

**Appendix 10A.** Analyses for pesticide compounds at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for sampled wells in the COSUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter code is the LRL; laboratory code 9060 data for the COSUS may be lower than concentrations in ground water due to excessive holding times prior to laboratory analysis; all concentrations are reported as micrograms per liter; E, estimated; —, not detected]

	Schedule 2001 (20 wells)	Laboratory code 9060 (20 wells)								Number of pesticides detected
	Herbicide (10 percent)	Degradation product (20 percent)				Herbicide (15 percent)		Fungicide (10 percent)		
NAWQA identification No.	Prometon (04037)	Deethyl-deiso-propyl-atrazine (04039)	Deiso-propyl-atrazine (04038)	Hydroxy-atrazine (50355)	3(4-chloro-phenyl) methyl urea (61692)	Diuron (49300)	Bromacil (04029)	Sulfo-metron methyl (50337)	Metalaxyl (50359)	
	[0.018]	[0.06]	[0.07]	[0.193]	[0.0915]	[0.08]	[0.08]	[0.039]	[0.057]	
COS-9	E0.17	E0.02	E0.01	E0.016	E0.0077	—	E0.01	—	—	6
COS-19	E.007	E.01	E.03	E.009	—	E0.02	—	—	—	5
COS-8	—	E.003	—	—	—	—	—	E0.025	E0.002	3
COS-18	—	E.001	E.01	—	—	—	—	—	—	2
Wells with pesticide detections.	2	4	3	2	1	1	1	1	1	
Detection frequency (percent).	10	20	15	10	5	5	5	5	5	

**Appendix 10B.** Analyses for pesticide compounds at concentrations below the laboratory reporting limit (LRL) for sampled wells in the COLUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter code is the LRL; laboratory code 9060 was under development at the time of this study; all concentrations are reported as micrograms per liter; concentrations reported as equal to the LRL were below the LRL prior to rounding; E, estimated; —, not detected]

NAWQA identification No.	Schedule 2001 (26 wells)			Laboratory code 9060 (26 wells)								Number of pesticides detected	
	Herbicide (23 percent)		Degradation product (15 percent)	Degradation product (19 percent)				Herbicide (19 percent)			Sewage tracer (12 percent)		
	Pro-meton (04037)	Simazine (04035)	p,p'-DDE (34653)	Deethyl-deiso-propyl-atrazine (04039)	Hydroxy-atrazine (50355)	Deiso-propyl-atrazine (04038)	3(4-chloro-phenyl)methyl urea (61692)	Diphen-amid (04033)	Diuron (49300)	Norflur-azon (49293)	Bromacil (04029)	Caffeine (50305)	
	[0.018]	[0.005]	[0.006]	[0.06]	[0.193]	[0.07]	[0.091]	[0.06]	[0.08]	[0.08]	[0.08]	[0.081]	
COL-3	E0.011	—	—	E0.02	E0.026	E0.01	—	—	—	—	—	—	4
COL-17	—	—	—	—	E.161	—	—	E0.03	—	E0.02	—	—	3
COL-2	—	—	—	E.02	—	—	—	—	—	—	—	E0.015	2
COL-6	—	E0.004	—	—	—	—	—	E.01	—	—	—	—	2
COL-10	—	—	E0.002	E.06	—	—	—	—	—	—	—	—	2
COL-11	—	—	—	—	—	—	E0.014	E.004	—	—	—	—	2
COL-15	E.012	—	—	—	—	—	—	—	—	—	E0.03	—	2
COL-1	—	—	E.001	—	—	—	—	—	—	—	—	—	1
COL-5	—	E.004	—	—	—	—	—	—	—	—	—	—	1
COL-12	—	—	E.001	—	—	—	—	—	—	—	—	—	1
COL-13	—	—	—	—	—	—	—	—	—	—	—	E.012	1
COL-22	E.006	—	—	—	—	—	—	—	—	—	—	—	1
COL-23	—	—	—	—	—	—	—	—	—	—	—	E.032	1
COL-24	—	—	E.002	—	—	—	—	—	—	—	—	—	1
COL-25	E.005	—	—	—	—	—	—	—	—	—	—	—	1
COL-26	—	—	—	—	—	—	—	—	E0.02	—	—	—	1
Wells with pesticide detections.	4	2	4	3	2	1	1	3	1	1	1	3	
Detection frequency (percent).	15	8	15	12	8	4	4	12	4	4	4	12	

**Appendix 10C.** Analyses for pesticide compounds at concentrations below the laboratory reporting limit (LRL) for sampled wells in the COFPS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is LRL; all concentrations are reported as micrograms per liter; concentrations reported as equal to the LRL were below the LRL prior to rounding; E, estimated; —, not detected]

NAWQA identification No.	Schedule 2001 (21 wells)						Degradation product (19 percent) p,p'-DDE (34653)	Number of pesticides detected
	Prometon (04037)	Tebuthiuron (82670)	Dacthal (DCPA) (82682)	EPTC (82668)	Molinate (82671)	Simazine (04035)		
	[0.018]	[0.01]	[0.002]	[0.002]	[0.004]	[0.005]	[0.006]	
COF-17	E0.003	—	E0.001	E0.001	—	—	E0.001	4
COF-18	E.004	E0.007	—	—	0.002	—	E.001	4
COF-19	E.004	—	E.002	—	—	—	E.001	3
COF-7	—	—	—	—	—	—	E.001	1
COF-11	—	E.01	—	—	—	—	—	1
COF-20	—	—	—	—	—	E0.003	—	1
COF-21	E.008	—	—	—	—	—	—	1
Wells with pesticide detections.	4	2	2	1	1	1	4	
Detection frequency (percent).	19	10	10	5	5	5	19	

**Appendix 10D.** Analyses for pesticide compounds at concentrations below the laboratory reporting limit (LRL) for sampled wells in the INSUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the laboratory reporting limit; laboratory code 9060 was under development at the time of this study; all concentrations are reported as micrograms per liter; concentrations reported as equal to the LRL were below the LRL prior to rounding; E, estimated; —, not detected]

NAWQA identification No.	Schedule 2001 (29 wells)			Laboratory code 9060 (29 wells)											Number of pesticides detected
	Herbicide (14 percent)			Degradation product (72 percent)				Herbicide (31 percent)							
	Pro-meton (04037)	Sim-azine (04035)	Tebu-thiuron (82670)	Deethyl-deiso-propyl-atrazine (04039)	Deiso-propyl-atrazine (04038)	3(4-chloro-phenyl) methyl urea (61692)	Hydroxy-atrazine (50355)	Bro-macil (04029)	Diuron (49300)	Di-phena-mid (04033)	Bro-moxy-nil (49311)	Norflu-razon (49293)	Sulfo-met-ruron methyl (50337)	Dino-seb (49301)	
	[0.018]	[0.005]	[0.01]	[0.06]	[0.07]	[0.092]	[0.193]	[0.08]	[0.08]	[0.06]	[0.06]	[0.08]	[0.039]	[0.04]	
INS-24	—	—	—	E0.01	E0.07	E0.010	—	E0.04	E0.05	E0.003	E0.01	—	—	—	7
INS-21	0.015	—	—	E.004	E.004	—	—	—	—	—	—	E0.02	E0.008	—	5
INS-7	—	—	—	E.04	E.03	—	E0.004	—	E.05	—	—	—	—	—	4
INS-13	—	—	E0.007	E.05	E.03	—	—	—	—	—	—	—	—	—	3
INS-19	—	—	—	E.03	E.07	E.005	—	E.02	—	—	—	—	—	E0.004	5
INS-28	—	—	—	E.02	E.02	E.004	—	E.03	—	—	—	—	—	—	4
INS-22	—	—	—	E.01	E.03	—	—	E.04	—	E.004	—	—	—	—	4
INS-18	—	—	—	E.02	E.01	—	—	—	E.02	—	—	—	—	—	3
INS-25	—	—	—	E.04	E.07	—	—	E.03	—	—	—	—	—	—	3
INS-26	—	—	—	E.02	—	E.008	—	—	E.04	—	—	—	—	—	3
INS-3	—	—	—	E.02	E.01	—	—	—	—	—	—	—	—	—	2
INS-17	—	—	—	E.02	E.01	—	—	—	—	—	—	—	—	—	2
INS-20	E.007	—	—	E.06	—	—	—	—	—	—	—	—	—	—	2
INS-1	—	E0.002	—	—	—	—	—	—	—	—	—	—	—	—	1
INS-2	—	—	—	E.01	—	—	—	—	—	—	—	—	—	—	1
INS-5	—	—	—	E.01	—	—	—	—	—	—	—	—	—	—	1
INS-6	—	—	—	E.02	—	—	—	—	—	—	—	—	—	—	1
INS-8	—	—	—	E.01	—	—	—	—	—	—	—	—	—	—	1
INS-11	—	—	—	—	E.01	—	—	—	—	—	—	—	—	—	1
INS-12	—	—	—	E.01	—	—	—	—	—	—	—	—	—	—	1
INS-23	—	—	—	E.02	—	—	—	—	—	—	—	—	—	—	1
INS-27	—	—	—	—	—	E.004	—	—	—	—	—	—	—	—	1
Wells with pesticide detections.	2	1	1	19	12	5	1	5	4	2	1	1	1	1	
Detection frequency (percent).	7	3	3	66	41	17	3	17	14	7	3	3	3	3	

\*—Parameter is found on Schedule 2001 and Laboratory code 9060.

