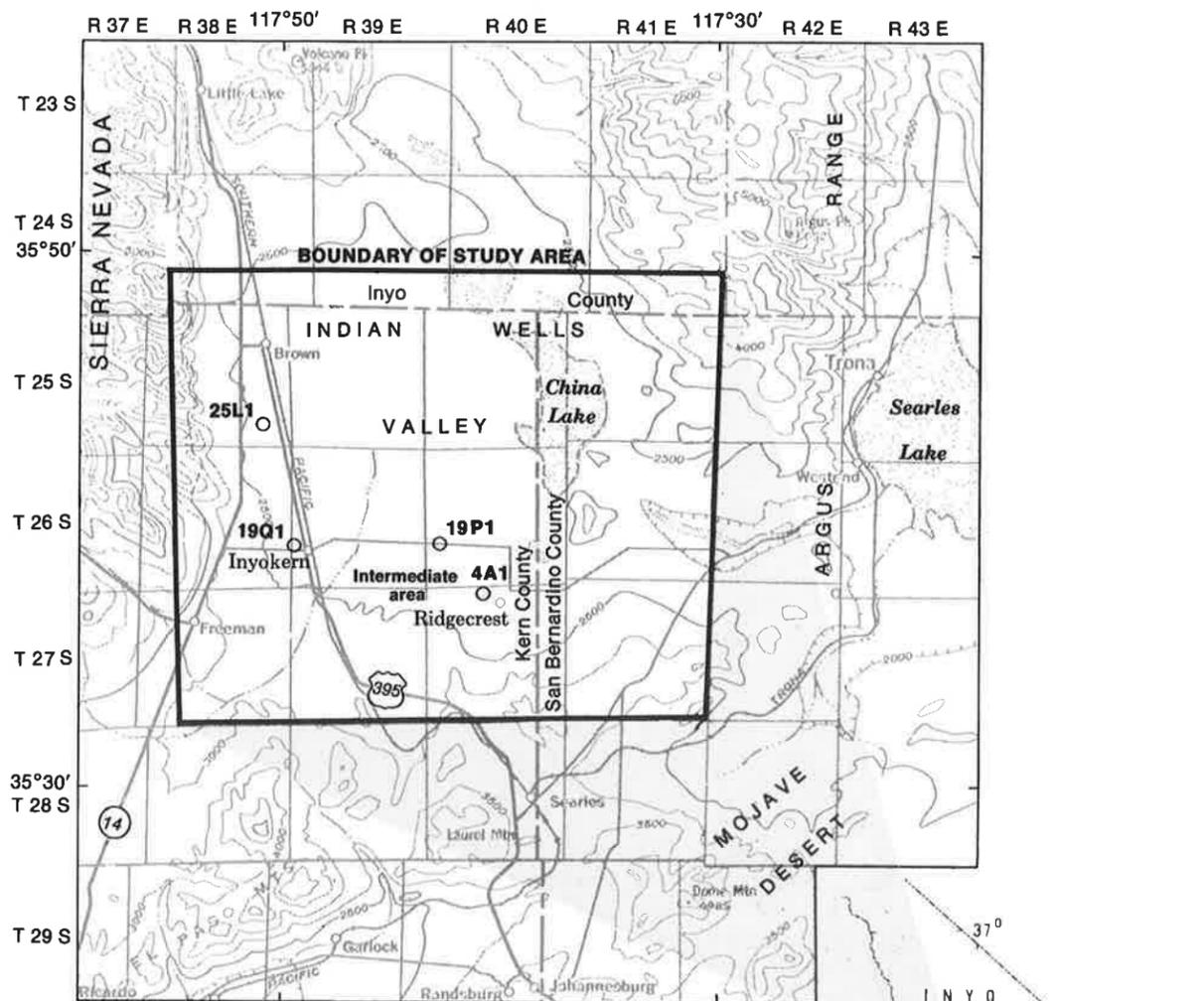


TABLE 3.--Chemical analyses of water from selected wells, 1977-84--Continued

Well	Date	Percent sodium	Sodium ad-sorption ratio	Potas-sium, dis-solved (mg/L as K)	Alka-linity, field (mg/L as CaCO ₃)	Sulfate, dis-solved (mg/L as SO ₄)	Chlo-ride, dis-solved (mg/L as Cl)	Fluo-ride, dis-solved (mg/L as F)	Silica, dis-solved (mg/L as SiO ₂)	Solids, sum of consti-tuents, dis-solved (mg/L)	Nitro-gen, NO ₂ +NO ₃ , dis-solved (mg/L as N)	Phos-phorus, ortho, dis-solved (mg/L as P)
26S/40E-23D1	83-10-31	99	88	7.9	--	60	260	6.7	28	1400	--	--
26S/40E-23D2	83-10-31	90	36	32	--	2200	920	1.3	6.9	4900	--	--
26S/40E-23G1	84-08-07	87	38	39	424	2600	1700	2.4	59	7100	<.10	0.10
26S/40E-23J1	84-08-09	39	2	23	--	280	50	.6	57	620	<.10	--
26S/40E-24C1	78-06-23	88	19	8.1	<1	480	710	4.6	13	1900	1.4	--
	80-05-21	96	38	5.4	64	250	610	4.9	8.9	1500	.79	.03
	82-06-10	94	30	4.2	120	310	880	2.1	20	2100	2.1	<.01
26S/40E-26F1	82-06-14	60	6	17	180	440	270	.7	68	1300	<.10	.05
26S/40E-28J1	78-06-29	61	3	14	110	78	26	1.3	53	330	.06	--
	79-06-01	52	3	17	91	130	39	1.2	56	410	<.10	.05
	80-05-27	61	4	10	89	120	50	1.0	43	400	.57	.03
	82-06-11	49	3	21	84	250	52	.8	59	590	<.10	<.01
	84-08-10	39	2	23	83	280	50	.6	57	630	<.10	--
26S/40E-30K1	77-03-23	78	5	2.3	102	41	43	1.3	--	--	--	--
	78-11-13	--	5	--	110	20	43	1.1	--	--	--	--
26S/40E-30K2	77-02-08	--	--	--	--	--	--	--	--	--	--	--
	77-02-28	87	8	1.1	130	53	48	1.1	--	--	--	--
	78-11-09	--	4	--	95	33	50	.9	--	--	--	--
26S/40E-30K3	77-03-23	96	16	.9	93	60	79	1.4	--	--	--	--
	78-11-09	--	10	--	93	75	85	1.1	--	--	--	--
26S/40E-32K1	77-11-12	91	12	4.0	172	60	87	1.0	--	--	--	--
	77-12-01	94	16	2.0	110	56	160	.8	--	--	--	--
