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Report on Ambient Pesticide Air Monitoring For Propyzamide In Monterey, San Benito and Santa Clara Counties During July and August of 2009

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April 7, 2011

Monitoring Report Approval

Report Title: Report on Ambient Pesticide Air Monitoring for Propyzamide in Monterey, San Benito and Santa Clara Counties during July and August of 2009

Project Lead: Jack Romans, Air Pollution Specialist

Approval: The following monitoring report has been reviewed and approved by the Monitoring and Laboratory Division.

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Mac McDougall, Manager Special Purpose Monitoring Section	Date
Kenneth R. Stroud, Chief Air Quality Surveillance Branch	Date

Executive Summary

Report on Ambient Pesticide Air Monitoring For Propyzamide in Monterey, San Benito and Santa Clara Counties during July and August of 2009

At the request of the Department of Pesticide Regulation (DPR), the Air Resources Board (ARB) conducted ambient air monitoring within Monterey, San Benito and Santa Clara Counties to help determine airborne concentrations of 3,5-dichloro-*N*-(1,1-dimethyl-propynyl) benzamide, commonly known as Propyzamide. Propyzamide is a systemic herbicide typically used for control of grasses and some broad-leaved weeds prior to the planting of lettuce crops. According to the DPR, approximately 7,500 pounds of active ingredient were used each month in Monterey County alone during June, July and August 2007. This monitoring was performed from July1 through August 20, 2009.

As DPR had also requested that the ARB perform ambient monitoring for the pesticide Diazinon in these same areas and season, ARB determined that the same sampling method could be used for both Propyzamide and Diazinon. Therefore, both of these compounds were simultaneously collected on a single sample (sorbent) tube and separate analyses were performed by the lab. Results of the Diazinon monitoring are presented in a separate report entitled, Ambient Pesticide Air Monitoring for Diazinon and Diazoxon in Monterey, San Benito and Santa Clara Counties During July and August of 2009, dated August 5, 2010.

Monitoring was performed at six locations; one site each in the cities of Soledad, Salinas, Chualar, Hollister, King City and Gilroy. A total of 192 ambient air samples, including 48 collocated pairs and an additional 19 quality control samples, were collected by staff of the ARB's Monitoring and Laboratory Division (MLD), Air Quality Surveillance Branch, Special Purpose Monitoring Section.

A single air sampler, consisting of plumbing, rotameter and pump, was installed at each selected sampling location. Daily samples were collected on XAD-2 resin sorbent tubes using a sample flow rate of three (3) liters per minute over a nominal 23-hour sampling period. The sorbent tubes were analyzed for Propyzamide using gas chromatography/mass spectrometry (GC/MS) in the selected ion-monitoring mode (SIM) by the MLD's Northern Laboratory Branch, Special Analysis Section in Sacramento.

Analytical results from each of the 192 ambient samples indicated concentrations of Propyzamide less than the analytical method detection limit (MDL) of 0.057 micrograms per sample (ug/sample) which equates to 0.014ug/m^3 based on the target sample flow rate of 3.0 LPM and nominal collection duration of 23 hours.
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Results from each of the eight (8) Trip Blanks also indicated concentrations less than the MDL.

Results from all seven (7) Field Spikes indicated recovery rates ranging from 82% to 95% with an average recovery rate of 91.7%.

Results from all four (4) Trip Spikes indicated recovery rates ranging from 64.8% to 97.9% with an average recovery rate of 88%. The laboratory results report remarked that the Trip Spike having 64.8% recovery may have received an insufficient spike in the laboratory.

Data completeness for this study was 100%. No samples were lost or invalidated and there were no known deviations from the Sampling Protocol.

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1.0 Introduction

At the request of the Department of Pesticide Regulation (DPR), in a January 2009 Memorandum, Warmerdam to Goldstene, the Air Resources Board (ARB) conducted ambient air monitoring for the pesticide 3,5-dichloro-*N*-(1,1-dimethyl-propynyl) benzamide, Chemical Abstract Service (CAS) Registry Number 23950-58-5 and commonly known as Propyzamide. Propyzamide is used as a systemic herbicide for control of grasses and some broad-leaf weeds on lettuce fields prior to planting.

Propyzamide is used throughout the State of California and throughout the calendar year. Data generated by DPR for 2007 indicated that Monterey County had the highest, second and third-highest monthly use in the State during June, July and August (6,652, 7,948 and 7,698 pounds of active ingredient per month respectively). DPR requested that the ARB perform ambient air monitoring for Propyzamide in and around Monterey County during these summer months.

As DPR had also requested that the ARB perform ambient monitoring for the pesticide Diazinon in this same general area and season, ARB determined that the same sampling method could be used for both Propyzamide and Diazinon. Therefore, both of these compounds were collected on a single sample (sorbent) tube and a separate analysis was performed by the lab. Results of the Diazinon monitoring are presented in a separate report entitled, Ambient Pesticide Air Monitoring for Diazinon and Diazoxon in Monterey, San Benito and Santa Clara Counties During July and August of 2009, dated August 5, 2010.

Staff from ARB's Monitoring and Laboratory Division, Special Purpose Monitoring Section (SPM) collected one hundred and ninety-two (192) ambient air samples and nineteen (19) quality control (QC) samples from six (6) separate sites in Monterey, San Benito and Santa Clara Counties over an eight-week period from July 1 through August 20 of 2009. Monitoring was conducted to coincide with the peak use of Propyzamide as a herbicide on lettuce and other food crops and in accordance with the "Sampling Protocol for Diazinon and Propyzamide Ambient Study" dated July 7, 2009, and presented in **Appendix A** of this report. Sample analyses were performed by the Special Analysis Section of ARB's Monitoring and Laboratory Division and are presented in **Appendix C,** "Propyzamide Method Development and Analytical Results…", dated October 30, 2009.

This monitoring was performed under the requirements of the California Code of Regulation, Food and Agriculture Code, Section 14022(c) which requires the ARB, "…to document the level of airborne emissions…of pesticides that may be determined to pose a present or potential hazard...", when requested by DPR.

2.0 Deviations from Protocol

No deviations from the sampling protocol occurred during this study. There were no samples lost or invalidated and data completeness was 100%.

3.0 Sampling Sites

Sampling sites were selected by SPM staff based upon historical pesticide use information supplied by DPR's 2009 monitoring recommendations and logistical considerations such as safety, security and access. All six (6) selected sites were located in relatively high-population areas and/or areas frequented by people such as schools or school district offices, fire stations or other public buildings. Each air monitoring site, except the urban background site in Gilroy which was expected to indicate the lowest ambient concentrations, was located in areas with historically high rates of Propyzamide use. DPR requested that the background site be located in Gilroy and at least one of the air monitoring sites be in Hollister.

Exact location of each sampling site is indicated by coordinates presented in **Table 1,** Sampler Waypoints, and also indicated by aerial photos presented in **Figures 1-7**. Soledad's aerial photo was taken prior to building of the school that served as a sampling site. There were no farmed fields adjacent to any sampling site and details of any nearby Propyzamide applications during sampling periods are unknown without further investigation. For more detailed views of the monitoring sites, please see **Appendix B**, Aerial and Site Photographs.

TABLE 1: SAMPLER WAYPOINTS

Site ID	Site Location Name and Address	Waypoints
GIL (Gilroy) (Background)	BAAQMD Station @ Glen View Elementary School, 695 9th Street. Elevation = 206', Inlet = 11.9'	N 36° 59' 57.8" W 121° 34' 28.9"
KCY (King City)	MBUAPCD Station @ San Lorenzo Elementary School, 421 Pearl Street. Elevation = 318', Inlet = 14.5'	N 36° 12' 32.1" W 121° 07' 33.7"
SOL (Soledad)	Roof of Cafeteria @ Jack Franscioni Elementary School, 779 Orchard Lane. Elevation = 369', Inlet = 16.8'	N 36° 26' 10.8" W 121° 18' 52.0"
CHU (Chualar)	Roof of Salinas Rural Fire Station, 24281 Washington Street. Elevation = 138', Inlet = 24.0'	N 36° 34' 17.3" W 121° 31' 03.3"
SAL (Salinas)	Roof of Cafeteria @ La Joya Elementary School, 56 Rogge Road, Bolsa Knolls area. Elevation = 143', Inlet = 17.4'	N 36° 43' 57.8" W 121° 38' 02.7"
HOL (Hollister)	Roof of classrooms @ R.O. Hardin K-5 School, 761 South Street. Elevation = 287', Inlet = 16.6'	N 36° 50' 53.1" W 121° 24' 39.3"

Note: Elevation is Topo map ground level and inlet is feet above ground level.

FIGURE 1: AERIAL PHOTO OVERVIEW OF MONITORED AREA

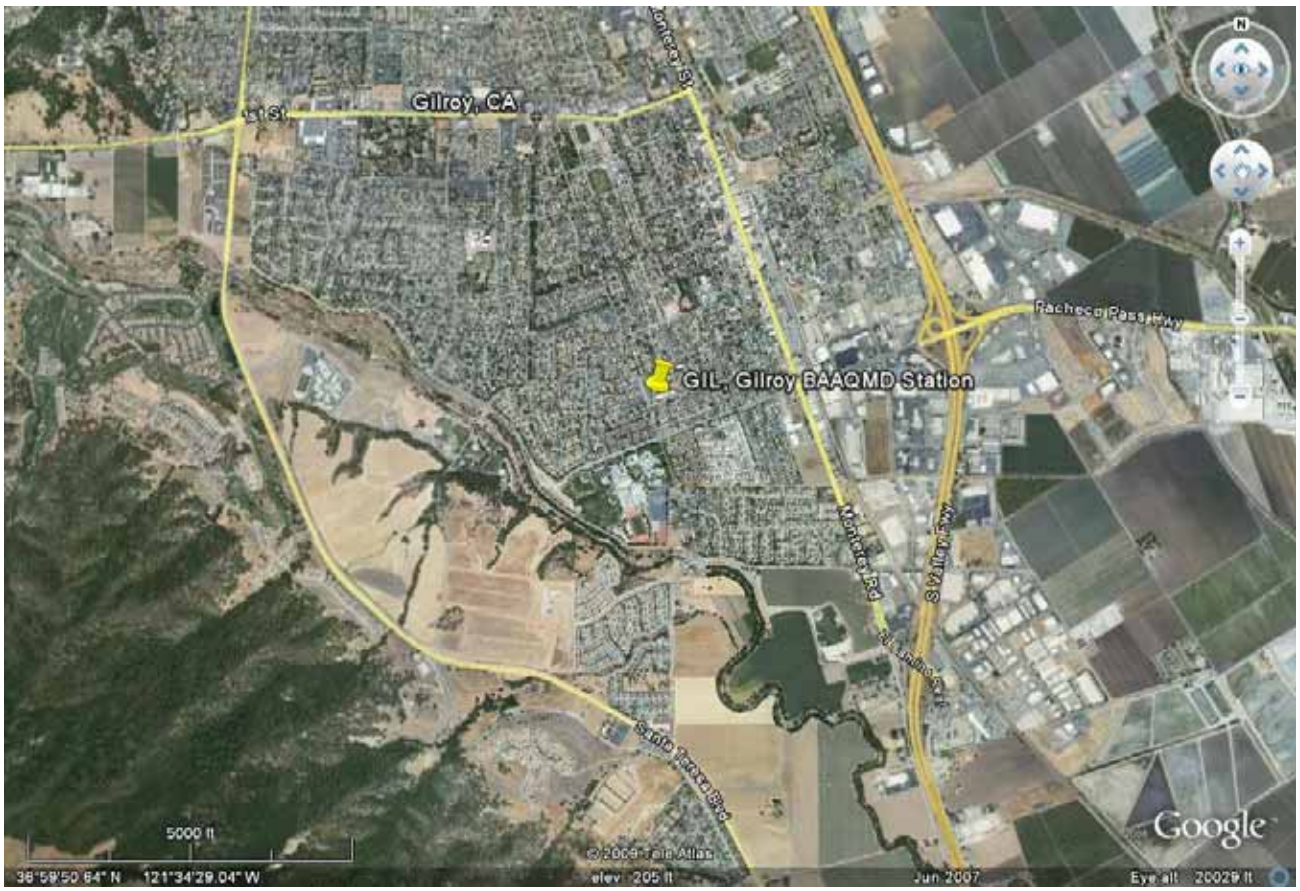


FIGURE 2: AERIAL PHOTO OVERVIEW OF THE GILROY SITE

FIGURE 3: AERIAL PHOTO OVERVIEW OF THE KING CITY SITE

FIGURE 4: AERIAL PHOTO OVERVIEW OF THE SOLEDAD SITE

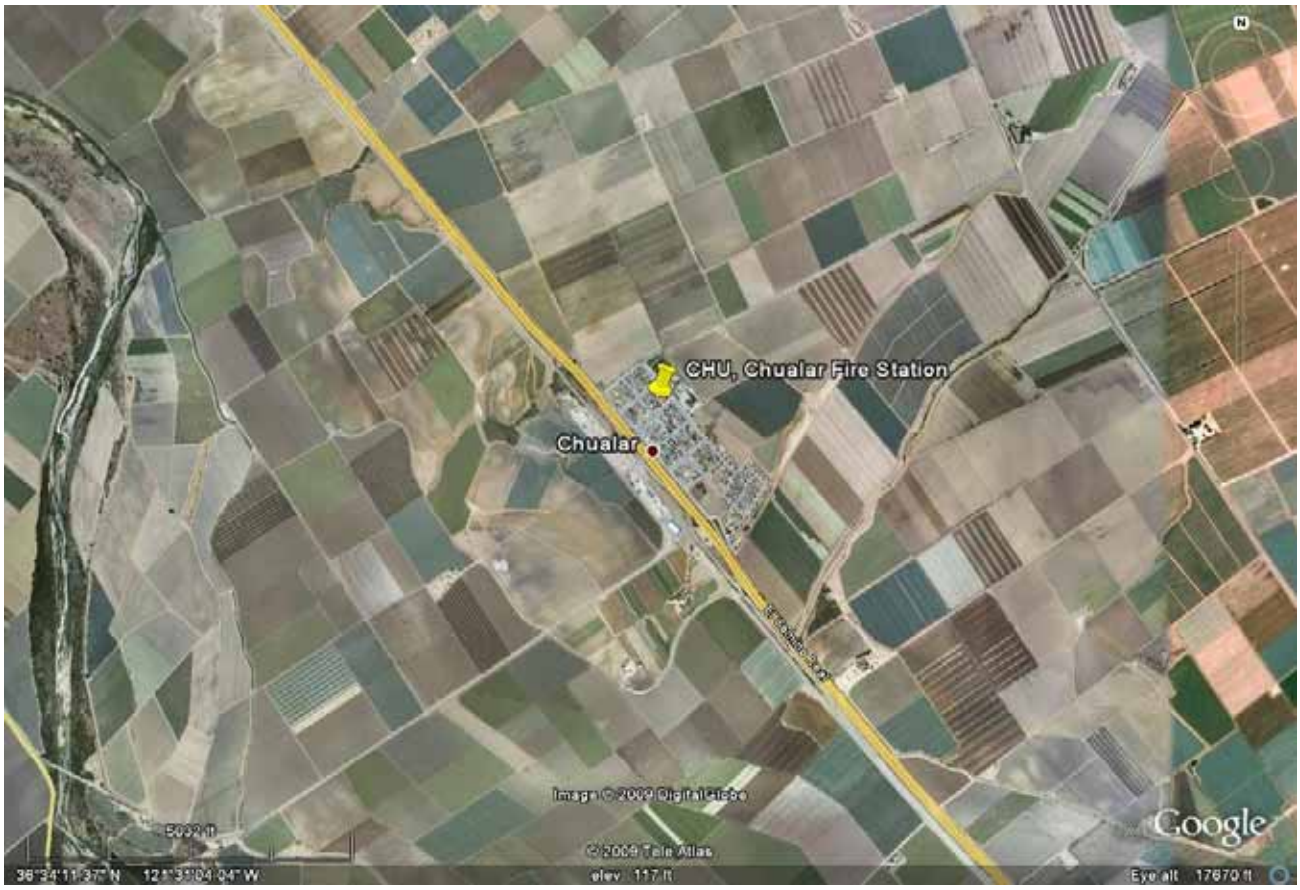


FIGURE 5: AERIAL PHOTO OVERVIEW OF THE CHUALAR SITE

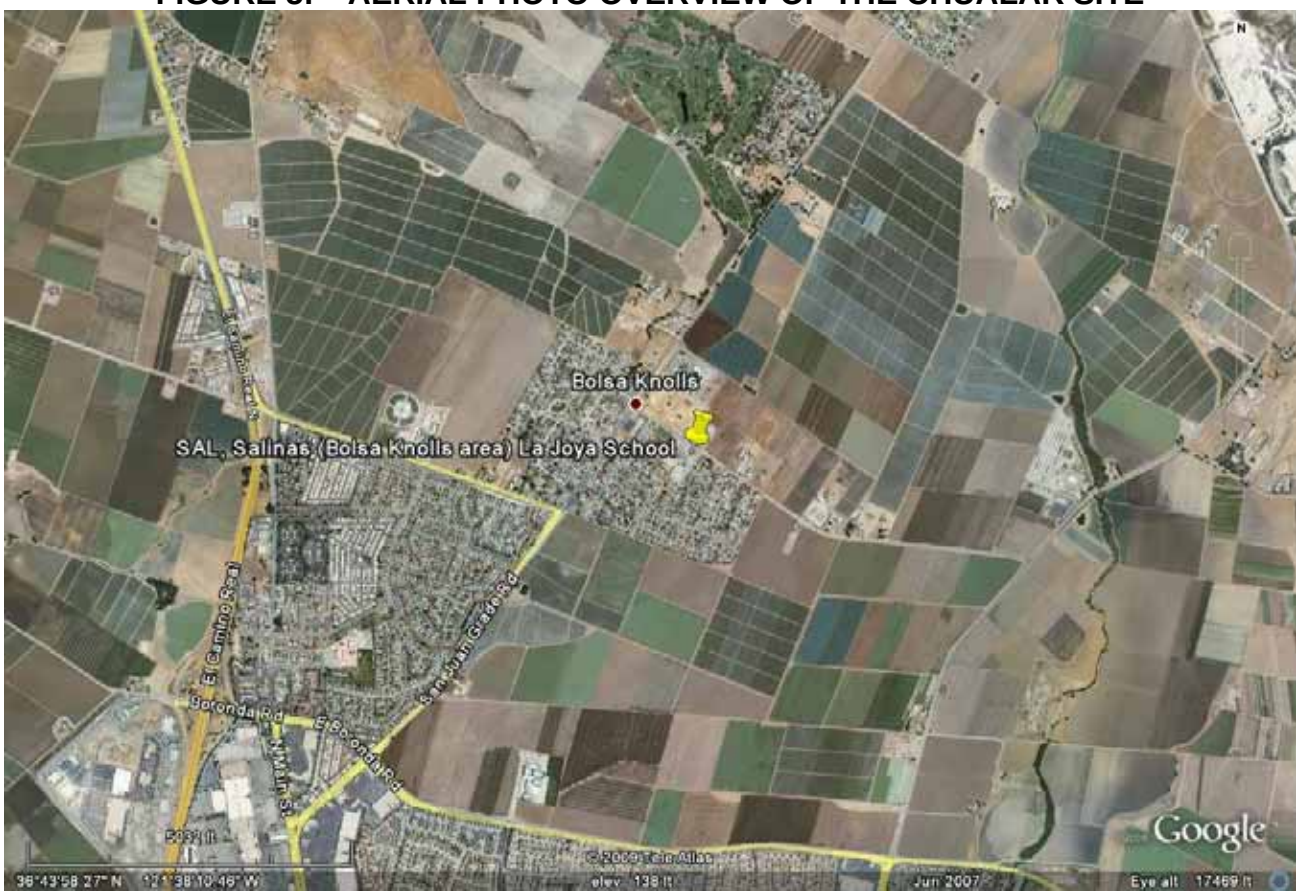


FIGURE 6: AERIAL PHOTO OVERVIEW OF THE SALINAS SITE

FIGURE 7: AERIAL PHOTO OVERVIEW OF THE HOLLISTER SITE

4.0 Methods

Typical ambient air pesticide studies collect four (4) 24-hour samples per calendar week from each sampling site for eight weeks. Due to furlough and overtime policies then in effect, all but the fifth week of sampling collected three (3) 23-hour samples per week. The first sample of the week was started at midday on Monday and collected 23 hours later. This procedure was repeated for each subsequent (daily) sample until the final sample of the week was retrieved on Thursday, again about midday, in time for ARB staff to return to Sacramento without incurring overtime.

A total of 211 air samples were collected from July 1 through August 20, 2009. These included 67 quality control (QC) XAD resin tube samples which consisted of seven (7) field spikes, four (4) trip spikes, eight (8) trip blanks and 48 collocated pairs. At least one (1) collocated sample pair was collected each week from each sampling site. This was performed using the same sampling platform but with an independent, yet identical, sample train.

The sampling process was designed to collect Propyzamide, Diazinon and Diazoxon on a single XAD resin sorbent tube. The Laboratory extracted and analyzed for each of these compounds from each sample tube. Collected resin sorbent tube samples were analyzed using the laboratory method titled, "Standard Operating Procedure Sampling and Analysis of O,O-diethyl O-2-isopropyl-6-methylpyrimidin-4-yl phosphorothioate (Diazinon) and the Oxygen Analog (Diazoxon)", presented in **Appendix A** as part of, "Sampling Protocol for Diazinon and Propyzamide Ambient Study". **Appendix C** contains the laboratory results report entitled, "Propyzamide Method Development and Analytical Results for Ambient Air Monitoring Samples in Monterey, Santa Clara, and San Benito Counties" (October 2009).

4.0 Methods (continued)

Samples were collected by passing a measured volume of ambient air through a single XAD resin sorbent tube (SKC #226-30-06) installed on the sampling device, commonly known as the "tree sampler". A nominal sample flow rate of 3.0 liters per minute (LPM) was controlled by the sampler's inline rotameter metering valve (flow range of 0-5 LPM) and measured by connecting a certified digital mass flow meter (MFM) to the sorbent tube.

At the beginning of each sampling period, the ends of a sealed-glass sorbent tube were snipped off and the tube installed on the sampler. With the MFM connected to the sorbent tube, the sample flow rate was measured and set (adjusted to 3.0 LPM) according to the MFM display. At the end of the sampling period, the MFM was again connected and the as-found flow rate measured and recorded. If the average of the beginning and end flow rates were within ±20% of 3.0 LPM (±0.6 LPM or 2.4–3.6 LPM), the sample was considered valid with respect to flow rate.

The sampling system was operated continuously for 23 hours, ±1 hour as measured by the sampler's in-line elapsed electrical timer and start/stop times were verified (±1 minute) by cell phone display. The operating duration and measured flow rates of each sample were recorded onto the field log sheets and are presented in **Appendix D** of this report.

Please note that a target flow rate of 3.0 LPM for 23 hours will result in a total collected sample volume of 4,140 liters or 4.14 cubic meters (m^3).

After removal from the sampler, the sorbent tube was capped at both ends, placed in a culture tube with an identification label affixed and stored in a cooler containing dry ice. At least once per week, collected samples were transported on dry ice to ARB's Monitoring and Laboratory Division in Sacramento for analysis. The exposed XAD-2 resin sorbent tubes were stored in a freezer at the laboratory until extracted and analyzed by the laboratory.

For additional details of the monitoring method, please refer to **Appendix A**, "Sampling Protocol for Diazinon and Propyzamide Ambient Study" dated July 7, 2009.

5.0 Ambient Results

Ambient Propyzamide concentration results are presented in **Table 2**, Propyzamide Ambient Results, Pages 8 through 14 of this report. These results, arranged chronologically by sampling site, were obtained from laboratory analytical results presented in **Appendix C**, Standard Operating Procedure, Sampling and Analysis of Propyzamide as well as sample volumes calculated from sample information recorded on the field log sheets and presented in **Appendix D**, Propyzamide Ambient Field Log Sheets.