**Appendix 10E.** Analyses for pesticide compounds at concentrations below the laboratory reporting limit (LRL) for sampled wells in the INFPS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter code is the LRL; all concentrations are reported as micrograms per liter; concentrations reported as equal to the LRL were above the LRL prior to rounding; E, estimated; —, not detected]

	Schedule 2001 (14 wells)			
	Herbicide (21 percent)			
NAWQA identification No.	Prometon (04037)	Simazine (04035)	Tebuthiuron (82670)	Number of pesticides detected
	[0.018]	[0.005]	[0.01]	
INF-3a	E0.004	—	E0.006	2
INF-4	E.015	—	—	1
INF-10	—	E0.005	—	1
Wells with pesticide detections.	2	1	1	
Detection frequency (percent).	14	7	7	

**Appendix 10F.** Analyses for pesticide compounds at concentrations below the laboratory reporting limit (LRL) for sampled wells in the SANSUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter code is the LRL; laboratory code 9060 was under development at the time of this study; all concentrations are reported as micrograms per liter; concentrations reported as equal to the LRL were below the LRL prior to rounding; E, estimated; —, not detected]

NAWQA identification No.	Schedule 2001 (23 wells)					Laboratory code 9060 (22 wells)							Number of pesticides detected
	Herbicide (43 percent)				Degradation product (17 percent)	Herbicide (27 percent)				Degradation product (14 percent)			
	Atra-zine* (39632)	Sima-zine (04035)	Pro-meton (04037)	Propanil (82679)	Deethyl-atra-zine* (04040)	Diuron (49300)	Bromacil (04029)	Imaze-thapyr (50407)	Dinoseb (49301)	Deiso-propyl-atrazine (04038)	Deethyl-deiso-propyl-atrazine (04039)	3(4-chloro-phenyl)methyl urea (61692)	
	[0.007]	[0.011]	[0.015]	[0.011]	[0.006]	[0.08]	[0.08]	[0.088]	[0.04]	[0.07]	[0.06]	[0.0915]	
SAS-4	E0.002	—	—	—	E0.004	E0.03	E0.03	—	E0.02	—	—	—	5
SAS-13	—	E0.005	—	—	E.006	—	—	—	—	E0.01	—	E0.0068	4
SAS-14	E.003	—	—	—	E.004	E.01	E.004	—	—	—	—	—	4
SAS-15	—	E.002	—	E0.002	—	E.004	—	—	—	—	—	—	3
SAS-5	—	—	—	—	—	E.01	E.02	—	—	—	—	—	2
SAS-12	E.003	—	—	—	E.002	—	—	—	—	—	—	—	2
SAS-16	—	—	—	E.001	—	—	—	E0.005	—	—	—	—	2
SAS-17	E.006	—	—	—	—	—	—	E.024	—	—	—	—	2
SAS-19	—	—	E0.003	—	—	—	—	—	—	—	E0.04	—	2
SAS-21	—	E.003	E.001	—	—	—	—	—	—	—	—	—	2
SAS-11	—	—	—	—	—	—	—	—	—	E.02	—	—	1
SAS-22	E.003	—	—	—	—	—	—	—	—	—	—	—	1
Wells with pesticide detections.	5	3	2	2	4	4	3	2	1	2	1	1	
Detection frequency (percent).	22	13	9	9	17	18	14	9	5	9	5	5	

\*—Parameter is found on Schedule 2001 and on Laboratory code 9060.

**Appendix 11A.** Analyses for volatile organic compounds (VOCs) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 20 sampled wells in the COSUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter code is the laboratory reporting limit; concentration in braces was less than the associated maximum field-blank concentration and may require further evaluation; all concentrations are reported as micrograms per liter; concentrations reported as equal to LRL were above the LRL prior to rounding; E, estimated; —, not detected]

NAWQA identification No.	Schedule 2020											Number of VOCs detected
	Disinfection byproduct (30 percent)		Solvent (25 percent)				Refrigerant (20 percent)		Gasoline (10 percent)		Organic synthesis (5 percent)	
	Trichloro-methane (chloroform) (32106)	Bromo-dichloro-methane (32101)	1,1,1-Trichloro-ethane (TCA) (34506)	Trichloro-ethylene (TCE) (39180)	Tetra-chloro-ethylene (PCE) (34475)	cis-1,2-Dichloro-ethylene (77093)	1,1,2-Trichloro-fluoro-ethane (CFC 113, freon 113) (77652)	Trichloro-fluoro-methane (CFC 11, freon 11) (34488)	Methyl tert-butyl ether (MTBE) (78032)	Methyl-benzene (Toluene) (34010)	1,1-Dichloro-ethene (DCE) (34501)	
	[0.05]	[0.05]	[0.03]	[0.04]	[0.1]	[0.04]	[0.03]	[0.09]	[0.2]	[0.05]	[0.04]	
COS-19	E.1	—	.12	—	.2	—	E.09	E.09	.2	—	.08	7
COS-2	.82	.12	E.05	—	—	—	.26	—	—	—	—	4
COS-20	1.07	.16	E.03	—	—	—	.27	—	—	—	—	4
COS-8	.21	E.05	—	E.05	—	—	—	—	—	—	—	3
COS-4	—	—	—	4.28	—	.72	—	—	—	—	—	2
COS-9	—	—	—	—	—	—	—	—	.3	{E.06}	—	2
COS-3	—	—	—	—	—	—	E.04	—	—	—	—	1
COS-16	.13	—	—	—	—	—	—	—	—	—	—	1
COS-18	E.07	—	—	—	—	—	—	—	—	—	—	1
Wells with VOC detections.	6	3	3	2	1	1	4	1	2	1	1	
Detection frequency (percent).	30	15	15	10	5	5	20	5	10	5	5	

**Appendix 11B.** Analyses for volatile organic compounds (VOCs) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 26 sampled wells in the COLUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; all concentrations are reported as micrograms per liter; concentrations reported as equal to LRL were above the LRL prior to rounding; E, estimated; —, not detected]

NAWQA identification No.	Solvent (19 percent)						Gasoline (19 percent)		Disinfection byproduct (15 percent)		Organic synthesis (8 percent)	Number of VOCs detected
	1,1-Dichloroethane (34496)	Tetrachloroethylene (PCE) (34475)	Dichloromethane (methylene chloride) (34423)	Trichloroethylene (TCE) (39180)	cis-1,2-Dichloroethene (77093)	trans-1,2-Dichloroethene (34546)	Methyl tert-butyl ether (MTBE) (78032)	Methylbenzene (toluene) (34010)	Trichloromethane (chloroform) (32106)	Bromodichloromethane (32101)	Carbon disulfide (77041)	
	[0.07]	[0.1]	[0.4]	[0.04]	[0.04]	[0.03]	[0.2]	[0.05]	[0.05]	[0.05]	[0.07]	
COL-10	.11	1.5	—	1.22	2.15	.12	—	—	—	—	—	5
COL-2	—	—	.7	—	—	—	—	—	40.4	3.39	—	3
COL-13	—	—	—	—	—	—	—	—	.41	E.07	—	2
COL-16	—	.1	—	—	—	—	.2	—	—	—	—	2
COL-17	—	—	—	—	—	—	.8	E.07	—	—	—	2
COL-18	—	—	—	—	—	—	—	E.09	—	—	E.09	2
COL-6	.14	—	—	—	—	—	—	—	—	—	—	1
COL-7	—	—	—	—	—	—	—	—	E.07	—	—	1
COL-8	—	—	—	—	—	—	.5	—	—	—	—	1
COL-19	—	—	—	—	—	—	—	—	—	—	E.07	1
COL-22	—	—	—	—	—	—	—	—	.71	—	—	1
COL-23	E.09	—	—	—	—	—	—	—	—	—	—	1
COL-24	—	—	—	—	—	—	—	E.05	—	—	—	1
Wells with VOC detections.	3	2	1	1	1	1	3	3	4	2	2	
Detection frequency (percent).	12	8	4	4	4	4	12	12	15	8	8	



