

APPENDIX D

Pilot Study No. 3 Field Activities

Appendix D

Pilot Study No. 3 Field Activities

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APPENDIX D

PILOT STUDY NO. 3 FIELD ACTIVITIES

D.1 Introduction

This appendix to the RFS contains documentation of the fieldwork accomplished during Pilot Study No. 3 at the Ascon Landfill Site ("Site"). Pilot Study No. 3 consisted of nine phases of fieldwork during March through early December of 2004 (**Table D-A**). The phases and purposes of each Phase are listed in **Table D-1**.

Table D-A. Investigation Phases of Pilot Study No. 3

Phase I	Small auger assessment of Former Lagoon Areas
Phase II	Bucket auger assessment of Former Lagoon Areas
Phase III	Trenching in Former Lagoon Areas
Phase IV	Sampling lagoons
Phase V	Sampling Pits A, B, C, D, E, G, and H
Phase VI	Geotechnical assessment (deep borings)
Phase VII	Further lagoon studies-- Eliminated
Phase VIII	Sampling Pit F and Pit F area
Phase VIII Addendum	Pit F offsite investigation
Phase IX	Treatability testing

The main objectives of Pilot Study No. 3 were "to collect data to provide better classification of waste materials (hazardous vs. non-hazardous) and to collect data on the nature, magnitude, and possible rates of odor and chemical emissions that may be generated by the buried waste materials at the Site when excavated and handled" (PNL, 2004a). Data collection efforts prior to Pilot Study No. 3 focused on the identification of specific chemical compounds in discrete samples from different geographic areas of the Site. While these data were useful for the 1997 RI and baseline risk assessment, additional data were required to further develop a range of remedial alternatives and to evaluate various waste handling and disposal options. For these reasons and to fulfill the study objectives, Pilot Study No. 3 consisted of waste sampling using composite methods to better simulate waste characterization during a removal action, air sampling during invasive activities, emissions assessment from freshly-exposed wastes, and emission control agent testing to identify effective means to mitigate emissions during excavation and subsequent waste handling.

As part of the Pilot Study No. 3 program, soils and waste materials at the Site were tested to determine if any materials would be potentially classified as hazardous waste under either State or Federal law. In general, the analytical tests used in the material characterization are listed in **Table D-2**. Tests performed on groundwater during 2004 sampling events are also listed in **Table D-2**.

The remaining sections of this Appendix outline the objectives and field activities of the Phases of Pilot Study No. 3. Findings are discussed in Section 3 of the RFS.

D.2 Phase I – Small Auger Assessment in Former Lagoon Areas

The scope of work for Phase I included the drilling of 17 hollow stem auger soil borings¹ (**Figure 3.1-1** of RFS shows drilling locations), collection of soil and waste samples for laboratory testing, and collection of vapor samples for odor and chemical testing using a downhole flux chamber sampling technique. Some general objectives of the Phase I drilling program included:

- To further characterize the nature of fill and waste material outside of the pit and lagoon areas.
- To evaluate odors and emissions.
- Obtain a greater understanding of the nature of the clay horizons below the bottoms of the former lagoon areas.

Field activities performed by GeoSyntec are documented in Attachment 1. Boreholes were drilled using 10-inch diameter hollow stem augers, to a depth of between 12 and 29 feet (at the interface with native material), with samples collected at intervals for characterization of the waste and fill. Samples were collected with an 18-inch California Modified Split Spoon sampler. These samples were field screened with a photoionization detector ("PID") and flame ionization detector ("FID") and sent to the laboratory for compositing and chemical analysis. Each of the 15 completed soil boreholes were logged. Boring logs are provided in the Phase I Field Memorandum as Attachment 1 to this appendix.

Regarding fill/waste sample collection:

- **Table D-3** summarizes the samples collected for laboratory analysis. Samples included fill and waste samples that were composited by the laboratory as well as discrete EnCore[®] samples of waste material. Samples were composited/ analyzed by Del Mar Analytical, Inc. For the composite samples, testing was performed as outlined in **Table D-2**.
- A composite waste sample was not collected from boreholes PNL-10 or PNL-15 due to the predominance of fill materials at these locations. A composite sample of the fill material was prepared for testing by the laboratory from boreholes PNL-9, PNL-12, and PNL-13, as shown in **Table D-3**.
- An aliquot of sample from each split spoon sampling interval of each borehole was screened using an FID and a PID. Field screening PID and FID data are summarized in **Table D-4**. As shown in **Table D-4**, the highest VOCs in headspace samples were detected in PNL-9 with a PID reading of 617 ppm. High PID headspace levels were found to correlate with areas of stiff drilling mud. Highest FID readings in headspace were found in PNL-3 (10,400 ppm), also in hydrocarbon-impacted drilling mud.

Downhole flux chamber tests were performed in each borehole at various depths within the waste or native materials. Flux chamber testing data were collected from each test using a PID and FID. In addition, vapor samples for laboratory analyses were collected from select flux chamber tests. Lab testing of vapor samples included VOCs, TPH, and odor. As shown in **Table D-3**, generally one downhole flux chamber vapor sample was collected from each borehole for

¹ PNL-5A and PNL-10A were drilled adjacent to PNL-5 and PNL-10, respectively. PNL-5A was drilled due to refusal encountered at PNL-5. PNL-10A was drilled due to the predominance of fill in PNL-10. The boring log for PNL-5A is incorporated into the log for PNL-5.

laboratory testing except for PNL-04, which contained shallow liquids in the borehole. Further details on the Phase I downhole flux testing are provided in Appendix F.

Perimeter air monitoring data consisting of hourly PID, dust, wind speed and direction, and odor measurements at each of the six perimeter air monitoring locations were also collected. The perimeter air results from the five days of Phase I field activities are presented in **Table D-6** and Appendix G. Summary tables of detections in perimeter air are found in Appendix N.

Laboratory reports are provided in Appendix U for fill, impacted soil, and drilling muds encountered in the Phase I borings. Results from Phase I borings are also incorporated in the waste stream evaluation in Section 3.2.3.

D.3 Phase II – Bucket Auger Assessment in Former Lagoon Areas

The scope of work for Phase II included the drilling of seven bucket auger soil borings, collection of soil and waste samples for laboratory testing, and vapor samples for odor and chemical testing using the surface flux chamber testing technique. Field activities performed by GeoSyntec are documented in Attachment 2. The following is a summary of primary Phase II field activities:

- Seven bucket auger boreholes (PNL-BA1, PNL-BA3, PNL-BA6, PNL-BA7, PNL-BA8, PNL-BA11, and PNL-BA13) were drilled adjacent to the identically numbered Phase I borehole locations using a nominal 30-inch diameter bucket auger.
- The boreholes were advanced to depths ranging from 8.5 ft-bgs to 21 ft-bgs into the targeted waste material (**Table D-7** provides a summary of the bucket auger borehole information).
- A single composite sample was collected from the bucket auger cutting stockpile at each borehole location (**Table D-3** provides a summary of sample locations).
- Drill cuttings were used for lithologic logging and headspace screening using an FID and PID. FID and PID headspace readings are summarized in **Table D-4**. Borehole logs are provided in Attachment 2 of this appendix.
- Stockpile material was tested with a PID/FID for compliance with SCAQMD Rule 1166/1150 permit conditions. **Table D-4** includes a summary of stockpile monitoring data. Stockpiled material from boreholes PNL-BA8 and PNL-BA13 exhibited PID readings greater than 50 ppm and was temporarily covered with plastic sheeting. A composite waste sample from PNL-BA8 and PNL-BA13 was collected for laboratory analysis for waste profiling purposes. Stockpiled soil from these and several test trench locations was disposed offsite in accordance with the SCAQMD Rule 1166 permit requirements.
- Using the waste material collected from each bucket auger location, flux chamber testing was performed under an uncontrolled and a controlled condition utilizing several emission control materials. Flux chamber testing data were collected from each test using a PID and FID. In addition, vapor samples were collected for laboratory analysis. Laboratory testing of vapor samples included VOCs, TPH, and odor.

- Perimeter air monitoring following the same protocol as Phase I was conducted during the four days of Phase II field activities. The Phase II air monitoring results are presented in Appendix G, and summary tables of detections are found in Appendix N.

D.4 Phase III – Trenching in Former Lagoon Areas

The scope of work for Phase III included the excavation of six test trenches, with an additional test trench location (PNL-TP07) added in the field (a seventh test trench was added with the recommendation from DTSC and PNL to confirm that perched liquids were not a significant issue), and the collection of soil and waste samples for laboratory testing. The Phase III field activities were designed to further examine the nature of the fill and waste material characteristics in trenches. Field activities performed by GeoSyntec are documented in Attachment 3 of this appendix. The following were primary activities conducted in Phase III:

- Seven test trenches (PNL-TP1, PNL-TP2, PNL-TP3, PNL-TP4, PNL-TP5, PNL-TP6, and PNL-TP7) were advanced to the top of the native alluvium (stiff clay or micaceous silt to silty sand), except for PNL-TP01, which was advanced a few feet into the native material. Total depths of trenches were estimated to range from 20 ft-bgs to 26 ft-bgs. A summary of test trench data is presented in **Table D-8**.
- Test trenches were logged in the field, and materials were stockpiled adjacent to each excavation. Trench logging was conducted using combined observations from trench sidewalls along with the excavated material from the stockpile.
- Stockpiled materials were sampled and analyzed by tests listed in **Table D-2**. **Table D-2** provides a summary of samples collected for laboratory testing from each test trench.
- Perimeter air monitoring consisting of hourly dust, PID, and odor measurements, and collection of one 8-hour integrated air sample for each workday at each of six designated perimeter air monitoring stations was conducted. **Table D-5** presents a summary of the perimeter air monitoring samples submitted for analysis, and **Table D-6** presents a summary of the perimeter air monitoring results.

D.4.1 Backfill and SCAQMD Rule 1166 Permit Requirements

Stockpile emissions were periodically monitored using an FID and PID as required by the SCAQMD Rule 1166/1150 Permit. Excavated waste material with PID emissions that exceeded 50 ppm was segregated from the material with PID readings of less than 50 ppm. A single composite sample was collected from the excavation stockpile at each trench location for laboratory analysis. FID and PID stockpile readings are summarized in **Table D-4**. Stockpile material from trenches PNL-TP1, PNL-TP2, PNL-TP3, PNL-TP4, and PNL-TP7 exhibited PID readings greater than 50 ppm and was treated with Rusmar vapor suppressant foam and covered with plastic sheeting. Test trenches were abandoned by backfilling only the stockpiled material having PID stockpile readings of less than 50 ppm.

D.4.2 Constituents and Stability

Artificial fill and construction debris ranges in thickness up to 21 feet bgs. Fill material consisting of wood, soil, metal, concrete, and asphalt comprises a large percentage of Site material and is referred to generally as "fill and construction debris." This fill material was observed to be loosely consolidated and dry, with an occasional pocket of liquid and tar within void spaces in the subsurface. Fill and construction debris has poor trench wall stability with a trench slope less than a 1:1 ratio. Trenches with large slabs of concrete tend to undercut when excavated, and the larger blocks dislodged from the trench walls contribute to the poor trench stability. Fill and construction debris is dominant on the east side of the Site and was observed primarily in trenches PNL-TP1, PNL-TP5, PNL-TP6 and PNL-TP7 with slabs of concrete comprising between 25 and 70 percent of the debris.

Stiff drilling mud is the dominant material observed on the west side of the Site and was encountered in test pits PNL-TP2, PNL-TP3 and PNL-TP4 in the subsurface with concrete and fill material as a minor component at the surface. The stiff drilling mud showed good sidewall stability with a near vertical face.

D.4.3 Water and Tar Seeps

Minor tar seeps were observed at the top of drilling mud and waste materials at PNL-TP1 and PNL-TP02 and commingled with construction debris at PNL-TP6. Water seeps were encountered in PNL-TP4, PNL-TP6, and PNL-TP7 with flow rates estimated to range between 0.1 gallons per minute (gpm) and 0.5 gpm. No liquid samples were collected due to the lack of accumulated liquids. Water inflow appears as irregular pockets within the fill and construction debris. No significant inflow of liquids was observed in other trenches.

D.4.4 Radiological Survey

A survey was performed on the Phase III test pit stockpiles to obtain baseline information on radiological conditions of the drilling mud, fill, and impacted soils. The focus of the survey was to assess the potential for naturally occurring radioactive materials ("NORM"), which is known to be associated with oilfield waste.

Results of the Pilot Study No. 3 NORM work are shown in **Figures 3.2-4a through e** and are discussed in Section 3.2.1.5 of the RFS. Surveys were performed using a Ludlum model 3 survey meter with a 44-2 1x1" sodium iodide probe. Readings were taken within one centimeter of the item to be surveyed or as close as possible given the nature of the material. Calibration sheets and supporting documentation for the NORM are found in Appendix H.

D.4.5 Construction Debris

During Phase III, as part of the investigation by PNL, an assessment of the construction debris was performed to better understand the handling characteristics of the material. In the Phase III program discussed above, five trenches (TP1, TP3, TP5, TP6, and TP7) had construction debris present. Concrete and construction debris were easily removed from trenches with excavators and did not appear to pose a handling problem with the equipment used for trenching. Wood and other debris were relatively small in size and did not appear to be a problem for excavation.

Heavy construction debris and concrete tended to undercut and slough when excavated, limiting the slope of excavations to under 1:1 (Horizontal to Vertical).

D.5 Phase IV – Lagoon Trenching

The scope of work for Phase IV included the collection of two soil waste samples from each of the five lagoons for laboratory testing and collection of vapor samples for odor and chemical testing using the surface flux chamber testing technique. Field activities performed by GeoSyntec are documented in Attachment 4. Following is a summary of the primary activities conducted during Phase IV:

- Lagoon materials were collected from depths ranging between 4 and 12 feet bgs using a CAT 225D LC Long-Reach Excavator. **Table D-3** shows a summary of samples collected for laboratory testing.
- Trenches were logged and bucket materials were field-screened using a PID and FID (see **Table D-4**). Trench logs are presented in the Phase IV Technical Memorandum in Attachment 4.
- Perimeter air monitoring consisting of hourly dust, PID, and odor measurements, and collection of one 8-hour integrated air sample for each workday at each of six designated perimeter air monitoring stations was conducted. **Table D-5** presents a summary of the perimeter air monitoring samples submitted for analysis, and **Table D-6** presents a summary of the perimeter air monitoring results.
- Flux chamber testing data were collected from each lagoon sample using a PID and FID, and vapor samples were collected for laboratory analysis for VOCs, total petroleum hydrocarbons, sulfur and odor (see **Table D-3** for sample information). See Appendix F for additional discussion of the flux results.

D.6 Phase V – Small Auger Assessment in Pits A through E, G, and H

In Phase V of Pilot Study No. 3, boreholes were drilled into each of the former pits A through H (except Pit F, which was investigated under Phase VIII). The former pits (except Pit F) have no surface expression and were located on the ground using aerial photography registered to the Site topographic map. Holes were drilled using a CME 85 hollow stem auger drill rig. Samples of the pit contents were collected with a California modified split spoon sampler in 6-inch brass sleeves at intervals that varied according to soil and waste type. Holes were logged for lithology in the field along with qualitative PID and FID headspace samples collected at regular intervals as the boring progressed. EnCore samples and composited waste samples were collected for laboratory analysis. The laboratory chemical analyses (see **Table D-2**) were conducted by Del Mar Analytical, Inc.

A summary of Phase V borehole and sampling information is presented in **Table D-3** along with borehole information from all Phases of Pilot Study No. 3. Borehole locations are shown on **Figure 3.1-1**. A summary of the PID and FID headspace screening for the Phase V borings is presented in **Table D-4** with similar data from all Phases of Pilot Study No. 3. GeoSyntec's Field Memorandum and Attachments, which include summaries of field activities and boring logs, are presented in Attachment 5.

Perimeter air monitoring was performed as described in Appendix A of the Pilot Study No. 3 Workplan and consisted of hourly PID, dust, and odor measurements at six designated perimeter

air monitoring locations. Hourly measurements of wind speed and direction were also recorded on logs from the onsite wind station. Results of the Phase V perimeter air monitoring are provided with the Field Memorandum in Attachment 5.

Two borings were drilled in the area demarcated as Pit E during the Phase I portion of the Pilot Study No. 3 program, PNL-10 and PNL-10a (see **Figure 3.1-1** for locations). PNL-10 was located approximately 25 feet north of the southern boundary of Pit E, and PNL-10a was located about 45 feet north of PNL-10. These borings were drilled to 16.5 feet bgs and did not contain waste material.

During Phase VIII, one step-out boring for Pit F, PNL-F31, was drilled in the Pit E area. Slight hydrocarbon impacts were found in this borehole in native clay and underlying sand (15 to 25 feet bgs). The location of PNL-F31 is shown on **Figure 3.1-1**.

D.7 Phase VI – Deep Borings in Former Lagoon Areas (Geotechnical Data Collection)

The Pilot Study No. 3 Phase VI geotechnical drilling program consisted of drilling three hollow stem auger soil borings for geotechnical sample collection. Three borings (PNL-21, PNL-23, and PNL-28) were drilled in the former lagoon areas (see **Figure 3.1-1** for locations). The three boreholes were advanced to a depth of approximately 60 feet bgs in the native sand. A 12-inch conductor casing was advanced to the top of the native alluvium clay following installation of a 7-inch pilot borehole to reduce potential impacts to groundwater from perched liquids potentially present in the waste zone. **Table D-9** presents a summary of borehole information for the geotechnical drilling program. Field activities performed by GeoSyntec and boring logs are documented in Attachment 5.

The following types of samples were collected from the three geotechnical borings:

- SPT samples - resistance (N) values (blow counts) recorded at 3-foot intervals.
- Geotechnical shelly tube samples – two per boring, within the drilling mud waste and native clay.
- Bulk samples of the native sand – using split spoon samplers.

The split spoon and shelly tube samples were submitted to PTS laboratories in Santa Fe Springs, California, for analysis for the following parameters.

Drilling Muds and Native Clay (Shelly Tubes) (all samples except as noted):

- Hydraulic Conductivity (5 samples)
- Atterberg Limits
- Unconsolidated Undrained Triaxial Shear (ASTM D2850) (5 samples) – this was substituted for undrained triaxial compression, which could not be run due to nature of material (oozing oil contaminated laboratory equipment).
- One Dimensional Consolidation (ASTM D 2435) (5 samples)
- Unconfined Compression (4 samples)
- Moisture Content (2 samples in drilling mud)

Native Sand Underlying Clay (12 samples):

- Moisture Content, Bulk Density, and #200 Sieve Analysis (ASTM D 1140)

Highly Liquid Drilling Muds in Lagoons 4 and 5 (2 samples):

- Moisture Content, Bulk Density, and One Dimensional Consolidation. Unconfined compression tests were attempted but could not be run due to lack of cohesive strength in the material.

Table D-10 presents a summary of the Phase VI geotechnical test program. Tables showing the geotechnical results for the above analyses are presented in **Table 3.2-3a** and **Table 3.2-3b** of the RFS and in Appendix J (PTS rpt).

D.8 Phase VIII – Pit F

The scope of work for Phase VIII included the drilling of 23 hollow stem auger borings, collection of waste material from Pit F for chemical analysis, and downhole and surface chamber vapor flux testing. The Phase VIII investigation program was designed to determine the vertical and horizontal extent of waste material that may have migrated from Pit F. The Phase VIII borings were drilled using a hollow stem auger rig using an eight-inch diameter bit. **Figure 3.1-1** shows the sample locations. Field activities performed by GeoSyntec and boring logs are documented in Attachment 6. The following activities were conducted during the advancement of each borehole:

- Samples were logged for lithology, and PID/FID headspace readings were collected. Borehole logs are presented in Appendix G. PID/FID readings are shown in **Table D-4**.
- EnCore and composited waste samples were collected at selected intervals for chemical analysis from a California modified split-spoon sampler. Waste samples were submitted to Del Mar Analytical, Inc. **Table D-3** summarizes the waste sampling locations for the drilling program. Analytical tests performed are listed in **Table D-2**.
- Downhole vapor flux chamber measurements were performed on several holes at various depths within the impacted and native material. Vapor flux samples collected were analyzed for VOCs, petroleum hydrocarbons, sulfur compounds, and odor. Results of these analyses are provided in Appendix F.

Phase VIII field activities also consisted of perimeter air monitoring (Section 3.4) and surface flux testing on exposed waste and waste following application of various emissions control agents (see Appendix F).

D.9 Pit F Offsite Investigation

Previous investigations at the Site including soil and downhole vapor flux investigations (see Appendix F) showed that impacts from Pit F materials in the subsurface were not well delineated in the easterly direction toward Magnolia Street. The Pit F offsite investigation was completed to assess soils and soil gas near and outside of the eastern fence line of the Site and to measure contaminant flux, if any, at the ground surface. The investigation included assessment of soils, soil gas, and surface flux along Magnolia just outside the fence line. The assessment is documented in the Pit F Offsite Investigation Addendum Letter Report submitted to DTSC on January 31, 2005 (PNL, 2005a).

D.10 Perimeter Air Monitoring During Pilot Study No. 3

An ambient air monitoring program was implemented as part of Pilot Study No. 3 field activities. The primary objective of this ambient air monitoring program was to monitor for potential offsite impacts during field testing activities. To accomplish this objective, perimeter air quality data were collected using both real time instrumentation and through the collection of 8-hour composite SUMMA canister samples. Ambient air samples were collected in general accordance with the procedures used for the perimeter air sampling program previously performed in 2002 and 2003 [GeoSyntec, 2002b, 2003a,c]. Wind speed and direction data were also collected with the onsite wind station.

D.10.1 Real-Time Monitoring

Real-time perimeter air monitoring was performed during Phases I, II, III, IV, V & VI, and Phase VIII of the Pilot Study No. 3 field investigation program at six perimeter locations shown on **Figure 3.1-1**. Perimeter air monitoring location AA-04 was relocated and renamed AA-04A for sampling events performed during Phase VIII, the Pit F investigation. Real-time perimeter air monitoring included measurements for VOCs using a PID, dust using a Dust Track monitor and odors using worker perception according to the SCAQMD odor classification scale. Real-time perimeter air monitoring was conducted at each location using a “walk-around procedure” approximately every hour throughout each workday. The real-time perimeter air monitoring results are tabulated in **Table D-6**.

D.10.2 Time-Averaged Sampling

Perimeter air monitoring during Phase III, Phase IV, and Phase VIII included the collection of 8-hour integrated SUMMA canister air samples. Chemical speciation of perimeter air during these phases was assessed because field activities during these Phases were more representative of anticipated remedial activities. Phase III consisted of gross disturbance of impacted soils during trenching, and Phases IV and VIII consisted of intrusion into the lagoons and Pit F, all of which are features at the Site with potential emissions concerns. One 8-hour sample was collected from each of the six perimeter air monitoring locations during working hours of each day. Perimeter air monitoring locations are shown on **Figure 3.1-1**. Sample names and dates are identified in **Table D-5**. Note the use of monitoring location AA-04A for Phase VIII activities near Pit F.

D.11 Quality Assurance/Quality Control and Data Validation

A review of Pilot Study No. 3 data quality was conducted by GeoSyntec. Methods and results are documented in Attachment 7, Data Quality Review.

Table D-1
Phases of Pilot Study No. 3
Ascon Landfill Site

Phase	Purpose	Metrics
I	<ul style="list-style-type: none"> Waste characterization Measure down-hole flux from impacted materials Odors and emissions 	15 hollow-stem auger borings
II	<ul style="list-style-type: none"> Waste characterization Assess effectiveness of vapor suppressants Assess perimeter air impacts, including impacts of SCAQMD Rule 1166 	7 bucket auger borings
III	<ul style="list-style-type: none"> Waste characterization using composite sampling Assess perimeter air impacts, including impacts of SCAQMD Rule 1166 Slope stability Identification of presence and magnitude of perched liquids, if any, and evaluate impacts to excavation 	7 trenches
IV	<ul style="list-style-type: none"> Waste characterization of Lagoon materials Assess perimeter air impacts Assess effectiveness of vapor suppressants 	2 bulk samples per lagoon
V	<ul style="list-style-type: none"> Waste characterization of materials from Pits A, B, C, D, E, G, and H 	1 or more borings per pit
VI	<ul style="list-style-type: none"> Deep geotechnical assessment 	3 hollow-stem auger borings to near 60 feet depth
VII	<ul style="list-style-type: none"> Additional lagoon studies 	Eliminated
VIII	<ul style="list-style-type: none"> Waste characterization of Pit F materials and vicinity Odors and emissions Assess effectiveness of vapor suppressants Assess perimeter air impacts Assess lateral extent of Pit F impacts 	23 hollow-stem auger borings near Pit F and sampling of Pit F material
VIII Addendum	<ul style="list-style-type: none"> Offsite soil, surface flux, and soil gas assessment near Pit F 	6 borings and 9 surface flux sites along Magnolia near Pit F
IX	<ul style="list-style-type: none"> Treatability studies 	

Table D-2
Analytical Testing Program
Pilot Study No. 3 and Groundwater Remedial Investigation
Ascon Landfill Site

Media	Analyte Group / Media Type	Analyte	Method Number(s)
Soil / Waste	VOCs	Volatile Organic Compounds	USEPA 5030/5035/8260B
	SVOCs/PAHs	Semi-Volatile Organic Compounds/Polyaromatic Hydrocarbons	USEPA 3545/8270C
	Pesticides	Organochlorine Pesticides	USEPA 8081A
	PCBs	Polychlorinated Biphenyls	USEPA 8082
	Metals	CAM 17 Metals	USEPA 6010B/7471A
		Chromium VI	USEPA 7199
		Organic Lead	CADHS LUFT/HML 939-M
	TPH	Total Recoverable Petroleum Hydrocarbons (TRPH)	USEPA 418.1
		Extractable Fuel Hydrocarbons (EFH)	CADHS 8015 Modified
		Oil & Grease	USEPA 413.2 Modified
	Others	pH	USEPA 9045C
		Ignitability	SW846 7.1.2
		Reactivity with water	SW846 7.3.2.1
Groundwater	As needed	STLC (if total result exceeded 10 times STLC threshold)	CA-WET/6010B
	As needed	TCLP (if total result exceeded 20 times TCLP threshold)	USEPA 1311/6010B
	VOCs	Volatile Organic Compounds	USEPA 8260B
	SVOCs	Semi-Volatile Organic Compounds	USEPA 8270C
	Metals	CAM 17 Metals	EPA 6020/7470A
		Chromium VI	EPA 7199
	Emergent Compounds	1,4-Dioxane Perchlorate N-nitrosodimethylamine (NDMA)	EPA 8270C- Modified EPA 314.0 EPA 1625C-Modified
	General Minerals	Total Dissolved Solids, major anions and cations	Various
Air	Flux	Volatile Organic Compounds	EPA TO-15
		Petroleum Hydrocarbons	EPA TO-3
		Odor	ASTM E-679-91/E-544-99
		Sulfur Compounds	ASTM D 5504-01
	Perimeter Air	Volatile Organic Compounds	EPA TO-15
		Petroleum Hydrocarbons	EPA TO-3

Table D-3
Pilot Study No. 3 Sample Collection Summary
Ascon Landfill Site

Phase	Borehole/ Trench	Date Sampled	Composite Soil & Waste Samples (composited depths) ¹	Discrete Soil & Waste Samples ²	Flux Type ⁴	Flux Vapor Samples ^{5,6} (TO-3, TO-15)	Flux Sulfur Compounds Samples (ASTM D 5504-01)	Flux Odor Samples (ASTM E 679-91, ASTM E 544-99)
			Del Mar Analytical	Del Mar Analytical		Columbia Analytical Services	Columbia Analytical Services	Odor Science & Engineering, Inc.
I	PNL-1	5/3/2004	PNL-1 (3, 7, 10, 13, 15, 18, and 21)	PNL-1-16.5-EC PNL-1-18.5-EC PNL-1-21.5-EC	DHF	PNL-1-15DHF	--	PNL-1-15DHF
I	PNL-2	3/15/2004	PNL-02 (3.5, 6.5, 9.5, 12.5, 13.0, 15.5, and 16.0)	--	DHF	PNL-02-15DHF	--	PNL-02-15DHF
I	PNL-3	3/16/2004	PNL-3 (16, 18.5, 22, and 24.5)	PNL-3-19-EC PNL-3-21.5-EC	DHF	PNL-3-21DHF	--	PNL-3-21DHF
I	PNL-4/4A	5/4/2004	PNL-4 (22, 24, and 27)	PNL-4-21.5-EC PNL-4-24.5-EC	DHF	--	--	--
I	PNL-5/5A	3/16/2004	PNL-5 (9.5, 13, and 15 from PNL-5; 18.5, 22, and 24.5 from PNL-5A)	PNL-5-10-EC PNL-5A-21.5-EC PNL-5A-25-EC	DHF	PNL-5A-11DHF	--	PNL-5A-11DHF
I	PNL-6	5/5/2004	PNL-6 (9, 12, 15, 21, and 24)	PNL-6-9.5-EC PNL-6-15.5-EC PNL-6-21.5-EC	DHF	PNL-6-15DHF PNL-6-15RDHF	--	PNL-6-15DHF
I	PNL-7	5/3/2004	PNL-7 (9.5, 12, 15, and 18)	PNL-7-12.5-EC	DHF	PNL-7-21DHF	--	PNL-7-21DHF PNL-7-21RDHF
I	PNL-8	5/5/2004	PNL-8 (10, 12.5, 15, 18, 21, 24, and 27)	PNL-8-9.5-EC PNL-8-18.5-EC PNL-8-24.5-EC	DHF	PNL-8-6-DHF PNL-8-18-DHF	--	PNL-8-18-DHF
I	PNL-9	5/5/2004	PNL-9 (16 and 18) PNL-9-Fill (6, 9.5, and 12.5)	PNL-9-10-EC PNL-9-15.5-EC PNL-9-18.5-EC	DHF	PNL-9-15DHF	--	PNL-9-15DHF PNL-9-15-RDHF
I	PNL-10	5/4/2004	--	PNL-10-6-EC PNL-10-9.5-EC PNL-10-12-EC PNL-10-18-EC	--	--	--	--
I	PNL-10A	5/4/2004	--	--	DHF	PNL-10A-13DHF	--	PNL-10A-13DHF
I	PNL-11	5/4/2004	PNL-11 (9, 12, 15, and 21.5)	PNL-11-12.5-EC PNL-11-15.5-EC PNL-11-22-EC	DHF	PNL-11-12DHF	--	PNL-11-12DHF

Table D-3
Pilot Study No. 3 Sample Collection Summary
Ascon Landfill Site

Phase	Borehole/ Trench	Date Sampled	Composite Soil & Waste Samples (composited depths) ¹	Discrete Soil & Waste Samples ²	Flux Type ⁴	Flux Vapor Samples ^{5,6} (TO-3, TO-15)	Flux Sulfur Compounds Samples (ASTM D 5504-01)	Flux Odor Samples (ASTM E 679-91, ASTM E 544-99)
I	PNL-12	3/16/2004	PNL-12 (13, 15.5, and 18.5) PNL-12-Fill (2, 3.5, 6.5, and 9.5)	PNL-12-16-EC PNL-12-18-EC	DHF	PNL-12-15RDHF PNL-12-15DHF	--	PNL-12-21DHF
I	PNL-13	3/15/2004	PNL-13 (6.5, 9.5, 10.0, 12.5, 13.0, 15.5, 16.0, 18.5, 19.0, 21.5, and 22.0) PNL-13-Fill (2.0, 2.5, and 3.5)	PNL-13-9.5-EC PNL-13-12.0-EC PNL-13-15.0-EC	DHF	PNL-13-12DHF	--	PNL-13-12DHF
I	PNL-14	5/3/2004	PNL-14 (15, 18, and 21)	PNL-14-15-EC PNL-14-18.5-EC	DHF	PNL-14-21DHF	--	PNL-14-21DHF
I	PNL-15	3/15/2004	--	--	DHF	PNL-15-12DHF	--	PNL-15-12DHF
I	Blank Flux Samples	3/15/2004 3/16/2004 5/5/2004	--	--	DHF	PNL-9-21-BDHF PNL-12-100DHF PNL-15-100DHF	--	PNL-7BDHF PNL-12-100DHF PNL-15-100DHF
II	PNL-BA01	5/10/2004	PNL-BA01-Stockpile	--	SF	PNLBA1-17-SFU PNLBA1-17-SFC1	--	PNLBA1-17-SFU PNLBA1-17-SFC1
II	PNL-BA03	5/12/2004	PNL-BA03-Stockpile	--	SF	PNLBA3-X-SFU PNLBA3-X-SFU1 PNLBA3-X-SFC	--	PNLBA3-X-SFU PNLBA3-X-SFC
II	PNL-BA06	5/13/2004	PNL-BA06-Stockpile	--	SF	PNLBA06-X-SFU PNLBA06-X-SFC	--	PNLBA06-X-SFU PNLBA06-X-SFC
II	PNL-BA07	5/11/2004	PNL-BA07-Stockpile	--	SF	PNLBA07-X-SFU PNLBA07-X-SFC	--	PNLBA07-X-SFU PNLBA07-X-SFC
II	PNL-BA08	5/11/2004	PNL-BA08-Stockpile	--	SF	PNLBA8-17-SFU PNLBA8-17-SFC1 PNLBA8-17-SFC2 PNLBA8-17-SFC3 PNLBA8-17-SFC4 PNLBA8-17-SFC5 PNLBA8-17-SFC6 PNLBA8-17-SFC7	--	PNLBA8-17-SFU PNLBA8-17-SFC1 PNLBA8-17-SFC2 PNLBA8-17-SFC3 PNLBA8-17-SFC4 PNLBA8-17-SFC5 PNLBA8-17-SFC6 PNLBA8-17-SFC7

Table D-3
Pilot Study No. 3 Sample Collection Summary
Ascon Landfill Site

Phase	Borehole/ Trench	Date Sampled	Composite Soil & Waste Samples (composited depths) ¹	Discrete Soil & Waste Samples ²	Flux Type ⁴	Flux Vapor Samples ^{5,6} (TO-3, TO-15)	Flux Sulfur Compounds Samples (ASTM D 5504-01)	Flux Odor Samples (ASTM E 679-91, ASTM E 544-99)
II	PNL-BA11	5/12/2004	PNL-BA11-Stockpile	--	SF	PNLBA11-X-SFU PNLBA11-X-SFC	--	PNLBA11-X-SFU PNLBA11-X-SFC
II	PNL-BA13	5/12/2004	PNL-BA13-Stockpile	--	SF	PNLBA13-X-SFU PNLBA13-X-SFC	--	PNLBA13-X-SFU PNLBA13-X-SFC
II	Multiple	5/26/2004	PNL-BA-8/13 waste	--	--	--	--	--
II	Blank Flux Samples	5/10- 12/2004	--	--	SF	PNL-100-100-SF	--	PNLBA3-100-SFC
III	PNL-TP01	5/17/2004 5/18/2004	PNL-TP01-Stockpile PNL-TP01-Waste	--	--	--	--	--
III	PNL-TP02	5/19/2004	PNL-TP02-Stockpile PNL-TP02-Waste	--	--	--	--	--
III	PNL-TP03	5/20/2004	PNL-TP03-Stockpile PNL-TP03-Waste	--	--	--	--	--
III	PNL-TP04	5/19/2004	PNL-TP04-Stockpile PNL-TP04-Waste	--	--	--	--	--
III	PNL-TP05	5/18/2004	PNL-TP05-Stockpile	--	--	--	--	--
III	PNL-TP06	5/18/2004	PNL-TP06-Stockpile	--	--	--	--	--

Table D-3
Pilot Study No. 3 Sample Collection Summary
Ascon Landfill Site

Phase	Borehole/ Trench	Date Sampled	Composite Soil & Waste Samples (composited depths) ¹	Discrete Soil & Waste Samples ²	Flux Type ⁴	Flux Vapor Samples ^{5,6} (TO-3, TO-15)	Flux Sulfur Compounds Samples (ASTM D 5504-01)	Flux Odor Samples (ASTM E 679-91, ASTM E 544-99)
III	PNL-TP07	5/20/2004	PNL-TP07-Stockpile PNL-TP07-Waste	--	--	--	--	--
III	Multiple	6/4/2004	PNL-TP01,02,03,04,07-WASTE	--	--	--	--	--
IV	PNL-L1A	5/26/2004	PNL-L1A	--	SF	PNL-L1A-SFU PNL-L1A-SFC1 PNL-L1A-SFC2	PNL-L1A-SFUS PNL-L1A-SFC1S PNL-L1A-SFC2S	PNL-L1A-SFU PNL-L1A-SFC1 PNL-L1A-SFC2
IV	PNL-L1B	5/26/2004	PNL-L1B	--	SF	PNL-L1B-SFU PNL-L1B-SFC1 PNL-L1B-SFC2 PNL-L1B-SFUR	PNL-L1B-SFUS PNL-L1B-SFC1S PNL-L1B-SFC2S	PNL-L1B-SFU PNL-L1B-SFC1 PNL-L1B-SFC2
IV	PNL-L2A	5/26/2004	PNL-L2A	--	SF	PNL-L2A-SFU PNL-L2A-SFC1 PNL-L2A-SFC2	PNL-L2A-SFUS PNL-L2A-SFC1S PNL-L2A-SFC2S	PNL-L2A-SFU PNL-L2A-SFC1 PNL-L2A-SFC2 PNL-L2A-SFURO
IV	PNL-L2B	5/26/2004	PNL-L2B	--	SF	PNL-L2B-SFU PNL-L2B-SFC1 PNL-L2B-SFC2	PNL-L2B-SFUS PNL-L2B-SFC1S PNL-L2B-SFC2S PNL-L2B-SFC1SR	PNL-L2B-SFU PNL-L2B-SFC1 PNL-L2B-SFC2
IV	PNL-L3A	5/25/2004	PNL-L3A	--	SF	PNL-L3A-SFU PNL-L3A-SFC1 PNL-L3A-SFC2	PNL-L3A-SFUS PNL-L3A-SFC1S PNL-L3A-SFC2S	PNL-L3A-SFU PNL-L3A-SFC1 PNL-L3A-SFC2
IV	PNL-L3B	5/25/2004	PNL-L3B	--	SF	PNL-L3B-SFU PNL-L3B-SFC1 PNL-L3B-SFC2	PNL-L3B-SFU PNL-L3B-SFC1S PNL-L3B-SFC2	PNL-L3B-SFU PNL-L3B-SFC1 PNL-L3B-SFC2

Table D-3
Pilot Study No. 3 Sample Collection Summary
Ascon Landfill Site

Phase	Borehole/ Trench	Date Sampled	Composite Soil & Waste Samples (composited depths) ¹	Discrete Soil & Waste Samples ²	Flux Type ⁴	Flux Vapor Samples ^{5,6} (TO-3, TO-15)	Flux Sulfur Compounds Samples (ASTM D 5504-01)	Flux Odor Samples (ASTM E 679-91, ASTM E 544-99)
IV	PNL-L4A	5/24/2004	PNL-L4A	--	SF	PNL-L4A-SFU PNL-L4A-SFC1 PNL-L4A-SFC2	PNL-L4A-SFUS PNL-L4A-SFC1S PNL-L4A-SFC2S	PNL-L4A-SFU PNL-L4A-SFC2
IV	PNL-L4B	5/24/2004	PNL-L4B	--	SF	PNL-L4B-SFU PNL-L4B-SFC1 PNL-L4B-SFC2	PNL-L4B-SFUS PNL-L4B-SFC1S PNL-L4B-SFC2S	PNL-L4B-SFU PNL-L4B-SFC2
IV	PNL-L5A	5/24/2004	PNL-L5A	--	SF	PNL-L5A-SFU PNL-L5A-SFC1 PNL-L5A-SFC2	PNL-L5A-SFUS PNL-L5A-SFC1S PNL-L5A-SFC2S	PNL-L5A-SFU PNL-L5A-SFC1 PNL-L5A-SFC2
IV	PNL-L5B	5/25/2004	PNL-L5B	--	SF	PNL-L5B-SFU PNL-L5B-SFC1 PNL-L5B-SFC2	PNL-L5B-SFUS PNL-L5B-SFC1S SPNL-L5B-SFC2	PNL-L5B-SFU PNL-L5B-SFC1 PNL-L5B-SFC2
IV	PNL-L3	6/29/2004	PNL-L3A, -L3B	--	--	--	--	--
IV	All Lagoon Retains	7/22/2004	PNL-L1A-1, -L1A-2, -L1B-1, -L2A-1, -L2B-1, -L3A-1, -L3B-1, -L4A-1, -L4B-1, -L5A-1, -L5B-1	--	--	--	--	--
IV	Blank Flux Samples	5/25- 27/2004	--	--	SF	PNL-L1A-SF300 PNL-L5-100-SFU	PNL-L200-SFUS	PNL-L200-SFU
V	PNL-PA1	6/15/2004	PNL-PA1 (16, 17.5, 19.5, 20.5, 22, and 23.5)	PNL-PA1-17-EC PNL-PA1-19-EC PNL-PA1-21-EC	--	--	--	--
V	PNL-PB1	6/15/2004	PNL-PB1 (18 and 22)	PNL-PB1-23.5-EC	--	--	--	--
V	PNL-PC1	6/14/2004	PNL-PC1 (7 and 9)	--	--	--	--	--
V	PNL-PC1A	6/14/2004	--	PNL-PC1A	--	--	--	--
V	PNL-PD1	6/14/2004	--	PNL-PD1 PNL-PD1-4-EC	--	--	--	--
V	PNL-PD1B	6/14/2004	--	PNL-PD1B	--	--	--	--
V	PNL-PE1	6/14/2004	PNL-PE1 (4, 6.5, 10.5, and 13.5)	PNL-PE1-7-EC PNL-PE1-12-EC	--	--	--	--
V	PNL-PG1	6/14/2004	--	PNL-PG1	--	--	--	--

Table D-3
Pilot Study No. 3 Sample Collection Summary
Ascon Landfill Site

Phase	Borehole/ Trench	Date Sampled	Composite Soil & Waste Samples (composited depths) ¹	Discrete Soil & Waste Samples ²	Flux Type ⁴	Flux Vapor Samples ^{5,6} (TO-3, TO-15)	Flux Sulfur Compounds Samples (ASTM D 5504-01)	Flux Odor Samples (ASTM E 679-91, ASTM E 544-99)
V	PNL-PH1	6/15/2004	--	PNL-PH1-7-EC PNL-PH1-7 PNL-PH1-8.5-EC PNL-PH1-8.5 PNL-PH1-11 PNL-PH1-12.5	--	--	--	--
VIII	PNL-F1	6/30/2004	PNL-F1-7.5 AND 9 PNL-F1-10.5,12.5,13.5	PNL-F1-8.5 -EC	DHF	PNL-F1-13-T PNL-F1-13-TR	PNL-F1-13-S PNL-F1-13-SR	PNL-F1-13-O PNL-F1-13-OR
			(Impacted cuttings from 5.5 to 8)	--	SF	SF-STY1-U-T SF-STY1-C1-T SF-STY1-C2-T	SF-STY1-U-S SF-STY1-U-SR SF-STY1-C1-S SF-STY1-C2-S	SF-STY1-U-O SF-STY1-U-OR SF-STY1-C1-O SF-STY1-C2-O
VIII	PNL-F3	6/29/2004	--	PNL-F3-15-EC PNL-F3-14.5	--	--	--	--
VIII	PNL-F4	6/28/2004	PNL-F4-11.5 & 14.5 PNL-F4-17 & 17.5	PNL-F4-11-EC PNL-F4-14-EC PNL-F4-16.5-EC	DHF	PNL-F4-15-T	PNL-F4-15-S	PNL-F4-15-O
VIII	PNL-F5	6/28/2004	PNL-F5-14 & 14.5	PNL-F5-17-EC	DHF	PNL-F5-13.5-T	PNL-F5-13.5-S	PNL-F5-13.5-O
VIII	PNL-F6	6/28/2004	PNL-F6-5.5 & 11.5 PNL-F6-12 & 14	PNL-F6-10.5-EC	--	--	--	--
VIII	PNL-F7	6/28/2004	PNL-F7-8.5 & 11	PNL-F7-11.5-EC	--	--	--	--
VIII	PNL-F17	6/29/2004	--	PNL-F17-10	--	--	--	--
VIII	PNL-F18	6/29/2004	--	PNL-F18-9.5 PNL-F18-12	--	--	--	--
VIII	PNL-F19	6/30/2004	--	PNL-F19-10.5 PNL-F19-14	DHF	PNL-F19-4-T PNL-F19-10-T	PNL-F19-4-S PNL-F19-10-S	PNL-F19-4-O PNL-F19-10-O
VIII	PNL-F21	6/29/2004	--	PNL-F21-9.5 PNL-F21-11.5	--	--	--	--
VIII	PNL-F25	7/1/2004	--	PNL-F25-19	--	--	--	--
VIII	PNL-F27	6/29/2004	--	PNL-F27-8.5	--	--	--	--
VIII	Pit F	6/30/2004	--	Pit F_SAMPLE (Pit F waste)	SF	SF-STY2-U-T SF-STY2-U-TR SF-STY2-C1-T SF-STY2-C2-T	SF-STY2-U-S SF-STY2-C1-S SF-STY2-C2-S	SF-STY2-U-O SF-STY2-C1-O SF-STY2-C2-O

Table D-3
Pilot Study No. 3 Sample Collection Summary
Ascon Landfill Site

Phase	Borehole/ Trench	Date Sampled	Composite Soil & Waste Samples (composited depths) ¹	Discrete Soil & Waste Samples ²	Flux Type ⁴	Flux Vapor Samples ^{5,6} (TO-3, TO-15)	Flux Sulfur Compounds Samples (ASTM D 5504-01)	Flux Odor Samples (ASTM E 679-91, ASTM E 544-99)
VIII	Pit F	6/30/2004	--	Pit F_BOTTOM (Pit F material near 4 feet below cover)	--	--	--	--
VIII	Blank Flux Samples	6/28- 30/2004	--	--	--	PNL-F75-1-T SF-BLK	PNL-F75-1-S SF-BLK-S	PNL-F75-1-O SF-BLK-ODOR
I-IV	Multiple	5/3-26/2004	PNL-1, -7, -8, -14 PNL-BA01, 06, 07, 08, 13 (all "stockpile") PNL-L1A/B, -L2A/B, -L4A, -L5B PNL-TP01, -TP02, -TP03, -TP04, -TP06 (all "stockpile" or "stockpile/waste")	--	--	--	--	--

Notes:

¹ Approximate depths of samples, in feet below ground surface, used in each composite are either in parentheses below sample ID or embedded in sample ID itself.

² "EC" in any discrete sample ID indicates Encore sampled (EPA 5035) and tested for VOCs only.

⁴ Flux types: DHF = Downhole, SF = Surface (vapor suppression testing), "--" = not applicable or undetermined

⁵ Flux sample name extensions: "DHF"--downhole flux, "SF"--surface flux, "T"--TO-15/3 sample, "S"--sulfur compound sample, "O"--odor sample, "R"--replicate, "B"--blank

⁶ Other surface flux sample name extensions: "U"--uncontrolled flux, "C1"--controlled flux using suppressant 1, etc.