Data completeness for this study was 100**%.** Each of the 192 ambient samples, collocated included, indicated concentrations of Propyzamide less than the Method Detection Limit (MDL) of 0.057 ug/sample**.** The actual limit of detection for each sample is calculated by dividing the MDL of 0.057 ug/sample by each sample's respective total sample volume according to the following equation:

$$SampleLimitofDetection/m^3 = \frac{MDL(0.057ug/sample)}{TotalSampleVolume(m^3)}$$

Additional information can be found in **Appendix E** which presents the calibration/certification reports of measurement standards.

Sample tube nomenclature for this study was based upon the location of each site and the run number. Additional letters were added after inserting a dash to identify the specific type of sample collected, e.g., collocated, blank or spike.

Examples:

GIL3 = Gilroy run 3
GIL3-FS = Gilroy run 3 Field Spike
KCY3 = King City run 3
SOL3 = Soledad run 3
CHU3 = Chualar run 3
SAL3 = Salinas (Bolsa Knolls) run 3
HOL3 = Hollister run 3
TB2 = Trip Blank 2
TS2 = Trip Spike 2
GIL4-C = Gilroy run 4 collocated

5.0 Ambient Results (continued)

Table 2: Propyzamide Ambient Results (Chualar)

Log #	Sample Name	Start Date and Time	Elapsed Time (Hours)	Avg. Flow (LPM)	Total Volume (m^3)	Propyzamide ug/sample	Propyzamide ug/m^3
003	CHU1	7-1-09 11:25	23.00	3.12	4.302	< 0.057	< 0.0133
012	CHU2	7-2-09 10:35	23.20	3.00	4.179	< 0.057	< 0.0136
013	CHU2-C	7-2-09 10:35	23.24	3.02	4.214	< 0.057	< 0.0135
024	CHU3	7-6-09 12:09	23.23	2.98	4.156	< 0.057	< 0.0137
035	CHU4	7-7-09 11:24	23.01	2.98	4.110	< 0.057	< 0.0139
036	CHU4-C	7-7-09 11:24	23.01	2.99	4.124	< 0.057	< 0.0138
044	CHU5	7-8-09 10:26	23.01	2.98	4.110	< 0.057	< 0.0139
053	CHU6	7-13-09 10:53	23.45	2.97	4.181	< 0.057	< 0.0136
054	CHU6-C	7-13-09 10:53	23.45	2.96	4.167	< 0.057	< 0.0137
062	CHU7	7-14-09 10:22	22.96	3.02	4.163	< 0.057	< 0.0137
068	CHU8	7-15-09 09:40	23.40	2.98	4.187	< 0.057	< 0.0136
074	CHU9	7-20-09 13:00	23.41	3.00	4.210	< 0.057	< 0.0135
082	CHU10	7-21-09 12:25	23.47	3.01	4.242	< 0.057	< 0.0134
083	CHU10-C	7-21-09 12:25	23.48	3.01	4.236	< 0.057	< 0.0135
093	CHU11	7-22-09 12:00	23.01	3.04	4.193	< 0.057	< 0.0136
106	CHU12	7-27-09 11:49	23.00	3.19	4.404	< 0.057	< 0.0129
107	CHU12-C	7-27-09 11:49	23.00	3.19	4.404	< 0.057	< 0.0129
115	CHU13	7-28-09 10:51	23.50	3.00	4.233	< 0.057	< 0.0135
121	CHU14	7-29-09 10:21	23.40	3.02	4.236	< 0.057	< 0.0135
128	CHU15	7-30-09 09:45	23.36	3.01	4.222	< 0.057	< 0.0135
137	CHU16	8-3-09 12:12	23.15	3.01	4.177	< 0.057	< 0.0136
149	CHU17	8-4-09 11:24	23.04	3.02	4.171	< 0.057	< 0.0137
150	CHU17-C	8-4-09 11:24	23.04	3.02	4.171	< 0.057	< 0.0137
156	CHU18	8-5-09 10:30	22.98	3.02	4.160	< 0.057	< 0.0137
165	CHU19	8-10-09 12:08	23.00	3.02	4.164	< 0.057	< 0.0137
166	CHU19-C	8-10-09 12:08	23.00	3.02	4.164	< 0.057	< 0.0137
174	CHU20	8-11-09 11:10	23.00	3.00	4.136	< 0.057	< 0.0138
180	CHU21	8-12-09 10:10	23.08	3.01	4.164	< 0.057	< 0.0137
188	CHU22	8-17-09 14:05	23.40	3.01	4.222	< 0.057	< 0.0135
201	CHU23	8-18-09 13:35	23.18	3.00	4.168	< 0.057	< 0.0137
202	CHU23-C	8-18-09 13:35	23.21	3.01	4.188	< 0.057	< 0.0136
209	CHU24	8-19-09 12:55	23.05	3.01	4.159	< 0.057	< 0.0137

5.0 Ambient Results (continued)

Table 2: Propyzamide Ambient Results (Gilroy)

Log #	Sample Name	Start Date and Time	Elapsed Time (Hours)	Avg. Flow (LPM)	Total Volume (m^3)	Propyzamide ug/sample	Propyzamide ug/m^3
007	GIL1	7-1-09 14:25	23.47	3.27	4.609	< 0.057	< 0.0124
017	GIL2	7-2-09 13:55	23.00	2.99	4.122	< 0.057	< 0.0138
018	GIL2-C	7-2-09 13:55	23.00	2.99	4.129	< 0.057	< 0.0138
020	GIL3	7-6-09 08:50	23.50	2.97	4.190	< 0.057	< 0.0136
029	GIL4	7-7-09 08:25	22.99	3.02	4.162	< 0.057	< 0.0137
030	GIL4-C	7-7-09 08:25	22.99	3.00	4.141	< 0.057	< 0.0138
041	GIL5	7-8-09 07:28	22.99	2.96	4.086	< 0.057	< 0.0140
047	GIL6	7-13-09 08:15	23.16	2.97	4.130	< 0.057	< 0.0138
048	GIL6-C	7-13-09 08:15	23.16	3.00	4.165	< 0.057	< 0.0137
059	GIL7	7-14-09 07:26	23.25	3.00	4.188	< 0.057	< 0.0136
065	GIL8	7-15-09 06:42	23.77	3.03	4.317	< 0.057	< 0.0132
077	GIL9	7-20-09 15:15	23.55	3.01	4.256	< 0.057	< 0.0134
088	GIL10	7-21-09 14:15	23.55	3.00	4.235	< 0.057	< 0.0135
089	GIL10-C	7-21-09 14:15	23.58	3.00	4.240	< 0.057	< 0.0134
097	GIL11	7-22-09 14:30	23.00	3.06	4.225	< 0.057	< 0.0135
100	GIL12	7-27-09 09:00	23.00	3.04	4.198	< 0.057	< 0.0136
101	GIL12-C	7-27-09 09:00	23.00	3.03	4.184	< 0.057	< 0.0136
112	GIL13	7-28-09 08:05	23.42	3.00	4.212	< 0.057	< 0.0135
118	GIL14	7-29-09 07:30	23.40	3.00	4.215	< 0.057	< 0.0135
125	GIL15	7-30-09 06:55	23.38	3.01	4.225	< 0.057	< 0.0135
131	GIL16	8-3-09 09:00	23.04	3.01	4.157	< 0.057	< 0.0137
145	GIL17	8-4-09 08:06	22.99	3.02	4.162	< 0.057	< 0.0137
146	GIL17-C	8-4-09 08:06	22.99	3.02	4.162	< 0.057	< 0.0137
153	GIL18	8-5-09 07:09	23.00	3.00	4.136	< 0.057	< 0.0138
159	GIL19	8-10-09 09:14	23.00	3.05	4.212	< 0.057	< 0.0135
160	GIL19-C	8-10-09 09:14	23.00	3.06	4.218	< 0.057	< 0.0135
171	GIL20	8-11-09 08:17	23.00	3.01	4.150	< 0.057	< 0.0137
177	GIL21	8-12-09 07:17	23.08	3.01	4.171	< 0.057	< 0.0137
184	GIL22	8-17-09 10:58	23.17	3.02	4.194	< 0.057	< 0.0136
195	GIL23	8-18-09 10:15	23.13	3.01	4.180	< 0.057	< 0.0136
196	GIL23-C	8-18-09 10:15	23.17	3.01	4.180	< 0.057	< 0.0136
206	GIL24	8-19-09 09:27	23.31	3.00	4.192	<0.057	< 0.0136

5.0 **Ambient Results** (continued)

Table 2: Propyzamide Ambient Results (Hollister)

Log #	Sample Name	Start Date and Time	Elapsed Time (Hours)	Avg. Flow (LPM)	Total Volume (m^3)	Propyzamide ug/sample	Propyzamide ug/m^3
005	HOL1	7-1-09 13:30	23.18	3.08	4.280	<0.057	< 0.0133
006	HOL1-C	7-2-09 13:30	23.21	3.13	4.362	<0.057	< 0.0131
016	HOL2	7-2-09 12:50	23.00	2.99	4.129	<0.057	< 0.0138
026	HOL3	7-6-09 14:06	23.01	2.98	4.117	<0.057	< 0.0138
039	HOL4	7-7-09 13:09	23.01	2.96	4.089	<0.057	< 0.0139
040	HOL4-C	7-7-09 13:09	22.99	2.97	4.099	<0.057	< 0.0139
046	HOL5	7-8-09 12:11	22.99	3.00	4.134	<0.057	< 0.0138
057	HOL6	7-13-09 12:04	23.65	3.01	4.274	<0.057	< 0.0133
058	HOL6-C	7-13-09 12:04	23.65	2.98	4.231	<0.057	< 0.0135
064	HOL7	7-14-09 11:45	23.11	3.03	4.197	<0.057	< 0.0136
070	HOL8	7-15-09 10:55	22.96	3.02	4.163	<0.057	< 0.0137
076	HOL9	7-20-09 14:28	23.51	3.01	4.242	<0.057	< 0.0134
086	HOL10	7-21-09 14:00	23.75	2.99	4.264	<0.057	< 0.0134
087	HOL10-C	7-21-09 14:00	23.79	3.00	4.278	<0.057	< 0.0133
096	HOL11	7-22-09 13:45	22.97	3.02	4.158	<0.057	< 0.0137
110	HOL12	7-27-09 13:05	23.00	3.39	4.678	<0.057	< 0.0122
111	HOL12-C	7-27-09 03:05	23.00	3.36	4.637	<0.057	< 0.0123
117	HOL13	7-28-09 12:08	23.42	3.00	4.219	<0.057	< 0.0135
123	HOL14	7-29-09 11:33	23.41	3.01	4.231	<0.057	< 0.0135
130	HOL15	7-30-09 10:58	23.37	3.00	4.203	<0.057	< 0.0136
141	HOL16	8-3-09 13:43	23.32	2.99	4.187	<0.057	< 0.0136
142	HOL16-C	8-4-09 13:43	23.32	2.96	4.138	<0.057	< 0.0138
152	HOL17	8-4-09 13:05	23.03	3.02	4.169	<0.057	< 0.0137
158	HOL18	8-5-09 12:10	22.99	3.01	4.148	<0.057	< 0.0137
169	HOL19	8-10-09 13:36	23.00	3.01	4.157	<0.057	< 0.0137
170	HOL19-C	8-10-09 13:36	23.00	3.01	4.150	<0.057	< 0.0137
176	HOL20	8-11-09 12:38	23.00	2.99	4.122	<0.057	< 0.0138
182	HOL21	8-12-09 11:38	23.08	3.00	4.157	<0.057	< 0.0137
192	HOL22	8-17-09 15:30	23.66	3.01	4.276	<0.057	< 0.0133
193	HOL22-C	8-18-09 15:30	23.66	3.01	4.276	<0.057	< 0.0133
204	HOL23	8-18-09 15:15	23.56	2.99	4.223	<0.057	< 0.0135
211	HOL24	8-19-09 14:54	23.01	2.96	4.083	<0.057	< 0.0140

5.0 Ambient Results (continued)

Table 2: Propyzamide Ambient Results (King City)

Log #	Sample Name	Start Date and Time	Elapsed Time (Hours)	Avg. Flow (LPM)	Total Volume (m^3)	Propyzamide ug/sample	Propyzamide ug/m
001	KCY1	7-1-09 09:30	23.25	2.94	4.097	<0.057	< 0.0139
008	KCY2	7-2-09 09:00	23.29	3.05	4.265	<0.057	< 0.0134
009	KCY2-C	7-2-09 09:00	23.29	3.02	4.216	<0.057	< 0.0135
022	KCY3	7-6-09 10:29	23.39	2.98	4.177	<0.057	< 0.0136
031	KCY4	7-7-09 09:56	23.00	3.08	4.254	<0.057	< 0.0134
032	KCY4-C	7-7-09 09:56	23.00	3.05	4.212	<0.057	< 0.0135
042	KCY5	7-8-09 08:58	23.01	2.98	4.109	<0.057	< 0.0139
049	KCY6	7-13-09 09:45	23.17	2.96	4.111	<0.057	< 0.0139
050	KCY6-C	7-13-09 09:45	23.17	2.99	4.152	<0.057	< 0.0137
060	KCY7	7-14-09 08:57	23.17	3.00	4.165	<0.057	< 0.0137
066	KCY8	7-15-09 08:06	23.63	3.01	4.271	<0.057	< 0.0133
072	KCY9	7-20-09 11:20	23.28	3.06	4.270	<0.057	< 0.0133
078	KCY10	7-21-09 10:45	23.27	3.02	4.212	<0.057	< 0.0135
079	KCY10-C	7-21-09 10:45	23.27	3.04	4.240	<0.057	< 0.0134
091	KCY11	7-22-09 10:20	23.00	3.02	4.164	<0.057	< 0.0137
102	KCY12	7-27-09 10:27	23.00	3.17	4.376	<0.057	< 0.0130
103	KCY12-C	7-27-09 10:27	23.00	3.11	4.287	<0.057	< 0.0133
113	KCY13	7-28-09 09:29	23.45	3.02	4.244	<0.057	< 0.0134
119	KCY14	7-29-09 08:56	23.42	3.01	4.225	<0.057	< 0.0135
126	KCY15	7-30-09 08:21	23.37	3.01	4.223	<0.057	< 0.0135
133	KYC16	8-3-09 10:35	23.45	2.98	4.196	<0.057	< 0.0136
134	KYC16-C	8-3-09 10:35	23.45	3.09	4.343	<0.057	< 0.0131
147	KYC17	8-4-09 10:07	22.99	3.02	4.161	<0.057	< 0.0137
154	KYC18	8-5-09 09:09	23.00	3.02	4.163	<0.057	< 0.0137
161	KYC19	8-10-09 10:46	23.00	3.05	4.205	<0.057	< 0.0136
162	KYC19-C	8-10-09 10:46	23.00	3.05	4.212	<0.057	< 0.0135
172	KYC20	8-11-09 09:49	23.00	3.01	4.150	<0.057	< 0.0137
178	KYC21	8-12-09 08:49	23.08	3.01	4.171	<0.057	< 0.0137
186	KCY22	8-17-09 12:25	23.40	3.02	4.236	<0.057	< 0.0135
197	KCY23	8-18-09 11:50	23.06	3.01	4.167	<0.057	< 0.0137
198	KCY23-C	8-18-09 11:50	23.06	3.01	4.167	<0.057	< 0.0137
207	KCY24	8-19-09 11:00	23.35	3.01	4.213	<0.057	< 0.0135

5.0 Ambient Results (continued)

Table 2: Propyzamide Ambient Results (Salinas)

Log #	Sample Name	Start Date and Time	Elapsed Time (Hours)	Avg. Flow (LPM)	Total Volume (m^3)	Propyzamide ug/sample	Propyzamide ug/m^3
004	SAL1	7-1-09 14:25	23.38	3.13	4.394	<0.057	< 0.0130
014	SAL-2	7-2-09 13:55	23.05	3.01	4.166	<0.057	< 0.0137
015	SAL2-C	7-2-09 13:55	23.08	3.01	4.171	<0.057	< 0.0137
025	SAL3	7-6-09 08:50	23.11	3.03	4.204	<0.057	< 0.0136
037	SAL4	7-7-09 08:25	23.00	2.74	3.776	<0.057	< 0.0151
038	SAL4-C	7-7-09 08:25	23.00	2.76	3.804	<0.057	< 0.0150
045	SAL5	7-8-09 07:28	22.99	2.97	4.099	<0.057	< 0.0139
055	SAL6	7-13-09 08:15	23.60	3.00	4.251	<0.057	< 0.0134
056	SAL6-C	7-13-09 08:15	23.60	3.00	4.244	<0.057	< 0.0134
063	SAL7	7-14-09 07:26	23.10	2.96	4.098	<0.057	< 0.0139
069	SAL8	7-15-09 06:42	23.25	3.04	4.243	<0.057	< 0.0134
075	SAL9	7-20-09 15:15	23.43	3.01	4.227	<0.057	< 0.0135
084	SAL10	7-21-09 14:15	23.66	3.00	4.255	<0.057	< 0.0134
085	SAL10-C	7-21-09 14:15	22.97	3.00	4.138	<0.057	< 0.0138
095	SAL11	7-22-09 14:30	23.00	2.98	4.109	<0.057	< 0.0139
108	SAL12	7-27-09 09:00	23.00	3.26	4.493	<0.057	< 0.0127
109	SAL12-C	7-27-09 09:00	23.00	3.28	4.527	<0.057	< 0.0126
116	SAL13	7-28-09 08:05	23.40	3.01	4.222	<0.057	< 0.0135
122	SAL14	7-29-09 07:30	23.42	3.02	4.240	<0.057	< 0.0134
129	SAL15	7-30-09 06:55	23.37	3.01	4.217	<0.057	< 0.0135
139	SAL16	8-3-09 09:00	23.09	3.02	4.180	<0.057	< 0.0136
140	SAL16-C	8-4-09 08:06	23.09	2.99	4.139	<0.057	< 0.0138
151	SAL17	8-4-09 08:06	23.01	3.01	4.158	<0.057	< 0.0137
157	SAL18	8-5-09 07:09	22.98	3.01	4.146	<0.057	< 0.0137
167	SAL19	8-10-09 09:14	23.00	3.02	4.164	<0.057	< 0.0137
168	SAL19-C	8-10-09 09:14	23.04	3.01	4.164	<0.057	< 0.0137
175	SAL20	8-11-09 08:17	22.99	3.00	4.141	<0.057	< 0.0138
181	SAL21	8-12-09 07:17	23.09	3.02	4.180	<0.057	< 0.0136
190	SAL22	8-17-09 10:58	23.46	3.00	4.226	<0.057	< 0.0135
191	SAL22-C	8-18-09 10:15	23.46	3.02	4.254	<0.057	< 0.0134
203	SAL23	8-18-09 10:15	23.40	2.99	4.201	<0.057	< 0.0136
210	SAL24	8-19-09 09:27	23.05	2.99	4.138	<0.057	< 0.0138

5.0 Ambient Results (continued)

Table 2: Propyzamide Ambient Results (Soledad)

Log #	Sample Name	Start Date and Time	Elapsed Time (Hours)	Avg. Flow (LPM)	Total Volume (m^3)	Propyzamide ug/sample	Propyzamide ug/m^3
002	SOL1	7-1-09 10:40	23.08	3.13	4.338	<0.057	< 0.0131
010	SOL2	7-2-09 09:50	23.28	2.97	4.143	<0.057	< 0.0138
011	SOL2-C	7-2-09 09:50	23.30	3.00	4.196	<0.057	< 0.0136
023	SOL3	7-6-09 11:28	23.28	2.98	4.165	<0.057	< 0.0137
033	SOL4	7-7-09 10:47	23.00	2.97	4.101	<0.057	< 0.0139
034	SOL4-C	7-7-09 10:47	23.00	3.05	4.212	<0.057	< 0.0135
043	SOL5	7-8-09 09:50	23.03	3.06	4.223	<0.057	< 0.0135
051	SOL6	7-13-09 10:26	23.26	3.01	4.203	<0.057	< 0.0136
052	SOL6-C	7-13-09 10:26	23.26	3.01	4.203	<0.057	< 0.0136
061	SOL7	7-14-09 09:44	23.17	3.01	4.180	<0.057	< 0.0136
067	SOL8	7-15-09 08:51	23.45	3.00	4.216	<0.057	< 0.0135
073	SOL9	7-20-09 12:20	23.37	2.99	4.195	<0.057	< 0.0136
080	SOL10	7-21-09 11:45	23.50	3.00	4.233	<0.057	< 0.0135
081	SOL10-C	7-21-09 11:45	23.50	3.01	4.247	<0.057	< 0.0134
092	SOL11	7-22-09 11:20	23.00	3.02	4.170	<0.057	< 0.0137
104	SOL12	7-27-09 11:08	23.00	3.22	4.445	<0.057	< 0.0128
105	SOL12-C	7-27-09 11:08	23.00	3.20	4.417	<0.057	< 0.0129
114	SOL13	7-28-09 10:10	23.43	3.02	4.241	<0.057	< 0.0134
120	SOL14	7-29-09 09:36	23.42	3.04	4.267	<0.057	< 0.0134
127	SOL15	7-30-09 09:01	23.37	3.01	4.223	<0.057	< 0.0135
135	SOL16	8-3-09 11:29	23.29	3.01	4.208	<0.057	< 0.0135
136	SOL16-C	8-3-09 11:29	23.29	3.00	4.195	<0.057	< 0.0136
148	SOL17	8-4-09 10:50	23.01	3.02	4.165	<0.057	< 0.0137
155	SOL18	8-5-09 09:53	22.99	3.00	4.142	<0.057	< 0.0138
163	SOL19	8-10-09 11:35	23.00	3.06	4.226	<0.057	< 0.0135
164	SOL19-C	8-10-09 11:35	23.00	3.06	4.226	<0.057	< 0.0135
173	SOL20	8-11-09 10:37	23.00	3.00	4.136	<0.057	< 0.0138
179	SOL21	8-12-09 09:37	23.08	3.01	4.165	<0.057	< 0.0137
187	SOL22	8-17-09 13:30	23.28	3.01	4.208	<0.057	< 0.0135
199	SOL23	8-18-09 12:50	23.25	3.01	4.202	<0.057	< 0.0136
200	SOL23-C	8-18-09 12:50	23.29	3.00	4.196	<0.057	< 0.0136
208	SOL24	8-19-09 12:10	23.03	3.01	4.161	<0.057	< 0.0137

6.0 Quality Control Results

Field samples collected for quality control purposes included 48 collocated pairs, seven (7) field spikes, four (4) trip spikes and eight (8) trip blanks.