**Appendix 11C.** Analyses for volatile organic compounds (VOC) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 21 sampled wells in the COFPS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; all concentrations are reported as micrograms per liter; E, estimated; —, not detected]

NAWQA identification No.	Solvent (48 percent)		Refrigerant (48 percent)		Disinfection byproduct (33 percent)		Gasoline (14 percent)	Organic synthesis (10 percent)	Number of VOCs detected
	1,1,1-Trichloroethane (TCA) (34506)	Trichloroethylene (TCE) (39180)	1,1,2-Trichloroethene (CFC 113, freon 113) (77652)	Trichlorofluoromethane (CFC 11, freon 11) (34488)	Trichloromethane (chloroform) (32106)	Bromodichloromethane (32101)	Methyl tert-butyl ether (MTBE) (78032)	1,1-Dichloroethylene (34501)	
	[0.03]	[0.04]	[0.06]	[0.09]	[0.05]	[0.05]	[0.2]	[0.04]	
COF-17	0.33	0.22	0.59	7.98	E0.07	—	E0.2	0.11	7
COF-12	E.04	.15	—	.26	E.08	—	.2	—	5
COF-20	E.08	E.06	.41	—	.35	E0.07	—	—	5
COF-11	—	E.06	E.07	—	E.06	—	.2	—	4
COF-19	.15	.53	.93	—	E.1	—	—	—	4
COF-7	E.03	—	.46	—	.1	—	—	—	3
COF-10	E.09	—	E.08	1.66	—	—	—	—	3
COF-13	.12	—	E.08	.16	—	—	—	—	3
COF-14	E.04	—	—	.15	—	—	—	E.06	3
COF-18	E.06	—	.59	1.41	—	—	—	—	3
COF-16	—	—	—	—	.15	—	—	—	1
Wells with VOC detections.	9	5	8	6	7	1	3	2	
Detection frequency (percent).	43	24	38	29	33	5	14	10	

**Appendix 11D.** Analyses for volatile organic compounds (VOCs) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 56 sampled wells in the OCCAS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; all concentrations are reported as micrograms per liter; E, estimated; —, not detected]

NAWQA identification No.	Disinfection byproduct (41 percent)				Solvent (16 percent)				Refrigerant (14 percent)	
	Trichloro- methane (chloro- form) (32106)	Bromo- dichloro- methane (32101)	Tribromo- methane (bromo- form) (32104)	Chloro- dibromo- methane (32105)	1,1,1- Trichloro- ethane (TCA) (34506)	Tetrachloro- ethylene (PCE) (34475)	Trichloro- ethylene (TCE) (39180)	n-Propyl- benzene (77224)	1,1,2- Trichloro- fluoro- ethane (CFC 113, freon 113) (77652)	Trichloro- fluoro- methane (CFC 11, freon 11) (34488)
	[0.05, 0.02]	[0.05]	[0.06]	[0.2]	[0.03]	[0.1]	[0.04]	[0.04]	[0.06]	[0.09]
OCC-1	E0.06	—	—	—	—	—	—	E0.09	—	—
OCC-9	.76	0.2	0.3	0.3	E0.06	0.5	2.4	—	0.26	—
OCC-10	.16	E.06	—	—	E.03	—	—	—	—	—
OCC-3	.9	.11	—	—	E.04	—	—	—	.29	—
OCC-19	.13	—	—	—	.28	—	.45	—	2.54	—
OCC-27	.91	.67	.14	.4	—	—	—	—	—	—
OCC-7	1.2	.17	—	—	—	—	—	—	.25	—
OCC-11	.42	E.07	—	—	—	—	—	—	—	—
OCC-20	.12	—	—	—	E.05	.2	—	—	—	—
OCC-31	E.03	—	—	—	.11	.3	—	—	—	—
OCC-2	.12	—	—	—	—	—	—	—	E.09	—
OCC-4	—	—	—	—	—	.7	.43	—	—	—
OCC-13	.25	E.08	—	—	—	—	—	—	—	—
OCC-29	E.03	—	—	—	—	—	—	—	—	E0.1
OCC-17	E.05	—	—	—	—	—	—	—	—	—
OCC-28	—	—	—	—	—	—	—	—	—	.11
OCC-30	—	—	—	—	—	—	—	—	—	.11
OCC-32	E.02	—	—	—	—	—	—	—	—	—
OCC-35	E.08	—	—	—	—	—	—	—	—	—
OCC-36	E.04	—	—	—	—	—	—	—	—	—
OCC-41	E.03	—	—	—	—	—	—	—	—	—
OCC-42	E.04	—	—	—	—	—	—	—	—	—
OCC-46	—	—	—	—	E.04	—	—	—	—	—
OCC-48	E.02	—	—	—	—	—	—	—	—	—
OCC-53	E.08	—	—	—	—	—	—	—	—	—
OCC-54	E.04	—	—	—	—	—	—	—	—	—
OCC-55	.05	—	—	—	—	—	—	—	—	—
Wells with VOC detections.	23	7	2	2	7	4	3	1	5	3
Detection frequency (percent).	41	12	4	4	12	7	5	2	9	5

**Appendix 11D.** Analyses for volatile organic compounds (VOCs) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 56 sampled wells in the OCCAS study, Santa Ana NAWQA, California—Continued

NAWQA identification No.	Organic synthesis (5 percent)			Gasoline (5 percent)			Hydrocarbon (2 percent)			Number of VOCs detected
	1,1-Dichloroethene (DCE) (34501)	1,2,4-Tri-methyl-benzene (77222)	sec-Butyl-benzene, (77350)	Methyl tert-butyl ether (MTBE) (78032)	1,2,3-Tri-methyl-benzene (77221)	1,3,5-Tri-methyl-benzene (77226)	1,2,3,4-Tetra-methyl-benzene (49999)	1,2,3,5-Tetra-methyl-benzene (50000)	2-Ethyl-toluene (o-ethyl toluene) (77220)	
	[0.04]	[0.06]	[0.03]	[0.2]	[0.1]	[0.04]	[0.2]	[0.2]	[0.06]	
OCC-1	—	1.62	E0.06	—	0.5	0.34	E1.1	0.3	0.28	9
OCC-9	—	—	—	—	—	—	—	—	—	8
OCC-10	0.3	—	—	—	—	—	—	—	—	4
OCC-3	—	—	—	—	—	—	—	—	—	4
OCC-19	—	—	—	—	—	—	—	—	—	4
OCC-27	—	—	—	—	—	—	—	—	—	4
OCC-7	—	—	—	—	—	—	—	—	—	3
OCC-11	E.05	—	—	—	—	—	—	—	—	3
OCC-20	—	—	—	0.2	—	—	—	—	—	4
OCC-31	—	—	—	.2	—	—	—	—	—	4
OCC-2	—	—	—	—	—	—	—	—	—	2
OCC-4	—	—	—	—	—	—	—	—	—	2
OCC-13	—	—	—	—	—	—	—	—	—	2
OCC-29	—	—	—	—	—	—	—	—	—	2
OCC-17	—	—	—	—	—	—	—	—	—	1
OCC-28	—	—	—	—	—	—	—	—	—	1
OCC-30	—	—	—	—	—	—	—	—	—	1
OCC-32	—	—	—	—	—	—	—	—	—	1
OCC-35	—	—	—	—	—	—	—	—	—	1
OCC-36	—	—	—	—	—	—	—	—	—	1
OCC-41	—	—	—	—	—	—	—	—	—	1
OCC-42	—	—	—	—	—	—	—	—	—	1
OCC-46	—	—	—	—	—	—	—	—	—	1
OCC-48	—	—	—	—	—	—	—	—	—	1
OCC-53	—	—	—	—	—	—	—	—	—	1
OCC-54	—	—	—	—	—	—	—	—	—	1
OCC-55	—	—	—	—	—	—	—	—	—	1
Wells with VOC detections.	2	1	1	2	1	1	1	1	1	
Detection frequency (percent).	4	2	2	4	2	2	2	2	2	

