

APPENDIX M

Report of Findings – Perimeter Air Sampling Program

GeoSyntec Consultants

February 23, 2004

**REPORT OF FINDINGS
PERIMETER AIR SAMPLING PROGRAM**

**ASCON LANDFILL SITE
HUNTINGTON BEACH, CALIFORNIA**

Prepared for:

**State of California Environmental Protection Agency
Department of Toxic Substances Control**
5796 Corporate Avenue
Cypress, California 90630

Submitted by:

Ascon Landfill Site Responsible Parties

Prepared by:



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23 February 2004



23 February 2004

Mr. Thomas M. Cota, Chief
Southern California Cleanup Operations Branch – Cypress Office
Attention: Ms. Christine Chiu, Project Manager
Southern California Cleanup Operations Branch, Cypress
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630-4732

Subject: Submittal – Report of Findings
Perimeter Air Sampling Program
Ascon Landfill Site
Huntington Beach, California

Dear Ms. Chiu:

Enclosed please find 3 copies of the Report of Findings for the Perimeter Air Sampling Program performed at the Ascon Landfill Site. The Report of Findings is submitted on behalf of the Ascon Responsible Parties. This deliverable was prepared by GeoSyntec Consultants and is consistent with the Consent Order, Docket No. I&SE-CO 02/03-007.

Please feel free to contact the undersigned with any questions or comments concerning site activities at the Ascon Landfill Site.

Sincerely,

Tamara Zeier, P.E.
Project Coordinator

Mike Reardon, P.E.
Project Engineer

Copy to: Michael Schum, DTSC
Gregory Braun, DHS
Bruce Lackow, PCR
Ascon Responsible Parties

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1. INTRODUCTION

1.1 Terms of Reference

This document presents the findings of the perimeter air sampling program performed at the Ascon Landfill Site (the Site) located in Huntington Beach, California. This report was prepared by GeoSyntec Consultants, Inc. (GeoSyntec) on behalf of the Ascon Site Responsible Parties (RPs) for submittal to the Department of Toxic Substances Control (DTSC).

1.2 Project Objectives

The primary objective of the sampling program was to evaluate existing ambient air quality with respect to volatile organic compounds (VOCs) at the property perimeter of the Site. The scope of work, as detailed in the workplan for the Perimeter Air Sampling Program [GeoSyntec, 2003a] included three rounds of ambient air sampling conducted in May, August, and December 2003. This document presents the activities and results of the December 2003 sampling round and a summary and evaluation of data from all three sampling rounds.

1.3 Report Organization

The remainder of this report is organized into the following sections:

- Section 2, *Project Background* - presents background information on the Site and previous work that relates to this evaluation,
- Section 3, *December 2003 Sampling Round* - contains details of the sampling program performed and the laboratory results of collected samples,

- Section 4, Perimeter Air Sampling *Program Evaluation* – includes a summary and evaluation of the air monitoring data collected during the three rounds of perimeter air sampling, and
- Section 5, *Summary and Conclusions* - presents a summary and conclusions of the perimeter air sampling program.

Referenced tables, figures, and appendices are included in separate sections at the end of this report.

2. PROJECT BACKGROUND

The Site is located at 21641 Magnolia Street in Huntington Beach, California and comprises approximately 38 acres situated at the corner of the intersection of Hamilton Avenue and Magnolia Street (Figure 2-1). The Site was operated as a waste disposal facility from approximately 1938 through 1984. Wastes originally disposed at the Site include wastes from oil drilling operations such as drilling muds. From 1957 to 1971, records show that wastes such as acids, slag, fuel oils, styrene and other wastes were also disposed on the Site. From 1971 to 1984 inert solid wastes such as concrete were disposed on the Site. Since 1984 the Site has remained in its current condition.

The Site currently consists of five visible impoundments (Lagoons 1 – 5), one covered pit (Pit F) and several pits and lagoons that are no longer visible (Figure 2-2). The surfaces of three of the five lagoons (Lagoons 3, 4 and 5) appear to be relatively dry. Significant portions of two of the lagoons (Lagoons 1 and 2) are made up of oily wastes and are liquid in nature. The remaining areas of the Site, excluding the roadways, are covered by construction debris and coastal vegetation such as ice plant.

Short-term (2-hour) and long-term (24-hour) ambient air sampling was performed around the perimeter of the Site in August 2002 [GeoSyntec, 2002]. Laboratory results of the August 2002 short-term samples indicated that the Site is not a significant contributor to concentrations of VOCs in ambient air. August 2002 results of longer-term sampling indicated that detected concentrations were generally not appreciably above background with the exception of methylene chloride and benzene detected in one sample during one of the two 24-hour sampling events. These detected concentrations were inconsistent with detected concentrations from other on-site samples. In addition, concentrations of detected chemicals at the Site were below the Agency for Toxic Substances Disease Registry (ATSDR) minimum risk levels (MRLs) and State of California reference exposure levels (RELs), as available. Additional sampling was conducted as part of the Perimeter Air Sampling Program to further evaluate ambient air quality at the perimeter of the Site. The Perimeter Air Sampling Program was developed to address the requirements of the Consent Order and incorporates discussions held with DTSC in a teleconference held on 19 February, 2003.

3. DECEMBER 2003 SAMPLING ROUND

3.1 Introduction

The December 2003 sampling round included a total of six consecutive 8-hour sampling events that were conducted from 7AM on 18 December 2003 through 7 AM on 20 December 2003. The December 2003 sampling event was originally scheduled for 9 December 2003 to 11 December 2003. However, due to measurable rain events, sampling was delayed until an antecedent dry period of 48 hours was experienced. The following sections present details of data collection and data analysis during the December 2003 sampling round.

3.2 Data Collection

3.2.1 General

The following subsections present details of the December 2003 sampling round including sample collection methods and materials, and laboratory testing. The remainder of this Section is organized into the following:

- Wind Monitoring;
- Sample Collection;
- Methods and Materials; and
- Laboratory Testing.

3.2.2 Wind Monitoring

Wind velocity and direction was monitored at the Site prior to and during sample collection. Wind speed and direction data were collected with a single wind station installed in a relatively open area of the Site (Figure 3-1). The wind station consisted of a Climatronix wind speed sensor and a 360-degree directional wind vane installed on a tower at a height of approximately 19-feet above ground surface. The wind data was recorded with a electronic data logger. The datalogger and system

battery were installed in a Nema enclosure at the base of the tower. Appendix A includes photographs of the installed wind station.

Wind speed and direction measurements were collected continuously and 15-minute average values were recorded in the datalogger. The wind station was mobilized on 8 December 2003, to correspond with the original planned sampling start date. However, due to rainfall events sampling was delayed until 18 December 2003. Instantaneous wind data was evaluated prior to and periodically during sample collection. A data logger malfunction was identified during the first 8-hour sampling event on 18 December. The data logger malfunction was repaired by 9:00 pm on 18 December and data collection resumed. The data logger malfunction resulted in a loss of wind data from 7 am until 9:00 pm on 18 December 2003. The station was left on Site collecting data until 1:15 pm on 22 December 2003.

To provide information on wind direction and speed during the time period the data logger malfunctioned, an evaluation of nearby meteorological stations was conducted. The Los Alamitos meteorological station was selected from the National Weather Service Meteorological network as a source for replacement of the missing data set. The Los Alamitos weather station was selected because of its close proximity to the Site (approximately 7 miles) and relative proximity to the coast, as compared to other stations. Raw 15-minute data compiled from the data logger and the Los Alamitos weather station is included in Appendix B-1. Hourly averages were generated from the 15-minute average data for use in producing wind roses. A separate wind rose was generated to represent wind speed and direction conditions for each of the six 8-hour sampling periods. Tables of hourly average data and the six 8-hour wind roses are included in Appendix B-2. As shown on the wind roses, wind directions during the December 2003 sampling events were variable. However, wind directions during late evening and early morning hours were predominately from the northeast to the northwest, typical of offshore drainage conditions experienced in Southern California during winter months. The wind velocities ranged from 0.9 to 9 miles per hour.

3.2.3 Sample Collection

Samples collected for the December 2003 sampling round consisted of six consecutive 8-hour sampling events. Sample collection began at 7 AM on 18 December 2003 and was completed at 7 AM on 20 December 2003. During field activities the Health & Safety Plan (HASP) presented in Appendix A of the Perimeter Air Sampling Program Workplan [GeoSyntec, 2003a] was adhered to.

A total of 38 8-hour integrated ambient air samples were collected along the property perimeter at the Site. One 8-hour sample was collected from each of the six sampling locations shown in Figure 3-1 during each of the six 8-hour periods. One duplicate 8-hour sample was also collected on each sampling day, for a total of 38 samples. Field duplicate 8-hour integrated samples were collected from locations AA-04 and AA-03 during the 2nd and 4th sampling events, respectively.

3.2.4 Method and Materials

The 8-hour integrated ambient air samples were collected in six-liter Summa canisters using a passive sample collection procedure. A passive collection procedure is an approved sampling method by the South Coast Air Quality Management District (SCAQMD). Summa canisters were provided pre-cleaned and evacuated by Columbia Analytical Services, Inc. (Columbia) located in Simi Valley, California. Each Summa canister was fitted with a dedicated flow control device. Calibration and cleaning of the flow control devices and Summa canisters was performed by Columbia.

The sample intake for each Summa canister was located at a height of approximately 3 feet (0.9 meter) above ground surface at each sampling location. Summa canisters were secured to a metal pole driven into the ground at each location. A team of two GeoSyntec personnel conducted the on-site sample collection activities.

An analogue vacuum gauge was used to measure the vacuum of each Summa canister prior to sample collection. Following sample collection, a post-collection vacuum reading was taken, and each Summa canister was stored in a cardboard box pending shipment to the laboratory under chain of custody protocol.

Samples were shipped to the laboratory in two batches, on 19 and 22 December 2003. A trip blank Summa canister was used for each sample shipment. Photographs of sampling activities are included in Appendix A. Field logs including the pre- and post-sample field vacuum gauge readings are included in Appendix C.

3.2.5 Laboratory Testing

Samples were analyzed by Columbia located in Simi Valley, California. Each sample was analyzed for VOCs by EPA Method TO-15. Appendix D contains the laboratory data. The laboratory data is discussed in the following section.

3.3 Data Analysis

3.3.1 General

Tables 3-1 through 3-6 present a summary of detected analytes from samples collected during Events 1 through 6, respectively. Figures 3-2 through 3-7 include summaries of wind speed and direction collected during Events 1 through 6, respectively. The wind speeds measured at the Site ranged from 0.9 to 9.0 miles per hour (mph) during the December 2003 sampling events. The wind direction was variable during the events and showed a stronger offshore flow pattern than observed during previous monitoring rounds as is typical during winter months in southern California.

3.3.2 December 2003 Sampling Round Results

As mentioned above, the wind directions measured during Events 1 through 6 were variable and exhibited a stronger offshore wind flow pattern. Given the varying wind direction, a consistent background sampling location cannot be established. However, it appears that, sample location AA-07 is generally an upwind or background sampling location during a majority of daytime hours. However, these time periods are not fully contained within an 8-hour sampling period. During late evening and early

morning hours (11 pm-7 am), offshore flow conditions generally cause northern sampling locations AA-01, AA-02, and AA-03 to be upwind of the Site.

