey muddie - drilling mud.

Acid Unit @ ph = 4 120.4

288.96 mg/l HCO_3^-

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INDIAN WELLS VALLEY PROJECT
GEOCHEMICAL/WATER SAMPLING DATA SHEET

WELL: NRI - SHALLOW	
SAMPLE #: 042595 - NRI-SHALLOW	SAMPLE TIME: 1100
DATE: APRIL 25, 1995	SAMPLER: BA
DEPTH OF WELL:	Well Volume Calculation:
DEPTH TO GROUNDWATER	30 GAL
WATER COLUMN HEIGHT (h):	
GAL./FT. Conv. Factor: 2.0" sch.40 pipe = .174	
WELL PURGE	

Start time:	Volume	Q	Hose Depth
9:40, 9:45, 9:50	50, 50, 50	CLEAR, CLEAR, CLEAR	200'
9:55, 10:00, 10:05	50, 50, 50	CLEAR, CLEAR, CLEAR	200'
10:10, 10:15, 10:20	50, 50, 50	CLEAR, CLEAR	200'

WATER PARAMETERS

Time	Volume	Temp.	Ph.	TDS	CND
1. 9:45	1400 GAL	77°F	7.924	.961	1921
2. 9:50	1450 GAL	76°F	7.972	.961	1.921
3. 9:55	1500 GAL	77°F	7.912	.941	.881
4. 10:00	1550 GAL	77°F	7.899	.939	1.879
5. 10:05	1600 GAL	77°F	7.895	.936	1.871
6. 10:10	1650 GAL	78°F	7.917	.938	1.875
7. 10:15	1700 GAL	78°F	7.883	.939	1.877
8. 10:20	1750	78°F	7.882	.943	1.886
9. 10:25	1800	GRABBED	LAST SAMPLE		

ALKALINITY TITRATION

Filter sample and measure sample with a pipette.

Voume measured: 50	
Acid:	

	Acid Units	pH
1	initial	7.886
2	100	6.268
3	200	5.586
4	220	5.483
5	240	5.326
6	260	5.194
7	280	5.056
8	300	4.763
9	310	4.466
10	320	3.756
11	330	3.031
12		
13		
14		

	Acid Units	pH
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		

COMMENTS: DAWN HAD MENTION THAT THIS WELL WAS NOT DEVELOPED SO I WAITED UNTIL THE SAMPLE CLEANED UP.

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INDIAN WELLS VALLEY PROJECT
GEOCHEMICAL/WATER SAMPLING DATA SHEET

WELL: NRI - SHALLOW	
SAMPLE #: 042595 - NRI - SH#	SAMPLE TIME:
DATE: APRIL 25, 1995	SAMPLER: BA
DEPTH OF WELL:	Well Volume Calculation:
DEPTH TO GROUNDWATER	30
WATER COLUMN HEIGHT (h):	
GAL./FT. Conv. Factor: 2.0" sch.40 pipe = .174	

WELL PURGE

Start time: *	Volume	WATER & COLOR	Hose Depth
8:25		MUDDY	200'
8:08, 9:12	50, 50	MUDDY	200'
8:15, 8:19, 8:23	50, 50, 50	MUDDY	200'
8:28, 9:32, 9:37	50, 50, 50	GREY	200'
9:42, 9:47, 9:51	50, 50, 50	GREY, CLEAR, CLEAR	200'
9:56, 9:01, 9:06	50, 50, 50	CLEAR, CLEAR, CLEAR	200'
9:11, 9:16, 9:20	50, 50, 50	CLEAR, CLEAR, CLEAR	200'
9:25, 9:30, 9:35	50, 50, 50	CLEAR, CLEAR, CLEAR	200'

WATER PARAMETERS

	Time	Volume	Temp.	Ph.	TDS	CND
1.	9:04	980 GAL	76°F	8.127	1.030	2.07
2.	9:10	1040 GAL	76°F	8.154	1.036	2.07
3.	9:13	1075 GAL	76°F	8.079	1.032	2.07
4.	9:18	1120 GAL	77°F	8.027	.994	1.99
5.	9:30	1250 GAL	76°F	8.003	.986	1.97
6.	9:35	1300 GAL	77°F	7.968	.972	1.944
7.	9:40	1350 GAL	77°F	7.958	.975	1.948
8.						
9.						