Ambient concentration results from collocated pairs are presented in **Table 3**: Propyzamide Ambient QC Collocated Concentration Results. Calculating the Relative Percent Difference (RPD) between the primary and collocated samples was not performed because all reported concentration results were less than the MDL of 0.057 ug/sample. The formula for calculating the RPD for Table three (3) would have been as follows:

$$RPD = \frac{(Collocated.ug/m^3 - Sample.ug/m^3)}{\left[\ (Collocated.ug/m^3 + Sample.ug/m^3) \div 2\ \right]} \times 100$$

Table 3: Propyzamide Ambient QC Collocated Concentration Results

Prim & Colloc Log Numbers	Primary Sample Name	Collocated Sample Name	Date Collected	Date Analyzed	Primary (ug/m3)	Collocated (ug/m3)
012 & 013	CHU2	CHU2-C	7/3/2009	7/7/2009	<0.0136	<0.0135
035 & 036	CHU4	CHU4-C	7/8/2009	7/14/2009	<0.0139	<0.0138
053 & 054	CHU6	CHU6-C	7/14/2009	7/20/2009	<0.0136	<0.0137
082 & 083	CHU10	CHU10-C	7/22/2009	7/28/2009	<0.0134	<0.0135
106 & 107	CHU12	CHU12-C	7/28/2009	8/3/2009	<0.0129	<0.0129
149 & 150	CHU17	CHU17-C	8/5/2009	8/11/2009	<0.0137	<0.0137
165 & 166	CHU19	CHU19-C	8/11/2009	8/17/2009	<0.0137	<0.0137
201 & 202	CHU23	CHU23-C	8/19/2009	8/25/2009	<0.0137	<0.0136
017 & 018	GIL2	GIL2-C	7/3/2009	7/7/2009	<0.0138	<0.0138
029 & 030	GIL4	GIL4-C	7/8/2009	7/14/2009	<0.0137	<0.0138
047 & 048	GIL6	GIL6-C	7/14/2009	7/20/2009	<0.0138	<0.0137
088 & 089	GIL10	GIL10-C	7/22/2009	7/28/2009	<0.0135	<0.0134
100 & 101	GIL12	GIL12-C	7/28/2009	8/3/2009	<0.0136	<0.0136
145 & 146	GIL17	GIL17-C	8/5/2009	8/11/2009	<0.0137	<0.0137
159 & 160	GIL19	GIL19-C	8/11/2009	8/17/2009	<0.0135	<0.0135
195 & 196	GIL23	GIL23-C	8/19/2009	8/25/2009	<0.0136	<0.0136

6.0 Quality Control Results (continued)

Table 3: Propyzamide Ambient QC Collocated Concentration Results						
Prim & Colloc Log Numbers	**Primary Sample Name**	**Collocated Sample Name**	**Date Collected**	**Date Analyzed**	**Primary (ug/m3)**	**Collocated (ug/m3)**
005 & 006	HOL1	HOL1-C	7/2/2009	7/6/2009	<0.0133	<0.0131
039 & 040	HOL4	HOL4-C	7/8/2009	7/15/2009	<0.0139	<0.0139
057 & 058	HOL6	HOL6-C	7/14/2009	7/20/2009	<0.0133	<0.0135
086 & 087	HOL10	HOL10-C	7/22/2009	7/28/2009	<0.0134	<0.0133
110 & 111	HOL12	HOL12-C	7/28/2009	8/3/2009	<0.0122	<0.0123
141 & 142	HOL16	HOL16-C	8/4/2009	8/10/2009	<0.0136	<0.0131
169 & 170	HOL19	HOL19-C	8/11/2009	8/17/2009	<0.0137	<0.0137
192 & 193	HOL22	HOL22-C	8/18/2009	8/25/2009	<0.0133	<0.0133
008 & 009	KCY2	KCY2-C	7/3/2009	7/7/2009	<0.0134	<0.0135
031 & 032	KCY4	KCY4-C	7/8/2009	7/14/2009	<0.0134	<0.0135
049 & 050	KCY6	KCY-C	7/14/2009	7/20/2009	<0.0139	<0.0137
078 & 079	KCY10	KCY10-C	7/22/2009	7/27/2009	<0.0135	<0.0134
102 & 103	KCY12	KCY12-C	7/28/2009	7/20/2009	<0.0130	<0.0133
133 & 134	KYC16	KYC16-C	8/4/2009	8/10/2009	<0.0136	<0.0131
161 & 162	KYC19	KYC19-C	8/11/2009	8/17/2009	<0.0136	<0.0135
197 & 198	KCY23	KCY23-C	8/19/2009	8/25/2009	<0.0137	<0.0137
014 & 015	SAL2	SAL2-C	7/3/2009	7/7/2009	<0.0137	<0.0137
037 & 038	SAL4	SAL4-C	7/8/2009	7/15/2009	<0.0151	<0.0150
055 & 056	SAL6	SAL6-C	7/14/2009	7/20/2009	<0.0134	<0.0134
084 & 085	SAL10	SAL10-C	7/22/2009	7/28/2009	<0.0134	<0.0138
108 & 109	SAL12	SAL12-C	7/28/2009	8/3/2009	<0.0127	<0.0126
139 & 140	SAL16	SAL16-C	8/4/2009	8/10/2009	<0.0136	<0.0138
167 & 168	SAL1-C	SAL19-C	8/10/2009	8/17/2009	<0.0137	<0.0137
190 & 191	SAL22	SAL22-C	8/18/2009	8/25/2009	<0.0135	<0.0134
010 & 011	SOL2	SOL2-C	7/3/2009	7/7/2009	<0.0138	<0.0136
033 & 034	SOL4	SOL4-C	7/8/2009	7/14/2009	<0.0139	<0.0135
051 & 052	SOL6	SOL6-C	7/14/2009	7/20/2009	<0.0136	<0.0136
080 & 081	SOL10	SOL10-C	7/22/2009	7/27/2009	<0.0135	<0.0134
104 & 105	SOL12	SOL12-C	7/28/2009	8/3/2009	<0.0128	<0.0129
135 & 136	SOL16	SOL16-C	8/4/2009	8/10/2009	<0.0135	<0.0136
163 & 164	SOL19	SOL19-C	8/11/2009	8/17/2009	<0.0135	<0.0135
199 & 200	SOL23	SOL23-C	8/19/2009	8/25/2009	<0.0136	<0.0136

6.0 Quality Control Results (continued)

Spiked XAD resin sorbent tubes were prepared by the laboratory each Thursday and kept in refrigerated storage until used for the following week's sampling as either field or trip spikes. Laboratory spike values were 3.0 ug of propyzamide per sample for each of the seven (7) field spikes and four (4) trip spikes prepared. Field spikes were only collected at either the Chualar or Gilroy monitoring sites.

Percent recoveries for the propyzamide field spikes are presented in **Table 4**, Propyzamide Ambient QC Field Spike Results. Recoveries ranged from 82% to 95% with an average recovery of 91.7% and a standard deviation of 4.8%. Recovery concentration values ranged from 2.58 to 2.91 ug/sample.

Please reference the following equations used to calculate the field spike recovery results presented in **Table 4**:

$$FieldSpike\frac{ug}{m^3} = Field\ \mathrm{Recovery}\left(\frac{ug}{sample}\right) \div TotalVolume\left(\frac{sample}{m^3}\right)$$

$$NetSpike\frac{ug}{m^3} = FieldSpikeConcentration\left(\frac{ug}{m^3}\right) - \mathrm{Primary}Sample\left(\frac{ug}{m^3}\right)$$

$$NetSpike\frac{ug}{sample} = NetSpike\left(\frac{ug}{m^3}\right) \times TotalVolume\left(\frac{m^3}{sample}\right)$$

$$SpikePercent\ \mathrm{Recovery}\frac{ug}{sample} = NetSpike\left(\frac{ug}{sample}\right) \div LabSpikeValue\left(\frac{ug}{sample}\right) \times 100\%$$

Table 4: Propyzamide Ambient QC Field Spike Results

Sample ID	Field Recovery (ug/sample)	Total Volume (m^3)	Field Spike Concentration (ug/m^3)	Primary Sample (ug/m^3)	Net Spike (ug/m^3)	Net Spike (ug/sample)	Lab Spike Value (ug/sample)	Spike Percent Recovery
GIL3	<0.057	4.190	N.A.	<0.0136	N.A.	N.A.	N.A.	N.A.
GIL3-FS	2.839	4.197	0.676	N.A.	0.663	2.782	3	93%
CHU11	<0.057	4.193	N.A.	<0.0136	N.A.	N.A.	N.A.	N.A.
CHU11-FS	2.613	4.110	0.636	N.A.	0.622	2.558	3	82%
GIL11	<0.057	4.225	N.A.	<0.0135	N.A.	N.A.	N.A.	N.A.
GIL11-FS	2.914	4.232	0.689	N.A.	0.675	2.857	3	95%
GIL16	<0.057	4.157	N.A.	<0.0137	N.A.	N.A.	N.A.	N.A.
GIL16-FS	2.815	4.171	0.675	N.A.	0.661	2.758	3	92%
CHU16	<0.057	4.177	N.A.	<0.0136	N.A.	N.A.	N.A.	N.A.
CHU16-FS	2.621	4.170	0.629	N.A.	0.615	2.564	3	85%
GIL22	<0.057	4.194	N.A.	<0.0136	N.A.	N.A.	N.A.	N.A.
GIL22-FS	2.581	4.187	0.616	N.A.	0.603	2.524	3	84%
CHU22	<0.057	4.222	N.A.	<0.0135	N.A.	N.A.	N.A.	N.A.
CHU22-FS	2.888	4.229	0.683	N.A.	0.669	2.831	3	94%

6.0 Quality Control Results (continued)

Percent recoveries for the four (4) propyzamide trip spikes are presented in **Table 5**, Propyzamide Ambient QC Trip Spike Results. Propyzamide recoveries averaged 88% with a standard deviation of 15%. Recovery concentration values ranged from 1.94 to 2.94 ug/sample. In comparison, laboratory spike recoveries presented in **Appendix C,** Laboratory Results and Report, averaged 91% with a standard deviation of 12% and values ranging from 2.21 to 2.91 ug/sample.

Please reference the following equation used to calculate the trip spike and blank recovery results presented in **Table 5**, Trip Spike Results and **Table 6**, Trip Blank Results:

$$\%\,\mathrm{Recovery} = \left(Measured\left(\frac{ug}{sample}\right) \div Expected\left(\frac{ug}{sample}\right)\right) \times 100\%$$

Table 5: Propyzamide Ambient QC Trip Spike Results

Log #	Sample Name	Date Collected	Date Analyzed	Expected (ug/sample)	Measured (ug/sample)	Recovery (%)
028	TS1	7/7/2009	7/12/2009	3.0	2.834	94.5%
099	TS2	7/23/2009	7/29/2009	3.0	1.944	64.8%
143	TS3	8/3/2009	8/10/2009	3.0	2.936	97.9%
205	TS4	8/18/2009	8/24/2009	3.0	2.843	94.8%

There were eight (8) designated trip blanks; one for each week of sampling. No propyzamide was detected (ND) in any trip blank and analytical results are presented in **Table 6**.

Table 6: Propyzamide Ambient QC Trip Blank Results

Log #	Sample Name	Date Collected	Date Analyzed	MDL (ug/sample)	Measured (ng/sample)
019	TB1	7/3/2009	7/6/2009	0.057ug/sample	ND
027	TB2	7/7/2009	7/13/2009	0.057ug/sample	ND
071	TB3	7/16/2009	7/21/2009	0.057ug/sample	ND
090	TB4	7/21/2009	7/28/2009	0.057ug/sample	ND
124	TB5	7/30/2009	8/5/2009	0.057ug/sample	ND
144	TB6	8/3/2009	8/10/2009	0.057ug/sample	ND
183	TB7	8/13/2009	8/18/2009	0.057ug/sample	ND
194	TB8	8/17/2009	8/25/2009	0.057ug/sample	ND

Calculated values presented in QC Results Tables 4 through 6 were produced using original laboratory data to six (6) decimal places where available. QC results were all within expected values except for trip spike TS2 which had a low recovery of 64.8%. The lab results report indicated that this Trip Spike may have received an insufficient spike in the lab. There is no field-generated information that would account for, or suggest why, this low recovery may or might have occurred.

7.0 Discussion

The purpose of this Discussion Section is to present relevant or updated information that provides additional perspective or context to the results presented in this report. In summary, these results indicated that all 192 ambient samples had Propyzamide concentrations below the Method Detection Limit (MDL) of 0.014ug/m^3 (based on the target sample flow rate of 3.0 LPM and collection duration of 23 hours).

Air monitoring for ambient concentrations of Propyzamide was previously performed by the DPR in June and July 2000 at several sites within the city of Lompoc, Santa Barbara County also using sorbent-tube sample capture. Analytical results indicated detection of Propyzamide above the MDL of 0.0017ug/ m^3 but below the Estimated Quantitation Limit (EQL) of 0.0084ug/m^3 (based on the sample flow rate of 15.0 LPM and collection duration of 24 hours).

In August 2009, the ARB conducted ambient air monitoring for Propyzamide during an agricultural application in Monterey County. Results of all 50 sorbent-tube samples indicated concentrations below the MDL(s) ranging from 0.019 ug/m^3 to 0.248 ug/m^3 (based on 3.0 LPM and collection durations ranging from 16.4 hours to 1.1 hours, respectively).

This 2009 ARB study was designed, in part, using 2007 use-data supplied by the DPR. Use-data for subsequent years has been obtained from the DPR and is presented in the following table. Please note the substantial (16-56%) reductions in usage (lbs. of active ingredient per month) during the period of monitoring, July 1 through August 20, 2009 in Monterey County.

Monterey County	**2007**	**2008**	**2009**
June	6,652	5,450	5,547
July	7,948	7,999	5,894
August	7,698	6,930	3,396

In conclusion, the non-detect analytical results presented in this report are consistent with results from a prior ambient study performed in 2000 as well as an application study performed in 2009. Also, the reduced Propyzamide usage-levels subsequently reported for summer 2009 may also have contributed to the non-detect results cited in this report.

APPENDIX A

Sampling Protocol for Diazinon and Propyzamide Ambient Study

California Environmental Protection Agency
AIR RESOURCES BOARD

Monitoring and Laboratory Division
Air Quality Surveillance Branch

Sampling Protocol for Diazinon and Propyzamide Ambient Study

July 7, 2009

Prepared by:

Steve Rider
Air Pollution Specialist
Special Purpose Monitoring Section

Signatures:

Kenneth R. Stroud, Chief Date
Air Quality Surveillance Branch
Air Resources Board

Cindy Castronovo, Chief Date
Northern Laboratory Branch
Air Resources Board

The following protocol has been reviewed and approved by staff of the Air Resources Board (ARB). Approval of this protocol does not necessarily reflect the views and policies of the ARB, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

Table of Contents

1.0 Introduction

At the request of the Department of Pesticide Regulation (DPR), the Air Resources Board (ARB) will conduct ambient air monitoring for the pesticides Diazinon and Propyzamide in Monterey, San Benito and Santa Clara Counties. Ambient Air monitoring for these pesticides will occur over a period of eight weeks. This monitoring will be performed under the requirements of the California Code of Regulation, Food and Agriculture Code, Section 14022(c) which requires the ARB, "…to document the level of airborne emissions…of pesticides that may be determined to pose a present or potential hazard...", when requested by the DPR. Monitoring is being conducted to coincide with the use of Diazinon as an insecticide on lettuce and other food crops for human consumption and Propyzamide as an herbicide used primarily for controlling grasses and some broad-leafed weeds.

The "Standard Operating Procedure Sampling and Analysis of Diazinon" dated June 2009 and "Standard Operating Procedure Sampling and Analysis of Propyzamide" dated June 2009 are included as Appendix A.

2.0 Chemical Properties of Diazinon and Propyzamide

Diazinon: The following information on the physico-chemical properties of Diazinon (see Table 1) are obtained from DPR's, "Use Information and Air Monitoring Recommendations for the Pesticide Active Ingredient Diazinon", dated May 2009 and is included as Appendix B or from the http://extoxnet.orst.edu/pips/diazinon.html website. Diazinon is a nonsystemic organophosphate insecticide and is moderately toxic to humans, birds and laboratory animals. Its principle toxic effect is the inhibition of acetylcholinesterase (AchE). The inhibition of AchE can lead to central nervous system and neuromuscular dysfunction, but its toxic effects are reversible and tend to dissipate after exposure ceases. Diazinon is available in dust, granules, seed dressings, wettable powder and emulsifiable solution formulations. It is generally used on farms to control sucking and leaf eating insects.

Propyzamide: The following information on the physico-chemical properties of Propyzamide (see Table 2) are obtained from DPR's, "Use Information and Air Monitoring Recommendations for the Pesticide Active Ingredient Propyzamide", dated April 2009 and is included as Appendix B or from the http://extoxnet.orst.edu/pips/diazinon.html website. Propyzamide is a white or off-white crystalline solid with no odor. It is relatively stable and is noncorrosive. Propyzamide is practically non-toxic to birds, mammals and warm water fish. It is slightly toxic to cold water fish.

TABLE 1: PHYSICO-CHEMICAL PROPERTIES OF DIAZINON

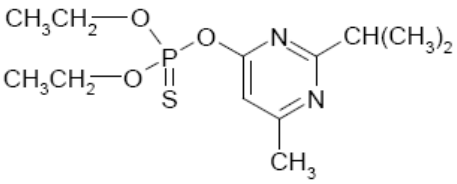
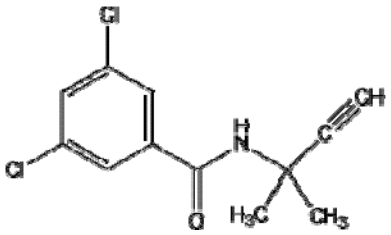
Property	Information
Chemical Name	O,O-Diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate
Chemical Formula	$C_{12}H_{21}N_2O_3PS$
Chemical Structure	
Molecular Weight	304.35
CAS Registry	333-41-5
Color	Colorless
Physical State	Liquid
Odor	Faint ester-like odor
Solubility	40 mg/l @ 20° C
Vapor Pressure	$9.01X10^{-5}$ mm Hg @ 20° C $1.1X10^{-3}$ mm Hg @ 40° C
Henry's Law Constant	$1.17\ X10^{-7}$ atm-m^3/mol
Data Source	Agency for Toxic Substances and Disease Registry (ATSDR, 2008)

TABLE 2: PHYSICO-CHEMICAL PROPERTIES OF PROPYZAMIDE

Property	Information
Chemical Name	3,5-dichloro-*N*-(1,1-dimethyl-2-propynyl)benzamide
Chemical Formula	$C_{12}H_{11}Cl_2NO$
Chemical Structure	
Molecular Weight	256.1
CAS Registry	23950-58-5
Color	Colorless
Physical State	Powder
Odor	Odorless
Solubility	15 mg/L (ppm) (at 25 °C)
Vapor Pressure	0.058 mPa (at 25 °C) 8.5 x 10^{-5} mmHg (at 25 °C)
Henry's Law Constant	9.8 x 10-9 (at 25 °C)
Data Source	CDPR, BCPC 2000 and Extoxnet

3.0 Project Goals and Objectives

The goal of this monitoring project is to measure the concentrations of both Diazinon and Propyzamide in ambient air throughout Monterey, San Benito and Santa Clara Counties.

To achieve the project goals, the following objectives should be met:

1. Identification of monitoring sites that mutually satisfies criteria for ambient air sampling and DPR's requirements.

2. Appropriate application of sampling/monitoring equipment to determine ambient Diazinon and Propyzamide concentrations.

3. Application of relevant field quality assurance/quality control practices to ensure the integrity of field samples.

4. At the conclusion of the project, MLD will provide DPR with a final report containing all relevant information, data and execution of this project.

4.0 Contacts

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pwofford@cdpr.ca.gov

5.0 Study Location and Design

Diazinon and Propyzamide are used throughout the State of California and throughout the calendar year. 2007 data shows that Monterey County has the highest Diazinon and Propyzamide use by a factor of three (3) over the second highest use counties of Fresno (Diazinon) and Santa Barbara (Propyzamide). In Monterey County, use of both pesticides is highest during the months of June through August. Propyzamide usage drops off tremendously in the month of September. DPR has requested that ARB perform ambient air monitoring for Diazinon and Propyzamide during the summer months.

Ambient Air Monitoring

The sampling process is designed to collect both Diazinon and Propyzamide on a single XAD resin sorbent tube. The Laboratory will extract both pesticides from each sample tube for analysis.

Samples will be collected by passing a measured volume of ambient air through one XAD resin sorbent tube that is mounted on a sampling tree as shown in Figure 1. The exposed XAD-2 resin sorbent tubes (SKC #226-30-06) with 400 and 200 mg of packing are stored in an ice chest (on dry ice) or in a freezer until extracted in the laboratory with organic solvent. The sampling flow rates of 3.0 liters per minute (LPM) for both pesticides will be accurately measured and the sampling system operated continuously

for 24 hours ± 1 with the exact operating interval recorded on the log sheet. The resin sorbent tubes will be protected from direct sunlight or rain and supported about 1.7 meters above the ground or roofline. Whether on the ground or a rooftop there shall not be any major obstructions and each site must meet generally accepted siting criteria for the ambient monitoring. At the end of each sampling period, the tubes will be placed in culture tubes with an identification label affixed. At least once a week, collected samples will be transported on dry ice to ARB's Monitoring and Laboratory Division laboratory for analysis. The samples will be stored in the freezer or extracted/analyzed immediately.

Sample flow is controlled by an inline rotameter (flow range of 0-5 LPM). Each site will have one (1) collocated sample per week. Prior to each sampling period, the sampler is leak checked with an unopened sacrificial resin sorbent tube. After the sample resin sorbent tube is installed, the flow rate is set at 3.0 LPM using a digital mass flow meter. The flow rate will be checked at the end of each sampling period, the start/end flows are documented on the log sheet and resin sorbent tube label. The end flow must be within ± 20% of 3.0 LPM (± 0.6 LPM or 2.4–3.6 LPM). The field log sheet (see Figure 2) and resin sorbent tube label will contain the following information: log #, sample name, sampler ID number, start and end date and time, start and end counter reading, start and end mass flow meter display reading, comments (if applicable), weather conditions and the start and end initials of the operator.

FIGURE 1: AIR SAMPLER TREE WITH PUMP

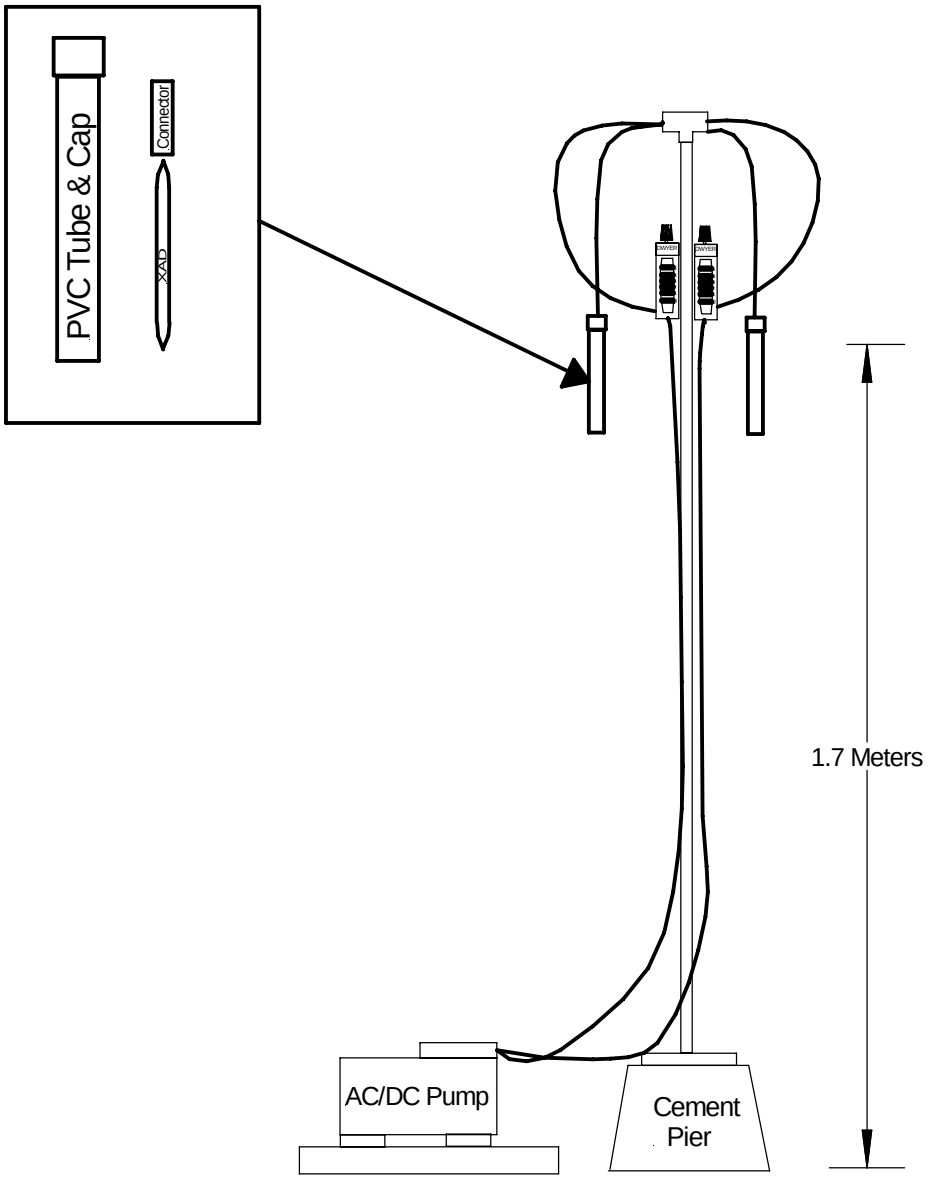


FIGURE 2: FIELD LOG SHEET
RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Pesticide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1 lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time Entry Example (6/14/08 13:42)		Counter		Mass Flow Meter Display		Corrected Average Flow	Comment Number	Weather K,P,C,F&R		Initials	
			Start	End	Start	End	Start	End			Start	End	Start	End

MFM Used #: _____ **Slope:** _____ **Intercept:** _____

1 of 12

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog and R = Rain (any)

Six sampling sites (five air monitoring sites and one urban background site) were selected in relatively high-population areas or in areas frequented by people (e.g., schools or school district offices, fire stations or other public buildings). Each air monitoring site is located in proximity to fields which have Diazinon and Propyzamide applied. Pesticide air monitoring site locations are determined using historical pesticide use information supplied by the California Department of Pesticide Regulation's 2009 monitoring recommendations. Sites are located in areas with historically high Diazinon and Propyzamide pesticide use.