As shown in Tables 3-1 through 3-6, generally similar analytes were detected at equivalent concentrations at all of the perimeter locations during each of the six events. As compared to previous monitoring rounds, several of the chemicals commonly detected in urban environments were detected more frequently and at higher concentrations than in previous rounds. This may be due to the stronger offshore flow pattern observed during this round of sampling and the presence of these chemicals in urban air that was flowing across the Site as opposed to the onshore flow conditions which would carry less impacted air from the ocean across the Site. It should be noted that concentrations detected in samples collected from the northern sampling locations (AA-01, AA-02, and AA-03) were generally equivalent to concentrations detected in samples from remaining Site locations during the 11 pm to 7 am sampling events when offshore flow conditions were predominant.

3.3.3 Data Quality Review

An overall quality review was performed on the laboratory data. In addition, a Level IV data validation was performed on four of the 38 total samples, approximately 10 percent of the data. Per the requirements of a Level IV data validation under USEPA National Functional Guidelines for Organic Data Review, each item contained in the data package must be checked. The data review process provides information on analytical limitations of data based on specific quality control (QC) criteria. The items reviewed as part of the data quality review include:

- Signed laboratory certification statement,
- Laboratory certified narrative,
- Sample holding times,
- GC/MS instrument performance check,
- Initial calibration,
- Continuing calibration,
- Blank results,
- System Monitoring Compounds (Surrogates),

- Matrix Spikes/Matrix Spike Duplicates (Where Applicable),
- Laboratory control samples (Where Applicable),
- Field duplicate and trip blank results,
- Internal standards,
- Target compound identification,
- Compound Quantitation and Reports CRQLs,
- Tentatively Identified Compounds, and
- System Performance.

Based on the review performed, the analyses were performed by Columbia in accordance with the methodology outlined in EPA Method TO-15. Level IV data validation was performed according to guidelines established and recommended by USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review [USEPA, 1999]. The results of the validation indicate that the data reviewed met specified criteria and no qualifiers are therefore assigned to these data.

4. PERIMETER AIR SAMPLING PROGRAM DATA EVALUATION

4.1 Introduction

A total of three rounds of ambient air sampling were conducted in May, August, and December 2003. Each round included the collection of 6 consecutive 8-hour integrated samples over a two day period from perimeter locations around the Site. In addition, an earlier round of 2-hour and 24-hour air sampling was conducted in August 2002. The following sections contain a review of the monitoring and air quality data collected during the three rounds of perimeter air sampling conducted in 2003.

The perimeter air sampling program commenced in May 2003 [GeoSyntec, 2003a]. Laboratory results of integrated 8-hour samples collected during the May 2003 sampling round indicated that concentrations of detected analytes were overall very similar from the background or upwind sample location. In addition, the maximum and average concentrations of detected analytes from the Site were within the range of those detected in 2002 at the California Air Resources Board (ARB) North Long Beach air toxics monitoring station.

The perimeter air sampling program continued in August 2003 [GeoSyntec, 2003b]. Wind monitoring data established sampling location AA-07 as a background or upwind location for these sampling events. The laboratory results of integrated 8-hour samples collected during the August 2003 sampling round were also generally within the range of historical data collected at the Site and at the ARB North Long Beach air toxics monitoring station. Therefore, based on these data it was concluded that the Site is not a significant contributor to concentrations of VOCs in ambient air.

4.2 Wind Monitoring Data

Table 4-1 summarizes the wind velocity data collected at the Site during the 2003 Perimeter Air Sampling Program. Figure 4-1 through 4-3 presents cumulative wind roses for the May 2003, August 2003, and December 2003 sampling rounds, respectively. Based on the data collected during the May and August sampling rounds,

sample location AA-07 is generally the upwind or background sampling location at the site.

The wind direction did vary during the December 2003 sampling round and exhibited a stronger offshore flow pattern than observed during previous rounds of sampling. This is believed to be caused by off-shore or drainage flow conditions experienced in the evening and early morning hours during winter months. Although the wind direction was variable, sample location AA-07 can be generally considered an upwind or background sampling location during a majority of daytime hours. However, these periods did not fully encompass individual 8-hour sampling events. The wind velocity at the Site was measured to range from 0.9 to 16 mph for the three rounds of sampling.

4.3 Air Quality Data

Table 4-2 presents a statistical summary of the May, August, and December 2003 laboratory data. A total of 107 primary samples were analyzed during the 2003 Perimeter Air Sampling Program. Statistically, 2-butanone, acetone, toluene, and trichlorofluoromethane had the highest frequency of detection, greater than 90%. The remainder of detected analytes had a frequency of less than or equal to 50%.

Table 4-3 presents a data comparison to regional background data obtained from the California Air Resources Board (ARB) North Long Beach air toxics monitoring station and a statewide summary from all ARB monitoring stations. As shown in Table 4-3, average concentrations of detected analytes are similar to the average concentrations detected in 2002 at the California Air Resources Board North Long Beach air toxics monitoring station and the statewide summary. Table 4-4 presents a historic summary of the detected chemicals and concentration ranges for the four rounds of air monitoring conducted at the Site.

5. SUMMARY AND CONCLUSIONS

The perimeter air sampling program was conducted to further evaluate existing ambient air quality with respect to volatile organic compounds (VOCs) at the property perimeter of the Site. The scope of work, as detailed in the workplan [GeoSyntec, 2003a] included the collection of three rounds of six consecutive 8-hour sampling events. Samples were analyzed for VOCs according to EPA method TO-15. Wind direction and velocity was monitored during the sampling program.

Based on the data presented in this report the following can be concluded:

- Sampling location AA-07 can be generally established as a background or upwind location for the Site. Although the wind directions were more variable during the December 2003 round of sampling, location AA-07 can be generally considered as a background or upwind location during the majority of daytime hours.
- The concentrations of detected analytes from the background or upwind location were either very similar or less than the remaining sampling locations around the perimeter of the Site.
- As shown in 4-3, the average concentrations of detected analytes from the Site are similar to those detected in 2002 at the California Air Resources Board, North Long Beach air toxics monitoring station.
- Concentrations of several constituents commonly detected in urban environments were detected at higher frequencies and greater concentrations in the December 2003 sampling round. This is likely a result of predominate northwest and northeasterly offshore wind flow patterns measured during these events as compared to onshore wind patterns measured during the other sampling rounds.
- Based on these data, it appears that the Site, in its undisturbed state, is not causing adverse air quality impacts over and above local or regional background levels.

- Other potential local sources of chemicals detected in ambient air at the Site include the adjacent power plant, the nearby waste water treatment plant, various adjacent industrial operations, and automobile emissions from the intersection located at Magnolia Avenue and Hamilton Avenue.

6. REFERENCES

- GeoSyntec 2003. "Workplan, Perimeter Air Sampling Program, Ascon Site, Huntington Beach, California". Submitted to State of California Environmental Protection Agency, Department of Toxic Substances Control. 14 March 2003: as amended by "GeoSyntec, Addendum to Perimeter Air Sampling Program Workplan, 25 April 2003" and "DTSC, Conditional Approval of Air Sampling Workplan Regarding the Ascon Landfill Site, April 30, 2003"
- GeoSyntec 2003a. "May 2003 Perimeter Air Sampling Report, Ascon Landfill Site, Huntington Beach, California." Submitted to State of California Environmental Protection Agency, Department of Toxic Substances Control. 24 July 2003.
- GeoSyntec 2003b. "August 2003 Perimeter Air Sampling Report, Ascon Landfill Site, Huntington Beach, California." Submitted to State of California Environmental Protection Agency, Department of Toxic Substances Control. 16 October 2003.
- GeoSyntec 2002. "Report, Ambient Air Quality Evaluation, Ascon Site, Huntington Beach, California." Submitted to State of California Environmental Protection Agency, Department of Toxic Substances Control. 13 September 2002.
- USEPA. 1999. United States Environmental Protection Agency (USEPA), Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review. October 1999.

TABLES

TABLE 3-1
SUMMARY OF LABORATORY DATA
8-HOUR SAMPLES - EVENT 1
DECEMBER 2003 SAMPLING ROUND
PERIMETER AIR SAMPLING PROGRAM
ASCON LANDFILL SITE

Component	AA-01	AA-02	AA-03	AA-04	AA-05	AA-07
1,1,2-Trichlorotrifluoroethane	<0.72	<0.81	<0.8	0.75	<0.78	<0.72
1,4-Dichlorobenzene	<0.72	<0.81	<0.8	<0.71	<0.78	<0.72
2-Butanone (MEK)	4.9	4.2	3.5	2.8	3.3	4.6
2-Hexanone	<0.72	<0.81	<0.8	<0.71	<0.78	<0.72
4-Methyl-2-pentanone (MIBK)	<0.72	<0.81	<0.8	<0.71	<0.78	<0.72
Acetone	38	31	27	22	26	32
Benzene	5.6	5.4	5.8	5.8	5.7	5.3
Carbon Disulfide	<0.72	<0.81	<0.8	<0.71	<0.78	<0.72
Chloromethane	<0.72	<0.81	<0.8	<0.71	<0.78	<0.72
Dichloromethane (Methylene Chloride)	4.3	3.2	3	3	2.9	3.3
Ethylbenzene	3.4	3.5	3.8	3.4	3.2	3.7
m,p-Xylenes	12	12	13	12	11	13
Methyl tert-Butyl Ether	1.1	0.91	0.83	0.87	0.94	0.92
o-Xylene	4.3	4.3	4.6	4.1	4	4.5
Styrene	1.7	1.5	1.4	1.5	1.3	1.3
Tetrachloroethene (PCE)	3.5	3	2.4	2.4	2.3	2.7
Toluene	22	18	19	18	17	18
Trichlorofluoromethane (CFC 11)	1.5	1.5	1.5	1.5	1.5	1.5
Vinyl Acetate	<1.4	<1.6	<1.6	<1.4	<1.6	<1.4

Note:

Includes only analytes detected.

Units are ug/m3

Event 1 Samples collected from 7AM to 3PM on 18 December 2003

TABLE 3-2

**SUMMARY OF LABORATORY DATA
8-HOUR SAMPLES - EVENT 2
DECEMBER 2003 SAMPLING ROUND
PERIMETER AIR SAMPLING PROGRAM
ASCON LANDFILL SITE**

Component	AA-01	AA-02	AA-03	AA-04	AA-04 (DUP)	AA-05	AA-07
1,1,2-Trichlorotrifluoroethane	0.65	0.62	<0.73	<0.75	<0.81	<0.71	<0.72
1,4-Dichlorobenzene	<0.61	<0.62	<0.73	<0.75	<0.81	<0.71	<0.72
2-Butanone (MEK)	3	2.5	3.9	2.2	6.2	2.7	2.1
2-Hexanone	<0.61	<0.62	<0.73	<0.75	1.5	<0.71	<0.72
4-Methyl-2-pentanone (MIBK)	<0.61	<0.62	<0.73	<0.75	<0.81	<0.71	<0.72
Acetone	19	16	23	19	55	17	18
Benzene	3.6	3.7	4.2	3.5	3.6	3.5	4.1
Carbon Disulfide	<0.61	<0.62	<0.73	<0.75	<0.81	<0.71	<0.72
Chloromethane	<0.61	<0.62	<0.73	<0.75	<0.81	<0.71	<0.72
Dichloromethane (Methylene Chloride)	2.6	2.2	2.1	2	1.9	2	1.9
Ethylbenzene	2.1	2	2.3	1.9	1.9	1.9	1.8
m,p-Xylenes	6.6	6.2	7.4	5.8	5.9	5.9	5.6
Methyl tert-Butyl Ether	1.3	0.82	0.94	0.81	0.85	0.84	0.86
o-Xylene	2.4	2.3	2.6	2.1	2.2	2.2	2
Styrene	0.88	0.8	0.91	0.75	0.82	0.84	0.72
Tetrachloroethene (PCE)	1.0	0.92	0.86	0.77	<0.81	0.74	0.86
Toluene	13	11	12	10	10	10	9.4
Trichlorofluoromethane (CFC 11)	2.3	2.3	2.1	2.1	2.2	2.2	2.2
Vinyl Acetate	<1.2	<1.2	<1.5	<1.5	13	<1.4	<1.4

Note:

Includes only analytes detected.