**Appendix 11E.** Analyses for volatile organic compounds (VOCs) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 28 sampled wells in the INSUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; all concentrations are reported as micrograms per liter; concentrations reported as equal to the LRL were above the LRL prior to rounding. E, estimated; —, not detected

NAWQA identification No.	Disinfection byproduct (57 percent)				Solvent (46 percent)						
	Trichloro-methane (chloroform) (32106)	Bromo-dichloro-methane (32101)	Tribromo-methane (bromoform) (32104)	Chloro-dibromo-methane (32105)	Trichloro-ethylene (TCE) (39180)	Tetra-chloro-ethylene (PCE) (34475)	cis-1,2-Dichloro-ethene (77093)	1,1,1-Trichloro-ethane (TCA) (34506)	1,1-Dichloro-ethane (34496)	Dibromo-methane (30217)	Tetrachloro-methane (carbon tetrachloride) (32102)
	[0.05]	[0.05]	[0.06]	[0.2]	[0.04]	[0.1]	[0.04]	[0.03]	[0.07]	[0.05]	[0.06]
INS-26	0.63	—	—	—	104	17.8	0.23	E0.09	E0.08	—	—
INS-27	.54	0.5	0.72	0.7	1.04	.4	.24	—	—	E0.05	—
INS-6	.18	E.05	.23	—	4.42	8.3	—	E.08	—	—	—
INS-24	.8	—	—	—	.15	1	—	—	E.11	—	—
INS-13	E.09	—	—	—	2.93	—	E.06	E.05	—	—	—
INS-19	E.07	—	—	—	10.6	.2	E.07	—	—	—	—
INS-20	.38	E.08	—	—	.43	—	—	—	—	—	—
INS-22	.22	—	—	—	.15	.3	E.06	—	—	—	—
INS-28	.1	—	—	—	.2	.5	.12	—	—	—	—
INS-5	E.1	—	—	—	—	.2	—	—	—	—	E0.09
INS-7	.19	E.09	—	—	.13	—	—	—	—	—	—
INS-17	1.06	.12	—	—	—	—	—	—	—	—	—
INS-1	—	—	—	—	.17	—	—	—	—	—	—
INS-2	—	—	—	—	—	—	—	—	—	—	—
INS-8	E.09	—	—	—	—	—	—	—	—	—	—
INS-11	—	—	—	—	—	1	—	—	—	—	—
INS-12	E.07	—	—	—	—	—	—	—	—	—	—
INS-21	.18	—	—	—	—	—	—	—	—	—	—
INS-29	.18	—	—	—	—	—	—	—	—	—	—
Wells with VOC detections.	16	5	2	1	11	9	6	3	2	1	1
Detection frequency (percent).	57	18	7	4	39	32	21	11	7	4	4

**Appendix 11.E.** Analyses for volatile organic compounds (VOCs) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 28 sampled wells in the INSUS study, Santa Ana NAWQA, California—Con tinued

	Organic synthesis (21 percent)	Refrigerant (14 percent)			Fumigant (7 percent)	Gasoline (4 percent)	
NAWQA identification No.	1,1-Dichloro- ethylene (DCE) (34501)	1,1,2-Trichloro- fluoroethane (CFC 113, freon 113) (77652)	Trichlorofluoro- methane (CFC 11, freon 11) (34488)	Dichlorodi- fluoromethane (CFC 12, freon 12) (34668)	Dibromo- chloro- propane (DBCP) (82625)	Methyl tert butyl ether (MTBE) (78032)	Number of VOCs detected
	[0.04]	[0.06]	[0.09]	[0.3]	[0.2]	[0.2]	
INS-26	5.32	E1.07	E0.09	—	2.8	—	10
INS-27	—	—	—	E0.3	—	—	9
INS-6	.73	—	—	—	—	—	7
INS-24	—	—	.12	—	E.4	0.3	7
INS-13	E.04	—	—	—	—	—	5
INS-19	E.06	—	—	—	—	—	5
INS-20	E.04	E.19	—	—	—	—	5
INS-22	—	—	—	—	—	—	4
INS-28	—	—	—	—	—	—	4
INS-5	—	—	—	—	—	—	3
INS-7	—	—	—	—	—	—	3
INS-17	—	—	—	—	—	—	2
INS-1	—	—	—	—	—	—	1
INS-2	.28	—	—	—	—	—	1
INS-8	—	—	—	—	—	—	1
INS-11	—	—	—	—	—	—	1
INS-12	—	—	—	—	—	—	1
INS-21	—	—	—	—	—	—	1
INS-29	—	—	—	—	—	—	1
Wells with VOC detections.	6	2	2	1	2	1	
Detection frequency (percent).	21	7	7	4	7	4	

**Appendix 11F.** Analyses for volatile organic compounds (VOCs) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 21 sampled wells in the INFPS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; concentrations in braces were less than the associated maximum field-blank concentrations and may require further evaluation; all concentrations are reported as micrograms per liter; concentrations reported as equal to the LRL were above the LRL prior to rounding. E, estimated; —, not detected]

NAWQA identification No.	Refrigerant (33 percent)	Gasoline (29 percent)						Solvent (14 percent)		
	Trichloro- fluoro- methane, total (CFC 11, freon 11) (34488)	Methyl benzene, total (toluene) (34010)	Benzene, total (34030)	1,3 & 1,4- Dimethyl benzene (meta- & para- xylene) (85795)	1,2-Di- methyl- benzene (o-xylene) (77135)	Ethyl- benzene (34371)	Methyl tert-butyl ether (MTBE) (78032)	Trichloro- ethylene (TCE) (39180)	Tribromo- methane (bromoform) (32104)	n-Propyl- benzene (77224)
	[0.09]	[0.05]	[0.04]	[0.06]	[0.04]	[0.03]	[0.2]	[0.04]	[0.06]	[0.04]
INF-4	.87	0.88	25.8	0.99	E.13	0.44	—	—	—	38
INF-19	—	.49	.12	.23	.13	.12	—	—	—	—
INF-5	—	{E.07}	—	E.11	E.07	—	—	—	—	—
INF-18	—	{E.07}	—	—	—	—	—	.11	—	—
INF-3	—	—	E.04	—	—	—	4.4	—	—	—
INF-13	.16	—	—	—	—	—	—	—	—	—
INF-1	.17	—	—	—	—	—	—	—	—	—
INF-2	E.11	—	—	—	—	—	—	—	—	—
INF-11	.12	—	—	—	—	—	—	—	—	—
INF-12	.14	—	—	—	—	—	—	—	—	—
INF-14	2.53	—	—	—	—	—	—	—	—	—
INF-16	—	—	—	—	—	—	—	—	E.09	—
INF-21	—	—	—	—	—	—	.3	—	—	—
Wells with VOC detections.	7	4	3	3	3	2	2	1	1	1
Detection frequency (percent).	33	19	14	14	14	10	10	5	5	5

**Appendix 11F.** Analyses for volatile organic compounds (VOCs) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 21 sampled wells in the INFPS study, Santa Ana NAWQA, California—Continued

NAWQA identification No.	Organic synthesis (14 percent)					Hydrocarbon (5 percent)		Disinfection byproduct (5 percent)	Number of VOCs detected
	1,2,4-Trimethylbenzene (77222)	Carbon disulfide (77041)	Isopropylbenzene (77223)	Naphthalene (34696)	sec-Butylbenzene (77350)	2-Ethyltoluene (o-ethyl toluene) (77220)	1,2,3,4-Tetramethyl benzene (49999)	Trichloromethane (chloroform) (32106)	
	[0.06]	[0.07]	[0.03]	[0.2]	[0.03]	[0.06]	[0.2]	[0.05]	
INF-4	—	—	26.1	21.9	5.5	1.86	6.9	—	12
INF-19	0.15	—	—	—	—	—	—	—	6
INF-5	—	—	—	—	—	—	—	—	3
INF-18	—	—	—	—	—	—	—	E0.05	3
INF-3	—	—	—	—	—	—	—	—	2
INF-13	—	0.73	—	—	—	—	—	—	2
INF-1	—	—	—	—	—	—	—	—	1
INF-2	—	—	—	—	—	—	—	—	1
INF-11	—	—	—	—	—	—	—	—	1
INF-12	—	—	—	—	—	—	—	—	1
INF-14	—	—	—	—	—	—	—	—	1
INF-16	—	—	—	—	—	—	—	—	1
INF-21	—	—	—	—	—	—	—	—	1
Wells with VOC detections.	1	1	1	1	1	1	1	1	
Detection frequency (percent).	5	5	5	5	5	5	5	5	

