Appendix E
Fort Irwin Draft Conformity Report
Air Quality

PART5 Input and Output

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1       PROMPT (Fort Irwin Land Expansion Project)
July 10, 2002 RUN
1       TAMFLG - DEFAULT TAMPERING RATE
1       SPDFLG - USER SUPPLIES ONE VALUE OF AVERAGE SPEEDS
1       VMFLAG - DEFAULT VEHICLE MILES TRAVELED MIX
1       MYMRFG - DEFAULT REGIST. DISTR. BY AGE;  DEFAULT MILEAGE
1       NEWFLG - DEFAULT BASIC EXHAUST RATES
1       IMFLAG - NO I/M PROGRAM
1       ALHFLG - NO ADDITIONAL CORRECTION FACTORS
1       ATPFLG - NO ANTI-TAMPERING PROGRAM MODELED
1       RLFLAG - CALCULATE REFUELING EMISSION FACTORS USING ON BOARD VRS
2       LOCFLG - LAP RECORD APPEARS ONCE, IN ONE-TIME DATA SECTION
2       TEMFLG - CORRECTION FACT. BASED ON AMBIENT TEMPERATURE
3       OUTFMT - 112 COLUMN OUTPUT
4       PRTFLG - PRINT EXHAUST HC, CO, AND NOX RESULTS
1       IDLFLG - NO IDLE EMISSION FACTORS
3       NMHFLG - CALCULATE EMISSIONS FOR VOLATILE ORGANIC HC
3       HCFLAG - PRINT HC TOTALS AND COMPONENTS
SCENARIO 1       B 03.0 112.  7.5  7.5 97 1 1 1         LOCAL AREA PARAMETERS-
WINTER TEMP. AND RVP