Units are ug/m3

Dup - denotes field duplicate sample

Event 2 Samples collected from 3 PM to 11PM on 18 December 2003

TABLE 3-3

**SUMMARY OF LABORATORY DATA
8-HOUR SAMPLES - EVENT 3
DECEMBER 2003 SAMPLING ROUND
PERIMETER AIR SAMPLING PROGRAM
ASCON LANDFILL SITE**

Component	AA-01	AA-02	AA-03	AA-04	AA-05	AA-07
1,1,2-Trichlorotrifluoroethane	0.92	0.88	0.85	0.88	0.84	0.88
1,4-Dichlorobenzene	0.97	1.1	1.5	1.1	1	0.83
2-Butanone (MEK)	4.3	4.5	4.2	3.5	3.6	3.8
2-Hexanone	<0.8	<0.66	<0.71	<0.65	<0.68	<0.73
4-Methyl-2-pentanone (MIBK)	<0.8	0.68	<0.71	<0.65	<0.68	<0.73
Acetone	33	33	44	30	30	31
Benzene	6.8	6.8	6.7	6.4	6.6	6.4
Carbon Disulfide	<0.8	<0.66	<0.71	<0.65	<0.68	<0.73
Chloromethane	<0.8	<0.66	<0.71	<0.65	<0.68	<0.73
Dichloromethane (Methylene Chloride)	4.9	4.7	4.8	4.6	4.7	4.7
Ethylbenzene	4.1	4.2	4.1	3.9	3.9	3.9
m,p-Xylenes	15	15	14	14	14	14
Methyl tert-Butyl Ether	1.7	1.6	1.6	1.6	1.7	1.7
o-Xylene	5	5.1	5	4.8	4.8	4.6
Styrene	2.6	2.7	2.6	2.3	2.4	1.8
Tetrachloroethene (PCE)	2.3	2.3	2.2	2.2	2.2	2.1
Toluene	25	24	24	23	24	23
Trichlorofluoromethane (CFC 11)	1.9	1.8	1.8	1.8	1.8	1.8
Vinyl Acetate	<1.6	<1.3	<1.4	<1.3	<1.4	<1.5

Note:

Includes only analytes detected.

Units are ug/m3

Event 3 Samples collected from 11PM on 18 December 2003 to 7AM on 19 December 2003

TABLE 3-4

**SUMMARY OF LABORATORY DATA
8-HOUR SAMPLES - EVENT 4
DECEMBER 2003 SAMPLING ROUND
PERIMETER AIR SAMPLING PROGRAM
ASCON LANDFILL SITE**

Component	AA-01	AA-02	AA-03	AA-03 (DUP)	AA-04	AA-05	AA-07
1,1,2-Trichlorotrifluoroethane	<0.8	<0.77	<0.79	0.75	<0.82	<0.8	0.72
1,4-Dichlorobenzene	<0.8	<0.77	<0.79	<0.72	<0.82	<0.8	<0.66
2-Butanone (MEK)	3.4	4.9	3.3	3.1	3.0	3.5	3.3
2-Hexanone	<0.8	1.4	<0.79	<0.72	<0.82	<0.8	<0.66
4-Methyl-2-pentanone (MIBK)	<0.8	<0.77	<0.79	<0.72	<0.82	<0.8	<0.66
Acetone	29	32	27	24	30	28	27
Benzene	5.4	5.3	5.5	6.6	5.4	5.3	5.1
Carbon Disulfide	<0.8	<0.77	<0.79	<0.72	<0.82	<0.8	<0.66
Chloromethane	<0.8	<0.77	<0.79	<0.72	<0.82	<0.8	0.67
Dichloromethane (Methylene Chloride)	3.0	2.7	2.9	2.8	2.7	2.7	2.8
Ethylbenzene	3.0	3.0	3.0	3.2	3.0	2.9	2.9
m,p-Xylenes	10	10	10	11	10	10	9.7
Methyl tert-Butyl Ether	1.0	0.89	0.87	0.92	0.85	0.9	0.86
o-Xylene	3.8	3.7	3.8	4.1	3.7	3.7	3.6
Styrene	1.6	1.7	1.6	1.8	1.4	1.6	1.7
Tetrachloroethene (PCE)	2.0	1.9	1.8	1.9	1.9	1.9	1.9
Toluene	18	17	17	19	17	17	16
Trichlorofluoromethane (CFC 11)	1.9	1.8	1.8	1.8	1.8	1.7	1.8
Vinyl Acetate	<0.8	<0.77	<0.79	<0.72	<0.82	<0.8	<0.66

Note:

Includes only analytes detected.

Units are ug/m3

Dup - denotes field duplicate sample

Event 4 Samples collected from 7AM to 3PM on 19 December 2003

TABLE 3-5
SUMMARY OF LABORATORY DATA
8-HOUR SAMPLES - EVENT 5
DECEMBER 2003 SAMPLING ROUND
PERIMETER AIR SAMPLING PROGRAM
ASCON LANDFILL SITE

Component	AA-01	AA-02	AA-03	AA-04	AA-05	AA-07
1,1,2-Trichlorotrifluoroethane	<0.72	0.76	<0.68	<0.81	<0.72	<0.7
1,4-Dichlorobenzene	<0.72	<0.75	<0.68	<0.81	<0.72	<0.7
2-Butanone (MEK)	5.1	5.3	4.8	1.7	4.2	4.6
2-Hexanone	<0.72	<0.75	<0.68	<0.81	<0.72	<0.7
4-Methyl-2-pentanone (MIBK)	<0.72	<0.75	<0.68	<0.81	<0.72	<0.7
Acetone	23	28	27	16	27	22
Benzene	5.9	5.9	6.4	1.6	5.5	5.4
Carbon Disulfide	<0.72	<0.75	<0.68	1.0	0.75	<0.7
Chloromethane	<0.72	0.83	0.84	<0.81	0.84	0.77
Dichloromethane (Methylene Chloride)	3.6	3.1	3.3	1.3	2.4	2.4
Ethylbenzene	2.8	2.8	3.0	<0.81	2.6	2.6
m,p-Xylenes	9.2	9.3	10	1.6	8.7	8.4
Methyl tert-Butyl Ether	1.1	1.0	1.0	<0.81	1.1	1.2
o-Xylene	3.4	3.4	3.6	<0.81	3.2	3.2
Styrene	1.2	0.95	1.2	<0.81	1.1	1.1
Tetrachloroethene (PCE)	1.4	1.3	1.4	<0.81	0.95	1.0
Toluene	17	16	17	3.7	15	15
Trichlorofluoromethane (CFC 11)	1.8	1.9	1.9	1.3	1.8	1.9
Vinyl Acetate	<0.72	<0.75	<0.68	<0.81	<0.72	<0.7

Note:

Includes only analytes detected.

Units are ug/m3

Event 5 Samples collected from 3PM to 11PM on 19 December 2003

TABLE 3-6

**SUMMARY OF LABORATORY DATA
8-HOUR SAMPLES - EVENT 6
DECEMBER 2003 SAMPLING ROUND
PERIMETER AIR SAMPLING PROGRAM
ASCON LANDFILL SITE**

Component	AA-01	AA-02	AA-03	AA-04	AA-05	AA-07
1,1,2-Trichlorotrifluoroethane	0.75	0.78	0.79	0.82	0.78	0.75
1,4-Dichlorobenzene	0.89	0.92	1.0	0.87	0.89	0.8
2-Butanone (MEK)	5.4	4.9	4.2	4.5	6.2	5.1
2-Hexanone	<0.7	<0.7	<0.71	<0.64	1.2	<0.65
4-Methyl-2-pentanone (MIBK)	0.82	0.76	<0.71	0.67	0.85	0.83
Acetone	38	32	30	28	37	35
Benzene	8.4	7.9	8.5	7.6	7.4	7.4
Carbon Disulfide	<0.7	9.9	<0.71	<0.64	<0.72	<0.65
Chloromethane	0.83	0.91	0.87	0.84	0.85	0.85
Dichloromethane (Methylene Chloride)	3.9	3.7	3.7	3.6	3.7	3.9
Ethylbenzene	4.1	4.2	4.2	4.0	4.0	4.0
m,p-Xylenes	15	15	15	14	14	14
Methyl tert-Butyl Ether	1.3	1.2	1.2	1.2	1.2	1.2
o-Xylene	5.3	5.5	5.5	5.2	5.1	5.1
Styrene	1.6	<0.7	1.6	1.6	1.6	1.5
Tetrachloroethene (PCE)	2.3	2.4	2.4	2.3	2.4	2.4
Toluene	25	25	25	24	24	25
Trichlorofluoromethane (CFC 11)	1.7	1.8	1.7	1.7	1.6	1.7
Vinyl Acetate	<0.7	<0.7	<0.71	<0.64	<0.72	<0.65

Note:

Includes only analytes detected.

Units are ug/m3

Event 6 Samples collected from 11PM on 19 December 2003 to 7AM on 20 December 2003

TABLE 4-1

**WIND VELOCITY DATA SUMMARY
MAY, AUGUST, AND DECEMBER 2003 SAMPLING ROUNDS
PERIMETER AIR SAMPLING PROGRAM
ASCON LANDFILL SITE**

MAY 2003 SAMPLING ROUND			
Events	Mean Wind Speed (mph)	Maximum Wind Speed (mph)	Minimum Wind Speed (mph)
1	7.6	11.7	2.7
2	8.3	12.6	4.0
3	3.9	8.2	0.1
4	7.6	11.9	2.7
5	9.9	12.6	4.0
6	4.1	16.0	1.9

AUGUST 2003 SAMPLING ROUND			
Events	Mean Wind Speed (mph)	Maximum Wind Speed (mph)	Minimum Wind Speed (mph)
1	8.3	10.2	6.3
2	5.4	9.3	2.0
3	1.8	3.6	0.6
4	6.3	9.1	2.1
5	6.7	10.6	2.1
6	4.7	5.8	3.3

DECEMBER 2003 SAMPLING ROUND			
Events	Mean Wind Speed (mph)	Maximum Wind Speed (mph)	Minimum Wind Speed (mph)
1	4.0	8.0	2.0
2	5.9	9.0	1.0
3	3.2	4.8	1.2
4	4.6	8.1	1.8
5	2.7	6.3	0.9
6	2.8	4.3	1.2

Notes:

mph - miles per hour

May 2003 sampling round from 7 am 20 May to 7 am 22 May 2003.

August 2003 sampling round from 7 am 19 August to 7 am 21 August 2003.

December 2003 sampling round from 7 am 18 December to 7 am 20 December 2003.

