Appendix E

PERMIT ACTIONS WITHIN THE STUDY BOUNDARY RESULTING IN EMISSIONS CHANGES (POST-JULY 1995)

een July 1995 and December 1998

Permit #	Company	Permit Da	O2 Emissions lb/hour	Ht (m)	Temp (K) or Sigma y(m)	V (m/sec) or Sigma z(m)	D (m)
CT-1045	FMC Wyoming Corp.	9/7/19	-	52.00	428.00	11.58	2.40
CT-1067	BJ Services	1/27/19	-	4.40	294.00	18.30	0.10
CT-1068	Lindley Construction	3/28/19	-	3.70	800.00	15.00	0.09
CT-1083	Pozzolanic International	5/9/19	-	15.50	293.00	28.90	0.20
CT-1093	Williams Field Service	6/27/19 a	- a	3.96	855.00	67.30	0.08
CT-1096	Searle Bros. Construction	7/11/19	-	2.29	70.90 [3]	2.13	
CT-1103	Woodward Tractor Company	8/22/19	-	2.29	70.90 [3]	2.13	
CT-1108	KN Gas Gathering	9/16/19	-	4.30	805.00	37.40	0.36
CT-1123	Church & Dwight Inc.	12/19/19	-	30.60	293.00	21.30	0.44
CT-1125	DALEN Resources	1/10/19	-	3.60	803.00	1.90	0.20
CT-1126	Williams Field Services	1/10/19	-	6.10	637.00	28.10	0.25
CT-1128	Presidio Oil Co.	1/10/19	-	3.70	905.00	28.50	0.10
CT-1132	Lewis & Lewis	2/6/19	-	2.29	70.90 [3]	2.13	
CT-1133	Professional Enterprises	2/6/19	-	3.70	800.00	15.00	0.30 [6]
CT-1134	FMC Wyoming Corporation	3/3/19	-	17.70	347.00	11.90	1.83
CT-1136	N.A. Degerstrom, Inc.	3/3/19	-	2.29	0.71	2.13	0.76
CT-1147	Wyoming Transportation Dept.	4/25/19	-	2.29	70.90 [3]	2.13	
CT-1148	Wold Trona Company	4/27/19	-	42.67	379.30	24.38	3.05
CT-1149	Western Gas Resources	5/23/19	-	16.76	697.00	11.50	0.56
CT-1153	Texaco USA	5/19/19	-	5.90	805.00	36.15	0.31
CT-1155	Woodward Tractor Co.	5/25/19	-	2.29	0.71	2.13	1.15
CT-1162	Amoco Production Co.	6/23/19	-	6.10	811.00	30.50	0.30
CT-1165	Compression Specialties	7/5/19	-	6.55	603.00	9.17	0.31
CT-1170	Sublette County	8/15/19	-	2.29	70.90 [3]	2.13	
CT-1174	Williams Field Services	10/3/19	-	10.70	764.00	45.10	1.17
CT-1175	Williams Field Services	10/3/19	-	10.70	764.00	45.10	1.17
CT-1177	Williams Field Services	10/9/19	-	5.94	626.00	25.90	0.31
CT-1180	Rhino Environmental Services	10/20/193	2.56	5.00	329.00	13.30	0.71
CT-1187	FMC Wyoming Corp.	11/28/19	-	18.30	293.00	11.45	0.91
CT-1190	N.A. Corporation	12/29/19	-	2.29	0.71	2.13	0.30
CT-1197	Wyoming Transportation Dept.	2/5/19	-	2.29	70.90 [3]	2.13	
CT-1206	Colorado Interstate Gas	4/18/19	-	1.57	514.00	15.45	5.26
CT-1208	Marathon Oil Company	4/23/19	-	8.23	977.00	15.00	0.76
CT-1209	Marathon Oil Company	4/23/19	-	8.23	977.00	15.00	0.76
CT-1210	Marathon Oil Company	5/3/19	-	8.23	977.00	15.00	0.76
CT-1211	Marathon Oil Company	5/3/19	-	8.23	977.00	15.00	0.76
CT-1212	Marathon Oil Company	5/3/19	-	8.23	977.00	15.00	0.76
CT-1213	Marathon Oil Company	5/3/19	-	8.23	977.00	15.00	0.76
CT-1214	Marathon Oil Company	5/3/19	-	8.23	977.00	15.00	0.76
CT-1217	Snyder Oil Corporation	5/7/19	-	4.57	533.15	0.83	0.30
CT-1221	Wyoming Transportation Dept.	5/21/19	-	2.29	70.90 [3]	2.13	
CT-1229	D.G. Huskins Const. Co.	6/25/1920	0.16	3.70	800.00	15.00	0.30 [6]
CT-1230	D.G. Huskins Const. Co.	6/25/1950	46.42	8.46	366.00	5.00	0.30 [6]
CT-1235	Lewis & Lewis Inc.	7/22/1941	0.32	2.29	0.71	2.13	0.30
CT-1240	Vase Funeral Homes	8/6/19	-	5.50	922.00	4.90	0.52
CT-1243	Wyoming Transportation Dept.	8/14/19	-	2.29	70.90 [3]	2.13	
CT-1247	Mountain Gas Resources	9/10/19	-	6.10	514.00	26.70	0.44
CT-1249	Samuel Fox Funeral Home	9/24/19	-	8.20	1,171.00	6.40	6.10