ALKALINITY TITRATION

Filter sample and measure sample with a pipette.

Voume measured:	
Acid:	

	Acid Units	pH
1	initial	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

	Acid Units	pH
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		

COMMENTS: * WE AIR LIFTED 300 GALS ON FRIDAY & WE WERE GETTING IN THE BOTTOM OF THE BARREL

PAGE 1

INDIAN WELLS VALLEY PROJECT
GEOCHEMICAL/WATER SAMPLING DATA SHEET

WELL: URI - ~~DEEP~~ SHALLOW	
SAMPLE #: 042195 - NRI - ~~DEEP~~ SHALLOW	SAMPLE TIME: 1500
DATE: APRIL 21, 1995	SAMPLER: KAT, KT
DEPTH OF WELL:	Well Volume Calculation:
DEPTH TO GROUNDWATER	~~[illegible] GAL~~
WATER COLUMN HEIGHT (h):	
GAL./FT. Conv. Factor: 2.0" sch.40 pipe = .174	
WELL PURGE	

Start time:	Volume	Q	Hose Depth
13:14		BLACK	200'
13:27	50	GREEN	200'
13:41	50	GREEN	200'
13:56	50	LIGHT GREEN	200'
14:10	50	LIGHT GREY	200'
14:25, 14:42	50, 50	LIGHT GREY	200'

WATER PARAMETERS

Time	Volume	Temp.	Ph.	TDS	CND
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

ALKALINITY TITRATION

Filter sample and measure sample with a pipette.

Voume measured:	
Acid:	

	Acid Units	pH
1	initial	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

	Acid Units	pH
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		

COMMENTS:

BC LABORATORIES

WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/10/95
Date Received: 04/26/95
Laboratory No.: 95-04968-1

Sample Description: CAL STATE IWVW WELL: 042595-NRI-SHALLOW SAMPLED BY BRIAN ALLEN

Sampling Date/Time: 04/25/95 @ 11:00AM

Constituents	Results	Units	P.Q.L.	Method
Calcium	40.	mg/L	0.1	EPA-7140
Magnesium	14.5	mg/L	0.01	EPA-7450
Sodium	356.	mg/L	0.1	EPA-7770
Potassium	5.3	mg/L	0.1	EPA-7610
Bicarbonate	578.	mg/L	2.6	EPA-310.1
Chloride	218.	mg/L	2.0	EPA-300.0
Sulfate	96.	mg/L	2.	EPA-300.0
Nitrate/Nitrite as NO3	2.2	mg/L	0.4	EPA-353.2
Fluoride	1.3	mg/L	0.05	EPA-340.2
Bromide	0.50	mg/L	0.05	EPA-300.0
pH	8.5	pH Units	0.1	EPA-9040
Total Dissolved Solids @ 180 C	1120.	mg/L	10.	EPA-160.1
Total Alkalinity as CaCO3	474.	mg/L	5.0	EPA-310.1

CB 2.9%

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M. Atencio

Marna Atencio
Department Supervisor

cc: CSUB SCIENCE STOCKROOM - JIM OSTDICK

BC LABORATORIES

WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/05/95
Date Received: 04/26/95
Laboratory No.: 95-04968-1

Sample Description: CAL STATE IWVW WELL: 042595-NRI-SHALLOW SAMPLED BY BRIAN ALLEN

Sampling Date/Time: 04/25/95 @ 11:00AM

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	38.	µg/L	2.	SM-3114B
Boron	4.92	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Iron	None Detected	µg/L	50.	EPA-6010
Lithium	102.	µg/L	20.	EPA-7430
Mercury	None Detected	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	34.	mg/L	0.2	EPA-6010
Strontium	500.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

cc: CSUB SCIENCE STOCKROOM - JIM OSTDICK

INDIAN WELLS VALLEY PROJECT
GEOCHEMICAL/WATER SAMPLING DATA SHEET

WELL: NR1 - DEEP	
SAMPLE #: 042495 - NR1 - DEEP	SAMPLE TIME: 1400
DATE: APRIL 24, 1995	SAMPLER: BA
DEPTH OF WELL:	Well Volume Calculation:
DEPTH TO GROUNDWATER	332 GAL
WATER COLUMN HEIGHT (h):	
GAL./FT. Conv. Factor: 2.0" sch.40 pipe = .174	
WELL PURGE	