Table D-4
Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
I	PNL-1	5/3/2004	8:02	3	60	250	Headspace analysis
			8:05	6	55.12	1420	Headspace analysis
			8:30	10	160	520	Headspace analysis
			8:35	12	170	470	Headspace analysis
			9:05	16	220	235	Headspace analysis
			9:10	18	354	6685	Headspace analysis
			9:30	21.5	289	1740	Headspace analysis
			9:37	24	13.4	156	Headspace analysis
I	PNL-2	3/15/2004	8:48	3	3.54	0.33	Headspace analysis
			8:52	6	6.56	71.13	Headspace analysis
			9:20	10	10.12	102	Headspace analysis
			9:30	12	1.98	102	Headspace analysis
			9:52	15	2.58	76.78	Headspace analysis
			9:59	18	3.79	61.59	Headspace analysis
			10:51	21	2.43	4.13	Headspace analysis
			14:29	3	1.12	4.39	Headspace analysis
I	PNL-3	3/16/2004	14:35	6	3.5	3471	Headspace analysis
			14:45	12	1.6	3800	Headspace analysis
			14:50	15	2	35	Headspace analysis
			15:35	18	150	3500	Headspace analysis
			16:06	21	260	10400	Headspace analysis
			16:06	24	140	2000	Headspace analysis
			16:25	27	90	1000	Headspace analysis
			7:45	3	12.38	533	Headspace analysis
I	PNL-4	5/4/2004	8:02	9	15.29	516	Headspace analysis
			8:14	15	4.23	466	Headspace analysis
			8:24	19	5.14	440	Headspace analysis
			8:30	21.5	207	3797	Headspace analysis
			8:36	24.5	324	5119	Headspace analysis
			8:42	27.5	176	1052	Headspace analysis
			8:20	3	66.8	2.6	Headspace analysis
I	PNL-5	3/16/2004	8:25	6	85.3	293	Headspace analysis
			8:45	9	73	1330	Headspace analysis
			9:09	12	8	440	Headspace analysis
			10:44	18	12	766	Headspace analysis
I	PNL-5A	3/16/2004	10:45	21	80	3655	Headspace analysis
			10:51	24	180	3500	Headspace analysis
			10:57	27	19	1014	Headspace analysis
			7:48	3.5	7.43	18.32	Headspace analysis
I	PNL-6	5/5/2004	7:52	6	14.55	469	Headspace analysis
			8:13	9.5	11.75	620	Headspace analysis
			8:20	12.5	17.52	632	Headspace analysis
			8:38	15.5	199	3157	Headspace analysis
			8:50	21.5	175	4356	Headspace analysis
			8:54	24.5	52.02	243	Headspace analysis
			13:50	3	5.12	26.59	Headspace analysis
I	PNL-7	5/3/2004	13:56	7	56.77	905	Headspace analysis
			14:15	9	98	1240	Headspace analysis
			14:20	13	242	4165	Headspace analysis
			14:37	15.5	39.53	1034	Headspace analysis
			14:42	18.5	166	1740	Headspace analysis
			15:10	21	18.7	65.3	Headspace analysis

Table D-4
Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
I	PNL-8	5/5/2004	12:50	3	5.42	13.66	Headspace analysis
			13:10	6.5	2.89	243	Headspace analysis
			13:17	9.5	396	2115	Headspace analysis
			13:33	13	393	6453	Headspace analysis
			13:39	15.5	473	5768	Headspace analysis
			14:05	18.5	401	5715	Headspace analysis
			14:07	21.5	400	5974	Headspace analysis
			14:30	24.5	430	3521	Headspace analysis
			14:35	27.5	536	5516	Headspace analysis
I	PNL-9	5/5/2004	14:38	29	12.43	762	Headspace analysis
			9:48	3	10.08	46.45	Headspace analysis
			9:50	6	23.56	47.25	Headspace analysis
			10:11	9	17.07	106	Headspace analysis
			10:18	12	10.43	92.28	Headspace analysis
			10:37	15.5	613	5521	Headspace analysis
			10:45	18.5	19.73	617	Headspace analysis
			11:00	21.5	5.26	23.06	Headspace analysis
			14:39	3.5	18.77	73.89	Headspace analysis
I	PNL-10	5/4/2004	14:45	6.5	1.64	28.24	Headspace analysis
			15:00	9.5	0.75	0.96	Headspace analysis
			15:03	12.5	1.31	2.2	Headspace analysis
			15:17	15.5	1.24	5.27	Headspace analysis
			15:19	18.5	1.74	6.08	Headspace analysis
			16:39	14.5	3.96	1201	Headspace analysis
I	PNL-11	5/4/2004	11:28	3.5	22.41	64.84	Headspace analysis
			11:48	6.5	2.65	3.4	Headspace analysis
			12:10	9.5	356	1098	Headspace analysis
			12:35	12.5	17.2	65.9	Headspace analysis
			12:45	15.5	4.3	27.95	Headspace analysis
			12:48	18	5.86	23.89	Headspace analysis
			13:05	22	2.3	4.9	Headspace analysis
			11:56	3	120	563	Headspace analysis
I	PNL-12	3/16/2004	12:18	7	50	1036	Headspace analysis
			12:32	9	12	1437	Headspace analysis
			12:43	12	300	4650	Headspace analysis
			12:53	15	180	3720	Headspace analysis
			13:18	18	70	1550	Headspace analysis
			13:19	21	2.2	520	Headspace analysis
			11:35	3	1.7	0.78	Headspace analysis
I	PNL-13	3/15/2002	11:56	6	327	3019	Headspace analysis
			11:58	9	229	2244	Headspace analysis
			12:28	12	160	500	Headspace analysis
			12:52	18	90	1200	Headspace analysis
			12:53	21	47	460	Headspace analysis
			14:30	24	5.87	41.57	Headspace analysis
			11:05	3	5.17	27.1	Headspace analysis
I	PNL-14	5/3/2004	11:11	7.5	3.32	16.98	Headspace analysis
			11:26	9	12.22	42.51	Headspace analysis
			11:30	12	66.52	619	Headspace analysis
			11:47	15	75.06	344	Headspace analysis
			11:52	18.5	236	983	Headspace analysis
			12:15	21.5	290	1071	Headspace analysis
			12:20	24	73.92	460	Headspace analysis

Table D-4
Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
I	PNL-15	3/15/2004	14:58	3	3.3	19.6	Headspace analysis
			15:27	6	3.1	11.6	Headspace analysis
			15:28	9	5.73	282	Headspace analysis
			15:48	12	20.8	189	Headspace analysis
			16:07	15	2.08	645	Headspace analysis
II	PNL-BA01	5/10/2004	14:55	5	719	799	Headspace analysis
			15:06	9	290	113	Headspace analysis
			15:12	11	372	408	Headspace analysis
			15:45	13	1400	700	Headspace analysis
			15:53	17	350	150	Headspace analysis
II	PNL-BA03	5/12/2004	11:21	2	12.7	1.8	Headspace analysis
			11:29	4	10.8	8	Headspace analysis
			11:31	5	62.2	55.1	Headspace analysis
			11:55	8.5	11	140	Headspace analysis
			11:59	10	10	150	Headspace analysis
			12:34	13	11.2	285	Headspace analysis
			12:47	15	8.5	330	Headspace analysis
			12:50	16	8.6	302	Headspace analysis
			12:59	17	15.5	350	Headspace analysis
			13:08	18	14.5	65	Headspace analysis
			13:18	19.5	1700	1700	Headspace analysis
II	PNL-BA06	5/13/2004	13:35	21	300	140	Headspace analysis
			7:56	4	21.1	12.2	Headspace analysis
			8:04	7.5	65.6	310	Headspace analysis
			8:11	11	27	209	Headspace analysis
			8:29	13.5	138	324	Headspace analysis
II	PNL-BA07	5/11/2004	8:42	17	420	680	Headspace analysis
			13:59	3	30.33	12.59	Headspace analysis
			14:06	6	16.11	102	Headspace analysis
			14:12	8	149	332	Headspace analysis
			14:16	11	172	363	Headspace analysis
			15:11	13	250	150	Headspace analysis
II	PNL-BA08	5/11/2004	15:27	14.5	240	320	Headspace analysis
			9:55	4	13.48	0.91	Headspace analysis
			10:05	6	15.34	3.36	Headspace analysis
			10:48	10	360	1500	Headspace analysis
			10:55	13	400	200	Headspace analysis
			11:10	15	380	200	Headspace analysis
II	PNL-BA11	5/12/2004	11:15	17	200	150	Headspace analysis
			9:26	4.5	28.77	15.43	Headspace analysis
			9:29	6	13.3	6.5	Headspace analysis
			9:34	8	10.4	2.1	Headspace analysis
			9:38	10.5	82.8	70	Headspace analysis
			9:44	11.5	1200	250	Headspace analysis
II	PNL-BA13	5/12/2004	15:52	2	15	3.5	Headspace analysis
			16:19	5	190	106	Headspace analysis
			16:19	7	300	170	Headspace analysis
			16:21	8.5	900	800	Headspace analysis
II	PNL-BA01	5/10/2004	14:58	NA	15.49	5.63	uncovered stockpile
			15:13	NA	5	1.56	uncovered stockpile
			15:28	NA	35.55	9.06	uncovered stockpile
			15:43	NA	12	2	uncovered stockpile
			15:58	NA	13	3	uncovered stockpile
			16:13	NA	8.75	1.93	uncovered stockpile

Table D-4
Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
II	PNL-BA03	5/12/2004	11:24	NA	1.5	1.3	uncovered stockpile
			11:34	NA	4.95	11.86	uncovered stockpile
			11:47	NA	1.8	0.5	uncovered stockpile
			11:57	NA	3.1	12.8	uncovered stockpile
			12:00	NA	2.8	8.9	uncovered stockpile
			12:40	NA	1.7	4.5	uncovered stockpile
			12:50	NA	0.8	4	uncovered stockpile
			13:00	NA	1.5	0.7	uncovered stockpile
II	PNL-BA06	5/13/2004	13:10	NA	2.2	4.4	uncovered stockpile
			8:25	NA	21.5	2.5	uncovered stockpile
			8:35	NA	13.1	1.2	uncovered stockpile
			8:45	NA	13.5	6.6	uncovered stockpile
II	PNL-BA07	5/11/2004	9:00	NA	8.1	1.5	uncovered stockpile
			14:03	NA	8.31	2.45	uncovered stockpile
			14:18	NA	17.75	22.83	uncovered stockpile
			14:33	NA	15.99	12.02	uncovered stockpile
			14:49	NA	3	1.4	uncovered stockpile
			15:09	NA	3	1.5	uncovered stockpile
			15:15	NA	8.79	3.2	uncovered stockpile
II	PNL-BA08	5/11/2004	15:28	NA	8.88	6.43	uncovered stockpile
			10:00	NA	7.38	0.45	uncovered stockpile
			10:15	NA	5.26	0.51	uncovered stockpile
			10:50	NA	26	17	uncovered stockpile
II	PNL-BA11	5/12/2004	11:05	NA	70	36	covered stockpile
			9:31	NA	2.8	1.6	uncovered stockpile
			9:37	NA	4.8	NR	uncovered stockpile
			9:41	NA	4.89	0.82	uncovered stockpile
II	PNL-BA13	5/12/2004	9:47	NA	22.44	3.89	uncovered stockpile
			16:07	NA	3.5	0.5	uncovered stockpile
			16:18	NA	9.1	3	uncovered stockpile
			16:23	NA	203	68.4	covered stockpile
III	PNL-TP01	5/17/2004	9:10	NA	13.01	6.91	uncovered stockpile
			9:25	NA	19.21	16.65	uncovered stockpile
			9:40	NA	19.1	2.8	uncovered stockpile
			9:55	NA	16.1	3.3	uncovered stockpile
			10:04	NA	14	4.8	uncovered stockpile
			10:19	NA	38.7	19.1	uncovered stockpile
			10:34	NA	21.8	6.1	uncovered stockpile
			11:07	NA	18.5	2.5	uncovered stockpile
			11:20	NA	19.1	2.3	uncovered stockpile
			11:35	NA	13	1.3	uncovered stockpile
			13:15	NA	2.8	1.1	uncovered stockpile
			13:30	NA	95	24	soil waste in roll off bin
			13:45	NA	21	8	uncovered stockpile
III	PNL-TP02	5/19/2004	11:47	NA	35	20	uncovered; tar material
			11:54	NA	70	20	uncovered; drilling mud
			12:00	NA	12	2	with applied foam cover
			12:15	NA	105	65.9	NR
III	PNL-TP03	5/20/2004	8:08	NA	150	60	uncovered; drilling clay
			8:20	NA	120	80	uncovered; drilling clay
			8:20	NA	40	30	with applied foam cover
			8:41	NA	15	20	with applied foam cover
			8:55	NA	6.1	1.5	bucket of native alluvium

Table D-4
Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
III	PNL-TP04	5/19/2004	8:04	NA	90	30	uncovered stockpile
			8:10	NA	30	10	water spray
			8:37	NA	15	4	uncovered; downwind of pile
			8:52	NA	15	4.5	uncovered; downwind of pile
			9:34	NA	150	30	uncovered stockpile
			9:41	NA	7.5	2	with applied foam cover
III	PNL-TP05	5/18/2004	8:20	NA	5.9	0.6	uncovered; dry fill
			8:36	NA	9	18	uncovered asphaltic material
			8:52	NA	13	180	uncovered stockpile
			9:04	NA	35	25	uncovered stockpile
III	PNL-TP06	5/18/2004	10:15	NA	4.5	0.3	uncovered stockpile
			10:30	NA	15.1	13.2	uncovered; asphalt and tar
			10:35	NA	4.3	2.5	uncovered; tar
			10:56	NA	3.2	0.5	uncovered stockpile
			11:06	NA	5	22	uncovered stockpile
			11:21	NA	4.4	0.8	uncovered stockpile
			11:40	NA	2.9	0.8	uncovered stockpile
			12:06	NA	3	0.5	uncovered stockpile
III	PNL-TP07	5/20/2004	13:15	NA	5	0.8	uncovered stockpile
			10:18	NA	4.5	0.4	uncovered stockpile
			10:26	NA	4.5	15	uncovered asphaltic material
			10:34	NA	25	35	uncovered stockpile
			10:40	NA	120	70	uncovered drilling clay
			10:43	NA	5	2.3	with applied foam cover
			11:00	NA	15	15	uncovered drilling clay
			11:15	NA	15	30	uncovered stockpile
IV	PNL-L1A	5/26/2004	11:17	NA	80	15	uncovered drilling clay
			14:34	NA	0.8	0.1	Bucket emissions
IV	PNL-L1B	5/26/2004	14:36	NA	35	50	Bucket emissions
			11:16	NA	2	0.5	Bucket emissions
			11:17	NA	0.9	0.5	Bucket emissions
IV	PNL-L2A	5/26/2004	11:21	NA	90	50	Bucket emissions
			13:55	NA	5.01	8.44	Bucket emissions
IV	PNL-L2B	5/26/2004	10:01	NA	10	2	Bucket emissions
			10:05	NA	20	5	Bucket emissions
			10:12	NA	18	5	Bucket emissions
IV	PNL-L3A	5/25/2004	12:46	NA	2.6	0.3	Bucket emissions
			12:58	NA	2.5	0.4	Bucket emissions
			13:09	NA	1.9	0.2	Bucket emissions
			13:14	NA	9	7	Bucket emissions
			13:27	NA	1.7	0.5	Bucket emissions
			13:41	NA	4.2	2	Bucket emissions
IV	PNL-L3B	5/25/2004	9:12	NA	2	0.8	Bucket emissions
			9:21	NA	15	7	Bucket emissions
			9:29	NA	20	23	Bucket emissions
			9:35	NA	20	35	Bucket emissions
			9:55	NA	90	25	Bucket emissions
IV	PNL-L4A	5/24/2004	14:00	NA	1.3	2.5	Bucket emissions
			NR	NA	10	2.5	Bucket emissions
			14:15	NA	110	60	Bucket emissions
			14:39	NA	180	90	Bucket emissions
			14:43	NA	12	24	Bucket emissions

Table D-4
Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
IV	PNL-L4B	5/24/2004	10:48	NA	200	196	Bucket emissions
			11:02	NA	64.8	48.2	Bucket emissions
IV	PNL-L5A	5/24/2004	9:43	NA	71.2	38.9	Bucket emissions
IV	PNL-L5B	5/25/2004	8:00	NA	1	0.2	Bucket emissions
			8:04	NA	73	36	Bucket emissions
			8:22	NA	1.2	0.2	Bucket emissions
V	PNL-PA1	6/15/2004	10:10	8.5	7.6	1.08	Headspace analysis
			10:15	10	7.73	4.06	Headspace analysis
			10:30	15	885	215	Headspace analysis
			10:33	16.5	195	236	Headspace analysis
			10:36	17	829	197	Headspace analysis
			10:40	19	583	302	Headspace analysis
			10:45	20	362	208	Headspace analysis
			10:47	22	624	582	Headspace analysis
			10:51	23	337	118	Headspace analysis
			10:55	24.5	49.6	275	Headspace analysis
V	PNL-PB1	6/15/2004	8:15	5.5	9.29	0.57	Headspace analysis
			8:18	7	4.73	0.68	Headspace analysis
			8:21	8.5	8.66	0.81	Headspace analysis
			8:30	9.5	8.7	0.78	Headspace analysis
			8:35	11.5	5.87	0.75	Headspace analysis
			8:39	13	5.81	0.78	Headspace analysis
			8:42	14.5	5.21	0.52	Headspace analysis
			8:47	16	6.47	0.82	Headspace analysis
			8:52	18.5	5.81	1.83	Headspace analysis
			8:57	20	8.44	2.02	Headspace analysis
			9:04	21	607	347	Headspace analysis
			9:08	22.5	1344	1197	Headspace analysis
			9:13	23.5	1653	1944	Headspace analysis
			9:16	25	1413	1729	Headspace analysis
V	PNL-PC1	6/14/2004	8:15	3.5	NR ¹	22.28	Headspace analysis
			8:23	6	NR ¹	15.1	Headspace analysis
			8:28	9.5	NR ¹	3.42	Headspace analysis
			8:35	12.5	25.6 ²	8.89	Headspace analysis
V	PNL-PC1A	6/14/2004	14:36	8.5	0	15.52	Headspace analysis
			14:40	9.5	0	8.53	Headspace analysis
			14:45	11.5	0	15.88	Headspace analysis
			14:55	12.5	0	1.63	Headspace analysis
V	PNL-PD1	5/11/2004	9:15	3	27.0 ²	NR	Headspace analysis
			9:24	10	16.7 ²	NR	Headspace analysis
			9:35	12.5	9.1 ²	NR	Headspace analysis
V	PNL-PE1	6/14/2004	11:10	3.5	16.7 ²	NR	Headspace analysis
			11:17	6	15.4 ²	NR	Headspace analysis
			11:19	10	20.5 ²	NR	Headspace analysis
			11:28	12.5	15.2 ²	NR	Headspace analysis
			11:33	15.5	163 ²	NR	Headspace analysis
V	PNL-PG1	6/14/2004	10:20	3	12.0 ²	NR	Headspace analysis
			10:24	6	10.7 ²	NR	Headspace analysis
			10:27	9.5	9.0 ²	NR	Headspace analysis
V	PNL-PG1A	6/14/2004	15:35	5.5	0	0.44	Headspace analysis
			15:43	8.5	0	1.22	Headspace analysis
			15:45	9.5	0	0.88	Headspace analysis

Table D-4
Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
V	PNL-PH1	6/15/2004	12:25	3.5	283	2.7	Headspace analysis
			12:30	5.5	151	10.54	Headspace analysis
			12:33	6.5	130	104	Headspace analysis
			12:38	8	160	422	Headspace analysis
			12:45	10	392	747	Headspace analysis
			12:50	10.5	57.9	18.59	Headspace analysis
			12:55	12	240	285	Headspace analysis
			13:03	13.5	46.11	143	Headspace analysis
			13:11	15	91.06	77.3	Headspace analysis
VIII	PNL-F5	6/28/2004	13:11	16	26.33	35.55	Headspace analysis
			9:02	2	144	0	Headspace analysis
			9:07	4.5	200	0.25	Headspace analysis
			9:10	8	196	0.13	Headspace analysis
			9:18	10.5	221	8.32	Headspace analysis
			9:47	14	125	20.31	Headspace analysis
			10:05	17	595	516	Headspace analysis
			10:20	19.5	4.45	3.27	Headspace analysis
VIII	PNL-F4	6/28/2004	10:50	1.5	8.23	0.16	Headspace analysis
			10:54	5	5.13	0	Headspace analysis
			10:56	8	2.23	0	Headspace analysis
			11:03	11	9.26	7.41	Headspace analysis
			11:18	14	16.44	9.36	Headspace analysis
			11:38	16.5	6.03	143	Headspace analysis
			12:54	18.5	266	31.5	Headspace analysis
			13:00	20	84.36	46.01	Headspace analysis
VIII	PNL-F6	6/28/2004	13:28	1.5	4.47	0	Headspace analysis
			13:31	4.5	4.18	0.14	Headspace analysis
			13:34	7.5	2.82	0	Headspace analysis
			13:49	10	3.48	0.13	Headspace analysis
			13:55	13.5	1251	172	Headspace analysis
			14:15	15	336	41.52	Headspace analysis
VIII	PNL-F7	6/28/2004	14:45	2	7.32	0	Headspace analysis
			14:47	5	14.81	0	Headspace analysis
			14:51	8	3.96	0	Headspace analysis
			15:07	10.5	969	90.31	Headspace analysis
			15:20	13.5	447	74.62	Headspace analysis
VIII	PNL-F21	6/29/2004	13:53	2	1.25	0	Headspace analysis
			13:56	4	3.34	0	Headspace analysis
			14:01	4.5	0.23	0	Headspace analysis
			14:04	6.5	0.9	0	Headspace analysis
			14:07	7.5	1.53	14.8	Headspace analysis
			14:17	9	73.16	19.4	Headspace analysis
			14:25	10	208	24.39	Headspace analysis
VIII	PNL-F27	6/29/2004	15:41	2	103	9.27	Headspace analysis
			15:45	4	30.31	2.28	Headspace analysis
			15:48	5	9.03	0.73	Headspace analysis
			15:50	7	1.15	0	Headspace analysis
			15:53	7.5	2	0.11	Headspace analysis
			15:57	9.5	1.53	0.27	Headspace analysis
			16:00	11	2.05	1.03	Headspace analysis
			16:10	12	1.38	1.67	Headspace analysis

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Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
VIII	PNL-F3	6/29/2004	8:11	2	68.07	0	Headspace analysis
			8:15	5	44.2	0.05	Headspace analysis
			8:20	8	42.96	0.22	Headspace analysis
			8:30	11.5	28.03	0.08	Headspace analysis
			8:50	14.5	947	55.43	Headspace analysis
			9:07	18	141	46.23	Headspace analysis
VIII	PNL-F11	6/29/2004	10:03	2	0	1.18	Headspace analysis
			10:11	5	0	0.38	Headspace analysis
			10:15	8	0	0.75	Headspace analysis
			10:24	11	0	0.89	Headspace analysis
VIII	PNL-F18	6/29/2004	11:00	1.5	20.52	0.07	Headspace analysis
			11:02	3	18.48	0.05	Headspace analysis
			11:05	5	18.95	0.01	Headspace analysis
			11:07	7	11.32	0	Headspace analysis
			11:12	7.5	62.06	16.71	Headspace analysis
			11:18	10	1120	179	Headspace analysis
			11:26	10.5	155	113	Headspace analysis
			11:36	12.5	15.93	43.37	Headspace analysis
VIII	PNL-F17	6/29/2004	12:55	2	5.34	0.26	Headspace analysis
			12:59	3.5	5.83	0.34	Headspace analysis
			13:03	5	10.44	0.4	Headspace analysis
			13:06	6	2.88	0.03	Headspace analysis
			13:11	9	3.32	0	Headspace analysis
			13:24	10.5	1.36	0	Headspace analysis
VIII	PNL-F19	6/30/2004	8:20	2.5	1.65	0	Headspace analysis
			8:45	5	0.05	0	Headspace analysis
			8:47	6.5	0.18	0	Headspace analysis
			9:25	10	47.25	10.43	Headspace analysis
			9:29	12	4.37	1.65	Headspace analysis
			9:35	13	5.43	1.28	Headspace analysis
			9:39	14	2.62	0.49	Headspace analysis
			10:24	0.5	0	0	Headspace analysis
VIII	PNL-F1	6/30/2004	10:30	2	0	0	Headspace analysis
			10:32	3.5	0	0	Headspace analysis
			10:37	5.5	0.79	0	Headspace analysis
			10:41	7	98	8.73	Headspace analysis
			10:57	8.5	375	39.59	Headspace analysis
			11:02	10	332	36.33	Headspace analysis
			11:05	12	410	35.39	Headspace analysis
			11:36	13.5	161	13.13	Headspace analysis
			11:40	14.5	22.47	1.83	Headspace analysis
			11:49	16	1.97	0.32	Headspace analysis
			11:55	17.5	0.55	0.43	Headspace analysis

Table D-4
Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
VIII	PNL-F12	6/30/2004	13:55	8.5	109	12.98	Headspace analysis
			14:08	12.5	23.79	2.23	Headspace analysis
			14:25	16	58.65	7.35	Headspace analysis
			14:40	20	14.25	2.32	Headspace analysis
			14:52	21.5	10.3	1.44	Headspace analysis
			14:58	23.5	112	17.42	Headspace analysis
			15:09	24.5	148	13.35	Headspace analysis
			15:10	26	738	62.89	Headspace analysis
			15:13	27	346	31.9	Headspace analysis
			15:16	27.5	201	19.31	Headspace analysis
			15:25	29	1179	122	Headspace analysis
			15:34	31.5	1139	91.38	Headspace analysis
			15:47	36	63.39	6.6	Headspace analysis
VIII	PNL-F25	7/1/2004	9:05	8.5	50.31	0.09	Headspace analysis
			9:11	10	235	8.33	Headspace analysis
			9:15	11.5	66.96	1.17	Headspace analysis
			9:18	14	105	1.04	Headspace analysis
			9:21	15	200	8.56	Headspace analysis
			9:25	16	2002	316	Headspace analysis
			9:32	17.5	1716	214	Headspace analysis
			9:38	18.5	1206	120	Headspace analysis
			9:43	21	792	97.1	Headspace analysis
VIII	PNL-F26	7/1/2004	10:22	8.5	6.43	70.35	Headspace analysis
			10:27	10	8.46	225	Headspace analysis
			10:30	11	7.57	41.86	Headspace analysis
			10:34	12.5	6.8	152	Headspace analysis
			10:37	14.5	435	316	Headspace analysis
			10:42	16	422	220	Headspace analysis
			10:45	17.5	418	525	Headspace analysis
			10:50	19	390	464	Headspace analysis
			10:54	21.5	97.24	142	Headspace analysis
VIII	PNL-F22	7/1/2004	12:32	5.5	17.81	1.45	Headspace analysis
			12:35	7	6.22	0.1	Headspace analysis
			12:41	9	5.39	0.11	Headspace analysis
			12:45	10	1.96	0	Headspace analysis
			12:47	12	2.66	0.13	Headspace analysis
			12:50	13	3.92	0	Headspace analysis
			12:54	14.5	2.37	2.53	Headspace analysis
			13:02	16	5.81	39.15	Headspace analysis
			13:10	18	1390	325	Headspace analysis
VIII	PNL-F28	7/1/2004	13:17	19	1638	282	Headspace analysis
			14:12	12.5	6.39	0.33	Headspace analysis
			14:14	14	4.85	0.25	Headspace analysis
			14:15	15.5	2.76	0.28	Headspace analysis
VIII	PNL-F29	7/1/2004	14:27	19	993	161	Headspace analysis
			15:03	12.5	0.27	0.18	Headspace analysis
			15:06	14	0	0.24	Headspace analysis
			15:14	15.5	0	0.17	Headspace analysis
			15:17	17	0	0.1	Headspace analysis
			15:24	18	48.69	4.68	Headspace analysis
			15:35	18.5	86.64	7.08	Headspace analysis

Table D-4
Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
VIII	PNL-F30	7/1/2004	16:17	14	0.29	0.35	Headspace analysis
			16:20	15.5	0	0.2	Headspace analysis
			16:25	17	0	0.27	Headspace analysis
			16:30	18.5	0	0.5	Headspace analysis
			16:40	20	0	0.42	Headspace analysis
VIII	PNL-F31	7/2/2004	8:37	14	11	108	Headspace analysis
			8:45	15.5	17	0.8	Headspace analysis
			8:55	18.5	5.86	1.22	Headspace analysis
			8:57	20	2.4	0.56	Headspace analysis
			8:59	21.5	0	0.41	Headspace analysis
			9:03	22.5	0	0.32	Headspace analysis
			9:09	24	0	0.49	Headspace analysis
VIII	PNL-F32	7/2/2004	9:42	8.5	0.78	0.08	Headspace analysis
			9:45	9.5	0	0.22	Headspace analysis
			9:48	11.5	4.2	1.39	Headspace analysis
			9:52	13	0.67	0.77	Headspace analysis
			9:57	14.5	0	0.49	Headspace analysis
			10:04	16	0	0.7	Headspace analysis
			10:07	17.5	0.26	1.14	Headspace analysis
			10:11	19	0	0.82	Headspace analysis
			10:22	20.5	0	0.15	Headspace analysis
			10:27	22	1.25	0.87	Headspace analysis
			10:33	23.5	0.01	0.24	Headspace analysis
			10:41	25	0	0.4	Headspace analysis
			10:45	26.5	0	0.3	Headspace analysis
			10:51	28	0	0.27	Headspace analysis
VIII	PNL-F13	7/2/2004	10:58	29.5	0	0.12	Headspace analysis
			12:11	6.5	53.89	8.73	Headspace analysis
			12:13	8	22.03	5.65	Headspace analysis
			12:16	9.5	2.7	4.75	Headspace analysis
			12:20	11	0.57	2.22	Headspace analysis
			13:00	12.5	1.36	2.68	Headspace analysis
			13:03	14	1.14	2.06	Headspace analysis
			13:07	15.5	1.59	2.83	Headspace analysis
			13:13	17	2.75	3.33	Headspace analysis
			13:16	18.5	2.99	1.76	Headspace analysis
			13:22	20	0.96	2.2	Headspace analysis

Table D-4
Soil and Waste PID/FID Screening Results
Ascon Landfill Site

Phase	Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)	Sample Type
VIII	PNL-F16	7/2/2004	14:01	6.5	0	0.01	Headspace analysis
			14:05	8	0	0.18	Headspace analysis
			14:08	9.5	0	0.15	Headspace analysis
			14:13	11	0	0.29	Headspace analysis
			14:15	12.5	0	0.1	Headspace analysis
			14:18	14	0	0.18	Headspace analysis
			14:21	15.5	0	4.56	Headspace analysis
			14:27	17	0	4.22	Headspace analysis
			14:42	19	0	0.02	Headspace analysis
			14:46	20.5	0	3.19	Headspace analysis
			14:51	22	0	0.32	Headspace analysis
			14:56	23.5	0	1.42	Headspace analysis
			15:02	25	0	0.09	Headspace analysis
			15:07	26.5	0	2.23	Headspace analysis
			15:12	28	0	11.14	Headspace analysis
			15:19	29.5	0	5.86	Headspace analysis

Notes:

Sample depths are approximate.

Sample headspace screened using plastic bag and PID and FID air monitoring instruments

ft-bgs: feet below ground surface

ppm: parts per million concentration

NR is No Reading recorded

¹ high background reading due to moisture

² PID reading collected with the MiniRae 2000

Table D-5
Index of Perimeter Air Samples
Pilot Study No. 3
Ascon Landfill Site

Phase	Sample Location	Date Collected	Sample Name
			Columbia Analytical Services
III	AA-01	5/17/2004	AA-01-051704
		5/18/2004	AA-01-051804
		5/19/2004	AA-01-051904
		5/20/2004	AA-01-052004
III	AA-02	5/17/2004	AA-02-051704
		5/18/2004	AA-02-051804
		5/19/2004	AA-02-051904
		5/20/2004	AA-02-052004
III	AA-03	5/17/2004	AA-03-051704
		5/18/2004	AA-03-051804
		5/19/2004	AA-03-051904
		5/20/2004	AA-03-052004
III	AA-04	5/17/2004	AA-04-051704
		5/18/2004	AA-04-051804
		5/19/2004	AA-04-051904
		5/20/2004	AA-04-052004
III	AA-05	5/17/2004	AA-05-051704
		5/18/2004	AA-05-051804
		5/19/2004	AA-05-051904
		5/20/2004	AA-05-052004
III	AA-07	5/17/2004	AA-07-051704
		5/18/2004	AA-07-051804
		5/19/2004	AA-07-051904
		5/20/2004	AA-07-052004
IV	AA-01	5/24/2004	AA-01-052404
		5/25/2004	AA-01-052504
		5/26/2004	AA-01-052604
IV	AA-02	5/24/2004	AA-02-052404
		5/25/2004	AA-02-052504
		5/26/2004	AA-02-052604
IV	AA-03	5/24/2004	AA-03-052404
		5/25/2004	AA-03-052504
		5/26/2004	AA-03-052604
IV	AA-04	5/24/2004	AA-04-052404
		5/25/2004	AA-04-052504
		5/26/2004	AA-04-052604
IV	AA-05	5/24/2004	AA-05-052404
		5/25/2004	AA-05-052504
		5/26/2004	AA-05-052604
IV	AA-07	5/24/2004	AA-07-052404
		5/25/2004	AA-07-052504
		5/26/2004	AA-07-052604

Table D-5
Index of Perimeter Air Samples
Pilot Study No. 3
Ascon Landfill Site

Phase	Sample Location	Date Collected	Sample Name
			Columbia Analytical Services
VIII	AA-01	6/28/2004	AA-01-062804
		6/29/2004	AA-01-062904
		6/30/2004	AA-01-063004
		7/1/2004	AA-01-070104
VIII	AA-02	6/28/2004	AA-02-062804
		6/29/2004	AA-02-062904
		6/30/2004	AA-02-063004
		7/1/2004	AA-02-070104
VIII	AA-03	6/28/2004	AA-03-062804
		6/29/2004	AA-03-062904
		6/30/2004	AA-03-063004
		7/1/2004	AA-03-070104
VIII	AA-04A	6/28/2004	AA-04A-062804
		6/29/2004	AA-04A-062904
		6/30/2004	AA-04A-063004
		7/1/2004	AA-04A-070104
VIII	AA-05	6/28/2004	AA-05-062804
		6/29/2004	AA-05-062904
		6/30/2004	AA-05-063004
		7/1/2004	AA-05-070104
VIII	AA-07	6/28/2004	AA-07-062804
		6/29/2004	AA-07-062904
		6/30/2004	AA-07-063004
		7/1/2004	AA-07-070104

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-01	I	3/15/2004	9:05 AM	2.6	150	0	0.6	0.030
AA-01	I	3/15/2004	10:00 AM	4.9	230	0	0.0	0.000
AA-01	I	3/15/2004	11:12 AM	7.7	205	0	0.0	0.005
AA-01	I	3/15/2004	12:09 PM	6.5	200	0	0.0	0.001
AA-01	I	3/15/2004	12:58 PM	6.1	182	0	0.0	0.000
AA-01	I	3/15/2004	1:59 PM	6.7	204	0	0.0	0.010
AA-01	I	3/15/2004	2:54 PM	9.3	181	0	0.0	0.000
AA-01	I	3/15/2004	4:04 PM	6.1	197	0	0.0	0.000
AA-02	I	3/15/2004	9:10 AM	2.6	150	0	0.6	0.002
AA-02	I	3/15/2004	10:08 AM	4.9	230	0	0.0	0.000
AA-02	I	3/15/2004	11:15 AM	7.7	205	0	0.0	0.003
AA-02	I	3/15/2004	12:11 PM	6.5	200	0	0.0	0.003
AA-02	I	3/15/2004	1:01 PM	6.1	182	0	0.0	0.000
AA-02	I	3/15/2004	2:02 PM	6.7	204	0	0.0	0.002
AA-02	I	3/15/2004	2:57 PM	9.3	181	0	0.0	0.000
AA-02	I	3/15/2004	4:06 PM	6.1	197	0	0.0	0.000
AA-03	I	3/15/2004	9:15 AM	2.6	150	0	0.4	0.001
AA-03	I	3/15/2004	10:10 AM	4.9	230	0	0.0	0.000
AA-03	I	3/15/2004	11:18 AM	7.7	205	0	0.0	0.001
AA-03	I	3/15/2004	12:14 PM	6.5	200	0	0.0	0.000
AA-03	I	3/15/2004	1:03 PM	6.1	182	0	0.0	0.000
AA-03	I	3/15/2004	2:04 PM	6.7	204	0	0.0	0.000
AA-03	I	3/15/2004	3:00 PM	9.3	181	0	0.0	0.000
AA-03	I	3/15/2004	4:08 PM	6.1	197	0	0.0	0.000
AA-04	I	3/15/2004	8:55 AM	2.6	150	0	0.6	0.002
AA-04	I	3/15/2004	9:50 AM	4.9	230	0	0.1	0.000
AA-04	I	3/15/2004	11:04 AM	7.7	205	0	0.0	0.004
AA-04	I	3/15/2004	12:02 PM	6.5	200	0	0.0	0.003
AA-04	I	3/15/2004	12:52 PM	6.1	182	0	0.0	0.001
AA-04	I	3/15/2004	1:51 PM	6.7	204	0	0.0	0.000
AA-04	I	3/15/2004	2:48 PM	9.3	181	0	0.0	0.000
AA-04	I	3/15/2004	3:59 PM	6.1	197	0	0.0	0.000
AA-05	I	3/15/2004	8:50 AM	2.6	150	0	0.6	0.000
AA-05	I	3/15/2004	9:45 AM	4.9	230	0	0.3	0.000
AA-05	I	3/15/2004	10:58 AM	7.7	205	0	0.0	0.001
AA-05	I	3/15/2004	11:59 AM	6.5	200	0	0.0	0.003
AA-05	I	3/15/2004	12:48 PM	6.1	182	0	0.0	0.001
AA-05	I	3/15/2004	1:48 PM	6.7	204	0	0.0	0.000
AA-05	I	3/15/2004	2:41 PM	9.3	181	0	0.0	0.000
AA-05	I	3/15/2004	3:55 PM	6.1	197	0	0.0	0.000
AA-07	I	3/15/2004	8:45 AM	2.6	150	0	0.6	0.000
AA-07	I	3/15/2004	9:40 AM	4.9	230	0	0.5	0.000
AA-07	I	3/15/2004	10:53 AM	7.7	205	0	0.0	0.005
AA-07	I	3/15/2004	11:56 AM	6.5	200	0	0.0	0.000
AA-07	I	3/15/2004	12:41 PM	6.1	182	0	0.0	0.001
AA-07	I	3/15/2004	1:44 PM	6.7	204	0	0.0	0.000
AA-07	I	3/15/2004	2:38 PM	9.3	181	0	0.0	0.000
AA-07	I	3/15/2004	3:49 PM	6.1	197	0	0.0	0.000
AA-01	I	3/16/2004	8:27 AM	3.3	282	0	2.0	0.025
AA-01	I	3/16/2004	9:33 AM	3.8	274	0	1.5	0.023
AA-01	I	3/16/2004	10:32 AM	4.3	260	0	0.0	0.000
AA-01	I	3/16/2004	11:40 AM	6.1	269	0	0.0	0.065

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-01	I	3/16/2004	12:41 PM	6.1	223	0	0.0	0.000
AA-01	I	3/16/2004	1:41 PM	10.6	240	0	0.0	0.000
AA-01	I	3/16/2004	2:39 PM	7.3	239	0	0.2	0.000
AA-01	I	3/16/2004	3:34 PM	7.2	235	0	0.6	0.000
AA-02	I	3/16/2004	8:31 AM	3.3	282	0	2.1	0.030
AA-02	I	3/16/2004	9:36 AM	3.8	274	0	1.3	0.036
AA-02	I	3/16/2004	10:35 AM	4.3	260	0	0.0	0.000
AA-02	I	3/16/2004	11:43 AM	6.1	269	0	0.0	0.057
AA-02	I	3/16/2004	12:43 PM	6.1	223	0	0.0	0.000
AA-02	I	3/16/2004	1:43 PM	10.6	240	0	0.0	0.000
AA-02	I	3/16/2004	2:41 PM	7.3	239	0	0.3	0.000
AA-02	I	3/16/2004	3:37 PM	7.2	235	0	0.5	0.000
AA-03	I	3/16/2004	8:35 AM	3.3	282	0	1.9	0.031
AA-03	I	3/16/2004	9:39 AM	3.8	274	0	1.3	0.018
AA-03	I	3/16/2004	10:38 AM	4.3	260	0	0.0	0.000
AA-03	I	3/16/2004	11:47 AM	6.1	269	0	0.0	0.050
AA-03	I	3/16/2004	12:48 PM	6.1	223	0	0.0	0.000
AA-03	I	3/16/2004	1:45 PM	10.6	240	0	0.1	0.000
AA-03	I	3/16/2004	2:44 PM	7.3	239	0	0.3	0.000
AA-03	I	3/16/2004	3:41 PM	7.2	235	0	0.5	0.000
AA-04	I	3/16/2004	8:18 AM	3.3	282	0	1.3	0.013
AA-04	I	3/16/2004	9:24 AM	3.8	274	0	1.9	0.028
AA-04	I	3/16/2004	10:21 AM	4.3	260	0	0.1	0.000
AA-04	I	3/16/2004	11:32 AM	6.1	269	0	0.0	0.072
AA-04	I	3/16/2004	12:31 PM	6.1	223	0	0.0	0.000
AA-04	I	3/16/2004	1:32 PM	10.6	240	0	0.0	0.000
AA-04	I	3/16/2004	2:32 PM	7.3	239	0	0.0	0.000
AA-04	I	3/16/2004	3:24 PM	7.2	235	0	0.4	0.000
AA-05	I	3/16/2004	8:14 AM	3.3	282	0	1.8	0.015
AA-05	I	3/16/2004	9:19 AM	3.8	274	0	1.8	0.038
AA-05	I	3/16/2004	10:16 AM	4.3	260	0	0.2	0.000
AA-05	I	3/16/2004	11:27 AM	6.1	269	0	0.0	0.055
AA-05	I	3/16/2004	12:25 PM	6.1	223	0	0.0	0.000
AA-05	I	3/16/2004	1:29 PM	10.6	240	0	0.0	0.000
AA-05	I	3/16/2004	2:29 PM	7.3	239	0	0.0	0.000
AA-05	I	3/16/2004	3:20 PM	7.2	235	0	0.4	0.000
AA-07	I	3/16/2004	8:10 AM	3.3	282	0	1.7	0.011
AA-07	I	3/16/2004	9:14 AM	3.8	274	0	1.9	0.020
AA-07	I	3/16/2004	10:13 AM	4.3	260	0	0.5	0.000
AA-07	I	3/16/2004	11:23 AM	6.1	269	0	0.0	0.051
AA-07	I	3/16/2004	12:20 PM	6.1	223	0	0.0	0.000
AA-07	I	3/16/2004	1:25 PM	10.6	240	0	0.1	0.000
AA-07	I	3/16/2004	2:22 PM	7.3	239	0	0.2	0.000
AA-07	I	3/16/2004	3:18 PM	7.2	235	0	0.3	0.000
AA-01	I	5/3/2004	9:00 AM	2.2	301	0	0.0	0.053
AA-01	I	5/3/2004	10:07 AM	4.3	249	0	0.0	0.068
AA-01	I	5/3/2004	11:14 AM	6.0	222	0	0.0	0.082
AA-01	I	5/3/2004	12:25 PM	4.7	203	0	0.0	0.074
AA-01	I	5/3/2004	1:17 PM	8.1	235	0	0.0	0.097
AA-01	I	5/3/2004	2:25 PM	7.8	256	0	0.0	0.079
AA-01	I	5/3/2004	3:29 PM	7.1	279	0	0.0	0.050
AA-02	I	5/3/2004	9:06 AM	2.2	301	0	0.0	0.049

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-02	I	5/3/2004	10:12 AM	4.3	249	0	0.0	0.060
AA-02	I	5/3/2004	11:22 AM	6.0	222	0	0.0	0.074
AA-02	I	5/3/2004	12:28 PM	4.7	203	0	0.0	0.076
AA-02	I	5/3/2004	1:21 PM	8.1	235	0	0.0	0.081
AA-02	I	5/3/2004	2:29 PM	7.8	256	0	0.0	0.084
AA-02	I	5/3/2004	3:31 PM	7.1	279	0	0.0	0.060
AA-03	I	5/3/2004	9:11 AM	2.2	301	0	0.0	0.053
AA-03	I	5/3/2004	10:19 AM	4.3	249	0	0.0	0.071
AA-03	I	5/3/2004	11:25 AM	6.0	222	0	0.0	0.079
AA-03	I	5/3/2004	12:33 PM	4.7	203	0	0.0	0.072
AA-03	I	5/3/2004	1:27 PM	8.1	235	0	0.0	0.074
AA-03	I	5/3/2004	2:34 PM	7.8	256	0	0.0	0.078
AA-03	I	5/3/2004	3:35 PM	7.1	279	0	0.0	0.065
AA-04	I	5/3/2004	8:48 AM	2.2	301	0	0.0	0.047
AA-04	I	5/3/2004	9:58 AM	4.3	249	0	0.0	0.073
AA-04	I	5/3/2004	11:13 AM	6.0	222	0	0.0	0.075
AA-04	I	5/3/2004	12:20 PM	4.7	203	0	0.0	0.078
AA-04	I	5/3/2004	1:13 PM	8.1	235	0	0.0	0.087
AA-04	I	5/3/2004	2:16 PM	7.8	256	0	0.0	0.080
AA-04	I	5/3/2004	1:20 PM	7.1	279	0	0.0	0.050
AA-05	I	5/3/2004	8:36 AM	2.2	301	0	0.0	0.048
AA-05	I	5/3/2004	9:53 AM	4.3	249	0	0.0	0.070
AA-05	I	5/3/2004	11:08 AM	6.0	222	0	0.0	0.076
AA-05	I	5/3/2004	12:15 PM	4.7	203	0	0.0	0.070
AA-05	I	5/3/2004	1:07 PM	8.1	235	0	0.0	0.079
AA-05	I	5/3/2004	2:11 PM	7.8	256	0	0.0	0.078
AA-05	I	5/3/2004	3:16 PM	7.1	279	0	0.0	0.064
AA-07	I	5/3/2004	8:30 AM	2.2	301	0	0.0	0.046
AA-07	I	5/3/2004	9:45 AM	4.3	249	0	0.0	0.066
AA-07	I	5/3/2004	11:05 AM	6.0	222	0	0.0	0.059
AA-07	I	5/3/2004	12:10 PM	4.7	203	0	0.0	0.069
AA-07	I	5/3/2004	1:02 PM	8.1	235	0	0.0	0.074
AA-07	I	5/3/2004	2:05 PM	7.8	256	0	0.0	0.070
AA-07	I	5/3/2004	3:11 PM	7.1	279	0	0.0	0.065
AA-01	I	5/4/2004	8:22 AM	5.2	155	0	0.0	0.068
AA-01	I	5/4/2004	9:35 AM	7.1	162	0	0.0	0.059
AA-01	I	5/4/2004	10:29 AM	10.2	164	0	0.0	0.055
AA-01	I	5/4/2004	12:07 PM	5.9	159	0	0.0	0.050
AA-01	I	5/4/2004	1:13 PM	9.9	189	0	0.0	0.038
AA-01	I	5/4/2004	2:16 PM	7.8	193	0	0.0	0.054
AA-01	I	5/4/2004	3:25 PM	5.1	215	0	0.0	0.048
AA-01	I	5/4/2004	4:06 PM	7.1	185	0	0.0	0.044
AA-02	I	5/4/2004	8:29 AM	5.2	155	0	0.0	0.075
AA-02	I	5/4/2004	9:38 AM	7.1	162	0	0.0	0.063
AA-02	I	5/4/2004	10:32 AM	10.2	164	0	0.0	0.060
AA-02	I	5/4/2004	12:11 PM	5.9	159	0	0.0	0.050
AA-02	I	5/4/2004	1:15 PM	9.9	189	0	0.0	0.040
AA-02	I	5/4/2004	2:18 PM	7.8	193	0	0.0	0.044
AA-02	I	5/4/2004	3:28 PM	5.1	215	0	0.0	0.051
AA-02	I	5/4/2004	4:08 PM	7.1	185	0	0.0	0.046
AA-03	I	5/4/2004	8:31 AM	5.2	155	0	0.0	0.081
AA-03	I	5/4/2004	9:42 AM	7.1	162	0	0.0	0.059

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-03	I	5/4/2004	10:36 AM	10.2	164	0	0.0	0.050
AA-03	I	5/4/2004	12:14 PM	5.9	159	0	0.0	0.048
AA-03	I	5/4/2004	1:18 PM	9.9	189	0	0.0	0.039
AA-03	I	5/4/2004	2:21 PM	7.8	193	0	0.0	0.042
AA-03	I	5/4/2004	3:31 PM	5.1	215	0	0.0	0.046
AA-03	I	5/4/2004	4:09 PM	7.1	185	0	0.0	0.044
AA-04	I	5/4/2004	8:09 AM	5.2	155	0	0.0	0.087
AA-04	I	5/4/2004	9:22 AM	7.1	162	0	0.0	0.075
AA-04	I	5/4/2004	10:18 AM	10.2	164	0	0.0	0.058
AA-04	I	5/4/2004	11:43 AM	5.9	159	0	0.0	0.048
AA-04	I	5/4/2004	1:00 PM	9.9	189	0	0.0	0.040
AA-04	I	5/4/2004	2:02 PM	7.8	193	0	0.0	0.052
AA-04	I	5/4/2004	3:17 PM	5.1	215	0	0.0	0.050
AA-04	I	5/4/2004	4:01 PM	7.1	185	0	0.0	0.043
AA-05	I	5/4/2004	8:05 AM	5.2	155	0	0.0	0.084
AA-05	I	5/4/2004	9:17 AM	7.1	162	0	0.0	0.059
AA-05	I	5/4/2004	10:13 AM	10.2	164	0	0.0	0.065
AA-05	I	5/4/2004	10:38 AM	5.9	159	0	0.0	0.058
AA-05	I	5/4/2004	12:56 PM	9.9	189	0	0.0	0.041
AA-05	I	5/4/2004	1:59 PM	7.8	193	0	0.0	0.041
AA-05	I	5/4/2004	3:14 PM	5.1	215	0	0.0	0.052
AA-05	I	5/4/2004	3:59 PM	7.1	185	0	0.0	0.047
AA-07	I	5/4/2004	7:59 AM	5.2	155	0	0.0	0.101
AA-07	I	5/4/2004	9:11 AM	7.1	162	0	0.0	0.071
AA-07	I	5/4/2004	10:09 AM	10.2	164	0	0.0	0.061
AA-07	I	5/4/2004	11:34 AM	5.9	159	0	0.0	0.052
AA-07	I	5/4/2004	12:52 PM	9.9	189	0	0.0	0.038
AA-07	I	5/4/2004	1:55 PM	7.8	193	0	0.0	0.047
AA-07	I	5/4/2004	3:10 PM	5.1	215	0	0.0	0.046
AA-07	I	5/4/2004	3:56 PM	7.1	185	0	0.0	0.042
AA-01	I	5/5/2004	8:19 AM	7.8	131	0	0.0	0.085
AA-01	I	5/5/2004	9:48 AM	6.0	148	0	0.0	0.078
AA-01	I	5/5/2004	10:49 AM	7.3	176	0	0.0	0.069
AA-01	I	5/5/2004	11:48 AM	12.1	172	0	0.0	0.072
AA-01	I	5/5/2004	1:02 PM	12.3	139	0	0.0	0.050
AA-01	I	5/5/2004	2:15 PM	7.3	199	0	0.0	0.051
AA-02	I	5/5/2004	8:24 AM	7.8	131	0	0.0	0.085
AA-02	I	5/5/2004	9:52 AM	6.0	148	0	0.0	0.072
AA-02	I	5/5/2004	10:52 AM	7.3	176	0	0.0	0.055
AA-02	I	5/5/2004	11:53 AM	12.1	172	0	0.0	0.073
AA-02	I	5/5/2004	1:06 PM	12.3	139	0	0.0	0.053
AA-02	I	5/5/2004	2:21 PM	7.3	199	0	0.0	0.068
AA-03	I	5/5/2004	8:28 AM	7.8	131	0	0.0	0.083
AA-03	I	5/5/2004	9:55 AM	6.0	148	0	0.0	0.080
AA-03	I	5/5/2004	10:56 AM	7.3	176	0	0.0	0.056
AA-03	I	5/5/2004	11:57 AM	12.1	172	0	0.0	0.062
AA-03	I	5/5/2004	1:10 PM	12.3	139	0	0.0	0.061
AA-03	I	5/5/2004	2:25 PM	7.3	199	0	0.0	0.048
AA-04	I	5/5/2004	8:09 AM	7.8	131	0	0.0	0.087
AA-04	I	5/5/2004	9:32 AM	6.0	148	0	0.0	0.072
AA-04	I	5/5/2004	10:34 AM	7.3	176	0	0.0	0.052
AA-04	I	5/5/2004	11:30 AM	12.1	172	0	0.0	0.056

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-04	I	5/5/2004	12:52 PM	12.3	139	0	0.0	0.067
AA-04	I	5/5/2004	2:10 PM	7.3	199	0	0.0	0.062
AA-05	I	5/5/2004	8:04 AM	7.8	131	0	0.0	0.088
AA-05	I	5/5/2004	9:26 AM	6.0	148	0	0.0	0.075
AA-05	I	5/5/2004	10:29 AM	7.3	176	0	0.0	0.064
AA-05	I	5/5/2004	11:27 AM	12.1	172	0	0.0	0.068
AA-05	I	5/5/2004	12:49 PM	12.3	139	0	0.0	0.043
AA-05	I	5/5/2004	2:04 PM	7.3	199	0	0.0	0.057
AA-07	I	5/5/2004	7:58 AM	7.8	131	0	0.0	0.078
AA-07	I	5/5/2004	9:22 AM	6.0	148	0	0.0	0.066
AA-07	I	5/5/2004	10:26 AM	7.3	176	0	0.0	0.065
AA-07	I	5/5/2004	11:24 AM	12.1	172	0	0.0	0.066
AA-07	I	5/5/2004	12:45 PM	12.3	139	0	0.0	0.045
AA-07	I	5/5/2004	1:58 PM	7.3	199	0	0.0	0.051
AA-01	II	5/10/2004	10:04 AM	14.5	160	0	0.0	0.052
AA-01	II	5/10/2004	10:57 AM	16.0	155	0	0.0	0.280
AA-01	II	5/10/2004	2:49 PM	10.0	183	0	0.0	0.045
AA-01	II	5/10/2004	3:44 PM	10.6	193	0	0.0	0.076
AA-02	II	5/10/2004	10:07 AM	14.5	160	0	0.0	0.057
AA-02	II	5/10/2004	11:00 AM	16.0	155	0	0.0	0.056
AA-02	II	5/10/2004	2:50 PM	10.0	183	0	0.0	0.052
AA-02	II	5/10/2004	3:47 PM	10.6	193	0	0.0	0.066
AA-03	II	5/10/2004	10:10 AM	14.5	160	0	0.0	0.061
AA-03	II	5/10/2004	11:04 AM	16.0	155	0	0.0	0.072
AA-03	II	5/10/2004	2:52 PM	10.0	183	0	0.0	0.044
AA-03	II	5/10/2004	3:50 PM	10.6	193	0	0.0	0.063
AA-04	II	5/10/2004	9:55 AM	14.5	160	0	0.0	0.051
AA-04	II	5/10/2004	10:51 AM	16.0	155	0	0.0	0.071
AA-04	II	5/10/2004	2:37 PM	10.0	183	0	0.0	0.044
AA-04	II	5/10/2004	3:38 PM	10.6	193	0	0.0	0.040
AA-05	II	5/10/2004	9:51 AM	14.5	160	0	0.0	0.045
AA-05	II	5/10/2004	10:45 AM	16.0	155	0	0.0	0.066
AA-05	II	5/10/2004	2:37 PM	10.0	183	0	0.0	0.041
AA-05	II	5/10/2004	3:35 PM	10.6	193	0	0.0	0.032
AA-07	II	5/10/2004	9:44 AM	14.5	160	0	0.0	0.054
AA-07	II	5/10/2004	10:43 AM	16.0	155	0	0.0	0.046
AA-07	II	5/10/2004	2:31 PM	10.0	183	0	0.0	0.044
AA-07	II	5/10/2004	3:32 PM	10.6	193	0	0.0	0.036
AA-01	II	5/11/2004	9:30 AM	4.9	185	0	0.0	0.044
AA-01	II	5/11/2004	10:35 AM	7.1	204	0	0.0	0.041
AA-01	II	5/11/2004	11:45 AM	6.9	180	0	0.0	0.045
AA-01	II	5/11/2004	1:49 PM	8.4	222	0	0.0	0.036
AA-01	II	5/11/2004	2:51 PM	7.8	190	0	0.0	0.045
AA-02	II	5/11/2004	9:34 AM	4.9	185	0	0.0	0.065
AA-02	II	5/11/2004	10:37 AM	7.1	204	0	0.0	0.035
AA-02	II	5/11/2004	11:47 AM	6.9	180	0	0.0	0.050
AA-02	II	5/11/2004	1:51 PM	8.4	222	0	0.0	0.051
AA-02	II	5/11/2004	2:54 PM	7.8	190	0	0.0	0.050
AA-03	II	5/11/2004	9:44 AM	4.9	185	0	0.0	0.045
AA-03	II	5/11/2004	10:39 AM	7.1	204	0	0.0	0.044
AA-03	II	5/11/2004	11:50 AM	6.9	180	0	0.0	0.046
AA-03	II	5/11/2004	1:53 PM	8.4	222	0	0.0	0.056