1 97 13.0 102. 20.6 27.3 20.6  1                        SCENERIOS
1 97 20.0 102. 20.6 27.3 20.6  1
1 97 25.0 102. 20.6 27.3 20.6  1
1 97 30.0 102. 20.6 27.3 20.6  1
1 97 35.0 102. 20.6 27.3 20.6  1
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1July 10, 2002 RUN
 MOBILE5b (14-Sep-96)
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-M170 Warning:
+              Exhaust emissions for gasoline fueled vehicles
               beginning in 1995 have been reduced as a result of
               Gasoline Detergent Additive Regulations (1994).
-M 98 Warning:
+              Diurnal temperature rise (max temp-min temp=109.0)
               is > 40F; diurnal evaporative emission factors will
               be calculated, but may be inaccurate.
-M 83 Comment:
+              One or more evaporative temperatures (input daily
               maximum, input ambient, calculated hot soak, and/or
               calculated running loss) is 40F or less, or input
               daily minimum is 25F or less; no evaporative emission
               factors (hot soak, diurnal, running loss, or resting
               loss) will be calculated.
-M154 Warning:
+              Refueling emissions for LDGV and LDGT after 1998
               model year have been reduced as a result of the
               Onboard Refueling Vapor Recovery Regulations (1994).
0SCENARIO 1                                 Minimum Temp:   3. (F)         Maximum Temp: 112. (F)
                     Period 1 RVP:  7.5     Period 2 RVP:  7.5        Period 2 Start Yr: 1997
0VOC HC emission factors include all evaporative HC emission factors, except for refueling emissions.
0_____________________________________________________________________________________________________
0Emission factors are as of Jan. 1st of the indicated calendar year.
0Cal. Year: 1997        I/M Program: No        Ambient Temp:102.0 /102.0 /102.0 (F) Region: Low
                  Anti-tam. Program: No      Operating Mode: 20.6 / 27.3 / 20.6   Altitude:  500. Ft.
                   Reformulated Gas: No
0  Veh. Type:       LDGV     LDGT1     LDGT2      LDGT      HDGV      LDDV      LDDT      HDDV      MC      All Veh
+                  ______    ______    ______    ______    ______    ______    ______    ______    ______    ______
 Veh. Speeds:      13.0      13.0      13.0                13.0      13.0      13.0      13.0      13.0
     VMT Mix:       0.626     0.185     0.085               0.031     0.002     0.001     0.064     0.007
0Composite Emission Factors (Gm/Mile)
 VOC      HC:       2.17      2.91      4.06      3.27      7.72      0.99      1.41      3.14      2.57     2.702
 Exhaust  HC:       2.17      2.90      4.04      3.26      7.69      0.99      1.41      3.14      2.57     2.692
 Evaporat HC:       0.01      0.01      0.02      0.01      0.02                                    0.00     0.010
 Refuel L HC:       0.20      0.27      0.28      0.27      0.45                                             0.214
 Runing L HC:       0.00      0.00      0.00      0.00      0.00                                             0.000
 Rsting L HC:       0.00      0.00      0.00      0.00      0.00                                    0.00     0.000
 Exhaust  CO:      30.52     41.14     56.84     46.08    187.60      2.54      2.92     17.64     49.04    38.779
 Exhaust NOX:       1.58      1.77      2.30      1.94      4.69      1.86      2.15     16.04      0.62     2.684
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0Evaporative Emissions by Component                    Weathered RVP:  6.7            Hot Soak Temp:102.0 (F)
 (Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)      Running Loss Temp:102.0 (F)
                                                                                     Resting Loss Temp:102.0 (F)
 Hot Soak          0.00      0.00      0.00      0.00      0.00                                 0.00
 WtDiurnal         0.00      0.00      0.00      0.00      0.00                                 0.00
 Multiple          0.00      0.00      0.00      0.00      0.00
 Crankcase         0.01      0.01      0.02      0.01      0.02                                 0.00
 Refuel            4.54      4.54      4.54      4.54      4.54
 Resting           0.00      0.00      0.00      0.00      0.00                                 0.00
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-M 98 Warning:
+              Diurnal temperature rise (max temp-min temp=109.0)
               is > 40F; diurnal evaporative emission factors will
               be calculated, but may be inaccurate.
-M 83 Comment:
+              One or more evaporative temperatures (input daily
               maximum, input ambient, calculated hot soak, and/or
               calculated running loss) is 40F or less, or input
               daily minimum is 25F or less; no evaporative emission
               factors (hot soak, diurnal, running loss, or resting
               loss) will be calculated.
-M154 Warning:
+              Refueling emissions for LDGV and LDGT after 1998
               model year have been reduced as a result of the
               Onboard Refueling Vapor Recovery Regulations (1994).
0Emission factors are as of Jan. 1st of the indicated calendar year.
0Cal. Year: 1997        I/M Program: No        Ambient Temp:102.0 /102.0 /102.0 (F) Region: Low
                  Anti-tam. Program: No      Operating Mode: 20.6 / 27.3 / 20.6   Altitude:  500. Ft.
                   Reformulated Gas: No
0  Veh. Type:       LDGV      LDGT1     LDGT2      LDGT      HDGV      LDDV      LDDT      HDDV      MC      All Veh
+                  ______    ______    ______    _______    ______    ______    ______    ______    ______    _______
 Veh. Speeds:      20.0      20.0      20.0                   20.0      20.0      20.0      20.0      20.0
     VMT Mix:       0.626     0.185     0.085                  0.031     0.002     0.001     0.064     0.007
0Composite Emission Factors (Gm/Mile)
 VOC      HC:       1.59      2.14      2.95      2.40      4.75      0.74      1.06      2.36      1.86      1.956