The ambient monitoring sites in Monterey and San Benito Counties are located at:

Gilroy – Background Site
Gilroy Monitoring Station – Bay Area AQMD
Located at Glen View Elementary School
695 9th Street
Gilroy, CA

Hollister
R.O Hardin K-5 School
761 South Street
Hollister, CA

Salinas
Santa Rita School District – Maintenance Facility
56 Rogge Road
Salinas, CA

Chualar
Salinas Rural Fire District – Chualar Station
24281 Washington Street
Chualar, CA

Soledad
Jack Franscioni Elementary School
779 Orchard Lane
Soledad, CA

King City
King City Monitoring Station – Monterey Bay Unified APCD
Located at San Lorenzo Elementary School
421 Pearl Street
King City, CA

Sampling schedules during this ambient monitoring project will reflect current furlough and overtime policies. ARB staff will continue to collect samples for an eight (8) week period (July – August '09). As agreed by the Department of Pesticide Regulations, alterations to the propyzamide recommendation will result in three (3) 23-hour samplers per week. Sampling will begin at the first site on Monday morning at approximately 11:00 am. Samples will be removed and new sample media installed 23 hours later on

Tuesday morning, and again 23 hours later on Wednesday morning. The third set of samples will be removed 23 hours later at approximately 8:00 on Thursday morning. All flow rates will be set to 3.0 LPM.

6.0 Sampling and Analysis Procedures

Special Purpose Monitoring Section (SPM) personnel will hand-carry samples to and from MLD's laboratory in Sacramento, and to and from the sampling location. The samples will not be exposed to extreme conditions or subjected to rough handling that might affect sample integrity.

At each sampling site, the operator will assure that all required sample collection information is recorded on the affixed XAD resin sorbent tube identification label and field log sheet. After removing samples from the sampling tree, samples are placed in a glass tube and stored in a cooler with dry ice at 4° C or less until returned to the laboratory. The sample tubes will be transported as soon as reasonably possible to ARB's Sacramento Monitoring and Laboratory Division laboratory for analysis. These samples will be stored in the freezer or extracted/analyzed immediately. Samples are collected in the field with a flow rate of 3.0 LPM.

All reported sampling times will be reported in Pacific Standard Time (PST).

The Northern Laboratory Branch (NLB) will supply SPM with XAD resin sorbent tubes and will perform analyses for Diazinon and Propyzamide on the collected ambient samples and report results to SPM.

Laboratory analyses will be performed in accordance with applicable standard operating procedures (Standard Operating Procedure Sampling and Analysis of (Diazinon) and (Propyzamide)) included as Appendix A.

The XAD resin sorbent tube sample validation and analytical quality control criteria are as follows.

1. **Sample Hold Time**: Sample hold time criteria will be established by the Laboratory. Samples not analyzed within the established holding time will be invalidated by the Laboratory.

2. **Replicate Analysis**: Laboratory to establish relative percent difference (RPD) criteria for replicate analysis. Replicate analysis shall be performed on every tenth sample (10%) per analytical batch sequence (excluding standards, controls and other quality control data). Lab to provide replicate analytical results and RPD.

3. **Method Detection Limit (MDL)**: Sample analytical results less than the MDL shall be reported as a less than numerical value. This less than numerical value shall incorporate any dilutions/concentrations.

4. **Analytical Linear Range**: Any analytical result greater than the highest calibration standard shall be reanalyzed within the calibrated linear range.

7.0 List of Field Equipment

Quantity	Item Description
(7)	Pesticide stick samplers with 2 ea. rotameters and separate plumbing for use with two (2) pumps
(7)	Cement piers for holding pesticide stick samplers
(13)	AC pumps
(1)	Global Positioning System (GPS) with backup batteries and carrying case
(1)	Digital Camera with backup batteries and carrying case
(2)	Aalborg mass flow meter 0-5 LPM.
(1)	Dry ice chest
(1)	Ladder
(7)	Extension cords
(7)	Elapsed time meters

8.0 Quality Control

Quality control procedures will be observed to ensure the integrity of samples collected in the field. National Institute of Standards and Technology (NIST)-traceable transfer standards will be used to measure sample flow rates.

The sample flow rate of the passive flow controllers will be measured using mass flow meters having a current calibration certification and a range of 0-5 liters per minute (LPM).

Each XAD resin sorbent tube will be assigned a field sample number that provides for identification of site, sample ID number, operator, and sample information as well as sample transfer information.

Field Spike (FS): A field spike will be prepared by the laboratory by injecting a resin sorbent tube with 72 nanograms (ng) of Diazinon, 130 ng of Diazoxon and 1 microgram (ug) of Propyzamide. The field spike is installed onto a sampler and will be collocated with the primary sampler. There will be a minimum of four (4) field spikes throughout the study.

Trip Spike (TS): A trip spike will be prepared by the laboratory by injecting a XAD resin sorbent tube at the same level as the field spike. The trip spike will be transported and analyzed along with the field spike. The trip spike is treated the same as a field spike with exception that it is not installed onto a sampler.

Trip Blank (TB): Field Staff will prepare one trip blank per week of sampling. The trip blank resin sorbent tube accompanies the sample resin sorbent tubes from the lab to the field and returns but is not installed onto a sampler.

Collocated (CO): For ambient monitoring, collocated (side-by-side) air samplers will operate once per week at each site for all eight (8) weeks of the monitoring period.

Site/Sample Identification

The Diazinon/Propyzamide sampling sites will be named accordingly for the locations, run and type of sample:

Ambient Site Naming:

GIL1-24 Gilroy ARB site Weeks 1 through 8
HOL1-24 Hollister site Weeks 1 through 8
SAL1-24 Salinas site Weeks 1 through 8
CHU1-24 Chualar site Weeks 1 through 8
SOL 1-24 Soledad site Weeks 1 through 8
GRE1-24 Greenfield site Weeks 1 through 8

Letter Abbreviations as follows
FS = Field Spike
C = Collocated
TS = Trip Spike
TB = Trip Blank

Examples: SAL5 = Salinas run #5.
SAL5-C = Salinas, run #5 and it is a collocated sample.

Each sample will be assigned a unique and sequential log number.

Following the quality control procedures listed above will insure the quality and integrity of the samples collected in the field and will insure accurate field and lab data collection.

9.0 Deliverables

9.1 Air Quality Surveillance Branch Deliverables

Within 60 days from receipt of the final results report from the Northern Laboratory Branch (NLB), AQSB will provide DPR with a draft report for review containing the following topics:

1) Sampling Protocol.
2) Personnel Contact List.
3) Site Maps.
4) Site Photographs.
5) Site Descriptions and Measurements, GPS coordinates, inlet height.
6) A map of the monitoring site locations.
7) Sample Summary Table.
8) Field Sample Log.
9) Laboratory Analysis Reports with calculations in electronic format.
10) Transfer Standards' Certification Reports.
11) Disk containing electronic files of Report.

In addition, the Special Purpose Monitoring Section (SPM) will prepare a project binder containing the above information. This binder will remain with SPM though available for viewing and review as requested.

9.2 Northern Laboratory Branch (NLB) Deliverables

Within 60 days from the last day of analysis, The NLB will provide SPM with a report that will include the following topics:

1) Analytical result table(s) to include:
    a. Sample identification (name).
    b. Date sample received from field.
    c. Date sample analyzed.
    d. Dilution ratio.
    e. Analytical results.
    f. Quality control results.
2) All equations used in calculating analytical results.
3) Table of duplicate/replicate results including calculated relative percent difference (RPD).
4) Table of collocated results including calculated relative percent difference (RPD).
5) Table of analytical results from all field spikes.
6) Table of analytical results from all trip and laboratory spikes including percent recoveries.
7) Table of analytical results from all trip blanks.
8) Table of analytical results from all laboratory blanks, standards and control checks performed, including dates performed and relative percent recoveries if applicable.
9) Copy or location of analytical method or Standard Operating Procedures (SOP) used for analysis.
10) Section or provision listing or reporting any and all deviations from analytical SOP and this protocol.

APPENDIX A: Standard Operating Procedure Analyses for Diazinon and Propyzamide

The Special Analysis Laboratory Section of MLD's Northern Laboratory Branch will perform the analyses for Diazinon collected by the XAD resin sorbent tube method. This analytical procedure is entitled, Standard Operating Procedure Sampling and Analysis of (Diazinon).

The Special Analysis Laboratory Section of MLD's Northern Laboratory Branch will perform the analyses for Propyzamide collected by the XAD resin sorbent tube method. This analytical procedure is entitled, Standard Operating Procedure Sampling and Analysis of (Propyzamide).

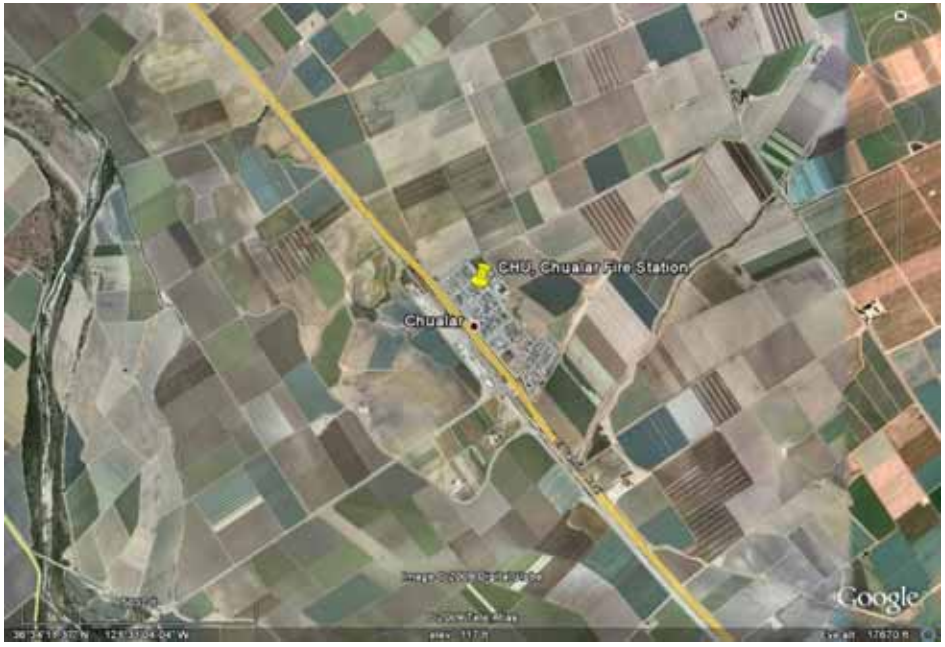
APPENDIX B:
Use Information and Air Monitoring Recommendations for the Pesticide Active Ingredient Diazinon
and
Use Information and Air Monitoring Recommendations for the Pesticide Active Ingredient Propyzamide

APPENDIX B

Aerial and Site Photographs


Gilroy, CA
GIL, Gilroy BAAQMD Station
HOL, Hollister-R O Hardin School
SAL, Salinas (Bolsa Knolls area) La Joya Schoo
Salinas
CHU, Chualar Fire Station
SOL, Soledad Jack Franscioni School
KCY, King City MBUAPCD Station
Google


CHU, Chualar Fire Station
Google


CHU, Chualar Fire Station
Chualar
Google


CHU, Chualar On Roof Of Fire Station
View North
07/06/2009


CHU, Chualar On Top Of Fire Station
View West
07/06/2009


CHU, Chualar On Top Of Fire Station
View South
07/06/2009

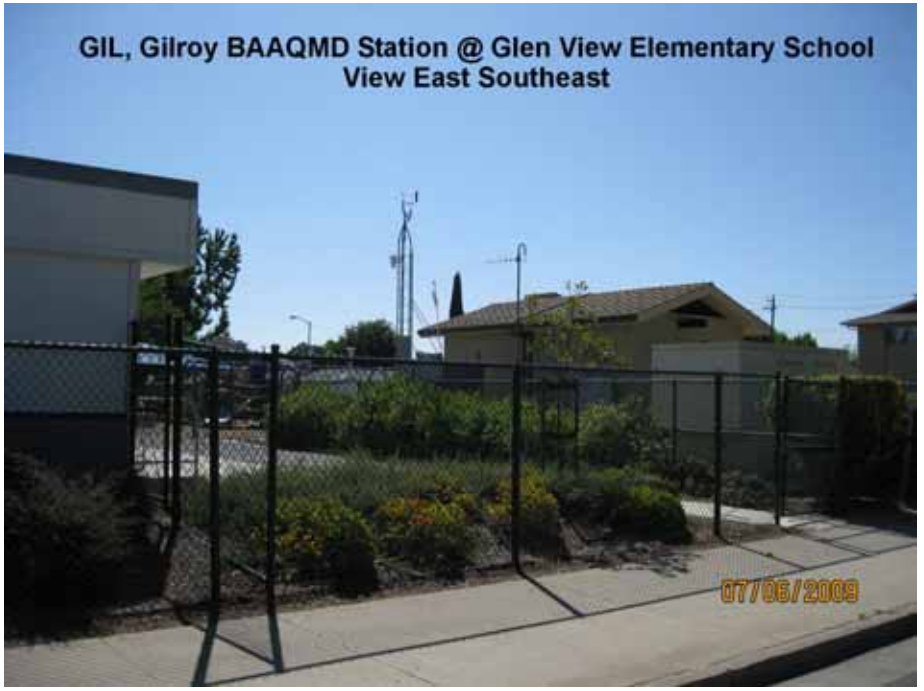

CHU, Chualar On Top Of Fire Station
View East Northeast
07/06/2009

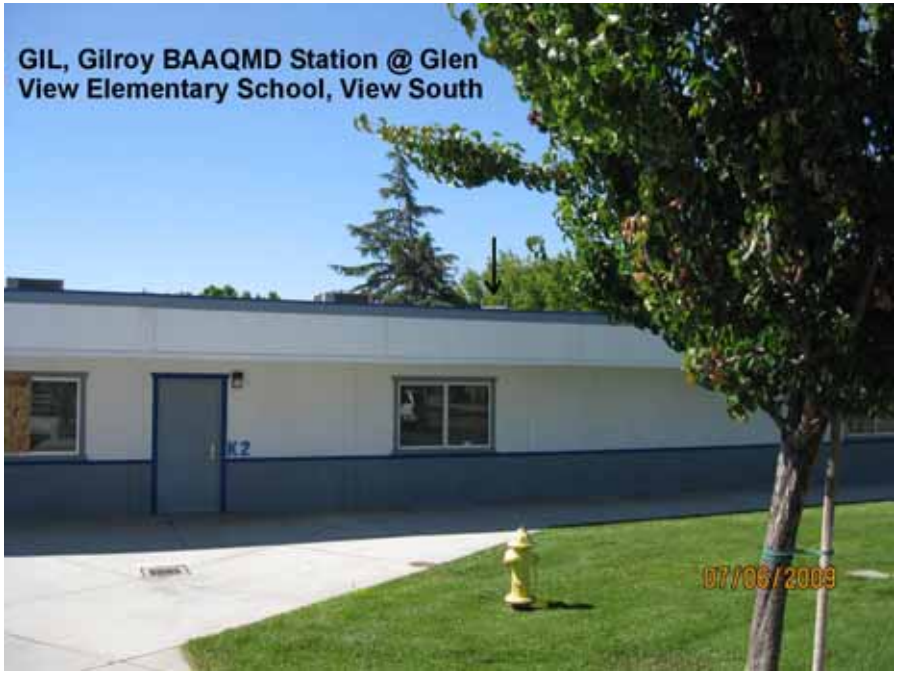

Gil_ Gilroy BAAQMD Station
Google


GIL, Gilroy BAAQMD Station @ Glen View Elementary School
Overview Looking Southwest
07/07/2009


Gilroy, CA
GIL, Gilroy BAAQMD Station
Google


07/06/2009
GIL, Gilroy BAAQMD Station @ Glen View Elementary School
View North Northwest


GIL, Gilroy BAAQMD Station @ Glen View Elementary School
View East Southeast
07/06/2009

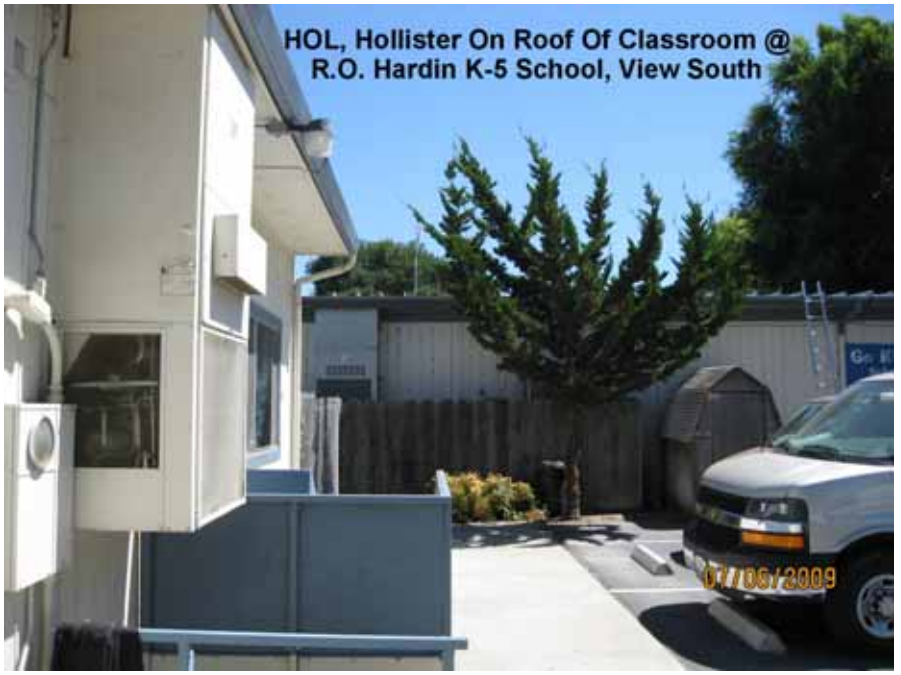

GIL, Gilroy BAAQMD Station @ Glen View Elementary School, View South
07/06/2009

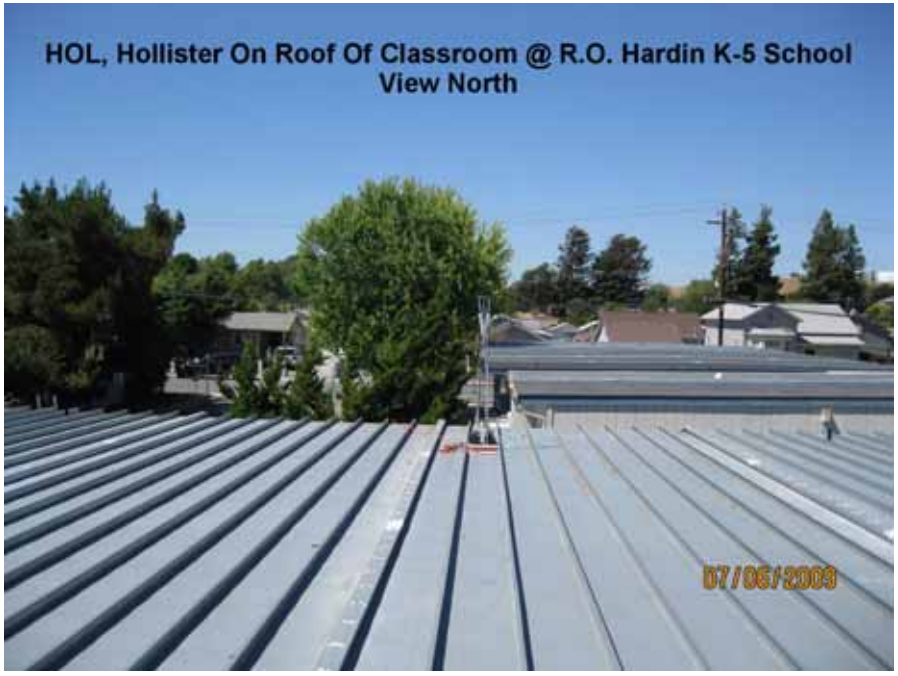

GIL, Gilroy BAAQMD Station @ Glen View Elementary School View West
07/06/2009


HOL, Hollister R.C. Hardin School
Google

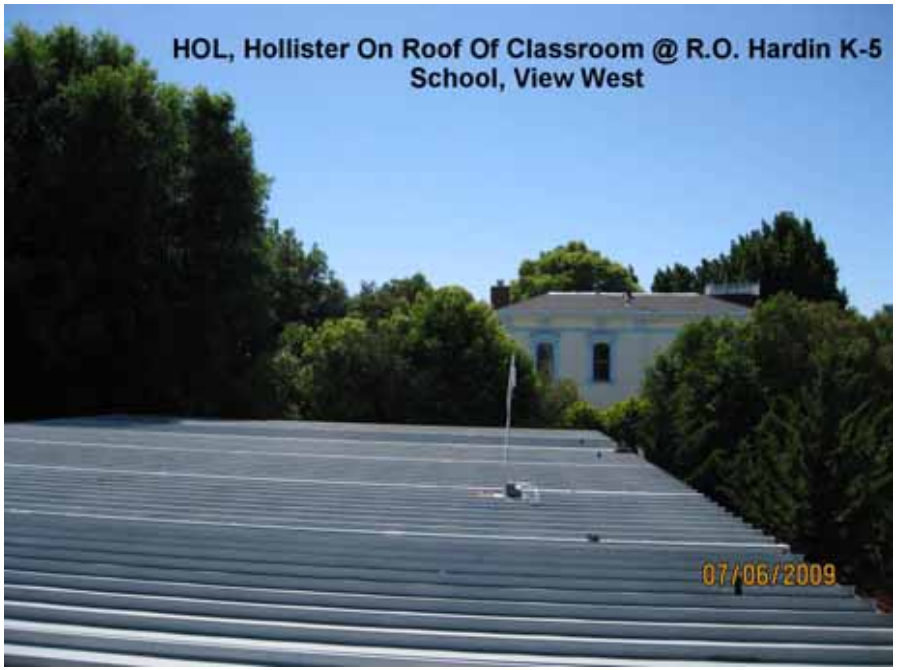

Hollister
HOL, Hollister R.C. Hardin School
Google

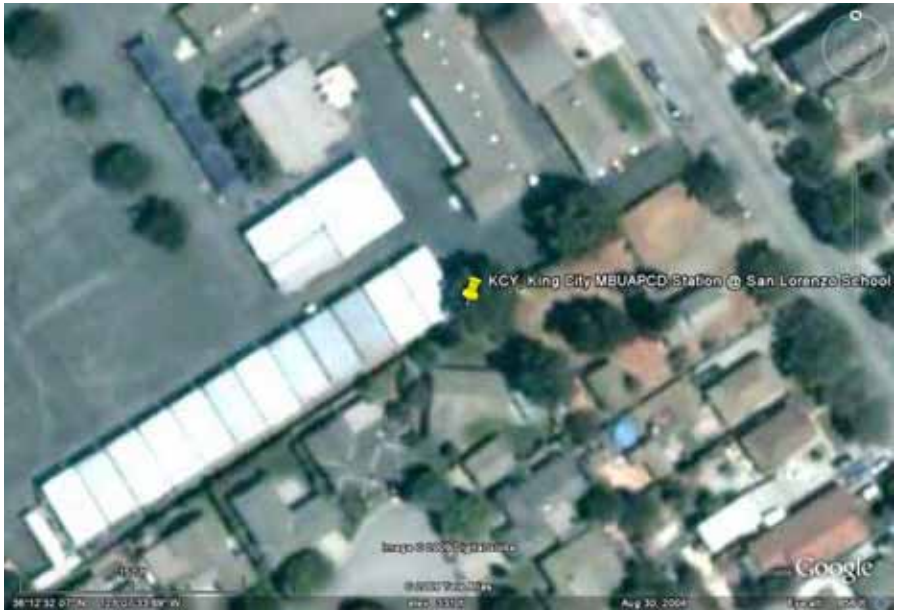

HOL, Hollister On Roof Of Classroom @ R.O. Hardin K-5 School, Overview Looking South Southeast
07/06/2009