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-03	II	5/11/2004	2:57 PM	7.8	190	0	0.0	0.046
AA-04	II	5/11/2004	9:26 AM	4.9	185	0	0.0	0.040
AA-04	II	5/11/2004	10:32 AM	7.1	204	0	0.0	0.048
AA-04	II	5/11/2004	11:43 AM	6.9	180	0	0.0	0.065
AA-04	II	5/11/2004	1:43 PM	8.4	222	0	0.0	0.061
AA-04	II	5/11/2004	2:46 PM	7.8	190	0	0.0	0.051
AA-05	II	5/11/2004	9:16 AM	4.9	185	0	0.0	0.042
AA-05	II	5/11/2004	10:30 AM	7.1	204	0	0.0	0.041
AA-05	II	5/11/2004	11:40 AM	6.9	180	0	0.0	0.040
AA-05	II	5/11/2004	1:41 PM	8.4	222	0	0.0	0.055
AA-05	II	5/11/2004	2:41 PM	7.8	190	0	0.0	0.061
AA-07	II	5/11/2004	9:13 AM	4.9	185	0	0.0	0.047
AA-07	II	5/11/2004	10:26 AM	7.1	204	0	0.0	0.044
AA-07	II	5/11/2004	11:36 AM	6.9	180	0	0.0	0.038
AA-07	II	5/11/2004	1:38 PM	8.4	222	0	0.0	0.045
AA-07	II	5/11/2004	2:39 PM	7.8	190	0	0.0	0.055
AA-01	II	5/12/2004	9:17 AM	9.2	200	0	0.0	0.038
AA-01	II	5/12/2004	10:15 AM	7.8	159	0	0.0	0.043
AA-01	II	5/12/2004	11:20 AM	8.2	199	0	0.0	0.051
AA-01	II	5/12/2004	12:23 PM	7.0	201	0	0.0	0.052
AA-01	II	5/12/2004	1:30 PM	10.0	230	0	0.0	0.030
AA-01	II	5/12/2004	3:53 PM	11.3	259	0	0.0	0.072
AA-02	II	5/12/2004	9:20 AM	9.2	200	0	0.0	0.028
AA-02	II	5/12/2004	10:17 AM	7.8	159	0	0.0	0.027
AA-02	II	5/12/2004	11:22 AM	8.2	199	0	0.0	0.033
AA-02	II	5/12/2004	12:25 PM	7.0	205	0	0.0	0.048
AA-02	II	5/12/2004	1:32 PM	10.0	230	0	0.0	0.044
AA-02	II	5/12/2004	3:56 PM	11.3	259	0	0.0	0.075
AA-03	II	5/12/2004	9:24 AM	9.2	200	0	0.0	0.044
AA-03	II	5/12/2004	10:19 AM	7.8	159	0	0.0	0.032
AA-03	II	5/12/2004	11:24 AM	8.2	199	0	0.0	0.042
AA-03	II	5/12/2004	12:28 PM	7.0	201	0	0.0	0.051
AA-03	II	5/12/2004	1:35 PM	10.0	230	0	0.0	0.049
AA-03	II	5/12/2004	3:59 PM	11.3	259	0	0.0	0.083
AA-04	II	5/12/2004	9:07 AM	9.2	200	0	0.0	0.036
AA-04	II	5/12/2004	10:06 AM	7.8	159	0	0.0	0.065
AA-04	II	5/12/2004	11:12 AM	8.2	199	0	0.0	0.043
AA-04	II	5/12/2004	12:13 PM	7.0	201	0	0.0	0.055
AA-04	II	5/12/2004	1:24 PM	10.0	230	0	0.0	0.045
AA-04	II	5/12/2004	3:40 PM	11.3	259	0	0.0	0.041
AA-05	II	5/12/2004	9:03 AM	9.2	200	0	0.0	0.044
AA-05	II	5/12/2004	10:03 AM	7.8	159	0	0.0	0.031
AA-05	II	5/12/2004	11:09 AM	8.2	199	0	0.0	0.062
AA-05	II	5/12/2004	12:09 PM	7.0	201	0	0.0	0.052
AA-05	II	5/12/2004	1:21 PM	10.0	230	0	0.0	0.050
AA-05	II	5/12/2004	3:35 PM	11.3	259	0	0.0	0.038
AA-07	II	5/12/2004	8:59 AM	9.2	200	0	0.0	0.029
AA-07	II	5/12/2004	10:00 AM	7.8	159	0	0.0	0.029
AA-07	II	5/12/2004	11:07 AM	8.2	199	0	0.0	0.046
AA-07	II	5/12/2004	12:06 PM	7.0	201	0	0.0	0.031
AA-07	II	5/12/2004	1:17 PM	10.0	230	0	0.0	0.029
AA-07	II	5/12/2004	3:32 PM	11.3	259	0	0.0	0.053

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-01	II	5/13/2004	8:16 AM	4.9	140	0	0.0	0.057
AA-01	II	5/13/2004	9:15 AM	9.4	194	0	0.0	0.048
AA-02	II	5/13/2004	8:20 AM	4.9	140	0	0.0	0.057
AA-02	II	5/13/2004	9:21 AM	9.4	194	0	0.0	0.053
AA-03	II	5/13/2004	8:23 AM	4.9	140	0	0.0	0.058
AA-03	II	5/13/2004	9:24 AM	9.4	194	0	0.0	0.052
AA-04	II	5/13/2004	8:09 AM	4.9	140	0	0.0	0.055
AA-04	II	5/13/2004	9:09 AM	9.4	194	0	0.0	0.054
AA-05	II	5/13/2004	8:06 AM	4.9	140	0	0.0	0.056
AA-05	II	5/13/2004	9:07 AM	9.4	194	0	0.0	0.045
AA-07	II	5/13/2004	8:02 AM	4.9	140	0	0.0	0.055
AA-07	II	5/13/2004	9:05 AM	9.4	194	0	0.0	0.038
AA-01	III	5/17/2004	8:41 AM	5.4	140	0	0.0	0.083
AA-01	III	5/17/2004	8:48 AM	6.7	175	0	0.0	0.056
AA-01	III	5/17/2004	10:55 AM	5.1	156	0	0.0	0.045
AA-01	III	5/17/2004	1:43 PM	5.0	166	0	0.0	0.046
AA-01	III	5/17/2004	2:47 PM	9.5	135	0	0.0	0.038
AA-02	III	5/17/2004	8:43 AM	5.4	140	0	0.0	0.043
AA-02	III	5/17/2004	8:51 AM	6.7	175	0	0.0	0.059
AA-02	III	5/17/2004	10:58 AM	5.1	156	0	0.0	0.052
AA-02	III	5/17/2004	1:46 PM	5.0	166	0	0.0	0.062
AA-02	III	5/17/2004	2:50 PM	9.5	135	0	0.0	0.042
AA-03	III	5/17/2004	8:46 AM	5.4	140	0	0.0	0.059
AA-03	III	5/17/2004	8:54 AM	6.7	175	0	0.0	0.066
AA-03	III	5/17/2004	11:02 AM	5.1	156	0	0.0	0.062
AA-03	III	5/17/2004	1:49 PM	5.0	166	0	0.0	0.038
AA-03	III	5/17/2004	2:53 PM	9.5	135	0	0.0	0.031
AA-04	III	5/17/2004	8:36 AM	5.4	140	0	0.0	0.044
AA-04	III	5/17/2004	9:41 AM	6.7	175	0	0.0	0.069
AA-04	III	5/17/2004	10:47 AM	5.1	156	0	0.0	0.047
AA-04	III	5/17/2004	1:37 PM	5.0	166	0	0.0	0.052
AA-04	III	5/17/2004	2:37 PM	9.5	135	0	0.0	0.039
AA-05	III	5/17/2004	8:33 AM	5.4	140	0	0.0	0.044
AA-05	III	5/17/2004	9:38 AM	6.7	175	0	0.0	0.058
AA-05	III	5/17/2004	10:44 AM	5.1	156	0	0.0	0.056
AA-05	III	5/17/2004	1:33 PM	5.0	166	0	0.0	0.057
AA-05	III	5/17/2004	2:34 PM	9.5	135	0	0.0	0.047
AA-07	III	5/17/2004	8:28 AM	5.4	140	0	0.0	0.044
AA-07	III	5/17/2004	9:35 AM	6.7	175	0	0.0	0.045
AA-07	III	5/17/2004	10:40 AM	5.1	156	0	0.0	0.052
AA-07	III	5/17/2004	1:29 PM	5.0	166	0	0.0	0.049
AA-07	III	5/17/2004	2:31 PM	9.5	135	0	0.0	0.032
AA-01	III	5/18/2004	8:46 AM	6.0	201	0	0.0	0.027
AA-01	III	5/18/2004	9:50 AM	8.3	180	0	0.0	0.032
AA-01	III	5/18/2004	10:52 AM	8.6	195	0	0.0	0.041
AA-01	III	5/18/2004	11:56 AM	9.9	175	0	0.0	0.037
AA-01	III	5/18/2004	1:31 PM	9.6	207	0	0.0	0.030
AA-01	III	5/18/2004	2:36 PM	9.1	271	0	0.0	0.036
AA-02	III	5/18/2004	8:48 AM	6.0	201	0	0.0	0.028
AA-02	III	5/18/2004	9:53 AM	8.3	180	0	0.0	0.035
AA-02	III	5/18/2004	10:55 AM	8.6	195	0	0.0	0.029
AA-02	III	5/18/2004	11:59 AM	9.9	175	0	0.0	0.035

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-02	III	5/18/2004	1:34 PM	9.6	207	0	0.0	0.024
AA-02	III	5/18/2004	2:39 PM	9.1	271	0	0.0	0.029
AA-03	III	5/18/2004	8:51 AM	6.0	201	0	0.0	0.032
AA-03	III	5/18/2004	9:56 AM	8.3	180	0	0.0	0.031
AA-03	III	5/18/2004	10:58 AM	8.6	195	0	0.0	0.032
AA-03	III	5/18/2004	11:02 AM	9.9	175	0	0.0	0.030
AA-03	III	5/18/2004	1:37 PM	9.6	207	0	0.0	0.028
AA-03	III	5/18/2004	2:42 PM	9.1	271	0	0.0	0.043
AA-04	III	5/18/2004	8:35 AM	6.0	201	0	0.0	0.028
AA-04	III	5/18/2004	9:41 AM	8.3	180	0	0.0	0.031
AA-04	III	5/18/2004	10:42 AM	8.6	195	0	0.0	0.039
AA-04	III	5/18/2004	11:47 AM	9.9	175	0	0.0	0.038
AA-04	III	5/18/2004	1:21 PM	9.6	207	0	0.0	0.026
AA-04	III	5/18/2004	2:27 PM	9.1	271	0	0.0	0.025
AA-05	III	5/18/2004	8:29 AM	6.0	201	0	0.0	0.035
AA-05	III	5/18/2004	9:38 AM	8.3	180	0	0.0	0.028
AA-05	III	5/18/2004	10:39 AM	8.6	195	0	0.0	0.026
AA-05	III	5/18/2004	11:43 AM	9.9	175	0	0.0	0.029
AA-05	III	5/18/2004	1:18 PM	9.6	207	0	0.0	0.032
AA-05	III	5/18/2004	2:22 PM	9.1	271	0	0.0	0.052
AA-07	III	5/18/2004	8:24 AM	6.0	201	0	0.0	0.027
AA-07	III	5/18/2004	9:34 AM	8.3	180	0	0.0	0.030
AA-07	III	5/18/2004	10:36 AM	8.6	195	0	0.0	0.035
AA-07	III	5/18/2004	11:39 AM	9.9	175	0	0.0	0.031
AA-07	III	5/18/2004	1:14 PM	9.6	207	0	0.0	0.025
AA-07	III	5/18/2004	2:18 PM	9.1	271	0	0.0	0.027
AA-01	III	5/19/2004	8:31 AM	3.8	142	0	0.0	0.052
AA-01	III	5/19/2004	8:33 AM	7.1	175	0	0.0	0.043
AA-01	III	5/19/2004	10:47 AM	10.0	180	0	0.0	0.038
AA-01	III	5/19/2004	11:51 AM	12.2	188	0	0.0	0.034
AA-01	III	5/19/2004	1:56 PM	9.1	205	0	0.0	0.047
AA-02	III	5/19/2004	8:34 AM	3.8	142	0	0.0	0.042
AA-02	III	5/19/2004	8:37 AM	7.1	175	0	0.0	0.032
AA-02	III	5/19/2004	10:51 AM	10.0	180	0	0.0	0.031
AA-02	III	5/19/2004	11:54 AM	12.2	188	0	0.0	0.027
AA-02	III	5/19/2004	1:59 PM	9.1	205	0	0.0	0.049
AA-03	III	5/19/2004	8:37 AM	3.8	142	0	0.0	0.038
AA-03	III	5/19/2004	9:40 AM	7.1	175	0	0.0	0.039
AA-03	III	5/19/2004	10:54 AM	10.0	180	0	0.0	0.036
AA-03	III	5/19/2004	11:58 AM	12.2	188	0	0.0	0.029
AA-03	III	5/19/2004	2:02 PM	9.1	205	0	0.0	0.042
AA-04	III	5/19/2004	8:21 AM	3.8	142	0	0.0	0.041
AA-04	III	5/19/2004	9:23 AM	7.1	175	0	0.0	0.039
AA-04	III	5/19/2004	10:36 AM	10.0	180	0	0.0	0.028
AA-04	III	5/19/2004	11:41 AM	12.2	188	0	0.0	0.029
AA-04	III	5/19/2004	1:48 PM	9.1	205	0	0.0	0.039
AA-05	III	5/19/2004	8:18 AM	3.8	142	0	0.0	0.040
AA-05	III	5/19/2004	9:18 AM	7.1	175	0	0.0	0.028
AA-05	III	5/19/2004	10:32 AM	10.0	180	0	0.0	0.027
AA-05	III	5/19/2004	11:36 AM	12.2	188	0	0.0	0.035
AA-05	III	5/19/2004	1:44 PM	9.1	205	0	0.0	0.060
AA-07	III	5/19/2004	8:14 AM	3.8	142	0	0.0	0.040

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-07	III	5/19/2004	9:13 AM	7.1	175	0	0.0	0.027
AA-07	III	5/19/2004	10:28 AM	10.0	180	0	0.0	0.028
AA-07	III	5/19/2004	11:32 AM	12.2	188	0	0.0	0.032
AA-07	III	5/19/2004	1:39 PM	9.1	205	0	0.0	0.040
AA-01	III	5/20/2004	8:23 AM	7.5	225	0	0.0	0.044
AA-01	III	5/20/2004	9:27 AM	9.4	222	0	0.0	0.043
AA-01	III	5/20/2004	10:33 AM	11.5	184	0	0.0	0.051
AA-01	III	5/20/2004	11:39 AM	8.8	170	0	0.0	0.031
AA-02	III	5/20/2004	8:25 AM	7.5	225	0	0.0	0.053
AA-02	III	5/20/2004	9:30 AM	9.4	222	0	0.0	0.039
AA-02	III	5/20/2004	10:36 AM	11.5	184	0	0.0	0.034
AA-02	III	5/20/2004	11:42 AM	8.8	170	0	0.0	0.047
AA-03	III	5/20/2004	8:28 AM	7.5	225	0	0.0	0.033
AA-03	III	5/20/2004	9:34 AM	9.4	222	0	0.0	0.058
AA-03	III	5/20/2004	10:40 AM	11.5	184	0	0.0	0.032
AA-03	III	5/20/2004	11:45 AM	8.8	170	0	0.0	0.039
AA-04	III	5/20/2004	8:19 AM	7.5	225	0	0.0	0.050
AA-04	III	5/20/2004	9:22 AM	9.4	222	0	0.0	0.040
AA-04	III	5/20/2004	10:23 AM	11.5	184	0	0.0	0.035
AA-04	III	5/20/2004	11:29 AM	8.8	170	0	0.0	0.036
AA-05	III	5/20/2004	8:15 AM	7.5	225	0	0.0	0.043
AA-05	III	5/20/2004	9:18 AM	9.4	222	0	0.0	0.031
AA-05	III	5/20/2004	10:20 AM	11.5	184	0	0.0	0.048
AA-05	III	5/20/2004	11:26 AM	8.8	170	0	0.0	0.021
AA-07	III	5/20/2004	8:11 AM	7.5	225	0	0.0	0.040
AA-07	III	5/20/2004	9:14 AM	9.4	222	0	0.0	0.035
AA-07	III	5/20/2004	10:16 AM	11.5	184	0	0.0	0.043
AA-07	III	5/20/2004	11:23 AM	8.8	170	0	0.0	0.032
AA-01	IV	5/24/2004	9:20 AM	5.4	200	0	0.0	0.022
AA-01	IV	5/24/2004	10:23 AM	9.5	190	0	0.0	0.038
AA-01	IV	5/24/2004	11:28 AM	11.4	184	0	0.0	0.042
AA-01	IV	5/24/2004	2:27 PM	9.8	202	0	0.0	0.037
AA-02	IV	5/24/2004	9:22 AM	5.4	200	0	0.0	0.040
AA-02	IV	5/24/2004	10:25 AM	9.5	190	0	0.0	0.016
AA-02	IV	5/24/2004	11:32 AM	11.4	184	0	0.0	0.038
AA-02	IV	5/24/2004	2:30 PM	9.8	202	0	0.0	0.022
AA-03	IV	5/24/2004	9:26 AM	5.4	200	0	0.0	0.023
AA-03	IV	5/24/2004	10:27 AM	9.5	190	0	0.0	0.029
AA-03	IV	5/24/2004	11:34 AM	11.4	184	0	0.0	0.024
AA-03	IV	5/24/2004	2:33 PM	9.8	202	0	0.0	0.025
AA-04	IV	5/24/2004	9:11 AM	5.4	200	0	0.0	0.028
AA-04	IV	5/24/2004	10:14 AM	9.5	190	0	0.0	0.031
AA-04	IV	5/24/2004	11:18 AM	11.4	184	0	0.0	0.030
AA-04	IV	5/24/2004	2:17 PM	9.8	202	0	0.0	0.029
AA-05	IV	5/24/2004	9:07 AM	5.4	200	0	0.0	0.022
AA-05	IV	5/24/2004	10:07 AM	9.5	190	0	0.0	0.025
AA-05	IV	5/24/2004	11:14 AM	11.4	184	0	0.0	0.035
AA-05	IV	5/24/2004	2:13 PM	9.8	202	0	0.0	0.022
AA-07	IV	5/24/2004	9:04 AM	5.4	200	0	0.0	0.025
AA-07	IV	5/24/2004	10:03 AM	9.5	190	0	0.0	0.027
AA-07	IV	5/24/2004	11:10 AM	11.4	184	0	0.0	0.019
AA-07	IV	5/24/2004	2:09 PM	9.8	202	0	0.0	0.020

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-01	IV	5/25/2004	8:30 AM	4.4	156	0	0.0	0.044
AA-01	IV	5/25/2004	9:37 AM	4.9	165	0	0.0	0.033
AA-01	IV	5/25/2004	10:38 AM	5.8	160	0	0.0	0.029
AA-01	IV	5/25/2004	1:12 PM	9.1	200	0	0.0	0.049
AA-01	IV	5/25/2004	2:18 PM	6.3	215	0	0.0	0.036
AA-02	IV	5/25/2004	8:33 AM	4.4	156	0	0.0	0.027
AA-02	IV	5/25/2004	9:40 AM	4.9	165	0	0.0	0.031
AA-02	IV	5/25/2004	10:42 AM	5.8	160	0	0.0	0.042
AA-02	IV	5/25/2004	1:15 PM	9.1	200	1	0.0	0.031
AA-02	IV	5/25/2004	2:21 PM	6.3	215	0	0.0	0.044
AA-03	IV	5/25/2004	8:37 AM	4.4	156	1	0.0	0.028
AA-03	IV	5/25/2004	9:44 AM	4.9	165	0	0.0	0.021
AA-03	IV	5/25/2004	10:47 AM	5.8	160	0	0.0	0.032
AA-03	IV	5/25/2004	3:18 PM	9.1	200	0	0.0	0.026
AA-03	IV	5/25/2004	2:25 PM	6.3	215	0	0.0	0.048
AA-04	IV	5/25/2004	8:19 AM	4.4	156	0	0.0	0.021
AA-04	IV	5/25/2004	9:26 AM	4.9	165	0	0.0	0.029
AA-04	IV	5/25/2004	10:27 AM	5.8	160	0	0.0	0.035
AA-04	IV	5/25/2004	1:01 PM	9.1	200	0	0.0	0.028
AA-04	IV	5/25/2004	2:13 PM	6.3	215	0	0.0	0.026
AA-05	IV	5/25/2004	8:14 AM	4.4	156	0	0.0	0.038
AA-05	IV	5/25/2004	9:20 AM	4.9	165	0	0.0	0.035
AA-05	IV	5/25/2004	10:23 AM	5.8	160	0	0.0	0.027
AA-05	IV	5/25/2004	12:58 PM	9.1	200	0	0.0	0.037
AA-05	IV	5/25/2004	2:09 PM	6.3	215	0	0.0	0.020
AA-07	IV	5/25/2004	8:09 AM	4.4	156	0	0.0	0.027
AA-07	IV	5/25/2004	9:16 AM	4.9	165	0	0.0	0.032
AA-07	IV	5/25/2004	10:19 AM	5.8	160	0	0.0	0.032
AA-07	IV	5/25/2004	12:54 PM	9.1	200	0	0.0	0.022
AA-07	IV	5/25/2004	2:05 PM	6.3	215	0	0.0	0.020
AA-01	IV	5/26/2004	10:26 AM	4.9	187	0	0.0	0.025
AA-01	IV	5/26/2004	11:44 AM	7.8	230	0	0.0	0.037
AA-01	IV	5/26/2004	2:22 PM	12.1	262	0	0.0	0.036
AA-02	IV	5/26/2004	10:28 AM	4.9	187	0	0.0	0.027
AA-02	IV	5/26/2004	11:47 AM	7.8	230	0	0.0	0.044
AA-02	IV	5/26/2004	2:26 PM	12.1	262	0	0.0	0.030
AA-03	IV	5/26/2004	10:32 AM	4.9	187	0	0.0	0.022
AA-03	IV	5/26/2004	11:50 AM	7.8	230	0	0.0	0.038
AA-03	IV	5/26/2004	2:30 PM	12.1	262	0	0.0	0.024
AA-04	IV	5/26/2004	10:16 AM	4.9	187	0	0.0	0.021
AA-04	IV	5/26/2004	11:34 AM	7.8	230	0	0.0	0.035
AA-04	IV	5/26/2004	2:12 PM	12.1	262	0	0.0	0.052
AA-05	IV	5/26/2004	10:08 AM	4.9	187	0	0.0	0.034
AA-05	IV	5/26/2004	10:31 AM	7.8	230	0	0.0	0.043
AA-05	IV	5/26/2004	2:08 PM	12.1	262	0	0.0	0.080
AA-07	IV	5/26/2004	10:02 AM	4.9	187	0	0.0	0.032
AA-07	IV	5/26/2004	11:28 AM	7.8	230	0	0.0	0.023
AA-07	IV	5/26/2004	2:04 PM	12.1	262	0	0.0	0.048
AA-01	V	6/14/2004	9:12 AM	5.1	186	0	3.7	0.034
AA-01	V	6/14/2004	10:12 AM	4.2	153	0	0.6	0.049
AA-01	V	6/14/2004	11:09 AM	5.0	179	0	0.1	0.036
AA-01	V	6/14/2004	1:40 PM	9.5	205	0	0.0	0.049

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-01	V	6/14/2004	2:47 PM	10.7	197	0	0.0	0.052
AA-01	V	6/14/2004	3:47 PM	8.7	212	0	0.0	0.046
AA-02	V	6/14/2004	9:15 AM	5.1	186	0	3.6	0.035
AA-02	V	6/14/2004	10:16 AM	4.2	153	0	0.4	0.038
AA-02	V	6/14/2004	11:12 AM	5.0	179	0	0.0	0.041
AA-02	V	6/14/2004	1:44 PM	9.5	205	0	0.0	0.043
AA-02	V	6/14/2004	2:50 PM	10.7	197	0	0.0	0.048
AA-02	V	6/14/2004	3:51 PM	8.7	212	0	0.0	0.054
AA-03	V	6/14/2004	9:19 AM	5.1	186	0	3.6	0.042
AA-03	V	6/14/2004	10:19 AM	4.2	153	0	0.6	0.051
AA-03	V	6/14/2004	11:16 AM	5.0	179	0	0.0	0.047
AA-03	V	6/14/2004	1:48 PM	9.5	205	0	0.0	0.035
AA-03	V	6/14/2004	2:54 PM	10.7	197	0	0.0	0.041
AA-03	V	6/14/2004	3:55 PM	8.7	212	0	0.0	0.048
AA-04	V	6/14/2004	9:02 AM	5.1	186	0	4.2	0.035
AA-04	V	6/14/2004	10:02 AM	4.2	153	0	0.7	0.064
AA-04	V	6/14/2004	10:58 AM	5.0	179	0	0.0	0.052
AA-04	V	6/14/2004	1:30 PM	9.5	205	0	0.0	0.040
AA-04	V	6/14/2004	2:37 PM	10.7	197	0	0.0	0.034
AA-04	V	6/14/2004	3:37 PM	8.7	212	0	0.0	0.042
AA-05	V	6/14/2004	8:58 AM	5.1	186	0	5.4	0.045
AA-05	V	6/14/2004	9:58 AM	4.2	153	0	0.3	0.035
AA-05	V	6/14/2004	10:55 AM	5.0	179	0	0.0	0.041
AA-05	V	6/14/2004	1:20 PM	9.5	205	0	0.0	0.035
AA-05	V	6/14/2004	2:34 PM	10.7	197	0	0.0	0.035
AA-05	V	6/14/2004	3:33 PM	8.7	212	0	0.0	0.029
AA-07	V	6/14/2004	8:41 AM	5.1	186	0	6.9	0.034
AA-07	V	6/14/2004	9:54 AM	4.2	153	0	1.7	0.032
AA-07	V	6/14/2004	10:51 AM	5.0	179	0	0.1	0.045
AA-07	V	6/14/2004	1:15 PM	9.5	205	0	0.4	0.033
AA-07	V	6/14/2004	2:30 PM	10.7	197	0	0.0	0.028
AA-07	V	6/14/2004	3:29 PM	8.7	212	0	0.0	0.033
AA-01	V	6/15/2004	8:26 AM	4.2	135	0	0.0	0.066
AA-01	V	6/15/2004	9:25 AM	3.9	161	0	0.0	0.037
AA-01	V	6/15/2004	10:23 AM	4.8	170	0	0.0	0.027
AA-01	V	6/15/2004	12:51 PM	10.5	206	0	0.0	0.043
AA-01	V	6/15/2004	1:43 PM	9.2	185	0	0.0	0.056
AA-01	VI	6/15/2004	2:50 PM	11.6	177	0	0.0	0.037
AA-02	V	6/15/2004	8:30 AM	4.2	135	0	0.0	0.053
AA-02	V	6/15/2004	9:29 AM	3.9	161	0	0.0	0.046
AA-02	V	6/15/2004	10:27 AM	4.8	170	0	0.0	0.031
AA-02	V	6/15/2004	12:55 PM	10.5	206	0	0.0	0.047
AA-02	V	6/15/2004	1:47 PM	9.2	185	0	0.0	0.050
AA-02	VI	6/15/2004	2:54 PM	11.6	177	0	0.0	0.048
AA-03	V	6/15/2004	8:34 AM	4.2	135	0	0.0	0.063
AA-03	V	6/15/2004	9:33 AM	3.9	161	0	0.0	0.045
AA-03	V	6/15/2004	10:30 AM	4.8	170	0	0.0	0.057
AA-03	V	6/15/2004	12:58 PM	10.5	206	0	0.0	0.045
AA-03	V	6/15/2004	1:50 PM	9.2	185	0	0.0	0.061
AA-03	VI	6/15/2004	2:57 PM	11.6	177	0	0.0	0.054
AA-04	V	6/15/2004	8:15 AM	4.2	135	0	0.0	0.058
AA-04	V	6/15/2004	9:14 AM	3.9	161	0	0.0	0.043

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-04	V	6/15/2004	10:13 AM	4.8	170	0	0.0	0.037
AA-04	V	6/15/2004	12:41 PM	10.5	206	0	0.0	0.049
AA-04	V	6/15/2004	1:33 PM	9.2	185	0	0.0	0.047
AA-04	VI	6/15/2004	2:40 PM	11.6	177	0	0.0	0.039
AA-05	V	6/15/2004	8:10 AM	4.2	135	0	0.0	0.063
AA-05	V	6/15/2004	9:10 AM	3.9	161	0	0.0	0.042
AA-05	V	6/15/2004	10:10 AM	4.8	170	0	0.0	0.036
AA-05	V	6/15/2004	12:37 PM	10.5	206	0	0.0	0.054
AA-05	V	6/15/2004	1:30 PM	9.2	185	0	0.0	0.058
AA-05	VI	6/15/2004	2:37 PM	11.6	177	0	0.0	0.043
AA-07	V	6/15/2004	8:05 AM	4.2	135	0	0.0	0.052
AA-07	V	6/15/2004	9:07 AM	3.9	161	0	0.0	0.038
AA-07	V	6/15/2004	10:06 AM	4.8	170	0	0.0	0.030
AA-07	V	6/15/2004	12:23 PM	10.5	206	0	0.0	0.052
AA-07	V	6/15/2004	1:27 PM	9.2	185	0	0.0	0.048
AA-07	VI	6/15/2004	2:34 PM	11.6	177	0	0.0	0.037
AA-01	VI	6/16/2004	8:26 AM	4.5	123	0	15.8	0.058
AA-01	VI	6/16/2004	9:26 AM	5.3	145	0	6.0	0.063
AA-01	VI	6/16/2004	10:26 AM	9.8	155	0	6.4	0.042
AA-01	VI	6/16/2004	11:28 AM	8.7	144	0	7.8	0.034
AA-01	VI	6/16/2004	4:03 PM	8.8	161	0	3.3	0.045
AA-01	VI	6/16/2004	5:01 PM	9.3	152	0	1.2	0.035
AA-02	VI	6/16/2004	8:30 AM	4.5	123	0	13.9	0.038
AA-02	VI	6/16/2004	9:30 AM	5.3	145	0	5.3	0.058
AA-02	VI	6/16/2004	10:30 AM	9.8	155	0	6.7	0.048
AA-02	VI	6/16/2004	11:34 AM	8.7	144	0	8.0	0.039
AA-02	VI	6/16/2004	4:08 PM	8.8	161	0	3.7	0.043
AA-02	VI	6/16/2004	5:04 PM	9.3	152	0	1.5	0.049
AA-03	VI	6/16/2004	8:34 AM	4.5	123	0	12.7	0.035
AA-03	VI	6/16/2004	9:34 AM	5.3	145	0	5.6	0.043
AA-03	VI	6/16/2004	10:35 AM	9.8	155	0	6.2	0.055
AA-03	VI	6/16/2004	11:38 AM	8.7	144	0	8.1	0.036
AA-03	VI	6/16/2004	4:12 PM	8.8	161	0	3.9	0.049
AA-03	VI	6/16/2004	5:07 PM	9.3	152	0	1.6	0.043
AA-04	VI	6/16/2004	8:13 AM	4.5	123	0	17.1	0.038
AA-04	VI	6/16/2004	9:15 AM	5.3	145	0	5.9	0.045
AA-04	VI	6/16/2004	10:16 AM	9.8	155	0	6.1	0.066
AA-04	VI	6/16/2004	11:17 AM	8.7	144	0	8.1	0.052
AA-04	VI	6/16/2004	3:51 PM	8.8	161	0	3.4	0.044
AA-04	VI	6/16/2004	4:45 PM	9.3	152	0	1.4	0.052
AA-05	VI	6/16/2004	8:08 AM	4.5	123	0	17.5	0.054
AA-05	VI	6/16/2004	9:11 AM	5.3	145	0	6.2	0.048
AA-05	VI	6/16/2004	10:12 AM	9.8	155	0	6.9	0.052
AA-05	VI	6/16/2004	11:12 AM	8.7	144	0	8.4	0.041
AA-05	VI	6/16/2004	3:47 PM	8.8	161	0	4.4	0.028
AA-05	VI	6/16/2004	4:40 PM	9.3	152	0	1.5	0.037
AA-07	VI	6/16/2004	8:03 AM	4.5	123	0	18.4	0.039
AA-07	VI	6/16/2004	9:07 AM	5.3	145	0	8.8	0.042
AA-07	VI	6/16/2004	10:08 AM	9.8	155	0	6.7	0.053
AA-07	VI	6/16/2004	11:08 AM	8.7	144	0	8.6	0.037
AA-07	VI	6/16/2004	3:43 PM	8.8	161	0	4.5	0.032
AA-07	VI	6/16/2004	4:57 PM	9.3	152	0	1.7	0.042

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-01	VI	6/17/2004	7:31 AM	4.4	50	0	15.1	0.038
AA-01	VI	6/17/2004	7:29 AM	4.3	45	0	5.8	0.065
AA-01	VI	6/17/2004	9:29 AM	5.1	193	0	4.1	0.021
AA-01	VI	6/17/2004	10:29 AM	6.5	230	0	1.8	0.026
AA-01	VI	6/17/2004	11:29 AM	9.5	245	0	1.8	0.024
AA-01	VI	6/17/2004	1:05 PM	11.0	250	0	0.0	0.029
AA-01	VI	6/17/2004	2:03 PM	10.5	250	0	0.0	0.025
AA-01	VI	6/17/2004	3:04 PM	8.2	250	0	0.0	0.024
AA-01	VI	6/17/2004	4:04 PM	7.4	235	0	0.0	0.027
AA-02	VI	6/17/2004	7:35 AM	4.4	50	0	13.2	0.049
AA-02	VI	6/17/2004	8:48 AM	4.3	45	0	5.4	0.043
AA-02	VI	6/17/2004	9:32 AM	5.1	193	0	4.4	0.029
AA-02	VI	6/17/2004	10:32 AM	6.5	230	0	2.5	0.021
AA-02	VI	6/17/2004	11:32 AM	9.5	245	0	1.9	0.034
AA-02	VI	6/17/2004	1:07 PM	11.0	250	0	0.0	0.028
AA-02	VI	6/17/2004	2:05 PM	10.5	250	0	0.0	0.023
AA-02	VI	6/17/2004	3:06 PM	8.2	250	0	0.0	0.038
AA-02	VI	6/17/2004	4:06 PM	7.4	235	0	0.0	0.038
AA-03	VI	6/17/2004	7:40 AM	4.4	50	0	11.1	0.044
AA-03	VI	6/17/2004	8:34 AM	4.3	45	0	5.9	0.050
AA-03	VI	6/17/2004	9:34 AM	5.1	193	0	4.3	0.027
AA-03	VI	6/17/2004	10:34 AM	6.5	230	0	2.3	0.024
AA-03	VI	6/17/2004	11:34 AM	9.5	245	0	1.7	0.035
AA-03	VI	6/17/2004	1:10 PM	11.0	250	0	0.0	0.040
AA-03	VI	6/17/2004	2:08 PM	10.5	250	0	0.0	0.031
AA-03	VI	6/17/2004	3:08 PM	8.2	250	0	0.0	0.036
AA-03	VI	6/17/2004	4:09 PM	7.4	235	0	0.0	0.036
AA-04	VI	6/17/2004	7:50 AM	4.4	50	0	9.8	0.058
AA-04	VI	6/17/2004	8:43 AM	4.3	45	0	5.4	0.040
AA-04	VI	6/17/2004	9:42 AM	5.1	193	0	4.1	0.027
AA-04	VI	6/17/2004	10:42 AM	6.5	230	0	2.7	0.034
AA-04	VI	6/17/2004	11:42 AM	9.5	245	0	1.4	0.030
AA-04	VI	6/17/2004	1:18 PM	11.0	250	0	0.0	0.040
AA-04	VI	6/17/2004	2:17 PM	10.5	250	0	0.0	0.045
AA-04	VI	6/17/2004	3:20 PM	8.2	250	0	0.0	0.037
AA-04	VI	6/17/2004	4:20 PM	7.4	235	0	0.0	0.043
AA-05	VI	6/17/2004	7:50 AM	4.4	50	0	8.2	0.080
AA-05	VI	6/17/2004	8:53 AM	4.3	45	0	5.1	0.047
AA-05	VI	6/17/2004	9:46 AM	5.1	193	0	4.1	0.022
AA-05	VI	6/17/2004	10:45 AM	6.5	230	0	2.6	0.024
AA-05	VI	6/17/2004	11:45 AM	9.5	245	0	1.3	0.026
AA-05	VI	6/17/2004	1:21 PM	11.0	250	0	0.0	0.030
AA-05	VI	6/17/2004	2:20 PM	10.5	250	0	0.0	0.024
AA-05	VI	6/17/2004	3:24 PM	8.2	250	0	0.0	0.022
AA-05	VI	6/17/2004	4:24 PM	7.4	235	0	0.0	0.028
AA-07	VI	6/17/2004	7:27 AM	4.4	50	0	17.7	0.062
AA-07	VI	6/17/2004	8:27 AM	4.3	45	0	6.2	0.071
AA-07	VI	6/17/2004	9:27 AM	5.1	193	0	4.1	0.025
AA-07	VI	6/17/2004	10:27 AM	6.5	230	0	2.4	0.018
AA-07	VI	6/17/2004	11:27 AM	9.5	245	0	2.2	0.022
AA-07	VI	6/17/2004	1:02 PM	11.0	250	0	0.0	0.035
AA-07	VI	6/17/2004	2:01 PM	10.5	250	0	0.0	0.032

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-07	VI	6/17/2004	3:01 PM	8.2	250	0	0.0	0.025
AA-07	VI	6/17/2004	4:01 PM	7.4	235	0	0.0	0.027
AA-01	VI	6/18/2004	7:54 AM	4.6	200	0	0.0	0.088
AA-01	VI	6/18/2004	8:56 AM	5.2	195	0	0.0	0.045
AA-01	VI	6/18/2004	9:50 AM	6.1	187	0	0.3	0.040
AA-01	VI	6/18/2004	10:51 AM	6.2	183	0	0.0	0.059
AA-01	VI	6/18/2004	12:28 PM	5.8	185	0	0.0	0.043
AA-01	VI	6/18/2004	1:26 PM	6.5	194	0	0.0	0.038
AA-02	VI	6/18/2004	7:56 AM	4.6	200	0	0.0	0.045
AA-02	VI	6/18/2004	8:58 AM	5.2	195	0	0.0	0.047
AA-02	VI	6/18/2004	9:52 AM	6.1	187	0	0.2	0.036
AA-02	VI	6/18/2004	10:54 AM	6.2	183	0	0.0	0.037
AA-02	VI	6/18/2004	12:30 PM	5.8	185	0	0.0	0.033
AA-02	VI	6/18/2004	1:28 PM	6.5	194	0	0.0	0.043
AA-03	VI	6/18/2004	7:59 AM	4.6	200	0	0.0	0.056
AA-03	VI	6/18/2004	9:01 AM	5.2	195	0	0.0	0.045
AA-03	VI	6/18/2004	9:56 AM	6.1	187	0	0.4	0.037
AA-03	VI	6/18/2004	10:56 AM	6.2	183	0	0.0	0.041
AA-03	VI	6/18/2004	12:33 PM	5.8	185	0	0.0	0.033
AA-03	VI	6/18/2004	1:32 PM	6.5	194	0	0.0	0.044
AA-04	VI	6/18/2004	8:04 AM	4.6	200	0	0.0	0.044
AA-04	VI	6/18/2004	9:07 AM	5.2	195	0	0.0	0.048
AA-04	VI	6/18/2004	10:04 AM	6.1	187	0	0.5	0.034
AA-04	VI	6/18/2004	11:05 AM	6.2	183	0	0.0	0.041
AA-04	VI	6/18/2004	12:40 PM	5.8	185	0	0.0	0.037
AA-04	VI	6/18/2004	1:38 PM	6.5	194	0	0.0	0.052
AA-05	VI	6/18/2004	8:08 AM	4.6	200	0	0.0	0.053
AA-05	VI	6/18/2004	9:12 AM	5.2	195	0	0.0	0.037
AA-05	VI	6/18/2004	10:07 AM	6.1	187	0	0.0	0.037
AA-05	VI	6/18/2004	11:08 AM	6.2	183	0	0.0	0.039
AA-05	VI	6/18/2004	12:43 PM	5.8	185	0	0.0	0.062
AA-05	VI	6/18/2004	1:43 PM	6.5	194	0	0.0	0.040
AA-07	VI	6/18/2004	7:47 AM	4.6	200	0	0.0	0.048
AA-07	VI	6/18/2004	8:50 AM	5.2	195	0	0.0	0.035
AA-07	VI	6/18/2004	9:46 AM	6.1	187	0	0.6	0.041
AA-07	VI	6/18/2004	10:48 AM	6.2	183	0	0.0	0.036
AA-07	VI	6/18/2004	12:25 PM	5.8	185	0	0.0	0.033
AA-07	VI	6/18/2004	1:24 PM	6.5	194	0	0.0	0.032
AA-01	VIII	6/28/2004	9:28 AM	4.0	156	0	2.8	0.043
AA-01	VIII	6/28/2004	10:31 AM	7.4	160	0	3.0	0.033
AA-01	VIII	6/28/2004	11:31 AM	10.0	172	0	2.2	0.029
AA-01	VIII	6/28/2004	1:17 PM	9.4	220	0	1.5	0.030
AA-01	VIII	6/28/2004	2:26 PM	10.0	230	0	0.0	0.031
AA-01	VIII	6/28/2004	3:36 PM	9.3	225	0	0.0	0.024
AA-02	VIII	6/28/2004	9:32 AM	4.0	156	0	2.8	0.039
AA-02	VIII	6/28/2004	10:35 AM	7.4	160	0	3.3	0.030
AA-02	VIII	6/28/2004	11:34 AM	10.0	172	0	2.0	0.030
AA-02	VIII	6/28/2004	1:20 PM	9.4	220	0	1.3	0.029
AA-02	VIII	6/28/2004	2:29 PM	10.0	230	0	0.0	0.033
AA-02	VIII	6/28/2004	3:39 PM	9.3	225	0	0.0	0.029
AA-03	VIII	6/28/2004	9:36 AM	4.0	156	0	3.0	0.038
AA-03	VIII	6/28/2004	10:38 AM	7.4	160	0	2.8	0.031

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-03	VIII	6/28/2004	11:38 AM	10.0	172	0	1.9	0.028
AA-03	VIII	6/28/2004	1:24 PM	9.4	220	0	1.2	0.034
AA-03	VIII	6/28/2004	2:32 PM	10.0	230	0	0.1	0.034
AA-03	VIII	6/28/2004	3:43 PM	9.3	225	0	0.0	0.031
AA-04A ³	VIII	6/28/2004	9:14 AM	4.0	156	0	3.0	0.042
AA-04A	VIII	6/28/2004	10:21 AM	7.4	160	0	2.5	0.028
AA-04A	VIII	6/28/2004	11:21 AM	10.0	172	0	2.1	0.026
AA-04A	VIII	6/28/2004	1:06 PM	9.4	220	0	1.2	0.042
AA-04A	VIII	6/28/2004	2:17 PM	10.0	230	0	0.2	0.040
AA-04A	VIII	6/28/2004	3:26 PM	9.3	225	0	0.1	0.025
AA-05	VIII	6/28/2004	9:11 AM	4.0	156	0	3.1	0.039
AA-05	VIII	6/28/2004	10:17 AM	7.4	160	0	4.5	0.032
AA-05	VIII	6/28/2004	11:18 AM	10.0	172	0	1.8	0.029
AA-05	VIII	6/28/2004	1:03 PM	9.4	220	0	1.8	0.027
AA-05	VIII	6/28/2004	2:12 PM	10.0	230	0	0.2	0.030
AA-05	VIII	6/28/2004	3:23 PM	9.3	225	0	0.0	0.025
AA-07	VIII	6/28/2004	9:08 AM	4.0	156	0	3.0	0.033
AA-07	VIII	6/28/2004	10:14 AM	7.4	160	0	4.4	0.028
AA-07	VIII	6/28/2004	11:14 AM	10.0	172	0	1.9	0.022
AA-07	VIII	6/28/2004	12:58 PM	9.4	220	0	1.8	0.025
AA-07	VIII	6/28/2004	2:09 PM	10.0	230	0	0.3	0.032
AA-07	VIII	6/28/2004	3:19 PM	9.3	225	0	0.0	0.025
AA-01	VIII	6/29/2004	8:22 AM	1.3	77	0	0.2	0.038
AA-01	VIII	6/29/2004	9:26 AM	5.8	182	0	0.0	0.023
AA-01	VIII	6/29/2004	10:39 AM	9.5	165	0	0.0	0.024
AA-01	VIII	6/29/2004	11:43 AM	10.9	184	0	0.0	0.033
AA-01	VIII	6/29/2004	1:10 PM	6.9	186	0	0.0	0.046
AA-01	VIII	6/29/2004	2:16 PM	7.3	175	0	0.0	0.037
AA-01	VIII	6/29/2004	3:23 PM	8.8	181	0	0.0	0.033
AA-02	VIII	6/29/2004	8:27 AM	1.3	77	0	0.0	0.039
AA-02	VIII	6/29/2004	9:29 AM	5.8	182	0	0.0	0.020
AA-02	VIII	6/29/2004	10:42 AM	9.5	165	0	0.0	0.027
AA-02	VIII	6/29/2004	11:46 AM	10.9	184	0	0.0	0.026
AA-02	VIII	6/29/2004	1:13 PM	6.9	186	0	0.0	0.035
AA-02	VIII	6/29/2004	2:19 PM	7.3	175	0	0.0	0.029
AA-02	VIII	6/29/2004	3:26 PM	8.8	181	0	0.0	0.038
AA-03	VIII	6/29/2004	8:33 AM	1.3	77	0	0.0	0.041
AA-03	VIII	6/29/2004	9:32 AM	5.8	182	0	0.0	0.022
AA-03	VIII	6/29/2004	10:45 AM	9.5	165	0	0.0	0.023
AA-03	VIII	6/29/2004	11:49 AM	10.9	184	0	0.0	0.025
AA-03	VIII	6/29/2004	1:16 PM	6.9	186	0	0.0	0.031
AA-03	VIII	6/29/2004	2:23 PM	7.3	175	0	0.0	0.032
AA-03	VIII	6/29/2004	3:29 PM	8.8	181	0	0.0	0.040
AA-04A	VIII	6/29/2004	8:09 AM	1.3	77	0	0.0	0.032
AA-04A	VIII	6/29/2004	9:16 AM	5.8	182	0	0.0	0.022
AA-04A	VIII	6/29/2004	10:29 AM	9.5	165	0	0.0	0.021
AA-04A	VIII	6/29/2004	11:33 AM	10.9	184	0	0.0	0.024
AA-04A	VIII	6/29/2004	1:00 PM	6.9	186	0	0.0	0.043
AA-04A	VIII	6/29/2004	2:06 PM	7.3	175	0	0.0	0.039
AA-04A	VIII	6/29/2004	3:15 PM	8.8	181	0	0.0	0.041
AA-05	VIII	6/29/2004	8:06 AM	1.3	77	0	0.0	0.041
AA-05	VIII	6/29/2004	9:11 AM	5.8	182	0	0.0	0.019

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-05	VIII	6/29/2004	10:26 AM	9.5	165	0	0.0	0.026
AA-05	VIII	6/29/2004	11:30 AM	10.9	184	0	0.0	0.030
AA-05	VIII	6/29/2004	12:57 PM	6.9	186	0	0.0	0.027
AA-05	VIII	6/29/2004	2:03 PM	7.3	175	0	0.0	0.053
AA-05	VIII	6/29/2004	3:11 PM	8.8	181	0	0.0	0.032
AA-07	VIII	6/29/2004	7:59 AM	1.3	77	0	0.1	0.040
AA-07	VIII	6/29/2004	9:08 AM	5.8	182	0	0.0	0.025
AA-07	VIII	6/29/2004	10:22 AM	9.5	165	0	0.0	0.019
AA-07	VIII	6/29/2004	11:27 AM	10.9	184	0	0.0	0.019
AA-07	VIII	6/29/2004	12:53 PM	6.9	186	0	0.0	0.034
AA-07	VIII	6/29/2004	1:59 PM	7.3	175	0	0.0	0.033
AA-07	VIII	6/29/2004	3:08 PM	8.8	181	0	0.0	0.029
AA-01	VIII	6/30/2004	8:44 AM	7.6	180	0	0.2	0.040
AA-01	VIII	6/30/2004	9:47 AM	5.9	192	0	0.0	0.039
AA-01	VIII	6/30/2004	10:55 AM	9.3	176	0	0.0	0.023
AA-01	VIII	6/30/2004	1:46 PM	8.7	175	0	0.0	0.042
AA-01	VIII	6/30/2004	2:59 PM	11.6	204	0	0.0	0.048
AA-02	VIII	6/30/2004	8:48 AM	7.6	180	0	0.3	0.036
AA-02	VIII	6/30/2004	9:50 AM	5.9	192	0	0.0	0.040
AA-02	VIII	6/30/2004	10:58 AM	9.3	176	0	0.0	0.031
AA-02	VIII	6/30/2004	1:49 PM	8.7	175	0	0.0	0.043
AA-02	VIII	6/30/2004	3:02 PM	11.6	204	0	0.0	0.051
AA-03	VIII	6/30/2004	8:52 AM	7.6	180	0	0.0	0.037
AA-03	VIII	6/30/2004	9:53 AM	5.9	192	0	0.0	0.041
AA-03	VIII	6/30/2004	11:01 AM	9.3	176	0	0.0	0.028
AA-03	VIII	6/30/2004	1:52 PM	8.7	175	0	0.0	0.046
AA-03	VIII	6/30/2004	3:05 PM	11.6	204	0	0.0	0.047
AA-04A	VIII	6/30/2004	8:32 AM	7.6	180	0	0.3	0.034
AA-04A	VIII	6/30/2004	9:37 AM	5.9	192	0	0.0	0.038
AA-04A	VIII	6/30/2004	10:45 AM	9.3	176	0	0.0	0.022
AA-04A	VIII	6/30/2004	1:36 PM	8.7	175	0	0.0	0.063
AA-04A	VIII	6/30/2004	2:49 PM	11.6	204	0	0.0	0.052
AA-05	VIII	6/30/2004	8:28 AM	7.6	180	0	0.7	0.040
AA-05	VIII	6/30/2004	9:33 AM	5.9	192	0	0.0	0.033
AA-05	VIII	6/30/2004	10:42 AM	9.3	176	0	0.0	0.032
AA-05	VIII	6/30/2004	1:33 PM	8.7	175	0	0.0	0.046
AA-05	VIII	6/30/2004	2:46 PM	11.6	204	0	0.0	0.039
AA-07	VIII	6/30/2004	8:24 AM	7.6	180	0	1.6	0.036
AA-07	VIII	6/30/2004	9:29 AM	5.9	192	0	0.0	0.031
AA-07	VIII	6/30/2004	10:39 AM	9.3	176	0	0.0	0.013
AA-07	VIII	6/30/2004	1:29 PM	8.7	175	0	0.0	0.037
AA-07	VIII	6/30/2004	2:43 PM	11.6	204	0	0.0	0.046
AA-01	VIII	7/1/2004	9:26 AM	1.6	66	0	0.0	0.032
AA-01	VIII	7/1/2004	10:35 AM	5.7	222	0	0.0	0.047
AA-01	VIII	7/1/2004	12:49 PM	11.3	260	0	0.0	0.043
AA-01	VIII	7/1/2004	1:50 PM	12.1	253	0	0.0	0.059
AA-01	VIII	7/1/2004	2:54 PM	9.8	232	0	0.0	0.043
AA-02	VIII	7/1/2004	9:30 AM	1.6	66	0	0.0	0.034
AA-02	VIII	7/1/2004	10:38 AM	5.7	222	0	0.0	0.038
AA-02	VIII	7/1/2004	12:52 PM	11.3	260	0	0.0	0.052
AA-02	VIII	7/1/2004	1:54 PM	12.1	253	0	0.0	0.061
AA-02	VIII	7/1/2004	2:57 PM	9.8	232	0	0.0	0.057

Table D-6
Perimeter Air Monitoring Data Summary
Pilot Study No. 3
Ascon Landfill Site

Monitoring Location	Phase	Date	Time	Wind Speed (mph)	Wind Direction ¹ (°azimuth)	Odor ² (Worker Perception)	PID (ppm)	Dust Concentration (mg/m3)
AA-03	VIII	7/1/2004	9:34 AM	1.6	66	0	0.0	0.039
AA-03	VIII	7/1/2004	10:42 AM	5.7	222	0	0.0	0.029
AA-03	VIII	7/1/2004	12:55 PM	11.3	260	0	0.0	0.045
AA-03	VIII	7/1/2004	1:57 PM	12.1	253	0	0.0	0.067
AA-03	VIII	7/1/2004	3:00 PM	9.8	232	0	0.0	0.059
AA-04A	VIII	7/1/2004	9:13 AM	1.6	66	0	0.0	0.043
AA-04A	VIII	7/1/2004	10:25 AM	5.7	222	0	0.0	0.031
AA-04A	VIII	7/1/2004	12:39 PM	11.3	260	0	0.0	0.061
AA-04A	VIII	7/1/2004	1:40 PM	12.1	253	0	0.0	0.072
AA-04A	VIII	7/1/2004	2:44 PM	9.8	232	0	0.0	0.034
AA-05	VIII	7/1/2004	9:09 AM	1.6	66	0	0.0	0.030
AA-05	VIII	7/1/2004	10:22 AM	5.7	222	0	0.0	0.038
AA-05	VIII	7/1/2004	12:36 PM	11.3	260	0	0.0	0.045
AA-05	VIII	7/1/2004	1:37 PM	12.1	253	0	0.0	0.053
AA-05	VIII	7/1/2004	2:41 PM	9.8	232	0	0.0	0.049
AA-07	VIII	7/1/2004	9:05 AM	1.6	66	0	0.0	0.028
AA-07	VIII	7/1/2004	10:18 AM	5.7	222	0	0.0	0.032
AA-07	VIII	7/1/2004	12:33 PM	11.3	260	0	0.0	0.039
AA-07	VIII	7/1/2004	1:33 PM	12.1	253	0	0.0	0.042
AA-07	VIII	7/1/2004	2:38 PM	9.8	232	0	0.0	0.038

¹ Wind direction indicates the azimuth from which the wind comes.