TABLE 4-2

**STATISTICAL DATA SUMMARY
MAY, AUGUST, AND DECEMBER 2003 SAMPLING ROUNDS
PERIMETER AIR SAMPLING PROGRAM
ASCON LANDFILL SITE**

Component	# Analysis	# Detects	Prevalence	Result (Min)	Result (Max)	Result (Avg) ⁽¹⁾	Result (St. Dev.) ⁽¹⁾
1,1,2-Trichlorotrifluoroethane	107	17	16%	0.62	0.92	0.45	0.16
1,4-Dichlorobenzene	107	18	17%	0.67	2.8	0.53	0.41
2-Butanone (MEK)	107	106	99%	0.76	9.7	2.78	1.54
2-Hexanone	107	11	10%	0.9	1.5	0.46	0.27
4-Methyl-2-pentanone (MIBK)	107	6	6%	0.67	0.85	0.40	0.10
Acetone	107	103	96%	7.2	59	20.22	10.66
Benzene	107	43	40%	1.1	8.5	2.24	2.64
Carbon Disulfide	107	12	11%	0.73	18	0.76	2.01
Chloromethane	107	45	42%	0.64	1.1	0.59	0.25
cis-1,2-Dichloroethene	107	2	2%	1	1.4	0.39	0.12
Dichloromethane (Methylene Chloride)	107	38	36%	0.85	4.9	1.36	1.45
Ethylbenzene	107	38	36%	0.75	4.2	1.35	1.40
m,p-Xylenes	107	57	53%	0.73	15	4.14	5.22
Methyl tert-Butyl Ether	107	36	34%	0.81	1.7	0.64	0.39
o-Xylene	107	39	36%	0.81	5.5	1.60	1.78
Styrene	107	40	37%	0.72	2.7	0.78	0.60
Tetrachloroethene (PCE)	107	36	34%	0.74	3.5	0.89	0.81
Toluene	107	99	93%	0.72	25	7.68	8.28
Trichlorofluoromethane (CFC 11)	107	106	99%	1.1	2.3	1.45	0.30
Vinyl Acetate	107	55	51%	0.89	13	2.12	2.16

Note:

1) One-half of the reporting limit was used for "non-detect" results

Includes only analytes detected

Units are in µg/m³

TABLE 4-3
DATA COMPARISON
MAY, AUGUST, AND DECEMBER 2003 SAMPLING ROUNDS
PERIMETER AIR SAMPLING PROGRAM
ASCON LANDFILL SITE

Component	May, August, and December 2003 Data		2002 North Long Beach Data ⁽¹⁾		2002 Statewide Data ⁽²⁾	
	Maximum	Average ⁽³⁾	Maximum	Average ⁽³⁾	Maximum	Average ⁽³⁾
1,1,2-Trichlorotrifluoroethane	0.92	0.5	NA	NA	NA	NA
1,4-Dichlorobenzene	2.8	0.5	3.6	1.1	4.2	1.0
2-Butanone (MEK)	9.7	2.8	1.5	NA	3.5	0.4
2-Hexanone	1.5	0.5	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	0.85	0.4	NA	NA	NA	NA
Acetone	59	20	NA	NA	NA	NA
Benzene	8.5	2.2	6.7	2.2	23.3	2.0
Carbon Disulfide	18	0.8	3.1	NA	18.0	NA
Chloromethane	1.1	0.6	NA	NA	NA	NA
cis-1,2-Dichloroethene	1.4	0.4	NA	NA	NA	NA
Dichloromethane (Methylene Chloride)	4.9	1.4	3.1	0.9	23.2	1.0
Ethylbenzene	4.2	1.3	3.9	0.9	10.0	1.0
m,p-Xylenes	15	4.1	13.4	4.6	69.3	4.7
Methyl tert-Butyl Ether	1.7	0.6	19.8	6.2	46.8	5.3
o-Xylene	5.5	1.6	5.2	1.5	20.4	1.5
Styrene	2.7	0.8	3.8	0.9	5.1	0.4
Tetrachloroethene (PCE)	3.5	0.9	2.4	0.6	6.2	0.5
Toluene	25	7.7	21.4	6.9	82.7	6.8
Trichlorofluoromethane (CFC 11)	2.3	1.5	NA	NA	NA	NA
Vinyl Acetate	13	2.1	NA	NA	NA	NA

Note:

(1) North Long Beach Air Toxics Monitoring Station, 2002 data summary, California Air Resources Board

(2) 2002 Statewide Toxics Summary, California Air Resources Board

(3) One-half of the reporting limit was used for "non-detect" results

Includes only analytes detected

Units are in µg/m³

NA - Not Applicable

TABLE 4-4

**HISTORICAL DATA SUMMARY
AMBIENT AIR SAMPLING PROGRAM
ASCON LANDFILL SITE**

August 2002 2-hour Samples		
Component	Result (Min)	Result (Max)
2-Butanone (MEK)	1.7	3.4
2-Hexanone	2.3	2.3
Acetone	4.2	46
m,p-Xylenes	3	3
Toluene	1.6	2.9

August 2002 24-hour Samples		
Component	Result (Min)	Result (Max)
2-Butanone (MEK)	1.5	2.8
2-Hexanone	3.5	3.5
4-Methyl-2-pentanone (MIBK)	1.7	1.7
Acetone	8.6	16
Benzene	0.82	18
Dichloromethane (Methylene Chloride)	1.1	6.4
m,p-Xylenes	1.4	2.9
Methyl tert-Butyl Ether	2	2.4
Toluene	1.9	4.4

May 2003 8-hour Samples		
Component	Result (Min)	Result (Max)
1,4-Dichlorobenzene	0.67	2.8
2-Butanone (MEK)	0.76	9.7
2-Hexanone	0.95	1.5
Acetone	7.6	59
Benzene	1.1	1.2
Carbon Disulfide	0.98	18
Chloromethane	0.78	1.1
Ethylbenzene	0.75	1.6
m,p-Xylenes	0.73	3.4
o-Xylene	0.81	1.3
Styrene	0.78	1.1
Tetrachloroethene (PCE)	0.75	0.75
Toluene	0.85	11
Trichlorofluoromethane (CFC 11)	1.2	1.6
Vinyl Acetate	1.3	13

TABLE 4-4 (continued)

**HISTORICAL DATA SUMMARY
AMBIENT AIR SAMPLING PROGRAM
ASCON LANDFILL SITE**

August 2003 8-hour Samples		
Component	Result (Min)	Result (Max)
2-Butanone (MEK)	0.98	5.3
2-Hexanone	0.9	1.5
Acetone	7.2	51
Benzene	2.4	2.4
Carbon Disulfide	0.73	2.4
Chloromethane	0.64	0.9
cis-1,2-Dichloroethene	1	1.4
Dichloromethane	0.85	1.7
Ethylbenzene	1.6	1.6
m,p-Xylenes	0.8	5.9
Methyl tert-Butyl Ether	1.4	1.4
o-Xylene	2	2
Toluene	0.72	7.5
Trichlorofluoromethane (CFC 11)	1.1	1.5
Vinyl Acetate	0.89	7.8

December 2003 8-hour Samples		
Component	Result (Min)	Result (Max)
1,1,2-Trichlorotrifluoroethane	0.62	0.92
1,4-Dichlorobenzene	0.8	1.5
2-Butanone (MEK)	1.7	6.2
2-Hexanone	1.2	1.5
4-Methyl-2-pentanone (MIBK)	0.67	0.85
Acetone	16	55
Benzene	1.6	8.5
Carbon Disulfide	0.75	9.9
Chloromethane	0.67	0.91
Dichloromethane (Methylene Chloride)	1.3	4.9
Ethylbenzene	1.8	4.2
m,p-Xylenes	1.6	15
Methyl tert-Butyl Ether	0.81	1.7
o-Xylene	2	5.5
Styrene	0.72	2.7
Tetrachloroethene (PCE)	0.74	3.5
Toluene	3.7	25
Trichlorofluoromethane (CFC 11)	1.3	2.3
Vinyl Acetate	13	13

Notes:

Includes only detected analytes

Units are ug/m3

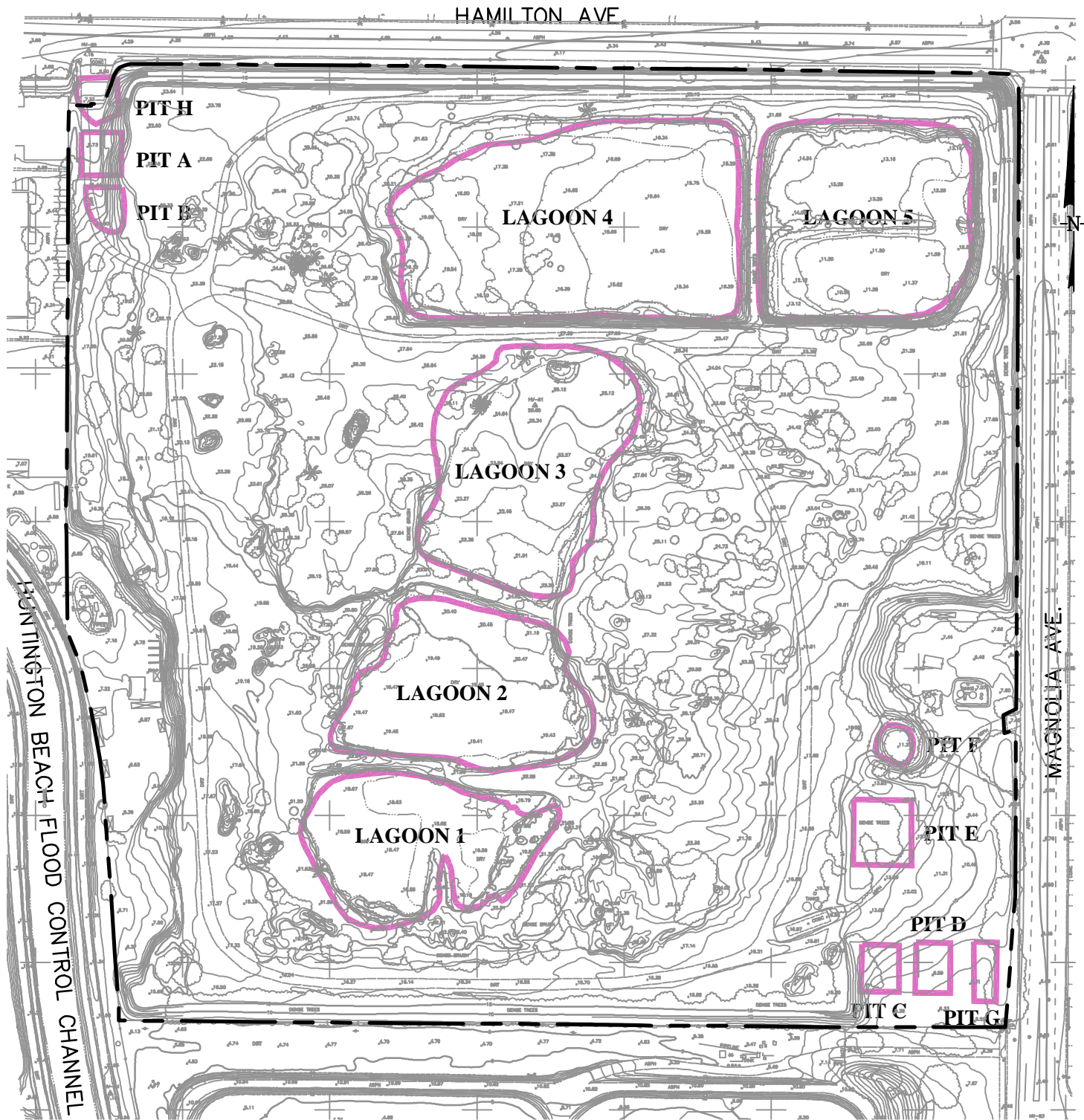
FIGURES



GEOSYNTEC CONSULTANTS

**SITE LOCATION
ASCON LANDFILL SITE
HUNTINGTON BEACH, CALIFORNIA**

FIGURE NO.	2-1
PROJECT NO.	HX0152
FILE NO.	0152G001.APR
DATE:	30 JANUARY 2004



LEGEND

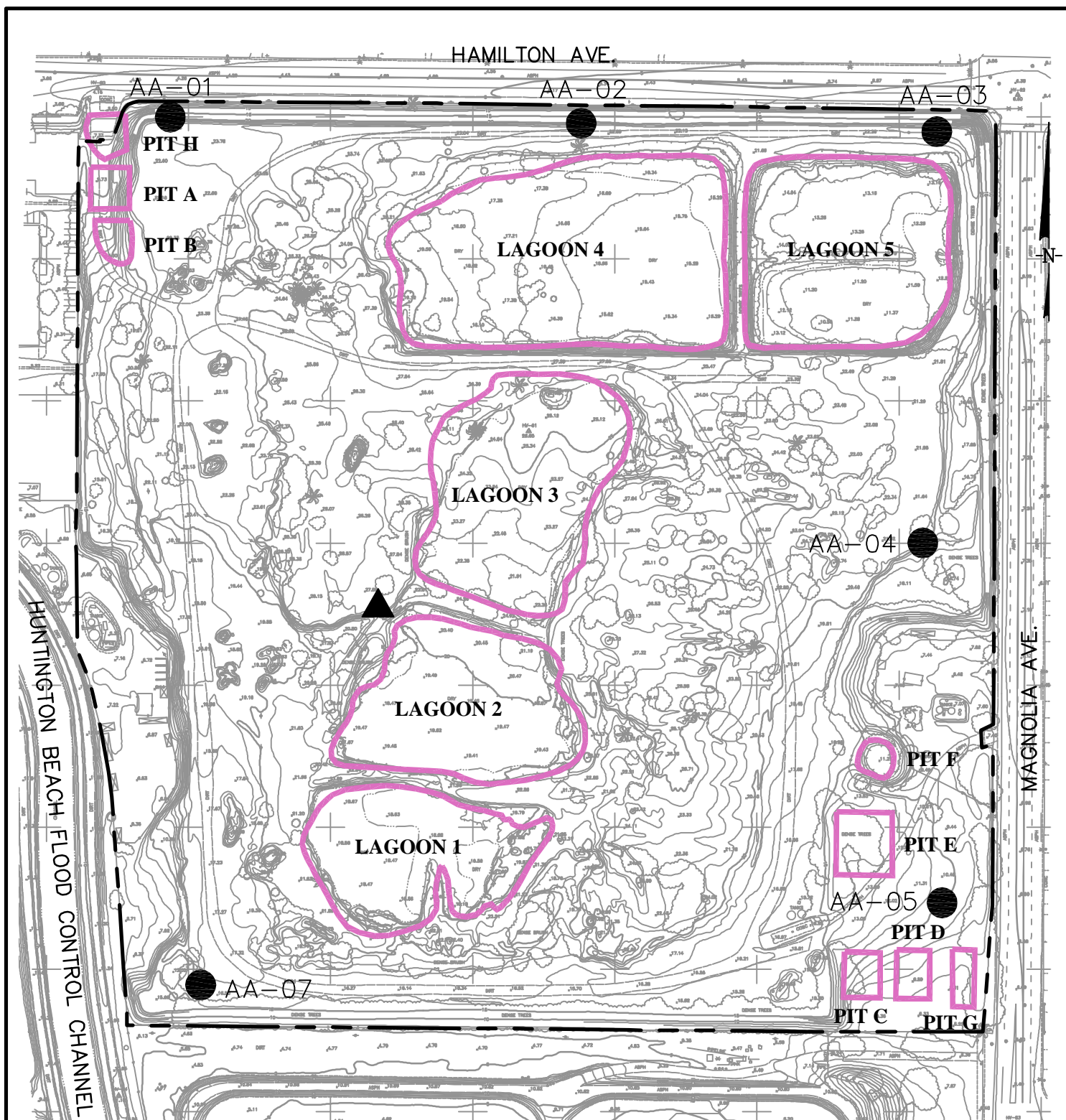
- PROPERTY LINE
- FOOTPRINT OF EXISTING PITS AND LAGOONS

0 100 200
SCALE IN FEET



SITE PLAN
ASCON LANDFILL SITE
HUNTINGTON BEACH, CALIFORNIA

FIGURE NO.	2-2
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004



LEGEND

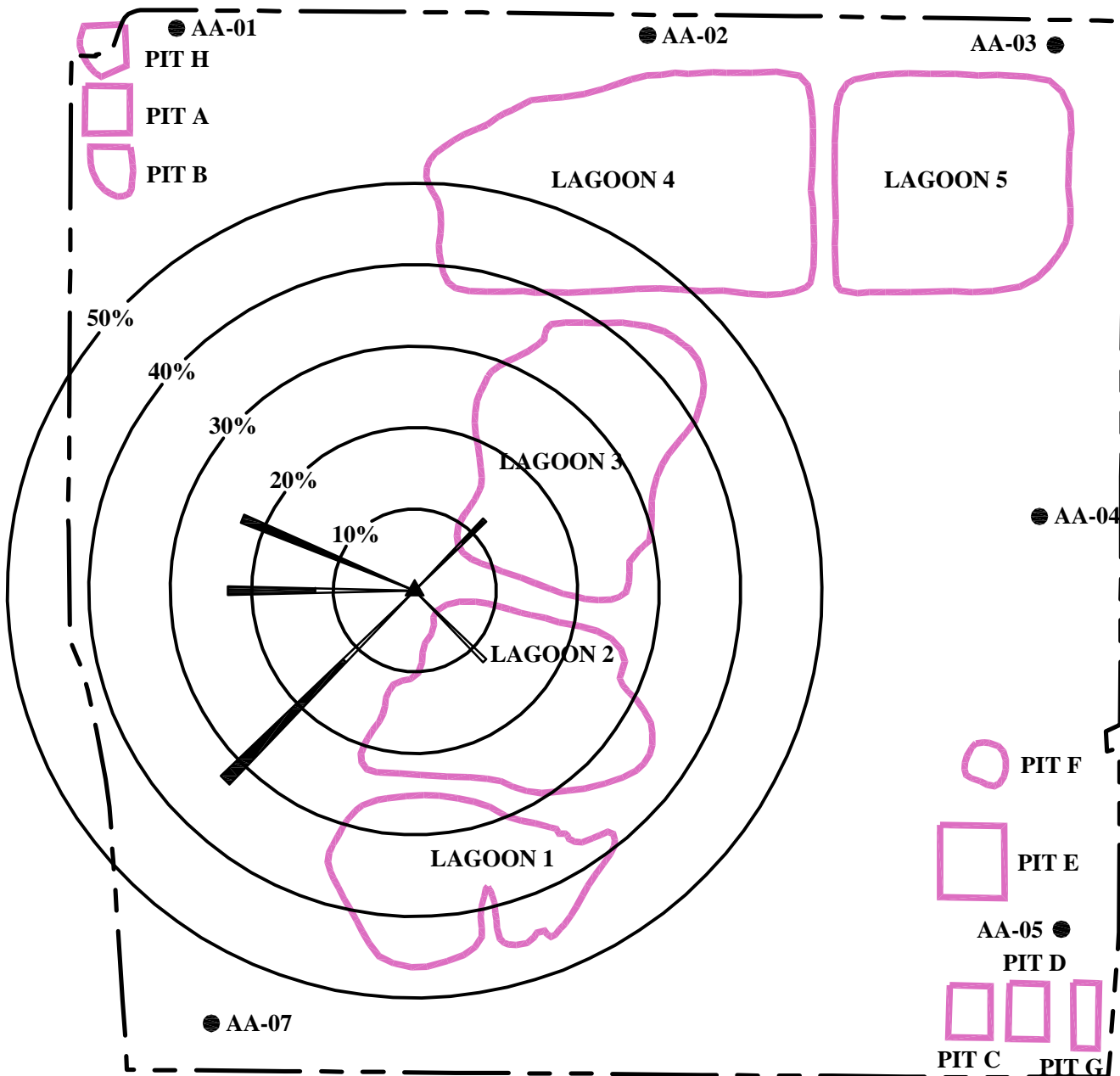
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- FOOTPRINT OF EXISTING PITS AND LAGOONS
- SAMPLING LOCATIONS
- WIND MONITORING LOCATION

0 100 200
SCALE IN FEET



SAMPLING LOCATIONS
ASCON LANDFILL SITE
HUNTINGTON BEACH, CALIFORNIA

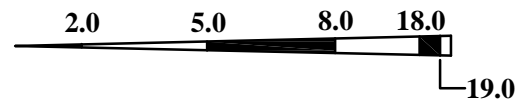
FIGURE NO.	3-1
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004



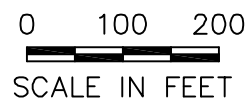
NOTE: DATA OBTAINED FROM LOS ALAMITOS METEOROLOGICAL STATION

LEGEND

- PROPERTY LINE
- FOOTPRINT OF EXISTING PITS AND LAGOONS
- SAMPLING LOCATIONS
- WIND MONITORING LOCATION



WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)