 Exhaust  HC:       1.59      2.13      2.93      2.38      4.73      0.74      1.06      2.36      1.86      1.946
 Evaporat HC:       0.01      0.01      0.02      0.01      0.02                                    0.00      0.010
 Refuel L HC:       0.20      0.27      0.28      0.27      0.45                                              0.214
 Runing L HC:       0.00      0.00      0.00      0.00      0.00                                              0.000
 Rsting L HC:       0.00      0.00      0.00      0.00      0.00                                    0.00      0.000
 Exhaust  CO:      22.15     29.57     39.09     32.57    121.80      1.69      1.95     11.76     31.78     27.374
 Exhaust NOX:       1.53      1.72      2.24      1.88      4.99      1.57      1.81     13.51      0.69      2.487
0Evaporative Emissions by Component                    Weathered RVP:  6.7            Hot Soak Temp:102.0 (F)
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 (Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)       Running Loss Temp:102.0 (F)
                                                                                      Resting Loss Temp:102.0 (F)
 Hot Soak          0.00      0.00      0.00      0.00      0.00                                  0.00
 WtDiurnal         0.00      0.00      0.00      0.00      0.00                                  0.00
 Multiple          0.00      0.00      0.00      0.00      0.00
 Crankcase         0.01      0.01      0.02      0.01      0.02                                  0.00
 Refuel            4.54      4.54      4.54      4.54      4.54
 Resting           0.00      0.00      0.00      0.00      0.00                                  0.00
 ____________________________________________________________________________________________________
-M 98 Warning:
+              Diurnal temperature rise (max temp-min temp=109.0)
               is > 40F; diurnal evaporative emission factors will
               be calculated, but may be inaccurate.
-M 83 Comment:
+              One or more evaporative temperatures (input daily
               maximum, input ambient, calculated hot soak, and/or
               calculated running loss) is 40F or less, or input
               daily minimum is 25F or less; no evaporative emission
               factors (hot soak, diurnal, running loss, or resting
               loss) will be calculated.
-M154 Warning:
+              Refueling emissions for LDGV and LDGT after 1998
               model year have been reduced as a result of the
               Onboard Refueling Vapor Recovery Regulations (1994).
0Emission factors are as of Jan. 1st of the indicated calendar year.
0Cal. Year: 1997        I/M Program: No        Ambient Temp:102.0 /102.0 /102.0 (F) Region: Low
                  Anti-tam. Program: No      Operating Mode: 20.6 / 27.3 / 20.6   Altitude:  500. Ft.
                   Reformulated Gas: No
0  Veh. Type:       LDGV      LDGT1     LDGT2       LDGT       HDGV       LDDV       LDDT       HDDV       MC      All Veh
+                  ______    ______    ______     ______     ______     ______     ______     ______     ______    _______
 Veh. Speeds:      25.0      25.0      25.0                  25.0       25.0       25.0       25.0       25.0
     VMT Mix:       0.626     0.185     0.085                 0.031      0.002      0.001      0.064      0.007
0Composite Emission Factors (Gm/Mile)
 VOC      HC:       1.31      1.80      2.48       2.01       3.53       0.62       0.89       1.98       1.60      1.613
 Exhaust  HC:       1.31      1.78      2.46       2.00       3.51       0.62       0.89       1.98       1.60      1.603
 Evaporat HC:       0.01      0.01      0.02       0.01       0.02                                           0.00      0.010
 Refuel L HC:       0.20      0.27      0.28       0.27       0.45                                                     0.214
 Runing L HC:       0.00      0.00      0.00       0.00       0.00                                                     0.000
 Rsting L HC:       0.00      0.00      0.00       0.00       0.00                                           0.00      0.000
 Exhaust  CO:      18.04     24.68     32.90      27.26      95.57       1.34       1.54       9.29      25.34     22.358
 Exhaust NOX:       1.57      1.77      2.32       1.94       5.21       1.45       1.67      12.46       0.76      2.469
0Evaporative Emissions by Component                    Weathered RVP:  6.7              Hot Soak Temp:102.0 (F)
 (Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)       Running Loss Temp:102.0 (F)
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                                                                                                  Resting Loss Temp:102.0 (F)
 Hot Soak          0.00      0.00      0.00      0.00      0.00                                          0.00
 WtDiurnal         0.00      0.00      0.00      0.00      0.00                                          0.00
 Multiple          0.00      0.00      0.00      0.00      0.00
 Crankcase         0.01      0.01      0.02      0.01      0.02                                          0.00
 Refuel            4.54      4.54      4.54      4.54      4.54
 Resting           0.00      0.00      0.00      0.00      0.00                                          0.00
_____________________________________________________________________________________________________________
-M 98 Warning:
+              Diurnal temperature rise (max temp-min temp=109.0)
               is > 40F; diurnal evaporative emission factors will
               be calculated, but may be inaccurate.
-M 83 Comment:
+              One or more evaporative temperatures (input daily
               maximum, input ambient, calculated hot soak, and/or
               calculated running loss) is 40F or less, or input
               daily minimum is 25F or less; no evaporative emission
               factors (hot soak, diurnal, running loss, or resting
               loss) will be calculated.