HOL, Hollister On Roof Of Classroom @ R.O. Hardin K-5 School, View South
07/06/2009


HOL, Hollister On Roof Of Classroom @ R.O. Hardin K-5 School View North
07/06/2009


HOL, Hollister On Roof Of Classroom @ R.O. Hardin K-5 School View East
07/06/2009


HOL, Hollister On Roof Of Classroom @ R.O. Hardin K-5 School, View West
07/06/2009


KCY, King City MBUAPCD Station @ San Lorenzo School
Google


King City
KCY, King City MBUAPCD Station @ San Lorenzo School
Google


KCY, King City MBUAPCD Station @ San Lorenzo School
Google


King City
KCY, King City MBUAPCD Station @ San Lorenzo School
Google


KCY, King City MBUAPCD Station @ San Lorenzo Elementary School
View East
07/06/2009


07/06/2009
King City MBUAPCD Station @ San Lorenzo Elementary School
View South


KCY, King City MBUAPCD Station @
San Lorenzo Elementary School,
View West
07/06/2009

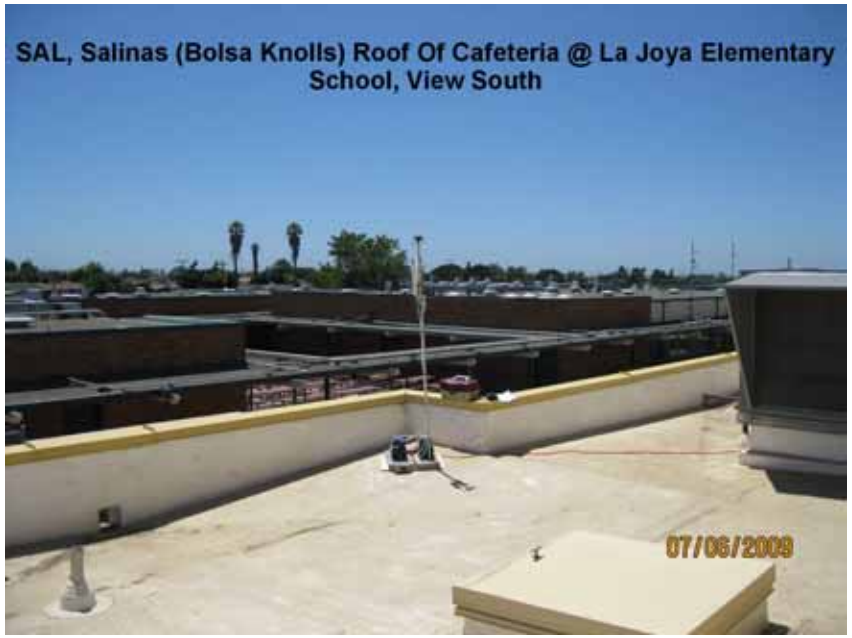

KCY, King City MBUAPCD Station @ San Lorenzo Elementary School
View North Atop Air Monitoring Platform
07/06/2009

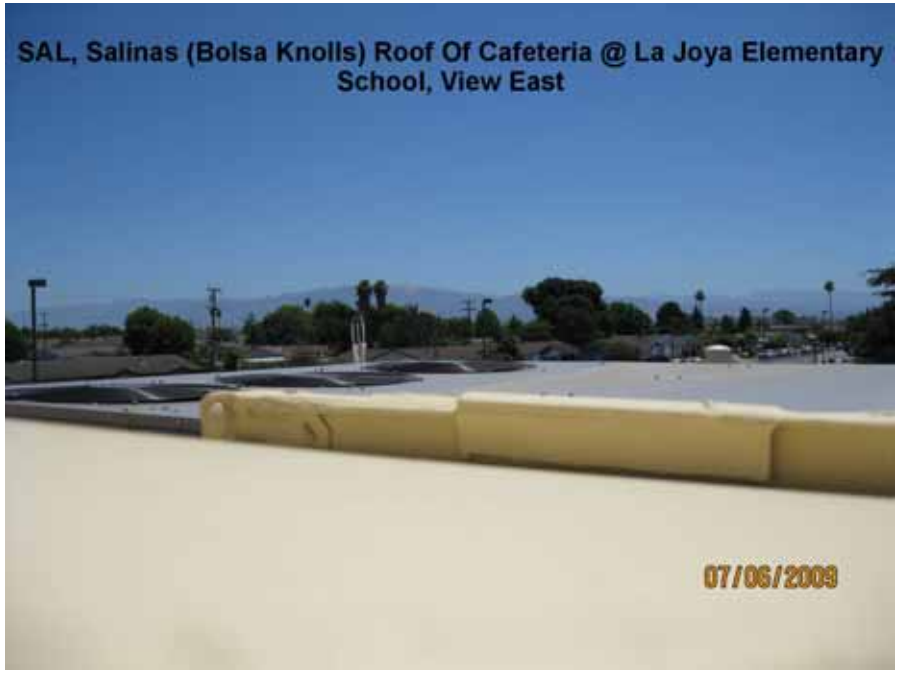

KCY, King City MBUAPCD Station @ San Lorenzo Elementary School
View West From Atop Air Monitoring Platform
07/06/2009

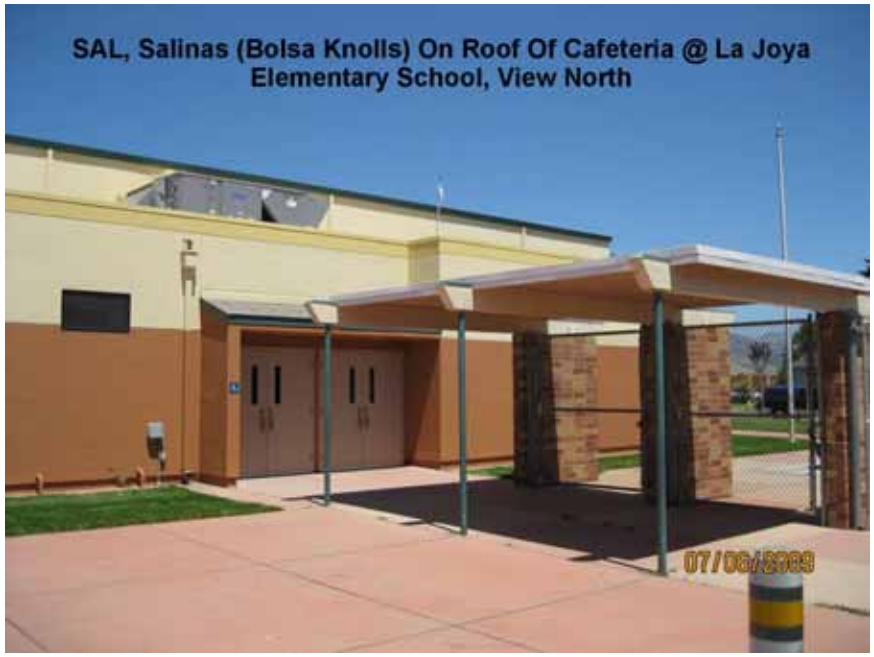

07/06/2009
KCY, King City MBUAPCD Station @ San Lorenzo Elementary School
View North

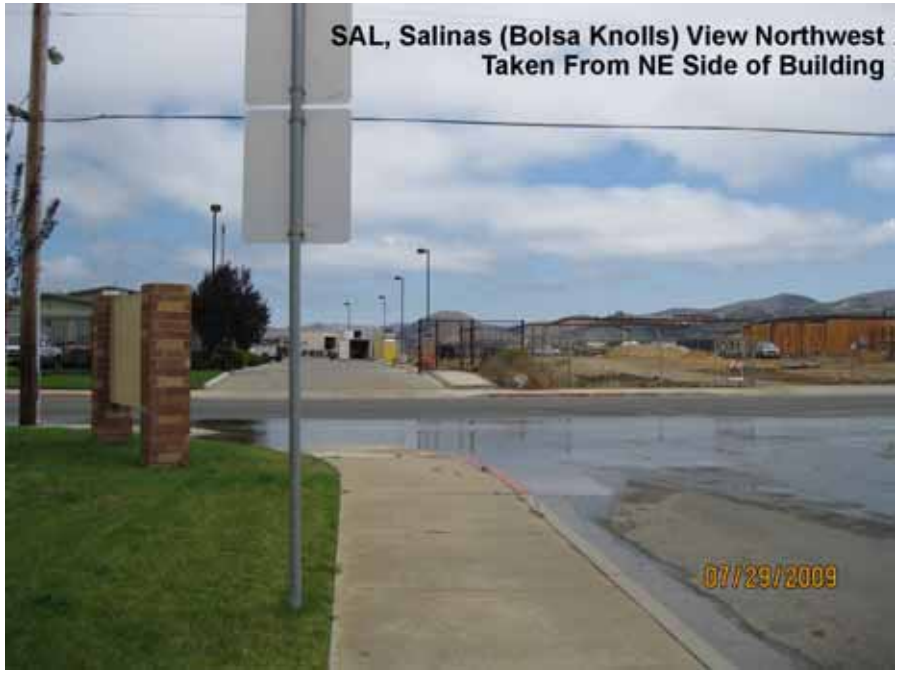

Google

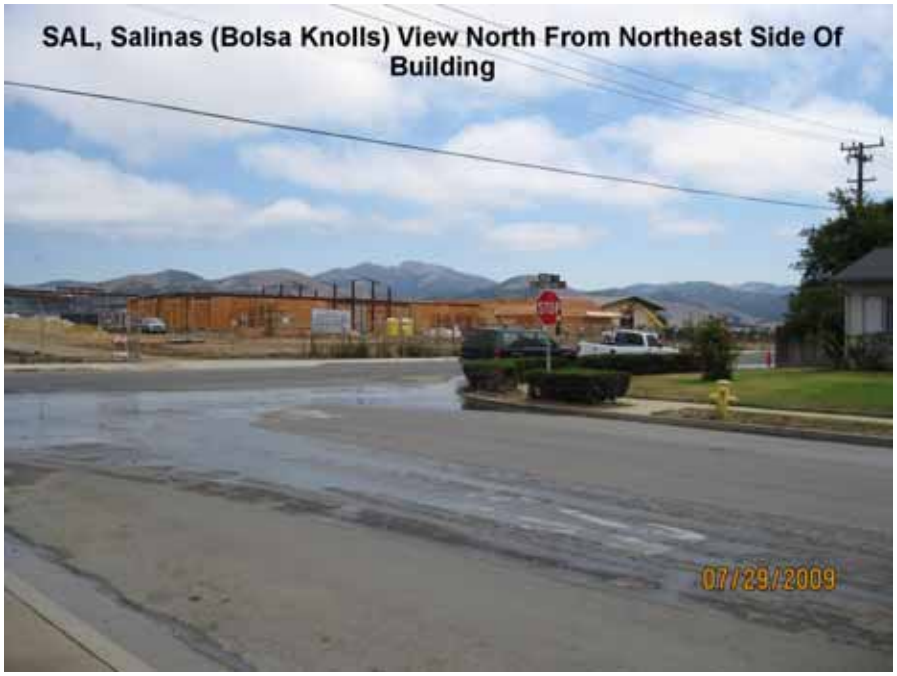

SAL, Salinas (Bolsa Knolls) La Joya School
Google


SAL, Salinas (Bolsa Knolls) Roof Of Cafeteria @ La Joya Elementary School, View South
07/06/2009


SAL, Salinas (Bolsa Knolls) Roof Of Cafeteria @ La Joya Elementary School, View East
07/06/2009


SAL, Salinas (Bolsa Knolls) On Roof Of Cafeteria @ La Joya Elementary School, View North
07/06/2009

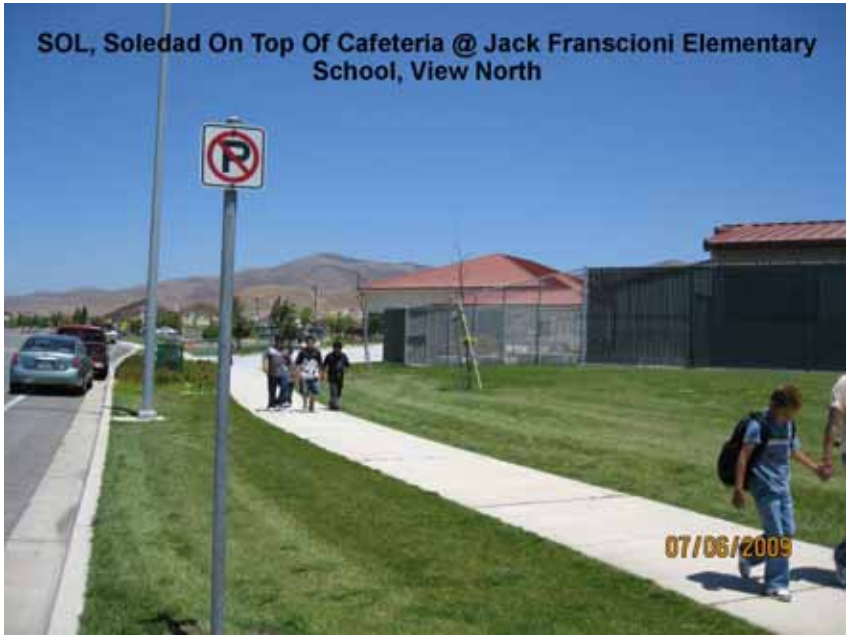

SAL, Salinas (Bolsa Knolls) View Northwest
Taken From NE Side of Building
07/29/2009

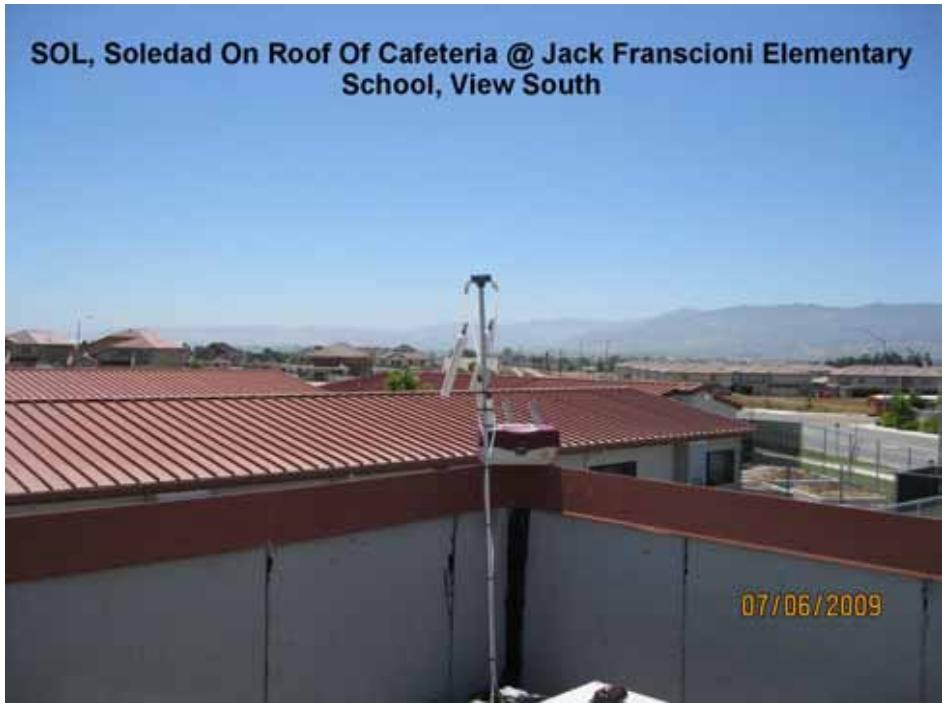

SAL, Salinas (Bolsa Knolls) View North From Northeast Side Of
Building
07/29/2009

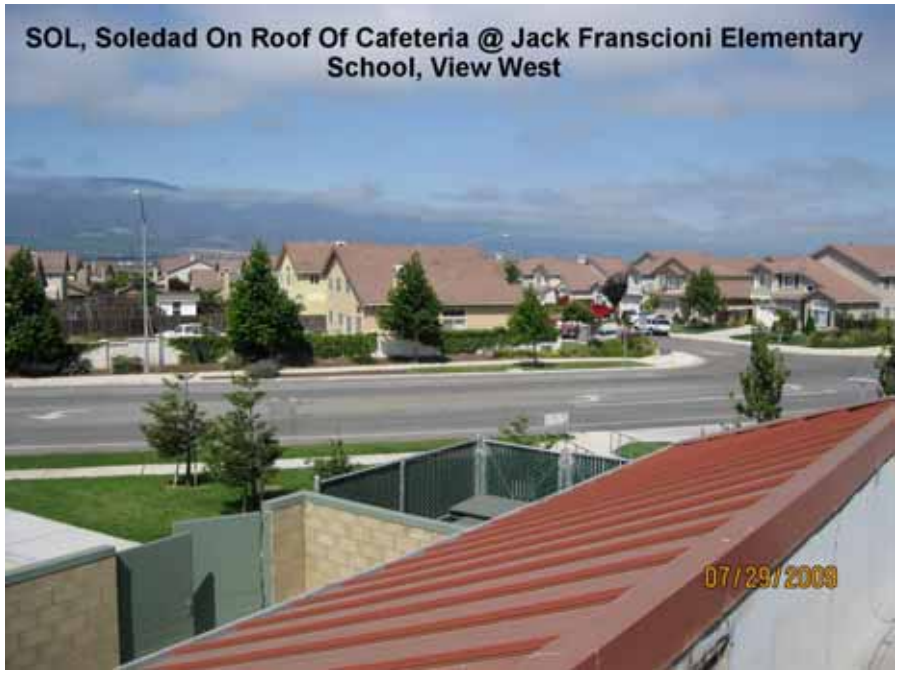

SAL, Salinas (Bolsa Knolls) Roof Of Cafeteria @ La Joya Elementary
School, View West
07/06/2009

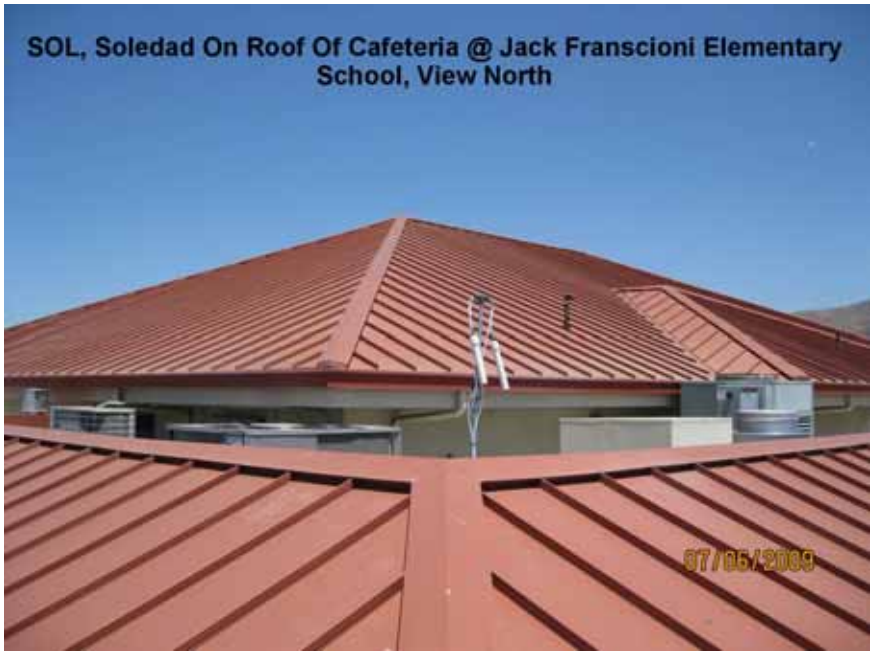

SOL, Soledad Jack Franscioni School
Soledad, CA
Soledad
Google

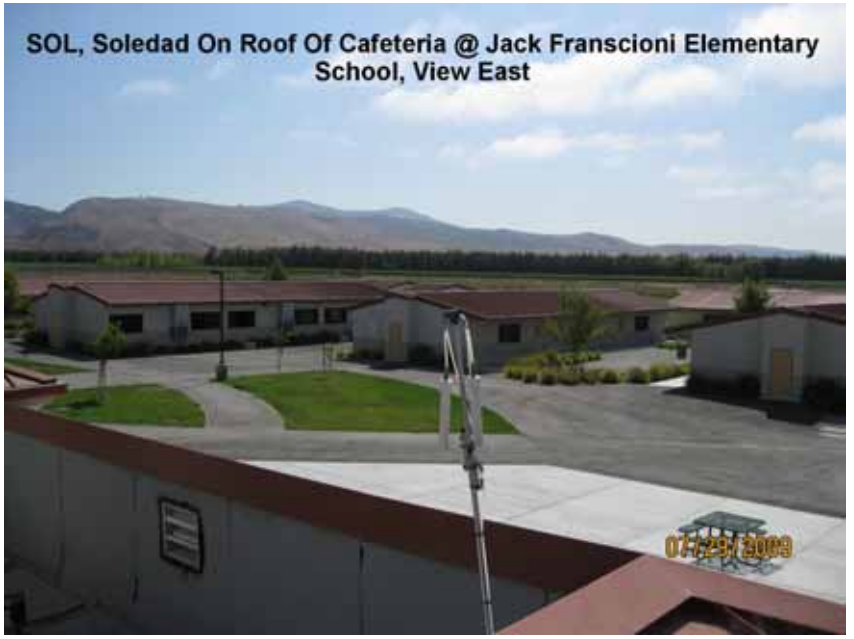

SOL


SOL, Soledad On Top Of Cafeteria @ Jack Franscioni Elementary School, View North
07/06/2009


SOL, Soledad On Roof Of Cafeteria @ Jack Franscioni Elementary School, View South
07/06/2009


SOL, Soledad On Roof Of Cafeteria @ Jack Franscioni Elementary School, View West
07/29/2009


SOL, Soledad On Roof Of Cafeteria @ Jack Franscioni Elementary School, View North
07/06/2009


SOL, Soledad On Roof Of Cafeteria @ Jack Franscioni Elementary School, View East
07/29/2009

APPENDIX C

Lab Report: Propyzamide Method Development and Results Report

California Environmental Protection Agency

Air Resources Board

Propyzamide Method Development and Analytical Results for Ambient Air Monitoring Samples in Monterey, Santa Clara, and San Benito Counties

DATE: October 30, 2009

Prepared by
T.E. Houston, PhD
Air Pollution Specialist

Special Analysis Section
Northern Laboratory Branch
Monitoring and Laboratory Division

Reviewed and Approved by

Russell Grace, Manager
Special Analysis Section

Table of Contents

1.0 INTRODUCTION

The Department of Pesticide Regulation (DPR) requested the Air Resources Board (ARB) conduct ambient air monitoring for propyzamide. This report covers the method development, analytical and quality assurance results for propyzamide during an eight-week ambient study in Monterey, Santa Clara, and San Benito Counties in 2009. DPR requested a method estimated quantitation limit (EQL) of 5.0 micrograms per cubic meter (µg/m^3). The EQL achieved during this project was 0.35 µg/m^3 based on 24-hour collection at three liters per minute (LPM).