Start time:	Volume	Q	Hose Depth
12:26	—	CLEAR	200'
12:35	50 GAL	CLEAR	200'
12:54	50 GAL	CLEAR	"
13:08, 13:16	50, 50 GAL	GREY	"
13:24, 13:31	50, 50 GAL	GREY	"
13:37, 13:41	50, 50 GAL	GREY	"

WATER PARAMETERS

	Time	Volume	Temp.	Ph.	TDS	CND
1.	13:45	410 GAL	84°F	9.372	11.48	TO HIGH
2.	13:47	420 GAL	85°F	9.340	11.44	" "
3.	13:49	440 GAL	85°F	9.331	11.42	" "
4.	13:51	450 GAL	85°F	9.330	11.38	" "
5.	13:54	470 GAL	85°F	9.344	11.35	" "
6.						
7.						
8.						
9.						

ALKALINITY TITRATION

Filter sample and measure sample with a pipette.

Voume measured:	10 MLS
Acid:	

	Acid Units	pH
1	initial	9.377
2	200	8.182
3	400	6.337
4	500	6.101
5	600	5.864
6	700	5.344
7	720	5.218
8	740	4.957
9	760	4.316
10	780	3.002
11	790	2.715
12		
13		
14		

	Acid Units	pH
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		

COMMENTS:

INDIAN WELLS VALLEY PROJECT
GEOCHEMICAL/WATER SAMPLING DATA SHEET

WELL: NRI - MEDIUM	
SAMPLE #: 042495 - NRI - MEDIUM	SAMPLE TIME:
DATE: APRIL 24, 1995	SAMPLER: K.A.
DEPTH OF WELL:	Well Volume Calculation:
DEPTH TO GROUNDWATER	
WATER COLUMN HEIGHT (h):	
GAL./FT. Conv. Factor: 2.0" sch.40 pipe = .174	
WELL PURGE	

Start time:	Volume	Q	Hose Depth
14:16		GREY	200'
14:22	50	GREY	"
14:25 *			

WATER PARAMETERS

Time	Volume	Temp.	Ph.	TDS	CND
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

ALKALINITY TITRATION

Filter sample and measure sample with a pipette.

Voume measured:	
Acid:	

	Acid Units	pH
1	initial	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

	Acid Units	pH
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		

COMMENTS: * Started getting methane gas from the well it blew 200' of hose out of hole in 5 seconds and continued to blow gas till 12:55, IT BLEW A STREAM OF MUD 30feet in the AIR

BC LABORATORIES

WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/11/95
Date Received: 04/26/95
Laboratory No.: 95-04968-2

Sample Description: CAL STATE IWVW WELL: 042495-NRI-DEEP SAMPLED BY BRIAN ALLEN

Sampling Date/Time: 04/24/95 @ 02:00PM

Constituents	Results	Units	P.Q.L.	Method	
Calcium	1.0	mg/L	0.1	EPA-7140	
Magnesium	1.0	mg/L	0.01	EPA-7450	
Sodium	6090.	mg/L	0.1	EPA-7770	
Potassium	23.	mg/L	0.1	EPA-7610	
Carbonate	2910.	mg/L	2.6	EPA-310.1	
Bicarbonate	2780.	mg/L	2.6	EPA-310.1	
Chloride	4330.	mg/L	2.0	EPA-300.0	
Sulfate	38.	mg/L	2.	EPA-300.0	
Nitrate/Nitrite as NO3	None Detected	mg/L	4.4	EPA-353.2	*1
Fluoride	24.	mg/L	0.05	EPA-340.2	
Bromide	8.2	mg/L	0.05	EPA-300.0	
pH	9.6	pH Units	0.1	EPA-9040	
Total Dissolved Solids @ 180 C	15600.	mg/L	10.	EPA-160.1	
Total Alkalinity as CaCO3	7130.	mg/L	5.0	EPA-310.1	

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Flag Explanations:
*1 = Detection limit raised due to matrix interference.