**Appendix 11G.** Analyses for volatile organic compounds (VOCs) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 23 sampled wells in the SANSUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; all concentrations are reported as micrograms per liter; E, estimated; —, not detected]

NAWQA identification No.	Disinfection byproduct (52 percent)			Solvent (22 percent)					Organic synthesis (4 percent)	Refrigerant (4 percent)	Number of VOCs detected
	Trichloro-methane (chloroform) (32106)	Tribromo-methane (bromoform) (32104)	Bromo-dichloro-methane (32101)	Tetra-chloro-ethylene (PCE) (34475)	Trichloro-ethylene (TCE) (39180)	1,1-Dichloro-ethane (34496)	1,2-Dichloro-propane (34541)	Tetra-chloro-methane (carbon tetrachloride) (32102)	1,1-Dichloro-ethylene (DCE) (34501)	Trichloro-fluoro-methane (CFC 11, freon 11) (34488)	
	[0.02]	[0.06]	[0.05]	[0.1]	[0.04]	[0.04]	[0.03]	[0.06]	[0.04]	[0.09]	
SAS-12	0.14	0.25	—	—	1.04	—	—	E0.08	—	—	4
SAS-15	.14	—	—	0.9	—	0.14	—	—	E0.04	—	4
SAS-14	E.09	—	—	.7	.15	—	—	—	—	—	3
SAS-4	.15	—	—	.3	—	—	—	—	—	—	2
SAS-9	E.05	—	—	—	—	—	—	—	—	0.25	2
SAS-17	.55	—	E.09	—	—	—	—	—	—	—	2
SAS-1	—	—	—	—	—	—	0.13	—	—	—	1
SAS-11	—	.21	—	—	—	—	—	—	—	—	1
SAS-13	E.06	—	—	—	—	—	—	—	—	—	1
SAS-16	E.03	—	—	—	—	—	—	—	—	—	1
SAS-19	E.03	—	—	—	—	—	—	—	—	—	1
SAS-21	E.03	—	—	—	—	—	—	—	—	—	1
SAS-23	.43	—	—	—	—	—	—	—	—	—	1
Wells with VOC detections.	11	2	1	3	2	1	1	1	1	1	
Detection frequency (percent).	48	9	4	13	9	4	4	4	4	4	



**Appendix 11H.** Analyses for volatile organic compounds (VOCs) at concentrations above the laboratory reporting limit (LRL) listed in order of detection frequency for 11 sampled wells in the SANCAS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; all concentrations are reported as micrograms per liter; E, estimated; —, not detected]

	Disinfection byproduct (45 percent)	Solvent (36 percent)				Organic synthesis (9 percent)	
NAWQA identification No.	Trichloro-methane, (chloroform) (32106)	1,2-Dichloro-propane, (34541)	Tetrahydro-furan, (81607)	Trichloro-ethylene, (TCE) (39180)	cis-1,2-Dichloro-ethene, (77093)	Carbon disulfide, (77041)	Number of VOCs detected
	[0.02]	[0.03]	[2]	[0.04]	[0.04]	[0.07]	
SAC-6	E0.04	—	—	0.47	E0.08	—	3
SAC-2	.17	E0.05	—	—	—	—	2
SAC-8	—	—	3	—	—	E0.09	2
SAC-7	—	E.09	—	—	—	—	1
SAC-9	E.03	—	—	—	—	—	1
SAC-10	E.05	—	—	—	—	—	1
SAC-11	E.03	—	—	—	—	—	1
Wells with VOC detections.	5	2	1	1	1	1	
Detection frequency (percent).	45	18	9	9	9	9	

**Appendix 12A.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 20 sampled wells in the COSUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter code is the LRL; concentrations in braces were less than the associated maximum field-blank concentrations and may require further evaluation; all concentrations are reported as micrograms per liter; E, estimated; —, not detected]

NAWQA identification No.	Gasoline (45 percent)		Disinfection byproduct (35 percent)		Solvent (30 percent)					
	Methylbenzene (toluene) (34010)	Methyl tert-butyl ether (MTBE) (78032)	Trichloromethane (chloroform) (32106)	Chlorodibromomethane (32105)	1,1-Dichloroethane (34496)	Diethyl ether (ethyl ether) (81576)	Dichloromethane (methylene chloride) (34423)	Trichloroethylene (TCE) (39180)	cis-1,2-Dichloroethene (77093)	trans-1,2-Dichloroethene (34546)
	[0.05]	[0.2]	[0.05]	[0.2]	[0.07]	[0.2]	[0.4]	[0.04]	[0.04]	[0.03]
COS-2	—	—	—	E0.02	E0.01	—	—	—	—	—
COS-4	{E0.01}	—	—	—	—	—	—	—	—	E0.02
COS-7	{E.01}	—	E0.04	—	—	—	—	—	—	—
COS-8	—	E0.1	—	E.02	—	—	—	—	E0.02	—
COS-9	—	—	E.05	—	—	—	E0.02	—	—	—
COS-16	{E.03}	E.1	—	—	—	0.1	—	—	—	—
COS-20	{E.03}	—	—	—	—	—	—	—	—	—
COS-3	{E.01}	—	E.01	—	—	—	—	—	—	—
COS-6	{E.01}	—	E.01	—	—	—	—	—	—	—
COS-13	{E.05}	—	—	—	—	—	—	—	—	—
COS-14	—	—	—	—	—	—	—	—	—	—
COS-5	—	—	—	—	—	—	—	—	—	—
COS-11	—	—	—	—	—	—	—	—	—	—
COS-12	—	—	E.02	—	—	—	—	—	—	—
COS-17	{E.02}	—	—	—	—	—	—	—	—	—
COS-19	—	—	—	—	—	—	—	E0.03	—	—
Wells with VOC detections.	8	2	5	2	1	1	1	1	1	1
Detection frequency (percent).	40	10	25	10	5	5	5	5	5	5

**Appendix 12A.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 20 sampled wells in the COSUS study, Santa Ana NAWQA, California—Continued

NAWQA identification No.	Refrigerant (25 percent)			Organic synthesis (25 percent)			Number of VOCs detected
	Dichlorodifluoromethane (CFC 12, freon 12) (34668)	Trichlorofluoromethane (CFC 11, freon 11) (34488)	1,1,2-Trichloro-1,2,2-trifluoroethane (CFC 113, freon 113) (77652)	1,2,4-Trimethylbenzene (77222)	Carbon disulfide (77041)	1,1-Dichloroethene (DCE) (34501)	
	[0.1]	[0.09]	[0.03]	[0.06]	[0.4]	[0.04]	
COS-2	E0.1	E0.05	—	—	—	—	4
COS-4	—	—	—	—	—	E0.01	3
COS-7	E.1	—	—	—	—	—	3
COS-8	—	—	—	—	—	—	3
COS-9	—	—	—	E0.02	—	—	3
COS-16	—	—	—	—	—	—	3
COS-20	E.1	E.04	—	—	—	—	3
COS-3	—	—	—	—	—	—	2
COS-6	—	—	—	—	—	—	2
COS-13	—	—	—	—	E0.09	—	2
COS-14	—	—	E0.03	E.03	—	—	2
COS-5	—	—	—	—	E.04	—	1
COS-11	—	E.01	—	—	—	—	1
COS-12	—	—	—	—	—	—	1
COS-17	—	—	—	—	—	—	1
COS-19	—	—	—	—	—	—	1
Wells with VOC detections.	3	3	1	2	2	1	
Detection frequency (percent).	15	15	5	10	10	5	

**Appendix 12B.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 26 sampled wells in the COLUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; concentrations in braces were less than the associated maximum field-blank concentrations and may require further evaluation; all concentrations are reported as micrograms per liter; E, estimated; —, not detected]