² Odor classification by worker perception: 0 = no odor; 1 = very faint; 2 = faint; 3 = distinct, easily noticeable; 4 = strong, decided; 5 = very strong. SQAMD odor classification scale.

³ AA-04A is location for the repositioned AA-04 during Phase VIII Pit F field work and was closer to Pit F.

PID = Photo-Ionization Detector

Table D-7
Summary of Bucket Auger Borehole Information
Phase II Drilling
Ascon Landfill Site

Borehole Location	Date Drilled	Drilling Method	Total Depth (ft-bgs)	Top of Waste (ft-bgs)	Borehole Abandoned
PNL-BA01	5/10/2004	30" dia. Bucket Auger	17	6	5/10/2004
PNL-BA03	5/12/2004	30" dia. Bucket Auger	21	18	5/12/2004
PNL-BA06	5/13/2004	30" dia. Bucket Auger	18	15	5/13/2004
PNL-BA07	5/11/2004	30" dia. Bucket Auger	14.5	10	5/11/2004
PNL-BA08	5/11/2004	30" dia. Bucket Auger	17	11	5/11/2004
PNL-BA11	5/12/2004	30" dia. Bucket Auger	11.5	10 1	5/12/2004
PNL-BA13	5/12/2004	30" dia. Bucket Auger	8.5	6.5	5/12/2004

Note: ft-bgs is feet below ground surface.

Bucket auger drilling did not advance to the native alluvium.

Table D-8
Summary of Test Trench Information
Phase III Trenching
Ascon Landfill Site

Trench Location	Date Excavated	Total Depth (ft-bgs)	Estimated Concrete Debris in Fill	Trench Wall Stability	Top of Waste (ft-bgs)	Top of Native Alluvium (ft-bgs)	Trench Abandoned
PNL-TP01	5/17/2004	26	30%; slabs as large as 5'x5'x1'	Fill: poor <1:1 slope; Waste: near vertical	18	22	5/17/2004
PNL-TP02	5/19/2004	22	none observed	Fill: poor <1:1 slope; Waste: near vertical	4	21	5/19/2004
PNL-TP03	5/20/2004	25	25%; debris as large as 5'x3'x1'	Fill: poor <1:1 slope; Waste: near vertical	5	24	5/20/2004
PNL-TP04	5/19/2004	20	none observed	Fill: poor <1:1 slope; Waste: near vertical	3	16	5/19/2004
PNL-TP05	5/18/2004	22	30%; block as large as 7'x2'x2'	Fill: poor <1:1 slope; Impacted Fill: near vertical	no waste encountered	13	5/18/2004
PNL-TP06	5/18/2004	23	70%; slab as large as 5'x6'x1'	Fill and Impacted Fill: poor <1:1 slope	~15 (commingled)	22	5/18/2004
PNL-TP07	5/20/2004	22	5-10%; debris as large as 1'x1'x1'	Fill and Impacted Fill: poor <1:1 slope	~15-18 & 18-20 (commingled)	21	5/20/2004

Note: ft-bgs is feet below ground surface.
All depths are approximate.

Table D-9
Summary of Borehole Information
Phase VI Geotechnical Drilling
Ascon Landfill Site

Borehole Location	Date Drilled	Total Depth (ft-bgs)	Top of Waste (ft-bgs)	Top of Native (ft-bgs)	Depth of Temporary 12" Auger (ft-bgs)	Geotechnical Sample Collected	Borehole Abandoned
PNL-21	6/16/2004	61.5	6	24	25	Shelby [22'-24'] Shelby [24'-26'] Bulk [33'-34'] Bulk [36'-37'] Bulk [45'-46'] Bulk [51'-52']	6/17/2004
PNL-23	6/15/2004	60.5	3	22	25	Shelby [16.5'-19'] Shelby [23.5'-26'] Bulk [26'-27'] Bulk [32'-33'] Bulk [50'-51'] Bulk [56'-57']	6/16/2004
PNL-28	6/17/2004	60.5	10	16	20	Shelby [11'-13'] Shelby [15'-17'] Bulk [23'-24.5'] Bulk [38'-39.5'] Bulk [53'-54.5'] Bulk [60'-60.5']	6/18/2004

Note: ft-bgs is feet below ground surface.

Table D-10
Pilot Study No. 3 Geotechnical Testing Program
Ascon Landfill Site

CORE ID Sample Location	Container Type	Matrix	Number of Samples	D2216 Moisture Content	D2937 Bulk Density	D1140 Pass/Retain #200	D5084 Hydraulic Conductivity	D4318 Atterberg Limits	D2850 Unconsol. Undrained Shear ⁽³⁾	D2435 One Dimensional Consolidation	D2166 Unconfined Compression
		Sample Type:		BULK	REMOLD	BULK					
PNL-5A	Shelby	Drilling Mud - Lagoon	1	X	X				X	X	X ⁽²⁾
PNL-4B	Shelby	Drilling Mud - Lagoon	1	X	X				X	X	X ⁽²⁾
PNL-23-16.5-19	Shelby	Drilling Mud	1	X			X	X	X	X	
PNL-23-23.5-26	Shelby	Native Clay	1				X	X	X	X	X
PNL-21-22-24	Shelby	Drilling Mud	1	X			X	X	X	X	X
PNL-21-24-26	Shelby	Native Clay	1				X	X	X	X	X
PNL-28-11-13 ⁽¹⁾	Shelby	Drilling Mud	1				X	X			
PNL-28-15-17	Shelby	Drilling Mud/Native Clay	1					X	X	X	X
PNL-23-26-27	Bag	Native Clay	1	X	X	X					
PNL-23-32-33	Bag	Native Sand	1	X	X	X					
PNL-23-50-51	Bag	Native Sand	1	X	X	X					
PNL-23-56-57	Bag	Native Sand	1	X	X	X					
PNL-21-33-34	Bag	Native Sand	1	X	X	X					
PNL-21-36-37	Bag	Native Sand	1	X	X	X					
PNL-21-45-46	Bag	Native Sand	1	X	X	X					
PNL-21-51-52	Bag	Native Sand	1	X	X	X					
PNL-28-23-24.5	Bag	Native Sand	1	X	X	X					
PNL-28-38-39.5	Bag	Native Sand	1	X	X	X					
PNL-28-53-54.5	Bag	Native Sand	1	X	X	X					
PNL-28-60-60.5	Bag	Native Sand	1	X	X	X					
TOTALS:	N/A		20	16	14	12	5	6	7	7	6

⁽¹⁾ Sample was deformed and unusable for strength tests

⁽²⁾ Although specified, tests could not be run due to poor cohesive strength.

⁽³⁾ This test was substituted for Consolidated triaxial undrained shear. The latter could not be run due to liquids contaminating the laboratory test equipment.

M E M O R A N D U M

TO: Tamara Zeier, P.E, Project Navigator, Inc.
Ken Fredianelli, Project Navigator, Inc.

FROM: Mike Reardon, P.E., GeoSyntec Consultants
Mark Grivetti, R.G., C.E.G., GeoSyntec Consultants

DATE: 19 May 2004

SUBJECT: **GeoSyntec Field Memorandum**
Pilot Study No. 3 – Phase I Drilling Program
Ascon Landfill Site

This memorandum provides a summary of field sampling and testing activities conducted by GeoSyntec Consultants (GeoSyntec) for the Pilot Study No. 3 Phase I hollow stem auger drilling program at the Ascon Landfill Site (Site) located in Huntington Beach, California. This memorandum was prepared for Project Navigator, Ltd. (PNL). Included with this memorandum are tabular summaries of field data, GINT[®] Borehole logs, and copies of calibration logs.

Phase I fieldwork was conducted on 15 and 16 March and 3, 4, and 5 May 2004. Although the Phase I drilling program schedule was interrupted due to the clean-up work related to the Oil Well No. 80 release which occurred on 17 March, fieldwork was completed within the estimated 5 day duration. Hollow stem auger drilling was performed under a GeoSyntec subcontract with West Hazmat drilling. Other GeoSyntec subcontractors used for the project included Del Mar laboratories for soil and waste testing, Odor Science and Engineering for testing of odor samples, and Columbia Analytical for chemical testing of vapor samples. Chuck Schmidt performed down-hole flux chamber testing under subcontract to PNL.

The scope of work for Phase I, as described in the workplan, “Pilot Study No. 3, Waste Characterization, Emissions, and Excavation Testing Program” [PNL and GeoSyntec, 2004], included the drilling of 15 hollow stem auger soil borings, collection of soil and waste samples for laboratory testing, and collection of vapor samples for

odor and chemical testing using a down-hole flux chamber sampling technique. Additional activities performed by GeoSyntec include geologic logging of boreholes, field screening of soil and waste samples with a photoionization detector (PID) and a flame ionization detector (FID), and perimeter air monitoring. Boreholes were drilled using 10-inch diameter hollow stem augers. Samples were collected with an 18-inch California Modified Split Spoon sampler. Down-hole flux chamber test equipment was provided and operated by Chuck Schmidt. When testing was completed, each borehole was abandoned using hydrated bentonite chips. Augers were steam cleaned between each borehole. Drill cuttings and decontamination water were placed in labeled drums. Drums were left in the drum storage area of the Site at the completion of field activities.

Air monitoring instruments, PIDs, FIDs, and dust monitors were calibrated daily. Equipment calibration sheets are included as an attachment. Perimeter air monitoring was conducted in accordance with activities described in Appendix A of the workplan. Hourly measurements of wind speed and direction were recorded on logs from the on-Site wind station. Hourly PID, dust, and odor measurements were also collected at each of the six perimeter air monitoring locations. Hourly results of perimeter air monitoring activities for the five days of Phase I fieldwork are summarized in Tables 1A through 1E. Overall, no significant readings above background were measured at perimeter air monitoring locations during Phase I drilling.

Each of the 15 soil boreholes was logged by a GeoSyntec geologist. The 15 boreholes were drilled at the approximate locations indicated in the workplan. Each borehole was drilled and sampled until the native clay soil underlying waste was identified. Refusal was experienced in one borehole, PNL-5. A second borehole (PNL-5A) was drilled to completion a few feet away. Following completion of fieldwork, electronic borehole logs were completed using GINT[®] software. GINT[®] borehole logs are provided as an attachment. GINT[®] borehole logs can also be provided electronically in Microsoft Access database format.

Samples of fill and waste materials were collected for laboratory testing. Samples of waste from each borehole were composited by the laboratory. Table 2 provides a summary of samples collected for laboratory testing from each borehole. A

composite waste sample was not collected from boreholes PNL-10 or PNL-15 due to the predominance of fill materials at these locations. A composite sample of the fill material was prepared for testing by the laboratory from boreholes PNL-09, PNL-12, and PNL-13 (Table 2). The requested chemical analyses are consistent with those listed in the workplan. In addition to the composite fill and waste samples, several discrete Encore samples were collected from each borehole for volatile organic compound (VOC) analysis. The additional Encore samples were collected at the request of PNL field representatives. Encore samples were not collected from PNL-02, since this borehole was drilled before the request to collect Encore samples was received.

GeoSyntec also screened an aliquot of sample from each split spoon sampling interval of each borehole using an FID and a PID on the headspace, as per the workplan. Field screening PID and FID data are summarized in Table 3.

Down-hole flux chamber tests were performed in each borehole at various depths within the waste or native materials. Flux chamber testing data was collected from each test using a PID and FID. In addition, vapor samples were collected from select tests using SUMMA canisters and Tedlar bags. Lab testing of vapor samples included VOCs, total petroleum hydrocarbons, and odor. As shown in Table 2, generally one down-hole flux chamber vapor sample was collected from each borehole for laboratory testing, with the exception of PNL-04 due the presence of liquids in the borehole. It is GeoSyntec's understanding that a summary of FID and PID down-hole flux chamber testing results will be provided to PNL by Chuck Schmidt.

Laboratory data were provided to PNL in electronic format. Electronic data deliverables (EDDs) for vapor data from Columbia Analytical (VOCs and TPH) were provided by GeoSyntec as received from the laboratory. EDDs for soil and waste testing results from Del Mar Analytical can be obtained through the web based portal set up for the project. Steve Howe of PNL was set up with a user name and password to access the Ascon project data as they were available. Odor data were provided from the laboratory to GeoSyntec and were transmitted to PNL (Steve Howe) as received.

If you have any questions regarding this information please contact Mike Reardon at (714) 969-0800 or Mark Grivetti at (805) 897-3800. GeoSyntec appreciates the opportunity to provide PNL with technical services for the Ascon Project.

* * * * *

TABLES

TABLE 1A
Air Monitoring Data Summary
March 15, 2004
Phase I Drilling

Monitoring Location	Date	Time	Wind Speed	Wind Direction	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	3/15/2004	9:05:00 AM	2.6	150	0	0.6	0.030
AA-01	3/15/2004	10:00:00 AM	4.9	230	0	0.0	0.000
AA-01	3/15/2004	11:12:00 AM	7.7	205	0	0.0	0.005
AA-01	3/15/2004	12:09:00 PM	6.5	200	0	0.0	0.001
AA-01	3/15/2004	12:58:00 PM	6.1	182	0	0.0	0.000
AA-01	3/15/2004	1:59:00 PM	6.7	204	0	0.0	0.010
AA-01	3/15/2004	2:54:00 PM	9.3	181	0	0.0	0.000
AA-01	3/15/2004	4:04:00 PM	6.1	197	0	0.0	0.000
AA-02	3/15/2004	9:10:00 AM	2.6	150	0	0.6	0.002
AA-02	3/15/2004	10:08:00 AM	4.9	230	0	0.0	0.000
AA-02	3/15/2004	11:15:00 AM	7.7	205	0	0.0	0.003
AA-02	3/15/2004	12:11:00 PM	6.5	200	0	0.0	0.003
AA-02	3/15/2004	1:01:00 PM	6.1	182	0	0.0	0.000
AA-02	3/15/2004	2:02:00 PM	6.7	204	0	0.0	0.002
AA-02	3/15/2004	2:57:00 PM	9.3	181	0	0.0	0.000
AA-02	3/15/2004	4:06:00 PM	6.1	197	0	0.0	0.000
AA-03	3/15/2004	9:15:00 AM	2.6	150	0	0.4	0.001
AA-03	3/15/2004	10:10:00 AM	4.9	230	0	0.0	0.000
AA-03	3/15/2004	11:18:00 AM	7.7	205	0	0.0	0.001
AA-03	3/15/2004	12:14:00 PM	6.5	200	0	0.0	0.000
AA-03	3/15/2004	1:03:00 PM	6.1	182	0	0.0	0.000
AA-03	3/15/2004	2:04:00 PM	6.7	204	0	0.0	0.000
AA-03	3/15/2004	3:00:00 PM	9.3	181	0	0.0	0.000
AA-03	3/15/2004	4:08:00 PM	6.1	197	0	0.0	0.000
AA-04	3/15/2004	8:55:00 AM	2.6	150	0	0.6	0.002
AA-04	3/15/2004	9:50:00 AM	4.9	230	0	0.1	0.000
AA-04	3/15/2004	11:04:00 AM	7.7	205	0	0.0	0.004
AA-04	3/15/2004	12:02:00 PM	6.5	200	0	0.0	0.003
AA-04	3/15/2004	12:52:00 PM	6.1	182	0	0.0	0.001
AA-04	3/15/2004	1:51:00 PM	6.7	204	0	0.0	0.000
AA-04	3/15/2004	2:48:00 PM	9.3	181	0	0.0	0.000
AA-04	3/15/2004	3:59:00 PM	6.1	197	0	0.0	0.000
AA-05	3/15/2004	8:50:00 AM	2.6	150	0	0.6	0.000
AA-05	3/15/2004	9:45:00 AM	4.9	230	0	0.3	0.000
AA-05	3/15/2004	10:58:00 AM	7.7	205	0	0.0	0.001
AA-05	3/15/2004	11:59:00 AM	6.5	200	0	0.0	0.003
AA-05	3/15/2004	12:48:00 PM	6.1	182	0	0.0	0.001
AA-05	3/15/2004	1:48:00 PM	6.7	204	0	0.0	0.000
AA-05	3/15/2004	2:41:00 PM	9.3	181	0	0.0	0.000
AA-05	3/15/2004	3:55:00 PM	6.1	197	0	0.0	0.000
AA-07	3/15/2004	8:45:00 AM	2.6	150	0	0.6	0.000
AA-07	3/15/2004	9:40:00 AM	4.9	230	0	0.5	0.000
AA-07	3/15/2004	10:53:00 AM	7.7	205	0	0.0	0.005
AA-07	3/15/2004	11:56:00 AM	6.5	200	0	0.0	0.000
AA-07	3/15/2004	12:41:00 PM	6.1	182	0	0.0	0.001
AA-07	3/15/2004	1:44:00 PM	6.7	204	0	0.0	0.000
AA-07	3/15/2004	2:38:00 PM	9.3	181	0	0.0	0.000
AA-07	3/15/2004	3:49:00 PM	6.1	197	0	0.0	0.000

TABLE 1B
Air Monitoring Data Summary
March 16, 2004
Phase I Drilling

Monitoring Location	Date	Time	Wind Speed	Wind Direction	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	3/16/2004	8:27:00 AM	3.3	282	0	2.0	0.025
AA-01	3/16/2004	9:33:00 AM	3.8	274	0	1.5	0.023
AA-01	3/16/2004	10:32:00 AM	4.3	260	0	0.0	0.000
AA-01	3/16/2004	11:40:00 AM	6.1	269	0	0.0	0.065
AA-01	3/16/2004	12:41:00 PM	6.1	223	0	0.0	0.000
AA-01	3/16/2004	1:41:00 PM	10.6	240	0	0.0	0.000
AA-01	3/16/2004	2:39:00 PM	7.3	239	0	0.2	0.000
AA-01	3/16/2004	3:34:00 PM	7.2	235	0	0.6	0.000
AA-02	3/16/2004	8:31:00 AM	3.3	282	0	2.1	0.030
AA-02	3/16/2004	9:36:00 AM	3.8	274	0	1.3	0.036
AA-02	3/16/2004	10:35:00 AM	4.3	260	0	0.0	0.000
AA-02	3/16/2004	11:43:00 AM	6.1	269	0	0.0	0.057
AA-02	3/16/2004	12:43:00 PM	6.1	223	0	0.0	0.000
AA-02	3/16/2004	1:43:00 PM	10.6	240	0	0.0	0.000
AA-02	3/16/2004	2:41:00 PM	7.3	239	0	0.3	0.000
AA-02	3/16/2004	3:37:00 PM	7.2	235	0	0.5	0.000
AA-03	3/16/2004	8:35:00 AM	3.3	282	0	1.9	0.031
AA-03	3/16/2004	9:39:00 AM	3.8	274	0	1.3	0.018
AA-03	3/16/2004	10:38:00 AM	4.3	260	0	0.0	0.000
AA-03	3/16/2004	11:47:00 AM	6.1	269	0	0.0	0.050
AA-03	3/16/2004	12:48:00 PM	6.1	223	0	0.0	0.000
AA-03	3/16/2004	1:45:00 PM	10.6	240	0	0.1	0.000
AA-03	3/16/2004	2:44:00 PM	7.3	239	0	0.3	0.000
AA-03	3/16/2004	3:41:00 PM	7.2	235	0	0.5	0.000
AA-04	3/16/2004	8:18:00 AM	3.3	282	0	1.3	0.013
AA-04	3/16/2004	9:24:00 AM	3.8	274	0	1.9	0.028
AA-04	3/16/2004	10:21:00 AM	4.3	260	0	0.1	0.000
AA-04	3/16/2004	11:32:00 AM	6.1	269	0	0.0	0.072
AA-04	3/16/2004	12:31:00 PM	6.1	223	0	0.0	0.000
AA-04	3/16/2004	1:32:00 PM	10.6	240	0	0.0	0.000
AA-04	3/16/2004	2:32:00 PM	7.3	239	0	0.0	0.000
AA-04	3/16/2004	3:24:00 PM	7.2	235	0	0.4	0.000
AA-05	3/16/2004	8:14:00 AM	3.3	282	0	1.8	0.015
AA-05	3/16/2004	9:19:00 AM	3.8	274	0	1.8	0.038
AA-05	3/16/2004	10:16:00 AM	4.3	260	0	0.2	0.000
AA-05	3/16/2004	11:27:00 AM	6.1	269	0	0.0	0.055
AA-05	3/16/2004	12:25:00 PM	6.1	223	0	0.0	0.000
AA-05	3/16/2004	1:29:00 PM	10.6	240	0	0.0	0.000
AA-05	3/16/2004	2:29:00 PM	7.3	239	0	0.0	0.000
AA-05	3/16/2004	3:20:00 PM	7.2	235	0	0.4	0.000
AA-07	3/16/2004	8:10:00 AM	3.3	282	0	1.7	0.011
AA-07	3/16/2004	9:14:00 AM	3.8	274	0	1.9	0.020
AA-07	3/16/2004	10:13:00 AM	4.3	260	0	0.5	0.000
AA-07	3/16/2004	11:23:00 AM	6.1	269	0	0.0	0.051
AA-07	3/16/2004	12:20:00 PM	6.1	223	0	0.0	0.000
AA-07	3/16/2004	1:25:00 PM	10.6	240	0	0.1	0.000
AA-07	3/16/2004	2:22:00 PM	7.3	239	0	0.2	0.000
AA-07	3/16/2004	3:18:00 PM	7.2	235	0	0.3	0.000

TABLE 1C
Air Monitoring Data Summary
May 3, 2004
Phase I Drilling

Monitoring Location	Date	Time	Wind Speed	Wind Direction	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/3/2004	9:00:00 AM	2.2	301	0	0.0	0.053
AA-01	5/3/2004	10:07:00 AM	4.3	249	0	0.0	0.068
AA-01	5/3/2004	11:14:00 AM	6.0	222	0	0.0	0.082
AA-01	5/3/2004	12:25:00 PM	4.7	203	0	0.0	0.074
AA-01	5/3/2004	1:17:00 PM	8.1	235	0	0.0	0.097
AA-01	5/3/2004	2:25:00 PM	7.8	256	0	0.0	0.079
AA-01	5/3/2004	3:29:00 PM	7.1	279	0	0.0	0.050
AA-02	5/3/2004	9:06:00 AM	2.2	301	0	0.0	0.049
AA-02	5/3/2004	10:12:00 AM	4.3	249	0	0.0	0.060
AA-02	5/3/2004	11:22:00 AM	6.0	222	0	0.0	0.074
AA-02	5/3/2004	12:28:00 PM	4.7	203	0	0.0	0.076
AA-02	5/3/2004	1:21:00 PM	8.1	235	0	0.0	0.081
AA-02	5/3/2004	2:29:00 PM	7.8	256	0	0.0	0.084
AA-02	5/3/2004	3:31:00 PM	7.1	279	0	0.0	0.060
AA-03	5/3/2004	9:11:00 AM	2.2	301	0	0.0	0.053
AA-03	5/3/2004	10:19:00 AM	4.3	249	0	0.0	0.071
AA-03	5/3/2004	11:25:00 AM	6.0	222	0	0.0	0.079
AA-03	5/3/2004	12:33:00 PM	4.7	203	0	0.0	0.072
AA-03	5/3/2004	1:27:00 PM	8.1	235	0	0.0	0.074
AA-03	5/3/2004	2:34:00 PM	7.8	256	0	0.0	0.078
AA-03	5/3/2004	3:35:00 PM	7.1	279	0	0.0	0.065
AA-04	5/3/2004	8:48:00 AM	2.2	301	0	0.0	0.047
AA-04	5/3/2004	9:58:00 AM	4.3	249	0	0.0	0.073
AA-04	5/3/2004	11:13:00 AM	6.0	222	0	0.0	0.075
AA-04	5/3/2004	12:20:00 PM	4.7	203	0	0.0	0.078
AA-04	5/3/2004	1:13:00 PM	8.1	235	0	0.0	0.087
AA-04	5/3/2004	2:16:00 PM	7.8	256	0	0.0	0.080
AA-04	5/3/2004	1:20:00 PM	7.1	279	0	0.0	0.050
AA-05	5/3/2004	8:36:00 AM	2.2	301	0	0.0	0.048
AA-05	5/3/2004	9:53:00 AM	4.3	249	0	0.0	0.070
AA-05	5/3/2004	11:08:00 AM	6.0	222	0	0.0	0.076
AA-05	5/3/2004	12:15:00 PM	4.7	203	0	0.0	0.070
AA-05	5/3/2004	1:07:00 PM	8.1	235	0	0.0	0.079
AA-05	5/3/2004	2:11:00 PM	7.8	256	0	0.0	0.078
AA-05	5/3/2004	3:16:00 PM	7.1	279	0	0.0	0.064
AA-07	5/3/2004	8:30:00 AM	2.2	301	0	0.0	0.046
AA-07	5/3/2004	9:45:00 AM	4.3	249	0	0.0	0.066
AA-07	5/3/2004	11:05:00 AM	6.0	222	0	0.0	0.059
AA-07	5/3/2004	12:10:00 PM	4.7	203	0	0.0	0.069
AA-07	5/3/2004	1:02:00 PM	8.1	235	0	0.0	0.074
AA-07	5/3/2004	2:05:00 PM	7.8	256	0	0.0	0.070
AA-07	5/3/2004	3:11:00 PM	7.1	279	0	0.0	0.065

TABLE 1D
Air Monitoring Data Summary
May 4, 2004
Phase I Drilling

Monitoring Location	Date	Time	Wind Speed	Wind Direction	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/4/2004	8:22:00 AM	5.2	155	0	0.0	0.068
AA-01	5/4/2004	9:35:00 AM	7.1	162	0	0.0	0.059
AA-01	5/4/2004	10:29:00 AM	10.2	164	0	0.0	0.055
AA-01	5/4/2004	12:07:00 PM	5.9	159	0	0.0	0.050
AA-01	5/4/2004	1:13:00 PM	9.9	189	0	0.0	0.038
AA-01	5/4/2004	2:16:00 PM	7.8	193	0	0.0	0.054
AA-01	5/4/2004	3:25:00 PM	5.1	215	0	0.0	0.048
AA-01	5/4/2004	4:06:00 PM	7.1	185	0	0.0	0.044
AA-02	5/4/2004	8:29:00 AM	5.2	155	0	0.0	0.075
AA-02	5/4/2004	9:38:00 AM	7.1	162	0	0.0	0.063
AA-02	5/4/2004	10:32:00 AM	10.2	164	0	0.0	0.060
AA-02	5/4/2004	12:11:00 PM	5.9	159	0	0.0	0.050
AA-02	5/4/2004	1:15:00 PM	9.9	189	0	0.0	0.040
AA-02	5/4/2004	2:18:00 PM	7.8	193	0	0.0	0.044
AA-02	5/4/2004	3:28:00 PM	5.1	215	0	0.0	0.051
AA-02	5/4/2004	4:08:00 PM	7.1	185	0	0.0	0.046
AA-03	5/4/2004	8:31:00 AM	5.2	155	0	0.0	0.081
AA-03	5/4/2004	9:42:00 AM	7.1	162	0	0.0	0.059
AA-03	5/4/2004	10:36:00 AM	10.2	164	0	0.0	0.050
AA-03	5/4/2004	12:14:00 PM	5.9	159	0	0.0	0.048
AA-03	5/4/2004	1:18:00 PM	9.9	189	0	0.0	0.039
AA-03	5/4/2004	2:21:00 PM	7.8	193	0	0.0	0.042
AA-03	5/4/2004	3:31:00 PM	5.1	215	0	0.0	0.046
AA-03	5/4/2004	4:09:00 PM	7.1	185	0	0.0	0.044
AA-04	5/4/2004	8:09:00 AM	5.2	155	0	0.0	0.087
AA-04	5/4/2004	9:22:00 AM	7.1	162	0	0.0	0.075
AA-04	5/4/2004	10:18:00 AM	10.2	164	0	0.0	0.058
AA-04	5/4/2004	11:43:00 AM	5.9	159	0	0.0	0.048
AA-04	5/4/2004	1:00:00 PM	9.9	189	0	0.0	0.040
AA-04	5/4/2004	2:02:00 PM	7.8	193	0	0.0	0.052
AA-04	5/4/2004	3:17:00 PM	5.1	215	0	0.0	0.050
AA-04	5/4/2004	4:01:00 PM	7.1	185	0	0.0	0.043
AA-05	5/4/2004	8:05:00 AM	5.2	155	0	0.0	0.084
AA-05	5/4/2004	9:17:00 AM	7.1	162	0	0.0	0.059
AA-05	5/4/2004	10:13:00 AM	10.2	164	0	0.0	0.065
AA-05	5/4/2004	10:38:00 AM	5.9	159	0	0.0	0.058
AA-05	5/4/2004	12:56:00 PM	9.9	189	0	0.0	0.041
AA-05	5/4/2004	1:59:00 PM	7.8	193	0	0.0	0.041
AA-05	5/4/2004	3:14:00 PM	5.1	215	0	0.0	0.052
AA-05	5/4/2004	3:59:00 PM	7.1	185	0	0.0	0.047
AA-07	5/4/2004	7:59:00 AM	5.2	155	0	0.0	0.101
AA-07	5/4/2004	9:11:00 AM	7.1	162	0	0.0	0.071
AA-07	5/4/2004	10:09:00 AM	10.2	164	0	0.0	0.061
AA-07	5/4/2004	11:34:00 AM	5.9	159	0	0.0	0.052
AA-07	5/4/2004	12:52:00 PM	9.9	189	0	0.0	0.038
AA-07	5/4/2004	1:55:00 PM	7.8	193	0	0.0	0.047
AA-07	5/4/2004	3:10:00 PM	5.1	215	0	0.0	0.046
AA-07	5/4/2004	3:56:00 PM	7.1	185	0	0.0	0.042

TABLE 1E
Air Monitoring Data Summary
May 5, 2004
Phase I Drilling

Monitoring Location	Date	Time	Wind Speed	Wind Direction	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/5/2004	8:19:00 AM	7.8	131	0	0.0	0.085
AA-01	5/5/2004	9:48:00 AM	6.0	148	0	0.0	0.078
AA-01	5/5/2004	10:49:00 AM	7.3	176	0	0.0	0.069
AA-01	5/5/2004	11:48:00 AM	12.1	172	0	0.0	0.072
AA-01	5/5/2004	1:02:00 PM	12.3	139	0	0.0	0.050
AA-01	5/5/2004	2:15:00 PM	7.3	199	0	0.0	0.051
AA-02	5/5/2004	8:24:00 AM	7.8	131	0	0.0	0.085
AA-02	5/5/2004	9:52:00 AM	6.0	148	0	0.0	0.072
AA-02	5/5/2004	10:52:00 AM	7.3	176	0	0.0	0.055
AA-02	5/5/2004	11:53:00 AM	12.1	172	0	0.0	0.073
AA-02	5/5/2004	1:06:00 PM	12.3	139	0	0.0	0.053
AA-02	5/5/2004	2:21:00 PM	7.3	199	0	0.0	0.068
AA-03	5/5/2004	8:28:00 AM	7.8	131	0	0.0	0.083
AA-03	5/5/2004	9:55:00 AM	6.0	148	0	0.0	0.080
AA-03	5/5/2004	10:56:00 AM	7.3	176	0	0.0	0.056
AA-03	5/5/2004	11:57:00 AM	12.1	172	0	0.0	0.062
AA-03	5/5/2004	1:10:00 PM	12.3	139	0	0.0	0.061
AA-03	5/5/2004	2:25:00 PM	7.3	199	0	0.0	0.048
AA-04	5/5/2004	8:09:00 AM	7.8	131	0	0.0	0.087
AA-04	5/5/2004	9:32:00 AM	6.0	148	0	0.0	0.072
AA-04	5/5/2004	10:34:00 AM	7.3	176	0	0.0	0.052
AA-04	5/5/2004	11:30:00 AM	12.1	172	0	0.0	0.056
AA-04	5/5/2004	12:52:00 PM	12.3	139	0	0.0	0.067
AA-04	5/5/2004	2:10:00 PM	7.3	199	0	0.0	0.062
AA-05	5/5/2004	8:04:00 AM	7.8	131	0	0.0	0.088
AA-05	5/5/2004	9:26:00 AM	6.0	148	0	0.0	0.075
AA-05	5/5/2004	10:29:00 AM	7.3	176	0	0.0	0.064
AA-05	5/5/2004	11:27:00 AM	12.1	172	0	0.0	0.068
AA-05	5/5/2004	12:49:00 PM	12.3	139	0	0.0	0.043
AA-05	5/5/2004	2:04:00 PM	7.3	199	0	0.0	0.057
AA-07	5/5/2004	7:58:00 AM	7.8	131	0	0.0	0.078
AA-07	5/5/2004	9:22:00 AM	6.0	148	0	0.0	0.066
AA-07	5/5/2004	10:26:00 AM	7.3	176	0	0.0	0.065
AA-07	5/5/2004	11:24:00 AM	12.1	172	0	0.0	0.066
AA-07	5/5/2004	12:45:00 PM	12.3	139	0	0.0	0.045
AA-07	5/5/2004	1:58:00 PM	7.3	199	0	0.0	0.051

TABLE 2
Sample Collection Summary
Phase I Drilling
Ascon Landfill Site

Borehole ID	Date Drilled	Composite Fill & Waste Samples	Discrete Encore Samples	Downhole Flux Odor Samples	Downhole Flux Vapor Samples
PNL-01	5/3/04	PNL-1	PNL-1-16.5-EC PNL-1-18.5-EC PNL-1-21.5-EC	PNL-1-15DHF	PNL-1-15DHF
PNL-02	3/15/04	PNL-02	None collected	PNL-02-15DHF	PNL-02-15DHF
PNL-03	3/16/04	PNL-3	PNL-3-19-EC PNL-3-21.5-EC	PNL-3-21DHF	PNL-3-21DHF
PNL-04/4A	5/4/04	PNL-4	PNL-4-21.5-EC PNL-4-24.5-EC	None collected (liquids present)	
PNL-05/5A	3/16/04	PNL-5	PNL-5-10-EC PNL-5A-21.5-EC PNL-5A-25-EC	PNL-5A-11DHF	PNL-5A-11DHF
PNL-06	5/5/04	PNL-6	PNL-6-9.5-EC PNL-6-15.5-EC PNL-6-21.5-EC	PNL-6-15DHF	PNL-6-15DHF PNL-6-15RDHF
PNL-07	5/3/04	PNL-7	PNL-7-12.5-EC	PNL-7-21DHF PNL-7-21RDHF	PNL-7-21DHF
PNL-08	5/5/04	PNL-8	PNL-8-9.5-EC PNL-8-18.5-EC PNL-8-24.5-EC	PNL-8-18-DHF	PNL-8-6-DHF PNL-8-18-DHF
PNL-09	5/5/04	PNL-9 PNL-9-Fill	PNL-9-10-EC PNL-9-15.5-EC PNL-9-18.5-EC	PNL-9-15DHF PNL-9-15-RDHF	PNL-9-15DHF

TABLE 2 (cont.)
Sample Collection Summary
Phase I Drilling
Ascon Landfill Site

Borehole ID	Date Drilled	Composite Fill & Waste Samples	Discrete Encore Samples	Downhole Flux Odor Samples	Downhole Flux Vapor Samples
PNL-10	5/4/04	None collected	PNL-10-6-EC PNL-10-9.5-EC PNL-10-12-EC PNL-10-18-EC		
PNL-10A		None collected	None collected	PNL-10A-13DHF	PNL-10A-13DHF
PNL-11	5/4/04	PNL-11	PNL-11-12.5-EC PNL-11-15.5-EC PNL-11-22-EC	PNL-11-12DHF	PNL-11-12DHF
PNL-12	3/16/04	PNL-12 PNL-12-Fill	PNL-12-16-EC PNL-12-18-EC	PNL-12-21DHF	PNL-12-15RDHF PNL-12-15DHF
PNL-13	3/15/04	PNL-13 PNL-13-Fill	PNL-13-9.5-EC PNL-13-12.0-EC PNL-13-15.0-EC	PNL-13-12DHF	PNL-13-12DHF
PNL-14	5/3/04	PNL-14	PNL-14-15-EC PNL-14-18.5-EC	PNL-14-21DHF	PNL-14-21DHF
PNL-15	3/15/04	None collected	None collected	PNL-15-12DHF	PNL-15-12DHF
Blank Samples				PNL-7BDHF PNL-12-100DHF PNL-15-100DHF	PNL-9-21-BDHF PNL-12-100DHF PNL-15-100DHF

TABLE 3
SOILWASTE HEADSPACE SCREENING RESULTS
PHASE I DRILLING
ASCON LANDFILL SITE

Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)
PNL-1	5/3/2004	8:02	3	60	250
		8:05	6	55.12	1420
		8:30	10	160	520
		8:35	12	170	470
		9:05	16	220	235
		9:10	18	354	6685
		9:30	21.5	289	1740
		9:37	24	13.4	156
PNL-2	3/15/2004	8:48	3	3.54	0.33
		8:52	6	6.56	71.13
		9:20	10	10.12	102
		9:30	12	1.98	102
		9:52	15	2.58	76.78
		9:59	18	3.79	61.59
		10:51	21	2.43	4.13
PNL-3	3/16/2004	14:29	3	1.12	4.39
		14:35	6	3.5	3471
		14:45	12	1.6	3800
		14:50	15	2	35
		15:35	18	150	3500
		16:06	21	260	10400
		16:06	24	140	2000
		16:25	27	90	1000
PNL-4	5/4/2004	7:45	3	12.38	533
		8:02	9	15.29	516
		8:14	15	4.23	466
		8:24	19	5.14	440
		8:30	21.5	207	3797
		8:36	24.5	324	5119
		8:42	27.5	176	1052
PNL-5	3/16/2004	8:20	3	66.8	2.6
		8:25	6	85.3	293
		8:45	9	73	1330
		9:09	12	8	440
PNL-5A	3/16/2004	10:44	18	12	766
		10:45	21	80	3655
		10:51	24	180	3500
		10:57	27	19	1014
PNL-6	5/5/2004	7:48	3.5	7.43	18.32
		7:52	6	14.55	469
		8:13	9.5	11.75	620
		8:20	12.5	17.52	632
		8:38	15.5	199	3157
		8:50	21.5	175	4356
		8:54	24.5	52.02	243

TABLE 3
SOILWASTE HEADSPACE SCREENING RESULTS
PHASE I DRILLING
ASCON LANDFILL SITE

Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)
PNL-7	5/3/2004	13:50	3	5.12	26.59
		13:56	7	56.77	905
		14:15	9	98	1240
		14:20	13	242	4165
		14:37	15.5	39.53	1034
		14:42	18.5	166	1740
		15:10	21	18.7	65.3
PNL-8	5/5/2004	12:50	3	5.42	13.66
		13:10	6.5	2.89	243
		13:17	9.5	396	2115
		13:33	13	393	6453
		13:39	15.5	473	5768
		14:05	18.5	401	5715
		14:07	21.5	400	5974
		14:30	24.5	430	3521
		14:35	27.5	536	5516
		14:38	29	12.43	762
PNL-9	5/5/2004	9:48	3	10.08	46.45
		9:50	6	23.56	47.25
		10:11	9	17.07	106
		10:18	12	10.43	92.28
		10:37	15.5	613	5521
		10:45	18.5	19.73	617
		11:00	21.5	5.26	23.06
PNL-10	5/4/2004	14:39	3.5	18.77	73.89
		14:45	6.5	1.64	28.24
		15:00	9.5	0.75	0.96
		15:03	12.5	1.31	2.2
		15:17	15.5	1.24	5.27
		15:19	18.5	1.74	6.08
PNL-10A	5/4/2004	16:39	14.5	3.96	1201
PNL-11	5/4/2004	11:28	3.5	22.41	64.84
		11:48	6.5	2.65	3.4
		12:10	9.5	356	1098
		12:35	12.5	17.2	65.9
		12:45	15.5	4.3	27.95
		12:48	18	5.86	23.89
		13:05	22	2.3	4.9
PNL-12	3/16/2004	11:56	3	120	563
		12:18	7	50	1036
		12:32	9	12	1437
		12:43	12	300	4650
		12:53	15	180	3720
		13:18	18	70	1550
		13:19	21	2.2	520

TABLE 3
SOILWASTE HEADSPACE SCREENING RESULTS
PHASE I DRILLING
ASCON LANDFILL SITE

Borehole ID	Date	Time	Depth of Sample (feet below ground)	PID Reading (ppm)	FID Reading (ppm)
PNL-13	3/15/2002	11:35	3	1.7	0.78
		11:56	6	327	3019
		11:58	9	229	2244
		12:28	12	160	500
		12:52	18	90	1200
		12:53	21	47	460
		14:30	24	5.87	41.57
PNL-14	5/3/2004	11:05	3	5.17	27.1
		11:11	7.5	3.32	16.98
		11:26	9	12.22	42.51
		11:30	12	66.52	619
		11:47	15	75.06	344
		11:52	18.5	236	983
		12:15	21.5	290	1071
		12:20	24	73.92	460
PNL-15	3/15/2004	14:58	3	3.3	19.6
		15:27	6	3.1	11.6
		15:28	9	5.73	282
		15:48	12	20.8	189
		16:07	15	2.08	645

Notes:

Sample depths indicate the top interval of the 6-inch sample tested

Sample headspace screened using plastic bag and PID and FID instruments

BORING LOGS



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PROJECT Ascon

PROJECT LOCATION Huntington Beach, CA

PROJECT NUMBER SB0202

KEY SHEET - CLASSIFICATIONS AND SYMBOLS

GS FORM:
KEY/SYMBOLS 01/04

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N VALUES *

	N VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)		N VALUE * (BLOWS/FT)	RELATIVE DENSITY
FINE GRAINED SOILS	0 - 2	VERY SOFT	<0.25	COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	3 - 4	SOFT	0.25 - 0.50		5 - 10	LOOSE
	5 - 8	FIRM	0.50 - 1.00		11 - 30	MEDIUM DENSE
	9 - 15	STIFF	1.00 - 2.00		31 - 50	DENSE
	16 - 30	VERY STIFF	2.00 - 4.00		>50	VERY DENSE
	31 - 50	HARD	>4.00			
	>50	VERY HARD				

* ASTM D 1586; NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1.4 IN. I.D. SAMPLER ONE FOOT.

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

MAJOR DIVISIONS			SYMBOLS		DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		LITTLE OR NO FINES		GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
		APPRECIABLE AMOUNT OF FINES		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		LITTLE OR NO FINES		SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES		SM	SILTY SANDS, SAND-SILT MIXTURES
		APPRECIABLE AMOUNT OF FINES		SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT

NOTE: DUAL SYMBOLS USED FOR BORDERLINE CLASSIFICATIONS

PARTICLE SIZE IDENTIFICATION

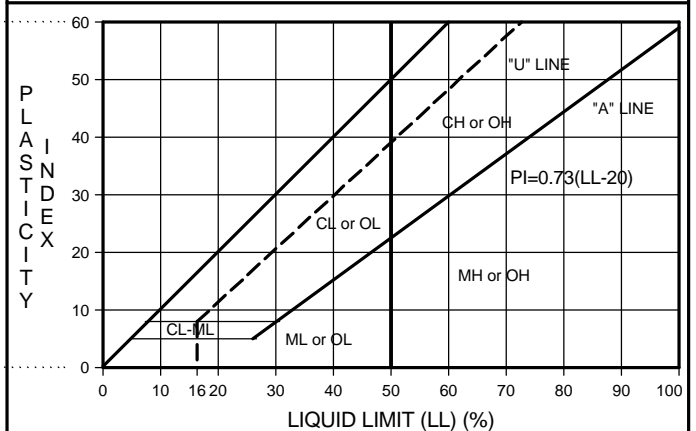
USCS (SOILS ONLY) *		SEDIMENTARY (ROCK ONLY)	
BOULDER	>300 mm	BOULDER	>256 mm
COBBLE	75 - 300 mm	COBBLE	64 - 256 mm
GRAVEL: COARSE	20 - 75 mm	PEBBLE	4 - 64 mm
GRAVEL: FINE	4.75 - 20 mm	GRANULE	2 - 4 mm
SAND: COARSE	2 - 4.75 mm	SAND: V. COARSE	1 - 2 mm
SAND: MEDIUM	0.42 - 2 mm	SAND: COARSE	0.5 - 1 mm
SAND: FINE	0.074 - 0.42 mm	SAND: MEDIUM	0.25 - 0.5 mm
SILT/CLAY	<0.074 mm	SAND: FINE	0.125 - 0.25 mm
		SAND: V. FINE	0.063 - 0.125 mm
		SILT	0.004 - 0.063 mm
		CLAY	<0.004 mm

* WELL GRADED - HAVING WIDE RANGE OF GRAIN SIZES AND APPRECIABLE AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES

* POORLY GRADED - PREDOMINANTLY ONE GRAIN SIZE, OR HAVING A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING

PERCENTAGE OF PARTICLE TYPE IN DECREASING ORDER OF PARTICLE SIZE (GRAVEL, SAND, FINES)

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

Conglomerate	Sandy Claystone	Marker Bed
Sandstone	Granitic/Intrusive	
Silty Sandstone	Volcanic/Extrusive	Artificial Fill
Clayey Sandstone	Metamorphic	Refuse
Sandy Siltstone	Limestone	Concrete/Asphalt
Siltstone	Dolomite	
Claystone	Glacial Till	
Clayey Siltstone/ Silty Claystone	Landslide Debris	

WELL SYMBOLS

CONCRETE
GROUT
BENTONITE SEAL
TRANSITION SAND
SAND/GRAVEL PACK
NATIVE/SLUFF
CENTRALIZER

SAMPLE TYPE AND OTHER SYMBOLS

BULK SAMPLE	Water Level at Time Drilling, or as Shown
STANDARD PENETRATION TEST	Static Water Level
MODIFIED CALIFORNIA SAMPLE	Pump Inlet
CORE SAMPLE	Loss of Drilling Fluid
SHELBY TUBE	MSL: Mean Sea Level
DRIVE SAMPLE	AGS: Above Ground Surface
	BGS: Below Ground Surface
	BTOC: Below Top of Casing
	HSA: Hollow Stem Auger



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-1

SHEET 1 OF 1

START DRILL DATE 3 May 04

ELEVATION DATA:

FINISH DRILL DATE 3 May 04

GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
5	ARTIFICIAL FILL Sandy SILT (SM/ML): light olive brown [2.5Y 5/4]; dry; silt with fine-grained sand; FINE gravel (angular to subangular, <10mm diameter) (5,20,75)										Began drilling at 0751 on May 3, 2004.
					3 3 3	6	100	60	0800	FID = 250 ppm	
					3 3 3	6	100	55	0813	FID = 1420 ppm	
10	IMPACTED FILL Silty SAND (SM): very dark greenish gray [GLEYS 1 3/10Y]; slightly moist; fine- to medium-grained sand; trace fine gravel; (<5mm diameter); silt (tr,70,30); strong hydrocarbon odor; staining					2 2 2	4	100	160	0832	Downhole flux measurement. FID = 520 ppm
					2 3 3	6	100	170	0835	FID = 470 ppm	
					2 3 3	6	100	220	0908	Downhole flux measurement. Sample PNL-1-15-DHF Sample PNL-1-16.5-EC FID = 235 ppm	
15	@ 15' - fragments of black tar interbedded [GLEYS 1 2.5/N]										
					3 7 6	13	100	354	0912	Sample PNL-1-18.5-EC FID = 6685 ppm	
					4 10 18	28	100	289	0930	Downhole flux measurement. Sample PNL-1-21.5-EC FID = 1740	
20	NATIVE Silty SAND (SM): very dark greenish gray [GLEYS 1 3/10Y]; slightly moist; fine-grained sand with some silt (0,70,30); very micaceous; faint hydrocarbon odor										
					7 7 9	16	100	13	0940	FID = 156 ppm	
25	CLAY (CL): very dark greenish gray [GLEYS 1 3/10Y]; stiff; highly plastic; faint hydrocarbon odor; micaceous										
30											
35											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-1 was located approximately 10 ft south and 20 ft west of GP-2.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-2

SHEET 1 OF 1

START DRILL DATE 15 Mar 04
FINISH DRILL DATE 15 Mar 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 6) Plasticity 2) Color 7) Density/Consistency 3) Moisture 8) Other (Mineral Content, 4) Grain Size Discoloration, Odor, etc.) 5) Percentage	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	ARTIFICIAL FILL Sandy SILT (SM/ML): olive brown [2.5Y 4/4]; slightly moist; silt with some fine-grained sand (0,10,90)										Began drilling at 0838 on March 15, 2004.
5	WASTE Silty CLAY (ML/CL): dark greenish gray [GLEY 1 4/10Y]; clay; trace fine-grain sand; very low plastic; soft to moderately stiff; slight hydrocarbon odor @ 6' - some black hydrocarbon staining; trace shell fragment					11 15 30	45	100	3.5	0842	FID = 0.33 ppm
						6 7 13	20	60	6.6	0848	FID = 71.13 ppm
						9 13 13	26	60	10.1	0910	Downhole flux measurement. FID = 102 ppm
10	@ 9' - becomes micaceous					9 12 13	25	80	2.0	0918	FID = 102 ppm
15	@ 12.5 to 13.5' seam - Silty SAND (SM): greenish gray [GLEY 1 5/10Y]; very fine-grained sand with silt (0,70,30); micaceous @ 15' - trace very fine-grained sand					6 10 20	30	90	2.6	0940	FID = 76.78 ppm Downhole flux measurement. Sample PNL-2-15-DHF
						3 8 13	21	100	3.8	0950	FID = 61.59 ppm
						8 11 12	23	100	2.4	1029	FID = 4.13 ppm Downhole flux measurement. Stopped drilling at a depth of 21 ft-bgs at 1029 on March 15, 2004. Sampled to a depth of 22.5 ft-bgs. Abandoned borehole on March 15, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (10 bags).
25											
30											
35											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-2 was located approximately 15 ft west and 20 south of GP-3.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-3

SHEET 1 OF 1

START DRILL DATE 16 Mar 04
FINISH DRILL DATE 16 Mar 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)										1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	ARTIFICIAL FILL SILT (ML): olive brown [2.5Y 4/4]; dry; trace fine gravel (angular, <5mm diameter); trace fine-grained sand (tr,tr,100)										Began drilling at 1415 on March 16, 2004.
5	@ 4' - becomes slightly moist; trace fine gravel (<25mm diameter); increase in sand content (tr,10,90)					18 50		80	1.1	1420	FID = 4.39 ppm
	@ 6' - Sandy SILT (SM): greenish black [GLEY 1 2.5/1]; silt with fine- to coarse-grained sand (subangular to subrounded); fine to medium gravel (angular to subangular, <35mm diameter) (5,20,75); no hydrocarbon odor; micaceous					35 50		50	3.5	1427	FID = 3471 ppm
10	@ 7' - concrete fragment					8 8 10	18	0	-	1438	No sample was recovered at 9-10.5 ft-bgs.
	@ 12' - SILT (ML): greenish black [GLEY 1 2.5/1]; moist; silt with some fine- to coarse-grained sand (angular to subrounded); trace fine gravel (tr,5,95); trace wood fragments; medium to high plasticity; soft; no hydrocarbon odor; micaceous					8 10 18	28	60	1.6	1442	FID = 3800 ppm
15	@ 15' - Silty CLAY (ML/CL): dark greenish gray [GLEY 1 4/10Y]; clay with some silt; trace fine-grained sand; high plasticity; moderately stiff; hydrocarbon odor					1 1 2	3	100	2.0	1500	FID = 35 ppm Downhole flux measurement. @ 16' - liquids observed
20	WASTE @ 16' - CLAY (CL): very dark greenish gray [GLEY 1 3/10Y]; high plasticity; strong hydrocarbon odor; oil staining					1 2 3	5	100	150	1511	FID = 3500 ppm Sample PNL-3-19-EC
						14 15 17	32	100	260	1546	FID = 10400 ppm Downhole flux measurement. Sample PNL-3-21-DHF Sample PNL-3-21.5-EC
25						12 12 12	24	100	140	1553	FID = 2000 ppm
						4 5 7	12	100	-	1615	FID = 1000 ppm Downhole flux measurement.
30	NATIVE SILT (ML): dark greenish gray [GLEY 1 4/10Y]; silt with trace fine-grained sand; some clay; high plasticity; soft; hydrocarbon odor @ 28-28.5' - shell fragments Silty SAND (SM): greenish black [GLEY 1 2.5/1]; fine-grained sand with some silt (0,90,10); 5% shell fragments; micaceous; hydrocarbon odor							100	90	1627	No recovery on first round. Stopped drilling at a depth of 30 ft-bgs at 1627 on March 16, 2004. Sampled to a depth of 31.5 ft-bgs. Abandoned borehole on March 16, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (15 bags).
35											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-3 was located approximately 50 ft north and 10 ft east of P-6.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING







START DRILL DATE 4 May 04
FINISH DRILL DATE 4 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-4

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage	6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)									1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
5	ARTIFICIAL FILL SAND (SP): light olive brown [2.5Y 5/4]; dry; fine- to medium-grained sand; trace coarse-grained sand (angular to subangular); trace fine to medium gravel (angular to subangular, <20mm diameter); silt (tr,95,5) @ 3' - Silty SAND (SM): dark greenish gray [GLEY 1 4/10Y]; slightly moist; fine- to coarse-grained sand (subangular to subrounded); silt; trace fine gravel (subangular to subrounded, <5mm diameter) (tr,80,20); trace concrete debris; partially stained black; faint to no hydrocarbon odor										Began drilling on May 4, 2004. Rig chatter between 1 and 6 ft-bgs.
						50		30	12	0750	FID = 533 ppm
						-		0	-	0758	Rig chatter continues; very hard drilling. No recovery at 6 ft-bgs. @ 7' - liquids observed
10	IMPACTED FILL @ 9' - Gravelly SAND (GP): very dark greenish gray [GLEY 1 3/10Y]; wet; fine- to coarse-grained sand (angular); fine to medium gravel (angular, <50mm diameter); some silt (30,60,10); oil sheen in water					10 5 14	19	100	15	0805	FID = 516 ppm
						-		0	-	0814	No core recovery at 12 ft-bgs.
15	@ 16' - Sandy CLAY (SC): dark greenish gray [GLEY 1 4/10Y]; wet; fine- to coarse-grained sand (angular); fine to medium gravel (angular, <20mm diameter) (tr,15,85); medium plasticity; soft to medium soft @ 18' - trace wood fragments (up to 3" long)					12 12 13	25	100	4	0817	FID = 466 ppm
						13 11 9	20	100	5	0824	PNL-4A: @ 17-18.5 ft-bgs showed 20% gravel content in clay; wet. FID = 440 ppm
						-		100	207	0835	Sample PNL-4-21.5-EC FID = 3797 ppm
20	WASTE CLAY (CL): very dark greenish gray [GLEY 1 3/10Y]; moist; high plasticity; moderately soft; strong hydrocarbon odor; oil saturated										
25						2 4 9	13	100	324	0840	Sample PNL-4-24.5-EC FID = 5119 ppm
30	NATIVE Silty SAND (SM): very dark greenish gray [GLEY 1 3/10Y]; fine-grained sand with silt (0,70,30); trace shell fragments; micaceous; hydrocarbon odor					9 17 21	38	100	176	0850	FID = 1052 ppm
35											Stopped drilling at a depth of 30 ft-bgs at 0850 on May 4, 2004. Abandoned borehole on May 4, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (10 bags).