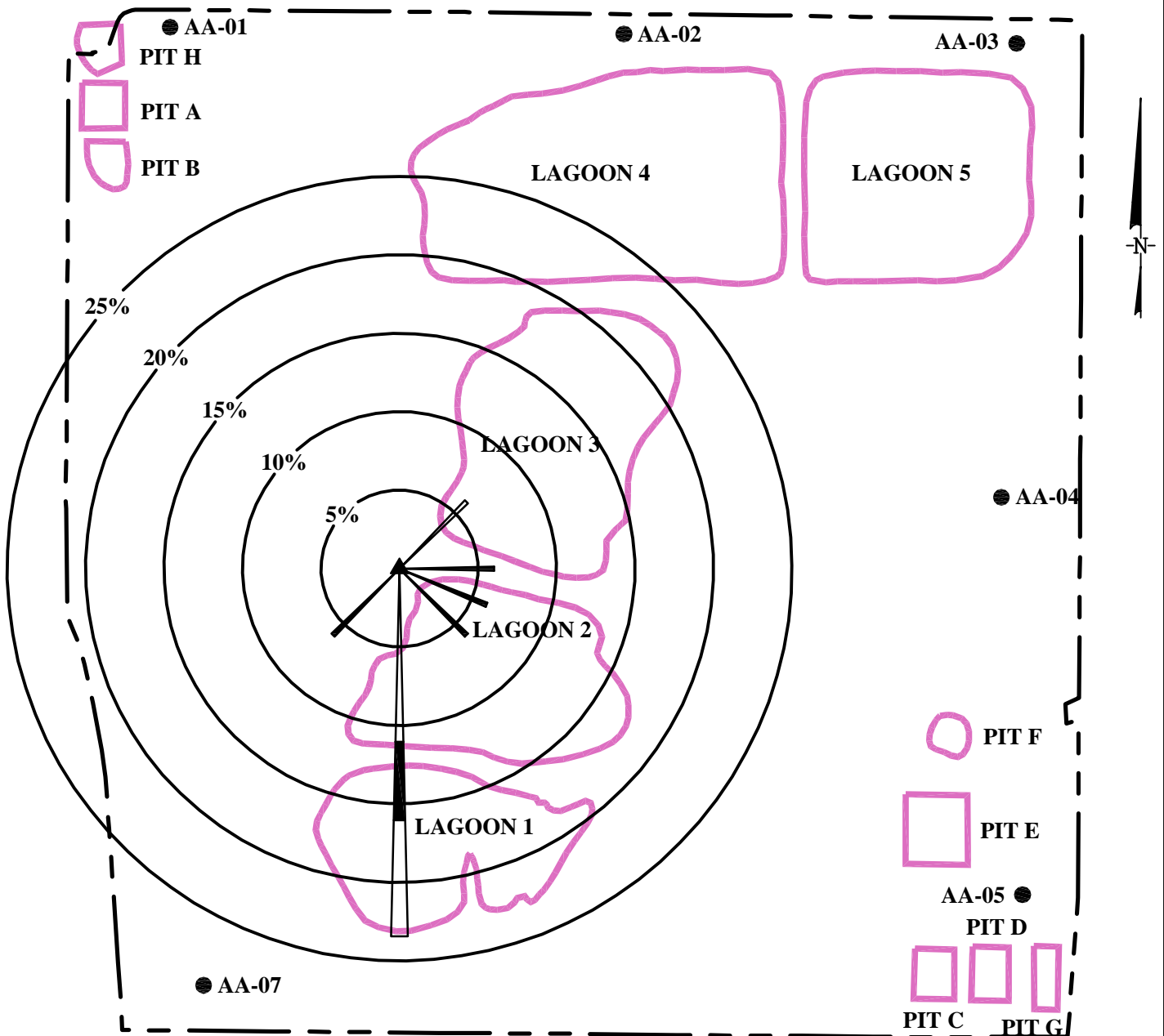


GEOSYNTEC CONSULTANTS

WIND ROSE
8-HOUR EVENT 1
7 AM - 3 PM, DECEMBER 18TH

FIGURE NO.	3-2
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004

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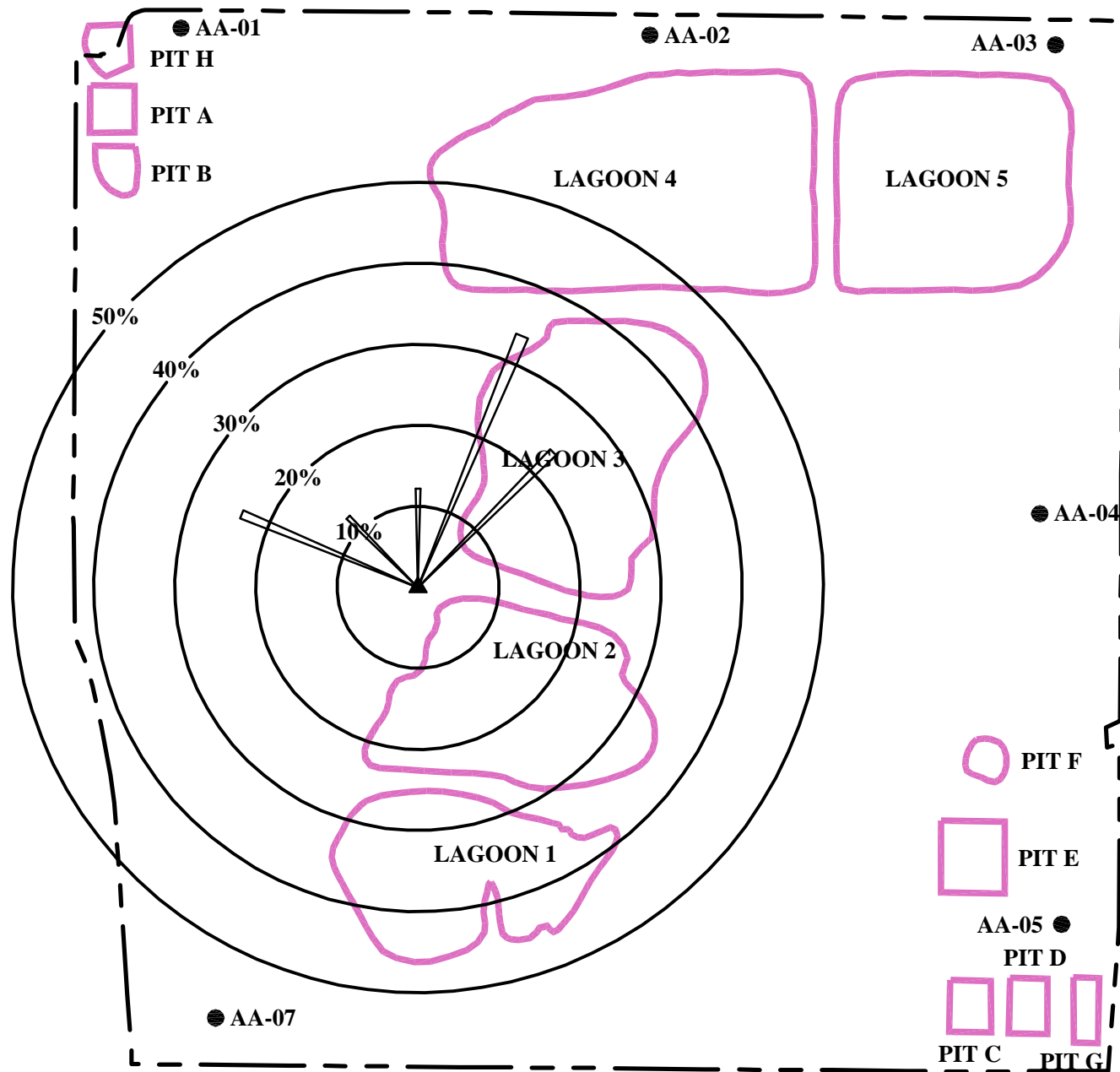


GEOSYNTEC CONSULTANTS

WIND ROSE
8-HOUR EVENT 2
3 PM - 11 PM, DECEMBER 18TH

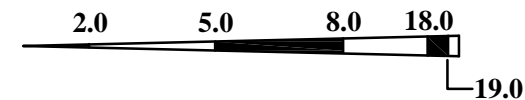
FIGURE NO.	3-3
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004

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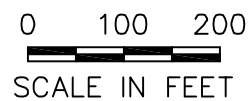


LEGEND

- PROPERTY LINE
- FOOTPRINT OF EXISTING PITS AND LAGOONS
- SAMPLING LOCATIONS
- WIND MONITORING LOCATION



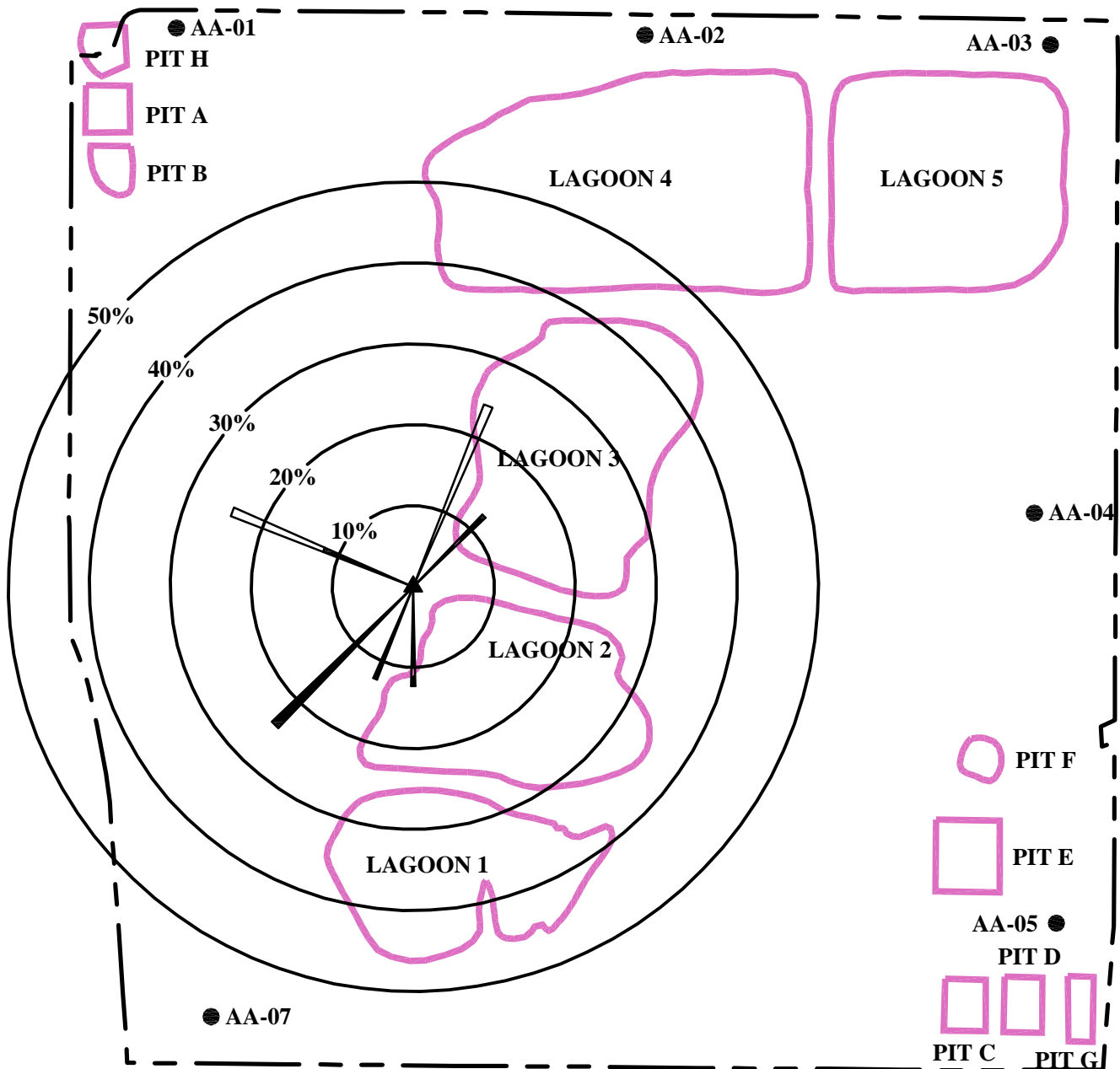
WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)