2.0 METHOD DEVELOPMENT

2.1 Overview

Ambient air samples are collected on XAD-2 sorbent tubes. Sampled tubes are stored at four (4) degrees centigrade (°C) or lower prior to extraction. Sample tubes are extracted using pesticide grade ethyl acetate. Sample analysis is performed using a gas chromatograph/electron capture detector. Analysis and quantitation uses external standard method for instrument calibration. Estimated quantitation level for this method is 0.35 µg/m^3 prior to any sample dilution for sampling at three LPM and a three milliliter (ml) extraction volume.

2.2 Instrument Reproducibility

Five individual injections of 1.0 microliters (µl) each were made of propyzamide at three concentrations (low, medium, and high) in order to establish the reproducibility of the instrument. Table 1 summarizes the results for the three levels with the average and standard deviation.

Table 1: Instrument reproducibility

	Low	Medium	High
Average	**0.490**	**2.957**	**5.148**
Standard Deviation	**0.003**	**0.074**	**0.273**
Relative Standard Deviation	**0.547**	**2.490**	**5.300**

2.3 Calibration Curve

Laboratory staff used standard concentrations of 0.5, 1.0, 2.0, 3.0 and 5.0 µg/ml for a five-point calibration curve. All calibration curves performed have an r^2 (variance) greater than or equal to 0.995. External calibration was run for each sample set and was linear in this range.

2.4. Minimum Detection Limit (MDL)

The MDL calculation follows the United States Environmental Protection Agency (USEPA) procedures for calculating MDL's. Using the analysis of seven low-level matrix spikes (0.5 µg/ml), the MDL and EQL for a three-ml extract is calculated as follows:

s = the standard deviation of the concentration calculated for the seven replicate spikes.
For propyzamide: s = 0.006 µg/ml
MDL = (3.14) x (s) = (3.14) x (0.006) = 0.018 µg/ml.
*MDL for total µg/sample = 0.057 µg/sample**
EQL = (5) x (MDL) = (5) x (0.018) = 0.089 µg/ml
*EQL for total µg/sample = 0.267 µg/sample**

** assuming a three-ml final extract volume*

Based on a total collection volume of 4.32 m^3 the EQL would be 0.06 µg/m^3. While a lower EQL is theoretically possible based on the above results, the low standard of the calibration (0.5 µg/ml) will be used corresponding to an EQL of 0.35 µg/m^3. Staff report results above the EQL to two significant figures. Results below the EQL but greater than or equal to the MDL are reported to one significant figure. Results less than MDL are reported as the calculated MDL to one significant figure.

2.5. Collection and Extraction Efficiency (Recovery)

Spiked XAD tubes were used to determine method field recovery. The tubes were spiked with 1.5 µg and 15 µg of propyzamide standard. A spiked tube was placed on a field sampler and sampled at approximately three LPM for 24 hours at ambient temperature. The recoveries for propyzamide were 98% at 0.5 µg and 93% at 5 µg.

2.6. Storage Stability

Laboratory staff completed a storage stability study which ran for 21 days with XAD tubes being tested at 0, 7, 14, and 21 days. Table 2 summarizes the results of the storage stability test. Laboratory staff analyzed all field samples within 14 days of collection.

Table 2: Storage stability

Day	Average low % Recovery	Average high % Recovery
0	96.9	94.8
7	100.6	91.2
14	106.3	89.4
21	102.7	88.4

2.7. Breakthrough

Propyzamide was spiked at 10 µg/ml and placed on sampler. Recovery was 87% and 92%, with no detection in the back section of the tubes.

3.0 PROPYZAMIDE AMBIENT AIR MONITORING SAMPLE RESULTS

The laboratory received a total of 211 ambient samples including seven field spikes, four trip spikes, and eight trip blanks. There was no propyzamide detected in any of the samples submitted. Table 3 presents the results of the analysis by site.

4.0 ANALYTICAL QUALITY CONTROL SAMPLES

4.1 System Blanks

Laboratory staff analyzes a system blank with each analytical batch, before the calibration, after the control and check samples, and after every tenth sample, and after samples containing high levels of propyzamide or co-extracted contaminants. Staff defines the analytical batch as all the samples extracted together, but not to exceed 20 samples. The system blank is run to insure the solvent and instrument do not contribute interferences to the analysis, and to minimize carryover from high level samples. All system blanks were less than the MDL.

4.2 Method Blanks

Laboratory staff analyzed a method blank with each analytical batch. This is an XAD tube prepared and analyzed as described for the ambient samples. All method blanks were less than the MDL.

4.3 Laboratory Control Sample (LCS)

Laboratory staff analyzed a LCS with each analytical batch. The LCS is an XAD tube spiked with 3.0 µg/sample of propyzamide. The LCS is extracted and analyzed as described for the samples. The LCS recoveries averaged 88% with a standard deviation of 4.9%.

4.4 Continuing Calibration Verification Standards (CCV)

Following standard lab procedures, laboratory staff analyzed a CCV after every calibration curve, after every tenth sample and at the end of an analytical batch. The CCV must be within $\pm$ 25% of the expected value. If any of the CCVs are outside this limit, the affected samples are re-analyzed. The CCV standard for each analytical batch is 1.0 µg/ml.

4.5 Laboratory Duplicates

Laboratory duplicate was a replicate of one of the extracted samples for a given analytical batch.

5.0 FIELD, TRIP, AND LABORATORY SPIKES AND TRIP BLANKS

Seven field spikes, four trip spikes, eight trip banks, and four laboratory spikes were analyzed. Laboratory staff prepared the spikes at 3.0 µg of propyzamide per sample. Table 4 presents the results for the quality control data.

5.1 Field Spikes

The average propyzamide recovery was 91.7% with a standard deviation of 4.8%. Values ranged 2.58-2.91 µg/sample. Field spike sampling was at the Chualar or Gilroy monitoring sites.

5.2 Trip Spikes and Laboratory Spikes

The trip spikes recoveries averaged 88% with a standard deviation of 15%. The values ranged 1.94-2.94 µg/sample. The low value in one of the trips may be a result of a poor spike. The laboratory spikes recoveries averaged 91% with a standard deviation of 12%. Values ranged 2.21-3.01 µg/sample.

5.3 Trip Blanks

There were eight trip blanks, one designated per week for analysis. No propyzamide was detected in any of the samples.

6.0 DISCUSSION

The Laboratory received 211 field samples, including seven field spikes, four trip spikes, and eight trip blanks. Four laboratory spikes were prepared and held at the laboratory at the same time the field/trip spikes were prepared and sent. There was no propyzamide detected in any of the field samples at an EQL over ten times lower than that requested. Recovery of the field spikes was as expected for the amounts and all the quality control samples were in established parameters.

Table 3: Propyzamide Ambient Air Monitoring Results by Site for Monterey, Santa Clara, and San Benito Counties 2009.

Site	No	Client ID	Date Analyzed	ug/ml	ug/sample
King City	1	KCY1	7/6/2009	ND	ND
	8	KCY2	7/7/2009	ND	ND
	9	KCY2-C	7/7/2009	ND	ND
	22	KCY3	7/13/2009	ND	ND
	31	KCY4	7/14/2009	ND	ND
	32	KCY4-C	7/14/2009	ND	ND
	42	KCY5	7/15/2009	ND	ND
	49	KCY6	7/20/2009	ND	ND
	50	KCY6-C	7/20/2009	ND	ND
	60	KCY7	7/21/2009	ND	ND
	66	KCY8	7/21/2009	ND	ND
	72	KCY9	7/27/2009	ND	ND
	78	KCY10	7/27/2009	ND	ND
	79	KCY10-C	7/27/2009	ND	ND
	91	KCY11	7/29/2009	ND	ND
	102	KCY12	8/3/2009	ND	ND
	103	KCY12-C	8/3/2009	ND	ND
	113	KCY13	8/4/2009	ND	ND
	119	KCY14	8/4/2009	ND	ND
	126	KCY15	8/5/2009	ND	ND
	133	KCY16	8/10/2009	ND	ND
	134	KCY16-C	8/10/2009	ND	ND
	147	KCY17	8/11/2009	ND	ND
	154	KCY18	8/11/2009	ND	ND
	161	KCY19	8/17/2009	ND	ND
	162	KCY19-C	8/17/2009	ND	ND
	172	KCY20	8/18/2009	ND	ND
	178	KCY21	8/18/2009	ND	ND
	186	KCY22	8/24/2009	ND	ND
	197	KCY23	8/25/2009	ND	ND
	198	KCY23-C	8/25/2009	ND	ND
	207	KCY24	8/25/2009	ND	ND

Site	No	Client ID	Date Analyzed	ug/ml	ug/sample
Soledad	2	SOL1	7/6/2009	ND	ND
	10	SOL2	7/7/2009	ND	ND
	11	SOL2-C	7/7/2009	ND	ND
	23	SOL3	7/13/2009	ND	ND
	33	SOL4	7/14/2009	ND	ND
	34	SOL4-C	7/14/2009	ND	ND
	43	SOL5	7/15/2009	ND	ND
	51	SOL6	7/20/2009	ND	ND
	52	SOL6-C	7/20/2009	ND	ND
	61	SOL7	7/21/2009	ND	ND
	67	SOL8	7/21/2009	ND	ND
	73	SOL9	7/27/2009	ND	ND
	80	SOL10	7/27/2009	ND	ND
	81	SOL10-C	7/27/2009	ND	ND
	92	SOL11	7/29/2009	ND	ND
	104	SOL12	8/3/2009	ND	ND
	105	SOL12-C	8/3/2009	ND	ND
	114	SOL13	8/4/2009	ND	ND
	120	SOL14	8/4/2009	ND	ND
	127	SOL15	8/5/2009	ND	ND
	135	SOL16	8/10/2009	ND	ND
	136	SOL16-C	8/10/2009	ND	ND
	148	SOL17	8/11/2009	ND	ND
	155	SOL18	8/11/2009	ND	ND
	163	SOL19	8/17/2009	ND	ND
	164	SOL19-C	8/17/2009	ND	ND
	173	SOL20	8/18/2009	ND	ND
	179	SOL21	8/18/2009	ND	ND
	187	SOL22	8/24/2009	ND	ND
	199	SOL23	8/25/2009	ND	ND
	200	SOL23-C	8/25/2009	ND	ND
	208	SOL24	8/25/2009	ND	ND

Site	No	Client ID	Date Analyzed	ug/ml	ug/sample
Chualar	3	CHU1	7/6/2009	ND	ND
	12	CHU2	7/7/2009	ND	ND
	13	CHU2-C	7/7/2009	ND	ND
	24	CHU3	7/13/2009	ND	ND
	35	CHU4	7/14/2009	ND	ND
	36	CHU4-C	7/14/2009	ND	ND
	44	CHU5	7/15/2009	ND	ND
	53	CHU6	7/20/2009	ND	ND
	54	CHU6-C	7/20/2009	ND	ND
	62	CHU7	7/21/2009	ND	ND
	68	CHU8	7/21/2009	ND	ND
	74	CHU9	7/27/2009	ND	ND
	82	CHU10	7/28/2009	ND	ND
	83	CHU10-C	7/28/2009	ND	ND
	93	CHU11	7/29/2009	ND	ND
	106	CHU12	8/3/2009	ND	ND
	107	CHU12-C	8/3/2009	ND	ND
	115	CHU13	8/4/2009	ND	ND
	121	CHU14	8/5/2009	ND	ND
	128	CHU15	8/5/2009	ND	ND
	137	CHU16	8/10/2009	ND	ND
	149	CHU17	8/11/2009	ND	ND
	150	CHU17-C	8/11/2009	ND	ND
	156	CHU18	8/11/2009	ND	ND
	165	CHU19	8/17/2009	ND	ND
	166	CHU19-C	8/17/2009	ND	ND
	174	CHU20	8/18/2009	ND	ND
	180	CHU21	8/18/2009	ND	ND
	188	CHU22	8/24/2009	ND	ND
	201	CHU23	8/25/2009	ND	ND
	202	CHU23-C	8/25/2009	ND	ND
	209	CHU24	8/25/2009	ND	ND

Site	No	Client ID	Date Analyzed	ug/ml	ug/sample
Salinas	4	SAL1	7/6/2009	ND	ND
	14	SAL2	7/7/2009	ND	ND
	15	SAL2-C	7/7/2009	ND	ND
	25	SAL3	7/13/2009	ND	ND
	37	SAL4	7/14/2009	ND	ND
	38	SAL4-C	7/15/2009	ND	ND
	45	SAL5	7/15/2009	ND	ND
	55	SAL6	7/20/2009	ND	ND
	56	SAL6-C	7/20/2009	ND	ND
	63	SAL7	7/21/2009	ND	ND
	69	SAL8	7/21/2009	ND	ND
	75	SAL9	7/27/2009	ND	ND
	84	SAL10	7/28/2009	ND	ND
	85	SAL10-C	7/28/2009	ND	ND
	95	SAL11	7/29/2009	ND	ND
	108	SAL12	8/3/2009	ND	ND
	109	SAL12-C	8/3/2009	ND	ND
	116	SAL13	8/4/2009	ND	ND
	122	SAL14	8/5/2009	ND	ND
	129	SAL15	8/5/2009	ND	ND
	139	SAL16	8/10/2009	ND	ND
	140	SAL16-C	8/10/2009	ND	ND
	151	SAL17	8/11/2009	ND	ND
	157	SAL18	8/11/2009	ND	ND
	167	SAL19	8/17/2009	ND	ND
	168	SAL19-C	8/17/2009	ND	ND
	175	SAL20	8/18/2009	ND	ND
	181	SAL21	8/18/2009	ND	ND
	190	SAL22	8/24/2009	ND	ND
	191	SAL22-C	8/24/2009	ND	ND
	203	SAL23	8/25/2009	ND	ND
	210	SAL24	8/25/2009	ND	ND

Site	No	Client ID	Date Analyzed	ug/ml	ug/sample
Hollister	5	HOL1	7/6/2009	ND	ND
	6	HOL1-C	7/6/2009	ND	ND
	16	HOL2	7/7/2009	ND	ND
	26	HOL3	7/13/2009	ND	ND
	39	HOL4	7/15/2009	ND	ND
	40	HOL4-C	7/15/2009	ND	ND
	46	HOL5	7/15/2009	ND	ND
	57	HOL6	7/20/2009	ND	ND
	58	HOL6-C	7/20/2009	ND	ND
	64	HOL7	7/21/2009	ND	ND
	70	HOL8	7/21/2009	ND	ND
	76	HOL9	7/27/2009	ND	ND
	86	HOL10	7/28/2009	ND	ND
	87	HOL10-C	7/28/2009	ND	ND
	96	HOL11	7/29/2009	ND	ND
	110	HOL12	8/3/2009	ND	ND
	111	HOL12-C	8/3/2009	ND	ND
	117	HOL13	8/4/2009	ND	ND
	123	HOL14	8/5/2009	ND	ND
	130	HOL15	8/5/2009	ND	ND
	141	HOL16	8/10/2009	ND	ND
	142	HOL16-C	8/10/2009	ND	ND
	152	HOL17	8/11/2009	ND	ND
	158	HOL18	8/11/2009	ND	ND
	169	HOL19	8/17/2009	ND	ND
	170	HOL19-C	8/17/2009	ND	ND
	176	HOL20	8/18/2009	ND	ND
	182	HOL21	8/18/2009	ND	ND
	192	HOL22	8/24/2009	ND	ND
	193	HOL22-C	8/24/2009	ND	ND
	204	HOL23	8/25/2009	ND	ND
	211	HOL24	8/25/2009	ND	ND

Site	No	Client ID	Date Analyzed	ug/ml	ug/sample
Gilroy	7	GIL1	7/6/2009	ND	ND
	17	GIL2	7/7/2009	ND	ND
	18	GIL2-C	7/7/2009	ND	ND
	20	GIL3	7/13/2009	ND	ND
	29	GIL4	7/14/2009	ND	ND
	30	GIL4-C	7/14/2009	ND	ND
	41	GIL5	7/15/2009	ND	ND
	47	GIL6	7/20/2009	ND	ND
	48	GIL6-C	7/20/2009	ND	ND
	59	GIL7	7/21/2009	ND	ND
	65	GIL8	7/21/2009	ND	ND
	77	GIL9	7/27/2009	ND	ND
	88	GIL10	7/28/2009	ND	ND
	89	GIL10-C	7/28/2009	ND	ND
	97	GIL11	7/29/2009	ND	ND
	100	GIL12	8/3/2009	ND	ND
	101	GIL12-C	8/3/2009	ND	ND
	112	GIL13	8/4/2009	ND	ND
	118	GIL14	8/4/2009	ND	ND
	125	GIL15	8/5/2009	ND	ND
	131	GIL16	8/10/2009	ND	ND
	145	GIL17	8/11/2009	ND	ND
	146	GIL17-C	8/11/2009	ND	ND
	153	GIL18	8/11/2009	ND	ND
	159	GIL19	8/17/2009	ND	ND
	160	GIL19-C	8/17/2009	ND	ND
	171	GIL20	8/18/2009	ND	ND
	177	GIL21	8/18/2009	ND	ND
	184	GIL22	8/24/2009	ND	ND
	195	GIL23	8/25/2009	ND	ND
	196	GIL23-C	8/25/2009	ND	ND
	206	GIL24	8/25/2009	ND	ND

Table 3 Notes: Ambient Monitoring Results for Monterey, Santa Clara, and San Benito Counties 2009.

Site location identification:

KCY	King City	King City Monitoring Station Monterey Bay Unified APCD
SOL	Soledad	Kjack Franscioni Elementary School
CHU	Chualar	Salina Rural Fire District
SAL	Salinas	Santa Rita School District
HOL	Hollister	R O Hardin K-5 School (San Benito County)
GIL	Gilroy	Gilroy Monitoring Station Bay Area AQMD (Santa Clara County)

Sample ID numbers followed by the letters C are collocated samples.

Table 4: Quality Control Data XAD Spikes for Field, Trip, and Laboratory.

QC	Analysis Date	Lab ID	Client ID	ug/sample
Field Spike	Jul 13	21	GIL3-FS	2.839
	Jul 29	94	CHU11-FS	2.613
	Jul 29	98	GIL11-FS	2.914
	Aug 10	132	GIL16-FS	2.815
	Aug 10	138	CHU16-FS	2.621
	Aug 24	185	GIL22-FS	2.581
	Aug 24	189	CHU22-FS	2.888
Trip Spike	Jul 12	28	TS-1	2.834
	Jul 29	99	TS-2	1.944
	Aug 10	143	TS-3	2.936
	Aug 24	205	TS-4	2.843
Laboratory	Jul 13	--	Lab Spike#1	2.765
	Jul 29	--	Lab Spike#2	3.008
	Aug 10	--	Lab Spike#3	2.901
	Aug 24	--	Lab Spike #4	2.209

Notes:
All spikes were at 3.0 µg/sample.

Appendix A:

Standard Operating Procedure for Propyzamide

California Environmental Protection Agency

Air Resources Board

Standard Operating Procedure
Sampling and Analysis of Propyzamide

Special Analysis Section
Northern Laboratory Branch
Monitoring and Laboratory Division

June 2009

Version 1

Approved by:

Russell Grace, Manager
Special Analysis Section

1. SCOPE

This is a gas chromatography/electron capture detector (GC/ECD) method for the determination of propyzamide in ambient and application air sampling.

2. SUMMARY OF METHOD

Ambient and application air samples are collected on XAD-2 sorbent tubes. Sampled tubes are stored at four (4) degrees centigrade (°C) or lower prior to extraction. Sample tubes are extracted using pesticide grade ethyl acetate. Sample analysis is performed using a GC/ECD. Sample analysis and quantitation uses external standard method for instrument calibration. Estimated quantitation level (EQL) for this method is approximately 5.0 micrograms per cubic meter ($\mu g/m^3$) prior to any sample dilution.

3. INTERFERENCES / LIMITATIONS

Method interference may be caused by contaminants in solvents, reagents, glassware and the XAD-2 tubes that can lead to discrete artifacts or elevated baselines. Analysis of samples containing high concentrations of early eluting components may cause significant contamination of the analytical equipment. Both a system blank and method blank must be analyzed with each batch of samples to detect any possible method or instrument interference.

4. EQUIPMENT AND CONDITIONS

A. Instrumentation

- Agilent Technologies 7890 Series gas chromatograph with Agilent Model 7683B injector.
- Column: Agilent HP-5, 30 meter, 0.32mm I.D., 0.25 micron film thickness, with helium as carrier gas at constant flow and nitrogen as the makeup gas at 25 ml/min.
- GC temperature program: initial 100^o C, initial time 2 minutes, to 260^o C @ 12^o C/min, hold 2 minutes.
- Inlet temperature 260^o C; splitless.
- Detector temperature 325^o C.

B. Auxiliary Apparatus

- XAD-2 tubes (400/200 mg) (SKC cat # 226-30-6) or equivalent
- Glass amber vials, 2-ml capacity with septum caps.

C. Reagents

- Ethyl Acetate(EtAc) (B&J brand HPLC grade or equivalent)
- Propyzamide 98.1%, Chem Services PS-349

5. SAMPLE COLLECTION

a) Samples are collected in the field with a maximum flow rate of three (3) liters per minute (lpm).
b) After collection the samples are placed in a glass tube and stored in a cooler at 4° C or less until returned to the laboratory.
c) Samples are stored at 4° C or less until ready for analysis.

6. SAMPLE EXTRACTON

a) Prepare a method blank and laboratory control sample (LCS) tube with every batch of field samples not to exceed twenty (20) samples in an analytical batch. The LCS is spiked with 3 µg of propyzamide before extraction.
b) Carefully score and break the sample XAD-2 tube just in front of the glass wool plug on the primary section.
c) Remove the glass wool plug using forceps. Pour the XAD-2 resin from the primary section into an 8 ml glass vial.
d) Score the tube just in front of the secondary section glass wool. Retain the secondary section for later analysis to check for breakthrough.
e) Using three (3.0) ml of EtAc carefully rinse the inside of the primary section into the glass vial. Cap securely.
f) The extracts are allowed to sit at room temperature for 1 hour. The extracts are ready for analysis or if not analyzed are stored in a refrigerator at 4º C.