′een July 1995 and December 1998

Permit #	Company	Permit Da	O2 Emissions lb/hour	Ht (m)	Temp (K) or Sigma y(m)	V (m/sec) or Sigma z(m)	D (m)
CT-1256	Questar Gas Management	11/5/19	-	3.70	863.00	4.37	0.30
CT-1257	Compression Specialties	11/5/19	-	6.10	842.00	30.50	0.30
CT-1266	Global Compression	11/19/19	-	4.42	864.00	43.00	0.20
CT-1267	Wyoming Interstate Company	11/26/19	-	7.92	933.00	43.90	0.41
CT-1269	Marathon Oil Company	12/12/19	-	2.74	950.00	8.00	0.10
CT-1273	Questar Gas Management	1/22/19	-	4.60	900.00	15.00	0.60
CT-1274	Questar Gas Management	1/22/19	-	6.10	880.00	45.00	0.30
CT-1284	Wyoming Transporation Dept.	2/28/19	-	2.29	70.90 [3]	2.13	
CT-1295	Questar Gas Management	4/8/19	-	6.10	633.00	37.20	0.46
CT-1296	Jonah Gas Gathering	4/22/19	-	2.74	950.00	8.00	0.10
CT-1300	Marathon Oil Company	5/29/19	-	1.00	800.00	5.00	0.01
CT-1301	Wyoming Interstate Company	6/2/19	-	7.92	933.00	43.90	0.41
CT-1306	Williams Field Services	7/1/19	-	6.70	633.00	34.30	0.31
CT-1308	Synder Oil Corporation	7/8/19	-	3.65	533.00	22.10	0.31
CT-1309	Cross Timbers Operating Co.	7/16/19	-	6.10	657.00	40.00	0.46
CT-1310	LeGrand Johnson Const. Co.	7/16/19 0	5.30	4.60	344.00	10.00	0.30 [6]
CT-1313	Aldila Corporation	8/5/19 1	0.85	17.70	300.00	5.18	0.69
CT-1315	Compression Secialities	8/18/19	-	5.50	983.00	36.20	0.25
CT-1316	Fidler, Inc.	8/18/19	-	2.29	70.90 [3]	2.13	
CT-1321	TG Soda Ash, Inc.	10/7/19	-	47.20	368.70	9.88	0.76
CT-1328	Marathon	10/28/19	-	2.29	70.90 [3]	2.13	
CT-1329	H-K Contractors	11/4/19 4	6.18	7.62	325.40	8.63	0.30 [6]
CT-1334	Presidio Oil Co.	12/1/19	-	8.23	977.00	15.00	0.76
CT-1335	Presidio Oil Co.	12/1/19	-	8.23	977.00	15.00	0.76
CT-1337	Nerd Enterprises	12/2/19	-	2.29	70.90 [3]	2.13	
CT-1342	Marathon Oil Co.	1/30/19	-	4.60	811.00	10.00	0.30
CT-1343	Marathon Oil Co.	1/30/19	-	4.60	811.00	10.00	0.30
CT-1344	Marathon Oil Co.	1/30/19	-	4.60	811.00	10.00	0.30
CT-1345	Marathon Oil Co.	1/30/19	-	4.60	811.00	10.00	0.30
CT-1347	Solvay	2/6/19	-	54.86	420.93	13.15	2.44
CT-1350	Mountain Gas Resources	3/13/19	-	12.19	899.82	70.10	0.25
CT-1355	CIG Exploration	2/27/19	-	2.29	70.90 [3]	2.13	
CT-1357	Amoco Production	3/10/19	-	2.29	70.90 [3]	2.13	
CT-1358	Amoco Production	3/10/19	-	2.29	70.90 [3]	2.13	
CT-1359	Amoco Production	3/10/19	-	2.29	70.90 [3]	2.13	
CT-1360	Amoco Production	3/10/19	-	2.29	70.90 [3]	2.13	
CT-1362	Louisiana Land & Exploration	4/10/19 90	115.07	38.10	533.00	20.38	1.07
CT-1364	WYDOT	4/21/19	-	2.29	70.90 [3]	2.13	
CT-1365	Cabot Oil & Gas Corp.	4/27/19	-	2.29	70.90 [3]	2.13	
CT-1366	Cabot Oil & Gas Corp.	5/6/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]
CT-1367	Cabot Oil & Gas Corp.	5/6/19	-	2.29	70.90 [3]	2.13	
CT-1369	Cabot Oil & Gas Corp.	5/6/19	-	2.29	70.90 [3]	2.13	
CT-1370	Cabot Oil & Gas Corp.	5/6/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]
CT-1371	Cabot Oil & Gas Corp.	5/6/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]
CT-1372	Cabot Oil & Gas Corp.	5/6/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]
CT-1374	Cabot Oil & Gas Corp.	4/27/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]
CT-1375	Cabot Oil & Gas Corp.	4/27/19	-	2.44	836.48	18.29 [6]	0.08
CT-1376	Cabot Oil & Gas Corp.	4/27/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]
CT-1377	Cabot Oil & Gas Corp.	4/27/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]