M. Atencio

Irma Atencio
Department Supervisor

cc: CSUB SCIENCE STOCKROOM - JIM OSTDICK

4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/03/95
Date Received: 04/21/95
Laboratory No.: 95-04811-5

Sample Description: CAL STATE BAKD #IWVW WELL: 042195-NR2-MED SAMPLED BY BRIAN ALLEN, RAY TRUJILLO

Sampling Date/Time: 04/21/95 @ 10:00AM

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	160.	µg/L	20.	SM-3114B
Boron	21.	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Iron	1300.	µg/L	50.	EPA-6010
Lithium	1410.	µg/L	10.	EPA-7430
Mercury	None Detected	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	88.	mg/L	0.2	EPA-6010
Strontium	300.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

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BC LABORATORIES

WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/05/95
Date Received: 04/21/95
Laboratory No.: 95-04811-5

Sample Description: CAL STATE BAKD #IWVW WELL: 042195-NR2-MED SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 04/21/95 @ 10:00AM

Constituents	Results	Units	P.Q.L.	Method
Calcium	4.5	mg/L	0.1	EPA-7140
Magnesium	4.0	mg/L	0.01	EPA-7450
Sodium	1220.	mg/L	0.1	EPA-7770
Potassium	9.0	mg/L	0.1	EPA-7610
Carbonate	114.	mg/L	2.6	EPA-310.1
Bicarbonate	2560.	mg/L	2.6	EPA-310.1
Chloride	365.	mg/L	2.0	EPA-300.0
Sulfate	11.	mg/L	2.	EPA-300.0
Nitrate as NO3	None Detected	mg/L	0.4	EPA-300.0
Fluoride	5.6	mg/L	0.05	EPA-340.2
Bromide	0.73	mg/L	0.05	EPA-300.0
pH	8.7	pH Units	0.1	EPA-9040
tal Dissolved Solids @ 180 C	3340.	mg/L	10.	EPA-160.1
Total Alkalinity as CaCO3	2290.	mg/L	5.0	EPA-310.1

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M. Atencio

Marna Atencio
Department Supervisor

cc: CSUB SCIENCE STOCK ROOM

4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC
ORATORIES

WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/05/95
Date Received: 04/26/95
Laboratory No.: 95-04968-2

Sample Description: CAL STATE IWVW WELL: 042495-NRI-DEEP SAMPLED BY BRIAN ALLEN

Sampling Date/Time: 04/24/95 @ 02:00PM

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	153.	µg/L	10.	SM-3114B
Boron	90.	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Iron	360.	µg/L	50.	EPA-6010
Lithium	785.	µg/L	10.	EPA-7430
Mercury	None Detected	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	30.	mg/L	0.2	EPA-6010
Strontium	240.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

cc: CSUB SCIENCE STOCKROOM - JIM OSTDICK

BC LABORATORIES

WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/05/95
Date Received: 04/21/95
Laboratory No.: 95-04811-4

Sample Description: CAL STATE BAKD #IWVW WELL: 042195-NR2-SHALLOW SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 04/21/95 @ 08:00AM

Constituents	Results	Units	P.Q.L.	Method
Calcium	50.	mg/L	0.1	EPA-7140
Magnesium	21.	mg/L	0.01	EPA-7450
Sodium	153.	mg/L	0.1	EPA-7770
Potassium	4.7	mg/L	0.1	EPA-7610
Carbonate	18.0	mg/L	2.6	EPA-310.1
Bicarbonate	357.	mg/L	2.6	EPA-310.1
Chloride	69.3	mg/L	2.0	EPA-300.0
Sulfate	133.	mg/L	2.	EPA-300.0
Nitrate as NO3	1.3	mg/L	0.4	EPA-300.0
Fluoride	0.96	mg/L	0.05	EPA-340.2
Bromide	0.19	mg/L	0.05	EPA-300.0
pH	8.4	pH Units	0.1	EPA-9040
Total Dissolved Solids @ 180 C	645.	mg/L	10.	EPA-160.1
Total Alkalinity as CaCO3	323.	mg/L	5.0	EPA-310.1

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M Atencio

Marna Atencio
Department Supervisor

cc: CSUB SCIENCE STOCK ROOM

BC LABORATORIES

WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/03/95
Date Received: 04/21/95
Laboratory No.: 95-04811-4

Sample Description: CAL STATE BAKD #IWVW WELL: 042195-NR2-SHALLOW SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 04/21/95 @ 08:00AM

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	72.	µg/L	10.	SM-3114B
Boron	0.94	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Iron	None Detected	µg/L	50.	EPA-6010
Lithium	62.	µg/L	10.	EPA-7430
Mercury	None Detected	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	47.	mg/L	0.2	EPA-6010
Strontium	760.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

