Table 9.--Analyses of pre-Ammonia Tanks lavas in Timber Mountain caldera moat, intrusive rocks on Timber Mountain dome, and younger intracaldera lavas and tuffs in Timber Mountain and Oasis Valley calderas

[Major oxide analyses 1-3 and 6 by rapid methods by P. L. D. Elmore, S. D. Botts, G. W. Chloe, Lowell Artis and H. Smith; 4, 5, and 7 by D. F. Powers; 8-12 by P. L. D. Elmore, S. D. Botts, G. W. Chloe, H. Smith, J. Kelsey and Lowell Artis. Minor element analyses 1-7 by semiquantitative spectrographic methods by J. C. Hamilton; 8-12 by W. B. Crandell. Leaders, ---, no analyses made or constituent was absent.]

	Pre-Ammonia Tanks lavas				Intrusive rocks exposed on Timber Mountain dome		Younger intracaldera lavas and tuffs in Timber Mountain and Oasis Valley calderas					
							Rhyodacite Lava	"Rhyolite" Lava of West Cat Canyon	Tuff of Fleur-de-lis Ranch	Rhyolite Lava of Beatty Wash		Tuff of Cut-off Road
	Basal fused tuff, vitrophyre	Stony interior	Upper vitrophyre		Granite porphyry	Rhyolite, east Cat Canyon	Stony interior	Devitrified	Welded, devitrified	Vitrophyre	Devitrified	Welded, devitrified
Sample localities (figure 2)	1	2	3	4	5	6	7	8	9	10	11	12
Field no.	TM5886	TM5486d	TM5488	TM5487	WJC-2-63	WJC-175-62	TM8740	67FB-10H	67FB-6B	67FB-14B	67FB-14A	67FB-6D
Chemical laboratory no.	161144	162828	161143	161142	D100064	162830	160520	W169680	W169678	W169682	W169681	W169679
Spectrographic laboratory no.	D110384W	D112929W	D110383W	D110382W	D100064	D112931W	301782	W169680	W169678	W169682	W169681	W169679
A. Major oxides (weight percent), recalculated without H_2O, F, Cl and CO_2 as $CaCO_3$.												
SiO_2	76.1	77.9	77.7	77.9	67.57	76.8	65.6	72.9	71.2	74.5	74.5	74.5
Al_2O_3	13.4	12.2	12.7	13.1	16.64	12.5	16.4	14.7	15.0	13.9	13.3	13.5
Fe_2O_3	.65	.81	.79	.63	2.57	1.0	3.1	1.6	2.3	.88	1.2	1.2
FeO	.26	.08	.16	.16	.00	.12	1.0	.04	.00	.33	.04	.08
Sum as FeO	.84	.81	.87	.78	2.31	1.0	3.8	1.5	2.1	1.1	1.1	1.2
MgO	.21	.10	.23	.06	.36	.56	1.0	.30	.58	.37	.26	.25
CaO	.42	.34	.56	.34	1.41	.50	2.9	1.1	1.6	.98	.44	1.1
Na_2O	3.7	3.5	3.2	2.7	4.87	3.2	4.2	4.1	3.2	3.2	2.1	4.2
K_2O	5.1	4.8	4.6	5.0	5.77	4.3	4.5	4.8	5.1	5.5	7.9	4.8
TiO_2	.06	.12	.09	.04	.56	.91	.81	.32	.30	.29	.23	.24
P_2O_5	.00	.00	.00	.00	.15	.03	.34	.08	.11	.04	.00	.04
MnO	.08	.09	.05	.06	.10	.06	.11	.10	.04	.10	.03	.07
Total	100.0	99.9	100.1	100.0	100.00	100.0	100.0	100.0	100.0	100.1	100.0	100.0
B. Minor elements (weight percent)												
B	.003	<.002	<.002	<.002	<.002	<.002	<.002	<.002	<.002	<.002	<.002	.005
Ba	.015	.003	.003	.005	.2	.02	.12	.2	.2	.03	.05	.05
Be	.0003	.0005	.0005	.0005	.0002	.0003	.0002	.0003	.0002	.0003	.0003	.0003
Ce	<.02	<.02	<.02	<.02	<.02	<.02	.02	.02	.02	.015	.015	.015
Co	<.0005	<.0005	<.0005	<.0005	.0015	<.0005	.0007	<.0003	.0003	<.0003	<.0003	<.0003
Cr	.00015	.00015	.0001	<.0001	.001	.0002	.0005	<.0001	.0003	<.0001	<.0001	<.0001
Cu	.005	.0003	.003	.0003	.002	.0003	.001	.00007	.001	.00005	.00005	.003
Ga	.003	.003	.003	.003	.005	.003	.003	.002	.002	.002	.002	.002
La	.007	.007	.003	.003	.005	.005	.01	.015	.015	.01	.01	.01
Mo	.0007	<.0005	.001	.001	<.0005	<.0005	<.0005	.0003	<.0003	.0007	<.0003	.0003
Nb	.002	.003	.003	.003	.002	.003	.002	.002	.0015	.002	.002	.002
Nd	<.01	<.01	<.01	<.01	.015	<.01	.015	.01	.01	<.01	<.01	<.01
Ni	<.0003	.0003	<.0003	<.0003	.0007	<.0003	<.0003	<.0003	<.0003	<.0003	<.0003	<.0003