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-4 was located approximately 6 ft east and 60 ft north of GP-16. Stepped out 15 ft east to drill PNL-04A to a depth of 17 ft-bgs and collected a single sample between a depth of 17 to 18.5 ft-bgs. Similar to PNL-04.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-5

SHEET 1 OF 1

START DRILL DATE 16 Mar 04
FINISH DRILL DATE 16 Mar 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	ARTIFICIAL FILL										Began drilling at 0806 on March 16, 2004. Rig chatter between 1 and 2 ft-bgs.
5	@3' - Sandy SILT (SM/ML): olive brown [2.5 Y 4/3]; slightly moist; silt with little fine-grained sand; trace gravel (subangular, 10mm diameter) (tr,20,80); micaceous					23 25 15	40	100	67	0811	FID = 2.6 ppm
						9 15 50		100	85	0815	FID = 293 ppm
10	IMPACTED FILL SILT (ML): black [2.5Y 2.5/1]; very moist; silt with trace fine-grained sand (0,tr,100); asphalt pieces; red brick fragments; faint hydrocarbon odor					15 50	60	73	0835	FID = 1330 ppm Downhole flux measurement Sample PNL-5A-11-DHF Sample PNL-5-10-EC @ 11' - liquids observed	
15	@ 12' - Gravelly SAND (GP): black [2.5Y 2.5/1]; wet; fine- to coarse-grained sand (angular to subangular); fine gravel (angular to subangular, <30mm diameter); some silt (10,70,20); asphalt fragments; hydrocarbon odor; oily sheen					4 10 12	22	30	8	0856	FID = 440 ppm Heavy rig chatter
	@ 15' - SAND (SP): black [2.5Y 2.5/1]; wet; fine- to medium-grained sand (angular to subangular); trace fine gravel; little silt (tr,95,5); grains of red brick; oily sheen					35 50		30	12	0904	Heavy rig chatter
	@ 16.5' - concrete fragments										
20	@ 18' - Gravelly SAND (GP): black [2.5Y 2.5/1]; wet; fine- to coarse-grained sand (angular to subangular); fine gravel (angular to subangular, <30mm diameter); some silt (10,70,20); asphalt, concrete, and wood fragments; hydrocarbon odor; oily sheen					15 20 50		100	-	1022	FID = 766 ppm Very hard drilling; no recovery
	WASTE @21' - CLAY (CL): dark greenish gray [GLEY 1 4/10Y]; wet; wood and rope fragments; high plasticity; moderately stiff; hydrocarbon odor; oily sheen; oil saturated					14 16 20 10 12	36	100	80	1032	FID = 3655 ppm Sample PNL-5A-21.5-EC Stopped drilling at a depth of 21 ft-bgs at 1040 on March 16, 2004. Sampled to a depth of 25.5 ft-bgs.
25	NATIVE Silty SAND (SM): very dark greenish gray [GLEY 1 3/10Y]; wet; fine-grained sand with silt (0,80,20); 10% shell fragments; hydrocarbon odor; micaceous					20 10 25 35	60	100	19	1040	Abandoned borehole on March 16, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (8 bags). FID = 3500 ppm Sample PNL-5A-25-EC FID = 1014 ppm
30											
35											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-5 was located approximately 100 ft E and 20 ft S of GP-13. Borehole PNL-5A stepped out 5 ft E of PNL-5 and drilled down to 11 ft above water for single flux measurement. Tagged top of native sand @ 24 ft; TD = 25.5ft. Abandoned PNL-5A.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

START DRILL DATE 5 May 04
FINISH DRILL DATE 5 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-6

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)										1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	ARTIFICIAL FILL SILT (ML): light yellowish brown [2.5Y 6/3]; dry; trace fine-grained sand (0,tr,100)									0743	Began drilling at 0743 on May 5, 2004.
5	@ 3.5' - Sandy SILT (SM/ML): dry; silt with some fine- to coarse-grained sand (subangular) (0,25,75); asphalt debris					29 50		60	7	0756	FID = 18.32
	@ 6' - Silty SAND (SM): very dark gray [5Y 3/1]; slightly moist; fine- to coarse-grained sand (angular to subangular); trace fine gravel (angular, <10mm diameter) (tr,70,30); shell fragments; concrete debris					5 5 8	13	10	15	0754	FID = 469 ppm
10	IMPACTED FILL @ 9' - Sandy SILT (SM): very dark greenish gray [GLEY 1 3/10Y]; moist; silt with fine- to coarse-grained sand (angular to subangular) (0,30,70); mildly strong hydrocarbon odor @ 10' - Silty SAND (SM): very dark gray [GLEY 1 3/N]; fine- to coarse-grained sand (angular to subangular); trace fine gravel (angular to subangular, <10mm diameter); silt (tr,80,20); hydrocarbon odor @ 10.5' - SAND (SP): greenish gray [GLEY 1 6/5GY]; predominately fine- to medium-grained sand with coarse-grained sand (angular); little silt (0,95,5); faint hydrocarbon odor; some hydrocarbon staining @ 12' - increase in silt; trace fine gravel (angular, <10mm diameter) (tr,85,15)					6 6 8	14	100	12	0815	Downhole flux measurement. Sample PNL-6-9.5-EC FID = 620 ppm
15	WASTE CLAY (CL): dark greenish gray [GLEY 1 4/10Y]; (0,0,100); trace asphalt; high plasticity; soft; strong hydrocarbon odor					4 8 9	17	100	18	0819	FID = 632 ppm
20	@ 21' - Sandy CLAY (SC): dark greenish gray [GLEY 4/10Y]; clay with fine-grained sand (0,40,60); very low plasticity; soft; strong hydrocarbon odor					3 3 4	7	100	199	0937	@ 15' - liquids observed Downhole flux measurement. Sample PNL-6-15-DHF Sample PNL-6-15.5-EC FID = 3157 ppm
						4 5		0	-	0844	
25	NATIVE CLAY (CL): dark greenish gray [GLEY 1 4/10Y]; high plasticity; moderately stiff; micaceous; faint hydrocarbon odor					4 4 4	8	100	175	0848	Sample PNL-6-21.5-EC FID = 4356 ppm
						3 7 8	13	100	52	0858	FID = 243 ppm
30											Stopped drilling at a depth of 25.5 ft-bgs at 0858 on May 5, 2004. Abandoned borehole on May 5, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (8 bags).
35											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-06 was located approximately 20 ft south and 35 ft east of GP-23.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

START DRILL DATE 3 May 04
FINISH DRILL DATE 3 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-7

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane		
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)	
5	ARTIFICIAL FILL Sandy SILT (ML): olive brown [2.5Y 4/4]; dry; silt with little fine-grained sand (0,10,90); plant fragments									1345	Began drilling at 1345 on May 3, 2004.	
10	IMPACTED FILL @ 6' - color change to black [GLEY 1 2.5/N]; trace plant fragment; strong hydrocarbon odor; hydrocarbon staining											
15	WASTE CLAY (CL): very dark greenish gray [GLEY 1 3/10Y]; high plasticity; moderately soft; strong hydrocarbon odor; oil saturated											
20	NATIVE Silty SAND (SM): very dark greenish gray [GLEY 1 3/10Y]; fine-grained sand with silt (0,70,30); very micaceous CLAY (CL): dark greenish gray [GLEY 1 4/10Y]; slightly moist; high plasticity; moderately stiff; micaceous; slight hydrocarbon odor @ 21' - some hydrocarbon staining											
25												
30												
35												

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-7 was located approximately 55 ft east and 7 ft south of P-4.

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BOREHOLE LOG

BORING

START DRILL DATE 5 May 04
FINISH DRILL DATE 5 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-8

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)										1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
5	ARTIFICIAL FILL SILT (ML): olive brown [2.5Y 4/4]; dry; fine- to medium-grained sand (0,5,96); trace plant fragments;									1244	Began drilling at 1244 on May 5, 2004.
10	@ 3' - color change to dark greenish brown [2.5Y 4/2]; becomes slightly moist; micaceous; no plasticity					7 7 9	16	10	5	1250	FID = 13.66 ppm
	@ 6' - Sandy SILT (SM/ML): very dark greenish gray [GLEYS 1 3/10Y]; moist; silt with some fine-grained sand (0,20,80); no plasticity; micaceous; no plasticity					3 4 5	9	70	3	-	Downhole flux measurement. Sample PNL-8-6-DHF FID = 243 ppm
	IMPACTED FILL @ 7.5' - SILT (ML): very dark greenish gray [GLEYS 1 3/10Y]; moist; no plasticity; strong hydrocarbon odor; staining					3 3 3	6	85	396	1316	Sample PNL-8-9.5-EC FID = 2115 ppm
	@ 9.5' - silt becomes saturated with oil										
	WASTE CLAY (CL): very dark greenish gray [GLEYS 1 3/10Y]; high plasticity; soft to moderately soft; strong hydrocarbon odor; saturated with black oil										
	@ 12' - trace fine-grained sand; trace reinforced hose										
15						1 2 2	4	100	393	1333	Downhole flux measurement. FID = 6453 ppm
20						2 2 2	4	100	473	1340	FID = 5768 ppm
25						1 2 2	4	100	401	1404	Downhole flux measurement. Sample PNL-8-18-DHF Sample PNL-8-18.5-EC FID = 5715 ppm
30						1 2 2	4	100	400	1409	FID = 5974 ppm
35						4 3 4	7	100	430	1428	Downhole flux measurement. Sample PNL-8-24.5-EC FID = 3521 ppm
40	NATIVE SILT (ML): dark greenish gray [GLEYS 1 3/10Y]; slightly moist; no plasticity; micaceous; strong hydrocarbon odor; staining										
	@ 29' - color change to very dark gray; hydrocarbon odor becomes faint; trace shell fragments										
45						6 9 21	30	100	536	1433	FID = 5516 ppm
50						14 16 21	37	100	12	1439	FID = 762 ppm
55											
60											
65											
70											
75											
80											
85											
90											
95											
100											
105											
110											
115											
120											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-8 was located approximately 20 ft north and 10 ft east of P-3.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

START DRILL DATE 4 May 04
FINISH DRILL DATE 4 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-9

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	
	ARTIFICIAL FILL SILT (ML): light olive brown [2.5Y 5/3]; dry; (0,0,100)									Began drilling at 0948 on May 4, 2004.
5	@ 3' - color change to dark greenish brown [2.5Y 4/2] silt mottled with light olive brown [2.5Y 5/6] silt; white calcified inclusions				9 8 11	19	10	10	0952	FID = 46.45 ppm Poor recovery
	@ 6' - color change to dark gray [5Y 4/1]; slightly moist; little fine-grained sand; trace fine to coarse gravel (angular) (tr,5,95); concrete debris				16 13 26	39	30	23	0957	FID = 47.25 ppm Core sampler plugged
10	@ 9' - Clayey SILT (CL/ML): greenish black [GLEYS 1 2.5/5GY]; slightly moist; trace fine- to coarse-grained sand (angular); trace fine gravel (angular, <5mm diameter); trace asphalt debris; low plasticity; soft; micaceous				4 6 6	12	100	17	1011	FID = 106 ppm Downhole flux measurement. Sample PNL-9-10-EC
	@ 12' - SILT (ML): greenish black [GLEYS 2.5/5GY]; slightly moist; trace fine gravel (angular, <5mm diameter) (tr,0,100); trace wood fragments; trace asphalt pieces; micaceous; very faint hydrocarbon odor				4 7 8	13	100	10	1015	FID = 92.28 ppm
15	WASTE CLAY (CL): very dark greenish gray [GLEYS 1 3/10Y]; (0,0,100); high plasticity; moderately stiff; strong hydrocarbon odor; oil saturated				2 3 4	7	100	613	1038	Downhole flux measurement. Sample PNL-9-15-DHF Sample PNL-9-15.5-EC FID = 5521 ppm
20	NATIVE SILT (ML): dark greenish gray [GLEYS 1 4/10Y]; slightly moist; (0,0,100); micaceous; no hydrocarbon odor				5 7 8	15	100	20	1042	Sample PNL-9-18.5-EC FID = 617 ppm
	CLAY (CL): dark greenish gray [GLEYS 1 4/10Y]; high plasticity; stiff; micaceous; no hydrocarbon odor; mottled with black clay				3 4 7	11	100	5	1059	Downhole flux measurement. Sample PNL-9-21B-DHF (field system blank) FID = 23.06 ppm
25	SILT (ML): dark greenish gray [GLEYS 1 3/10Y]; moist; no plasticity; micaceous; mottled with black fines									Stopped drilling at a depth of 22.5 ft-bgs at 1059 on May 4, 2004. Abandoned borehole at 1126 on May 4, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (8 bags).
30										
35										

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-9 was located approximately 50 ft east and 20 ft south of P-2.

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GS FORM:
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BOREHOLE LOG

BORING

PNL-10

SHEET 1 OF 1

START DRILL DATE 4 May 04
FINISH DRILL DATE 4 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)										1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	ARTIFICIAL FILL SILT (ML): light olive brown [2.5Y 5/3]; dry; little fine-grained sand; trace fine gravel (<5mm diameter) (tr,5,95); trace plant fragments									1435	Began drilling at 1435 on May 4, 2004.
5	@ 4' - CLAY (CL): light olive brown [5Y 6/2] clay mottled with light olive brown [5Y 5/3] clay; dry; hard; micaceous @ 6' - SILT (ML): olive brown [2.5Y 4/4] @ 7' seam - CLAY (CL): light olive brown [5Y 6/2] clay mottled with light olive brown [5Y 5/3] clay; dry; hard; micaceous Silty SAND (SM): light yellowish brown [2.5Y 6/3]; dry; fine-grained sand with silt; (0,80,20); micaceous					20 15 16	31	50	19	1441	FID = 73.89 ppm
	@ 9' - Silty CLAY (ML/CL): dark greenish brown [2.5Y 4/2]; slightly moist; low plasticity; friable; micaceous @ 10' - SILT (ML): olive yellow [2.5Y 6/6]; dry; silt with little fine-grained sand (0,5,95) @ 10.5' seam - Silty SAND (SM): very dark greenish brown [2.5Y 3/2]; slightly moist; medium-grained sand with silt (0,70,30) @ 12' - Clayey SILT (CL/ML): very dark brown [2.5y 3/2]; slightly moist; silt with some clay; low to medium plasticity; soft @ 12.5' - Sandy SILT (SM): black [2.5Y 2.5/1]; slightly moist; silt with fine- to medium-grained sand (0,35,65) @ 13.5' -Gravelly Silty SAND (SM): dark greenish gray [GLE Y 1 4/5GY]; wet; fine- to coarse-grained sand (angular to subangular); some fine gravel (subangular, <10mm diameter) (5,75,20);					44 16 11	17	100	2	1447	Sample PNL-10-6-EC FID = 28.24 ppm
10						5 5 5	10	-	0.8	1500	Sample PNL-10-9.5-EC FID = 0.96 ppm
						2 3 3	6	-	1.3	1505	Downhole flux measurement. Sample PNL-10-12-EC FID = 2.2 ppm
15						5 6 8	14	100	1.2	1519	@ 15' - liquids observed Downhole flux measurement. FID = 5.27 ppm
						8 9 17	26	100	1.7	1522	Sample PNL-10-18-EC FID = 6.08 ppm
20	NATIVE Silty SAND (SM): very dark greenish gray [GLE Y 1 3/10Y]; wet; fine-grained sand with silt (0,75,25); trace shell fragments; micaceous; no hydrocarbon odor @ 18.5' - increase in shell fragments to 5%										Stopped drilling at a depth of 19.5 ft-bgs at 1522 on May 4, 2004. Abandoned borehole on May 4, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (6 bags).
25											
30											
35											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-10 was located approximately 25 ft north and 65 ft east of GP-11.

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-10A

SHEET 1 OF 1

START DRILL DATE 4 May 04

ELEVATION DATA:

FINISH DRILL DATE 4 May 04

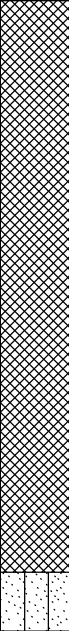
GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)		
	ARTIFICIAL FILL SILT (ML): light olive brown [2.5Y 5/3]; dry; trace fine- to coarse-grained sand (0,tr,100); no hydrocarbon odor									1605	Began drilling at 1605 on May 4, 2004.	
5												
10												
15	@ 13' - SILT (ML): light olive brown [2.5Y 5/3]; dry; trace fine- to medium-grained sand (0,tr,100); slightly micaceous @ 13.5' - Silty SAND (SM): very dark greenish gray [GLEYS 1 3/10Y]; fine-grained sand with silt (0,70,30); trace shell fragments; micaceous; hydrocarbon odor					4 6 8 10 10	13	60	4	1630 1642	Sample PNL-10A-13-DHF Downhole flux measurement. Downhole flux measurement. FID = 1201 ppm	
20	NATIVE Silty SAND (SM): very dark greenish gray [GLEYS 1 3/10Y]; fine-grained sand with silt (0,70,30); trace shell fragments; micaceous; no hydrocarbon odor											Stopped drilling at a depth of 16 ft-bgs at 1642 on May 4, 2004. Abandoned borehole on May 4, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (6 bags).
25												
30												
35												

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-10A was located approximately 45 ft north of PNL-10.

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GS FORM:
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BOREHOLE LOG





BORING

PNL-11

SHEET 1 OF 1

START DRILL DATE 4 May 04
FINISH DRILL DATE 4 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL SAND (SP): pale yellow [5Y 7/3]; dry; fine- to coarse-grained sand (angular to subrounded); little fine gravel (angular to subrounded, <10mm diameter) (5,90,5)									1125	Began drilling at 1125 on May 4, 2004.
5	NATIVE CLAY (CL): olive brown [2.5Y 4/3] mottled with brown [7.5YR 4/3]; slightly moist; clay with silt (0,0,100); high plasticity; moderately stiff; micaceous; no odor					8 10 11	21	60	22	1129	FID = 64.84 ppm
10	STYRENE IMPACTED: 9 TO 22.5 FT-BGS Silty SAND (SM): dark green gray [GLEYS 1 4/5G]; very moist; fine-grained sand with some silt (0,80,20); trace shell fragments; micaceous; very strong styrene odor @ 12' - becomes wet					4 4 5	9	100	3	-	Downhole flux measurement. FID = 3.4 ppm
15						8 10 13	23	100	356	1212	Downhole flux measurement. FID = 1098 ppm
20	SAND (SP): dark greenish gray [GLEYS 1 4/5G]; wet; fine-grained sand; trace silt; trace shell fragments; micaceous; styrene odor					8 10 11	21	100	17	1234	@ 12' - liquids observed Downhole flux measurement. Sample PNL-11-12-DHF Sample PNL-11-12.5-EC Observed yellow color residual from water in sand. FID = 65.9 ppm Sample PNL-11-15.5-EC FID = 27.95 ppm
						7 11 12	23	100	4	1244	FID = 23.89 ppm Heaving sand; lost most of sample
						8 9 14	23	5	6	1248	
						18 50		100	2.3	1302	Blow count mixed into heaving sand. Sample PNL-11-22-EC FID = 4.9 ppm Stopped drilling at a depth of 22.5 ft-bgs at 1302 on May 4, 2004. Abandoned borehole on May 4, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (5 bags).
25											
30											
35											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-11 was located approximately 50 ft southwest from center of Magnolia gate entrance.

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG




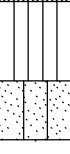
BORING

PNL-12

SHEET 1 OF 1

START DRILL DATE 16 Mar 04
FINISH DRILL DATE 16 Mar 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 6) Plasticity 2) Color 7) Density/Consistency 3) Moisture 8) Other (Mineral Content, 4) Grain Size Discoloration, Odor, etc.) 5) Percentage	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane			
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)		
5	ARTIFICIAL FILL Gravelly SAND (GP): very dark grayish brown [2.5Y 3/2]; fine- to coarse-grained sand (subangular to subrounded); fine gravel (subrounded) (10,80,10); strong hydrocarbon odor @ 2' - Clayey SILT (CL/ML): very dark greenish gray [GLEYS 1 3/10Y]; slightly moist; silt with clay; trace shells; metal fragments; high plasticity; moderately stiff; micaceous @ 3 to 4.5' - asphalt and glass fragments @ 6' - CLAY (CL): greenish black [GLEYS 1 2.5/10Y]; tar fragments; high plasticity; stiff; hydrocarbon odor; hydrocarbon staining @ 7' - asphalt fragments; hydrocarbon odor becomes strong					14 16 24 6 50	40	-		1142	Began drilling at 1135 on March 16, 2004.		
									60	120	1200	FID = 563 ppm Downhole flux measurement.	
									16	80	50	1210	FID = 1036 ppm
									13	100	12	1220	FID = 1437 ppm Downhole flux measurement.
									14	60	300	1224	FID = 4650 ppm
10	WASTE CLAY (CL): dark greenish gray [GLEYS 1 4/10Y]; high plasticity; soft @ 12 to 13' - interbedded with black [GLEYS 1 2.5/N]; tar-like granules; strong hydrocarbon odor					6 6 7							
						4 6 8							
						1 2 3	5	100	180	1249	FID = 3720 ppm Downhole flux measurement. Sample PNL-12-15-DHF Sample PNL-12-16-EC		
15	@ 15' - color change to very dark greenish gray [GLEYS 1 3/10Y] mottled with oil; high plasticity; soft to moderately stiff; strong hydrocarbon odor					4 6 8	14	100	70	1253	FID = 1550 ppm Sample PNL-12-18-EC		
						10 20 35	55	100	2.2	1312	@ 21' - liquids observed FID = 520 ppm Downhole flux measurement. Sample PNL-12-21-DHF Stopped drilling at a depth of 21 ft-bgs at 1312 on March 16, 2004. Sampled to a depth of 22.5 ft-bgs. Abandoned borehole on March 16, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (10 bags).		
20	NATIVE CLAY (CL): dark greenish gray [GLEYS 1 4/10Y]; high plasticity; moderately stiff to stiff; hydrocarbon odor SILT (ML): greenish black [GLEYS 1 2.5/N]; moist; 5% shell fragments; medium to high plasticity; soft hydrocarbon odor Silty SAND (SM): dark greenish gray [GLEYS 1 4/10Y]; fine-grained sand; little silt (0,90,10); 5% shell fragments; micaceous; no hydrocarbon odor												
25													
30													
35													

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY
NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-12 was located approximately 55 ft north of GP-12.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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BOREHOLE LOG

BORING

PNL-13

SHEET 1 OF 1

START DRILL DATE 15 Mar 04
FINISH DRILL DATE 15 Mar 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
5	ARTIFICIAL FILL Sandy SILT (SM): olive brown [2.5Y 4/3]; dry; silt with little fine-grained sand; trace fine gravel (tr,10,90); trace plant fragments					5	28	100		1121	Began drilling at 1116 on March 15, 2004.
					10						
					18						
	@ 3' - Silty CLAY (ML/CL): dark grayish brown [GLEY 1 4/2]; slightly moist; clay with some silt; trace plant fragments; low plasticity; soft to moderately stiff					4	25	100	1.7	1128	FID = 0.78 ppm
					10						
10	WASTE Sandy CLAY (SC): black [GLEY 1 2.5/N]; moist; clay with fine-grained sand (0,30,70); low plasticity; soft; strong hydrocarbon odor; hydrocarbon staining					3	9	90	327	1144	FID = 3019 ppm Downhole flux measurement.
					3						
					6						
	@ 9' - CLAY (CL): black [GLEY 1 2.5/N]; moist; trace fine gravel; strong hydrocarbon odor; hydrocarbon staining					4	11	100	229	1148	FID = 2244 ppm Sample PNL-13-9.5-EC
					5						
15	@ 12' - Sandy CLAY (SC): black [GLEY 1 2.5/N]; moist; clay with little fine- to medium-grained sand; trace fine gravel (tr,25,75); high plasticity; soft; hydrocarbon staining @ 13' - CLAY (CL): black [GLEY 1 2.5/N]; moist; trace fine gravel; strong hydrocarbon odor; hydrocarbon staining					3	8	100	160	1206	FID = 500 ppm Downhole flux measurement. Sample PNL-13-12-DHF Sample PNL-13-12.0-EC
					4						
					4						
					1	5	-	30	1211		
					2						
20						1	4	100	90	1229	FID = 1200 ppm Downhole flux measurement. Sample PNL-13-15.0-EC
					2						
					2						
					6	28	-	47	1235	FID = 460 ppm	
					13						
25	NATIVE CLAY (CL): black [GLEY 1 2.5/N] mottled with dark greenish gray [GLEY 1 4/10GY]; moist; trace fine gravel; stiff; strong hydrocarbon odor; hydrocarbon staining					15					
					4	28	60	5.9	1304	FID = 41.57 ppm Downhole flux measurement. Stopped drilling at a depth of 24 ft-bgs at 1304 on March 15, 2004. Abandoned borehole on March 15, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (11 bags).	
					13						
30	Silty SAND (SM): dark gray [GLEY 1 4/N]; moist; fine-grained sand with silt (0,85,15); 5% shell fragments; micaceous; no hydrocarbon odor					15					
35											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-13 was located approximately 5 ft west and 35 ft north of P-8.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GEO SYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-14

SHEET 1 OF 1

START DRILL DATE 3 May 04
FINISH DRILL DATE 3 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)										1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
5 											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-14 was located approximately 35 ft north and 20 ft west of P-5.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GeoSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-15

SHEET 1 OF 1

START DRILL DATE 15 Mar 04
FINISH DRILL DATE 15 Mar 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 6) Plasticity 2) Color 7) Density/Consistency 3) Moisture 8) Other (Mineral Content, 4) Grain Size Discoloration, Odor, etc.) 5) Percentage	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	ARTIFICIAL FILL Gravelly SILT (ML): olive brown [2.5Y 4/3]; dry; silt with little fine-grained sand; fine to medium gravel (angular) (10,25,65); concrete piece; no hydrocarbon odor									Began drilling at 1441 on March 15, 2004.	
5	@ 4' - Silty SAND (SM): dark gray [2.5Y 4/1]; slightly moist; fine- to medium-grained sand; micaceous; faint hydrocarbon odor					24 20 24	44	60	3.3	1446	FID = 19.6 ppm
	@ 6' - Sandy SILT (SM/ML): greenish black [GLEY 1 2.5/10Y]; silt with fine- to medium-grained sand; trace fine gravel (subangular) (0,40,60); asphalt pieces; faint hydrocarbon odor					13 50		40	3.1	1510	FID = 11.6 ppm
10	@ 9 to 10' - asphalt core					28 25 50		60	5.7	1515	FID = 282 ppm Downhole flux measurement.
	@ 12' - concrete piece					50		5	21	1530	FID = 189 ppm Downhole flux measurement. Sampler plugged by a piece of concrete. Sample PNL-15-12-DHF
15	Clayey GRAVEL (GC): very dark greenish gray [GLEY 1 3/10Y]; wet; fine- to coarse-grained sand (subangular); fine gravel (subangular) (10,60,30); medium plasticity; soft; no hydrocarbon odor					7 14 15	29	30	2.1	1558	@ 15' - liquids observed FID = 645 ppm Downhole flux measurement. Stopped drilling at a depth of 15 ft-bgs at 1558 on March 15 2004. Sampled to a depth of 16.5 ft-bgs. Abandoned borehole on March 15, 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (7 bags).
20											
25											
30											
35											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Borehole PNL-15 was located approximately 10 ft north and 90 ft east of GP-21.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

PID/FID CALIBRATION LOGS

Instrument Calibration Log

Pilot Study No. 3

Ascon Landfill Site

Instrument Information			
Instrument Name: <i>Mini Rac 2000</i>	Manufacturer: <i>RAE Systems, Inc</i>		
Serial Number:	Last Service Date: <i>3/5/04</i>		
Parameters:	Calibration Gas: <i>Isobutylene (100 ppm)</i>		
Calibration Procedure:			
Daily Calibration Results			
Date: <i>3/15/04</i>	Calibration Result:	Name:	Signature:
Notes:	<i>100 ppm</i>	<i>L. Dage</i>	<i>Liam Dage</i>
Date: <i>3/16/04</i>	Calibration Result:	Name:	Signature:
Notes:	<i>103 ppm</i>	<i>L. Dage</i>	<i>Liam Dage</i>
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			

Instrument Calibration Log

Pilot Study No. 3

Ascon Landfill Site

Instrument Information			
Instrument Name: Foxboro TVA-1000		Manufacturer: Foxboro	
Serial Number: R4240		Last Service Date: 3/11/04	
Parameters:		Calibration Gas: Isobutylene Methane	
Calibration Procedure:			
Daily Calibration Results			
Date: 3/15/04	Calibration Result:	Name:	Signature:
Notes:	PID = 102.2 ppm FID = 99.8 ppm	L. Dage	Lammun Dage
Date: 3/16/04	Calibration Result:	Name:	Signature:
Notes:	PID = 101 ppm FID = 100 ppm	L. Dage	Lammun Dage
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			

Instrument Calibration Log

Pilot Study No. 3
Ascon Landfill Site

Instrument Information			
Instrument Name:	Mini RAE 2000	Manufacturer:	Mini RAE
Serial Number:	R5603	Last Service Date:	4/28/04
Parameters:	total VOCs	Calibration Gas:	100 ppm Isobutylene
Calibration Procedure:			
Daily Calibration Results			
Date:	5/3/04	Calibration Result:	102 ppm
Notes:	0749 5/4/04	Name:	L. Dage
		Signature:	Laurie Dage
Date:	5/3/04	Calibration Result:	101 ppm
Notes:	0735	Name:	L. Dage
		Signature:	Laurie Dage
Date:	5/5/04	Calibration Result:	101 ppm
Notes:	0725	Name:	L. Dage
		Signature:	Laurie Dage
Date:		Calibration Result:	
Notes:		Name:	
		Signature:	
Date:		Calibration Result:	
Notes:		Name:	
		Signature:	

Instrument Calibration Log

Pilot Study No. 3
Ascon Landfill Site

Instrument Information			
Instrument Name: TVA-1000	Manufacturer: Thermo Environmental Instruments		
Serial Number: 74062	Last Service Date: 4/29/04		
Parameters: VOCs	Calibration Gas: 100ppm Isobutylene		
Calibration Procedure: Lot #: DAD-248-1			
Daily Calibration Results			
Date: 5/3/04 Notes: 0730	Calibration Result: PID = 101 ppm FID = 99.19 ppm	Name: 5/3/04 L. Dage	Signature: Lamm Dage
Date: 5/4/04 Notes: 0725 Filled w/ Hydrogen	Calibration Result: 102 ppm = PID 102 ppm = FID	Name: L. Dage	Signature: Lamm Dage
Date: 5/5/04 Notes: 0720 Filled w/ Hydrogen	Calibration Result: PID = 101 ppm FID = 99.89 ppm	Name: L. Dage	Signature: Lamm Dage
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			

M E M O R A N D U M

TO: Tamara Zeier, P.E, Project Navigator, Ltd.
Ken Fredianelli, Project Navigator, Ltd.

FROM: Mike Reardon, P.E., GeoSyntec Consultants
Mark Grivetti, R.G., C.E.G., GeoSyntec Consultants

DATE: 17 June 2004

SUBJECT: **GeoSyntec Field Memorandum**
Pilot Study No. 3 – Phase II Bucket Auger Drilling Program
Ascon Landfill Site
Huntington Beach, California

This memorandum provides a summary of field activities conducted by GeoSyntec Consultants (GeoSyntec) for the Pilot Study No. 3, Phase II bucket auger drilling program at the Ascon Landfill Site (Site) located in Huntington Beach, California. This memorandum was prepared for Project Navigator, Ltd. (PNL). Included with this memorandum are tabular summaries of borehole information, air monitoring data, GINT[®] borehole logs, and copies of field calibration logs.

The scope of work for Phase II, as described in the workplan, “Pilot Study No. 3, Waste Characterization, Emissions, and Excavation Testing Program” [PNL and GeoSyntec, 2004], included the drilling of seven bucket auger soil borings, collection of soil and waste samples for laboratory testing, and vapor samples for odor and chemical testing using the surface flux chamber testing technique. Specific field activities performed by GeoSyntec included lithologic logging of boreholes from drill cuttings, field screening of soil and waste samples from drill cuttings and stockpiles for compliance with South Coast Air Quality Management District (SCAQMD) permit requirements using a photoionization detector (PID) and flame ionization detector (FID), and conducting hourly perimeter air monitoring.

Phase II fieldwork was conducted from 10 May 2004 through 13 May 2004. Bucket auger drilling was performed by Central Reclamation under subcontract to Recon Remedial Construction Services, all under subcontract to PNL. Chuck Schmidt, under subcontract to PNL, performed surface flux tests of waste materials for mitigation measure quantification. A number of participating analytical laboratories under subcontract to GeoSyntec conducted the chemical analyses for soil and vapor samples, which included Del Mar Analytical laboratories for soil and waste testing, Odor Science and Engineering for odor testing of vapor samples, and Columbia Analytical for chemical testing of vapor samples.

Seven boreholes (PNL-BA01, PNL-BA03, PNL-BA06, PNL-BA07, PNL-BA08, PNL-BA11, and PNL-BA13) were drilled adjacent to selected Phase I borehole locations by a track mounted IMT AF6 rig, using a nominal 30-inch diameter bucket auger. The boreholes were advanced to depths ranging from 8.5 ft-bgs to 21 ft-bgs into the targeted waste material. Drilling refusal was encountered in PNL-BA03, PNL-BA06, PNL-BA07, PNL-BA08, and PNL-BA13 due to subsurface concrete. Refusal was remedied by utilizing a backhoe to remove the concrete debris. A single composite sample was collected from the bucket auger cutting stockpile at each borehole location. Drill cuttings were also used for lithologic logging and headspace screening using an FID and PID. FID and PID headspace readings are summarized in Table 1.

Waste material from each drilling location was also collected in a 55-gallon drum for use in surface flux chamber testing. The boreholes were then abandoned by backfilling only the stockpiled material having PID surface stockpile readings of less than 50 ppm. A GeoSyntec field geologist observed and documented drilling activities. Between each borehole, the bucket auger equipment was decontaminated using a pressure washer. Table 2 presents a summary of bucket auger borehole information. GINT[®] borehole logs are provided as an attachment. Table 3 provides a summary of samples collected for laboratory testing from each borehole. Analytical testing of samples was requested per the workplan.

Stockpile material was tested with a FID and a PID for compliance with SCAQMD permit conditions. Table 4 includes a summary of stockpile monitoring data.

Stockpiled material from boreholes PNL-BA08 and PNL-BA13 exhibited PID readings greater than 50 ppm and was temporarily covered with visqueen. At the request of PNL, a composite waste sample from PNL-BA08 and PNL-BA13 was collected for laboratory analysis and waste profiling purposes after the completion of Phase IV.

Air monitoring instruments, PIDs, FIDs, and dust monitors were calibrated daily. Equipment calibration sheets are included as an attachment. Perimeter air monitoring was performed in accordance with activities described in Appendix A of the workplan. Perimeter air monitoring consisted of hourly PID, dust, and odor measurements at six designated perimeter air monitoring locations. Hourly measurements of wind speed and direction were also recorded on logs from the on-site wind station. Air monitoring activities were conducted by a GeoSyntec field engineer. The perimeter air monitoring results for activities during the four days of Phase II fieldwork are presented in Tables 5A through 5D. No significant readings above background were measured at site perimeter air monitoring locations during Phase II drilling.

Using the waste material collected from each bucket auger location, flux chamber testing was performed under an uncontrolled and a controlled condition utilizing several emission control materials. Flux chamber testing data was collected from each test using a PID and FID. In addition, vapor samples were collected using SUMMA canisters and Tedlar bags for laboratory analysis. Laboratory testing of vapor samples included VOCs, total petroleum hydrocarbons, and odor. FID and PID flux chamber test results were provided to PNL by Chuck Schmidt. Table 3 provides a summary of flux samples collected for laboratory testing. All flux testing equipment for the mitigation measurement quantification was provided and operated by Chuck Schmidt.

Laboratory data were provided to PNL in electronic format. Electronic data deliverables (EDDs) for vapor analyses from Columbia Analytical (VOCs and TPH) were provided by GeoSyntec once received from the laboratory. All EDDs for soil and waste testing results from Del Mar Analytical can be obtained through the web based portal set up for the project. Odor data were provided from the laboratory to GeoSyntec and were transmitted to PNL (Steve Howe) as received.

GeoSyntec Field Memorandum – Phase II

17 June 2004

Page 4

If you have any questions regarding this information please contact Mike Reardon at (714) 969-0800 or Mark Grivetti at (805) 897-3800. GeoSyntec appreciates the opportunity to provide PNL with technical services for the Ascon Project.

* * * * *

TABLES

TABLE 1
SOIL AND WASTE HEADSPACE SCREENING RESULTS
PHASE II BUCKET AUGER DRILLING
ASCON LANDFILL SITE

Borehole ID	Date	Time	Depth of Sample (ft-bgs)	PID Reading (ppm)	FID Reading (ppm)
PNL-BA01	5/10/2004	14:55	5	719	799
		15:06	9	290	113
		15:12	11	372	408
		15:45	13	1400	700
		15:53	17	350	150
PNL-BA03	5/12/2004	11:21	2	12.7	1.8
		11:29	4	10.8	8
		11:31	5	62.2	55.1
		11:55	8.5	11	140
		11:59	10	10	150
		12:34	13	11.2	285
		12:47	15	8.5	330
		12:50	16	8.6	302
		12:59	17	15.5	350
		13:08	18	14.5	65
		13:18	19.5	1700	1700
		13:35	21	300	140
PNL-BA06	5/13/2004	7:56	4	21.1	12.2
		8:04	7.5	65.6	310
		8:11	11	27	209
		8:29	13.5	138	324
		8:42	17	420	680
PNL-BA07	5/11/2004	13:59	3	30.33	12.59
		14:06	6	16.11	102
		14:12	8	149	332
		14:16	11	172	363
		15:11	13	250	150
		15:27	14.5	240	320
PNL-BA08	5/11/2004	9:55	4	13.48	0.91
		10:05	6	15.34	3.36
		10:48	10	360	1500
		10:55	13	400	200
		11:10	15	380	200
		11:15	17	200	150
PNL-BA11	5/12/2004	9:26	4.5	28.77	15.43
		9:29	6	13.3	6.5
		9:34	8	10.4	2.1
		9:38	10.5	82.8	70
		9:44	11.5	1200	250
PNL-BA13	5/12/2004	15:52	2	15	3.5
		16:19	5	190	106
		16:19	7	300	170
		16:21	8.5	900	800

Notes:

Sample depths are approximate.

Sample headspace screened using plastic bag and PID and FID air monitoring instruments

ft-bgs: feet below ground surface

ppm: parts per million concentration

TABLE 2
SUMMARY OF BUCKET AUGER BOREHOLE INFORMATION
PHASE II DRILLING
ASCON LANDFILL SITE

Borehole Location	Date Drilled	Drilling Method	Total Depth (ft-bgs)	Top of Waste (ft-bgs)	Borehole Abandoned
PNL-BA01	5/10/2004	30" dia. Bucket Auger	17	6	5/10/2004
PNL-BA03	5/12/2004	30" dia. Bucket Auger	21	18	5/12/2004
PNL-BA06	5/13/2004	30" dia. Bucket Auger	18	15	5/13/2004
PNL-BA07	5/11/2004	30" dia. Bucket Auger	14.5	10	5/11/2004
PNL-BA08	5/11/2004	30" dia. Bucket Auger	17	11	5/11/2004
PNL-BA11	5/12/2004	30" dia. Bucket Auger	11.5	10	5/12/2004
PNL-BA13	5/12/2004	30" dia. Bucket Auger	8.5	6.5	5/12/2004

Note: ft-bgs is feet below ground surface.

bucket auger drilling did not advance to the native alluvium.

TABLE 3

**SAMPLE COLLECTION SUMMARY
PHASE II BUCKET AUGER DRILLING
ASCON LANDFILL SITE**

Borehole ID	Date Drilled	Composite Stockpile Samples [Del Mar Analytical]	Flux Chamber Odor Samples [Odor Science & Engineering, Inc]	Flux Chamber Vapor Samples [Columbia Analytical Services]
PNL-BA01	5/10/04	PNL-BA01-Stockpile	PNLBA1-17-SFU PNLBA1-17-SFC1	PNLBA1-17-SFU PNLBA1-17-SFC1
PNL-BA03	5/12/04	PNL-BA03-Stockpile	PNLBA3-X-SFU PNLBA3-X-SFC	PNLBA3-X-SFU PNLBA3-X-SFU1 PNLBA3-X-SFC
PNL-BA06	5/13/04	PNL-BA06-Stockpile	PNLBA06-X-SFU PNLBA06-X-SFC	PNLBA06-X-SFU PNLBA06-X-SFC
PNL-BA07	5/11/04	PNL-BA07-Stockpile	PNLBA07-X-SFU PNLBA07-X-SFC	PNLBA07-X-SFU PNLBA07-X-SFC
PNL-BA08	5/11/04	PNL-BA08-Stockpile	PNLBA8-17-SFU PNLBA8-17-SFC1 PNLBA8-17-SFC2 PNLBA8-17-SFC3 PNLBA8-17-SFC4 PNLBA8-17-SFC5 PNLBA8-17-SFC6 PNLBA8-17-SFC7	PNLBA8-17-SFU PNLBA8-17-SFC1 PNLBA8-17-SFC2 PNLBA8-17-SFC3 PNLBA8-17-SFC4 PNLBA8-17-SFC5 PNLBA8-17-SFC6 PNLBA8-17-SFC7
PNL-BA11	5/12/04	PNL-BA11-Stockpile	PNLBA11-X-SFU PNLBA11-X-SFC	PNLBA11-X-SFU PNLBA11-X-SFC
PNL-BA13	5/12/04	PNL-BA13-Stockpile	PNLBA13-X-SFU PNLBA13-X-SFC	PNLBA13-X-SFU PNLBA13-X-SFC
Blank Samples			PNLBA3-100-SFC	PNL-100-100-SF

Note:

A composite waste sample from borehole PNL-BA08 and PNL-BA13, with PID readings >50 ppm, was collected for laboratory analysis on 05/26/2004 at the request of PNL.

TABLE 4
SUMMARY OF SOIL STOCKPILE MONITORING
PHASE II BUCKET AUGER DRILLING
ASCEN LANDFILL SITE

GeoSyntec Consultants

Borehole ID	Date	Time	PID Reading (ppm)	FID Reading (ppm)	Stockpile Condition
PNL-BA01	5/10/2004	14:58	15.49	5.63	uncovered
		15:13	5	1.56	uncovered
		15:28	35.55	9.06	uncovered
		15:43	12	2	uncovered
		15:58	13	3	uncovered
		16:13	8.75	1.93	uncovered
PNL-BA03	5/12/2004	11:24	1.5	1.3	uncovered
		11:34	4.95	11.86	uncovered
		11:47	1.8	0.5	uncovered
		11:57	3.1	12.8	uncovered
		12:00	2.8	8.9	uncovered
		12:40	1.7	4.5	uncovered
		12:50	0.8	4	uncovered
		13:00	1.5	0.7	uncovered
PNL-BA06	5/13/2004	13:10	2.2	4.4	uncovered
		8:25	21.5	2.5	uncovered
		8:35	13.1	1.2	uncovered
		8:45	13.5	6.6	uncovered
PNL-BA07	5/11/2004	9:00	8.1	1.5	uncovered
		14:03	8.31	2.45	uncovered
		14:18	17.75	22.83	uncovered
		14:33	15.99	12.02	uncovered
		14:49	3	1.4	uncovered
		15:09	3	1.5	uncovered
		15:15	8.79	3.2	uncovered
		15:28	8.88	6.43	uncovered
PNL-BA08	5/11/2004	10:00	7.38	0.45	uncovered
		10:15	5.26	0.51	uncovered
		10:50	26	17	uncovered
		11:05	70	36	covered
PNL-BA11	5/12/2004	9:31	2.8	1.6	uncovered
		9:37	4.8	NR	uncovered
		9:41	4.89	0.82	uncovered
		9:47	22.44	3.89	uncovered
PNL-BA13	5/12/2004	16:07	3.5	0.5	uncovered
		16:18	9.1	3	uncovered
		16:23	203	68.4	covered

Notes:

ppm: parts per million concentration

NR: not recorded

TABLE 5A
PERIMETER AIR MONITORING DATA SUMMARY
10 MAY 2004
PHASE II BUCKET AUGER DRILLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/10/2004	10:04 AM	14.5	160	0	0.0	0.052
AA-01	5/10/2004	10:57 AM	16.0	155	0	0.0	0.280
AA-01	5/10/2004	2:49 PM	10.0	183	0	0.0	0.045
AA-01	5/10/2004	3:44 PM	10.6	193	0	0.0	0.076
AA-02	5/10/2004	10:07 AM	14.5	160	0	0.0	0.057
AA-02	5/10/2004	11:00 AM	16.0	155	0	0.0	0.056
AA-02	5/10/2004	2:50 PM	10.0	183	0	0.0	0.052
AA-02	5/10/2004	3:47 PM	10.6	193	0	0.0	0.066
AA-03	5/10/2004	10:10 AM	14.5	160	0	0.0	0.061
AA-03	5/10/2004	11:04 AM	16.0	155	0	0.0	0.072
AA-03	5/10/2004	2:52 PM	10.0	183	0	0.0	0.044
AA-03	5/10/2004	3:50 PM	10.6	193	0	0.0	0.063
AA-04	5/10/2004	9:55 AM	14.5	160	0	0.0	0.051
AA-04	5/10/2004	10:51 AM	16.0	155	0	0.0	0.071
AA-04	5/10/2004	2:37 PM	10.0	183	0	0.0	0.044
AA-04	5/10/2004	3:38 PM	10.6	193	0	0.0	0.040
AA-05	5/10/2004	9:51 AM	14.5	160	0	0.0	0.045
AA-05	5/10/2004	10:45 AM	16.0	155	0	0.0	0.066
AA-05	5/10/2004	2:37 PM	10.0	183	0	0.0	0.041
AA-05	5/10/2004	3:35 PM	10.6	193	0	0.0	0.032
AA-07	5/10/2004	9:44 AM	14.5	160	0	0.0	0.054
AA-07	5/10/2004	10:43 AM	16.0	155	0	0.0	0.046
AA-07	5/10/2004	2:31 PM	10.0	183	0	0.0	0.044
AA-07	5/10/2004	3:32 PM	10.6	193	0	0.0	0.036

TABLE 5B
PERIMETER AIR MONITORING DATA SUMMARY
11 MAY 2004
PHASE II BUCKET AUGER DRILLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/11/2004	9:30 AM	4.9	185	0	0.0	0.044
AA-01	5/11/2004	10:35 AM	7.1	204	0	0.0	0.041
AA-01	5/11/2004	11:45 AM	6.9	180	0	0.0	0.045
AA-01	5/11/2004	1:49 PM	8.4	222	0	0.0	0.036
AA-01	5/11/2004	2:51 PM	7.8	190	0	0.0	0.045
AA-02	5/11/2004	9:34 AM	4.9	185	0	0.0	0.065
AA-02	5/11/2004	10:37 AM	7.1	204	0	0.0	0.035
AA-02	5/11/2004	11:47 AM	6.9	180	0	0.0	0.050
AA-02	5/11/2004	1:51 PM	8.4	222	0	0.0	0.051
AA-02	5/11/2004	2:54 PM	7.8	190	0	0.0	0.050
AA-03	5/11/2004	9:44 AM	4.9	185	0	0.0	0.045
AA-03	5/11/2004	10:39 AM	7.1	204	0	0.0	0.044
AA-03	5/11/2004	11:50 AM	6.9	180	0	0.0	0.046
AA-03	5/11/2004	1:53 PM	8.4	222	0	0.0	0.056
AA-03	5/11/2004	2:57 PM	7.8	190	0	0.0	0.046
AA-04	5/11/2004	9:26 AM	4.9	185	0	0.0	0.040
AA-04	5/11/2004	10:32 AM	7.1	204	0	0.0	0.048
AA-04	5/11/2004	11:43 AM	6.9	180	0	0.0	0.065
AA-04	5/11/2004	1:43 PM	8.4	222	0	0.0	0.061
AA-04	5/11/2004	2:46 PM	7.8	190	0	0.0	0.051
AA-05	5/11/2004	9:16 AM	4.9	185	0	0.0	0.042
AA-05	5/11/2004	10:30 AM	7.1	204	0	0.0	0.041
AA-05	5/11/2004	11:40 AM	6.9	180	0	0.0	0.040
AA-05	5/11/2004	1:41 PM	8.4	222	0	0.0	0.055
AA-05	5/11/2004	2:41 PM	7.8	190	0	0.0	0.061
AA-07	5/11/2004	9:13 AM	4.9	185	0	0.0	0.047
AA-07	5/11/2004	10:26 AM	7.1	204	0	0.0	0.044
AA-07	5/11/2004	11:36 AM	6.9	180	0	0.0	0.038
AA-07	5/11/2004	1:38 PM	8.4	222	0	0.0	0.045
AA-07	5/11/2004	2:39 PM	7.8	190	0	0.0	0.055

TABLE 5C
PERIMETER AIR MONITORING DATA SUMMARY
12 MAY 2004
PHASE II BUCKET AUGER DRILLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/12/2004	9:17 AM	9.2	200	0	0.0	0.038
AA-01	5/12/2004	10:15 AM	7.8	159	0	0.0	0.043
AA-01	5/12/2004	11:20 AM	8.2	199	0	0.0	0.051
AA-01	5/12/2004	12:23 PM	7.0	201	0	0.0	0.052
AA-01	5/12/2004	1:30 PM	10.0	230	0	0.0	0.030
AA-01	5/12/2004	3:53 PM	11.3	259	0	0.0	0.072
AA-02	5/12/2004	9:20 AM	9.2	200	0	0.0	0.028
AA-02	5/12/2004	10:17 AM	7.8	159	0	0.0	0.027
AA-02	5/12/2004	11:22 AM	8.2	199	0	0.0	0.033
AA-02	5/12/2004	12:25 PM	7.0	205	0	0.0	0.048
AA-02	5/12/2004	1:32 PM	10.0	230	0	0.0	0.044
AA-02	5/12/2004	3:56 PM	11.3	259	0	0.0	0.075
AA-03	5/12/2004	9:24 AM	9.2	200	0	0.0	0.044
AA-03	5/12/2004	10:19 AM	7.8	159	0	0.0	0.032
AA-03	5/12/2004	11:24 AM	8.2	199	0	0.0	0.042
AA-03	5/12/2004	12:28 PM	7.0	201	0	0.0	0.051
AA-03	5/12/2004	1:35 PM	10.0	230	0	0.0	0.049
AA-03	5/12/2004	3:59 PM	11.3	259	0	0.0	0.083
AA-04	5/12/2004	9:07 AM	9.2	200	0	0.0	0.036
AA-04	5/12/2004	10:06 AM	7.8	159	0	0.0	0.065
AA-04	5/12/2004	11:12 AM	8.2	199	0	0.0	0.043
AA-04	5/12/2004	12:13 PM	7.0	201	0	0.0	0.055
AA-04	5/12/2004	1:24 PM	10.0	230	0	0.0	0.045
AA-04	5/12/2004	3:40 PM	11.3	259	0	0.0	0.041
AA-05	5/12/2004	9:03 AM	9.2	200	0	0.0	0.044
AA-05	5/12/2004	10:03 AM	7.8	159	0	0.0	0.031
AA-05	5/12/2004	11:09 AM	8.2	199	0	0.0	0.062
AA-05	5/12/2004	12:09 PM	7.0	201	0	0.0	0.052
AA-05	5/12/2004	1:21 PM	10.0	230	0	0.0	0.050
AA-05	5/12/2004	3:35 PM	11.3	259	0	0.0	0.038
AA-07	5/12/2004	8:59 AM	9.2	200	0	0.0	0.029
AA-07	5/12/2004	10:00 AM	7.8	159	0	0.0	0.029
AA-07	5/12/2004	11:07 AM	8.2	199	0	0.0	0.046
AA-07	5/12/2004	12:06 PM	7.0	201	0	0.0	0.031
AA-07	5/12/2004	1:17 PM	10.0	230	0	0.0	0.029
AA-07	5/12/2004	3:32 PM	11.3	259	0	0.0	0.053

TABLE 5D
PERIMETER AIR MONITORING DATA SUMMARY
13 MAY 2004
PHASE II BUCKET AUGER DRILLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m³)
AA-01	5/13/2004	8:16 AM	4.9	140	0	0.0	0.057
AA-01	5/13/2004	9:15 AM	9.4	194	0	0.0	0.048
AA-02	5/13/2004	8:20 AM	4.9	140	0	0.0	0.057
AA-02	5/13/2004	9:21 AM	9.4	194	0	0.0	0.053
AA-03	5/13/2004	8:23 AM	4.9	140	0	0.0	0.058
AA-03	5/13/2004	9:24 AM	9.4	194	0	0.0	0.052
AA-04	5/13/2004	8:09 AM	4.9	140	0	0.0	0.055
AA-04	5/13/2004	9:09 AM	9.4	194	0	0.0	0.054
AA-05	5/13/2004	8:06 AM	4.9	140	0	0.0	0.056
AA-05	5/13/2004	9:07 AM	9.4	194	0	0.0	0.045
AA-07	5/13/2004	8:02 AM	4.9	140	0	0.0	0.055
AA-07	5/13/2004	9:05 AM	9.4	194	0	0.0	0.038

BORING LOGS



GeoSYNTEC CONSULTANTS

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PROJECT Ascon

PROJECT LOCATION Huntington Beach, CA

PROJECT NUMBER SB0202

KEY SHEET - CLASSIFICATIONS AND SYMBOLS
















GS FORM:
KEY/SYMBOLS 01/04

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N VALUES *

	N VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)		N VALUE * (BLOWS/FT)	RELATIVE DENSITY
FINE GRAINED SOILS	0 - 2	VERY SOFT	<0.25	COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	3 - 4	SOFT	0.25 - 0.50		5 - 10	LOOSE
	5 - 8	FIRM	0.50 - 1.00		11 - 30	MEDIUM DENSE
	9 - 15	STIFF	1.00 - 2.00		31 - 50	DENSE
	16 - 30	VERY STIFF	2.00 - 4.00		>50	VERY DENSE
	31 - 50	HARD	>4.00			
	>50	VERY HARD				

* ASTM D 1586; NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1.4 IN. I.D. SAMPLER ONE FOOT.