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BC LABORATORIES

WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/04/95
Date Received: 04/21/95
Laboratory No.: 95-04811-6

Sample Description: CAL STATE BAKD #IWVW WELL: 042195-NR2-DEEP SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 04/21/95 @ 12:00PM

Constituents	Results	Units	P.Q.L.	Method
Calcium	26.	mg/L	0.1	EPA-7140
Magnesium	30.	mg/L	0.01	EPA-7450
Sodium	1450.	mg/L	0.1	EPA-7770
Potassium	11.0	mg/L	0.1	EPA-7610
Bicarbonate	3910.	mg/L	2.6	EPA-310.1
Chloride	196.	mg/L	2.0	EPA-300.0
Sulfate	45.	mg/L	2.	EPA-300.0
Nitrate as NO3	None Detected	mg/L	0.4	EPA-300.0
Fluoride	2.0	mg/L	0.05	EPA-340.2
Bromide	0.36	mg/L	0.05	EPA-300.0
pH	8.1	pH Units	0.1	EPA-9040
Total Dissolved Solids @ 180 C	3840.	mg/L	10.	EPA-160.1
Total Alkalinity as CaCO3	3200.	mg/L	5.0	EPA-310.1

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M. Atencio

Marna Atencio
Department Supervisor

cc: CSUB SCIENCE STOCK ROOM

FAX (805) 327-1918

BC LABORATORIES

WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/03/95
Date Received: 04/21/95
Laboratory No.: 95-04811-6

Sample Description: CAL STATE BAKD #IWVW WELL: 042195-NR2-DEEP SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 04/21/95 @ 12:00PM

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	724.	µg/L	40.	SM-3114B
Boron	5.2	mg/L	0.10	EPA-6010
Copper	140.	µg/L	10.	EPA-6010
Iron	63.	µg/L	50.	EPA-6010
Lithium	1590.	µg/L	10.	EPA-7430
Mercury	None Detected	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	96.	mg/L	0.2	EPA-6010
Strontium	740.	µg/L	10.	EPA-6010
Zinc	140.	µg/L	10.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

(805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/22/95
Date Received: 05/05/95
Laboratory No.: 95-05448-3

Sample Description: CAL STATE IWVW WELL: 050595; BR-6; SHALLOW SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 05/05/95 @ 11:30AM

Constituents	Results	Units	P.Q.L.	Method
Calcium	37.	mg/L	0.1	EPA-7140
Magnesium	29.	mg/L	0.01	EPA-7450
Sodium	136.	mg/L	0.1	EPA-7770
Potassium	16.6	mg/L	0.1	EPA-7610
Carbonate	3.4	mg/L	2.6	EPA-310.1
Bicarbonate	304.	mg/L	2.6	EPA-310.1
Chloride	117.	mg/L	2.0	EPA-300.0
Sulfate	109.	mg/L	2.	EPA-300.0
Nitrate/Nitrite as NO3	1.8	mg/L	0.4	EPA-353.2
Fluoride	0.86	mg/L	0.05	EPA-340.2
Bromide	0.35	mg/L	0.05	EPA-300.0
pH	8.3	pH Units	0.1	EPA-9040
Total Dissolved Solids @ 180 C	675.	mg/L	10.	EPA-160.1
Total Alkalinity as CaCO3	255.	mg/L	5.0	EPA-310.1

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M. Atencio

Marna Atencio
Department Supervisor

cc: CSUB SCIENCE STOCKROOM

4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/19/95
Date Received: 05/05/95
Laboratory No.: 95-05448-3

Sample Description: CAL STATE IWVW WELL: 050595; BR-6; SHALLOW SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 05/05/95 @ 11:30AM

Constituents	Results	Units	P.Q.L.	Method
Aluminum	220.	µg/L	50.	EPA-6010
Arsenic	33.	µg/L	2.	SM-3114B
Boron	2.4	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Iron	240.	µg/L	50.	EPA-6010
Lithium	223.	µg/L	10.	EPA-7430
Mercury	0.44	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	49.	mg/L	0.2	EPA-6010
Strontium	80.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

cc: CSUB SCIENCE STOCKROOM

4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/22/95
Date Received: 05/05/95
Laboratory No.: 95-05448-4

Sample Description: CAL STATE IWVW WELL: 050595; BR-6; MEDIUM SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 05/05/95