-M154 Warning:
+              Refueling emissions for LDGV and LDGT after 1998
               model year have been reduced as a result of the
               Onboard Refueling Vapor Recovery Regulations (1994).
0Emission factors are as of Jan. 1st of the indicated calendar year.
0Cal. Year: 1997        I/M Program: No        Ambient Temp:102.0 /102.0 /102.0 (F) Region: Low
                  Anti-tam. Program: No      Operating Mode: 20.6 / 27.3 / 20.6   Altitude:  500. Ft.
                   Reformulated Gas: No
0  Veh. Type:       LDGV      LDGT1     LDGT2      LDGT      HDGV      LDDV      LDDT      HDDV      MC      All Veh
+                  ______    ______    ______    ______    ______    ______    ______    ______    ______    ______
 Veh. Speeds:      30.0      30.0      30.0                  30.0      30.0      30.0      30.0      30.0
     VMT Mix:       0.626     0.185     0.085                 0.031     0.002     0.001     0.064     0.007
0Composite Emission Factors (Gm/Mile)
 VOC      HC:       1.13      1.55      2.16      1.75      2.74      0.54      0.76      1.70      1.40     1.379
 Exhaust  HC:       1.12      1.54      2.14      1.73      2.71      0.54      0.76      1.70      1.40     1.369
 Evaporat HC:       0.01      0.01      0.02      0.01      0.02                                    0.00     0.010
 Refuel L HC:       0.20      0.27      0.28      0.27      0.45                                             0.214
 Runing L HC:       0.00      0.00      0.00      0.00      0.00                                             0.000
 Rsting L HC:       0.00      0.00      0.00      0.00      0.00                                    0.00     0.000
 Exhaust  CO:      15.25     21.21     28.68     23.56     79.23      1.11      1.27      7.69     20.68    18.973
 Exhaust NOX:       1.60      1.81      2.37      1.98      5.43      1.38      1.60     11.92      0.83     2.469
0Evaporative Emissions by Component                    Weathered RVP:  6.7              Hot Soak Temp:102.0 (F)
 (Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)       Running Loss Temp:102.0 (F)
                                                                                      Resting Loss Temp:102.0 (F)
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 Hot Soak          0.00      0.00      0.00      0.00      0.00                                    0.00
 WtDiurnal         0.00      0.00      0.00      0.00      0.00                                    0.00
 Multiple          0.00      0.00      0.00      0.00      0.00
 Crankcase         0.01      0.01      0.02      0.01      0.02                                    0.00
 Refuel            4.54      4.54      4.54      4.54      4.54
 Resting           0.00      0.00      0.00      0.00      0.00                                    0.00
 ____________________________________________________________________________________________________
-M 98 Warning:
+              Diurnal temperature rise (max temp-min temp=109.0)
               is > 40F; diurnal evaporative emission factors will
               be calculated, but may be inaccurate.
-M 83 Comment:
+              One or more evaporative temperatures (input daily
               maximum, input ambient, calculated hot soak, and/or
               calculated running loss) is 40F or less, or input
               daily minimum is 25F or less; no evaporative emission
               factors (hot soak, diurnal, running loss, or resting
               loss) will be calculated.
-M154 Warning:
+              Refueling emissions for LDGV and LDGT after 1998
               model year have been reduced as a result of the
               Onboard Refueling Vapor Recovery Regulations (1994).
0Emission factors are as of Jan. 1st of the indicated calendar year.
0Cal. Year: 1997        I/M Program: No        Ambient Temp:102.0 /102.0 /102.0 (F) Region: Low
                  Anti-tam. Program: No      Operating Mode: 20.6 / 27.3 / 20.6   Altitude:  500. Ft.
                   Reformulated Gas: No
0  Veh. Type:      LDGV     LDGT1     LDGT2      LDGT      HDGV      LDDV      LDDT      HDDV      MC      All Veh
+                 ______    ______    ______    ______    ______    ______    ______    ______    ______    ______
 Veh. Speeds:     35.0      35.0      35.0               35.0      35.0      35.0      35.0      35.0
     VMT Mix:      0.626     0.185     0.085              0.031     0.002     0.001     0.064     0.007
0Composite Emission Factors (Gm/Mile)
 VOC      HC:      0.99      1.38      1.93      1.55      2.21      0.47      0.67      1.49      1.24     1.212
 Exhaust  HC:      0.98      1.37      1.91      1.54      2.19      0.47      0.67      1.49      1.24     1.202
 Evaporat HC:      0.01      0.01      0.02      0.01      0.02                                    0.00     0.010
 Refuel L HC:      0.20      0.27      0.28      0.27      0.45                                             0.214
 Runing L HC:      0.00      0.00      0.00      0.00      0.00                                             0.000
 Rsting L HC:      0.00      0.00      0.00      0.00      0.00                                    0.00     0.000
 Exhaust  CO:     13.25     18.70     25.63     20.88     69.40      0.96      1.10      6.65     17.23    16.606
 Exhaust NOX:      1.62      1.83      2.41      2.01      5.65      1.37      1.58     11.81      0.88     2.491
0Evaporative Emissions by Component                    Weathered RVP:  6.7              Hot Soak Temp:102.0 (F)
 (Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)       Running Loss Temp:102.0 (F)
                                                                                      Resting Loss Temp:102.0 (F)
 Hot Soak          0.00      0.00      0.00      0.00      0.00                                    0.00
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WtDiurnal	0.00	0.00	0.00	0.00	0.00	0.00
Multiple	0.00	0.00	0.00	0.00	0.00	
Crankcase	0.01	0.01	0.02	0.01	0.02	0.00
Refuel	4.54	4.54	4.54	4.54	4.54	
Resting	0.00	0.00	0.00	0.00	0.00	0.00