GEOSYNTEC CONSULTANTS

WIND ROSE
8-HOUR EVENT 3
11 PM, DECEMBER 18TH – 7 AM, DECEMBER 19TH

FIGURE NO.	3-4
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004

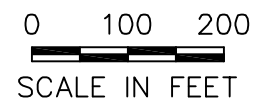


LEGEND

- PROPERTY LINE
- FOOTPRINT OF EXISTING PITS AND LAGOONS
- SAMPLING LOCATIONS
- WIND MONITORING LOCATION



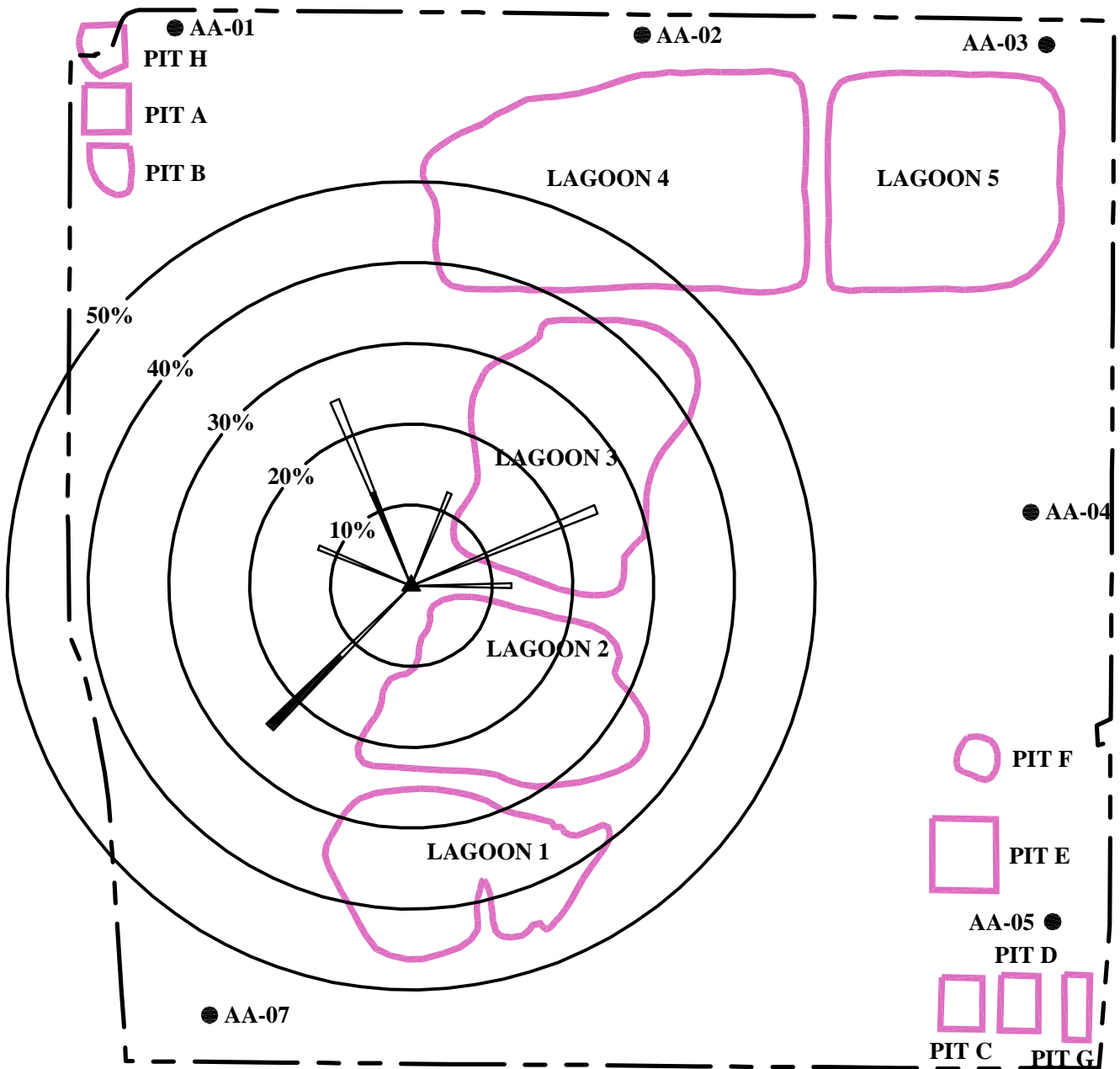
WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)



GEOSYNTEC CONSULTANTS

WIND ROSE
8-HOUR EVENT 4
7 AM - 3 PM, DECEMBER 19TH

FIGURE NO.	3-5
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004

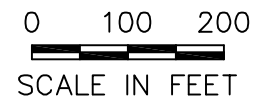


LEGEND

- PROPERTY LINE
- FOOTPRINT OF EXISTING PITS AND LAGOONS
- SAMPLING LOCATIONS
- WIND MONITORING LOCATION



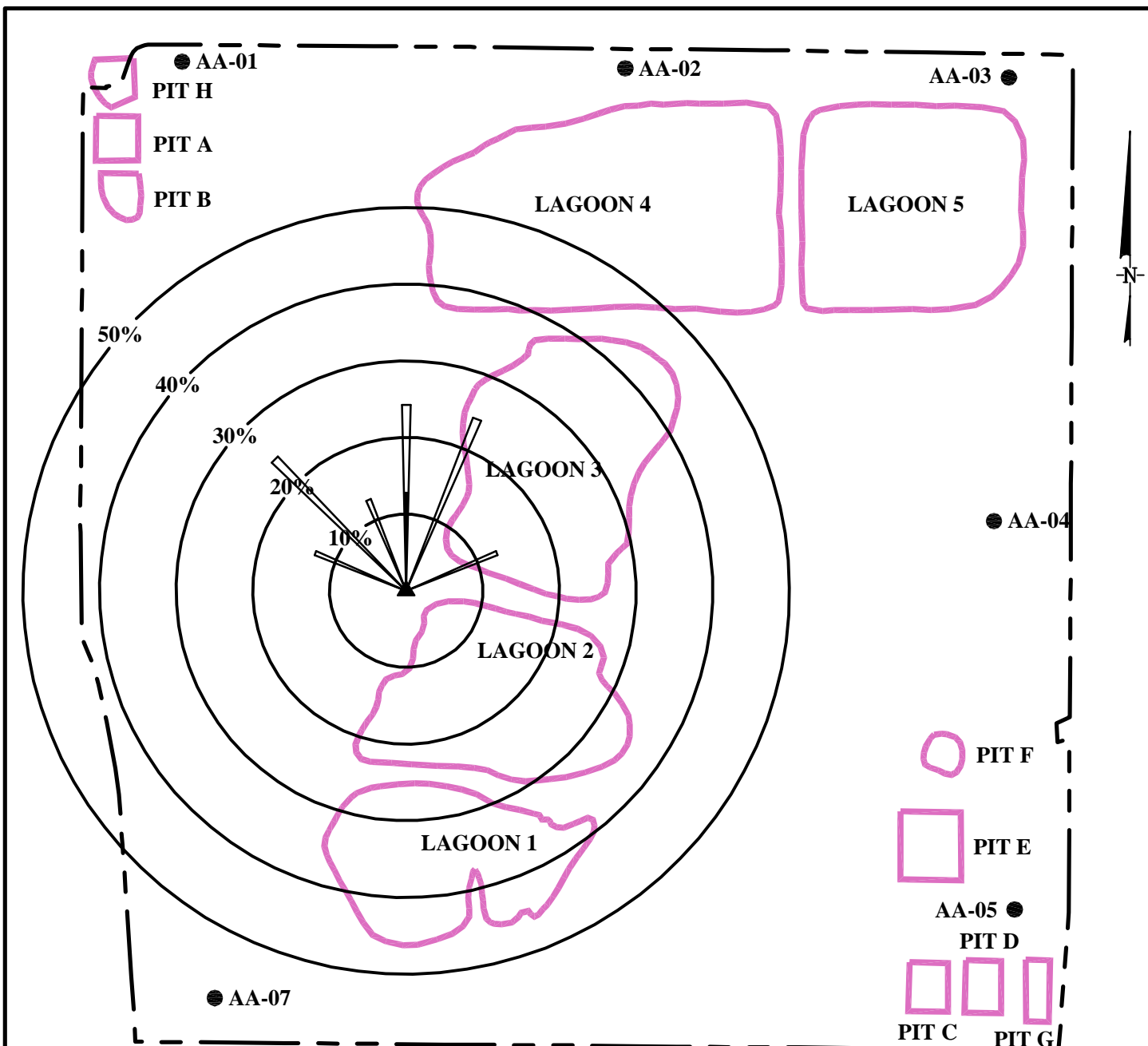
WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)



GEOSYNTEC CONSULTANTS

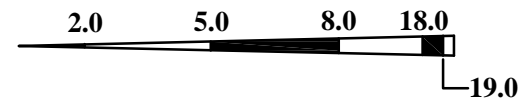
WIND ROSE
8-HOUR EVENT 5
3 PM - 11 PM, DECEMBER 19TH

FIGURE NO.	3-6
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004

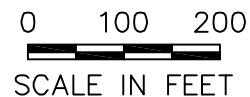


LEGEND

- PROPERTY LINE
- FOOTPRINT OF EXISTING PITS AND LAGOONS
- SAMPLING LOCATIONS
- WIND MONITORING LOCATION



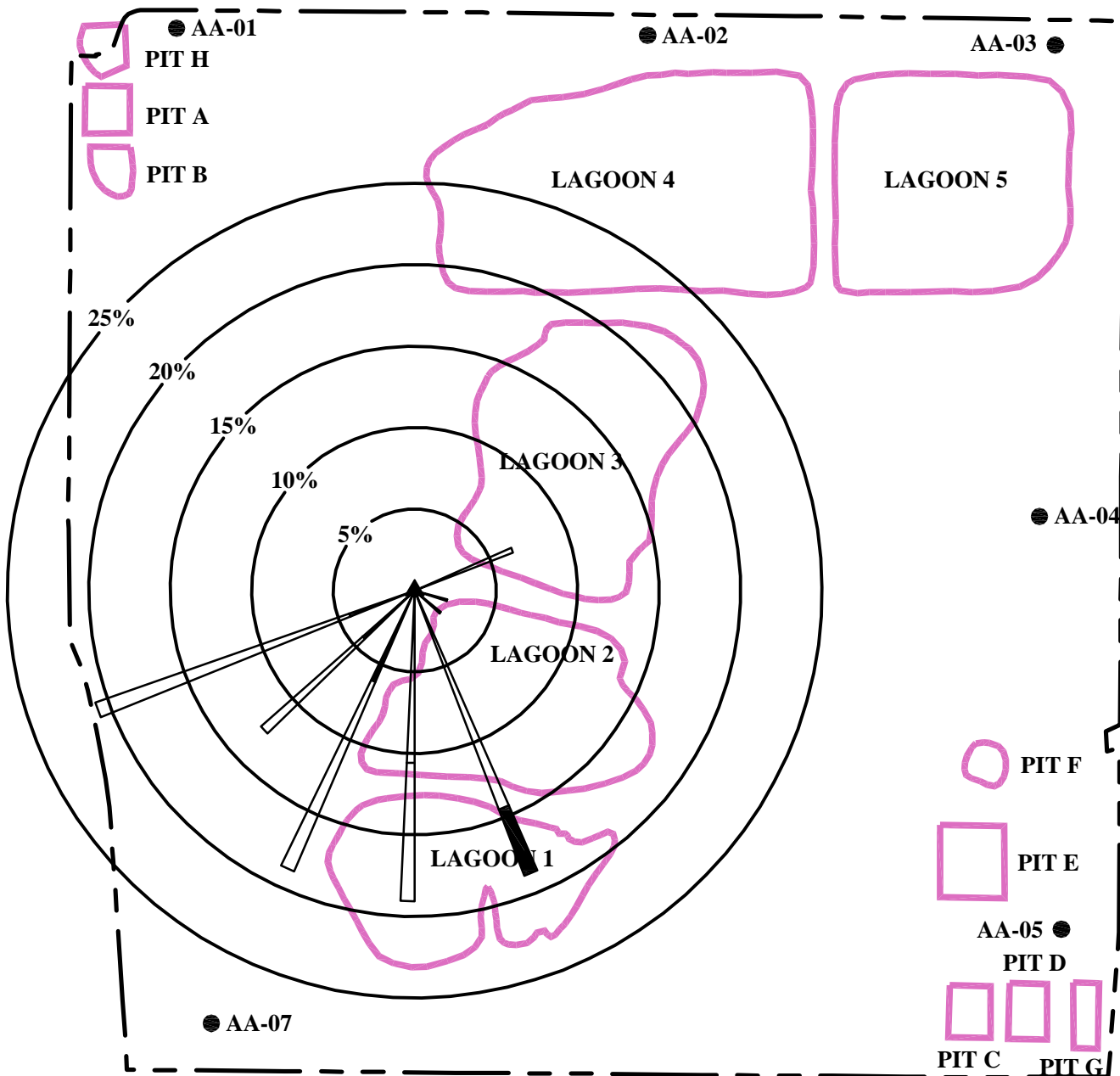
WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)