Constituents	Results	Units	P.Q.L.	Method
Calcium	1.2	mg/L	0.1	EPA-7140
Magnesium	0.44	mg/L	0.01	EPA-7450
Sodium	358.	mg/L	0.1	EPA-7770
Potassium	2.3	mg/L	0.1	EPA-7610
Carbonate	114.	mg/L	2.6	EPA-310.1
Bicarbonate	650.	mg/L	2.6	EPA-310.1
Chloride	32.3	mg/L	2.0	EPA-300.0
Sulfate	None Detected	mg/L	2.	EPA-300.0
Nitrate/Nitrite as NO3	None Detected	mg/L	0.4	EPA-353.2
Fluoride	6.8	mg/L	0.05	EPA-340.2
Bromide	0.06	mg/L	0.05	EPA-300.0
pH	9.2	pH Units	0.1	EPA-9040
Total Dissolved Solids @ 180 C	900.	mg/L	10.	EPA-160.1
Total Alkalinity as CaCO3	490.	mg/L	5.0	EPA-310.1

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M. Atencio

Marna Atencio
Department Supervisor

cc: CSUB SCIENCE STOCKROOM

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BC LABORATORIES

WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/19/95
Date Received: 05/05/95
Laboratory No.: 95-05448-4

Sample Description: CAL STATE IWVW WELL: 050595; BR-6; MEDIUM SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 05/05/95

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	11.	µg/L	2.	SM-3114B
Boron	3.1	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Iron	120.	µg/L	50.	EPA-6010
Lithium	287.	µg/L	10.	EPA-7430
Mercury	0.76	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	29.	mg/L	0.2	EPA-6010
Strontium	87.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

cc: CSUB SCIENCE STOCKROOM

4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/22/95
Date Received: 05/05/95
Laboratory No.: 95-05448-5

Sample Description: CAL STATE IWVW WELL: 050595; BR-6; DEEP SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 05/05/95

Constituents	Results	Units	P.Q.L.	Method
Calcium	2.1	mg/L	0.1	EPA-7140
Magnesium	0.60	mg/L	0.01	EPA-7450
Sodium	252.	mg/L	0.1	EPA-7770
Potassium	4.3	mg/L	0.1	EPA-7610
Carbonate	53.9	mg/L	2.6	EPA-310.1
Bicarbonate	488.	mg/L	2.6	EPA-310.1
Chloride	27.0	mg/L	2.0	EPA-300.0
Sulfate	18.	mg/L	2.	EPA-300.0
Nitrate/Nitrite as NO3	None Detected	mg/L	0.4	EPA-353.2
Fluoride	1.7	mg/L	0.05	EPA-340.2
Bromide	0.08	mg/L	0.05	EPA-300.0
pH	8.9	pH Units	0.1	EPA-9040
Total Dissolved Solids @ 180 C	675.	mg/L	10.	EPA-160.1
Total Alkalinity as CaCO3	490.	mg/L	5.0	EPA-310.1

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M. Atencio

Marna Atencio
Department Supervisor

cc: CSUB SCIENCE STOCKROOM

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BC LABORATORIES

WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/19/95
Date Received: 05/05/95
Laboratory No.: 95-05448-5

Sample Description: CAL STATE IWVW WELL: 050595; BR-6; DEEP SAMPLED BY BRIAN ALLEN/RAY TRUJILLO

Sampling Date/Time: 05/05/95

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	31.	µg/L	2.	SM-3114B
Boron	2.1	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Iron	95.	µg/L	50.	EPA-6010
Lithium	332.	µg/L	10.	EPA-7430
Mercury	0.61	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	42.	mg/L	0.2	EPA-6010
Strontium	40.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

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BC LABORATORIES

WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/04/95
Date Received: 04/17/95
Laboratory No.: 95-04562-1

Sample Description: CSUB #IWV WELLS: 041495-BR10-S SAMPLED BY DAWN HANSON/CHERYL BLUME/BRIAN ALLEN