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

MAJOR DIVISIONS			SYMBOLS		DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		LITTLE OR NO FINES		GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO.4 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			LITTLE OR NO FINES		SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES		SM	SILTY SANDS, SAND-SILT MIXTURES	
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES	
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	MORE THAN 50% OF MATERIAL FINER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT
					CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
					OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT	

NOTE: DUAL SYMBOLS USED FOR BORDERLINE CLASSIFICATIONS

PARTICLE SIZE IDENTIFICATION

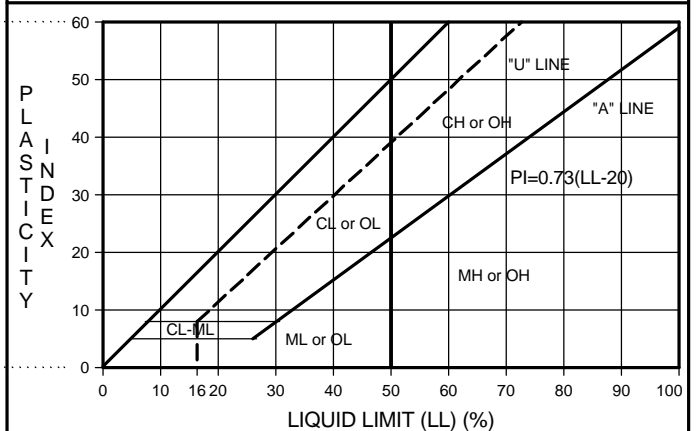
USCS (SOILS ONLY) *		SEDIMENTARY (ROCK ONLY)	
BOULDER	>300 mm	BOULDER	>256 mm
COBBLE	75 - 300 mm	COBBLE	64 - 256 mm
GRAVEL: COARSE	20 - 75 mm	PEBBLE	4 - 64 mm
GRAVEL: FINE	4.75 - 20 mm	GRANULE	2 - 4 mm
SAND: COARSE	2 - 4.75 mm	SAND: V. COARSE	1 - 2 mm
SAND: MEDIUM	0.42 - 2 mm	SAND: COARSE	0.5 - 1 mm
SAND: FINE	0.074 - 0.42 mm	SAND: MEDIUM	0.25 - 0.5 mm
SILT/CLAY	<0.074 mm	SAND: FINE	0.125 - 0.25 mm
		SAND: V. FINE	0.063 - 0.125 mm
		SILT	0.004 - 0.063 mm
		CLAY	<0.004 mm

* WELL GRADED - HAVING WIDE RANGE OF GRAIN SIZES AND APPRECIABLE AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES

* POORLY GRADED - PREDOMINANTLY ONE GRAIN SIZE, OR HAVING A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING

PERCENTAGE OF PARTICLE TYPE IN DECREASING ORDER OF PARTICLE SIZE (GRAVEL, SAND, FINES)

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

Conglomerate	Sandy Claystone	Marker Bed
Sandstone	Granitic/Intrusive	
Silty Sandstone	Volcanic/Extrusive	Artificial Fill
Clayey Sandstone	Metamorphic	Refuse
Sandy Siltstone	Limestone	Concrete/Asphalt
Siltstone	Dolomite	
Claystone	Glacial Till	
Clayey Siltstone/ Silty Claystone	Landslide Debris	

WELL SYMBOLS

CONCRETE
GROUT
BENTONITE SEAL
TRANSITION SAND
SAND/GRAVEL PACK
NATIVE/SLUFF
CENTRALIZER

SAMPLE TYPE AND OTHER SYMBOLS

BULK SAMPLE	Water Level at Time Drilling, or as Shown
STANDARD PENETRATION TEST	Static Water Level
MODIFIED CALIFORNIA SAMPLE	Pump Inlet
CORE SAMPLE	Loss of Drilling Fluid
SHELBY TUBE	MSL: Mean Sea Level
DRIVE SAMPLE	AGS: Above Ground Surface
	BGS: Below Ground Surface
	BTOC: Below Top of Casing
	HSA: Hollow Stem Auger



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-BA1

SHEET 1 OF 1

START DRILL DATE 10 May 04
FINISH DRILL DATE 10 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage	6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)									1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
5	ARTIFICIAL FILL SILT (ML): light brownish gray [2.5Y 6/2]; dry; silt; fine- to medium-grained sand; trace plant fragment; (0,10,90) @ 1' - color change to light olive brown [2.5Y 5/4]; increase in sand content to 30%; (0,30,70)								-	1449	Began drilling at 1447 on 10 May 2004.
								-	1451		
								-	-		
								719	-	FID = 799 ppm	
								290	1506	FID = 113 ppm	
								372	1512	FID = 408 ppm Sloughing in borehole	
								1400	1545	FID = 700 ppm	
								-	-		
								350	1553	FID = 150	
											Stopped drilling at a depth of 17 ft-bgs at 1553 on 10 May 2004. Abandoned borehole using fill material extracted from the borehole on 10 May 2004.
20											
25											

CONTRACTOR Recon/Central Reclamation
EQUIPMENT IMT AF6
DRILL MTHD Bucket Auger
DIAMETER 30-inch
LOGGER GTY
NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Composite Sample: PNL-BA1-Stockpile

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GEO SYNTEC CONSULTANTS

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-BA3

SHEET 1 OF 1

START DRILL DATE 12 May 04
FINISH DRILL DATE 12 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage	6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)									1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
5	ARTIFICIAL FILL Silty SAND (SM): light olive brown [2.5Y 5/3]; dry; fine- to medium-grained sand with silt; trace fine to medium gravel (subangular, <20mm diameter); (tr,60,40) @ 2' - color change to very dark greenish brown [2.5Y 3/2]; becomes slightly moist; increase in fine gravel (angular to subrounded, <15mm diameter); asphalt-like material; wires; concrete debris; scrap metal debris; pipes @ 4' - predominately black [2.5Y 2.5/1] asphalt-like material; slight hydrocarbon odor; wood fragments @ 6' - Clayey SILT (CL/ML): greenish black [GLE Y1 2.5/10Y]; slightly moist; silt with some clay; trace fine-grained sand (0,tr,100); medium to high plasticity; micaceous; faint hydrocarbon odor @ 8.5' - SILT (ML): greenish black [GLE Y1 2.5/10Y]; slightly moist; silt with little fine-grained sand (0,5,95); low plasticity; moderately stiff; micaceous @ 10' - Sandy SILT (SM): greenish black [GLE Y1 2.5/10Y]; slightly moist; fine- to coarse-grained sand (angular); trace fine gravel (angular) with silt (tr,30,70); micaceous @ 13' - becomes wet; wood fragments @ 14' - increase in fine- to coarse-grained sand (angular) content to 50% @ 15' - Silty Gravelly SAND (SM): dark greenish gray [GLE Y1 4/10Y]; wet; fine- to coarse-grained sand (angular); fine to coarse gravel (angular, <75mm diameter); some silt (5,65,30)							-	1121	Began drilling at 1118 on 12 May 2004. FID = 2 ppm	
									13	1124	
								-	1129	FID = 8 ppm	
								11	1132	FID = 55 ppm	
								62	1153	Refusal - backhoe cleared construction debris material between 5 and 6 ft-bgs. FID = 140 ppm	
								-	1156		
								11	1159	FID = 150 ppm	
								10	1206		
								-	1234	FID = 285 ppm Refusal due to concrete piece at 1214 on 12 May 2004; backhoe to dig out several feet to east.	
15								11	1238	@ 13' - liquids observed	
								9	1247	FID = 330 ppm	
								9	1250	FID = 302 ppm	
								16	1300	FID = 350 ppm	
								15	1308	FID = 65 ppm	
								-	1314		
20	WASTE Clay (CL): dark greenish gray [GLE Y1 3/10Y]; clay; high plasticity; soft to moderately soft; strong hydrocarbon odor; oil saturated								1700	1318	FID = 1700 ppm
									300	1328	FID = 140 ppm
											Stopped drilling at a depth of 21 ft-bgs at 1328 on 12 May 2004. Abandoned borehole using fill material extracted from the borehole on 12 May 2004.

CONTRACTOR Recon/Central Reclamation
EQUIPMENT IMT AF6
DRILL MTHD Bucket Auger
DIAMETER 30-inch
LOGGER GTY
NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Composite Sample: PNL-BA3-Stockpile

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

02-GEOTECH1 ASCONSB0202_04.GPJ GEOSYNTEC.GDT 28/10/04



GeoSYNTEC CONSULTANTS

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(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-BA6

SHEET 1 OF 1

START DRILL DATE 13 May 04
FINISH DRILL DATE 13 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane			
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)				
5	ARTIFICIAL FILL SILT (ML): olive brown [2.5Y 4/4]; dry; silt with little fine- to medium-grained sand; trace fine gravel (angular to subangular, <20mm) (tr,10,90); trace concrete and wood fragments @ 2.5 to 5.5' - concrete debris @ 4' - color change to very dark greenish gray [GLE Y1 3/10Y]; becomes slightly moist; slight hydrocarbon odor		▽						-	0749	Began excavation of fill material using a backhoe at 0745 on 13 May 2004			
										21	0756	Began drilling at 0754 on 13 May 2004. FID = 12 ppm Refusal at 3 ft-bgs		
										-	0800			
										66	0804	FID = 310 ppm		
										-	0807			
	10			IMPACTED FILL Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; wet; fine- to coarse-grained sand (angular to subangular); trace fine to medium gravel (angular to subangular, <30mm diameter); silt (tr,85,15); trace wood fragments; hydrocarbon odor @ 11' - oil sheen in water with cuttings @ 13' - SILT (ML): very dark greenish gray [GLE Y1 3/10Y]; silt; trace fine- to coarse-grained sand (angular); trace fine gravel (angular, <5mm diameter) (tr,tr,100); trace wood fragments; low plasticity; soft; hydrocarbon odor							27	0811	FID = 209 ppm @ 10' - liquids observed	
												138	0817	FID = 324 ppm
												-	0834	
					15						420	0842	FID = 680 ppm Refusal - drilled through	
											-	0848		
20										Stopped drilling at a depth 18 ft-bgs at 0848 on 13 May 2004. Abandoned borehole using fill material extracted from the borehole on 13 May 2004.				
25														

CONTRACTOR Recon/Central Reclamation
EQUIPMENT IMT AF6
DRILL MTHD Bucket Auger
DIAMETER 30-inch
LOGGER GTY
NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Composite Sample: PNL-BA6-Stockpile

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GeoSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-BA8

SHEET 1 OF 1

START DRILL DATE 11 May 04
FINISH DRILL DATE 11 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
5	ARTIFICIAL FILL SILT (ML): olive brown [2.5Y 5/3]; dry; silt; little fine-to medium-grained sand; trace fine gravel (subrounded) (tr,5,95); trace plant fragments; @ 1 to 3' - concrete debris @ 3' - color change to olive brown [2.5Y 4/3]; becomes slightly moist; becomes slightly micaceous @ 5' - mottled in very dark gray [2.5Y 3/1]; silt; becomes moist								-	0943	Began drilling at 0938 on 11 May 2004.
									13.5	0959	FID = 0.9 ppm Backhoe clears borehole to 4 ft-bgs.
									15.3	1005	FID = 3.4 ppm
									-	1023	Seep encountered at 5 ft-bgs.
									360	1048	FID = 1500 ppm Refusal - backhoe used to remove large concrete piece. Resume drilling at 1046 on 11 May 2004.
									-	-	
									400	1057	FID = 200 ppm
									380	1100	FID = 200 ppm
									200	1108	FID = 150 ppm
20											
25											

CONTRACTOR Recon/Central Reclamation
EQUIPMENT IMT AF6
DRILL MTHD Bucket Auger
DIAMETER 30-inch
LOGGER GTY
NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Composite Sample: PNL-BA8-Stockpile

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GeoSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG




BORING

PNL-BA11

SHEET 1 OF 1

START DRILL DATE 12 May 04
FINISH DRILL DATE 12 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	POSSIBLE ARTIFICIAL FILL Silty SAND (SM): olive brown [2.5Y 4/3]; dry; fine- to medium-grained sand with silt (0,70,30) @ 2' - asphalt-like material; hydrocarbon odor								-	0918	Began drilling at 0918 on 12 May 2004.
									-	0923	
									29	0926	FID = 15 ppm
5	NATIVE CLAY (CL): dark greenish gray [GLE Y1 4/10Y]; moist; high plasticity; moderately stiff; slightly micaceous @ 7' - slight styrene odor								13	0929	FID = 7 ppm
									10	0932	FID = 2 ppm
									83	0938	FID = 70 ppm
10	STYRENE IMPACTED: 10 TO 11.5 FT-BGS Silty SAND (SM): greenish black [GLE Y1 2.5/10Y]; saturated; fine-grained sand with silt (0,70,30); 10% shell fragments; very strong styrene odor; sticky; stringy; micaceous								1200	0944	FID = 250 ppm
											Stopped drilling at a depth of 11.5 ft-bgs at 0944 on 12 May 2004. Abandoned borehole using clay and fill material extracted from the borehole on 12 May 2003
15											
20											
25											

CONTRACTOR Recon/Central Reclamation
EQUIPMENT IMT AF6
DRILL MTHD Bucket Auger
DIAMETER 30-inch
LOGGER GTY
NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Composite Sample: PNL-BA11-Stockpile

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GeoSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-BA13

SHEET 1 OF 1

START DRILL DATE 12 May 04
FINISH DRILL DATE 12 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
5	NATIVE Gravelly SAND (GP): olive brown [2.5Y 4/3]; dry; fine- to coarse-grained sand (angular to subangular); fine to medium gravel (angular to subrounded, <50mm diameter) (5,85,10); trace concrete fragments; asphalt fragments @ 3' - concrete debris; asphalt debris								15	1550	Began drilling at 1546 on 12 May 2003. Heavy concrete and asphalt debris from 0 to 6 ft-bgs. FID = 3.5 ppm
									-	1557	
									-	1605	Refusal
5	SILT (ML): olive brown [2.5Y 4/3]; slightly moist; silt; fine- to medium-grained sand; trace coarse-grained sand (angular); trace fine gravel (angular, <20mm diameter) (tr,10,90); asphalt debris; concrete debris; micaceous @ 6' - oil staining; hydrocarbon odor								190	1618	FID = 106 ppm Backhoe 1 ft of construction debris material.
									300	1621	FID = 170 ppm Backhoe 1 ft of construction debris material.
10	CLAY (CL): very dark gray [2.5Y 3/1]; clay; trace fine- to medium-grained sand (0,tr,100); high plasticity; soft; strong hydrocarbon odor; oil saturated								900	1623	FID = 800 ppm
25											Stopped drilling at a depth of 8.5 ft-bgs at 1623 on 12 May 2004. Abandoned borehole using fill material extracted from the borehole on 12 May 2004.

CONTRACTOR Recon/Central Reclamation
EQUIPMENT IMT AF6
DRILL MTHD Bucket Auger
DIAMETER 30-inch
LOGGER GTY
NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Composite Sample: PNL-BA13-Stockpile

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

PID/FID CALIBRATION LOGS

Instrument Calibration Log

Pilot Study No. 3

Ascon Landfill Site

Instrument Information			
Instrument Name: <u>Mini RAE 2000</u>	Manufacturer: <u>Mini RAE</u>		
Serial Number: <u>R5603</u>	Last Service Date: <u>4/28/04</u>		
Parameters: <u>Total VOCs</u>	Calibration Gas: <u>50 ppm Hexane</u>		
Calibration Procedure:		<u>LOT#: IAD-289-50-1</u>	
Daily Calibration Results			
Date: <u>5/10/04</u> <u>0925</u> Notes:	Calibration Result: <u>50.1 ppm</u>	Name: <u>L. Dage</u>	Signature: <u>Lamm Dage</u>
Date: <u>5/11/04</u> <u>0850</u> Notes:	Calibration Result: <u>50.4 ppm</u>	Name: <u>L. Dage</u>	Signature: <u>Lamm Dage</u>
Date: <u>5/12/04</u> <u>0750</u> Notes:	Calibration Result: <u>50.1 ppm</u>	Name: <u>L. Dage</u>	Signature: <u>Lamm Dage</u>
Date: <u>5/13/04</u> <u>0745</u> Notes:	Calibration Result: <u>49.3 ppm</u>	Name: <u>L. Dage</u>	Signature: <u>Lamm Dage</u>
Date:	Calibration Result:	Name:	Signature:
Notes:			

Instrument Calibration Log

Pilot Study No. 3
Ascon Landfill Site

Instrument Information			
Instrument Name: TVA-1000	Manufacturer: Thermo Environmental Instruments		
Serial Number: R5208	Last Service Date:		
Parameters: Total VOCs	Calibration Gas: 50ppm Hexane		
Calibration Procedure:		Lot #: IAD-289-50-1	
Daily Calibration Results			
Date: 5/10/04 0910	Calibration Result: PID = 51.65 ppm FID = 49.89 ppm	Name: L. Dage	Signature: Lamm Dage
Notes:			
Date: 5/11/04 0845	Calibration Result: PID = 50.52 ppm FID = 50.73 ppm	Name: L. Dage	Signature: Lamm Dage
Notes: Re-fueled Hydrogen supply			
Date: 5/12/04 0745	Calibration Result: PID = 51.22 ppm FID = 49.84 ppm	Name: L. Dage	Signature: Lamm Dage
Notes: Re-fueled Hydrogen Supply			
Date: 5/13/04 0740	Calibration Result: PID = 50.56 ppm FID = 51.44 ppm	Name: L. Dage	Signature: Lamm Dage
Notes: re-fueled Hydrogen Supply			
Date:	Calibration Result:	Name:	Signature:
Notes:			

M E M O R A N D U M

TO: Tamara Zeier, P.E, Project Navigator, Ltd.
Ken Fredianelli, Project Navigator, Ltd.

FROM: Mike Reardon, P.E., GeoSyntec Consultants
Mark Grivetti, R.G., C.E.G., GeoSyntec Consultants

DATE: 17 June 2004

SUBJECT: **GeoSyntec Field Memorandum**
Pilot Study No. 3 – Phase III Test Trench Excavation Program
Ascon Landfill Site
Huntington Beach, California

This memorandum provides a summary of field activities conducted by GeoSyntec Consultants (GeoSyntec) for the Pilot Study No. 3, Phase III test trench excavation program at the Ascon Landfill Site (Site) located in Huntington Beach, California. This memorandum was prepared for Project Navigator, Ltd. (PNL). Included with this memorandum are tabular summaries of test trench information, air monitoring data, trench logs, and copies of field calibration and SUMMA canister logs.

The scope of work for Phase III, as described in the workplan, “Pilot Study No. 3, Waste Characterization, Emissions, and Excavation Testing Program” [PNL and GeoSyntec, 2004], included the excavation of six test trenches with an additional test trench location (PNL-TP07) added at the request of PNL, and the collection of soil and waste samples for laboratory testing. Specific field activities performed by GeoSyntec included trench logging, field screening of soil and waste stockpiles for compliance with South Coast Air Quality Management District (SCAQMD) permit requirements using a photoionization detector (PID) and flame ionization detector (FID), and conducting hourly perimeter air monitoring.

Phase III fieldwork was conducted from 17 May 2004 through 20 May 2004. Test trench excavation was performed by Recon Remedial Construction Services, under contract to PNL. Analytical laboratories under subcontract to GeoSyntec for chemical

analyses of soil waste and perimeter ambient air samples included Del Mar Analytical and Columbia Analytical, respectively.

Seven test trenches (PNL-TP01, PNL-TP02, PNL-TP03, PNL-TP04, PNL-TP05, PNL-TP06, and PNL-TP07) were excavated using a Hitachi EX450H Excavator and, when necessary, a CAT 225D LC Long-Reach Excavator for excavations in excess of 22 ft depth. Excavations were advanced to the top of the native alluvium (stiff clay or micaceous silt to silty sand), except for PNL-TP01. Total depths of trenches were estimated to range from 20 ft-bgs to 26 ft-bgs. Trenches PNL-TP01, PNL-TP06, and PNL-TP07 could not sustain walls with slopes steeper than 1:1. Trench wall instability was consistently observed to occur within the fill and impacted fill material, especially within zones of abundant concrete and asphalt debris. In contrast, trenching within the oily drilling mud waste material with minimal concrete and debris maintained a near vertical cut slope.

Trench logging was conducted using observations from trench sidewalls and of the excavated material from the stockpile. Minor (<0.1 gpm) tar seeps were observed either at the top of the oily drilling mud waste material and fill interface (PNL-TP01), within the waste material (PNL-TP02), or commingled within the construction debris material of predominately concrete (PNL-TP06). Water seeps were also documented in trenches PNL-TP04, PNL-TP06, and PNL-TP07 with estimated flow rates of generally <0.1 gpm, except for PNL-TP07 where an exposed water seep initially flowed at about 0.5 gpm for the first 10 minutes, then decreased to <0.1 gpm. No liquid samples were collected due to the lack of accumulated liquids. Stockpile emissions were periodically monitored using an FID and PID as required by the workplan and SCAQMD permits. Excavated waste material with PID emissions that exceeded 50 ppm was segregated from the material with PID readings of less than 50 ppm. A single composite sample was collected from the excavation stockpile at each trench location for laboratory analysis. FID and PID stockpile readings are summarized in Table 1

Test trenches were abandoned by backfilling only the stockpiled material having PID stockpile readings of less than 50 ppm. A GeoSyntec field geologist

observed and documented test trench activities. Table 2 presents a summary of the test trench information. GINT[®] trench logs are provided as an attachment. Table 3 provides a summary of samples collected for laboratory testing from each test trench. Analytical testing of samples was requested per the workplan.

Stockpile material from trenches PNL-TP01, PNL-TP02, PNL-TP03, PNL-TP04, and PNL-TP07 exhibited PID readings greater than 50 ppm and was treated with a vapor emission suppressant and covered with visqueen. A composite waste sample was collected for analytical waste profiling purposes.

Air monitoring instruments, PIDs, FIDs, and dust monitors were calibrated daily. Equipment calibration sheets are included as an attachment. Perimeter air monitoring was performed in accordance with activities described in Appendix A of the workplan. Perimeter air monitoring consisted of hourly PID, dust, odor measurements, and the collection of one 8-hour integrated SUMMA canister for each work day at six designated perimeter air monitoring locations. A summary of SUMMA air samples submitted for laboratory analysis is presented in Table 4. Hourly measurements of wind speed and direction were also recorded on logs from the on-site wind station. Air monitoring activities were conducted by a GeoSyntec field engineer. The perimeter air monitoring results for activities during the four days of Phase III fieldwork are presented in Tables 5A through 5D. No significant readings above background were measured at site perimeter air monitoring locations during Phase III trenching.

Laboratory data were provided to PNL in electronic format. Electronic data deliverables (EDDs) for perimeter ambient air samples analyses from Columbia Analytical (VOCs) were provided by GeoSyntec once received from the laboratory. All EDDs for soil and waste testing results from Del Mar Analytical can be obtained through the web-based portal set up for the project.

If you have any questions regarding this information please contact Mike Reardon at (714) 969-0800 or Mark Grivetti at (805) 897-3800. GeoSyntec appreciates the opportunity to provide PNL with technical services for the Ascon Project.

GeoSyntec Field Memorandum – Phase III

17 June 2004

Page 4

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TABLES

TABLE 1
SUMMARY OF SOIL STOCKPILE MONITORING
PHASE III TEST TRENCH EXCAVATION
ASCON LANDFILL SITE

Borehole ID	Date	Time	PID Reading (ppm)	FID Reading (ppm)	Stockpile Condition
PNL-TP01	5/17/2004	9:10	13.01	6.91	uncovered
		9:25	19.21	16.65	uncovered
		9:40	19.1	2.8	uncovered
		9:55	16.1	3.3	uncovered
		10:04	14	4.8	uncovered
		10:19	38.7	19.1	uncovered
		10:34	21.8	6.1	uncovered
		11:07	18.5	2.5	uncovered
		11:20	19.1	2.3	uncovered
		11:35	13	1.3	uncovered
		13:15	2.8	1.1	uncovered
		13:30	95	24	soil waste in roll off bin
		13:45	21	8	uncovered
PNL-TP02	5/19/2004	11:47	35	20	uncovered; tar material
		11:54	70	20	uncovered; drilling mud
		12:00	12	2	with applied foam cover
		12:15	105	65.9	NR
PNL-TP03	5/20/2004	8:08	150	60	uncovered; drilling clay
		8:20	120	80	uncovered; drilling clay
		8:20	40	30	with applied foam cover
		8:41	15	20	with applied foam cover
		8:55	6.1	1.5	bucket of native alluvium
PNL-TP04	5/19/2004	8:04	90	30	uncovered
		8:10	30	10	water spray
		8:37	15	4	uncovered; downwind of pile
		8:52	15	4.5	uncovered; downwind of pile
		9:34	150	30	uncovered
		9:41	7.5	2	with applied foam cover
PNL-TP05	5/18/2004	8:20	5.9	0.6	uncovered; dry fill
		8:36	9	18	uncovered asphaltic material
		8:52	13	180	uncovered
		9:04	35	25	uncovered
PNL-TP06	5/18/2004	10:15	4.5	0.3	uncovered
		10:30	15.1	13.2	uncovered; asphalt and tar
		10:35	4.3	2.5	uncovered; tar
		10:56	3.2	0.5	uncovered
		11:06	5	22	uncovered
		11:21	4.4	0.8	uncovered
		11:40	2.9	0.8	uncovered
		12:06	3	0.5	uncovered
PNL-TP07	5/20/2004	13:15	5	0.8	uncovered
		10:18	4.5	0.4	uncovered
		10:26	4.5	15	uncovered asphaltic material
		10:34	25	35	uncovered
		10:40	120	70	uncovered drilling clay
		10:43	5	2.3	with applied foam cover
		11:00	15	15	uncovered drilling clay
		11:15	15	30	uncovered
		11:17	80	15	uncovered drilling clay

Notes:

ppm: parts per million concentration

NR: not recorded

TABLE 2
SUMMARY OF TEST TRENCH INFORMATION
PHASE III TRENCHING
ASCON LANDFILL SITE

Trench Location	Date Excavated	Total Depth (ft-bgs)	Estimated Concrete Debris in Fill	Trench Wall Stability	Top of Waste (ft-bgs)	Top of Native Alluvium (ft-bgs)	Trench Abandoned
PNL-TP01	5/17/2004	26	30%; slabs as large as 5'x5'x1'	Fill: poor <1:1 slope; Waste: near vertical	18	22	5/17/2004
PNL-TP02	5/19/2004	22	none observed	Fill: poor <1:1 slope; Waste: near vertical	4	21	5/19/2004
PNL-TP03	5/20/2004	25	25%; debris as large as 5'x3'x1'	Fill: poor <1:1 slope; Waste: near vertical	5	24	5/20/2004
PNL-TP04	5/19/2004	20	none observed	Fill: poor <1:1 slope; Waste: near vertical	3	16	5/19/2004
PNL-TP05	5/18/2004	22	30%; block as large as 7'x2'x2'	Fill: poor <1:1 slope; Impacted Fill: near vertical	no waste encountered	13	5/18/2004
PNL-TP06	5/18/2004	23	70%; slab as large as 5'x6'x1'	Fill and Impacted Fill: poor <1:1 slope	~15 (commingled)	22	5/18/2004
PNL-TP07	5/20/2004	22	5-10%; debris as large as 1'x1'x1'	Fill and Impacted Fill: poor <1:1 slope	~15-18 & 18-20 (commingled)	21	5/20/2004

Note: ft-bgs is feet below ground surface.

All depths are approximate.

TABLE 3

**SAMPLE COLLECTION SUMMARY
PHASE III TRENCHING
ASCON LANDFILL SITE**

Borehole ID	Date Sampled	Composite Sample ID [Del Mar Analytical]
PNL-TP01	5/17/04 5/18/04	PNL-TP01-Stockpile PNL-TP01-Waste
PNL-TP02	5/19/04	PNL-TP02-Stockpile PNL-TP02-Waste
PNL-TP03	5/20/04	PNL-TP03-Stockpile PNL-TP03-Waste
PNL-TP04	5/19/04	PNL-TP04-Stockpile PNL-TP04-Waste
PNL-TP05	5/18/04	PNL-TP05-Stockpile
PNL-TP06	5/18/04	PNL-TP06-Stockpile
PNL-TP07	5/20/04	PNL-TP07-Stockpile PNL-TP07-Waste

Note:

A composite waste sample representing trench waste from PNL-TP01, PNL-TP02, PNL-TP03, PNL-TP04, and PNL-TP07 locations was made by Del Mar Analytical at the request of PNL on 6/4/2004 for laboratory analysis (Sample ID of PNL-TP01,02,03,04,07-WASTE).

TABLE 4

**PERIMETER AIR SAMPLE COLLECTION SUMMARY
PHASE III TEST TRENCH EXCAVATION
ASCON LANDFILL SITE**

Station ID	Date Collected	Container ID (Serial #)	Flow Controller (Serial #)	Sample ID [Columbia Analytical Services]
AA-01	5/17/04	01753	01812	AA-01-051704
	5/18/04	01602	00833	AA-01-051804
	5/19/04	01205	01813	AA-01-051904
	5/20/04	01102	01311	AA-01-052004
AA-02	5/17/04	01268	01689	AA-02-051704
	5/18/04	01895	01687	AA-02-051804
	5/19/04	02037	01662	AA-02-051904
	5/20/04	02179	01993	AA-02-052004
AA-03	5/17/04	02009	01955	AA-03-051704
	5/18/04	02108	01945	AA-03-051804
	5/19/04	01337	02059	AA-03-051904
	5/20/04	01891	01950	AA-03-052004
AA-04	5/17/04	01641	01019	AA-04-051704
	5/18/04	01275	01808	AA-04-051804
	5/19/04	01447	02045	AA-04-051904
	5/20/04	01121	01310	AA-04-052004
AA-05	5/17/04	00274	02052	AA-05-051704
	5/18/04	01258	01961	AA-05-051804
	5/19/04	01776	02062	AA-05-051904
	5/20/04	01623	01816	AA-05-052004
AA-07	5/17/04	01517	02077	AA-07-051704
	5/18/04	01719	01648	AA-07-051804
	5/19/04	01204	02060	AA-07-051904
	5/20/04	01452	02071	AA-07-052004

TABLE 5A
PERIMETER AIR MONITORING DATA SUMMARY
17 MAY 2004
PHASE III TRENCHING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/17/2004	8:41 AM	5.4	140	0	0.0	0.083
AA-01	5/17/2004	8:48 AM	6.7	175	0	0.0	0.056
AA-01	5/17/2004	10:55 AM	5.1	156	0	0.0	0.045
AA-01	5/17/2004	1:43 PM	5.0	166	0	0.0	0.046
AA-01	5/17/2004	2:47 PM	9.5	135	0	0.0	0.038
AA-02	5/17/2004	8:43 AM	5.4	140	0	0.0	0.043
AA-02	5/17/2004	8:51 AM	6.7	175	0	0.0	0.059
AA-02	5/17/2004	10:58 AM	5.1	156	0	0.0	0.052
AA-02	5/17/2004	1:46 PM	5.0	166	0	0.0	0.062
AA-02	5/17/2004	2:50 PM	9.5	135	0	0.0	0.042
AA-03	5/17/2004	8:46 AM	5.4	140	0	0.0	0.059
AA-03	5/17/2004	8:54 AM	6.7	175	0	0.0	0.066
AA-03	5/17/2004	11:02 AM	5.1	156	0	0.0	0.062
AA-03	5/17/2004	1:49 PM	5.0	166	0	0.0	0.038
AA-03	5/17/2004	2:53 PM	9.5	135	0	0.0	0.031
AA-04	5/17/2004	8:36 AM	5.4	140	0	0.0	0.044
AA-04	5/17/2004	9:41 AM	6.7	175	0	0.0	0.069
AA-04	5/17/2004	10:47 AM	5.1	156	0	0.0	0.047
AA-04	5/17/2004	1:37 PM	5.0	166	0	0.0	0.052
AA-04	5/17/2004	2:37 PM	9.5	135	0	0.0	0.039
AA-05	5/17/2004	8:33 AM	5.4	140	0	0.0	0.044
AA-05	5/17/2004	9:38 AM	6.7	175	0	0.0	0.058
AA-05	5/17/2004	10:44 AM	5.1	156	0	0.0	0.056
AA-05	5/17/2004	1:33 PM	5.0	166	0	0.0	0.057
AA-05	5/17/2004	2:34 PM	9.5	135	0	0.0	0.047
AA-07	5/17/2004	8:28 AM	5.4	140	0	0.0	0.044
AA-07	5/17/2004	9:35 AM	6.7	175	0	0.0	0.045
AA-07	5/17/2004	10:40 AM	5.1	156	0	0.0	0.052
AA-07	5/17/2004	1:29 PM	5.0	166	0	0.0	0.049
AA-07	5/17/2004	2:31 PM	9.5	135	0	0.0	0.032

TABLE 5B
PERIMETER AIR MONITORING DATA SUMMARY
18 MAY 2004
PHASE III TRENCHING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/18/2004	8:46 AM	6.0	201	0	0.0	0.027
AA-01	5/18/2004	9:50 AM	8.3	180	0	0.0	0.032
AA-01	5/18/2004	10:52 AM	8.6	195	0	0.0	0.041
AA-01	5/18/2004	11:56 AM	9.9	175	0	0.0	0.037
AA-01	5/18/2004	1:31 PM	9.6	207	0	0.0	0.030
AA-01	5/18/2004	2:36 PM	9.1	271	0	0.0	0.036
AA-02	5/18/2004	8:48 AM	6.0	201	0	0.0	0.028
AA-02	5/18/2004	9:53 AM	8.3	180	0	0.0	0.035
AA-02	5/18/2004	10:55 AM	8.6	195	0	0.0	0.029
AA-02	5/18/2004	11:59 AM	9.9	175	0	0.0	0.035
AA-02	5/18/2004	1:34 PM	9.6	207	0	0.0	0.024
AA-02	5/18/2004	2:39 PM	9.1	271	0	0.0	0.029
AA-03	5/18/2004	8:51 AM	6.0	201	0	0.0	0.032
AA-03	5/18/2004	9:56 AM	8.3	180	0	0.0	0.031
AA-03	5/18/2004	10:58 AM	8.6	195	0	0.0	0.032
AA-03	5/18/2004	11:02 AM	9.9	175	0	0.0	0.030
AA-03	5/18/2004	1:37 PM	9.6	207	0	0.0	0.028
AA-03	5/18/2004	2:42 PM	9.1	271	0	0.0	0.043
AA-04	5/18/2004	8:35 AM	6.0	201	0	0.0	0.028
AA-04	5/18/2004	9:41 AM	8.3	180	0	0.0	0.031
AA-04	5/18/2004	10:42 AM	8.6	195	0	0.0	0.039
AA-04	5/18/2004	11:47 AM	9.9	175	0	0.0	0.038
AA-04	5/18/2004	1:21 PM	9.6	207	0	0.0	0.026
AA-04	5/18/2004	2:27 PM	9.1	271	0	0.0	0.025
AA-05	5/18/2004	8:29 AM	6.0	201	0	0.0	0.035
AA-05	5/18/2004	9:38 AM	8.3	180	0	0.0	0.028
AA-05	5/18/2004	10:39 AM	8.6	195	0	0.0	0.026
AA-05	5/18/2004	11:43 AM	9.9	175	0	0.0	0.029
AA-05	5/18/2004	1:18 PM	9.6	207	0	0.0	0.032
AA-05	5/18/2004	2:22 PM	9.1	271	0	0.0	0.052
AA-07	5/18/2004	8:24 AM	6.0	201	0	0.0	0.027
AA-07	5/18/2004	9:34 AM	8.3	180	0	0.0	0.030
AA-07	5/18/2004	10:36 AM	8.6	195	0	0.0	0.035
AA-07	5/18/2004	11:39 AM	9.9	175	0	0.0	0.031
AA-07	5/18/2004	1:14 PM	9.6	207	0	0.0	0.025
AA-07	5/18/2004	2:18 PM	9.1	271	0	0.0	0.027

TABLE 5C
PERIMETER AIR MONITORING DATA SUMMARY
19 MAY 2004
PHASE III TRENCHING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/19/2004	8:31 AM	3.8	142	0	0.0	0.052
AA-01	5/19/2004	8:33 AM	7.1	175	0	0.0	0.043
AA-01	5/19/2004	10:47 AM	10.0	180	0	0.0	0.038
AA-01	5/19/2004	11:51 AM	12.2	188	0	0.0	0.034
AA-01	5/19/2004	1:56 PM	9.1	205	0	0.0	0.047
AA-02	5/19/2004	8:34 AM	3.8	142	0	0.0	0.042
AA-02	5/19/2004	8:37 AM	7.1	175	0	0.0	0.032
AA-02	5/19/2004	10:51 AM	10.0	180	0	0.0	0.031
AA-02	5/19/2004	11:54 AM	12.2	188	0	0.0	0.027
AA-02	5/19/2004	1:59 PM	9.1	205	0	0.0	0.049
AA-03	5/19/2004	8:37 AM	3.8	142	0	0.0	0.038
AA-03	5/19/2004	9:40 AM	7.1	175	0	0.0	0.039
AA-03	5/19/2004	10:54 AM	10.0	180	0	0.0	0.036
AA-03	5/19/2004	11:58 AM	12.2	188	0	0.0	0.029
AA-03	5/19/2004	2:02 PM	9.1	205	0	0.0	0.042
AA-04	5/19/2004	8:21 AM	3.8	142	0	0.0	0.041
AA-04	5/19/2004	9:23 AM	7.1	175	0	0.0	0.039
AA-04	5/19/2004	10:36 AM	10.0	180	0	0.0	0.028
AA-04	5/19/2004	11:41 AM	12.2	188	0	0.0	0.029
AA-04	5/19/2004	1:48 PM	9.1	205	0	0.0	0.039
AA-05	5/19/2004	8:18 AM	3.8	142	0	0.0	0.040
AA-05	5/19/2004	9:18 AM	7.1	175	0	0.0	0.028
AA-05	5/19/2004	10:32 AM	10.0	180	0	0.0	0.027
AA-05	5/19/2004	11:36 AM	12.2	188	0	0.0	0.035
AA-05	5/19/2004	1:44 PM	9.1	205	0	0.0	0.060
AA-07	5/19/2004	8:14 AM	3.8	142	0	0.0	0.040
AA-07	5/19/2004	9:13 AM	7.1	175	0	0.0	0.027
AA-07	5/19/2004	10:28 AM	10.0	180	0	0.0	0.028
AA-07	5/19/2004	11:32 AM	12.2	188	0	0.0	0.032
AA-07	5/19/2004	1:39 PM	9.1	205	0	0.0	0.040

TABLE 5D
PERIMETER AIR MONITORING DATA SUMMARY
20 MAY 2004
PHASE III TRENCHING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/20/2004	8:23 AM	7.5	225	0	0.0	0.044
AA-01	5/20/2004	9:27 AM	9.4	222	0	0.0	0.043
AA-01	5/20/2004	10:33 AM	11.5	184	0	0.0	0.051
AA-01	5/20/2004	11:39 AM	8.8	170	0	0.0	0.031
AA-02	5/20/2004	8:25 AM	7.5	225	0	0.0	0.053
AA-02	5/20/2004	9:30 AM	9.4	222	0	0.0	0.039
AA-02	5/20/2004	10:36 AM	11.5	184	0	0.0	0.034
AA-02	5/20/2004	11:42 AM	8.8	170	0	0.0	0.047
AA-03	5/20/2004	8:28 AM	7.5	225	0	0.0	0.033
AA-03	5/20/2004	9:34 AM	9.4	222	0	0.0	0.058
AA-03	5/20/2004	10:40 AM	11.5	184	0	0.0	0.032
AA-03	5/20/2004	11:45 AM	8.8	170	0	0.0	0.039
AA-04	5/20/2004	8:19 AM	7.5	225	0	0.0	0.050
AA-04	5/20/2004	9:22 AM	9.4	222	0	0.0	0.040
AA-04	5/20/2004	10:23 AM	11.5	184	0	0.0	0.035
AA-04	5/20/2004	11:29 AM	8.8	170	0	0.0	0.036
AA-05	5/20/2004	8:15 AM	7.5	225	0	0.0	0.043
AA-05	5/20/2004	9:18 AM	9.4	222	0	0.0	0.031
AA-05	5/20/2004	10:20 AM	11.5	184	0	0.0	0.048
AA-05	5/20/2004	11:26 AM	8.8	170	0	0.0	0.021
AA-07	5/20/2004	8:11 AM	7.5	225	0	0.0	0.040
AA-07	5/20/2004	9:14 AM	9.4	222	0	0.0	0.035
AA-07	5/20/2004	10:16 AM	11.5	184	0	0.0	0.043
AA-07	5/20/2004	11:23 AM	8.8	170	0	0.0	0.032

AIR SAMPLE LOGS

SAMPLE LOG SHEET AMBIENT AIR SAMPLING ASCON LANDFILL

DATE: 17 May 2004Page 1 of 1Sampler: L. Dage

Sample ID	Summa PAI #	Flow Controller PAI #	(in. Hg) Pre- Sample Vacuum	(in. Hg) Post Sample Vacuum	Sample Collection Time (initial)
AA-01-051704	01753	01812	>30	9.5	0838 0839 / 1613
AA-02-051704	01268	01689	730	6.0	0832 0842 / 1614
AA-03-051704	02009	01955	730	10.0	0845 / 1616
AA-04-051704	01641 01019	01019	>30	7.5	0835 / 1610
AA-05-051704	00274	02052	730	10.0	0832 / 1608
AA-07-051704	01517	02077	730	9.0	0828 / 1606

SAMPLE LOG SHEET AMBIENT AIR SAMPLING ASCON LANDFILL

DATE: 5/18/04Page 1 of 1
 Sampler: L. Dage ~~§~~ D. Tokat
 (in. Hg)

Sample ID	Summa PAI #	Flow Controller PAI #	Pre- Sample Vacuum	Post Sample Vacuum	Sample Collection Time (initial)
AA-01-051804	01602	00633	>30	00 17	0744 1520
AA-02-051804	01895	01687	>30	00 19	0746 1522
AA-03-051804	02108	01945	>30	20	0749 1514
AA-04-051804	01275	01808	>30	14.5	0740 1517
AA-05-051804	01256	01961	>30	22	0738 1515
AA-07-051804	01719	01648	>30	23	0734 1512

SAMPLE LOG SHEET **AMBIENT AIR SAMPLING** **ASCON LANDFILL**

DATE: 5/19/04Page 1 of 1Sampler: L. Dage

(in. Hg) (in. Hg)

Sample ID	Summa PAI #	Flow Controller PAI #	Pre- Sample Vacuum	Post Sample Vacuum	Sample Collection Time (initial)
AA-01-051904	01205	01813	>30	0	0737 1512
AA-02-051904	02037	01662	>30	8.5	0738 1514
AA-03-051904	01337	02059	>30	9.5	0740 1516
AA-04-051904	01447	02045	>30	8.5	0735 1509
AA-05-051904	01776	02062	>30	9.0	0732 1507
AA-07-051904	01204	02060	>30	10.0	0730 1505

SAMPLE LOG SHEET
AMBIENT AIR SAMPLING
ASCON LANDFILL

DATE: 5/20/04Page 1 of 1Sampler: L. Dwyer

(in. Hg) (in. Hg)

Sample ID	Summa PAI #	Flow Controller PAI #	Pre- Sample Vacuum	Post Sample Vacuum	Sample Collection Time (initial)
AA-01-052004	01102	01311	>30	8.5	0737 1513
AA-02-052004	01479	01993	>30	9.0	0740 1514
AA-03-052004	01891	01950	>30	9.0	0742 1516
AA-04-052004	01121	01310	>30	9.5	0735 1510
AA-05-052004	01623	01816	>30	9.0	0733 1507
AA-07-052004	01452	02071	>30	7.5	0731 1505

BORING LOGS



GeoSYNTEC CONSULTANTS

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PROJECT Ascon

PROJECT LOCATION Huntington Beach, CA

PROJECT NUMBER SB0202

KEY SHEET - CLASSIFICATIONS AND SYMBOLS















GS FORM:
KEY/SYMBOLS 01/04

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N VALUES *

	N VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)		N VALUE * (BLOWS/FT)	RELATIVE DENSITY
FINE GRAINED SOILS	0 - 2	VERY SOFT	<0.25	COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	3 - 4	SOFT	0.25 - 0.50		5 - 10	LOOSE
	5 - 8	FIRM	0.50 - 1.00		11 - 30	MEDIUM DENSE
	9 - 15	STIFF	1.00 - 2.00		31 - 50	DENSE
	16 - 30	VERY STIFF	2.00 - 4.00		>50	VERY DENSE
	31 - 50	HARD	>4.00			
	>50	VERY HARD				

* ASTM D 1586; NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1.4 IN. I.D. SAMPLER ONE FOOT.

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

MAJOR DIVISIONS			SYMBOLS		DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		LITTLE OR NO FINES		GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO.4 SIEVE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	
		APPRECIABLE AMOUNT OF FINES		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	
	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
		LITTLE OR NO FINES		SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
	MORE THAN 50% OF MATERIAL COARSER THAN NO. 200 SIEVE SIZE	MORE THAN 50% OF COARSE FRACTION PASSING NO.4 SIEVE	SANDS WITH FINES		SM	SILTY SANDS, SAND-SILT MIXTURES
			APPRECIABLE AMOUNT OF FINES		SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT	
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT	

NOTE: DUAL SYMBOLS USED FOR BORDERLINE CLASSIFICATIONS

PARTICLE SIZE IDENTIFICATION

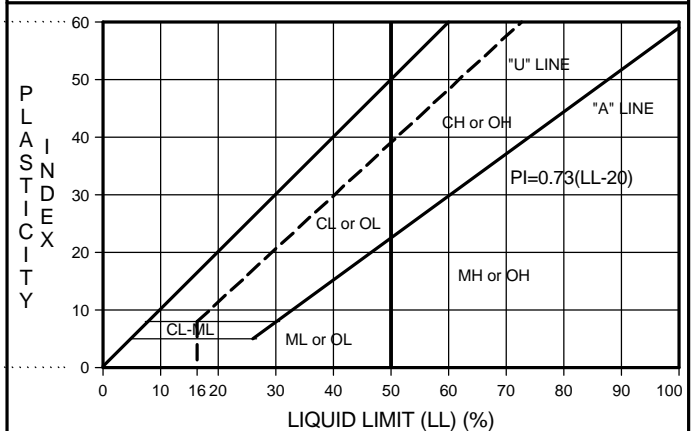
USCS (SOILS ONLY) *		SEDIMENTARY (ROCK ONLY)	
BOULDER	>300 mm	BOULDER	>256 mm
COBBLE	75 - 300 mm	COBBLE	64 - 256 mm
GRAVEL: COARSE	20 - 75 mm	PEBBLE	4 - 64 mm
GRAVEL: FINE	4.75 - 20 mm	GRANULE	2 - 4 mm
SAND: COARSE	2 - 4.75 mm	SAND: V. COARSE	1 - 2 mm
SAND: MEDIUM	0.42 - 2 mm	SAND: COARSE	0.5 - 1 mm
SAND: FINE	0.074 - 0.42 mm	SAND: MEDIUM	0.25 - 0.5 mm
SILT/CLAY	<0.074 mm	SAND: FINE	0.125 - 0.25 mm
		SAND: V. FINE	0.063 - 0.125 mm
		SILT	0.004 - 0.063 mm
		CLAY	<0.004 mm

* WELL GRADED - HAVING WIDE RANGE OF GRAIN SIZES AND APPRECIABLE AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES

* POORLY GRADED - PREDOMINANTLY ONE GRAIN SIZE, OR HAVING A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING

PERCENTAGE OF PARTICLE TYPE IN DECREASING ORDER OF PARTICLE SIZE
(GRAVEL, SAND, FINES)

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

Conglomerate	Sandy Claystone	Marker Bed
Sandstone	Granitic/Intrusive	
Silty Sandstone	Volcanic/Extrusive	Artificial Fill
Clayey Sandstone	Metamorphic	Refuse
Sandy Siltstone	Limestone	Concrete/Asphalt
Siltstone	Dolomite	
Claystone	Glacial Till	
Clayey Siltstone/ Silty Claystone	Landslide Debris	

WELL SYMBOLS

CONCRETE
GROUT
BENTONITE SEAL
TRANSITION SAND
SAND/GRAVEL PACK
NATIVE/SLUFF
CENTRALIZER

SAMPLE TYPE AND OTHER SYMBOLS

BULK SAMPLE	Water Level at Time Drilling, or as Shown
STANDARD PENETRATION TEST	Static Water Level
MODIFIED CALIFORNIA SAMPLE	Pump Inlet
CORE SAMPLE	Loss of Drilling Fluid
SHELBY TUBE	MSL: Mean Sea Level
DRIVE SAMPLE	AGS: Above Ground Surface
	BGS: Below Ground Surface
	BTOC: Below Top of Casing
	HSA: Hollow Stem Auger



GeoSYNTEC CONSULTANTS

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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING PNL-TP1
START DRILL DATE 17 May 04
FINISH DRILL DATE 17 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

SHEET 1 OF 1

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
ARTIFICIAL FILL Volume 30% concrete fragments to blocks and slabs; predominately smaller concrete fragments with some rebar; occasional large concrete pieces (5'x5'x1'); 5% predominately small asphalt fragments; trace larger asphalt slabs (5'x3'x0.5'); predominately silt; wood fragments; dry	1 2 3 4 5		1 2 3 4 5	Began trenching at 0907 pm 17 May 2004.
IMPACTED FILL Black silt; construction debris material same as above	6 7 8 9		6 7 8 9	
@ 10' - abundant tree stumps and vegetative waste; clay (drilling mud); high plasticity; soft; hydrocarbon odor; hydrocarbon saturated; walls not stable >1:1 slope; tar seeps	10 11 12		10 11 12	
@ 12' - water seep with flow rate <0.5gpm; tar seeps	13 14 15 16 17		13 14 15 16 17	
WASTE Dark greenish gray clay; high plasticity; soft; strong hydrocarbon odor; oil saturated	18 19 20 21		18 19 20 21	
NATIVE CLAY (CL): dark greenish gray; high plasticity; moderately stiff; hydrocarbon odor; oil and tar imbedded	22 23 24 25		22 23 24 25	
	26 27 28 29 30		26 27 28 29 30	Stopped trenching at a depth of 26 ft-bgs 1350 on 17 May 2004.