NAWQA identification No.	Gasoline (69 percent)						Organic synthesis (31 percent)			
	Methylbenzene (toluene) (34010)	Methyl tert-butyl ether (MTBE) (78032)	1,3 & 1,4-Dimethyl benzene (meta-and para-xylene) (85795)	Benzene (34030)	Disopropyl ether (81577)	Ethylbenzene (34371)	Carbon disulfide (77041)	1,1-Dichloroethylene (DCE) (34501)	1,2-Dichloro-propane (34541)	Isopropylbenzene (77223)
	[0.05]	[0.2]	[0.06]	[0.04]	[0.1]	[0.03]	[0.07]	[0.04]	[0.07]	[0.03]
COL-10	—	{E0.1}	—	—	—	—	—	E0.03	E0.06	—
COL-22	E0.04	{ E.1}	E0.03	—	—	—	—	—	—	E0.01
COL-2	—	—	—	—	—	—	—	—	—	—
COL-12	E.04	—	—	—	E0.04	—	E0.05	—	—	—
COL-16	E.02	—	—	—	—	—	E.03	—	—	—
COL-18	—	—	E.03	E0.01	—	E0.01	—	—	—	—
COL-19	E.04	—	—	E.01	—	—	—	—	—	—
COL-5	E.004	—	—	—	—	—	—	—	—	—
COL-11	E.04	{E.1}	—	—	—	—	—	—	—	—
COL-13	E.01	—	—	—	—	—	—	—	—	—
COL-14	E.02	—	—	—	—	—	E.01	—	—	—
COL-15	E.02	—	—	—	—	—	—	—	—	—
COL-21	E.01	—	—	—	—	—	E.02	—	—	—
COL-25	E.01	—	—	—	—	—	E.03	—	—	—
COL-3	—	{E.1}	—	—	—	—	—	—	—	—
COL-17	—	—	E.03	—	—	—	—	—	—	—
COL-20	E.03	—	—	—	—	—	—	—	—	—
COL-23	E.02	—	—	—	—	—	—	—	—	—
COL-24	—	—	—	—	—	—	E.04	—	—	—
COL-26	E.02	—	—	—	—	—	—	—	—	—
Wells with VOC detections.	14	4	3	2	1	1	6	1	1	1
Detection frequency (percent).	54	15	12	8	4	4	23	4	4	4

**Appendix 12B.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 26 sampled wells in the COLUS study, Santa Ana NAWQA, California—Continued

NAWQA identification No.	Solvent (19 percent)				Disinfection byproduct (15 percent)			Refrigerant (4 percent)	Number of VOCs detected
	1,1,1-Trichloroethane (TCA) (34506)	Tetrachloroethylene (PCE) (34475)	1,3-Dichlorobenzene (34566)	Dichloromethane (methylene chloride) (34423)	Trichloromethane (chloroform) (32106)	Bromodichloromethane (32101)	Chlorodibromomethane (32105)	1,1,2-Trichloro-1,2,2-trifluoroethane (CFC 113, freon113) (77652)	
	[0.03]	[0.1]	[0.05]	[0.4]	[0.05]	[0.05]	[0.2]	[0.06]	
COL-10	E0.01	—	E0.02	—	—	—	—	—	5
COL-22	—	—	—	—	—	E0.04	—	—	5
COL-2	—	E0.1	—	—	—	—	E0.03	E0.01	3
COL-12	—	—	—	—	—	—	—	—	3
COL-16	—	—	—	—	E0.04	—	—	—	3
COL-18	—	—	—	—	—	—	—	—	3
COL-19	—	—	—	E0.2	—	—	—	—	3
COL-5	E.01	—	—	—	—	—	—	—	2
COL-11	—	—	—	—	—	—	—	—	2
COL-13	—	E.01	—	—	—	—	—	—	2
COL-14	—	—	—	—	—	—	—	—	2
COL-15	—	—	—	—	E.02	—	—	—	2
COL-21	—	—	—	—	—	—	—	—	2
COL-25	—	—	—	—	—	—	—	—	2
COL-3	—	—	—	—	—	—	—	—	1
COL-17	—	—	—	—	—	—	—	—	1
COL-20	—	—	—	—	—	—	—	—	1
COL-23	—	—	—	—	—	—	—	—	1
COL-24	—	—	—	—	—	—	—	—	1
COL-26	—	—	—	—	—	—	—	—	1
Wells with VOC detections.	2	2	1	1	2	1	1	1	
Detection frequency (percent).	8	8	4	4	8	4	4	4	

**Appendix 12C.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 21 sampled wells in the COFPS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; concentration in braces was less than the associated maximum field-blank concentration and may require further evaluation; all concentrations are reported as micrograms per liter; E, estimated; —, not detected]

NAWQA identification No.	Solvent (33 percent)				Disinfection byproduct (29 percent)		Refrigerant (24 percent)			Gasoline (19 percent)	Number of VOCs detected
	1,1,1-Trichloroethane (TCA) (34506)	Tetrachloroethylene (PCE) (34475)	1,1-Dichloroethane (34496)	Trichloroethylene (TCE) (39180)	Trichloromethane (chloroform) (32106)	Bromodichloromethane (32101)	Trichlorofluoromethane (CFC 11, freon 11) (34488)	Dichlorodifluoromethane (CFC 12, freon 12) (34668)	Methylchloride (chloromethane) (34418)	Methyl tert-butyl ether (MTBE) (78032)	
	[0.03]	[0.1]	[0.07]	[0.04]	[0.05]	[0.05]	[0.09]	[0.3]	[0.5]	[0.2]	
COF-19	—	E0.02	—	—	—	E0.02	E0.03	—	—	E0.1	4
COF-20	—	—	E0.02	—	—	—	E.04	E0.1	—	E.1	4
COF-16	E0.01	—	—	—	—	—	—	E.1	—	E.1	3
COF-8	—	—	—	—	E0.01	—	E.02	—	—	—	2
COF-10	—	—	—	—	E.04	—	—	—	—	E.1	2
COF-18	—	—	—	E0.01	E.03	—	—	—	—	—	2
COF-4	—	—	—	—	—	—	—	—	{E0.03}	—	1
COF-5	E.01	—	—	—	—	—	—	—	—	—	1
COF-11	E.02	—	—	—	—	—	—	—	—	—	1
COF-14	—	—	—	—	E.02	—	—	—	—	—	1
COF-15	—	—	—	—	E.02	—	—	—	—	—	1
COF-21	—	E.03	—	—	—	—	—	—	—	—	1
Wells with VOC detections.	3	2	2	1	5	1	3	2	1	4	
Detection frequency (percent).	14	10	5	5	24	5	14	10	5	19	

**Appendix 12D.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 56 sampled wells in the OCCAS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; concentrations in braces were less than the associated maximum field-blank concentrations and may require further evaluation; all concentrations are reported as micrograms per liter; E, estimated; —, not detected]

NAWQA identification No.	Solvent (27 percent)								Refrigerant (23 percent)		
	Trichloro-ethylene (TCE) (39180)	1,1-Dichloro-ethylene (DCE) (34501)	1,1,1-Trichloro-ethane (TCA) (34506)	1,1-Dichloro-ethane (34496)	Methyl chloride (chloro-methane) (34418)	Tetra-chloro-ethylene (PCE) (34475)	cis-1,2-Dichloro-ethene (77093)	Tetra-hydro-furan (81607)	Trichloro-fluoro-methane (CFC 11, freon 11) (34488)	1,1,2-Trichloro-fluoro-ethane (CFC 113, freon 113) (77652)	Dichloro-difluoro-methane (CFC 12, freon 12) (34668)
	[0.04]	[0.04]	[0.03]	[0.07, 0.04]	[0.5, 0.2]	[0.1]	[0.04]	[2]	[0.09]	[0.06]	[0.3]
OCC-7	E0.01	E0.02	E0.03	—	—	—	—	—	E0.04	—	E0.1
OCC-19	—	E.03	—	—	E0.04	E0.04	—	—	E.05	—	—
OCC-20	E.02	E.03	—	E0.01	—	—	—	—	E.05	E0.06	—
OCC-9	—	—	—	—	—	—	E0.02	—	E.06	—	E.1
OCC-1	—	—	—	—	—	—	—	—	—	—	—
OCC-4	—	E.02	—	—	—	—	—	—	E.02	E.05	—
OCC-32	E.02	—	—	—	—	E.02	—	—	—	—	—
OCC-2	—	—	—	—	—	—	—	E1	E.05	—	—
OCC-3	—	—	—	E.01	—	—	—	—	—	—	E.1
OCC-11	—	—	E.01	—	—	—	—	—	E.05	—	—
OCC-27	—	—	—	—	—	—	—	—	E.07	—	E.04
OCC-38	—	—	—	—	—	—	—	—	—	E.01	—
OCC-54	—	—	E.004	—	—	—	—	—	—	—	—
OCC-55	—	—	E.01	—	—	—	—	—	—	—	—
OCC-10	E.02	—	—	—	—	—	E.04	—	—	—	—
OCC-5	—	—	—	—	—	—	—	—	E.05	—	—
OCC-6	—	—	—	—	—	—	—	—	—	—	—
OCC-14	—	—	—	—	E.04	—	—	—	—	—	—
OCC-21	—	—	—	—	—	—	—	—	—	—	—
OCC-22	—	—	—	—	—	—	—	—	—	—	—
OCC-25	—	—	—	—	—	—	—	—	—	—	—
OCC-26	—	—	—	—	—	—	—	—	E.03	—	—
OCC-29	—	—	—	—	—	—	—	—	—	E.01	—
OCC-30	—	—	—	—	E.02	—	—	—	—	—	—
OCC-31	E.02	—	—	—	—	—	—	—	—	—	—
OCC-33	—	—	—	—	—	—	—	—	—	—	—
OCC-34	—	—	—	—	—	—	—	—	—	—	—
OCC-36	—	—	—	—	—	—	—	—	—	—	—
OCC-47	—	—	—	—	—	—	—	—	—	—	—
Wells with VOC detections.	5	4	4	2	3	2	2	1	10	4	4
Detection frequency (percent).	9	7	7	4	5	4	4	2	18	7	7