Appendix F
Fort Irwin Draft Conformity Report
Air Quality

Vehicle Exhaust Emission Estimates

Heavy Rotation

Fort Irwin
Exhaust Emission Calculations - Alternative 1 - Heavy Rotation

			Emission Factors					Emissions											
Group	Vehicle Type	VMT miles/ rotation	Exhaust Running VOC g/mi	Exhaust CO g/mi	Exhaust NOx g/mi	Exhaust SO_2 g/mi	Exhaust PM g/mi	Exhaust Running VOC lb/ rotation	Exhaust CO lb/ rotation	Exhaust NOx lb/ rotation	Exhaust SO_2 lb/ rotation	Exhaust PM lb/ rotation	Exhaust Running VOC ton/ rotation	Exhaust CO ton/ rotation	Exhaust NOx ton/ rotation	Exhaust SO_2 ton/ rotation	Exhaust PM ton/ rotation		
BLUEFOR MANEUVER	HT	68,007	1.98	9.29	12.46	0.519	1.023	296.6	1,391.6	1,866.4	77.7	153.2	0.148	0.696	0.933	0.039	0.077	29.7	186.6
	LT	72,396	1.98	9.29	12.46	0.427	0.881	315.7	1,481.4	1,986.9	68.1	140.5	0.158	0.741	0.993	0.034	0.070	31.6	198.7
	HW	277,891	1.98	9.29	12.46	0.427	0.881	1,211.9	5,686.4	7,626.7	261.4	539.3	0.606	2.843	3.813	0.131	0.270	121.2	762.7
	LW	190,332	0.89	1.54	1.67	0.111	0.264	373.1	645.6	700.1	46.5	110.7	0.187	0.323	0.350	0.023	0.055	37.3	70.0
	Total	608,626						2,197.3	9,205.0	12,180.1	453.7	943.7	1.099	4.603	6.089	0.227	0.472	219.7	1,218.0
OPFOR MANEUVER	HT	21,664	1.98	9.29	12.46	0.519	1.023	94.5	443.3	594.6	24.8	48.8	0.047	0.222	0.297	0.012	0.024	9.5	59.5
	LT	66,031	1.98	9.29	12.46	0.427	0.881	288.0	1,351.2	1,812.2	62.1	128.1	0.144	0.676	0.906	0.031	0.064	28.8	181.2
	HW	13,180	1.98	9.29	12.46	0.427	0.881	57.5	269.7	361.7	12.4	25.6	0.029	0.135	0.181	0.006	0.013	5.8	36.2
	LW	29,598	0.89	1.54	1.67	0.111	0.264	58.0	100.4	108.9	7.2	17.2	0.029	0.050	0.054	0.004	0.009	5.8	10.9
	Total	130,473						498.0	2,164.6	2,877.4	106.5	219.7	0.249	1.083	1.438	0.053	0.110	49.8	287.7
OPSGRP	HT	0	1.98	9.29	12.46	0.519	1.023	0	0	0	0	0	0	0	0	0	0	0.0	0.0
	LT	3,732	1.98	9.29	12.46	0.427	0.881	16.3	76.4	102.4	3.5	7.2	0.008	0.038	0.051	0.002	0.004	1.6	10.2
	HW	2,611	1.98	9.29	12.46	0.427	0.881	11.4	53.4	71.7	2.5	5.1	0.006	0.027	0.036	0.001	0.003	1.1	7.2
	LW	264,941	0.89	1.54	1.67	0.111	0.264	519.4	898.7	974.6	64.8	154.1	0.260	0.449	0.487	0.032	0.077	51.9	97.5
	Total	271,284						547.1	1,028.5	1,148.7	70.8	166.4	0.274	0.514	0.574	0.035	0.084	54.7	114.9
TOTAL	HT	89,670	1.98	9.29	12.46	0.519	1.023	391.1	1,834.9	2,461.0	102.5	202.1	0.196	0.917	1.231	0.051	0.101	39.1	246.1
	LT	142,158	1.98	9.29	12.46	0.427	0.881	620.0	2,908.9	3,901.5	133.7	275.9	0.310	1.454	1.951	0.067	0.138	62.0	390.2
	HW	293,682	1.98	9.29	12.46	0.427	0.881	1,280.8	6,009.5	8,060.1	276.2	569.9	0.640	3.005	4.030	0.138	0.285	128.1	806.0
	LW	484,871	0.89	1.54	1.67	0.111	0.264	950.5	1,644.7	1,783.6	118.5	282.0	0.475	0.822	0.892	0.059	0.141	95.1	178.4
	Total	1,010,381						3,242.4	12,398.0	16,206.2	630.9	1,329.9	1.620	6.200	8.100	0.320	0.670	324.2	1,620.6
																		1.620	8.100