Pb	.003	.005	.003	.003	.003	.003	.003	.003	.003	.003	.003	.005
Sc	<.0005	<.0005	<.0005	<.0005	.0015	<.0005	.001	.0003	.0005	.0003	.0003	.0003
Sr	.005	.0015	.01	.0015	.07	.007	.1	.05	.07	.01	.007	.02
V	.001	.001	<.001	<.001	.015	.0015	.015	.0015	.002	.0007	.0007	.0015
Y	.002	.003	.003	.003	.003	.003	.005	.003	.003	.003	.003	.003
Yb	.0003	.0005	.0003	.0003	.0005	.0003	.0005	.0003	.0003	.0003	.0003	.0003
Zr	.01	.007	.007	.01	.02	.01	.05	.02	.02	.015	.015	.015
C. Norms (weight percent), from recalculated analyses.												
Quartz	33.7	38.2	40.2	42.1	14.1	39.9	17.1	28.5	29.6	32.3	30.6	29.4
Orthoclase	30.1	28.1	27.3	29.6	34.1	25.2	26.7	28.1	29.9	32.4	46.6	28.4
Albite	31.6	30.0	26.6	22.9	41.2	27.4	35.6	34.3	27.4	27.1	18.0	35.5
Anorthite	2.1	1.7	2.8	1.7	6.0	2.3	12.2	5.0	7.3	4.6	2.2	3.8
Corundum	1.0	.6	1.5	2.6	.2	1.7	.1	1.0	1.5	1.0	.4	.0
Enstatite	.5	.3	.6	.2	.9	1.4	2.5	.8	1.4	.9	.7	.6
Ferrosilite	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Magnetite	.9	.2	.4	.6	.0	.0	1.2	.0	.0	.6	.0	.0
Hematite	.0	.7	.5	.2	2.6	1.0	2.3	1.6	2.3	.5	1.2	1.2
Ilmenite	.1	.2	.2	.1	.2	.4	1.5	.3	.1	.6	.2	.3
Rutile	.0	.0	.0	.0	.4	.7	.0	.2	.3	.0	.2	.0
Apatite	.0	.0	.0	.0	.4	.1	.8	.2	.3	.1	.0	.1
Total	100.0	100.0	100.1	100.0	100.1	99.0	100.0	100.0	100.2	100.1	100.1	100.0
D. Minerals (volume percent)												
Quartz	-------	4.4	3.6	3.6	-------	6.5	-------	-------	-------	-------	-------	-------
Alkali feldspar	3.3	3.3	3.2	4.4	41.5	10.9	1.8	-------	0.1	7.5	5.0	5.0
Plagioclase	4.1	0.7	0.7	0.3	5.6	0.7	21.8	6.8	14.0	7.1	0.1	4.7
Biotite	0.7	tr	tr	tr	2.2	0.2	3.0	0.9	2.7	0.6	0.5	0.6
Clinopyroxene	0.1	-------	-------	-------	0.6	-------	2.3	0.3	0.2	-------	-------	-------
Hornblende	-------	-------	-------	-------	-------	-------	0.1	-------	-------	0.2	-------	0.1
Sphene	0.1	tr	tr	tr	-------	tr	-------	-------	-------	0.1	tr	tr
Opaques	0.2	0.2	tr	tr	1.2	0.1	1.2	0.3	0.9	0.6	0.2	0.2
Groundmass	91.5	91.4	92.5	91.7	48.9	81.6	69.8	91.7	81.3	84.4	94.2	86.6
Lithic inclusions	-------	-------	-------	-------	-------	-------	-------	-------	0.8	-------	-------	1.7
Points counted	3648	1878	3234	3350	781	2162	1188	3730	1960	3200	3840	3600
E. Major oxides (weight percent), original analyses.												
SiO_2	73.3	77.0	74.1	74.7	66.91	75.8	65.4	72.0	71.0	72.0	73.7	72.8
Al_2O_3	12.9	12.1	12.1	12.6	16.48	12.3	16.3	14.5	14.8	13.4	13.1	13.2
Fe_2O_3	.63	.80	.73	.60	2.55	1.0	3.1	1.6	2.3	.85	1.2	1.2
FeO	.25	.08	.15	.15	.00	.12	1.0	.08	.00	.32	.04	.08
MgO	.20	.10	.22	.06	.36	.55	1.0	.30	.57	.36	.26	.24
CaO	.40	.66	.68	.33	1.59	.49	2.9	1.1	1.6	.95	.44	1.1
Na_2O	3.6	3.5	3.0	2.6	4.82	3.2	4.2	4.0	3.2	3.1	2.1	4.1
K_2O	4.9	4.7	4.4	4.8	5.71	4.2	4.5	4.7	5.0	5.3	7.8	4.7
H_2O+	3.2	.36	3.0	3.8	.22	.49	.46	.26	.34	.22	.21	.08
H_2O-	.15	.25	.94	.21	.20	.46	.20	.74	.49	3.1	.89	.51
TiO_2	.06	.12	.09	.04	.55	.90	.81	.32	.30	.28	.23	.23
P_2O_5	.00	.00	.00	.00	.15	.03	.34	.08	.11	.04	.00	.04
MnO	.08	.09	.05	.06	.10	.06	.11	.10	.04	.10	.03	.07
CO_2	<.05	.26	.12	<.05	.16	<.05	<.05	<.05	<.05	<.05	<.05	<.05
Cl												
F												
Subtotal												
Less O												
Total	100	100	100	100	99.80	100	100	100	100	100	100	99
Powder density	2.38		2.32	2.36								