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT See Remarks
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTec.GDT 28/10/04



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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

START DRILL DATE 19 May 04
FINISH DRILL DATE 19 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-TP2

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
ARTIFICIAL FILL Sandy SILT (SM): yellowish brown; no concrete; no construction debris material	1		1	Began trenching at 1127 on 19 May 2004.
	2		2	
	3		3	
	4		4	
WASTE Black tar material with tar ooze; strong hydrocarbon odor	5		5	
	6		6	
@ 6' - CLAY (CL): (drilling mud); high plasticity; soft; oil saturated; strong hydrocarbon odor; trench walls held up vertically	7		7	
	8		8	
	9		9	
	10		10	
	11		11	
	12		12	
	13		13	
	14		14	
	15		15	
	16		16	
	17		17	
	18		18	
	19		19	
	20		20	
	21		21	
NATIVE CLAY (CL): dark greenish clay with hydrocarbon impact (relatively thin)	22		22	Stopped trenching at a depth of 22 ft-bgs at 1211 on 19 May 2004.
Silty SAND (SM): micaceous; evidence of hydrocarbon impact; slight hydrocarbon odor; trench walls held up vertically	23		23	
	24		24	
	25		25	
	26		26	
	27		27	
	28		28	
	29		29	
	30		30	

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT Hitachi Ex450H Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTEC.GDT 28/10/04



GEO SYNTEC CONSULTANTS

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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

START DRILL DATE 20 May 04
FINISH DRILL DATE 20 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-TP3

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL
DESCRIPTION

LAYER
DEPTH
(FT)

SYMBOLIC LOG

LAYER
DEPTH
(FT)

COMMENT

ARTIFICIAL FILL

Silty SAND (SM): yellowish brown; fine- to coarse-grained sand; 30% silt; 15% fine to coarse gravel; 25% concrete debris (<1'x1'x0.5' slabs); trace large concrete debris (<5'x3'x1') trace red bricks; rebar; metal pipes; asphalt debris (<1'x1'x0.5' fragments)

WASTE

Black to very dark greenish gray clay (drilling mud); high plasticity; soft; strong hydrocarbon odor; oil saturated; trench walls held up vertically

NATIVE

Silty SAND (SM): dark greenish gray; predominantly silty fine-grained sand; trace shell fragments; clay interbedded; medium plasticity; stiff; micaceous; faint hydrocarbon odor; trench walls held up vertically

Began trenching at 0756 on 20 May 2004.

Stopped trenching at a depth of 25 ft-bgs at 0855 on 20 May 2004.

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT See Remarks
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTEC.GDT 28/10/04

**GEO SYNTEC CONSULTANTS**

924 Anacapa Street, Suite 4A
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GS FORM:
TRENCH 6/04

TEST TRENCH LOG**BORING****PNL-TP04****SHEET 1 OF 1**

START DRILL DATE 19 May 04
FINISH DRILL DATE 19 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
ARTIFICIAL FILL SILT (ML): dry; trace fine to medium gravel; no concrete debris	1		1	Began trenching at 0755 on 19 May 2004.
	2		2	
	3		3	
WASTE Oily Silty SAND (SM): slightly moist; very strong hydrocarbon odor; trench wall vertical	4		4	
	5		5	
	6		6	
@ 6' - CLAY (CL): black to very dark greenish gray; oil saturated; strong hydrocarbon odor	7		7	
	8		8	
	9		9	
@ 9' - ~6-inch layer white shale material	10		10	
	11		11	
@ 11' - water seep with flow rate <0.1gpm	12		12	
	13		13	
	14		14	
	15		15	
	16		16	
NATIVE CLAY (CL): dark greenish gray clay; clay is stiff and high plasticity with evidence of hydrocarbon impact; slight hydrocarbon odor	17		17	
	18		18	
Silty SAND (SM): micaceous	19		19	
	20		20	Stopped trenching at a depth of 20 ft-bgs at 0940 on 19 May 2004.
	21		21	
	22		22	
	23		23	
	24		24	
	25		25	
	26		26	
	27		27	
	28		28	
	29		29	
	30		30	

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT Hitachi Ex450H Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTEC.GDT 28/10/04



GEO SYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

START DRILL DATE 18 May 04
FINISH DRILL DATE 18 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-TP05

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL
DESCRIPTION

LAYER
DEPTH
(FT)

SYMBOLIC LOG

LAYER
DEPTH
(FT)

COMMENT

ARTIFICIAL FILL

Concrete fragments, blocks, and slabs with rebar (30% volume); occasional large concrete pieces (<7'x2'x2');

@ 4' - abundant asphalt debris, slabs and chunks (4'x4'x0.3'); silt; sand; dry

IMPACTED FILL

Black silty impacted fill; trace red bricks; wood fragments; wires; concrete and asphalt debris; trench walls held up well >1:1 slope

NATIVE

CLAY (CL): dark greenish gray; moderate to stiff; vertical trench walls held up well

Silty SAND (SM): trace shell fragments; micaceous; hydrocarbon odor; vertical trench walls held up well

Began trenching at 0809 on 18 May 2004.

Stopped trenching at a depth of 22 ft-bgs at 0904 on 18 May 2004..

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT Hitachi Ex450H Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING

REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSNTEC.GDT 28/10/04



GeoSYNTEC CONSULTANTS

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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

PNL-TP06

SHEET 1 OF 1

START DRILL DATE 18 May 04
FINISH DRILL DATE 18 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
ARTIFICIAL FILL Abundant concrete debris including large slabs and chunks (<5'x6'x1'); upper 6 ft composed about 70% concrete debris in silty sandy material	1 2 3 4 5 6		1 2 3 4 5 6	Began trenching at 1004 on 18 May 2004.
IMPACTED FILL Black silt; material with abundant concrete debris with chunks as large as 5'x5'x1' slabs; abundant tar seeps oozing between concrete debris; little asphalt debris; trace fiberglass insulation and pipe; ~70% concrete debris by volume; wood fragments; top of waste zone not clearly defined; commingled clay (drilling mud) with tar and fill	7 8 9 10 11 12 13 14 15 16 17 18 19 20 21		7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	
@ 18' - water seep with flow rate - <0.2 gpm	22		22	
NATIVE CLAY (CL): dark greenish gray; high plasticity; stiff; no hydrocarbon odor; observed little hydrocarbon impact at impacted fill - clay interface	23 24 25 26 27 28 29 30		23 24 25 26 27 28 29 30	Stopped trenching at a depth of 22.5 ft-bgs at 1315 on 18 May 2004. Trench walls did not hold up well with slopes >1:1 due to abundant large concrete debris commingled with tar seeps.

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT See Remarks
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTEC.GDT 28/10/04



GEOSYNTEC CONSULTANTS

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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

PNL-TP7

SHEET 1 OF 1

START DRILL DATE 20 May 04
FINISH DRILL DATE 20 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
ARTIFICIAL FILL Concrete debris 5% (1'x1'x1'); abundant roots	1		1	Began trenching at 1011 on 20 May 2004.
	2		2	
IMPACTED FILL Black to very dark greenish gray; fill; material of various composition; asphalt debris; asphalt sludge; abundant plant material; trace wood fragment; organic matrix/material; cloth; metal pipe; ~10% concrete debris; trace large concrete (<6'x1'x1'); spray can; plastic pipe; trench walls unstable >1:1 below 2 feet of depth	3		3	
	4		4	
	5		5	
	6		6	
	7		7	
	8		8	
	9		9	
	10		10	
	11		11	
	12		12	
	13		13	
	14		14	
@ 14' - water seep with initial flow rate - 0.5 gpm, then slowed to <0.1 gpm after 10 minutes	15		15	
@ 15 to 20' - commingled pockets of clay waste (drilling mud); oil saturated; strong hydrocarbon odor with construction debris material	16		16	
	17		17	
@ 18' - water seep with initial flow rate 0.5 gpm, then slowed to <0.1 gpm after ~10 minutes	18		18	
	19		19	
	20		20	
NATIVE CLAY (CL): dark greenish gray; clay; high plasticity; stiff; clay layer <1ft thick Silty SAND (SM): low plasticity; very micaceous	21		21	
	22		22	Stopped trenching at a depth of 22 ft-bgs at 1120 May 2004.
	23		23	
	24		24	
	25		25	
	26		26	
	27		27	
	28		28	
	29		29	
	30		30	

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT Hitachi Ex450H Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTEC.GDT 28/10/04

PID/FID CALIBRATION LOGS

Instrument Calibration Log

Pilot Study No. 3
Ascon Landfill Site

Instrument Information			
Instrument Name: <i>TVA-1000</i>	Manufacturer: <i>Thermo Environmental</i>		
Serial Number: <i>R5208</i>	Last Service Date:		
Parameters: <i>Total VOCs</i>	Calibration Gas: <i>50ppm Hexane</i>		
Calibration Procedure:		<i>LOT #: IAD-289-50-1</i>	
Daily Calibration Results			
Date: <i>5/17/04</i> <i>0815</i>	Calibration Result: <i>PID = 50.36 ppm</i> <i>FID = 50.17 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Liam Dage</i>
Notes: <i>Refueled Hydrogen Supply</i>			
Date: <i>5/19/04</i> <i>0815</i>	Calibration Result: <i>PID = 49.88 ppm</i> <i>FID = 49.5 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Liam Dage</i>
Notes: <i>Refueled Hydrogen supply</i>			
Date: <i>5/19/04</i> <i>0755</i>	Calibration Result: <i>PID = 52.10</i> <i>FID = 51.45</i>	Name: <i>L. Dage</i>	Signature: <i>Liam Dage</i>
Notes: <i>Refueled Hydrogen Supply</i>			
Date: <i>5/20/04</i> <i>0750</i>	Calibration Result: <i>PID = 49.70</i> <i>FID = 50.41</i>	Name: <i>L. Dage</i>	Signature: <i>Liam Dage</i>
Notes: <i>re-fueled Hydrogen Supply</i>			
Date:	Calibration Result:	Name:	Signature:
Notes:			

Instrument Calibration Log

Pilot Study No. 3

Ascon Landfill Site

Instrument Information			
Instrument Name: <i>Mini RAE 2000</i>	Manufacturer: <i>Mini RAE</i>		
Serial Number: <i>R5603</i>	Last Service Date: <i>4/28/04</i>		
Parameters: <i>total VOCs</i>	Calibration Gas: <i>50 ppm Hexane</i>		
Calibration Procedure: <i>IAD-289-50-1</i>			
Daily Calibration Results			
Date: <i>5/17/04</i>	Calibration Result: <i>49.9 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Laurin Dage</i>
Notes:			
Date: <i>5/18/04</i>	Calibration Result: <i>52.0 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Laurin Dage</i>
Notes: <i>0800</i>			
Date: <i>5/19/04</i>	Calibration Result: <i>50.1 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Laurin Dage</i>
Notes: <i>0800</i>			
Date: <i>5/20/04</i>	Calibration Result: <i>50.7 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Laurin Dage</i>
Notes: <i>0800</i>			
Date:	Calibration Result:	Name:	Signature:
Notes:			

M E M O R A N D U M

TO: Tamara Zeier, P.E, Project Navigator, Ltd.
Ken Fredianelli, Project Navigator, Ltd.

FROM: Mike Reardon, P.E., GeoSyntec Consultants
Mark Grivetti, R.G., C.E.G., GeoSyntec Consultants

DATE: 17 June 2004

SUBJECT: **GeoSyntec Field Memorandum**
Pilot Study No. 3 – Phase IV Lagoon Sampling Program
Ascon Landfill Site
Huntington Beach, California

This memorandum provides a summary of field activities conducted by GeoSyntec Consultants (GeoSyntec) for the Pilot Study No. 3, Phase IV lagoon sampling program at the Ascon Landfill Site (Site) located in Huntington Beach, California. This memorandum was prepared for Project Navigator, Ltd. (PNL). Included with this memorandum are tabular summaries of lagoon sampling information, air monitoring data, and copies of field logs.

The scope of work for Phase IV, as described in the workplan, “Pilot Study No. 3, Waste Characterization, Emissions, and Excavation Testing Program” [PNL and GeoSyntec, 2004] and the Phase IV Addendum [PNL, 2004], included the collection of two soil waste samples at each of the five lagoons for laboratory testing, and collection of vapor samples for odor and chemical testing using the surface flux chamber testing technique. Specific field activities performed by GeoSyntec included logging of lagoon materials, field screening of lagoon material bucket samples using a photoionization detector (PID) and flame ionization detector (FID), and perimeter air monitoring.

Phase IV fieldwork was conducted from 24 May 2004 through 26 May 2004. The heavy equipment and an operator were provided by Recon Remedial Construction Services, under contract to PNL. Analytical laboratories under subcontract to GeoSyntec for chemical analyses of lagoon material samples and surface flux and perimeter ambient air samples included Del Mar Analytical and Columbia Analytical, respectively.

Ten lagoon sampling locations (PNL-L1A, PNL-L1B, PNL-L2A, PNL-L2B, PNL-L3A, PNL-L3B, PNL-L4A, PNL-L4B, PNL-L5A, and PNL-L5B) were probed and sampled using a CAT 225D LC Long-Reach Excavator. Observations and samples of lagoon materials were obtained from estimated depths of 4 ft-bgs to 12 ft-bgs. The degree to which lagoon materials flowed limited the depths to which materials could be observed and subsequently sampled. Due to the presence of relatively higher strength materials (more solid like), the top of the native alluvium (stiff clay or micaceous silt to silty sand) was observed at lagoon locations PNL-L4A and PNL-L5B.

Trench logging was conducted using combined observations from material disturbed in the lagoon and from information gathered from the equipment operator. In general, the lagoons were predominately composed of drilling mud waste and oil-like material. The composition of the upper portions of the lagoons generally exhibited either a hardened crust of tar or “taffy” like black tar. In addition, a plastic geomembrane-like liner was identified at a depth of approximately 1 foot below the lagoon surface at PNL-L2A. No free liquids were observed at lagoon sampling locations.

Waste material from each lagoon sampling location was collected in a 55-gallon drum for use in surface flux chamber testing and for laboratory analytical testing. Emissions from bucket samples were recorded using a FID and PID. FID and PID results from monitoring the excavator bucket are summarized in Table 1. Disturbed lagoon surfaces were sprayed with a foam suppressant to control potential odor and chemical emissions from disturbed materials.

A GeoSyntec field geologist observed and documented lagoon sampling activities. GINT[®] trench logs are provided as an attachment. Table 2 provides a

summary of samples collected for laboratory testing from each lagoon location. Analytical testing of samples was requested per the workplan and the addendum.

Air monitoring instruments, PIDs, FIDs, and dust monitors were calibrated daily. Equipment calibration sheets are included as an attachment. Perimeter air monitoring was performed in accordance with activities described in Appendix A of the workplan and the addendum. Perimeter air monitoring consisted of hourly PID, dust, odor measurements, and the collection of one 8-hour integrated SUMMA canister air sample for each work day at each of the six designated perimeter air monitoring locations. A summary of SUMMA air samples submitted for analysis is presented in Table 3. Hourly measurements of wind speed and direction were also recorded on logs from the on-site wind station. Air monitoring activities were conducted by a GeoSyntec field engineer. Odor levels above background (SCAQMD Level I) were noted on 25 May at the northern site perimeter air monitoring location AA-02, which was downwind of the lagoons being disturbed. The perimeter air monitoring results for activities during the 3 days of Phase IV fieldwork are presented in Tables 4A through 4C.

Using the lagoon material collected from each sampling location, surface flux chamber testing was performed under an uncontrolled and a controlled condition utilizing two selected emission control materials. Flux chamber testing data were collected from each test using a PID and FID. In addition, vapor samples were collected using SUMMA canisters and Tedlar bags for laboratory analysis. Laboratory testing of vapor samples included VOCs, total petroleum hydrocarbons, sulfur compounds, and odor. A summary of FID and PID flux chamber test results was provided to PNL by Chuck Schmidt. Table 2 provides a summary of flux samples collected for laboratory testing. All flux testing equipment for the mitigation measurement quantification was provided and operated by Chuck Schmidt.

Laboratory data were provided to PNL in electronic format. Electronic data deliverables (EDDs) for surface flux and perimeter ambient air samples analyses from Columbia Analytical (VOCs, sulfur compounds, and petroleum hydrocarbons) were provided by GeoSyntec once received. All EDDs for soil and waste testing results from Del Mar Analytical can be obtained through the web based portal set up for the project.

GeoSyntec Field Memorandum – Phase IV

17 June 2004

Page 4

Odor data were provided from the laboratory to GeoSyntec and were transmitted to PNL (Steve Howe) as received.

If you have any questions regarding this information please contact Mike Reardon at (714) 969-0800 or Mark Grivetti at (805) 897-3800. GeoSyntec appreciates the opportunity to provide PNL with technical services for the Ascon Project.

* * * * *

TABLES

TABLE 1
SUMMARY OF EXCAVATOR BUCKET MONITORING
PHASE IV LAGOON SAMPLING
ASCON LANDFILL SITE

Borehole ID	Date	Time	PID Reading (ppm)	FID Reading (ppm)
PNL-L1A	5/26/2004	14:34	0.8	0.1
		14:36	35	50
PNL-L1B	5/26/2004	11:16	2	0.5
		11:17	0.9	0.5
		11:21	90	50
PNL-L2A	5/26/2004	13:55	5.01	8.44
PNL-L2B	5/26/2004	10:01	10	2
		10:05	20	5
		10:12	18	5
PNL-L3A	5/25/2004	12:46	2.6	0.3
		12:58	2.5	0.4
		13:09	1.9	0.2
		13:14	9	7
		13:27	1.7	0.5
		13:41	4.2	2
PNL-L3B	5/25/2004	9:12	2	0.8
		9:21	15	7
		9:29	20	23
		9:35	20	35
		9:55	90	25
PNL-L4A	5/24/2004	14:00	1.3	2.5
		NR	10	2.5
		14:15	110	60
		14:39	180	90
		14:43	12	24
PNL-L4B	5/24/2004	10:48	200	196
		11:02	64.8	48.2
PNL-L5A	5/24/2004	9:43	71.2	38.9
PNL-L5B	5/25/2004	8:00	1	0.2
		8:04	73	36
		8:22	1.2	0.2

Notes:

ppm: parts per million concentration

Measurement taken from material surface as sampled with bucket

NR: not recorded

TABLE 2
SAMPLE COLLECTION SUMMARY
PHASE IV LAGOON SAMPLING
ASCON LANDFILL SITE

Lagoon Sampling Location	Date Sampled	Lagoon Sample ID [Del Mar Analytical]	Flux Chamber Odor Samples [Odor Science & Engineering, Inc]	Flux Chamber TO-15/TO-3 Vapor Samples [Columbia Analytical Services]	Flux Chamber Sulfur Vapor Samples [Columbia Analytical Services]
PNL-L1A	5/26/04	PNL-L1A	PNL-L1A-SFU PNL-L1A-SFC1 PNL-L1A-SFC2	PNL-L1A-SFU PNL-L1A-SFC1 PNL-L1A-SFC2	PNL-L1A-SFUS PNL-L1A-SFC1S PNL-L1A-SFC2S
PNL-L1B	5/26/04	PNL-L1B	PNL-L1B-SFU PNL-L1B-SFC1 PNL-L1B-SFC2	PNL-L1B-SFU PNL-L1B-SFUR PNL-L1B-SFC1 PNL-L1B-SFC2	PNL-L1B-SFUS PNL-L1B-SFC1S PNL-L1B-SFC2S
PNL-L2A	5/26/04	PNL-L2A	PNL-L2A-SFU PNL-L2A-SFC1 PNL-L2A-SFC2 PNL-L2A-SFURO	PNL-L2A-SFU PNL-L2A-SFC1 PNL-L2A-SFC2	PNL-L2A-SFUS PNL-L2A-SFC1S PNL-L2A-SFC2S
PNL-L2B	5/26/04	PNL-L2B	PNL-L2B-SFU PNL-L2B-SFC1 PNL-L2B-SFC2	PNL-L2B-SFU PNL-L2B-SFC1 PNL-L2B-SFC2	PNL-L2B-SFUS PNL-L2B-SFC1S PNL-L2B-SFC1SR PNL-L2B-SFC2S
PNL-L3A	5/25/04	PNL-L3A	PNL-L3A-SFU PNL-L3A-SFC1 PNL-L3A-SFC2	PNL-L3A-SFU PNL-L3A-SFC1 PNL-L3A-SFC2	PNL-L3A-SFUS PNL-L3A-SFC1S PNL-L3A-SFC2S
PNL-L3B	5/25/04	PNL-L3B	PNL-L3B-SFU PNL-L3B-SFC1 PNL-L3B-SFC2	PNL-L3B-SFC1 PNL-L3B-SFC2	PNL-L3B-SFU PNL-L3B-SFC1S PNL-L3B-SFC2
PNL-L4A	5/24/04	PNL-L4A	PNL-L4A-SFU PNL-L4A-SFC1 PNL-L4A-SFC2	PNL-L4A-SFU PNL-L4A-SFC1 PNL-L4A-SFC2	PNL-L4A-SFUS PNL-L4A-SFC1S PNL-L4A-SFC2S
PNL-L4B	5/24/04	PNL-L4B	PNL-L4B-SFU PNL-L4B-SFC1 PNL-L4B-SFC2	PNL-L4B-SFU PNL-L4B-SFC1 PNL-L4B-SFC2	PNL-L4B-SFUS PNL-L4B-SFC1S PNL-L4B-SFC2S
PNL-L5A	5/24/04	PNL-L5A	PNL-L5A-SFU PNL-L5A-SFC1 PNL-L5A-SFC2	PNL-L5A-SFU PNL-L5A-SFC1 PNL-L5A-SFC2	PNL-L5A-SFUS PNL-L5A-SFC1S PNL-L5A-SFC2S
PNL-L5B	5/25/04	PNL-L5B	PNL-L5B-SFU PNL-L5B-SFC1 PNL-L5B-SFC2	PNL-L5B-SFU PNL-L5B-SFC1 PNL-L5B-SFC2	PNL-L5B-SFUS PNL-L5B-SFC1S PNL-L5B-SFC2S
Blank Samples			PNL-L200-SFU	PNL-L1A-SF300 PNL-L5-100-SFU	PNL-L200-SFUS

TABLE 3

**PERIMETER AIR SAMPLE COLLECTION SUMMARY
PHASE IV LAGOON SAMPLING
ASCON LANDFILL SITE**

Station ID	Date Collected	Container ID (Serial #)	Flow Controller (Serial #)	Sample ID [Columbia Analytical Services]
AA-01	5/24/04	01902	01686	AA-01-052404
	5/25/04	01924	01704	AA-01-052504
	5/26/04	02000	01592	AA-01-052604
AA-02	5/24/04	01627	02584	AA-02-052404
	5/25/04	00634	01678	AA-02-052504
	5/26/04	01866	01685	AA-02-052604
AA-03	5/24/04	02025	01654	AA-03-052404
	5/25/04	07148	01321	AA-03-052504
	5/26/04	02006	01960	AA-03-052604
AA-04	5/24/04	01183	01784	AA-04-052404
	5/25/04	01530	01316	AA-04-052504
	5/26/04	02022	01414	AA-04-052604
AA-05	5/24/04	02001	01396	AA-05-052404
	5/25/04	01885	01691	AA-05-052504
	5/26/04	02024	01655	AA-05-052604
AA-07	5/24/04	01914	01313	AA-07-052404
	5/25/04	02043	01994	AA-07-052504
	5/26/04	01577	01697	AA-07-052604

TABLE 4A
PERIMETER AIR MONITORING DATA SUMMARY
24 MAY 2004
PHASE IV - LAGOON SAMPLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/24/2004	9:20 AM	5.4	200	0	0.0	0.022
AA-01	5/24/2004	10:23 AM	9.5	190	0	0.0	0.038
AA-01	5/24/2004	11:28 AM	11.4	184	0	0.0	0.042
AA-01	5/24/2004	2:27 PM	9.8	202	0	0.0	0.037
AA-02	5/24/2004	9:22 AM	5.4	200	0	0.0	0.040
AA-02	5/24/2004	10:25 AM	9.5	190	0	0.0	0.016
AA-02	5/24/2004	11:32 AM	11.4	184	0	0.0	0.038
AA-02	5/24/2004	2:30 PM	9.8	202	0	0.0	0.022
AA-03	5/24/2004	9:26 AM	5.4	200	0	0.0	0.023
AA-03	5/24/2004	10:27 AM	9.5	190	0	0.0	0.029
AA-03	5/24/2004	11:34 AM	11.4	184	0	0.0	0.024
AA-03	5/24/2004	2:33 PM	9.8	202	0	0.0	0.025
AA-04	5/24/2004	9:11 AM	5.4	200	0	0.0	0.028
AA-04	5/24/2004	10:14 AM	9.5	190	0	0.0	0.031
AA-04	5/24/2004	11:18 AM	11.4	184	0	0.0	0.030
AA-04	5/24/2004	2:17 PM	9.8	202	0	0.0	0.029
AA-05	5/24/2004	9:07 AM	5.4	200	0	0.0	0.022
AA-05	5/24/2004	10:07 AM	9.5	190	0	0.0	0.025
AA-05	5/24/2004	11:14 AM	11.4	184	0	0.0	0.035
AA-05	5/24/2004	2:13 PM	9.8	202	0	0.0	0.022
AA-07	5/24/2004	9:04 AM	5.4	200	0	0.0	0.025
AA-07	5/24/2004	10:03 AM	9.5	190	0	0.0	0.027
AA-07	5/24/2004	11:10 AM	11.4	184	0	0.0	0.019
AA-07	5/24/2004	2:09 PM	9.8	202	0	0.0	0.020

TABLE 4B
PERIMETER AIR MONITORING DATA SUMMARY
25 MAY 2004
PHASE IV - LAGOON SAMPLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/25/2004	8:30 AM	4.4	156	0	0.0	0.044
AA-01	5/25/2004	9:37 AM	4.9	165	0	0.0	0.033
AA-01	5/25/2004	10:38 AM	5.8	160	0	0.0	0.029
AA-01	5/25/2004	1:12 PM	9.1	200	0	0.0	0.049
AA-01	5/25/2004	2:18 PM	6.3	215	0	0.0	0.036
AA-02	5/25/2004	8:33 AM	4.4	156	0	0.0	0.027
AA-02	5/25/2004	9:40 AM	4.9	165	0	0.0	0.031
AA-02	5/25/2004	10:42 AM	5.8	160	0	0.0	0.042
AA-02	5/25/2004	1:15 PM	9.1	200	1	0.0	0.031
AA-02	5/25/2004	2:21 PM	6.3	215	0	0.0	0.044
AA-03	5/25/2004	8:37 AM	4.4	156	1	0.0	0.028
AA-03	5/25/2004	9:44 AM	4.9	165	0	0.0	0.021
AA-03	5/25/2004	10:47 AM	5.8	160	0	0.0	0.032
AA-03	5/25/2004	3:18 PM	9.1	200	0	0.0	0.026
AA-03	5/25/2004	2:25 PM	6.3	215	0	0.0	0.048
AA-04	5/25/2004	8:19 AM	4.4	156	0	0.0	0.021
AA-04	5/25/2004	9:26 AM	4.9	165	0	0.0	0.029
AA-04	5/25/2004	10:27 AM	5.8	160	0	0.0	0.035
AA-04	5/25/2004	1:01 PM	9.1	200	0	0.0	0.028
AA-04	5/25/2004	2:13 PM	6.3	215	0	0.0	0.026
AA-05	5/25/2004	8:14 AM	4.4	156	0	0.0	0.038
AA-05	5/25/2004	9:20 AM	4.9	165	0	0.0	0.035
AA-05	5/25/2004	10:23 AM	5.8	160	0	0.0	0.027
AA-05	5/25/2004	12:58 PM	9.1	200	0	0.0	0.037
AA-05	5/25/2004	2:09 PM	6.3	215	0	0.0	0.020
AA-07	5/25/2004	8:09 AM	4.4	156	0	0.0	0.027
AA-07	5/25/2004	9:16 AM	4.9	165	0	0.0	0.032
AA-07	5/25/2004	10:19 AM	5.8	160	0	0.0	0.032
AA-07	5/25/2004	12:54 PM	9.1	200	0	0.0	0.022
AA-07	5/25/2004	2:05 PM	6.3	215	0	0.0	0.020

TABLE 4C
PERIMETER AIR MONITORING DATA SUMMARY
26 MAY 2004
PHASE IV - LAGOON SAMPLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	5/26/2004	10:26 AM	4.9	187	0	0.0	0.025
AA-01	5/26/2004	11:44 AM	7.8	230	0	0.0	0.037
AA-01	5/26/2004	2:22 PM	12.1	262	0	0.0	0.036
AA-02	5/26/2004	10:28 AM	4.9	187	0	0.0	0.027
AA-02	5/26/2004	11:47 AM	7.8	230	0	0.0	0.044
AA-02	5/26/2004	2:26 PM	12.1	262	0	0.0	0.030
AA-03	5/26/2004	10:32 AM	4.9	187	0	0.0	0.022
AA-03	5/26/2004	11:50 AM	7.8	230	0	0.0	0.038
AA-03	5/26/2004	2:30 PM	12.1	262	0	0.0	0.024
AA-04	5/26/2004	10:16 AM	4.9	187	0	0.0	0.021
AA-04	5/26/2004	11:34 AM	7.8	230	0	0.0	0.035
AA-04	5/26/2004	2:12 PM	12.1	262	0	0.0	0.052
AA-05	5/26/2004	10:08 AM	4.9	187	0	0.0	0.034
AA-05	5/26/2004	10:31 AM	7.8	230	0	0.0	0.043
AA-05	5/26/2004	2:08 PM	12.1	262	0	0.0	0.080
AA-07	5/26/2004	10:02 AM	4.9	187	0	0.0	0.032
AA-07	5/26/2004	11:28 AM	7.8	230	0	0.0	0.023
AA-07	5/26/2004	2:04 PM	12.1	262	0	0.0	0.048

AIR SAMPLE LOGS

SAMPLE LOG SHEET **AMBIENT AIR SAMPLING** **ASCON LANDFILL**

DATE: 5/24/04Page 1 of 1
 Sampler: Lauren Dage (in Hg)

Sample ID	Summa PAI #	Flow Controller PAI #	Pre- Sample Vacuum	Post Sample Vacuum	Sample Collection Time (initial)
AA-01-052404	01902	01686	>30	10.0	0737 1512
AA-02-052404	01627	02584	>30	7.5	0739 1513
AA-03-052404	02025	01654	>30	8.5	0740 1515
AA-04-052404	01183	01784	>30	7.5	0733 1509
AA-05-052404	02001	01396	>30	9.0	0730 1507
AA-07-052404	01914	01313	>30	8.5	0728 1504

SAMPLE LOG SHEET AMBIENT AIR SAMPLING ASCN LANDFILL

DATE: 5/25/04Page 1 of 1Sampler: L. D. Age

(in. Hg) (in. Hg)

Sample ID	Summa PAI #	Flow Controller PAI #	Pre- Sample Vacuum	Post Sample Vacuum	Sample Collection Time (initial)
AA-01-052504	01924	01704	>30	7.0	0731 / 1502
AA-02-052504	AC00634	01678	>30	8.5	0733 / 1504
AA-03-052504	01148	01321	>30	8.0	0734 / 1505
AA-04-052504	01530	01316	>30	7.0	0728 / 1500
AA-05-052504	01885	01691	>30	6.0	0726 / 1457
AA-07-052504	02043	01994	>30	6.5	0724 / 1456

5/24/04
 (α L4B - SFC
 L5B on Can
 GeoSyntec Consultants

SAMPLE LOG SHEET
AMBIENT AIR SAMPLING
ASCON LANDFILL

5/25/04
 PNL-L3B -
 Last sample.

DATE: 5/26/04

Page 1 of 1

Sampler: L. Dage

(in. Hg) (in. Hg)

Sample ID	Summa PAI #	Flow Controller PAI #	Pre- Sample Vacuum	Post Sample Vacuum	Sample Collection Time (initial)
AA-01-052604	02000	01591	30	18.0	0741 1530
AA-02-052604	01866	01685	30	9.0	0743 1531
AA-03-052604	02006	01960	30	11.0	0745 1532
AA-04-052604	02022	01414	30	8.5	0738 1528
AA-05-052604	02024	01655	30	5.0	0735 1526
AA-07-052604	01577	01692	30	8.5	0733 1524

BORING LOGS



GeoSYNTEC CONSULTANTS

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Santa Barbara, California 93101
(805) 897-3800

PROJECT Ascon

PROJECT LOCATION Huntington Beach, CA

PROJECT NUMBER SB0202

KEY SHEET - CLASSIFICATIONS AND SYMBOLS

GS FORM:
KEY/SYMBOLS 01/04

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N VALUES *

	N VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)		N VALUE * (BLOWS/FT)	RELATIVE DENSITY
FINE GRAINED SOILS	0 - 2	VERY SOFT	<0.25	COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	3 - 4	SOFT	0.25 - 0.50		5 - 10	LOOSE
	5 - 8	FIRM	0.50 - 1.00		11 - 30	MEDIUM DENSE
	9 - 15	STIFF	1.00 - 2.00		31 - 50	DENSE
	16 - 30	VERY STIFF	2.00 - 4.00		>50	VERY DENSE
	31 - 50	HARD	>4.00			
	>50	VERY HARD				

* ASTM D 1586; NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1.4 IN. I.D. SAMPLER ONE FOOT.

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

MAJOR DIVISIONS			SYMBOLS		DESCRIPTIONS			
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES			
		LITTLE OR NO FINES		GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES			
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO.4 SIEVE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES			
		APPRECIABLE AMOUNT OF FINES		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES			
	MORE THAN 50% OF MATERIAL COARSER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES		
			LITTLE OR NO FINES		SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES		
		MORE THAN 50% OF COARSE FRACTION PASSING NO.4 SIEVE	SANDS WITH FINES		SM	SILTY SANDS, SAND-SILT MIXTURES		
			APPRECIABLE AMOUNT OF FINES		SC	CLAYEY SANDS, SAND-CLAY MIXTURES		
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY			
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS			
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY			
	MORE THAN 50% OF MATERIAL FINER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT		
					CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS		
					OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS		
				HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT

NOTE: DUAL SYMBOLS USED FOR BORDERLINE CLASSIFICATIONS

PARTICLE SIZE IDENTIFICATION

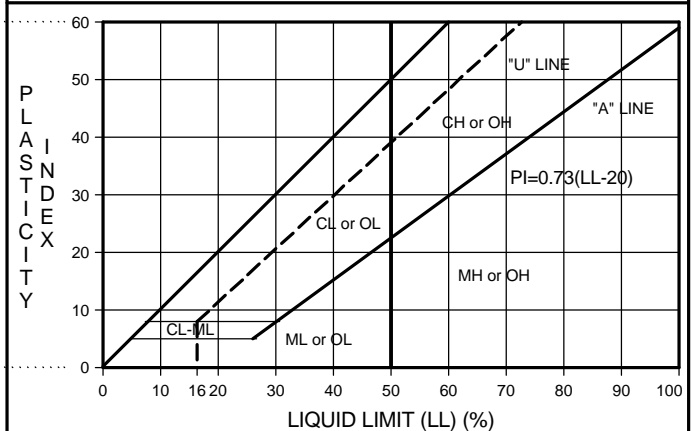
USCS (SOILS ONLY) *		SEDIMENTARY (ROCK ONLY)	
BOULDER	>300 mm	BOULDER	>256 mm
COBBLE	75 - 300 mm	COBBLE	64 - 256 mm
GRAVEL: COARSE	20 - 75 mm	PEBBLE	4 - 64 mm
GRAVEL: FINE	4.75 - 20 mm	GRANULE	2 - 4 mm
SAND: COARSE	2 - 4.75 mm	SAND: V. COARSE	1 - 2 mm
SAND: MEDIUM	0.42 - 2 mm	SAND: COARSE	0.5 - 1 mm
SAND: FINE	0.074 - 0.42 mm	SAND: MEDIUM	0.25 - 0.5 mm
SILT/CLAY	<0.074 mm	SAND: FINE	0.125 - 0.25 mm
		SAND: V. FINE	0.063 - 0.125 mm
		SILT	0.004 - 0.063 mm
		CLAY	<0.004 mm

* WELL GRADED - HAVING WIDE RANGE OF GRAIN SIZES AND APPRECIABLE AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES

* POORLY GRADED - PREDOMINANTLY ONE GRAIN SIZE, OR HAVING A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING

PERCENTAGE OF PARTICLE TYPE IN DECREASING ORDER OF PARTICLE SIZE (GRAVEL, SAND, FINES)

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

Conglomerate	Sandy Claystone	Marker Bed
Sandstone	Granitic/Intrusive	
Silty Sandstone	Volcanic/Extrusive	Artificial Fill
Clayey Sandstone	Metamorphic	Refuse
Sandy Siltstone	Limestone	Concrete/Asphalt
Siltstone	Dolomite	
Claystone	Glacial Till	
Clayey Siltstone/ Silty Claystone	Landslide Debris	

WELL SYMBOLS

CONCRETE
GROUT
BENTONITE SEAL
TRANSITION SAND
SAND/GRAVEL PACK
NATIVE/SLUFF
CENTRALIZER

SAMPLE TYPE AND OTHER SYMBOLS

BULK SAMPLE	Water Level at Time Drilling, or as Shown
STANDARD PENETRATION TEST	Static Water Level
MODIFIED CALIFORNIA SAMPLE	Pump Inlet
CORE SAMPLE	Loss of Drilling Fluid
SHELBY TUBE	MSL: Mean Sea Level
DRIVE SAMPLE	AGS: Above Ground Surface
	BGS: Below Ground Surface
	BTOT: Below Top of Casing
	HSA: Hollow Stem Auger



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(805) 897-3800

GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

START DRILL DATE 26 May 04
FINISH DRILL DATE 26 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-L1A

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

**MATERIAL
DESCRIPTION**

**LAYER
DEPTH
(FT)**

SYMBOLIC LOG

**LAYER
DEPTH
(FT)**

COMMENT

WASTE

TAR: black; viscous; soupy;
hydrocarbon odor not strong

@ 1' - CLAY: black to very dark
greenish gray; high plasticity; soft;
strong hydrocarbon odor; oil
saturated (drilling mud).

1

2

3

4

5

@ 5' - refusal; higher resistant
material; unknown/undetermined

6

7

8

9

10

11

12

13

14

15

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Began trenching at 1433 on 26 May
2004.

Due to unexposed lagoon subsurface by
soupy tar layer, trench logging was
based upon visual observations from
excavator bucket and comments from
excavator operator. Size of trench
limited by opened protective netting
above lagoon 1.

Stopped trenching at a depth of 5 ft-bgs
at 1440 on 26 May 2004.

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT CAT 225D LC Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTec.GDT 28/10/04



GEO SYNTEC CONSULTANTS

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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

START DRILL DATE 26 May 04
FINISH DRILL DATE 26 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-L1B

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
WASTE TAR: black; viscous; very soupy; hydrocarbon odor not strong	1		1	Began trenching at 1113 on 26 May 2004.
@ 2' - CLAY: black to very dark greenish gray; low plasticity; very soft; strong hydrocarbon odor	2		2	Due to unexposed lagoon subsurface by soupy tar layer, trench logging was based upon visual observations of excavator bucket and comments from excavator operator. Size of trench limited by opened protective netting above lagoon 1.
	3		3	
	4		4	
	5		5	
	6		6	
@ 7' - excavator operator reported that the resistant material underlying the clay did not feel like the ceramic/clay tile layers logged in PNL-L2B. Stiffer drilling mud is the suspected resistant layer	7		7	Stopped trenching at a depth of 7 ft-bgs at 1120 on 26 May 2004.
	8		8	
	9		9	
	10		10	
	11		11	
	12		12	
	13		13	
	14		14	
	15		15	

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT CAT 225D LC Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

START DRILL DATE 26 May 04
FINISH DRILL DATE 26 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-L2A

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
WASTE TAR: black; viscous (more viscous than tar found in PNL-L1B); soupy; hydrocarbon odor not strong @ 1' - COMPOSITE: hard plastic liner underlies the tar layer (suspected); liner appears ripped from lagoon during trenching and separates the tar from the material below; underlying the plastic liner - composite soil-like material; hydrocarbon impacted silt; tarry sand; trace fine to medium gravel (angular to subangular, <50mm diameter); strong hydrocarbon odor; high plasticity; soft to stiff; some drilling mud (clay)	1 2 3 4		1 2 3 4	Began trenching at 1347 on 26 May 2004. Due to unexposed lagoon subsurface by soupy tar layer, trench logging was based upon visual observations of excavator bucket and comments from excavator operator. Size of trench limited by opened protective netting above lagoon 2.
@ 5' - refusal or higher resistant material; unknown/undetermined	5		5	Stopped trenching at a depth of 5 ft-bgs at 1400 on 26 May 2004.
	6		6	
	7		7	
	8		8	
	9		9	
	10		10	
	11		11	
	12		12	
	13		13	
	14		14	
	15		15	

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT CAT 225D LC Excavator
DRILL MTHD Test Trench
LOGGER GTY
NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTEC.GDT 28/10/04



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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

PNL-L2B

SHEET 1 OF 1

START DRILL DATE 26 May 04
FINISH DRILL DATE 26 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
WASTE COMPOSITE: upper 1-inch partially solidified hydrocarbon crust material; likely containing tar; underlain by composited clay and oily soil-like material; clay is black to very dark greenish gray; strong hydrocarbon odor; high plasticity; soft; oil saturated; tar/oil seeps; material in general drier than PNL-L3A; soil material composed of hydrocarbon impacted silt, sand, and trace fine to medium gravel (angular to subangular, <50mm diameter)	1 2 3		1 2 3	Began trenching at 0959 on 26 May 2004. Size of trench limited by opened protective netting above lagoon 2.
@ 4' - refusal; undetermined hard material; suspected to be layers of 1/2-inch thick ceramic or clay tiles found in excavator bucket. Trench walls unable to sustain >1:1 slope; material slumped inwards; final trench dimension with sloughing ~5 ft wide, 5 ft long, and 1 ft deep	4 5 6 7 8 9 10 11 12 13 14 15		4 5 6 7 8 9 10 11 12 13 14 15	Stopped trenching at a depth of 4 ft-bgs at 1010 on 26 May 2004.

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT CAT 225D LC Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTec.GDT 28/10/04

**GEOSYNTEC CONSULTANTS**

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Santa Barbara, California 93101
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GS FORM:
TRENCH 6/04

TEST TRENCH LOG**BORING****PNL-L3A****SHEET 1 OF 1**

START DRILL DATE 25 May 04
FINISH DRILL DATE 25 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
WASTE CLAY: black tar; ~1-inch thick; highly viscous but flowing; soft taffy; very sticky; underlain by black to very dark greenish gray clay; medium plasticity; very soft; oil saturated; ; strong hydrocarbon odor; predominately drilling mud; 4-ft pipe piece	1		1	Began trenching at 1244 on 25 May 2004.
	2		2	Due to soft nature of lagoon material and limits of excavator reach, equipment could not keep trench open and could not advance.
	3		3	
	4		4	
@ 5' - clay consistency became relatively stiffer	5		5	
Trench walls unable to sustain >1:1 slope; massive sloughing; slowly flowing material; final trench dimensions 20 ft long, 50 ft wide, and 6 ft deep	6		6	Stopped trenching at a depth of 6 ft-bgs at 1340 on 25 May 2004.
	7		7	
	8		8	
	9		9	
	10		10	
	11		11	
	12		12	
	13		13	
	14		14	
	15		15	

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT CAT 225D LC Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSNTEC.GDT 28/10/04



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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

START DRILL DATE 25 May 04
FINISH DRILL DATE 25 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-L3B

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
WASTE CLAY: hydrocarbon crust; ~1-inch thick; dried; partially solidified; underlain by black to very dark greenish gray clay; oil saturated; strong hydrocarbon odor; high plasticity; soft; upper 1-ft abundant oil or tar seeps; clay predominately drilling mud	1		1	Began trenching at 0908 on 25 May 2004.
	2		2	
	3		3	
	4		4	
@ 5' - clay consistency became moderately soft; less fluid-like	5		5	
	6		6	
	7		7	
	8		8	
	9		9	
Trench walls unable to hold >1:1 slope; massive sloughing; final trench size 18 ft wide, 30 ft long, and 10 ft deep, with sloughing, only 5 ft deep	10		10	Stopped trenching at a depth of 10 ft-bgs at 0947 on 25 May 2004.
	11		11	
	12		12	
	13		13	
	14		14	
	15		15	

CONTRACTOR
EQUIPMENT
DRILL MTHD
LOGGER

Recon Remedial Construction Services
CAT 225D LC Excavator
Test Trench
GTJ

NORTHING
EASTING

REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSNTEC.GDT 28/10/04



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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

START DRILL DATE 24 May 04
FINISH DRILL DATE 24 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-L4A

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
WASTE CLAY: black tar; ~2-inch thick; viscous but flowing; taffy consistency; underlain by black to very dark greenish gray clay; high plasticity; soft; strong hydrocarbon odor; oil saturated	1		1	Began trenching at 1357 on 24 May 2004.
	2		2	
	3		3	
	4		4	
@ 4' - unknown composition; 3-inch thick brown material interbedded and horizontally laid	5		5	
	6		6	
	7		7	
	8		8	
	9		9	
	10		10	
NATIVE CLAY (CL): dark greenish gray clay; high plasticity; stiff; hydrocarbon impacted; hydrocarbon odor	11		11	
SILT (ML): dark greenish gray silt; trace fine-grained sand; very micaceous; faint hydrocarbon odor	12		12	Stopped trenching at a depth of 12 ft-bgs at 1445 on 24 May 2004.
Trench walls unable to sustain vertical walls with slumping walls; collapses; issue was cascading tar into trench	13		13	
	14		14	
	15		15	

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT CAT 225D LC Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTEC.GDT 28/10/04



GeoSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
TRENCH 6/04

TEST TRENCH LOG

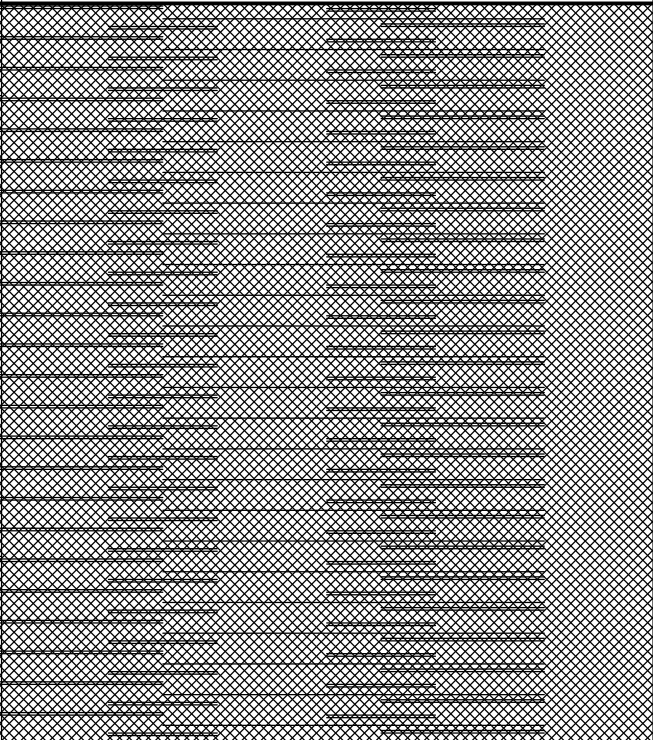
BORING

PNL-L4B

SHEET 1 OF 1

START DRILL DATE 24 May 04
FINISH DRILL DATE 24 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
WASTE Light brown silt-like material mottled with slightly hardened tar-like material; very highly viscous; dry deep; able to walk on it but can leave foot impression down to 0.5" deep @ 0.5' - increase in silt material thickness (~1.5-ft) towards the northern berm	1 2 3 4 5 6 7 8		1 2 3 4 5 6 7 8	Began trenching at 1034 on 24 May 2004.
@ 8' - CLAY: black to very dark greenish gray; high plasticity; moderately soft; strong hydrocarbon odor; oil saturated; trench walls held up well vertically	9 10 11 12 13 14 15		9 10 11 12 13 14 15	Stopped trenching at a depth of 8 ft-bgs at 1055 on 24 May 2004.

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT CAT 225D LC Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSNTEC.GDT 28/10/04



GeoSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
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GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

PNL-L5A

SHEET 1 OF 1

START DRILL DATE 24 May 04
FINISH DRILL DATE 24 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
WASTE Silt crust: yellowish brown; iron stained; dry; mottled with black viscous tar-like material; tar-like ooze; sulfur-like odor; liquids squeezed out from crust layer as it was disturbed; able to walk on hardened crust; increase in yellowish brown iron stained silt-like material thickness (~1-ft) toward western berm @ 0.5' - CLAY: black to very dark greenish gray; high plasticity; soft; strong hydrocarbon odor; oil saturated; trench walls do not hold up well >1:1 slope	1		1	Began trenching at 0852 on 24 May 2004.
	2		2	
	3		3	
	4		4	
	5		5	
	6		6	
	7		7	Stopped trenching at a depth of 7 ft-bgs at 0954 on 24 May 2004.
	8		8	
	9		9	
	10		10	
	11		11	
	12		12	
	13		13	
	14		14	
	15		15	

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT CAT 225D LC Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSNTEC.GDT 28/10/04



GeoSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
TRENCH 6/04

TEST TRENCH LOG

BORING

START DRILL DATE 25 May 04
FINISH DRILL DATE 25 May 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-L5B

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SYMBOLIC LOG	LAYER DEPTH (FT)	COMMENT
WASTE Partially solidified crust; white to light greenish gray; ~1-inch thick; underlain by black to very dark greenish gray clay; plasticity; soft; some tar; strong sulfur odor; trench walls cannot hold up >1:1 slope; heavy sloughing; final trench ~20'x18'x3' with trench wall caving; clay is oil saturated; predominately drilling mud	1 2 3 4 5 6 7 8 9 10		1 2 3 4 5 6 7 8 9 10	Began trenching at 0757 on 25 May 2004.
NATIVE Silty SAND (SM): dark greenish gray; very fine-grained sand with silt; micaceous; faint hydrocarbon odor	11 12 13 14 15		11 12 13 14 15	Stopped trenching at a depth of 10.5 ft-bgs at 0837 on 25 May 2004.