Vehicle type, number of vehicles and distance traveled was provided by Charis via email in Excel files within a directory named HRalt1Excell Spreadsheets received on October 1, 2002.
VMT, miles = Number of Vehicles by Type x Distance, miles. This was completed in the conformity calculations (EPAFortIrwinAlt1H.xls) developed by Parsons. Note: The calculation will not work on the number of vehicles and distance provided in this spreadsheet because the number of vehicles and distances are agregreate values not individual distances.
Emissions, lb = VMT, miles x Emission Factor, g/mil x lb/454 g
Emissions, ton = Emissions, lb x ton/2,000 lb

VOC Emission @ non-attainment area lb/rotation	NOx Emission @ non-attainment area lb/rotation
29.7	186.6
31.6	198.7
121.2	762.7
37.3	70.0
219.7	1218.0
9.5	59.5
28.8	181.2
5.8	36.2
5.8	10.9
49.8	287.7
0.0	0.0
1.6	10.2
1.1	7.2
51.9	97.5
54.7	114.9
39.1	246.1
62.0	390.2
128.1	806.0
95.1	178.4
324.2	1620.6

Fort Irwin
Exhaust Emission Calculations - Alternative 6 - Heavy Rotation

			Emission Factors					Emissions									
Group	Vehicle Type	VMT miles/ rotation	Exhaust Running VOC g/mi	Exhaust CO g/mi	Exhaust NOx g/mi	Exhaust SO_2 g/mi	Exhaust PM g/mi	Exhaust Running VOC lb/ rotation	Exhaust CO lb/ rotation	Exhaust NOx lb/ rotation	Exhaust SO_2 lb/ rotation	Exhaust PM lb/ rotation	Exhaust Running VOC ton/ rotation	Exhaust CO ton/ rotation	Exhaust NOx ton/ rotation	Exhaust SO_2 ton/ rotation	Exhaust PM ton/ rotation
BLUEFOR MANEUVER	HT	68,007	1.98	9.29	12.46	0.519	1.023	296.6	1,391.6	1,866.4	77.7	153.2	0.148	0.696	0.933	0.039	0.077
	LT	72,396	1.98	9.29	12.46	0.427	0.881	315.7	1,481.4	1,986.9	68.1	140.5	0.158	0.741	0.993	0.034	0.070
	HW	277,891	1.98	9.29	12.46	0.427	0.881	1,211.9	5,686.4	7,626.7	261.4	539.3	0.606	2.843	3.813	0.131	0.270
	LW	190,332	0.89	1.54	1.67	0.111	0.264	373.1	645.6	700.1	46.5	110.7	0.187	0.323	0.350	0.023	0.055
	Total	608,626						2,197.3	9,205.0	12,180.1	453.7	943.7	1.099	4.603	6.089	0.227	0.472
OPFOR MANEUVER	HT	21,664	1.98	9.29	12.46	0.519	1.023	94.5	443.3	594.6	24.8	48.8	0.047	0.222	0.297	0.012	0.024
	LT	66,031	1.98	9.29	12.46	0.427	0.881	288.0	1,351.2	1,812.2	62.1	128.1	0.144	0.676	0.906	0.031	0.064
	HW	13,180	1.98	9.29	12.46	0.427	0.881	57.5	269.7	361.7	12.4	25.6	0.029	0.135	0.181	0.006	0.013
	LW	29,598	0.89	1.54	1.67	0.111	0.264	58.0	100.4	108.9	7.2	17.2	0.029	0.050	0.054	0.004	0.009
	Total	130,473						498.0	2,164.6	2,877.4	106.5	219.7	0.249	1.083	1.438	0.053	0.110
OPSGRP	HT	0	1.98	9.29	12.46	0.519	1.023	0	0	0	0	0	0	0	0	0	0
	LT	3,732	1.98	9.29	12.46	0.427	0.881	16.3	76.4	102.4	3.5	7.2	0.008	0.038	0.051	0.002	0.004
	HW	2,611	1.98	9.29	12.46	0.427	0.881	11.4	53.4	71.7	2.5	5.1	0.006	0.027	0.036	0.001	0.003
	LW	264,941	0.89	1.54	1.67	0.111	0.264	519.4	898.7	974.6	64.8	154.1	0.260	0.449	0.487	0.032	0.077
	Total	271,284						547.1	1,028.5	1,148.7	70.8	166.4	0.274	0.514	0.574	0.035	0.084
TOTAL	HT	89,670	1.98	9.29	12.46	0.519	1.023	391.1	1,834.9	2,461.0	102.5	202.1	0.196	0.917	1.231	0.051	0.101
	LT	142,158	1.98	9.29	12.46	0.427	0.881	620.0	2,908.9	3,901.5	133.7	275.9	0.310	1.454	1.951	0.067	0.138
	HW	293,682	1.98	9.29	12.46	0.427	0.881	1,280.8	6,009.5	8,060.1	276.2	569.9	0.640	3.005	4.030	0.138	0.285
	LW	484,871	0.89	1.54	1.67	0.111	0.264	950.5	1,644.7	1,783.6	118.5	282.0	0.475	0.822	0.892	0.059	0.141
	Total	1,010,381						3,242.4	12,398.0	16,206.2	630.9	1,329.9	1.620	6.200	8.100	0.320	0.670

Vehicle type, number of vehicles and distance traveled was provided by Charis via email in Excel files within a directory named HRalt6Excell Spreadsheets received on October 1, 2002.
VMT, miles = Number of Vehicles by Type x Distance, miles. This was completed in the conformity calculations (EPAFortIrwinAlt6H.xls) developed by Parsons. Note: The calculation will not work on the number of vehicle and distance provided in this spreadsheet because the number of vehicles and distances are agregreate values not individual distances.
Emissions, lb = VMT, miles x Emission Factor, g/mil x lb/454 g
Emissions, ton = Emissions, lb x ton/2,000 lb

Light Rotation

Fort Irwin
Exhaust Emission Calculations - Alternative 1 - Light Rotation

			Emission Factors					Emissions									
Group	Vehicle Type	VMT miles/ rotation	Exhaust Running VOC g/mi	Exhaust CO g/mi	Exhaust NOx g/mi	Exhaust SO_2 g/mi	Exhaust PM g/mi	Exhaust Running VOC lb/ rotation	Exhaust CO lb/ rotation	Exhaust NOx lb/ rotation	Exhaust SO_2 lb/ rotation	Exhaust PM lb/ rotation	Exhaust Running VOC ton/ rotation	Exhaust CO ton/ rotation	Exhaust NOx ton/ rotation	Exhaust SO_2 ton/ rotation	Exhaust PM ton/ rotation
BLUEFOR MANEUVER	HT	21,255	1.98	9.29	12.46	0.519	1.023	92.7	434.9	583.3	24.3	47.9	0.046	0.217	0.292	0.012	0.024
	LT	34,068	1.98	9.29	12.46	0.427	0.881	148.6	697.1	935.0	32.0	66.1	0.074	0.349	0.468	0.016	0.033
	HW	100,068	1.98	9.29	12.46	0.427	0.881	436.4	2,047.6	2,746.4	94.1	194.2	0.218	1.024	1.373	0.047	0.097
	LW	197,837	0.89	1.54	1.67	0.111	0.264	387.8	671.1	727.7	48.4	115.0	0.194	0.336	0.364	0.024	0.058
	Total	353,228						1,065.5	3,850.7	4,992.4	198.8	423.2	0.532	1.926	2.497	0.099	0.212
OPFOR MANEUVER	HT	23,247	1.98	9.29	12.46	0.519	1.023	101.4	475.7	638.0	26.6	52.4	0.051	0.238	0.319	0.013	0.026
	LT	68,390	1.98	9.29	12.46	0.427	0.881	298.3	1,399.4	1,877.0	64.3	132.7	0.149	0.700	0.939	0.032	0.066
	HW	13,180	1.98	9.29	12.46	0.427	0.881	57.5	269.7	361.7	12.4	25.6	0.029	0.135	0.181	0.006	0.013
	LW	29,148	0.89	1.54	1.67	0.111	0.264	57.1	98.9	107.2	7.1	16.9	0.029	0.049	0.054	0.004	0.008
	Total	133,965						514.3	2,243.7	2,983.9	110.4	227.6	0.258	1.122	1.493	0.055	0.113
OPSGRP	HT	0	1.98	9.29	12.46	0.519	1.023	0	0	0	0	0	0	0	0	0	0
	LT	3,732	1.98	9.29	12.46	0.427	0.881	16.3	76.4	102.4	3.5	7.2	0.008	0.038	0.051	0.002	0.004
	HW	2,611	1.98	9.29	12.46	0.427	0.881	11.4	53.4	71.7	2.5	5.1	0.006	0.027	0.036	0.001	0.003
	LW	264,941	0.89	1.54	1.67	0.111	0.264	519.4	898.7	974.6	64.8	154.1	0.260	0.449	0.487	0.032	0.077
	Total	271,284						547.1	1,028.5	1,148.7	70.8	166.4	0.274	0.514	0.574	0.035	0.084
TOTAL	HT	44,502	1.98	9.29	12.46	0.519	1.023	194.1	910.6	1,221.4	50.9	100.3	0.097	0.455	0.611	0.025	0.050
	LT	106,190	1.98	9.29	12.46	0.427	0.881	463.1	2,172.9	2,914.4	99.9	206.1	0.232	1.086	1.457	0.050	0.103
	HW	115,859	1.98	9.29	12.46	0.427	0.881	505.3	2,370.8	3,179.7	109.0	224.8	0.253	1.185	1.590	0.055	0.112
	LW	491,926	0.89	1.54	1.67	0.111	0.264	964.3	1,668.6	1,809.5	120.3	286.1	0.482	0.834	0.905	0.060	0.143
	Total	758,477						2,126.8	7,122.9	9,125.0	380.1	817.3	1.060	3.560	4.560	0.190	0.410