7. ANALYSIS OF SAMPLES

a) Transfer approximately 0.25 ml of the sample extract into a 1.5-ml autosampler vial equipped with a 0.25 ml insert. Sample extract is now ready for analysis.
b) A 1-µl injection volume will be used for all analyses.
c) Perform a calibration curve using concentrations at or near the EQL to approximately 10 times higher. At least five (5) points must be analyzed to establish a calibration curve.

d) Prepare a sample sequence for the GC/ECD. The sequence should include a system blank and a calibration control standard, for every ten (10) samples analyzed. If this batch of samples includes a method blank and /or LCS, they should be run prior to field samples to verify that QC criteria have been met.

e) Because of the nature of the XAD-2 tube, extraneous components will be extracted along with the analytes of interest. To minimize excessive carry over of these contaminants from one analysis to the next, a system blank should be run after every ten (10) to twenty (20) samples or more frequently if indicated by sample chromatograms. In no case should a sample contaminant interfere with the peaks of interest. This will be verified by the absence of a peak in the analyte retention time window during the system blank analysis.

f) Review and edit the quantitation reports as needed.

g) The samples must be diluted if the analytical results are not within the calibration curve. Every attempt should be made to have the diluted results fall within the upper half of the calibration curve.

h) The final results will be adjusted by an appropriate dilution factor and reported in µg/ml.

i) The atmospheric concentration is calculated according to:

$$\text{Ambient Sample Conc. } (\mu g/m^3) = \frac{\text{Extract Conc. } (\mu g/ml) \times 3 \text{ ml}}{\text{Air Volume Sampled } (m^3)}$$

j) Given instrument sensitivity and a maximum sample volume of 4.32 m^3 the EQL for this method will be approximately 0.35 $\mu g/m^3$.

8. QUALITY ASSURANCE

a) A system blank must be analyzed with each batch of samples. The system blank is an aliquot of the solvent used to extract the samples. The analyte concentration must be below the method detection limit (MDL) established for the method. A system blank is run at the beginning of the analytical batch, after the calibration curve, or just prior to sample analysis.

b) A minimum five point calibration will be run with each sample batch.

c) A calibration control will be run after the calibration, every tenth sample and at the end of the sample batch to verify system linearity. The calibration control values must be within 25% of the actual value.

d) A method blank will be run with each sample batch. The method blank is a blank solvent that is run through the entire method. The analyte concentration must be below the MDL established for the method.

e) A LCS will be run with every sample batch. The LCS analyte concentration should fall within the lower half of the calibration curve. The

LCS stock standard should come from a different source or lot than the daily calibration standards. If not available then this should be prepared separately from the calibration curve. The analytical value of the LCS must be within three standard deviations of its historical mean. If the LCS is outside these limits then the samples in the analytical batch must be reanalyzed.

f) Run specific quality control samples, such as field spikes, trip spikes, and laboratory spikes prior to the field samples. A system blank should be run after the spiked samples to ensure that spiked analyte does not carry over.

9. Safety

This procedure does not address all of the safety concerns associated with chemical analysis. It is the responsibility of the analyst to establish appropriate safety and health practices. For hazard information and guidance refer to the material safety data sheets (MSDS) of any chemicals used in this procedure.

APPENDIX D

Propyzamide Ambient Field Log Sheets

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Mete Display		Corrected Average	Comment	Weather K,P,C,F&R		Initials	
			Start	End	Hours:Mins	Start	End	Hours	Start	End	Flow	Number	Start	End	Start	End
001	KCY1	PS-12A	7/1/09 9:30	7/2/09 8:50	23:20	*47.0*	*1442.0*	23.25	2.98	2.84	2.94		C	C	JR	JR
002	SOL1	PS11A	7/1/09 10:40	7/2/09 9:45	23:05	*57.0*	*1442.0*	23.08	2.97	3.24	3.13		C	C	JR	JR
003	CHU1	PS14A	7/1/09 11:25	7/2/09 10:30	23:05	5118.3	5141.3	23.00	2.98	3.20	3.12		C	C	JR	JR
004	SAL1	PS03A	7/1/09 12:15	7/2/09 11:40	23:25	3814.8	3838.1	23.38	2.98	3.23	3.13		C	C	JR	JR
005	HOL1	PS02A	7/1/09 13:30	7/2/09 12:40	23:10	612.7	635.8	23.18	2.85	3.25	3.08		C	C	JR	JR
006	HOL1-C	PS02B	7/1/09 13:30	7/2/09 12:45	23:15	612.7	635.9	23.21	2.97	3.24	3.13		C	C	JR	JR
007	GIL1	PS01A	7/1/09 14:25	7/2/09 13:50	23:25	*76.6*	*1484.9*	23.47	2.95	3.54	3.27		C	C	JR	JR
008	KCY2	PS12A	7/2/09 9:00	7/3/09 8:17	23:17	*1451.0*	*2848.5*	23.29	2.99	3.06	3.05		C	C	JR	JR
009	KCY2-C	PS12B	7/2/09 9:00	7/3/09 8:18	23:18	*1451.0*	*2848.3*	23.29	2.98	3.00	3.02		C	C	JR	JR
010	SOL2	PS11A	7/2/09 9:50	7/3/09 9:08	23:18	*1448.0*	*2844.5*	23.28	2.98	2.90	2.97		C	C	JR	JR
011	SOL2-C	PS11B	7/2/09 9:50	7/3/09 9:09	23:19	*1448.0*	*2845.8*	23.30	2.98	2.97	3.00		C	C	JR	JR
012	CHU2	PS14A	7/2/09 10:35	7/3/09 9:49	23:14	5141.4	5164.6	23.20	2.98	2.97	3.00		C	C	JR	JR
013	CHU2-C	PS14B	7/2/09 10:35	7/3/09 9:52	23:17	5141.4	5164.7	23.24	2.99	3.00	3.02		C	C	JR	JR
014	SAL-2	PS03A	7/2/09 11:45	7/3/09 10:50	23:05	3838.3	3861.3	23.05	2.99	2.98	3.01		C	C	JR	JR
015	SAL2-C	PS03B	7/2/09 11:45	7/3/09 10:52	23:07	3838.3	3861.3	23.08	2.98	2.99	3.01		C	C	JR	JR
016	HOL2	PS02A	7/2/09 12:50	7/3/09 11:53	23:03	636.0	659.0	23.00	2.99	2.94	2.99		C	C	JR	JR
017	GIL2	PS01A	7/2/09 13:55	7/3/09 12:55	23:00	*1490.0*	*2870.0*	23.0	2.98	2.94	2.99		C	C	JR	JR
018	GIL2-C	PS01B	7/2/09 13:55	7/3/09 12:56	23:01	*1490.0*	*2870.0*	23.0	2.98	2.95	2.99		C	C	JR	JR
019	TB1	N.A.	7/3/09 0:00	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~		C	N.A.	JR	N.A.
020	GIL3	PS01A	7/6/09 8:50	7/7/09 8:20	23:30	*2870.0*	*4279.9*	23.50	2.97	2.92	2.97		K	K	SRR	SRR
021	GIL3-FS1	PS01B	7/6/09 8:50	7/7/09 8:20	23:30	*2870.0*	*4279.9*	23.50	2.97	2.93	2.98		K	K	SRR	SRR
022	KCY3	PS12A	7/6/09 10:29	7/7/09 9:52	23:23	*2849.7*	*4252.9*	23.39	2.97	2.93	2.98	2	K	K	SRR	SRR

MFM Used #: **2-5063** **Slope:** **1.003** **Intercept:** **0.018** *Italicized counter entries are in minutes instead of hours.*

2. Counter in minutes instead of hours and tenths of an hour.

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog, and R = Rain (any)

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Mete Display		Corrected Average	Comment	Weather K,P,C,F&R		Initials	
			Start	End	Hours:Mins	Start	End	Hours	Start	End	Flow	Number	Start	End	Start	End
023	SOL3	PS11A	7/6/09 11:28	7/7/09 10:46	23:18	*2847.1*	*4244.0*	23.28	2.97	2.94	2.98	3	K	K	SRR	SRR
024	CHU3	PS14A	7/6/09 12:09	7/7/09 11:22	23:13	5164.7	5187.9	23.23	2.97	2.94	2.98	4	K	K	SRR	SRR
025	SAL3	PS02A	7/6/09 13:03	7/7/09 12:10	23:07	13861.4	13884.5	23.11	2.97	3.04	3.03		K	K	SRR	SRR
026	HOL3	PS02A	7/6/09 14:06	7/7/09 13:06	23:00	659.0	682.0	23.01	2.97	2.94	2.98		K	K	SRR	SRR
027	TB2	N.A.	7/7/09 7:30	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~		K	N.A.	SRR	N.A.
028	TS1	N.A.	7/7/09 7:31	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~		K	N.A.	SRR	N.A.
029	GIL4	PS01A	7/7/09 8:25	7/8/09 7:25	23:00	576.9	599.9	22.99	2.98	3.00	3.02	1	K	F	SRR	SRR
030	GIL4-C	PS01B	7/7/09 8:25	7/8/09 7:25	23:00	576.9	599.9	22.99	2.97	2.98	3.00		K	F	SRR	SRR
031	KCY4	PS12A	7/7/09 9:56	7/8/09 8:56	23:00	*4252.9*	*5633.0*	23.00	2.97	3.14	3.08	5	K	P	SRR	SRR
032	KCY4-C	PS12B	7/7/09 9:56	7/8/09 8:56	23:00	*4252.9*	*5633.0*	23.00	2.97	3.08	3.05		K	P	SRR	SRR
033	SOL4	PS11A	7/7/09 10:47	7/8/09 9:47	23:00	*4244.0*	*5624.0*	23.00	2.97	2.92	2.97		K	P	SRR	SRR
034	SOL4-C	PS11B	7/7/09 10:47	7/8/09 9:47	23:00	*4244.0*	*5624.0*	23.00	2.97	3.08	3.05		K	P	SRR	SRR
035	CHU4	PS14A	7/7/09 11:24	7/8/09 10:24	23:00	5187.9	5210.9	23.01	2.97	2.93	2.98		K	K	SRR	SRR
036	CHU4-C	PS14B	7/7/09 11:24	7/8/09 10:24	23:00	5187.9	5210.9	23.01	2.97	2.95	2.99		K	K	SRR	SRR
037	SAL4	PS03A	7/7/09 12:11	7/8/09 11:11	23:00	13884.5	13907.5	23.00	2.97	2.45	2.74		K	K	SRR	SRR
038	SAL4-C	PS03B	7/7/09 12:11	7/8/09 11:11	23:00	13884.5	13907.5	23.00	2.97	2.49	2.76		K	K	SRR	SRR
039	HOL4	PS02A	7/7/09 13:09	7/8/09 12:09	23:00	682.0	705.0	23.01	2.97	2.90	2.96		K	K	SRR	SRR
040	HOL4-C	PS02B	7/7/09 13:09	7/8/09 12:09	23:00	682.0	705.0	22.99	2.97	2.92	2.97		K	K	SRR	SRR
041	GIL5	PS01A	7/8/09 7:28	7/9/09 6:28	23:00	599.9	622.9	22.99	2.97	2.90	2.96		F	F	SRR	SRR
042	KCY5	PS12A	7/8/09 8:58	7/9/09 7:58	23:00	*5633.1*	*7013.5*	23.01	2.97	2.93	2.98		P	F	SRR	SRR
043	SOL5	PS11B	7/8/09 9:50	7/9/09 8:50	23:00	*5624.5*	*7006.0*	23.03	2.97	3.09	3.06		P	K	SRR	SRR
044	CHU5	PS14A	7/8/09 10:26	7/9/09 9:26	23:00	5210.9	5233.9	23.01	2.97	2.93	2.98		K	K	SRR	SRR

MFM Used #: 2-5063 **Slope: 1.003** **Intercept: 0.018** *Italicized counter entries are in minutes instead of hours.*

1. Replaced counter. 3. Counter in minutes not hours and tenths. 4. Found sunshield on roof at removal. 5. Added pump exhaust mufflers.

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog, and R = Rain (any)

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Mete Display		Corrected Average	Comment	Weather K,P,C,F&R		Initials	
			Start	End	Hours:Mins	Start	End	Hours	Start	End	Flow	Number	Start	End	Start	End
045	SAL5	PS03A	7/8/09 11:13	7/9/09 10:13	23:00	3907.5	3930.5	22.99	2.97	2.92	2.97		K	K	SRR	SRR
046	HOL5	PS02A	7/8/09 12:11	7/9/09 11:11	23:00	705.1	728.0	22.99	2.97	2.97	3.00		K	K	SRR	SRR
047	GIL6	PS01A	7/13/09 8:15	7/14/09 7:25	23:10	622.9	646.1	23.16	2.97	2.92	2.97		K	K	NTA	NTA
048	GIL6C	PS01B	7/13/09 8:15	7/14/09 7:25	23:10	622.9	646.1	23.16	2.97	2.97	3.00		K	K	NTA	NTA
049	KCY6	PS12A	7/13/09 9:45	7/14/09 8:55	23:10	*7013.5*	*7013.5*	0.00	2.97	2.89	2.96	6	K	K	NTA	NTA
050	KCY6C	PS12B	7/13/09 9:45	7/14/09 8:55	23:10	*7013.5*	*7013.5*	0.00	2.97	2.95	2.99	6	K	K	NTA	NTA
051	SOL6	PS11A	7/13/09 10:26	7/14/09 9:42	23:16	*7009.8*	*8405.2*	23.26	2.97	3.00	3.01		K	K	NTA	NTA
052	SOL6C	PS11B	7/13/09 10:26	7/14/09 9:42	23:16	*7009.8*	*8405.2*	23.26	2.97	3.00	3.01		K	K	NTA	NTA
053	CHU6	PS14A	7/13/09 10:53	7/14/09 10:20	23:27	5233.9	5257.4	23.45	2.97	2.92	2.97		K	K	NTA	NTA
054	CHU6C	PS14B	7/13/09 10:53	7/14/09 10:20	23:27	5233.9	5257.4	23.45	2.97	2.90	2.96		K	K	NTA	NTA
055	SAL6	PS03A	7/13/09 11:22	7/14/09 10:22	23:00	3930.5	3954.1	23.60	2.97	2.98	3.00	?	K	K	NTA	NTA
056	SAL6C	PS03B	7/13/09 11:22	7/14/09 10:22	23:00	3930.5	3954.1	23.60	2.97	2.97	3.00	?	K	K	NTA	NTA
057	HOL6	PS02A	7/13/09 12:04	7/14/09 11:04	23:00	728.1	751.7	23.65	2.97	3.00	3.01	?	K	K	NTA	NTA
058	HOL6C	PS02B	7/13/09 12:04	7/14/09 11:04	23:00	728.1	751.7	23.65	2.97	2.94	2.98	?	K	K	NTA	NTA
059	GIL7	PS01A	7/14/09 7:26	7/15/09 6:41	23:15	646.1	669.3	23.25	2.97	2.98	3.00		K	K	NTA	NTA
060	KCY7	PS12A	7/14/09 8:57	7/15/09 8:05	23:08	*7013.5*	*8403.4*	23.17	2.97	2.97	3.00		K	K	NTA	NTA
061	SOL7	PS11A	7/14/09 9:44	7/15/09 8:51	23:07	*8405.2*	*9795.2*	23.17	2.97	2.99	3.01		K	K	NTA	NTA
062	CHU7	PS14A	7/14/09 10:22	7/15/09 9:35	23:13	5257.4	5280.3	22.96	2.97	3.02	3.02	See # 7	K	K	NTA	NTA
063	SAL7	PS03A	7/14/09 10:57	7/15/09 10:05	23:08	3954.1	3977.2	23.10	2.97	2.89	2.96		K	K	NTA	NTA
064	HOL7	PS02A	7/14/09 11:45	7/15/09 10:53	23:08	751.7	774.8	23.11	2.97	3.03	3.03		K	K	NTA	NTA
065	GIL8	PS01A	7/15/09 6:42	7/16/09 6:27	23:45	669.3	693.1	23.77	2.97	3.03	3.03		K	K	NTA	NTA
066	KCY8	PS12A	7/15/09 8:06	7/16/09 7:44	23:38	*8403.4*	*9821.4*	23.63	2.97	3.00	3.01		K	K	NTA	NTA

MFM Used #: 2-5063 **Slope: 1.003** **Intercept: 0.018** *Italicized counter entries are in minutes instead of hours.*

6 = King City ETM did not start. Moved it on 14th and it started. ? = Errors between Elapsed Time & Elapsed Counter due to operator forgot their glasses.

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog, and R = Rain (any)

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Mete Display		Corrected Average	Comment	Weather K,P,C,F&R		Initials	
			Start	End	Hours:Mins	Start	End	Hours	Start	End	Flow	Number	Start	End	Start	End
067	SOL8	PS11A	7/15/09 8:51	7/16/09 8:18	23:27	*9795.2*	*11201.9*	23.45	2.97	2.97	3.00		K	K	NTA	NTA
068	CHU8	PS14A	7/15/09 9:40	7/16/09 8:45	23:05	54.1	77.5	23.40	2.97	2.94	2.98	7	K	K	NTA	NTA
069	SAL8	PS03A	7/15/09 10:06	7/16/09 9:15	23:09	3977.2	4000.4	23.25	2.97	3.06	3.04	?	K	K	NTA	NTA
070	HOL8	PS02A	7/15/09 10:55	7/16/09 9:58	23:03	774.9	797.9	22.96	2.97	3.02	3.02		K	K	NTA	NTA
071	TB3	N.A.	7/16/09 10:10	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~		K	N.A.	NTA	N.A.
072	KCY9	PS12A	7/20/09 11:20	7/21/09 10:40	23:20	*9827.0*	*11224.0*	23.28	2.98	3.08	3.06		K	K	JR	JR
073	SOL9	PS11A	7/20/09 12:20	7/21/09 11:40	23:20	*11203.0*	*12605.0*	23.37	2.98	2.95	2.99	?2	K	K	JR	JR
074	CHU9	PS14A	7/20/09 13:00	7/21/09 12:25	23:25	77.5	100.9	23.41	2.98	2.96	3.00	8	K	K	JR	JR
075	SAL9	PS03A	7/20/09 13:40	7/21/09 13:05	23:25	4000.5	4023.9	23.43	2.99	2.97	3.01		K	K	JR	JR
076	HOL9	PS02A	7/20/09 14:28	7/21/09 13:55	23:27	797.9	821.4	23.51	2.98	2.98	3.01		K	K	JR	JR
077	GIL9	PS01A	7/20/09 15:15	7/21/09 14:45	23:30	693.1	716.7	23.55	2.98	2.99	3.01	?2	K	K	JR	JR
078	KCY10	PS12A	7/21/09 10:45	7/22/09 10:05	23:20	*11233.0*	*12629.0*	23.27	2.98	3.00	3.02		K	K	JR	JR
079	KCY10-C	PS12B	7/21/09 10:45	7/22/09 10:05	23:20	*11233.0*	*12629.0*	23.27	2.98	3.04	3.04		K	K	JR	JR
080	SOL10	PS11A	7/21/09 11:45	7/22/09 11:15	23:30	*12609.0*	*14019.0*	23.50	2.98	2.97	3.00		K	K	JR	JR
081	SOL10-C	PS11B	7/21/09 11:45	7/22/09 11:15	23:30	*12609.0*	*14019.0*	23.50	2.98	2.99	3.01		K	K	JR	JR
082	CHU10	PS14A	7/21/09 12:25	7/22/09 11:52	23:27	100.9	124.4	23.47	2.99	2.98	3.01		K	K	JR	JR
083	CHU10-C	PS14B	7/21/09 12:25	7/22/09 11:55	23:30	100.9	124.4	23.48	2.98	2.98	3.01		K	K	JR	JR
084	SAL10	PS03A	7/21/09 13:15	7/22/09 12:50	23:35	4024.0	4047.7	23.66	2.97	2.97	3.00	?2	K	K	JR	JR
085	SAL10-C	PS03B	7/21/09 13:15	7/22/09 12:53	23:38	4024.7	4047.7	22.97	2.98	2.97	3.00	?2	K	K	JR	JR
086	HOL10	PS02A	7/21/09 14:00	7/22/09 13:45	23:45	821.5	845.2	23.75	2.97	2.96	2.99		K	K	JR	JR
087	HOL10-C	PS02B	7/21/09 14:00	7/22/09 13:47	23:47	821.5	845.2	23.79	2.97	2.97	3.00		K	K	JR	JR
088	GIL10	PS01A	7/21/09 14:50	7/22/09 14:25	23:35	716.8	740.4	23.55	2.98	2.96	3.00		K	K	JR	JR

MFM Used #: 6-2240 **Slope: 0.994** **Intercept: 0.045** *Italicized counter entries are in minutes instead of hours.*

7 = ETM changed in error. 8. Found sun shield on roof. ? = Errors between Elapsed Time & Elapsed Counter due to operator forgot their glasses.

?2 = Operator recorded time or counter reading slighly off. Thus, differences between Elapsed Time & Elapsed Counter.

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog, and R = Rain (any)

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Mete Display		Corrected Average	Comment	Weather K,P,C,F&R		Initials	
			Start	End	Hours:Mins	Start	End	Hours	Start	End	Flow	Number	Start	End	Start	End
089	GIL10-C	PS01B	7/21/09 14:50	7/22/09 14:27	23:37	716.8	740.4	23.58	2.98	2.96	3.00		K	K	JR	JR
090	TB4	N.A.	N.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!		K	N.A.	JR	N.A.
091	KCY11	PS12A	7/22/09 10:20	7/23/09 9:22	23:02	*12645.0*	*14025.0*	23.00	2.98	3.00	3.02		K	K	JR	JR
092	SOL11	PS11A	7/22/09 11:20	7/23/09 10:22	23:02	*14025.0*	*15405.0*	23.00	2.99	3.00	3.02		K	K	JR	JR
093	CHU11	PS14A	7/22/09 12:00	7/23/09 11:02	23:02	124.6	147.6	23.01	2.98	3.04	3.04		K	K	JR	JR
094	CHU11-FS	PS14B	7/22/09 12:00	7/23/09 11:02	23:02	124.6	147.6	23.01	2.90	3.00	2.98	9	K	K	JR	JR
095	SAL11	PS03A	7/22/09 13:00	7/23/09 12:02	23:02	4047.8	4070.8	23.00	2.98	2.92	2.98		K	K	JR	JR
096	HOL11	PS02A	7/22/09 13:45	7/23/09 12:47	23:02	845.3	868.3	22.97	2.98	3.00	3.02		K	K	JR	JR
097	GIL11	PS01A	7/22/09 14:30	7/23/09 13:32	23:02	740.5	763.5	23.00	3.00	3.07	3.06		K	K	JR	JR
098	GIL11-FS	PS01B	7/22/09 14:30	7/23/09 13:32	23:02	740.5	763.5	23.00	3.00	3.08	3.07		K	K	JR	JR
099	TS2	N.A.	7/23/09 16:47	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!		K	N.A.	JR	N.A.
100	GIL12	PS01A	7/27/09 9:00	7/28/09 8:00	23:00	763.5	786.5	23.00	2.97	3.06	3.04	11	K	C	SRR	SRR
101	GIL12-C	PS01B	7/27/09 9:00	7/28/09 8:00	23:00	763.5	786.5	23.00	2.97	3.04	3.03		K	C	SRR	SRR
102	KCY12	PS12A	7/27/09 10:27	7/28/09 9:27	23:00	*14025.2*	*15405.1*	23.00	2.97	3.32	3.17		K	PC	SRR	SRR
103	KCY12-C	PS12B	7/27/09 10:27	7/28/09 9:27	23:00	*14025.2*	*15405.1*	23.00	2.97	3.19	3.11		K	PC	SRR	SRR
104	SOL12	PS11A	7/27/09 11:08	7/28/09 10:08	23:00	*15405.0*	*16785.0*	23.00	2.97	3.42	3.22	10	K	K	SRR	SRR
105	SOL12-C	PS11B	7/27/09 11:08	7/28/09 10:08	23:00	*15405.0*	*16785.0*	23.00	2.97	3.38	3.20	10	K	K	SRR	SRR
106	CHU12	PS14A	7/27/09 11:49	7/28/09 10:49	23:00	147.6	170.6	23.00	2.97	3.36	3.19		K	PC	SRR	SRR
107	CHU12-C	PS14B	7/27/09 11:49	7/28/09 10:49	23:00	147.6	170.6	23.00	2.97	3.36	3.19		K	PC	SRR	SRR
108	SAL12	PS03A	7/27/09 12:23	7/28/09 11:23	23:00	4070.8	4093.8	23.00	2.97	3.49	3.26		K	C	SRR	SRR
109	SAL12-C	PS03B	7/27/09 12:23	7/28/09 11:23	23:00	4070.8	4093.8	23.00	2.97	3.54	3.28		K	C	SRR	SRR
110	HOL12	PS02A	7/27/09 13:05	7/28/09 12:05	23:00	868.3	891.3	23.00	2.97	3.76	3.39		K	PC	SRR	SRR

MFM Used #: 6-2240 **Slope: 0.994** **Intercept: 0.045** *Italicized counter entries are in minutes instead of hours.*

9. Found sun shield on roof. 10. Took 3 tubes till one worked. (Winds up it was probably the low bat. on MFM 5063.) 11. Found 5063 MFM reading very low @ AM removal.
11. (continued) Started using 20062240.