**Appendix 12D.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 56 sampled wells in the OCCAS study, Santa Ana NAWQA, California—Continued

NAWQA identification No.	Disinfection byproduct (12 percent)		Gasoline (12 percent)		Organic synthesis (4 percent)				Number of VOCs detected
	Trichloro-methane (chloroform), total (32106)	Bromo-dichloro-methane (32101)	Methyl tert-butyl ether (MTBE) (78032)	Methyl-benzene (Toluene), total (34010)	p-Isopropyl-toluene (77356)	n-Butyl benzene, (77342)	Carbon disulfide (77041)	Isopropyl benzene, (77223)	
	[0.05, 0.02]	[0.05]	[0.2]	[0.05]	[0.07]	[0.2]	[0.07]	[0.03]	
OCC-7	—	—	E0.1	—	—	—	—	—	6
OCC-19	—	—	E.1	—	—	—	—	—	5
OCC-20	—	—	—	—	—	—	—	—	5
OCC-9	—	—	—	—	—	—	E0.02	—	4
OCC-1	—	—	—	—	E0.06	E0.1	—	E0.02	3
OCC-4	—	—	—	—	—	—	—	—	3
OCC-32	—	—	E.1	—	—	—	—	—	3
OCC-2	—	—	—	—	—	—	—	—	2
OCC-3	—	—	—	—	—	—	—	—	2
OCC-11	—	—	—	—	—	—	—	—	2
OCC-27	—	—	—	—	—	—	—	—	2
OCC-38	E0.02	—	—	—	—	—	—	—	2
OCC-54	—	—	E.1	—	—	—	—	—	2
OCC-55	—	—	E.1	—	—	—	—	—	2
OCC-10	—	—	—	—	—	—	—	—	2
OCC-5	—	—	—	—	—	—	—	—	1
OCC-6	E.02	—	—	—	—	—	—	—	1
OCC-14	—	—	—	—	—	—	—	—	1
OCC-21	—	—	—	{E0.01}	—	—	—	—	1
OCC-22	—	—	—	{E.01}	—	—	—	—	1
OCC-25	E.02	—	—	—	—	—	—	—	1
OCC-26	—	—	—	—	—	—	—	—	1
OCC-29	—	—	—	—	—	—	—	—	1
OCC-30	—	—	—	—	—	—	—	—	1
OCC-31	—	—	—	—	—	—	—	—	1
OCC-33	E.02	—	—	—	—	—	—	—	1
OCC-34	E.02	—	—	—	—	—	—	—	1
OCC-36	—	E0.03	—	—	—	—	—	—	1
OCC-47	E.01	—	—	—	—	—	—	—	1
Wells with VOC detections.	6	1	5	2	1	1	1	1	
Detection frequency (percent).	11	2	9	4	2	2	2	2	



**Appendix 12E.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 28 sampled wells in the INSUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; all concentrations are reported as micrograms per liter; concentrations reported as equal to the LRL were below the LRL prior to rounding; E, estimated; —, not detected]

NAWQA identification No.	Solvent (64 percent)										
	Tetra-chloro-ethylene (PCE) (34475)	1,1-Dichloro-ethylene (DCE) (34501)	1,1,1-Trichloro-ethane (TCA) (34506)	1,2-Dichloro-propane (34541)	Trichloro-ethylene (TCE) (39180)	Tetra-chloro-methane (carbon tetra-chloride) (32102)	1,1-Dichloro-ethane (34496)	cis-1,2-Dichloro-ethene (77093)	o-Dichloro-benzene (34536)	Dichloro-methane (methylene chloride) (34423)	Chloro-benzene (34301)
	[0.1]	[0.04]	[0.03]	[0.07]	[0.04]	[0.06]	[0.07]	[0.04]	[0.05]	[0.4 0.2]	[0.03]
INS-27	—	E0.01	—	E0.02	—	—	E0.03	—	—	—	E0.004
INS-23	E0.1	—	—	—	E0.01	—	E.03	E0.01	—	—	—
INS-24	—	E.02	E0.02	—	—	E0.01	—	E.03	—	—	—
INS-22	—	E.01	—	—	—	—	—	—	E0.03	E0.1	—
INS-28	—	—	—	E.01	—	—	—	—	E.02	—	—
INS-15	E.008	E.01	—	—	—	—	—	—	—	—	—
INS-16	E.03	—	—	—	—	—	—	—	—	—	—
INS-5	—	—	—	—	—	—	—	—	—	—	—
INS-8	E.01	—	—	—	—	—	—	—	—	—	—
INS-11	—	—	—	—	E.03	—	—	E.04	—	—	—
INS-13	—	—	—	—	—	E.03	E.04	—	—	—	—
INS-17	E.01	—	E.01	—	—	—	—	—	—	—	—
INS-18	E.03	—	—	—	E.01	—	—	—	—	—	—
INS-19	—	—	E.01	E.06	—	—	—	—	—	—	—
INS-20	E.02	—	E.02	—	—	—	—	—	—	—	—
INS-21	E.004	—	—	—	—	—	—	—	—	—	—
INS-26	—	—	—	E.04	—	E.03	—	—	—	—	—
INS-2	E.1	—	—	—	—	—	—	—	—	—	—
INS-6	—	—	—	—	—	—	—	—	—	—	—
INS-7	—	E.02	—	—	—	—	—	—	—	—	—
INS-25	—	—	—	—	—	—	—	—	—	—	—
Wells with VOC detections.	9	5	4	4	3	3	3	3	2	1	1
Detection frequency (percent).	32	18	14	14	11	11	11	11	7	4	4

**Appendix 12E.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 28 sampled wells in the INSUS study, Santa Ana NAWQA, California—Continued

NAWQA identification No.	Disinfection byproduct (32 percent)			Refrigerant (14 percent)		Gasoline (14 percent)		Fumigant (14 percent)	Organic synthesis (4 percent)	Number of VOCs detected
	Trichloro-methane (chloroform) (32106)	Bromo-dichloro-methane (32101)	Chloro-dibromo-methane (32105)	Dichloro-difluoro-methane (CFC 12, freon 12) (34668)	Trichloro-fluoro-methane (CFC 11, freon 11) (34488)	Methyl tert-butyl ether (MTBE) (78032)	Methyl-benzene (toluene) (34010)	1,4-Dichloro-benzene (34571)	Bromo-chloro-methane (77297)	
	[0.05]	[0.05]	[0.2]	[0.3]	[0.09]	[0.2]	[0.05]	[0.05]	[0.04]	
INS-27	—	—	—	—	E0.04	E0.1	—	—	E0.02	7
INS-23	E0.03	—	—	—	—	—	—	E0.01	—	6
INS-24	—	—	—	E0.2	—	—	—	E.01	—	6
INS-22	—	E0.02	—	—	—	—	—	E.01	—	5
INS-28	—	—	—	E.1	—	—	E0.005	E.01	—	5
INS-15	E.02	—	—	—	—	—	—	—	—	3
INS-16	E.01	—	—	—	—	E.03	—	—	—	3
INS-5	—	E.03	—	E.2	—	—	—	—	—	2
INS-8	—	—	—	—	—	E.1	—	—	—	2
INS-11	—	—	—	—	—	—	—	—	—	2
INS-13	—	—	—	—	—	—	—	—	—	2
INS-17	—	—	—	—	—	—	—	—	—	2
INS-18	—	—	—	—	—	—	—	—	—	2
INS-19	—	—	—	—	—	—	—	—	—	2
INS-20	—	—	—	—	—	—	—	—	—	2
INS-21	—	E.02	—	—	—	—	—	—	—	2
INS-26	—	—	—	—	—	—	—	—	—	2
INS-2	E.02	—	—	—	—	—	—	—	—	2
INS-6	—	—	E.1	—	—	—	—	—	—	1
INS-7	—	—	—	—	—	—	—	—	—	1
INS-25	E.01	—	—	—	—	—	—	—	—	1
Wells with VOC detections.	5	3	1	3	1	3	1	4	1	
Detection frequency (percent).	18	11	4	11	4	11	4	14	4	