Sampling Date/Time: 04/14/95 @ 06:00PM

Constituents	Results	Units	P.Q.L.	Method
Calcium	57.	mg/L	0.1	EPA-7140
Magnesium	56.	mg/L	0.01	EPA-7450
Sodium	283.	mg/L	0.1	EPA-7770
Potassium	17.9	mg/L	0.1	EPA-7610
Bicarbonate	618.	mg/L	2.6	EPA-310.1
Chloride	208.	mg/L	2.0	EPA-300.0
Sulfate	211.	mg/L	2.	EPA-300.0
Nitrate/Nitrite as NO3	1.8	mg/L	0.4	EPA-353.2
Fluoride	0.52	mg/L	0.05	EPA-340.2
Bromide	0.53	mg/L	0.05	EPA-300.0
pH	8.1	pH Units	0.1	EPA-9040
Total Dissolved Solids @ 180 C	1140.	mg/L	10.	EPA-160.1
Total Alkalinity as CaCO3	506.	mg/L	5.0	EPA-310.1

Co 0.59%

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M. Atencio

Marna Atencio
Department Supervisor

cc: CSUB SCIENCE STOCK ROOM

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BC LABORATORIES

WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/01/95
Date Received: 04/17/95
Laboratory No.: 95-04562-1

Sample Description: CSUB #IWV WELLS: 041495-BR10-S SAMPLED BY DAWN HANSON/CHERYL BLUME/BRIAN ALLEN

Sampling Date/Time: 04/14/95 @ 06:00PM

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	None Detected	µg/L	2.	SM-3114B
Boron	6.5	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Lithium	302.	µg/L	20.	EPA-7430
Mercury	None Detected	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	27.	mg/L	0.2	EPA-6010
Strontium	1000.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010
Total Iron	None Detected	µg/L	50.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

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WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/05/95
Date Received: 04/17/95
Laboratory No.: 95-04562-2

Sample Description: CSUB #IWV WELLS: 041495-BR10-MS SAMPLED BY DAWN HANSON/CHERYL BLUME/BRIAN ALLEN

Sampling Date/Time: 04/14/95 @ 04:43PM

Constituents	Results	Units	P.Q.L.	Method
Calcium	32.	mg/L	0.1	EPA-7140
Magnesium	28.	mg/L	0.01	EPA-7450
Sodium	193.	mg/L	0.1	EPA-7770
Potassium	8.6	mg/L	0.1	EPA-7610
Carbonate	19.7	mg/L	2.6	EPA-310.1
Bicarbonate	190.	mg/L	2.6	EPA-310.1
Chloride	170.	mg/L	2.0	EPA-300.0
Sulfate	185.	mg/L	2.	EPA-300.0
Nitrate/Nitrite as NO3	0.9	mg/L	0.4	EPA-353.2
Fluoride	0.76	mg/L	0.05	EPA-340.2
Bromide	0.44	mg/L	0.05	EPA-300.0
pH	8.5	pH Units	0.1	EPA-9040
Total Dissolved Solids @ 180 C	745.	mg/L	10.	EPA-160.1
otal Alkalinity as CaCO3	189.	mg/L	5.0	EPA-310.1

(B 0.14%,

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M. Atencio

Marna Atencio
epartment Supervisor

cc: CSUB SCIENCE STOCK ROOM

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BC LABORATORIES

WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/01/95
Date Received: 04/17/95
Laboratory No.: 95-04562-2

Sample Description: CSUB #IWV WELLS: 041495-BR10-MS SAMPLED BY DAWN HANSON/CHERYL BLUME/BRIAN ALLEN

Sampling Date/Time: 04/14/95 @ 04:43PM

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	None Detected	µg/L	2.	SM-3114B
Boron	1.3	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Lithium	70.	µg/L	10.	EPA-7430
Mercury	None Detected	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	14.	mg/L	0.2	EPA-6010
Strontium	860.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010
Total Iron	None Detected	µg/L	50.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

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WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/05/95
Date Received: 04/17/95
Laboratory No.: 95-04562-3

Sample Description: CSUB #IWV WELLS: 041495-BR10-DM SAMPLED BY DAWN HANSON/CHERYL BLUME/BRIAN ALLEN