	78-11-09	--	4	--	82	38	39	.5	--	--	--	--
26S/40E-33P4	77-03-23	88	9	3.4	114	46	78	1.5	--	--	--	--
	78-11-13	--	7	--	102	26	92	1.1	--	--	--	--
26S/40E-34N1	78-07-31	44	2	5.9	88	85	80	.7	42	400	--	--
	80-03-29	48	3	6.4	76	110	100	.7	45	440	--	--
26S/40E-36A1	78-06-29	70	7	5.9	93	79	290	.8	35	730	.10	--
	79-06-06	76	8	6.9	90	110	280	.6	37	750	.04	.05
	80-05-27	76	8	6.2	80	110	300	.6	29	770	.03	.01
	82-06-14	69	7	8.8	89	180	360	.6	30	970	<.10	.01
26S/41E-7D1	78-06-29	95	110	59	<1	1100	8400	1.1	6.5	15000	.05	--
	79-05-17	98	180	50	1	1200	7900	12	12	15000	.01	.02
	80-05-21	99	280	78	37	970	8000	15	4.7	15000	.09	.04
26S/41E-7E1	78-06-29	99	160	17	620	490	1900	.8	18	4500	3.7	--
	79-05-17	99	160	16	610	460	1900	7.0	18	4600	1.6	.11
	80-05-20	98	110	12	600	440	1700	6.9	22	4200	.38	.12
	82-06-10	99	170	23	620	460	2100	3.0	23	5100	<.10	.12
26S/41E-7G1	78-06-29	100	510	18	1300	620	2900	11	15	7200	.41	--
	79-05-17	99	280	21	1230	630	2900	10	11	7100	.95	.25
27S/40E-2J1	78-06-28	72	9	7.2	160	67	500	1.2	54	1100	2.1	--
	79-06-01	72	9	7.3	160	69	480	1.3	54	1100	1.7	.01
	80-05-23	72	9	7.2	160	130	440	1.2	57	1100	2.0	.01
27S/40E-3R1	78-06-29	75	7	5.5	130	93	240	.8	40	700	2.8	--
	79-06-06	73	8	5.4	140	170	230	1.0	47	820	.85	.02
	80-05-27	82	11	6.9	140	160	220	1.6	49	820	8.5	.01
	82-06-15	74	8	5.4	240	170	210	.9	56	920	13	.03
27S/40E-4C2	77-03-23	69	6	5.1	95	58	190	.9	--	--	--	--
	78-11-13	--	5	--	90	35	210	.7	--	--	--	--
	78-12-27	--	5	--	82	62	230	.8	--	--	--	--
27S/40E-4L1	78-11-09	--	8	--	115	31	230	.8	--	--	--	--
27S/40E-10R1	78-06-28	73	16	49	<1	16	1900	.9	10	3200	.04	--
	79-06-06	78	17	39	<1	12	1500	.9	8.4	2600	.09	<.01
	80-05-28	78	18	49	57	13	1600	.8	6.7	2800	.21	.06