**Appendix 12F.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 21 sampled wells in the INFPS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; concentrations in braces were less than the associated maximum field-blank concentrations and may require further evaluation; all concentrations are reported as micrograms per liter; concentrations reported as equal to the LRL were below the LRL prior to rounding; E, estimated; —, not detected]

NAWQA identification No.	Gasoline (29 percent)								Solvent (24 percent)				
	Methylbenzene (toluene) (34010)	Benzene (34030)	Ethylbenzene (34371)	Methyl tert-butyl ether (MTBE) (78032)	1,3,5-Trimethylbenzene (77226)	1,3 & 1,4-Dimethylbenzene (meta- & para-xylene) (85795)	1,2-Dimethylbenzene (77135)	1,2,3-Trimethylbenzene (77221)	Tetrachloroethylene (PCE) (34475)	Trichloroethylene (TCE) (39180)	n-Propylbenzene (77224)	1,1-Dichloroethane (34496)	1,2-Dichlorobenzene (34536)
	[0.05]	[0.04]	[0.03]	[0.2]	[0.04]	[0.06]	[0.04]	[0.1]	[0.1]	[0.04]	[0.04]	[0.07, .04]	[0.05, .03]
INF-18	—	—	{E0.01}	—	—	E0.05	E0.03	—	E0.02	—	—	E0.02	—
INF-19	—	—	—	—	E0.04	—	—	E0.04	—	—	E0.04	—	—
INF-10	{E0.03}	E0.01	—	E0.1	—	—	—	—	—	—	—	—	E0.04
INF-5	—	{E.02}	E.03	E 0.1	—	—	—	—	—	—	—	—	—
INF-16	—	—	—	—	—	—	—	—	—	—	—	—	—
INF-3	{E.01}	—	—	—	—	—	—	—	—	—	—	—	—
INF-17	—	—	—	—	—	—	—	—	E.1	—	—	—	—
INF-2	{E.01}	—	—	—	—	—	—	—	—	—	—	—	—
INF-8a	—	—	—	—	—	—	—	—	—	—	—	—	—
INF-11	—	—	—	—	—	—	—	—	—	—	—	—	—
INF-13	—	—	—	—	—	—	—	—	—	E0.02	—	—	—
INF-14	—	—	—	—	—	—	—	—	—	—	—	—	—
Wells with VOC detections.	3	2	2	2	1	1	1	1	2	1	1	1	1
Detection frequency (percent).	14	10	10	10	5	5	5	5	10	5	5	5	5

**Appendix 12F.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 21 sampled wells in the INFPS study, Santa Ana NAWQA, California—Continued

NAWQA identification No.	Organic synthesis (24 percent)						Refrigerant (19 percent)		Disinfection byproduct (10 percent)		Hydrocarbon (5 percent)	Number of VOCs detected
	Carbon disulfide (77041)	1,2,4-Trimethylbenzene (77222)	p-Iso-propyl-toluene (77356)	Bromo-dichloro-methane (32101)	n-Butyl benzene (77342)	Isopropyl benzene (77223)	Methyl chloride (chloro-methane) (34418)	Trichloro-fluoro-methane (CFC 11, freon 11) (34488)	Trichloro-methane (chloro-form) (32106)	Chloro-dibromo-methane (32105)	2-Ethyl toluene (o-ethyl toluene) (77220)	
	[0.07]	[0.06]	[0.07]	[0.05]	[0.2]	[0.03]	[0.5, .2]	[0.09]	[0.05, .02]	[0.2]	[0.06]	
INF-18	E0.02	E0.02	—	—	—	—	—	E0.02	—	—	—	8
INF-19	—	—	—	—	E0.04	E0.02	—	—	—	—	E0.05	6
INF-10	—	—	E0.02	—	—	—	—	—	—	—	—	5
INF-5	—	—	—	—	—	—	—	—	—	—	—	3
INF-16	—	—	—	E0.05	—	—	—	—	E0.03	E0.1	—	3
INF-3	—	—	—	—	—	—	—	E.07	—	—	—	2
INF-17	—	—	—	—	—	—	—	—	E.02	—	—	2
INF-2	—	—	—	—	—	—	—	—	—	—	—	1
INF-8a	—	—	—	—	—	—	E.04	—	—	—	—	1
INF-11	E.03	—	—	—	—	—	—	—	—	—	—	1
INF-13	—	—	—	—	—	—	—	—	—	—	—	1
INF-14	—	—	—	—	—	—	E.04	—	—	—	—	1
Wells with VOC detections.	2	1	1	1	1	1	2	2	2	1	1	
Detection frequency (percent).	10	5	5	5	5	5	10	10	10	5	5	

**Appendix 12G.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 23 sampled wells in the SANSUS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is LRL; all concentrations are reported as micrograms per liter; E, estimated; —, not detected]

NAWQA identification No.	Disinfection byproduct (34 percent)			Solvent (22 percent)			Organic synthesis (4 percent)	Gasoline (4 percent)	Number of VOCs detected
	Bromo-dichloro-methane (32101)	Trichloro-methane (chloroform) (32106)	Chloro-dibromo-methane (32105)	Tetrachloro-ethylene (PCE) (34475)	1,1-Dichloro-ethane (34496)	Trichloro-ethylene (TCE) (39180)	1,1-Dichloro-ethylene (DCE) (34501)	Methyl-benzene (toluene) (34010)	
	[0.05]	[0.05, .02]	[0.2]	[0.1]	[0.07, .04]	[0.04]	[0.04]	[0.05]	
SAS-5	—	E0.01	—	E0.01	—	—	—	—	2
SAS-14	—	—	—	—	E0.02	—	E0.02	—	2
SAS-15	E 0.04	—	—	—	—	E0.01	—	—	2
SAS-4	—	—	—	—	—	—	—	E0.01	1
SAS-6	—	E.02	—	—	—	—	—	—	1
SAS-9	—	—	—	E.006	—	—	—	—	1
SAS-11	—	E.02	—	—	—	—	—	—	1
SAS-12	E.02	—	—	—	—	—	—	—	1
SAS-13	E.02	—	—	—	—	—	—	—	1
SAS-16	E.01	—	—	—	—	—	—	—	1
SAS-17	—	—	E.1	—	—	—	—	—	1
SAS-19	—	—	—	E.03	—	—	—	—	1
Wells with VOC detections.	4	3	1	3	1	1	1	1	
Detection frequency (percent).	15	12	4	12	4	4	4	4	

**Appendix 12H.** Analyses for volatile organic compounds (VOCs) at concentrations below the laboratory reporting limit (LRL) listed in order of detection frequency for 11 sampled wells in the SANCAS study, Santa Ana NAWQA, California

[Sample dates are given in Appendix 3; percent values are detection frequencies; number below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; number in brackets below the parameter number is the LRL; all concentrations are reports as micrograms per liter; E, estimated; —, not detected]

	Disinfection byproduct (18 percent)	Solvent (9 percent)	Gasoline (9 percent)	
NAWQA identification No.	Trichloromethane (chloroform) (32106)	Tetrachloroethylene (PCE) (34475)	Methylbenzene (toluene) (34010)	Number of VOCs detected
	[0.02]	[0.1]	[0.05]	
SAC-5	E0.02	—	E0 .02	2
SAC-3	E.01	—	—	1
SAC-6	—	E0.03	—	1
Wells with VOC detections.	2	1	1	
Detection frequency (percent).	18	9	9	