een July 1995 and December 1998

Permit #	Company	Permit Dat	O2 Emissions lb/hour	Ht (m)	Temp (K) or Sigma y(m)	V (m/sec) or Sigma z(m)	D (m)
CT-1378	Cabot Oil & Gas Corp.	5/21/19	-	3.68	866.48	18.29 [6]	0.20
CT-1381	Snyder Oil Corporation	5/27/19	-	3.66	672.04	6.10 [6]	0.30
CT-1387	Cabot Oil and Gas	6/18/19	-	4.17	516.48	5.65	0.25
CT-1388	Lousiana Land & Expl.	6/19/19	-	4.27	492.04	6.10 [6]	0.32
CT-1395	WYDOT	8/5/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]
CT-1397	Amoco Production	8/19/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1398	Amoco Production	8/19/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1399	Amoco Production	8/19/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1400	Union Pacific Resources	8/19/19	-	4.65	519.15	11.71	0.42
CT-1405	Amoco Production	8/19/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1406	Amoco Production	8/19/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1407	Amoco Production	8/19/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1408	Amoco Production	8/19/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1409	Church and Dwight	8/19/19	-	8.23	294.26	21.64	0.41
CT-1410	Clear Creek Storage	8/21/19	-	12.19	747.04	67.97	0.36
CT-1414	Amoco Productiom	9/23/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1415	Amoco Productiom	9/23/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1416	Solvay Minerals	9/23/19	-	19.35	339.26	20.73	0.25
CT-1418	Amoco Production	9/25/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1419	Amoco Production	9/25/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1420	Amoco Production	9/25/19	-	9.14	810.93 [4]	20.00 [4]	0.33 [1]
CT-1422	Jonah Gas Gathering	10/13/19	-	6.10	725.37	142.04	0.30
CT-1423	Jonah Gas Gathering	10/13/19	-	6.10	725.37	142.04	0.30
CT-1426	WYDOT	10/19/19	-	2.29 [2]	70.90 [2,3]	2.13 [2]	
CT-1436	Amoco - Champlin 278 D2	11/3/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]
CT-1437	Amoco - Three Mile 15-2	11/3/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]
CT-1439	Amoco - Shute Creek 43	11/3/19	-	10.00 [5]	867.00 [5]	6.10 [5]	0.61 [5]
CT-1441	Amoco - Corona Unit #7-31	11/19/19	-	9.14 [1]	810.93 [4]	20.00 [4]	0.33 [1]
CT-1449	McMurry Oil Company - Stud Horse Butte 13-2	12/4/19	-	3.66	672.04	6.10 [6]	0.30
CT-1450	Amoco - Coal Bank 7-PAD	12/4/19	-	9.14	810.93 [4]	20.00 [4]	0.33
CT-1454	Snyder Oil - Creston Nose #4-28-18-92	12/18/19	-	4.27	727.59	6.10 [6]	0.15
CT-1455	Snyder Oil - Creston Nose #12-28-18-92	12/18/19	-	4.27	727.59	6.10 [6]	0.15
CT-1456	Snyder Oil - Creston Nose #14-32-18-92	12/18/19	-	4.27	727.59	6.10 [6]	0.15
CT-1461	Marathon Oil - Wamsutter 12-28	12/31/19	-	4.57	810.93	6.10 [6]	0.30
CT-550A4*	SF Phosphates Inc.	6/14/195 a	209.20 a	60.35	349.82	20.73	1.58
MD-129A*	General Chemical Corp.	1/23/19	-	35.97	349.82	9.69	2.24
MD-198	General Chemical Co.	5/9/19	-	14.94	293.00	11.70	0.34
MD-205	Universal Resources Crop.	7/11/19	-	4.90	950.00	70.10	0.26
MD-214	Amoco Production Co.	2/6/190	6.39	10.00	867.00	10.00	0.61
MD-215	Williams Field Services	3/3/19	-	8.60	711.00	10.50	1.00
MD-225	Overland Trail Trans. Co.	5/19/19	-	6.70	672.00	32.30	0.31
MD-237	Black Butte Coal	7/25/19	-	2.29	70.90 [3]	2.13	
MD-242	Williams Field Services	8/30/19	-	9.14	689.00	68.90	0.76
MD-282	Solvay Minerals	5/14/190	0.78	12.00	316.00	16.50	0.61
MD-299	Mid America Pipeline	11/22/19	-	6.10	753.00	46.90	0.46
MD-300	OCI Wyoming	11/26/19	-	12.19	280.00	35.63	0.23
MD-301	Halliburton Energy Services	11/26/19	-	5.80	300.00	0.82	1.14
MD-302	P&M Coal Mining Company	11/26/19	-	5.50	293.00	14.00	0.91
MD-307	PacifiCorp	12/17/19	-	2.29	70.90 [3]	2.13	