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog, and R = Rain (any)

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Mete Display		Corrected Average	Comment	Weather K,P,C,F&R		Initials	
			Start	End	Hours:Mins	Start	End	Hours	Start	End	Flow	Number	Start	End	Start	End
111	HOL12-C	PS02B	7/27/09 13:05	7/28/09 12:05	23:00	868.3	891.3	23.00	2.97	3.70	3.36		K	PC	SRR	SRR
112	GIL13	PS01A	7/28/09 8:05	7/29/09 7:30	23:25	786.5	809.9	23.42	2.97	2.97	3.00		C	C	SRR	SRR
113	KCY13	PS12A	7/28/09 9:29	7/29/09 8:56	23:27	*15407.1*	*16813.8*	23.45	2.98	3.00	3.02		PC	C	SRR	SRR
114	SOL13	PS11A	7/28/09 10:10	7/29/09 9:36	23:26	*16785.0*	*18190.7*	23.43	2.98	3.00	3.02		K	PC	SRR	SRR
115	CHU13	PS14A	7/28/09 10:51	7/29/09 10:21	23:30	170.6	194.1	23.50	2.98	2.97	3.00		PC	PC	SRR	SRR
116	SAL13	PS03A	7/28/09 11:25	7/29/09 10:50	23:25	4093.8	4117.2	23.40	2.98	2.98	3.01		C	PC	SRR	SRR
117	HOL13	PS02A	7/28/09 12:08	7/29/09 11:33	23:25	891.3	914.7	23.42	2.98	2.97	3.00		PC	K	SRR	SRR
118	GIL14	PS01A	7/29/09 7:30	7/30/09 6:55	23:25	809.9	833.3	23.40	2.98	2.97	3.00		C	C	SRR	SRR
119	KCY14	PS12A	7/29/09 8:56	7/30/09 8:21	23:25	*16813.8*	*18218.9*	23.42	2.98	2.98	3.01		C	C	SRR	SRR
120	SOL14	PS11A	7/29/09 9:36	7/30/09 9:01	23:25	*18190.7*	*19595.8*	23.42	2.98	3.04	3.04		PC	C	SRR	SRR
121	CHU14	PS14A	7/29/09 10:21	7/30/09 9:45	23:24	194.1	217.5	23.40	2.98	3.00	3.02		PC	C	SRR	SRR
122	SAL14	PS03A	7/29/09 10:50	7/30/09 10:15	23:25	4117.2	4140.6	23.42	2.98	3.00	3.02		PC	C	SRR	SRR
123	HOL14	PS02A	7/29/09 11:33	7/30/09 10:58	23:25	914.7	938.1	23.41	2.98	2.99	3.01		K	K	SRR	SRR
124	TB5	N.A.	7/29/09 6:50	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~		C	N.A.	SRR	N.A.
125	GIL15	PS01A	7/30/09 6:55	7/31/09 6:17	23:22	833.3	856.7	23.38	2.98	2.99	3.01		C	C	SRR	SRR
126	KCY15	PS12A	7/30/09 8:21	7/31/09 7:43	23:22	*18218.9*	*19620.8*	23.37	2.98	2.99	3.01		C	C	SRR	SRR
127	SOL15	PS11A	7/30/09 9:01	7/31/09 8:23	23:22	*19595.8*	*20997.8*	23.37	2.98	2.99	3.01		C	C	SRR	SRR
128	CHU15	PS14A	7/30/09 9:45	7/31/09 9:07	23:22	217.5	240.8	23.36	2.98	2.99	3.01		C	C	SRR	SRR
129	SAL15	PS03A	7/30/09 10:15	7/31/09 9:37	23:22	4140.6	4163.9	23.37	2.98	2.98	3.01		C	C	SRR	SRR
130	HOL15	PS02A	7/30/09 10:58	7/31/09 10:20	23:22	938.1	961.5	23.37	2.98	2.96	3.00		K	K	SRR	SRR
131	GIL16	PS01A	8/3/09 9:00	8/4/09 8:02	23:02	856.8	879.8	23.04	2.98	2.98	3.01		C	P	MM	MM
132	GIL16-FS	PS01B	8/3/09 9:00	8/4/09 8:02	23:02	856.8	879.8	23.04	2.98	3.00	3.02		C	P	MM	MM

MFM Used #: 6-2240 **Slope: 0.994** **Intercept: 0.045**

Italicized counter entries are in minutes instead of hours.

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog, and R = Rain (any)

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Mete Display		Corrected Average	Comment	Weather K,P,C,F&R		Initials	
			Start	End	Hours:Mins	Start	End	Hours	Start	End	Flow	Number	Start	End	Start	End
133	KYC16	PS12A	8/3/09 10:35	8/4/09 10:02	23:27	*19628.8*	*21035.8*	23.45	2.98	2.93	2.98		P	K	MM	MM
134	KYC16-C	PS12B	8/3/09 10:35	8/4/09 10:02	23:27	*19628.8*	*21035.8*	23.45	2.98	3.14	3.09		P	K	MM	MM
135	SOL16	PS11A	8/3/09 11:29	8/4/09 10:46	23:17	*21000.4*	*22397.6*	23.29	2.98	2.99	3.01		K	K	MM	MM
136	SOL16-C	PS11B	8/3/09 11:29	8/4/09 10:46	23:17	*21000.4*	*22397.6*	23.29	2.98	2.97	3.00		K	K	MM	MM
137	CHU16	PS14A	8/3/09 12:12	8/4/09 11:21	23:09	240.9	264.0	23.15	2.98	2.98	3.01		K	K	MM	MM
138	CHU16-FS	PS14B	8/3/09 12:12	8/4/09 11:21	23:09	240.9	264.0	23.15	2.98	2.97	3.00		K	K	MM	MM
139	SAL16	PS03A	8/3/09 12:53	8/4/09 11:58	23:05	4164.0	4187.1	23.09	2.98	3.00	3.02		K	K	MM	MM
140	SAL16-C	PS03B	8/3/09 12:53	8/4/09 11:58	23:05	4164.0	4187.1	23.09	2.98	2.94	2.99		K	K	MM	MM
141	HOL16	PS02A	8/3/09 13:43	8/4/09 13:01	23:18	961.5	984.8	23.32	2.98	2.95	2.99		K	K	MM	MM
142	HOL16-C	PS02B	8/3/09 13:43	8/4/09 13:01	23:18	961.5	984.8	23.32	2.98	2.88	2.96		K	K	MM	MM
143	TS3	N.A.	8/3/09 13:53	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~		K	N.A.	MM	N.A.
144	TB6	N.A.	8/3/09 13:53	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~		K	N.A.	MM	N.A.
145	GIL17	PS01A	8/4/09 8:06	8/5/09 7:06	23:00	879.9	902.9	22.99	2.98	3.00	3.02		P	C	MM	MM
146	GIL17-C	PS01B	8/4/09 8:06	8/5/09 7:06	23:00	879.9	902.9	22.99	2.98	3.00	3.02		P	C	MM	MM
147	KYC17	PS12A	8/4/09 10:07	8/5/09 9:07	23:00	*21036.2*	*22415.3*	22.99	2.98	3.00	3.02		K	K	MM	MM
148	SOL17	PS11A	8/4/09 10:50	8/5/09 9:51	23:01	*22398.3*	*23778.9*	23.01	2.98	3.00	3.02		K	K	MM	MM
149	CHU17	PS14A	8/4/09 11:24	8/5/09 10:26	23:02	264.1	287.1	23.04	2.98	3.00	3.02		K	K	MM	MM
150	CHU17-C	PS14B	8/4/09 11:24	8/5/09 10:26	23:02	264.1	287.1	23.04	2.98	3.00	3.02		K	K	MM	MM
151	SAL17	PS03A	8/4/09 12:02	8/5/09 11:02	23:00	4187.1	4210.1	23.01	2.98	2.99	3.01		K	K	MM	MM
152	HOL17	PS02A	8/4/09 13:05	8/5/09 12:08	23:03	984.9	1007.9	23.03	2.98	3.00	3.02		K	K	MM	MM
153	GIL18	PS01A	8/5/09 7:09	8/6/09 6:09	23:00	902.9	925.9	23.00	2.98	2.96	3.00		C	C	MM	MM
154	KYC18	PS12A	8/5/09 9:09	8/6/09 8:09	23:00	*22415.5*	*23795.3*	23.00	2.98	3.00	3.02		K	P	MM	MM

MFM Used #: **6-2240** **Slope:** **0.994** **Intercept:** **0.045**

Italicized counter entries are in minutes instead of hours.

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog, and R = Rain (any)

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Mete Display		Corrected Average	Comment	Weather K,P,C,F&R		Initials	
			Start	End	Hours:Mins	Start	End	Hours	Start	End	Flow	Number	Start	End	Start	End
155	SOL18	PS11A	8/5/09 9:53	8/6/09 8:53	23:00	*23779.1*	*25158.7*	22.99	2.98	2.97	3.00		K	C	MM	MM
156	CHU18	PS14A	8/5/09 10:30	8/6/09 9:30	23:00	287.1	310.1	22.98	2.98	3.00	3.02		K	R	MM	MM
157	SAL18	PS03A	8/5/09 11:03	8/6/09 10:03	23:00	4210.1	4233.1	22.98	2.98	2.98	3.01		K	P	MM	MM
158	HOL18	PS02A	8/5/09 12:10	8/6/09 11:10	23:00	1007.9	1030.9	22.99	2.98	2.98	3.01		K	C	MM	MM
159	GIL19	PS01A	8/10/09 9:14	8/11/09 8:14	23:00	925.9	948.9	23.00	2.98	3.07	3.05		K	P	SRR	SRR
160	GIL19-C	PS01B	8/10/09 9:14	8/11/09 8:14	23:00	925.9	948.9	23.00	2.98	3.08	3.06		K	P	SRR	SRR
161	KYC19	PS12A	8/10/09 10:46	8/11/09 9:46	23:00	*23795.3*	*25175.4*	23.00	2.98	3.06	3.05		P	P	SRR	SRR
162	KYC19-C	PS12B	8/10/09 10:46	8/11/09 9:46	23:00	*23795.3*	*25175.4*	23.00	2.98	3.07	3.05		P	P	SRR	SRR
163	SOL19	PS11A	8/10/09 11:35	8/11/09 10:35	23:00	*25158.7*	*26538.8*	23.00	2.98	3.09	3.06		P	P	SRR	SRR
164	SOL19-C	PS11B	8/10/09 11:35	8/11/09 10:35	23:00	*25158.7*	*26538.8*	23.00	2.98	3.09	3.06		P	P	SRR	SRR
165	CHU19	PS14A	8/10/09 12:08	8/11/09 11:08	23:00	310.1	333.1	23.00	2.98	3.00	3.02		P	P	SRR	SRR
166	CHU19-C	PS14B	8/10/09 12:08	8/11/09 11:08	23:00	310.1	333.1	23.00	2.98	3.00	3.02		P	P	SRR	SRR
167	SAL19	PS03A	8/10/09 12:47	8/11/09 11:47	23:00	4233.1	4256.1	23.00	2.98	3.00	3.02		P	P	SRR	SRR
168	SAL19-C	PS03B	8/10/09 12:47	8/11/09 11:47	23:00	4233.1	4256.1	23.04	2.98	2.99	3.01		P	P	SRR	SRR
169	HOL19	PS02A	8/10/09 13:36	8/11/09 12:36	23:00	1030.9	1053.9	23.00	2.98	2.99	3.01		P	K	SRR	SRR
170	HOL19-C	PS02B	8/10/09 13:36	8/11/09 12:36	23:00	1030.9	1053.9	23.00	2.98	2.98	3.01		P	K	SRR	SRR
171	GIL20	PS01A	8/11/09 8:17	8/12/09 7:17	23:00	948.9	971.9	23.00	2.98	2.98	3.01		P	P	SRR	SRR
172	KYC20	PS12A	8/11/09 9:49	8/12/09 8:49	23:00	*25175.4*	*26555.4*	23.00	2.98	2.98	3.01		P	K	SRR	SRR
173	SOL20	PS11A	8/11/09 10:37	8/12/09 9:37	23:00	*26538.8*	*27918.7*	23.00	2.98	2.96	3.00		P	P	SRR	SRR
174	CHU20	PS14A	8/11/09 11:10	8/12/09 10:10	23:00	333.1	356.1	23.00	2.98	2.96	3.00		P	P	SRR	SRR
175	SAL20	PS03A	8/11/09 11:49	8/12/09 10:49	23:00	4256.1	4279.1	22.99	2.98	2.97	3.00		P	P	SRR	SRR
176	HOL20	PS02A	8/11/09 12:38	8/12/09 11:38	23:00	1053.9	1076.9	23.00	2.98	2.94	2.99		K	K	SRR	SRR

MFM Used #: **6-2240** **Slope:** **0.994** **Intercept:** **0.045**

Italicized counter entries are in minutes instead of hours.

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog, and R = Rain (any)

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Mete Display		Corrected Average	Comment	Weather K,P,C,F&R		Initials	
			Start	End	Hours:Mins	Start	End	Hours	Start	End	Flow	Number	Start	End	Start	End
177	GIL21	PSO1A	8/12/09 7:17	8/13/09 6:22	23:05	971.9	995.0	23.08	2.98	2.99	3.01		P	K	SRR	SRR
178	KYC21	PS12A	8/12/09 8:49	8/13/09 7:54	23:05	*26555.4*	*27940.3*	23.08	2.98	2.99	3.01		K	K	SRR	SRR
179	SOL21	PS11A	8/12/09 9:37	8/13/09 8:42	23:05	*27918.7*	*29303.7*	23.08	2.98	2.98	3.01		P	P	SRR	SRR
180	CHU21	PS14A	8/12/09 10:10	8/13/09 9:15	23:05	356.1	379.2	23.08	2.98	2.98	3.01		P	P	SRR	SRR
181	SAL21	PS03A	8/12/09 10:49	8/13/09 9:54	23:05	4279.1	4302.1	23.09	2.98	3.00	3.02		P	P	SRR	SRR
182	HOL21	PS02A	8/12/09 11:38	8/13/09 10:43	23:05	1076.9	1100.0	23.08	2.98	2.97	3.00		K	K	SRR	SRR
183	TB7	N.A.	8/13/09 7:14	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~		P	N.A.	SRR	N.A.
184	GIL22	PS01A	8/17/09 10:58	8/18/09 10:10	23:12	995.1	1018.3	23.17	2.98	3.00	3.02		K	K	JR	JR
185	GIL22-FS	PS01B	8/17/09 10:58	8/18/09 10:10	23:12	995.1	1018.3	23.17	2.97	3.00	3.01		K	K	JR	JR
186	KCY22	PS12A	8/17/09 12:25	8/18/09 11:50	23:25	*27943.0*	*29347.0*	23.40	2.98	3.00	3.02		K	K	JR	JR
187	SOL22	PS11A	8/17/09 13:30	8/18/09 12:45	23:15	*29305.0*	*30702.0*	23.28	2.97	3.00	3.01		K	K	JR	JR
188	CHU22	PS14A	8/17/09 14:05	8/18/09 13:30	23:25	379.2	402.6	23.40	2.99	2.97	3.01		K	K	JR	JR
189	CHU22-FS	PS14A	8/17/09 14:05	8/18/09 13:30	23:25	379.2	402.6	23.40	2.99	2.98	3.01		K	K	JR	JR
190	SAL22	PS03A	8/17/09 14:45	8/18/09 14:15	23:30	4302.2	4325.7	23.46	2.98	2.97	3.00		K	P	JR	JR
191	SAL22-C	PS03B	8/17/09 14:45	8/18/09 14:15	23:30	4302.2	4325.7	23.46	2.99	3.00	3.02		K	P	JR	JR
192	HOL22	PS02A	8/17/09 15:30	8/18/09 15:10	23:40	1100.0	1123.7	23.66	2.98	2.99	3.01		K	K	JR	JR
193	HOL22-C	PS02B	8/17/09 15:30	8/18/09 15:10	23:40	1100.0	1123.7	23.66	2.98	2.99	3.01		K	K	JR	JR
194	TB8	N.A.	8/17/09 20:00	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~		K	N.A.	JR	N.A.
195	GIL23	PS01A	8/18/09 10:15	8/19/09 9:21	23:06	1018.3	1041.5	23.13	2.98	2.99	3.01		K	P	JR	JR
196	GIL23-C	PS01B	8/18/09 10:15	8/19/09 9:24	23:09	1018.3	1041.5	23.17	2.97	2.99	3.01		K	P	JR	JR
197	KCY23	PS12A	8/18/09 11:50	8/19/09 10:55	23:05	*29349.0*	*30732.5*	23.06	2.97	3.00	3.01		K	K	JR	JR
198	KCY23-C	PS12B	8/18/09 11:50	8/19/09 10:55	23:05	*29349.0*	*30732.5*	23.06	2.97	3.00	3.01		K	K	JR	JR

MFM Used #: **6-2240** **Slope:** **0.994** **Intercept:** **0.045**

Italicized counter entries are in minutes instead of hours.

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog, and R = Rain (any)

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Mete Display		Corrected Average	Comment	Weather K,P,C,F&R		Initials	
			Start	End	Hours:Mins	Start	End	Hours	Start	End	Flow	Number	Start	End	Start	End
199	SOL23	PS11A	8/18/09 12:50	8/19/09 12:05	23:15	*30705.0*	*32100.0*	23.25	2.97	3.00	3.01		K	K	JR	JR
200	SOL23-C	PS11B	8/18/09 12:50	8/19/09 12:07	23:17	*30705.0*	*32102.5*	23.29	2.97	2.98	3.00		K	K	JR	JR
201	CHU23	PS14A	8/18/09 13:35	8/19/09 12:45	23:10	402.7	425.9	23.18	2.97	2.97	3.00		K	K	JR	JR
202	CHU23-C	PS14B	8/18/09 13:35	8/19/09 12:48	23:13	402.7	425.9	23.21	2.98	2.98	3.01		K	K	JR	JR
203	SAL23	PS03A	8/18/09 14:20	8/19/09 13:42	23:22	4325.8	4349.2	23.40	2.97	2.96	2.99		P	P	JR	JR
204	HOL23	PS02A	8/18/09 15:15	8/19/09 14:50	23:35	1123.7	1147.3	23.56	2.97	2.95	2.99		K	K	JR	JR
205	TS4	N.A.	8/18/09 15:20	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~	N.A.	N.A.	~~#VALUE!~~		K	N.A.	JR	N.A.
206	GIL24	PS01A	8/19/09 9:27	8/20/09 8:45	23:18	1041.6	1064.9	23.31	2.98	2.96	3.00		K	K	JR	JR
207	KCY24	PS12A	8/19/09 11:00	8/20/09 10:20	23:20	*30738.0*	*32139.0*	23.35	2.98	2.98	3.01		K	K	JR	JR
208	SOL24	PS11A	8/19/09 12:10	8/20/09 11:12	23:02	*32105.5*	*33487.0*	23.03	2.97	3.00	3.01		K	K	JR	JR
209	CHU24	PS14A	8/19/09 12:55	8/20/09 11:57	23:02	426.0	449.1	23.05	2.97	2.99	3.01		K	K	JR	JR
210	SAL24	PS03A	8/19/09 13:50	8/20/09 12:51	23:01	4349.2	4372.3	23.05	2.98	2.95	2.99		K	K	JR	JR
211	HOL24	PS02A	8/19/09 14:54	8/20/09 13:55	23:01	1147.4	1170.4	23.01	2.97	2.89	2.96		K	K	JR	JR
					0:00			0.00								
					0:00			0.00								
					0:00			0.00								
					0:00			0.00								
					0:00			0.00								
					0:00			0.00								
					0:00			0.00								
					0:00			0.00								
					0:00			0.00								

MFM Used #: _____ **Slope:** _____ **Intercept:** _____ *Italicized counter entries are in minutes instead of hours.*

Weather Codes: K = Clear, P = Partly Cloudy, C = ≥67% Cloudy, F = Fog, and R = Rain (any)

APPENDIX E

Calibration and Certification Reports

CALIFORNIA AIR RESOURCES BOARD

FLOW CALIBRATION REPORT

TO: *SPECIAL PURPOSE MONITORING*
NEIL ADLER

LOG NUMBER : *2009 127*

FROM: ROBERT RUSSELL\BRIAN SPREADBOROUGH
Program Evaluation & Standards

CALIBRATION DATE: *06/19/2009*
REPORT DATE : *06/19/2009*

IDENTIFICATION

Instrument : *AALBORG*
Position number : *1*
Property No. : 20062240
Serial No. : *20062240*
Previous Log No.: *2008 110*
Bar Code No. : *20062240*
Elevation : *25.00'*
Inst. Prop. Of : *AIR MONITORING - CENTRAL*

Site Name : *MLD Standards Lab*
Site Number : *34-299*
Location : *1309 T-Street*
Sacramento, CA 95814

CALIBRATION STANDARDS	ID NUMBER
MOLBOX	20021121

CALIBRATION RESULTS

Component	FLOW
Instrument Range	0-5 SLM
Initial Zero Setting	
Initial Span Setting	
Final Zero Setting	
Final Span Setting	
Slope	1.006
Intercept	-0.045
Correlation Coefficient	0.99994 ✓
Change From Previous Calibration (%)	0.6455
Date Of Last Calibration	05/28/2008

Calibration Equation:

Calibration Expires: *06/19/2010*

Std. FLOW = 0.994 * (Net Display) + 0.045

Comments:

CALIBRATED BY: NSB

CHECKED BY: RR

CALIFORNIA AIR RESOURCES BOARD

FLOW CALIBRATION REPORT

TO: *TESTING AND EVALUATIONS*
STEVE RIDER

LOG NUMBER : *2009 031*

FROM: ROBERT RUSSELL\BRIAN SPREADBOROUGH
Program Evaluation & Standards

CALIBRATION DATE: *03/13/2009*
REPORT DATE : *03/13/2009*

IDENTIFICATION

Instrument : *AALBORG MFM GFM17*
Position number : *1*
Property No. : 20005063
Serial No. : *G15285*
Previous Log No.: *2009 007*
Bar Code No. : *20005063*
Elevation : *25.00'*
Inst. Prop. Of : *AIR MONITORING - CENTRAL*

Site Name : *MLD Standards Lab*
Site Number : *34-299*
Location : *1309 T-Street*
Sacramento, CA 95814

CALIBRATION STANDARDS	ID NUMBER
MOLBOX	20021493

CALIBRATION RESULTS

Component	FLOW
Instrument Range	0-5SLM
Initial Zero Setting	
Initial Span Setting	
Final Zero Setting	
Final Span Setting	
Slope	0.997
Intercept	-0.018
Correlation Coefficient	0.99998 ✓
Change From Previous Calibration (%)	-1.291
Date Of Last Calibration	01/13/2009

Calibration Equation: +1.3%

Std. FLOW = 1.003 * (Net Display) + 0.018

Calibration Expires: *03/13/2010*

Comments:

CALIBRATED BY: NS

CHECKED BY: RR