EXPLANATION
 ○ 4A1 WELL AND NUMBER-- Shows location of wells for which hydrographs shown in figure 2 were constructed

FIGURE 1. -- Location of study area and hydrograph wells.

TABLE 3.--Chemical analyses of water from selected wells, 1977-84--Continued

Well	Date	Arsenic, total (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Chromium, hexavalent, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)
26S/40E-23D1	83-10-31	--	--	--	--	19000	--	--	--	--	--	--	220
26S/40E-23D2	83-10-31	--	--	--	--	19000	--	--	--	--	--	--	50
26S/40E-23G1	84-08-07	--	--	32	<2	30000	<5	--	<20	--	<50	--	170
26S/40E-23J1	84-08-09	--	--	17	1	380	<1	--	<3	--	<10	--	43
26S/40E-24C1	78-06-23	--	--	--	--	7300	--	--	--	--	--	--	56000
	80-05-21	4	--	--	--	5800	--	--	--	--	--	--	14000
	82-06-10	36	--	--	--	6300	--	--	--	--	--	--	170000
26S/40E-26F1	82-06-14	13	--	--	--	1900	--	--	--	--	--	--	32
26S/40E-28J1	78-06-29	1	--	--	--	360	--	--	--	--	--	--	<10
	79-06-01	1	--	--	--	280	--	--	--	--	--	--	20
	80-05-27	8	--	--	--	550	--	--	--	--	--	--	70
	82-06-11	<1	--	--	--	350	--	--	--	--	--	--	76
	84-08-10	--	--	17	1	380	<1	--	<3	--	<10	--	43
26S/40E-30K1	77-03-23	--	40	--	--	--	--	--	--	--	--	<100	--
	78-11-13	--	10	--	--	--	--	--	--	--	--	<100	--
26S/40E-30K2	77-02-08	--	<10	--	--	--	--	--	--	--	--	--	--
	77-02-28	--	<100	--	--	--	--	--	--	--	--	<100	--
	78-11-09	--	20	--	--	--	--	--	--	--	--	<100	--
26S/40E-30K3	77-03-23	--	<100	--	--	--	--	--	--	--	--	<100	--
	78-11-09	--	20	--	--	--	--	--	--	--	--	300	--
26S/40E-32K1	77-11-12	--	--	--	--	400	--	--	--	--	--	260	--
	77-12-01	--	<10	--	--	--	--	--	--	--	--	<100	--
	78-11-09	--	<10	--	--	--	--	--	--	--	--	<100	--
26S/40E-33P4	77-03-23	--	<100	--	--	--	--	--	--	--	--	<100	--
	78-11-13	--	10	--	--	--	--	--	--	--	--	<100	--
26S/40E-34N1	78-07-31	--	--	--	--	680	--	--	--	<2	--	1500	--
	80-03-29	--	--	--	--	820	--	--	--	30	--	670	--
26S/40E-36A1	78-06-29	24	--	--	--	1000	--	--	--	--	--	--	70
	79-06-06	13	--	--	--	1200	--	--	--	--	--	--	100
	80-05-27	13	--	--	--	1300	--	--	--	--	--	--	60
	82-06-14	34	--	--	--	1700	--	--	--	--	--	--	69
26S/41E-7D1	78-06-29	8	--	--	--	44000	--	--	--	--	--	--	460000
	79-05-17	1	--	--	--	14000	--	--	--	--	--	--	230000
	80-05-21	3	--	--	--	50000	--	--	--	--	--	--	65000
26S/41E-7E1	78-06-29	22	--	--	--	23000	--	--	--	--	--	--	3000
	79-05-17	16	--	--	--	24000	--	--	--	--	--	--	<10
	80-05-20	17	--	--	--	24000	--	--	--	--	--	--	1100
	82-06-10	8	--	--	--	24000	--	--	--	--	--	--	40
26S/41E-7G1	78-06-29	18	--	--	--	40000	--	--	--	--	--	--	70
	79-05-17	18	--	--	--	170	--	--	--	--	--	--	9200
27S/40E-2J1	78-06-28	26	--	--	--	3100	--	--	--	--	--	--	<10
	79-06-01	24	--	--	--	3100	--	--	--	--	--	--	30
	80-05-23	38	--	--	--	4100	--	--	--	--	--	--	50
27S/40E-3R1	78-06-29	26	--	--	--	1400	--	--	--	--	--	--	40
	79-06-06	13	--	--	--	2200	--	--	--	--	--	--	50
	80-05-27	25	--	--	--	4600	--	--	--	--	--	--	120
	82-06-15	12	--	--	--	4000	--	--	--	--	--	--	48
27S/40E-4C2	77-03-23	--	20	--	--	--	--	--	--	--	--	<100	--
	78-11-13	--	100	--	--	--	--	--	--	--	--	1300	--
	78-12-27	--	10	--	--	--	--	--	--	--	--	700	--
27S/40E-4L1	78-11-09	--	20	--	--	--	--	--	--	--	--	<100	--
27S/40E-10R1	78-06-28	3	--	--	--	3400	--	--	--	--	--	--	120000
	79-06-06	<1	--	--	--	4500	--	--	--	--	--	--	40000
	80-05-28	1	--	--	--	5500	--	--	--	--	--	--	22000