een July 1995 and December 1998

Permit #	Company	O2 Emissions Permit Dat	lb/hour	Ht (m)	Temp (K) or Sigma y(m)	V (m/sec) or Sigma z(m)	D (m)
MD-316	Northwest Pipeline	6/17/19	-	15.20	700.00	91.00	1.20
MD-317	Williams Field Services	6/17/19	-	9.14	768.15	53.71	0.61
MD-322	Mid-America Pipeline Co.	7/1/19	-	6.10	753.00	35.70	0.61
MD-329	Williams Field Services	8/5/19	-	6.70	631.00	38.80	0.34
MD-340	General Chemical	11/21/19	-	42.70	464.00	8.90	2.07
MD-343	Louisiana Land & Exploration	1/21/190	35.37	38.10	533.20	20.38	1.07
MD-357	Union Pacific Resources	5/18/19	-	2.79	605.59	20.16	0.08
MD-364	Mountain Gas Resources	6/18/19	-	4.57	699.82	6.10 [6]	0.61
MD-372	Mountain Gas Resources	8/28/19	-	9.14	861.48	30.18	0.30
MD-375	Mid America Pipeline Co.	9/25/19	-	6.10	766.48	18.29 [6]	0.61
MD-376	Williams Field Service	9/30/19	-	6.71	658.71	37.00	0.31
MD-380	Snyder Oil Corporation	10/26/19	-	5.49	734.82	41.15	0.30
MD-382	Questar - Blacks Fork Gas Plant	12/4/19	-	15.24	697.04	47.24	0.30
MD-383	Williams Field Services - Frewen Lake Compre	12/7/19	-	6.71	610.93	30.89	0.31

Permit #	Company	O2 Emissions Permit Dat	lb/hour	Ht (m)	Temp (K) or Sigma y(m)	V (m/sec) or Sigma z(m)	D (m)
CT-1199	General Chemical	2/21/19	-	45.72	405.93	13.11	2.38
CT-1347	Solvay	2/6/19	-	54.86	420.93	13.15	2.44
MD-208	Sweetwater Resources/P4 Production	9/2/19	-	9.14	294.26	7.10	1.10
MD-229	Solvay Minerals	6/13/190)	(85.59)	54.86	463.71	6.71	3.66
MD-270	Church & Dwight	5/2/19	-	12.19	294.26	17.80	0.30
MD-282	Solvay Minerals	5/14/19	-	12.00	316.00	16.50	0.61
MD-290	Kern River Gas Trans.	7/16/19	-	16.76	723.71	15.24	2.57
MD-305	Monsanto Company/P-4 Production	12/9/19	-	2.29	70.90 [3]	2.13	
MD-315	Union Pacific Resources	5/13/19	-	15.24	474.80	38.41	1.38
MD-320	KN Gas Gathering	7/1/19	-	4.27	805.37	37.37	0.36
MD-333	Questar Pipeline	8/16/19	-	7.62	797.04	4.77	0.40
MD-374	Church & Dwight	9/18/19	-	30.94	323.15	23.47	0.54
MD-384	SF Phosphates - Phosphate Fertilizer Plant	12/22/190)	(41.48)	36.27	365.928	13.23	1.66

[1]No stack parameters in files. Parameter taken from other flares.

[2]Volume source parameters taken from Continental Divide emissions inventory.

[3]Initial sigma-y changed from 0.709 m (as presented in Continental Divide's emissions inventory) tc

[4]For flares, temperatures are assumed to equal 1000 F and exit velocity assumed to equal 20 m/s, pe

[5]No stack parameters in files. Parameter taken from other separator heater.

[6]Assumption

[7]C=combustion, MH = material handling, T=trona

* Potential emissions substituted with actual emissions.