Vehicle type, number of vehicles and distance traveled was provided by Charis via email in Excel files within a directory named LRalt1Excel Spreadsheets received on September 30, 2002.
VMT, miles = Number of Vehicles by Type x Distance, miles. This was completed in the conformity calculations (EPAFortIrwinAlt1L.xls) developed by Parsons. Note: The calculation will not work on the number of vehicl and distance provided in this spreadsheet because the number of vehicles and distances are agregreate values not individual distances.
Emissions, lb = VMT, miles x Emission Factor, g/mil x lb/454 g
Emissions, ton = Emissions, lb x ton/2,000 lb

Fort Irwin
Exhaust Emission Calculations - Alternative 6 - Light Rotation

			Emission Factors					Emissions									
Group	Vehicle Type	VMT miles/ rotation	Exhaust Running VOC g/mi	Exhaust CO g/mi	Exhaust NOx g/mi	Exhaust SO_2 g/mi	Exhaust PM g/mi	Exhaust Running VOC lb/ rotation	Exhaust CO lb/ rotation	Exhaust NOx lb/ rotation	Exhaust SO_2 lb/ rotation	Exhaust PM lb/ rotation	Exhaust Running VOC ton/ rotation	Exhaust CO ton/ rotation	Exhaust NOx ton/ rotation	Exhaust SO_2 ton/ rotation	Exhaust PM ton/ rotation
BLUEFOR MANEUVER	HT	21,250	1.98	9.29	12.46	0.519	1.023	92.7	434.8	583.2	24.3	47.9	0.046	0.217	0.292	0.012	0.024
	LT	33,646	1.98	9.29	12.46	0.427	0.881	146.7	688.5	923.4	31.6	65.3	0.073	0.344	0.462	0.016	0.033
	HW	98,831	1.98	9.29	12.46	0.427	0.881	431.0	2,022.3	2,712.4	93.0	191.8	0.216	1.011	1.356	0.047	0.096
	LW	203,976	0.89	1.54	1.67	0.111	0.264	399.9	691.9	750.3	49.9	118.6	0.200	0.346	0.375	0.025	0.059
	Total	357,703						1,070.3	3,837.5	4,969.3	198.8	423.6	0.535	1.918	2.485	0.100	0.212
OPFOR MANEUVER	HT	21,595	1.98	9.29	12.46	0.519	1.023	94.2	441.9	592.7	24.7	48.7	0.047	0.221	0.296	0.012	0.024
	LT	64,478	1.98	9.29	12.46	0.427	0.881	281.2	1,319.4	1,769.6	60.6	125.1	0.141	0.660	0.885	0.030	0.063
	HW	11,940	1.98	9.29	12.46	0.427	0.881	52.1	244.3	327.7	11.2	23.2	0.026	0.122	0.164	0.006	0.012
	LW	29,546	0.89	1.54	1.67	0.111	0.264	57.9	100.2	108.7	7.2	17.2	0.029	0.050	0.054	0.004	0.009
	Total	127,559						485.4	2,105.8	2,798.7	103.7	214.2	0.243	1.053	1.399	0.052	0.108
OPSGRP	HT	0	1.98	9.29	12.46	0.519	1.023	0	0	0	0	0	0	0	0	0	0
	LT	3,732	1.98	9.29	12.46	0.427	0.881	16.3	76.4	102.4	3.5	7.2	0.008	0.038	0.051	0.002	0.004
	HW	2,611	1.98	9.29	12.46	0.427	0.881	11.4	53.4	71.7	2.5	5.1	0.006	0.027	0.036	0.001	0.003
	LW	264,941	0.89	1.54	1.67	0.111	0.264	519.4	898.7	974.6	64.8	154.1	0.260	0.449	0.487	0.032	0.077
	Total	271,284						547.1	1,028.5	1,148.7	70.8	166.4	0.274	0.514	0.574	0.035	0.084
TOTAL	HT	42,845	1.98	9.29	12.46	0.519	1.023	186.9	876.7	1,175.9	49.0	96.5	0.093	0.438	0.588	0.025	0.048
	LT	101,857	1.98	9.29	12.46	0.427	0.881	444.2	2,084.3	2,795.5	95.8	197.7	0.222	1.042	1.398	0.048	0.099
	HW	113,382	1.98	9.29	12.46	0.427	0.881	494.5	2,320.1	3,111.8	106.6	220.0	0.247	1.160	1.556	0.053	0.110
	LW	498,462	0.89	1.54	1.67	0.111	0.264	977.2	1,690.8	1,833.5	121.9	289.9	0.489	0.845	0.917	0.061	0.145
	Total	756,546						2,102.8	6,971.9	8,916.7	373.3	804.1	1.050	3.490	4.460	0.190	0.400