GROUND-WATER DATA FOR INDIAN WELLS VALLEY

KERN, INYO, AND SAN BERNARDINO COUNTIES, CALIFORNIA, 1977-84

By Charles Berenbrock

ABSTRACT

Ground water is the sole source of water in Indian Wells Valley. Since 1966, annual ground-water pumpage has exceeded estimates of mean annual recharge, and continued and increased stresses on the aquifer system of the valley are expected. In 1981 the U.S. Geological Survey began a 10-year program to develop a data base that could be used in evaluating future water-management alternatives for the valley.

This report tabulates existing water-level and water-quality data in order to provide a basis for the design of a ground-water monitoring network for Indian Wells Valley.

Water-levels were measured in 131 wells during 1977-84. About 62 percent of the wells that have water-level measurements spanning at least 3 years during the period 1977-84 show a net water-level decline; the decline in 23 percent of the wells is greater than 5 feet. Water-quality samples from 85 wells were analyzed for major dissolved constituents. At selected wells water samples were also analyzed for nutrients and trace metals. Seventy-nine of the wells sampled contained water with concentrations of one or more dissolved constituents that equaled or exceeded U.S. Environmental Protection Agency primary or secondary maximum contaminant levels for drinking water. Dissolved-solids concentrations, which ranged from 190 to 67,000 milligrams per liter, equaled or exceeded 500 milligrams per liter (the Environmental Protection Agency secondary maximum contaminant level) in 85 percent of the sampled wells and 1,000 milligrams per liter in 59 percent.

Water samples collected in 1984 from eight wells near the industrial-waste ponds of the China Lake Naval Weapons Center were analyzed for the presence of organic compounds designated "priority pollutants" by the U.S. Environmental Protection Agency. Priority pollutants were detected in three wells. Trichloroethylene, methylene chloride, vinyl chloride, and chloroform were identified; concentrations were less than 10 micrograms per liter except for trichloroethylene and chloroform, at 94 and 12 micrograms per liter, respectively. Trichloroethylene in one sample and vinyl chloride in another exceeded Environmental Protection Agency proposed maximum contaminant levels.