Sampling Date/Time: 04/14/95 @ 03:00PM

Constituents	Results	Units	P.Q.L.	Method
Calcium	44.	mg/L	0.1	EPA-7140
Magnesium	55.	mg/L	0.01	EPA-7450
Sodium	281.	mg/L	0.1	EPA-7770
Potassium	18.2	mg/L	0.1	EPA-7610
Carbonate	33.4	mg/L	2.6	EPA-310.1
Bicarbonate	527.	mg/L	2.6	EPA-310.1
Chloride	207.	mg/L	2.0	EPA-300.0
Sulfate	211.	mg/L	2.	EPA-300.0
Nitrate/Nitrite as NO3	1.8	mg/L	0.4	EPA-353.2
Fluoride	0.47	mg/L	0.05	EPA-340.2
Bromide	0.50	mg/L	0.05	EPA-300.0
pH	8.4	pH Units	0.1	EPA-9040
Total Dissolved Solids @ 180 C	1140.	mg/L	10.	EPA-160.1
Total Alkalinity as CaCO3	488.	mg/L	5.0	EPA-310.1

CB -1.62%

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M Atencio

Marna Atencio
Department Supervisor

cc: CSUB SCIENCE STOCK ROOM

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WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/01/95
Date Received: 04/17/95
Laboratory No.: 95-04562-3

Sample Description: CSUB #IWV WELLS: 041495-BR10-DM SAMPLED BY DAWN HANSON/CHERYL BLUME/BRIAN ALLEN

Sampling Date/Time: 04/14/95 @ 03:00PM

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	2.0	µg/L	2.	SM-3114B
Boron	6.3	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Lithium	300.	µg/L	10.	EPA-7430
Mercury	None Detected	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	28.	mg/L	0.2	EPA-6010
Strontium	980.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010
Total Iron	130.	µg/L	50.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director

BC LABORATORIES

WATER ANALYSIS
(GENERAL CHEMISTRY)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/05/95
Date Received: 04/17/95
Laboratory No.: 95-04562-4

Sample Description: CSUB #IWV WELLS: 041495-BR10-D SAMPLED BY DAWN HANSON/CHERYL BLUME/BRIAN ALLEN

Sampling Date/Time: 04/14/95 @ 11:45AM

Constituents	Results	Units	P.Q.L.	Method
Calcium	49.	mg/L	0.1	EPA-7140
Magnesium	56.	mg/L	0.01	EPA-7450
Sodium	282.	mg/L	0.1	EPA-7770
Potassium	17.8	mg/L	0.1	EPA-7610
Carbonate	53.9	mg/L	2.6	EPA-310.1
Bicarbonate	485.	mg/L	2.6	EPA-310.1
Chloride	209.	mg/L	2.0	EPA-300.0
Sulfate	211.	mg/L	2.	EPA-300.0
Nitrate/Nitrite as NO3	None Detected	mg/L	0.4	EPA-353.2
Fluoride	0.47	mg/L	0.05	EPA-340.2
Bromide	0.54	mg/L	0.05	EPA-300.0
pH	8.5	pH Units	0.1	EPA-9040
Total Dissolved Solids @ 180 C	1120.	mg/L	10.	EPA-160.1
Total Alkalinity as CaCO3	487.	mg/L	5.0	EPA-310.1

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Marna Atencio
Department Supervisor

cc: CSUB SCIENCE STOCK ROOM

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WATER ANALYSIS
(METALS)

NAVAL WEAPONS GEOTHERMAL CENTER
CODE C8306
CHINA LAKE, CA 93555
Attn: STEVE BJORNSTAD 619-939-4048

Date Reported: 05/01/95
Date Received: 04/17/95
Laboratory No.: 95-04562-4

Sample Description: CSUB #IWV WELLS: 041495-BR10-D SAMPLED BY DAWN HANSON/CHERYL BLUME/BRIAN ALLEN

Sampling Date/Time: 04/14/95 @ 11:45AM

Constituents	Results	Units	P.Q.L.	Method
Aluminum	None Detected	µg/L	50.	EPA-6010
Arsenic	None Detected	µg/L	2.	SM-3114B
Boron	6.1	mg/L	0.10	EPA-6010
Copper	None Detected	µg/L	10.	EPA-6010
Lithium	304.	µg/L	10.	EPA-7430
Mercury	None Detected	µg/L	0.2	EPA-245.1
Selenium	None Detected	µg/L	2.	SM-3114B
Si as SiO2	25.	mg/L	0.2	EPA-6010
Strontium	790.	µg/L	10.	EPA-6010
Zinc	None Detected	µg/L	10.	EPA-6010
Total Iron	None Detected	µg/L	50.	EPA-6010

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Samples were filtered and acidified in field.
Metal results reported above are on a dissolved basis.

Dan Schultz
Laboratory Director