GEOSYNTEC CONSULTANTS

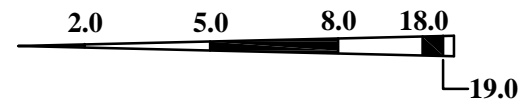
WIND ROSE
8-HOUR EVENT 6
11 PM, DECEMBER 19TH – 7 AM, DECEMBER 20TH

FIGURE NO.	3-7
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004

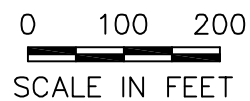


LEGEND

- PROPERTY LINE
- FOOTPRINT OF EXISTING PITS AND LAGOONS
- SAMPLING LOCATIONS
- WIND MONITORING LOCATION



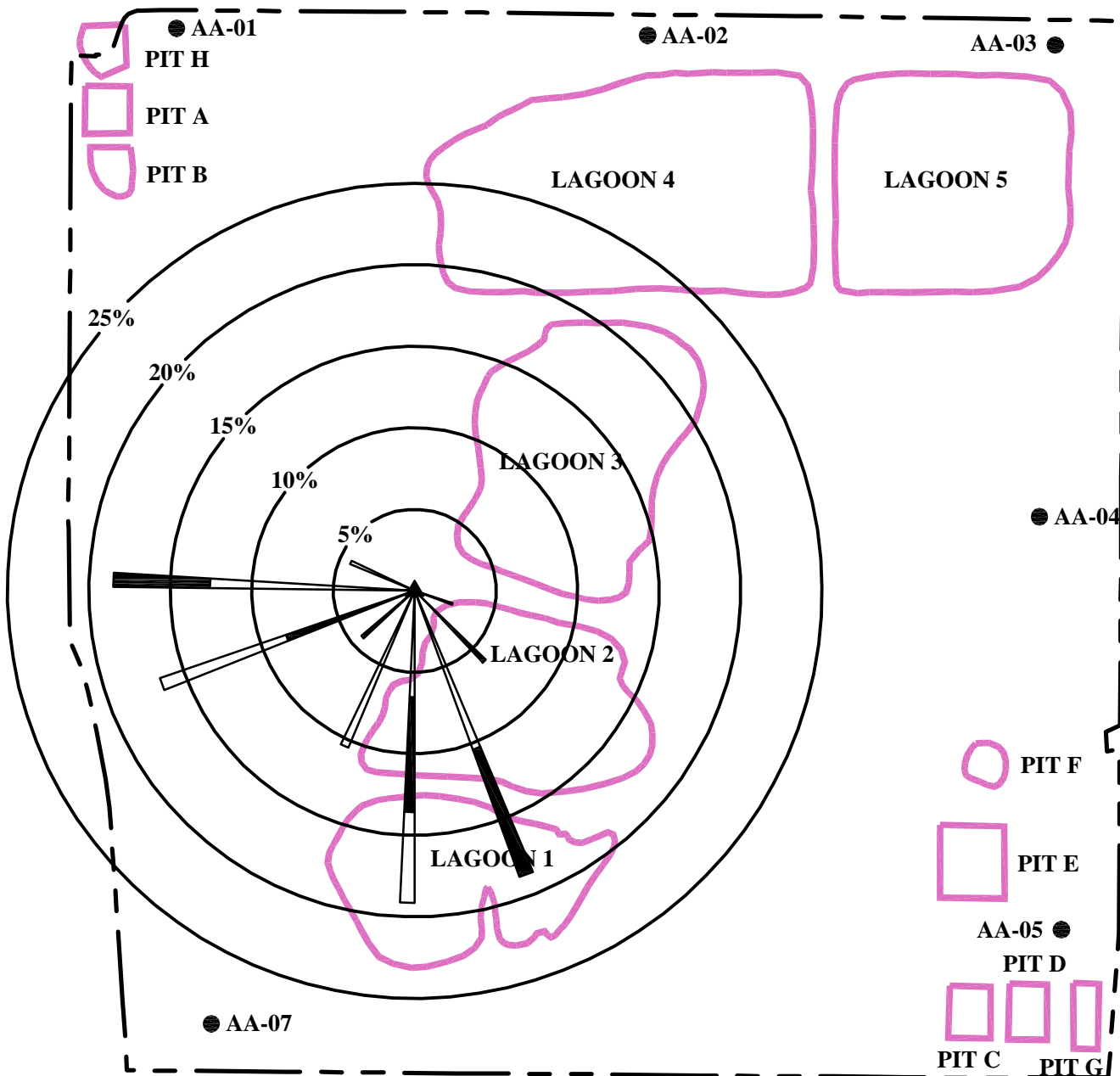
WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)



GEOSYNTEC CONSULTANTS

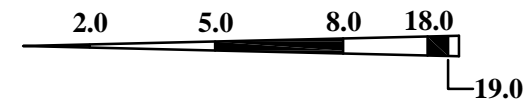
WIND ROSE
MAY 2003 SAMPLING ROUND
7 AM, MAY 20TH – 7 AM, MAY 22ND

FIGURE NO.	4-1
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004

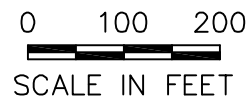


LEGEND

- PROPERTY LINE
- FOOTPRINT OF EXISTING PITS AND LAGOONS
- SAMPLING LOCATIONS
- WIND MONITORING LOCATION



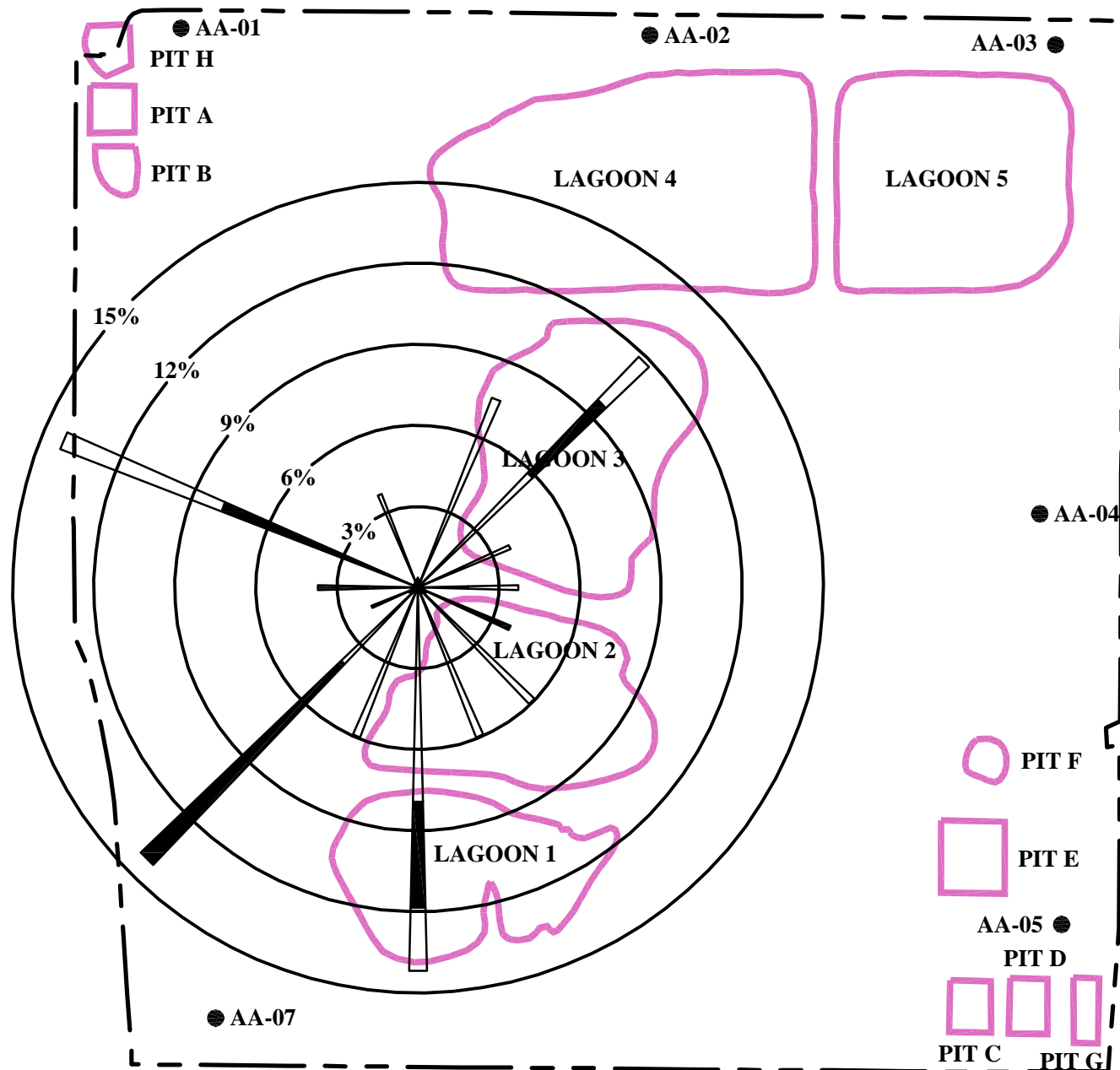
WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)



GEOSYNTEC CONSULTANTS

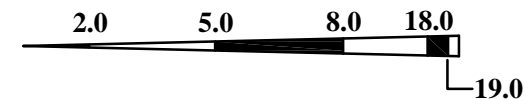
WIND ROSE
AUGUST 2003 SAMPLING ROUND
7 AM, AUGUST 19TH – 7 AM, AUGUST 21ST

FIGURE NO.	4-2
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004

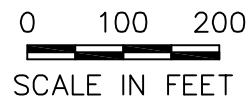


LEGEND

- PROPERTY LINE
- FOOTPRINT OF EXISTING PITS AND LAGOONS
- SAMPLING LOCATIONS
- WIND MONITORING LOCATION



WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)



GeoSYNTEC CONSULTANTS

WIND ROSE
DECEMBER 2003 SAMPLING ROUND
7 AM, DECEMBER 18TH – 7 AM, DECEMBER 20TH

FIGURE NO.	4-3
PROJECT NO.	HX0152
DOCUMENT NO.	ASC03-12
DATE:	30 JAN 2004

APPENDIX A

PHOTOGRAPHS

APPENDIX B

WIND MONITORING DATA

APPENDIX B-1

15-Minute Wind Data

APPENDIX B-2

Wind Rose Data

APPENDIX C

FIELD LOGS

APPENDIX D

LABORATORY DATA