Vehicle type, number of vehicles and distance traveled was provided by Charis via email in Excel files within a directory named LRalt6Excel Spreadsheets received on September 30, 2002.
VMT, miles = Number of Vehicles by Type x Distance, miles. This was completed in the conformity calculations (EPAFortIrwinAlt6L.xls) developed by Parsons. Note: The calculation will not work on the number of vehicl and distance provided in this spreadsheet because the number of vehicles and distances are agregreate values not individual distances.
Emissions, lb = VMT, miles x Emission Factor, g/mil x lb/454 g
Emissions, ton = Emissions, lb x ton/2,000 lb

Appendix G
Fort Irwin Draft Conformity Report
Air Quality

Vehicle Exhaust Emission Estimate Summary

Fort Irwin
Exhaust Emission Calculation Summary

		Alternate 6 (No Action)			Alternative 1 (Preferred)			Projected Increase				
Group	Vehicle Type	Exhaust Running VOC ton/ rotation	Exhaust NOx ton/ rotation	Exhaust PM ton/ rotation	Exhaust Running VOC ton/ rotation	Exhaust NOx ton/ rotation	Exhaust PM ton/ rotation	Exhaust Running VOC ton/yr	Exhaust CO ton/yr	Exhaust NOx ton/yr	Exhaust SO_2 ton/ rotation	Exhaust PM ton/yr
BLUEFOR MANEUVER	HT	0.148	0.933	0.077	0.148	0.933	0.077	0.000	0.000	0.000	0.000	0.000
	LT	0.158	0.993	0.070	0.158	0.993	0.070	0.000	0.000	0.000	0.000	0.000
	HW	0.606	3.813	0.270	0.606	3.813	0.270	0.000	0.000	0.000	0.000	0.000
	LW	0.187	0.350	0.055	0.187	0.350	0.055	0.000	0.000	0.000	0.000	0.000
	Total	1.099	6.089	0.472	1.099	6.089	0.472	0.000	0.000	0.000	0.000	0.000
OPFOR MANEUVER	HT	0.047	0.297	0.024	0.047	0.297	0.024	0.000	0.000	0.000	0.000	0.000
	LT	0.144	0.906	0.064	0.144	0.906	0.064	0.000	0.000	0.000	0.000	0.000
	HW	0.029	0.181	0.013	0.029	0.181	0.013	0.000	0.000	0.000	0.000	0.000
	LW	0.029	0.054	0.009	0.029	0.054	0.009	0.000	0.000	0.000	0.000	0.000
	Total	0.249	1.438	0.110	0.249	1.438	0.110	0.000	0.000	0.000	0.000	0.000
OPSGRP	HT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LT	0.008	0.051	0.004	0.008	0.051	0.004	0.000	0.000	0.000	0.000	0.000
	HW	0.006	0.036	0.003	0.006	0.036	0.003	0.000	0.000	0.000	0.000	0.000
	LW	0.260	0.487	0.077	0.260	0.487	0.077	0.000	0.000	0.000	0.000	0.000
	Total	0.274	0.574	0.084	0.274	0.574	0.084	0.000	0.000	0.000	0.000	0.000
TOTAL	HT	0.196	1.231	0.101	0.196	1.231	0.101	0.000	0.000	0.000	0.000	0.000
	LT	0.310	1.951	0.138	0.310	1.951	0.138	0.000	0.000	0.000	0.000	0.000
	HW	0.640	4.030	0.285	0.640	4.030	0.285	0.000	0.000	0.000	0.000	0.000
	LW	0.475	0.892	0.141	0.475	0.892	0.141	0.000	0.000	0.000	0.000	0.000
	Total	1.620	8.100	0.670	1.620	8.100	0.670	0.000	0.000	0.000	0.000	0.000

Alternative 6 (No Action) Emissions developed in the spreadsheet HR Alt 6 within this Excel workbook (FortIrwinExhaust.xls).
Alternative 1 (Preferred) Emissions developed in the spreadsheet HR Alt 1 within this Excel workbook (FortIrwinExhaust.xls).
Increase Emissions, ton/yr = (Alternative 1 (Preferred) Emissions, ton/rotation- Alternative 6 (No Action) Emissions, ton/rotation) x 10 rotations/yr