CONTRACTOR Recon Remedial Construction Services
EQUIPMENT CAT 225D LC Excavator
DRILL MTHD Test Trench
LOGGER GTY

NORTHING
EASTING
REVIEWER MR

REMARKS:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TRENCH ASCONSB0202_04.GPJ GEOSYNTEC.GDT 28/10/04

PID/FID CALIBRATION LOGS

Instrument Calibration Log

Pilot Study No. 3
Ascon Landfill Site

Instrument Information			
Instrument Name: <i>Mini RAE 2000</i>	Manufacturer: <i>Mini RAE</i>		
Serial Number: <i>R5603</i>	Last Service Date: <i>4/28/04</i>		
Parameters: <i>Total VOCs</i>	Calibration Gas: <i>50 ppm Hexane</i>		
Calibration Procedure:		<i>LOT# IAD-289-50-1 (5/24/04)</i> <i>LOT# JAD-289-50-1 (5/25/04)</i>	
Daily Calibration Results			
Date: <i>5/24/04</i> <i>0805</i>	Calibration Result: <i>50.5 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Lamm Dage</i>
Notes:			
Date: <i>5/25/04</i> <i>0752</i>	Calibration Result: <i>51.8 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Lamm Dage</i>
Notes:			
Date: <i>5/26/04</i> <i>0810</i>	Calibration Result: <i>50.3 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Lamm Dage</i>
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			

Instrument Calibration Log

Pilot Study No. 3

Ascon Landfill Site

Instrument Information			
Instrument Name: <i>TVA-1000</i>	Manufacturer: <i>Thermo Environmental Instruments</i>		
Serial Number: <i>A5208</i>	Last Service Date:		
Parameters: <i>Total VOCs</i>	Calibration Gas: <i>50ppm Hexane</i>		
Calibration Procedure:	<i>LOT# IAD-289-50-1 (5/24/04 & 5/25/04)</i> <i>LOT# IAD-289-50-1 (5/25/04 -</i>		
Daily Calibration Results			
Date: <i>5/24/04</i> <i>0800</i> Notes: <i>Re-fueled Hydrogen Supply</i>	Calibration Result: <i>PID = 50.15 ppm</i> <i>FID = 50.35 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Lamm Dage</i>
Date: <i>5/25/04</i> <i>0747</i> Notes: <i>Refueled Hydrogen</i>	Calibration Result: <i>PID = 50.26 ppm</i> <i>FID = 50.48 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Lamm Dage</i>
Date: <i>5/26/04</i> <i>0805</i> Notes: <i>re-fueled Hydrogen Supply</i>	Calibration Result: <i>PID = 50.20 ppm</i> <i>FID = 50.22 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Lamm Dage</i>
Date: Notes:	Calibration Result:	Name:	Signature:
Date: Notes:	Calibration Result:	Name:	Signature:

M E M O R A N D U M

TO: Tamara Zeier, P.E, Project Navigator, Ltd.
Ken Fredianelli, Project Navigator, Ltd.

FROM: Mike Reardon, P.E., GeoSyntec Consultants
Mark Grivetti, R.G., C.E.G., GeoSyntec Consultants

DATE: 7 July 2004

SUBJECT: **GeoSyntec Field Memorandum**
Pilot Study No. 3 – Phase V/VI Drilling Program
Ascon Landfill Site
Huntington Beach, California

This memorandum provides a summary of field activities conducted by GeoSyntec Consultants (GeoSyntec) for the Pilot Study No. 3, Phase V/VI hollow stem auger drilling program at the Ascon Landfill Site (Site) located in Huntington Beach, California. This memorandum was prepared for Project Navigator, Ltd. (PNL). Included with this memorandum are tabular summaries of borehole information, laboratory sample information, air monitoring data, GINT[®] borehole logs, and copies of field calibration logs.

The scope of work for Phase V/VI, as described in the workplan, “Pilot Study No. 3, Waste Characterization, Emissions, and Excavation Testing Program, Phase V/VI Addendum” [PNL, 2004], included the Phase V drilling of seven hollow stem auger soil borings with an additional three locations added at the request of PNL, collection of soil and waste samples for laboratory testing, and the geotechnical Phase VI drilling of three hollow stem auger soil borings with geotechnical sample collection. Specific field activities performed by GeoSyntec included lithologic logging of boreholes from drill cuttings, field screening of soil and waste samples from drill cuttings using a photoionization detector (PID) and flame ionization detector (FID), and hourly perimeter air monitoring.

PHASE V PIT DRILLING PROGRAM

Phase V fieldwork was conducted on 14 June 2004 and 15 June 2004. Drilling was performed by West Hazmat Drilling Corporation (West Hazmat), a C-57 licensed drilling firm under subcontract to GeoSyntec, to drill a total of 10 Phase V boreholes (PNL-PA1, PNL-PB1, PNL-PC1, PNL-PC1A, PNL-PD1, PNL-PD1A, PNL-PE1, PNL-PG1, PNL-PG1A, and PNL-PH1) using a CME 85 hollow stem auger rig. A nominal 8-inch diameter drill bit was advanced through fill and waste materials into the top of the native alluvium material to depths ranging from 11 ft-bgs to 26 ft-bgs. Samples were collected using an 18-inch California Modified Split Spoon sampler for lithologic logging and headspace screening utilizing an FID and PID. The FID and PID headspace readings are summarized in Table 1. Encore samples and composited waste samples were collected for laboratory analysis. Table 2 provides a summary of samples collected for laboratory testing from each borehole. Del Mar Analytical laboratories under subcontract to GeoSyntec conducted the chemical analyses for soil samples. Analytical testing of samples was requested per the Phase V & VI Workplan Addendum.

Phase V boreholes were abandoned using hydrated bentonite chips. Drill cuttings and decontamination water were placed in labeled drums. Drums were left in the drum storage area of the Site at the completion of field activities. A GeoSyntec field geologist observed and documented drilling activities. Between each borehole, the drilling equipment was decontaminated using a pressure steam washer. Table 3 presents a summary of Phase V drilling and borehole information. GINT[®] borehole logs are provided as an attachment. GINT[®] borehole logs can be provided electronically in Microsoft Access database format upon request.

PHASE VI GEOTECHNICAL DRILLING & SAMPLING

Phase VI fieldwork was conducted from 15 June 2004 through 18 June 2004, subsequent to the completion of the Phase V drilling program. The Phase VI drilling was also performed by West Hazmat. Three Phase VI geotechnical boreholes (PNL-21, PNL-23, and PNL-28) were drilled in former lagoon areas using a CME 85 hollow stem auger rig. A pilot 7-inch diameter borehole was first drilled to depths ranging from 18.5 ft-bgs to 24 ft-bgs into the top of the native alluvium clay material. The pilot hole was then reamed with a 12-inch outer diameter auger which served as a temporary conductor casing to reduce potential impacts to groundwater from perched liquids that may be present in the waste zone. A 7-inch diameter auger was then advanced through the native alluvium inside the temporary 12-inch auger conductor casing to a depth of approximately 60 ft-bgs. Potable water was periodically added into the borehole to control heaving sands. A standard penetration testing (SPT) sampler was used to collect resistance N values (blow counts) with depth and samples for lithologic logging. As requested by PNL, GeoSyntec collected geotechnical Shelby tube samples within the drilling mud waste and native clay. Bulk samples of the native alluvium sands were also collected. No fine-grained units were observed below the native clay found beneath the waste materials. Geotechnical laboratory analyses of samples were coordinated by PNL.

Phase VI boreholes were abandoned using a bentonite slurry pumped through a 1-inch PVC tremie pipe placed to a depth of approximately 60 ft-bgs. Once the level of the bentonite slurry was filled above the native alluvium, the slurry was poured down the borehole up to ground surface. Drill cuttings and decontamination water were placed in labeled drums. Drums were left in the drum storage area of the Site at the completion of field activities. A GeoSyntec field geologist observed and documented drilling activities. Between each borehole, the drilling equipment was decontaminated using a pressure steam washer. Table 4 presents a summary of the Phase VI drilling and borehole information. GINT[®] borehole logs are provided as an attachment. GINT[®] borehole logs can be provided electronically in Microsoft Access database format upon request.

AIR MONITORING

During Phases V and VI, air monitoring instruments, PIDs, FIDs, and dust monitors, were calibrated daily. Equipment calibration sheets are included as an attachment. Perimeter air monitoring was performed in accordance with activities described in Appendix A of the workplan. Perimeter air monitoring consisted of hourly PID, dust, and odor measurements at six designated perimeter air monitoring locations. Hourly measurements of wind speed and direction were also recorded on logs from the on-site wind station. Air monitoring activities were conducted by a GeoSyntec field engineer. The perimeter air monitoring results for activities during the 5 days of Phase V/VI fieldwork are presented in Tables 5A through 5E. No significant readings above background were measured at perimeter air monitoring locations during either phase.

Laboratory data were provided to PNL in electronic format. EDDs for Phase V soil and waste testing results from Del Mar Analytical can be obtained through the web based portal set up for the project.

If you have any questions regarding this information please contact Mike Reardon at (714) 969-0800 or Mark Grivetti at (805) 897-3800. GeoSyntec appreciates the opportunity to provide PNL with technical services for the Ascon Project.

* * * * *

TABLES

TABLE 1
SOIL AND WASTE HEADSPACE SCREENING RESULTS
PHASE V PIT AND FORMER LAGOON DRILLING
ASCON LANDFILL SITE

Borehole ID	Date	Time	Depth of Sample (ft-bgs)	PID Reading (ppm)	FID Reading (ppm)
PNL-PA1	6/15/2004	10:10	8.5	7.6	1.08
		10:15	10	7.73	4.06
		10:30	15	885	215
		10:33	16.5	195	236
		10:36	17	829	197
		10:40	19	583	302
		10:45	20	362	208
		10:47	22	624	582
		10:51	23	337	118
		10:55	24.5	49.6	275
PNL-PB1	6/15/2004	8:15	5.5	9.29	0.57
		8:18	7	4.73	0.68
		8:21	8.5	8.66	0.81
		8:30	9.5	8.7	0.78
		8:35	11.5	5.87	0.75
		8:39	13	5.81	0.78
		8:42	14.5	5.21	0.52
		8:47	16	6.47	0.82
		8:52	18.5	5.81	1.83
		8:57	20	8.44	2.02
		9:04	21	607	347
		9:08	22.5	1344	1197
		9:13	23.5	1653	1944
		9:16	25	1413	1729
PNL-PC1	6/14/2004	8:15	3.5	NR ¹	22.28
		8:23	6	NR ¹	15.1
		8:28	9.5	NR ¹	3.42
		8:35	12.5	25.6 ²	8.89
PNL-PC1A	6/14/2004	14:36	8.5	0	15.52
		14:40	9.5	0	8.53
		14:45	11.5	0	15.88
		14:55	12.5	0	1.63
PNL-PD1	5/11/2004	9:15	3	27.0 ²	NR
		9:24	10	16.7 ²	NR
		9:35	12.5	9.1 ²	NR
PNL-PE1	6/14/2004	11:10	3.5	16.7 ²	NR
		11:17	6	15.4 ²	NR
		11:19	10	20.5 ²	NR
		11:28	12.5	15.2 ²	NR
		11:33	15.5	163 ²	NR
PNL-PG1	6/14/2004	10:20	3	12.0 ²	NR
		10:24	6	10.7 ²	NR
		10:27	9.5	9.0 ²	NR

TABLE 1
SOIL AND WASTE HEADSPACE SCREENING RESULTS
PHASE V PIT AND FORMER LAGOON DRILLING
ASCON LANDFILL SITE

Borehole ID	Date	Time	Depth of Sample (ft-bgs)	PID Reading (ppm)	FID Reading (ppm)
PNL-PG1A	6/14/2004	15:35	5.5	0	0.44
		15:43	8.5	0	1.22
		15:45	9.5	0	0.88
PNL-PH1	6/15/2004	12:25	3.5	283	2.7
		12:30	5.5	151	10.54
		12:33	6.5	130	104
		12:38	8	160	422
		12:45	10	392	747
		12:50	10.5	57.9	18.59
		12:55	12	240	285
		13:03	13.5	46.11	143
		13:11	15	91.06	77.3
		13:11	16	26.33	35.55

Notes:

Sample depths are approximate.

Sample headspace screened using plastic bag and PID and FID air monitoring instruments

ft-bgs: feet below ground surface

ppm: parts per million concentration

NR is No Reading recorded

(1) high background reading due to moisture

(2) PID reading collected with the MiniRae 2000

TABLE 2

SAMPLE COLLECTION SUMMARY

PHASE V PIT AND FORMER LAGOON DRILLING

ASCON LANDFILL SITE

Borehole ID	Date Sampled	Sample ID [Del Mar Analytical]
PNL-PA1	06/15/04	*PNL-PA1-16 PNL-PA1-17-EC *PNL-PA1-17.5 PNL-PA1-19-EC *PNL-PA1-19.5 *PNL-PA1-20.5 PNL-PA1-21-EC *PNL-PA1-22 *PNL-PA1-23.5
PNL-PB1	06/15/04	*PNL-PB1-18 *PNL-PB1-22 PNL-PB1-23.5-EC
PNL-PC1	06/14/04	*PNL-PC1-7 *PNL-PC1-9
PNL-PC1A	06/14/04	PNL-PC1A
PNL-PD1	06/14/04	PNL-PD1 PNL-PD1-4-EC
PNL-PD1B	06/14/04	PNL-PD1B
PNL-PE1	06/14/04	*PNL-PE1-4 *PNL-PE1-6.5 PNL-PE1-7-EC *PNL-PE1-10.5 PNL-PE1-12-EC *PNL-PE1-13.5
PNL-PG1	06/14/04	PNL-PG1
PNL-PH1	06/15/04	PNL-PH1-7 PNL-PH1-7-EC PNL-PH1-8.5 PNL-PH1-8.5-EC PNL-PH1-11 PNL-PH1-12.5

Notes: Encore samples collected are identified with an "EC" extension

* - Samples from each borehole combined and analyzed as a single composite sample

TABLE 3
SUMMARY OF BOREHOLE INFORMATION
PHASE V PIT AND FORMER LAGOON DRILLING
ASCEN LANDFILL SITE

Borehole Location	Date Drilled	Total Depth (ft-bgs)	Top of Waste (ft-bgs)	Top of Native (ft-bgs)	Borehole Abandoned
PNL-PA1	6/15/2004	26	20	25	6/15/2004
PNL-PB1	6/15/2004	26	21.5	24	6/15/2004
PNL-PC1	6/14/2004	13.5	NA	6.5	6/14/2004
PNL-PC1A	6/14/2004	14	NA	9	6/14/2004
PNL-PD1	6/14/2004	13.5	NA	9	6/14/2004
PNL-PD1A	6/14/2004	16.5	NA	11	6/14/2004
PNL-PD1B	6/14/2004	14	NA	11	6/14/2004
PNL-PE1	6/14/2004	16.5	NA	15	6/14/2004
PNL-PG1	6/14/2004	12	NA	9	6/14/2004
PNL-PG1A	6/14/2004	11	NA	8	6/14/2004
PNL-PH1	6/15/2004	16.5	6	11.5	6/15/2004

Note: ft-bgs is feet below ground surface.

NA is Not Applicable - definitive waste layer was not observed

TABLE 4
SUMMARY OF BOREHOLE INFORMATION
PHASE VI GEOTECHNICAL DRILLING
ASCEN LANDFILL SITE

Borehole Location	Date Drilled	Total Depth (ft-bgs)	Top of Waste (ft-bgs)	Top of Native (ft-bgs)	Depth of Temporary 12" Auger (ft-bgs)	Geotechnical Sample Collected	Borehole Abandoned
PNL-21	6/16/2004	61.5	6	24	25	Shelby [22.5'-24'] Shelby [24'-26'] Bulk [33'-34'] Bulk [36'-37'] Bulk [45'-46']	6/17/2004
PNL-23	6/15/2004	60.5	3	22	25	Shelby [16.5'-19'] Shelby [23.5'-26'] Bulk [26'-27'] Bulk [32'-33'] Bulk [50'-51']	6/16/2004
PNL-28	6/17/2004	60.5	10	16	20	Shelby [11'-13'] Shelby [15'-17'] Bulk [23'-24.5'] Bulk [38'-39.5'] Bulk [53'-54.5'] Bulk [60'-60.5']	6/18/2004

Note: ft-bgs is feet below ground surface.

TABLE 5A
PERIMETER AIR MONITORING DATA SUMMARY
14 JUNE 2004
PHASE V PIT AUGER DRILLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	6/14/2004	9:12 AM	5.1	186	0	3.7	0.034
AA-01	6/14/2004	10:12 AM	4.2	153	0	0.6	0.049
AA-01	6/14/2004	11:09 AM	5.0	179	0	0.1	0.036
AA-01	6/14/2004	1:40 PM	9.5	205	0	0.0	0.049
AA-01	6/14/2004	2:47 PM	10.7	197	0	0.0	0.052
AA-01	6/14/2004	3:47 PM	8.7	212	0	0.0	0.046
AA-02	6/14/2004	9:15 AM	5.1	186	0	3.6	0.035
AA-02	6/14/2004	10:16 AM	4.2	153	0	0.4	0.038
AA-02	6/14/2004	11:12 AM	5.0	179	0	0.0	0.041
AA-02	6/14/2004	1:44 PM	9.5	205	0	0.0	0.043
AA-02	6/14/2004	2:50 PM	10.7	197	0	0.0	0.048
AA-02	6/14/2004	3:51 PM	8.7	212	0	0.0	0.054
AA-03	6/14/2004	9:19 AM	5.1	186	0	3.6	0.042
AA-03	6/14/2004	10:19 AM	4.2	153	0	0.6	0.051
AA-03	6/14/2004	11:16 AM	5.0	179	0	0.0	0.047
AA-03	6/14/2004	1:48 PM	9.5	205	0	0.0	0.035
AA-03	6/14/2004	2:54 PM	10.7	197	0	0.0	0.041
AA-03	6/14/2004	3:55 PM	8.7	212	0	0.0	0.048
AA-04	6/14/2004	9:02 AM	5.1	186	0	4.2	0.035
AA-04	6/14/2004	10:02 AM	4.2	153	0	0.7	0.064
AA-04	6/14/2004	10:58 AM	5.0	179	0	0.0	0.052
AA-04	6/14/2004	1:30 PM	9.5	205	0	0.0	0.040
AA-04	6/14/2004	2:37 PM	10.7	197	0	0.0	0.034
AA-04	6/14/2004	3:37 PM	8.7	212	0	0.0	0.042
AA-05	6/14/2004	8:58 AM	5.1	186	0	5.4	0.045
AA-05	6/14/2004	9:58 AM	4.2	153	0	0.3	0.035
AA-05	6/14/2004	10:55 AM	5.0	179	0	0.0	0.041
AA-05	6/14/2004	1:20 PM	9.5	205	0	0.0	0.035
AA-05	6/14/2004	2:34 PM	10.7	197	0	0.0	0.035
AA-05	6/14/2004	3:33 PM	8.7	212	0	0.0	0.029
AA-07	6/14/2004	8:41 AM	5.1	186	0	6.9	0.034
AA-07	6/14/2004	9:54 AM	4.2	153	0	1.7	0.032
AA-07	6/14/2004	10:51 AM	5.0	179	0	0.1	0.045
AA-07	6/14/2004	1:15 PM	9.5	205	0	0.4	0.033
AA-07	6/14/2004	2:30 PM	10.7	197	0	0.0	0.028
AA-07	6/14/2004	3:29 PM	8.7	212	0	0.0	0.033

TABLE 5B
PERIMETER AIR MONITORING DATA SUMMARY
15 JUNE 2004
PHASE V/VI PIT AUGER & GEOTECHNICAL DRILLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	6/15/2004	8:26 AM	4.2	135	0	0.0	0.066
AA-01	6/15/2004	9:25 AM	3.9	161	0	0.0	0.037
AA-01	6/15/2004	10:23 AM	4.8	170	0	0.0	0.027
AA-01	6/15/2004	12:51 PM	10.5	206	0	0.0	0.043
AA-01	6/15/2004	1:43 PM	9.2	185	0	0.0	0.056
AA-01	6/15/2004	2:50 PM	11.6	177	0	0.0	0.037
AA-02	6/15/2004	8:30 AM	4.2	135	0	0.0	0.053
AA-02	6/15/2004	9:29 AM	3.9	161	0	0.0	0.046
AA-02	6/15/2004	10:27 AM	4.8	170	0	0.0	0.031
AA-02	6/15/2004	12:55 PM	10.5	206	0	0.0	0.047
AA-02	6/15/2004	1:47 PM	9.2	185	0	0.0	0.050
AA-02	6/15/2004	2:54 PM	11.6	177	0	0.0	0.048
AA-03	6/15/2004	8:34 AM	4.2	135	0	0.0	0.063
AA-03	6/15/2004	9:33 AM	3.9	161	0	0.0	0.045
AA-03	6/15/2004	10:30 AM	4.8	170	0	0.0	0.057
AA-03	6/15/2004	12:58 PM	10.5	206	0	0.0	0.045
AA-03	6/15/2004	1:50 PM	9.2	185	0	0.0	0.061
AA-03	6/15/2004	2:57 PM	11.6	177	0	0.0	0.054
AA-04	6/15/2004	8:15 AM	4.2	135	0	0.0	0.058
AA-04	6/15/2004	9:14 AM	3.9	161	0	0.0	0.043
AA-04	6/15/2004	10:13 AM	4.8	170	0	0.0	0.037
AA-04	6/15/2004	12:41 PM	10.5	206	0	0.0	0.049
AA-04	6/15/2004	1:33 PM	9.2	185	0	0.0	0.047
AA-04	6/15/2004	2:40 PM	11.6	177	0	0.0	0.039
AA-05	6/15/2004	8:10 AM	4.2	135	0	0.0	0.063
AA-05	6/15/2004	9:10 AM	3.9	161	0	0.0	0.042
AA-05	6/15/2004	10:10 AM	4.8	170	0	0.0	0.036
AA-05	6/15/2004	12:37 PM	10.5	206	0	0.0	0.054
AA-05	6/15/2004	1:30 PM	9.2	185	0	0.0	0.058
AA-05	6/15/2004	2:37 PM	11.6	177	0	0.0	0.043
AA-07	6/15/2004	8:05 AM	4.2	135	0	0.0	0.052
AA-07	6/15/2004	9:07 AM	3.9	161	0	0.0	0.038
AA-07	6/15/2004	10:06 AM	4.8	170	0	0.0	0.030
AA-07	6/15/2004	12:23 PM	10.5	206	0	0.0	0.052
AA-07	6/15/2004	1:27 PM	9.2	185	0	0.0	0.048
AA-07	6/15/2004	2:34 PM	11.6	177	0	0.0	0.037

TABLE 5C
PERIMETER AIR MONITORING DATA SUMMARY
16 JUNE 2004
PHASE VI GEOTECHNICAL DRILLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	6/16/2004	8:26 AM	4.5	123	0	15.8	0.058
AA-01	6/16/2004	9:26 AM	5.3	145	0	6.0	0.063
AA-01	6/16/2004	10:26 AM	9.8	155	0	6.4	0.042
AA-01	6/16/2004	11:28 AM	8.7	144	0	7.8	0.034
AA-01	6/16/2004	4:03 PM	8.8	161	0	3.3	0.045
AA-01	6/16/2004	5:01 PM	9.3	152	0	1.2	0.035
AA-02	6/16/2004	8:30 AM	4.5	123	0	13.9	0.038
AA-02	6/16/2004	9:30 AM	5.3	145	0	5.3	0.058
AA-02	6/16/2004	10:30 AM	9.8	155	0	6.7	0.048
AA-02	6/16/2004	11:34 AM	8.7	144	0	8.0	0.039
AA-02	6/16/2004	4:08 PM	8.8	161	0	3.7	0.043
AA-02	6/16/2004	5:04 PM	9.3	152	0	1.5	0.049
AA-03	6/16/2004	8:34 AM	4.5	123	0	12.7	0.035
AA-03	6/16/2004	9:34 AM	5.3	145	0	5.6	0.043
AA-03	6/16/2004	10:35 AM	9.8	155	0	6.2	0.055
AA-03	6/16/2004	11:38 AM	8.7	144	0	8.1	0.036
AA-03	6/16/2004	4:12 PM	8.8	161	0	3.9	0.049
AA-03	6/16/2004	5:07 PM	9.3	152	0	1.6	0.043
AA-04	6/16/2004	8:13 AM	4.5	123	0	17.1	0.038
AA-04	6/16/2004	9:15 AM	5.3	145	0	5.9	0.045
AA-04	6/16/2004	10:16 AM	9.8	155	0	6.1	0.066
AA-04	6/16/2004	11:17 AM	8.7	144	0	8.1	0.052
AA-04	6/16/2004	3:51 PM	8.8	161	0	3.4	0.044
AA-04	6/16/2004	4:45 PM	9.3	152	0	1.4	0.052
AA-05	6/16/2004	8:08 AM	4.5	123	0	17.5	0.054
AA-05	6/16/2004	9:11 AM	5.3	145	0	6.2	0.048
AA-05	6/16/2004	10:12 AM	9.8	155	0	6.9	0.052
AA-05	6/16/2004	11:12 AM	8.7	144	0	8.4	0.041
AA-05	6/16/2004	3:47 PM	8.8	161	0	4.4	0.028
AA-05	6/16/2004	4:40 PM	9.3	152	0	1.5	0.037
AA-07	6/16/2004	8:03 AM	4.5	123	0	18.4	0.039
AA-07	6/16/2004	9:07 AM	5.3	145	0	8.8	0.042
AA-07	6/16/2004	10:08 AM	9.8	155	0	6.7	0.053
AA-07	6/16/2004	11:08 AM	8.7	144	0	8.6	0.037
AA-07	6/16/2004	3:43 PM	8.8	161	0	4.5	0.032
AA-07	6/16/2004	4:57 PM	9.3	152	0	1.7	0.042

TABLE 5D
PERIMETER AIR MONITORING DATA SUMMARY
17 JUNE 2004
PHASE VI GEOTECHNICAL DRILLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	6/17/2004	7:31 AM	4.4	50	0	15.1	0.038
AA-01	6/17/2004	7:29 AM	4.3	45	0	5.8	0.065
AA-01	6/17/2004	9:29 AM	5.1	193	0	4.1	0.021
AA-01	6/17/2004	10:29 AM	6.5	230	0	1.8	0.026
AA-01	6/17/2004	11:29 AM	9.5	245	0	1.8	0.024
AA-01	6/17/2004	1:05 PM	11.0	250	0	0.0	0.029
AA-01	6/17/2004	2:03 PM	10.5	250	0	0.0	0.025
AA-01	6/17/2004	3:04 PM	8.2	250	0	0.0	0.024
AA-01	6/17/2004	4:04 PM	7.4	235	0	0.0	0.027
AA-02	6/17/2004	7:35 AM	4.4	50	0	13.2	0.049
AA-02	6/17/2004	8:48 AM	4.3	45	0	5.4	0.043
AA-02	6/17/2004	9:32 AM	5.1	193	0	4.4	0.029
AA-02	6/17/2004	10:32 AM	6.5	230	0	2.5	0.021
AA-02	6/17/2004	11:32 AM	9.5	245	0	1.9	0.034
AA-02	6/17/2004	1:07 PM	11.0	250	0	0.0	0.028
AA-02	6/17/2004	2:05 PM	10.5	250	0	0.0	0.023
AA-02	6/17/2004	3:06 PM	8.2	250	0	0.0	0.038
AA-02	6/17/2004	4:06 PM	7.4	235	0	0.0	0.038
AA-03	6/17/2004	7:40 AM	4.4	50	0	11.1	0.044
AA-03	6/17/2004	8:34 AM	4.3	45	0	5.9	0.050
AA-03	6/17/2004	9:34 AM	5.1	193	0	4.3	0.027
AA-03	6/17/2004	10:34 AM	6.5	230	0	2.3	0.024
AA-03	6/17/2004	11:34 AM	9.5	245	0	1.7	0.035
AA-03	6/17/2004	1:10 PM	11.0	250	0	0.0	0.040
AA-03	6/17/2004	2:08 PM	10.5	250	0	0.0	0.031
AA-03	6/17/2004	3:08 PM	8.2	250	0	0.0	0.036
AA-03	6/17/2004	4:09 PM	7.4	235	0	0.0	0.036
AA-04	6/17/2004	7:50 AM	4.4	50	0	9.8	0.058
AA-04	6/17/2004	8:43 AM	4.3	45	0	5.4	0.040
AA-04	6/17/2004	9:42 AM	5.1	193	0	4.1	0.027
AA-04	6/17/2004	10:42 AM	6.5	230	0	2.7	0.034
AA-04	6/17/2004	11:42 AM	9.5	245	0	1.4	0.030
AA-04	6/17/2004	1:18 PM	11.0	250	0	0.0	0.040
AA-04	6/17/2004	2:17 PM	10.5	250	0	0.0	0.045
AA-04	6/17/2004	3:20 PM	8.2	250	0	0.0	0.037
AA-04	6/17/2004	4:20 PM	7.4	235	0	0.0	0.043
AA-05	6/17/2004	7:50 AM	4.4	50	0	8.2	0.080
AA-05	6/17/2004	8:53 AM	4.3	45	0	5.1	0.047
AA-05	6/17/2004	9:46 AM	5.1	193	0	4.1	0.022
AA-05	6/17/2004	10:45 AM	6.5	230	0	2.6	0.024
AA-05	6/17/2004	11:45 AM	9.5	245	0	1.3	0.026
AA-05	6/17/2004	1:21 PM	11.0	250	0	0.0	0.030
AA-05	6/17/2004	2:20 PM	10.5	250	0	0.0	0.024
AA-05	6/17/2004	3:24 PM	8.2	250	0	0.0	0.022
AA-05	6/17/2004	4:24 PM	7.4	235	0	0.0	0.028
AA-07	6/17/2004	7:27 AM	4.4	50	0	17.7	0.062
AA-07	6/17/2004	8:27 AM	4.3	45	0	6.2	0.071
AA-07	6/17/2004	9:27 AM	5.1	193	0	4.1	0.025
AA-07	6/17/2004	10:27 AM	6.5	230	0	2.4	0.018
AA-07	6/17/2004	11:27 AM	9.5	245	0	2.2	0.022
AA-07	6/17/2004	1:02 PM	11.0	250	0	0.0	0.035
AA-07	6/17/2004	2:01 PM	10.5	250	0	0.0	0.032
AA-07	6/17/2004	3:01 PM	8.2	250	0	0.0	0.025
AA-07	6/17/2004	4:01 PM	7.4	235	0	0.0	0.027

TABLE 5E
PERIMETER AIR MONITORING DATA SUMMARY
18 JUNE 2004
PHASE VI GEOTECHNICAL DRILLING

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	6/18/2004	7:54 AM	4.6	200	0	0.0	0.088
AA-01	6/18/2004	8:56 AM	5.2	195	0	0.0	0.045
AA-01	6/18/2004	9:50 AM	6.1	187	0	0.3	0.040
AA-01	6/18/2004	10:51 AM	6.2	183	0	0.0	0.059
AA-01	6/18/2004	12:28 PM	5.8	185	0	0.0	0.043
AA-01	6/18/2004	1:26 PM	6.5	194	0	0.0	0.038
AA-02	6/18/2004	7:56 AM	4.6	200	0	0.0	0.045
AA-02	6/18/2004	8:58 AM	5.2	195	0	0.0	0.047
AA-02	6/18/2004	9:52 AM	6.1	187	0	0.2	0.036
AA-02	6/18/2004	10:54 AM	6.2	183	0	0.0	0.037
AA-02	6/18/2004	12:30 PM	5.8	185	0	0.0	0.033
AA-02	6/18/2004	1:28 PM	6.5	194	0	0.0	0.043
AA-03	6/18/2004	7:59 AM	4.6	200	0	0.0	0.056
AA-03	6/18/2004	9:01 AM	5.2	195	0	0.0	0.045
AA-03	6/18/2004	9:56 AM	6.1	187	0	0.4	0.037
AA-03	6/18/2004	10:56 AM	6.2	183	0	0.0	0.041
AA-03	6/18/2004	12:33 PM	5.8	185	0	0.0	0.033
AA-03	6/18/2004	1:32 PM	6.5	194	0	0.0	0.044
AA-04	6/18/2004	8:04 AM	4.6	200	0	0.0	0.044
AA-04	6/18/2004	9:07 AM	5.2	195	0	0.0	0.048
AA-04	6/18/2004	10:04 AM	6.1	187	0	0.5	0.034
AA-04	6/18/2004	11:05 AM	6.2	183	0	0.0	0.041
AA-04	6/18/2004	12:40 PM	5.8	185	0	0.0	0.037
AA-04	6/18/2004	1:38 PM	6.5	194	0	0.0	0.052
AA-05	6/18/2004	8:08 AM	4.6	200	0	0.0	0.053
AA-05	6/18/2004	9:12 AM	5.2	195	0	0.0	0.037
AA-05	6/18/2004	10:07 AM	6.1	187	0	0.0	0.037
AA-05	6/18/2004	11:08 AM	6.2	183	0	0.0	0.039
AA-05	6/18/2004	12:43 PM	5.8	185	0	0.0	0.062
AA-05	6/18/2004	1:43 PM	6.5	194	0	0.0	0.040
AA-07	6/18/2004	7:47 AM	4.6	200	0	0.0	0.048
AA-07	6/18/2004	8:50 AM	5.2	195	0	0.0	0.035
AA-07	6/18/2004	9:46 AM	6.1	187	0	0.6	0.041
AA-07	6/18/2004	10:48 AM	6.2	183	0	0.0	0.036
AA-07	6/18/2004	12:25 PM	5.8	185	0	0.0	0.033
AA-07	6/18/2004	1:24 PM	6.5	194	0	0.0	0.032

BORING LOGS



GeoSYNTEC CONSULTANTS

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PROJECT Ascon

PROJECT LOCATION Huntington Beach, CA

PROJECT NUMBER SB0202

KEY SHEET - CLASSIFICATIONS AND SYMBOLS
















GS FORM:
KEY/SYMBOLS 01/04

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N VALUES *

	N VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)		N VALUE * (BLOWS/FT)	RELATIVE DENSITY
FINE GRAINED SOILS	0 - 2	VERY SOFT	<0.25	COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	3 - 4	SOFT	0.25 - 0.50		5 - 10	LOOSE
	5 - 8	FIRM	0.50 - 1.00		11 - 30	MEDIUM DENSE
	9 - 15	STIFF	1.00 - 2.00		31 - 50	DENSE
	16 - 30	VERY STIFF	2.00 - 4.00		>50	VERY DENSE
	31 - 50	HARD	>4.00			
	>50	VERY HARD				

* ASTM D 1586; NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1.4 IN. I.D. SAMPLER ONE FOOT.

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

MAJOR DIVISIONS			SYMBOLS		DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		LITTLE OR NO FINES		GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
		APPRECIABLE AMOUNT OF FINES		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		LITTLE OR NO FINES		SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES		SM	SILTY SANDS, SAND-SILT MIXTURES
		APPRECIABLE AMOUNT OF FINES		SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT

NOTE: DUAL SYMBOLS USED FOR BORDERLINE CLASSIFICATIONS

PARTICLE SIZE IDENTIFICATION

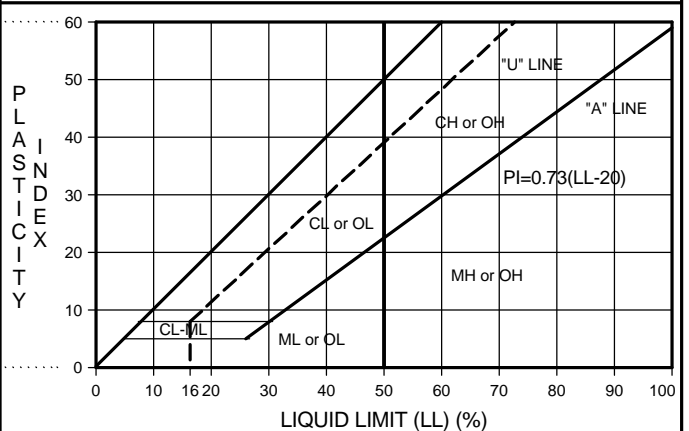
USCS (SOILS ONLY) *		SEDIMENTARY (ROCK ONLY)	
BOULDER	>300 mm	BOULDER	>256 mm
COBBLE	75 - 300 mm	COBBLE	64 - 256 mm
GRAVEL: COARSE	20 - 75 mm	PEBBLE	4 - 64 mm
GRAVEL: FINE	4.75 - 20 mm	GRANULE	2 - 4 mm
SAND: COARSE	2 - 4.75 mm	SAND: V. COARSE	1 - 2 mm
SAND: MEDIUM	0.42 - 2 mm	SAND: COARSE	0.5 - 1 mm
SAND: FINE	0.074 - 0.42 mm	SAND: MEDIUM	0.25 - 0.5 mm
SILT/CLAY	<0.074 mm	SAND: FINE	0.125 - 0.25 mm
		SAND: V. FINE	0.063 - 0.125 mm
		SILT	0.004 - 0.063 mm
		CLAY	<0.004 mm

* WELL GRADED - HAVING WIDE RANGE OF GRAIN SIZES AND APPRECIABLE AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES

* POORLY GRADED - PREDOMINANTLY ONE GRAIN SIZE, OR HAVING A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING

PERCENTAGE OF PARTICLE TYPE IN DECREASING ORDER OF PARTICLE SIZE (GRAVEL, SAND, FINES)

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

Conglomerate	Sandy Claystone	Marker Bed
Sandstone	Granitic/Intrusive	
Silty Sandstone	Volcanic/Extrusive	Artificial Fill
Clayey Sandstone	Metamorphic	Refuse
Sandy Siltstone	Limestone	Concrete/Asphalt
Siltstone	Dolomite	
Claystone	Glacial Till	
Clayey Siltstone/ Silty Claystone	Landslide Debris	

WELL SYMBOLS

CONCRETE
GROUT
BENTONITE SEAL
TRANSITION SAND
SAND/GRAVEL PACK
NATIVE/SLUFF
CENTRALIZER

SAMPLE TYPE AND OTHER SYMBOLS

BULK SAMPLE	Water Level at Time Drilling, or as Shown
STANDARD PENETRATION TEST	Static Water Level
MODIFIED CALIFORNIA SAMPLE	Pump Inlet
CORE SAMPLE	Loss of Drilling Fluid
SHELBY TUBE	MSL: Mean Sea Level
DRIVE SAMPLE	AGS: Above Ground Surface
	BGS: Below Ground Surface
	BTOC: Below Top of Casing
	HSA: Hollow Stem Auger



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

START DRILL DATE 15 Jun 04
FINISH DRILL DATE 15 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-PA1

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)										1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	ARTIFICIAL FILL Sandy SILT (SM): light olive brown [2.5Y 5/3]; dry; silt with fine-to medium-grained sand; trace fine gravel (subrounded, <4mm diameter); (tr,30,70); trace plant material					-		-	-	-	Began drilling at 0956 on 15 June 2004.
5											
	@ 8' - SILT (ML): light yellowish brown [2.5Y 6/4]; dry; silt; little fine-grained sand; trace medium gravel (subangular, <20mm diameter); (tr,10,90); trace plant material; no odor					19 36 42		100	7.6	1009	FID = 1.08 ppm
10	@ 9.5' - interlayered with dark yellowish brown Sandy SILT; silt with fine-grained sand; (0,30,70)					50		30	7.7	1014	FID = 4.06 ppm
						50		0	-	1019	No Recovery
						50 50		0	-	1022	No Recovery Driller said very rocky zone
15	@ 14' - concrete fragments (broken, angular) @ 14.5' - color change to greenish black [GLEY1 2.5/10Y]; some clay; strong hydrocarbon odor; hydrocarbon staining					50		20	885	1028	FID = 215 ppm
	@ 16.5' - color change to dark greenish gray [GLEY1 4/10Y]; trace laminations; low plasticity; soft; becomes moist; hydrocarbon odor; some hydrocarbon staining					8 14 16		70	195	1032	Sample PNL-PA1-16 FID = 236 ppm
	@ 17.5' - increase in clay content; high plasticity; stiff; micaceous; hydrocarbon odor; hydrocarbon staining					5 5 7		100	829	1035	FID = 197 ppm Sample PNL-PA1-17-EC Sample PNL-PA1-17.5
20	@ 19' - decrease in clay content; hydrocarbon odor; hydrocarbon staining					17 23 25		70	362	1039	FID = 302 ppm Sample PNL-PA1-19-EC Sample PNL-PA1-19.5
	WASTE CLAY (CL): very dark greenish gray [GLEY1 3/10Y]; moist; clay; high plasticity; stiff; oil saturated; hydrocarbon odor					4 5 7		100	624	1043	FID = 208 ppm Sample PNL-PA1-20.5 Sample PNL-PA1-21-EC
	@ 22' - Clayey SILT (CL/ML): very dark greenish gray [GLEY1 3/10Y]; moist; high plasticity; moderately stiff; micaceous; hydrocarbon staining; sulfur odor					7 8 11		100	337	1046	FID = 582 ppm Sample PNL-PA1-22
	@ 23' - CLAY (CL): dark greenish gray [GLEY1 4/10Y]; moist; clay; high plasticity; stiff; hydrocarbon staining					6 7 8		100	49.6	1051	FID = 118 ppm Sample PNL-PA1-23.5
25	@ 24' - slight sulfurous hydrocarbon odor					5 5 7		100	-	1055	FID = 275 ppm
	NATIVE Silty SAND (SM): very dark greenish gray [GLEY1 3/10Y]; fine-grained sand with some silt; (0,70,30); trace shell fragments; micaceous; slight sulfurous hydrocarbon odor										Stopped drilling at a depth of 26 ft-bgs at 1055 on 15 June 2004. Abandoned borehole at 1122 on 15 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (6 bags).
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

02-GEOTECH1 ASCONSB0202_04.GPJ GEOSYNTEC.GDT 28/10/04



GEO SYNTEC CONSULTANTS

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

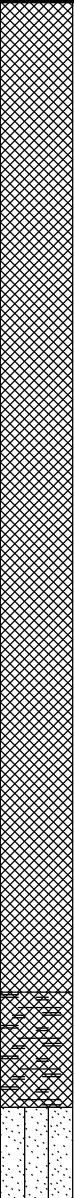
START DRILL DATE 15 Jun 04
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LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-PB1

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 6) Plasticity 2) Color 7) Density/Consistency 3) Moisture 8) Other (Mineral Content, 4) Grain Size Discoloration, Odor, etc.) 5) Percentage	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL Sandy SILT (SM): light olive brown [2.5Y 5/3]; dry; silt with fine- to medium-grained sand; trace fine gravel (subrounded, <4mm); (tr,30,70); trace plant material				-	-	-	-	Began drilling at 0807 on 15 June 2004.		
5	@ 5' - SILT (ML): light yellowish brown [2.5Y 6/3]; dry; silt; (0,0,100); trace plant material				16 17 17		60	9.3	0817	FID = 0.57 ppm	
	@ 7.5' - SAND (SP): light yellowish brown [2.5Y 6/3]; dry; fine-grained sand with little silt; (0,90,10); no odor				43 33 50		100	4.7	0821	FID = 0.68 ppm	
	@ 8.5' - SILT (ML): light olive brown [2.5Y 5/3]; dry; silt; (0,0,100)				50 50		30	8.7	0826	FID = 0.81 ppm	
10	@ 9' - Gravelly SAND (GP): dark grayish brown [2.5Y 4/2]; fine- to coarse-grained sand (angular to subangular); fine to medium gravel (angular to subangular, <25mm diameter); (25,75,0); asphalt-like material				50 50		40	8.7	0830	FID = 0.78 ppm	
	@ 11.5' - SAND (SP): light yellowish brown [2.5Y 6/3]; dry; fine-grained sand (well sorted); trace fine gravel (subrounded, <5mm diameter); micaceous				12 30 50		60	5.9	0835	FID = 0.75 ppm	
	@ 12.5' - Clayey SILT (ML): olive brown [2.5Y 4/3]; slightly moist; silt with clay; low plasticity; moderately soft				9 12 17		80	5.8	0838	FID = 0.78 ppm	
15	@ 13.5' - SAND (SP): light brownish gray [2.5Y 6/2]; dry; fine-grained sand (well sorted); trace fine gravel (subrounded, <5mm diameter); micaceous				10 24 30		60	5.2	0842	FID = 0.52 ppm	
	@ 14' - Gravelly SAND (GP): black [2.5Y 2.5/1]; fine- to coarse-grained sand (angular to subangular); fine to medium gravel (angular to subangular, <25mm diameter); (25,75,0); asphalt-like material				39 50		30	6.5	0846	FID = 0.82 ppm	
	@ 15.5 - increase in silt content (10,80,10)				17 38 50		50	5.8	0850		
	@ 17.5 to 18' - seam of Clayey SILT (ML): dark greenish gray [GLE Y1 4/10Y]; moist; trace fine- to coarse-grained sand; trace fine gravel (<4mm diameter); (tr,tr,100); slightly micaceous				24 33 50		30	8.4	0856	Sample PNL-PB1-18 FID = 1.83 ppm	
20	@ 18' - faint hydrocarbon odor				18 25 30		60	607	0904	FID = 2.02 ppm	
	@ 20' - tar in asphalt; hydrocarbon odor				8 8 14		100	1344	0907	FID = 347 ppm	
	WASTE Clayey SILT (CL/ML): greenish black [GLE Y1 2.5/10Y]; moist; silt with some clay; high plasticity; moderately stiff; hydrocarbon staining; hydrocarbon odor				8 10 13		100	1653	0911	Sample PNL-PB1-22 FID = 1197 ppm	
25	@ 23' - Sandy SILT (SM/ML): very dark greenish gray [GLE Y1 3/10Y]; silt with fine-grained sand; (0,20,80); trace shell fragments; micaceous; hydrocarbon staining; strong hydrocarbon odor				7 8 10		100	1413	0913	FID = 1944 ppm Sample PNL-PB1-23.5-EC	
	NATIVE Silty SAND (SM): dark greenish gray [GLE Y1 4/10Y]; moist; fine-grained sand with silt; (0,80,20); trace shell fragments; micaceous									FID = 1729 ppm	
	@ 25.5' - becomes wet									@ 25.5' - liquids observed Stopped drilling at a depth of 26 ft-bgs at 0913 on 15 June 2004. Abandoned borehole at 0945 on 15 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (8 bags).	
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

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GeoSYNTEC CONSULTANTS

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-PC1

SHEET 1 OF 1

START DRILL DATE 14 Jun 04

ELEVATION DATA:

FINISH DRILL DATE 14 Jun 04



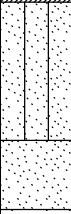
GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane		
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)			
5	ARTIFICIAL FILL Sandy SILT (SM/ML): light olive brown [2.5Y 5/3]; dry; silt with some fine-grained sand; (0,20,80)					-		-	-	-	Began drilling at 0807 on 14 June 2004. PID temporarily not functioning properly.		
					14 23 32		100	-	0815	FID=22.28 ppm			
10	NATIVE CLAY (CL): light olive brown [2.5Y 5/6] clay mottled with greenish gray [GLE Y1 6/10Y] clay; slightly moist; (0,0,100); medium plasticity; moderately stiff; no odor		▽			8 10 12		100	-	0820	FID=15.10 ppm Sample PNL-PC1-7		
					4 7 8		100	-	0826	FID=3.42 ppm Sample PNL-PC1-9 @ 9' - liquids observed			
15	SAND (SP): very dark greenish gray [GLE Y1 3/10Y]; moist; fine-grained sand; trace silt; (0,100,tr); well sorted; micaceous; no odor					7 12 13		100	26	0835	FID = 8.89 ppm		
20													
25													
30													

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

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GS FORM:
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BOREHOLE LOG

BORING

PNL-PC1A

SHEET 1 OF 1

START DRILL DATE 14 Jun 04

ELEVATION DATA:

FINISH DRILL DATE 14 Jun 04






GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	ARTIFICIAL FILL Sandy SILT (SM/ML): olive brown [2.5Y 4/3]; dry; silt with some fine-grained sand; (0,20,80)					-		-	-	-	Began drilling at 1426 on 14 June 2004. PID temporarily not functioning properly.
5											
	IMPACTED NATIVE CLAY (CL): dark greenish gray [GLE Y1 4/10Y]; clay; hydrocarbon staining (tar); high plasticity; stiff; micaceous; slight hydrocarbon odor					6 11 12		90	0	1430	FID=15.52 ppm Sample PNL-PC1A
10	NATIVE Sandy SILT (SM/ML): very dark greenish gray [GLE Y1 3/10Y]; moist; silt with fine-grained sand; (0,20,80); micaceous; faint hydrocarbon odor					7 7 20		90	0	1438	FID=8.53 ppm
	Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; moist; fine-grained sand with silt; (0,80,20); trace shell fragments; micaceous; no odor					7 11 20		60	0	1445	FID=15.88 ppm
	SAND (SP): very dark greenish gray [GLE Y1 3/10Y]; wet; fine-grained sand; trace silt; trace shell fragments; micaceous					20 33 36		100	0	1452	FID=1.63 ppm @ 12.5' - liquids observed
15											Stopped drilling at a depth of 14 ft-bgs at 1452 on 14 June 2004. Abandoned borehole at 1515 on 14 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (5 bags).
20											
25											
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

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GS FORM:
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BOREHOLE LOG



BORING

PNL-PD1

SHEET 1 OF 1

START DRILL DATE 14 Jun 04
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PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
5	ARTIFICIAL FILL Sandy SILT (SM/ML): light olive brown [2.5Y 5/3]; dry; silt with some fine-grained sand; (0,20,80) @ 3' - Silty SAND (SM): olive brown [2.5Y 4/3]; moist; fine-grained sand with some silt; (0,80,20); trace shell fragments; trace plant material; no odor					-		-	-	-	Began drilling at 0910 on 14 June 2004. Sample PNL-PD1 Sample PNL-PD1-4-EC No recovery
						5 7 10		60	27	0915	
						4 4 6		0	-	0921	
10	NATIVE SAND (SP): very dark greenish gray [GLE Y1 3/10Y]; wet; fine-grained sand; trace silt; (0,100,tr); trace shell fragments; micaceous; no odor					7 8 9		30	17	0927	
						10 15 27		60	9	0935	
15											Stopped drilling at a depth of 13.5 ft-bgs at 0935 on 14 June 2004. Abandoned borehole at 1000 on 14 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (5.5 bags).
20											
25											
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

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COORDINATE SYSTEM:
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BOREHOLE LOG

BORING

PNL-PD1A

SHEET 1 OF 1

START DRILL DATE 14 Jun 04

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GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL Sandy SILT (SM/ML): light olive brown [2.5Y 5/3]; dry; silt with some fine-grained sand; (0,20,80)					-		-	-	-	Began drilling at 1307 on 14 June 2004
5											
	@ 8' - asphalt-like material; black [GLE Y1 2.5Y/N]; fine gravel (angular to subangular, <10mm diameter); trace concrete fragment					8 50		10	-	1344	Poor recovery due to concrete fragment plugging up the sampler.
10						43 50 3		0	-	1349	No recovery
	NATIVE Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; fine-grained sand with some silt; (0,80,20); trace shell fragments; micaceous; no odor					28 17 17		-	-	1355	
	SAND (SP): dark greenish gray [GLE Y1 3/10Y]; wet; fine-grained sand with trace silt; (0,100,tr); micaceous; no odor					8 12 23		100	-	1400	@ 12.5' - liquids observed
15						19 25 36		100	-	1320	
											Stopped drilling at a depth of 16.5 ft-bgs at 1320 on 14 June 2004. Abandoned borehole at 1411 on 14 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (5 bags).
20											
25											
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Lithologic descriptions from 8 ft-bgs to 14 ft-bgs are based on borehole PNL-PD1B, located 2 ft west of PNL-PD1A.

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BOREHOLE LOG

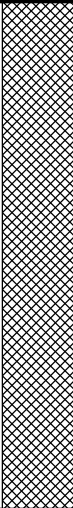



BORING

PNL-PD1B

SHEET 1 OF 1

START DRILL DATE 14 Jun 04
FINISH DRILL DATE 14 Jun 04
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PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 6) Plasticity 2) Color 7) Density/Consistency 3) Moisture 8) Other (Mineral Content, 4) Grain Size Discoloration, Odor, etc.) 5) Percentage	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL Sandy SILT (SM/ML): light olive brown [2.5Y 5/3]; dry; silt with some fine-grained sand; (0,20,80)					-		-	-	-	Began drilling at 1336 on 14 June 2004
5											
	@ 8' - asphalt-like material; black [GLE Y1 2.5Y/N]; fine gravel (angular to subangular, <10mm diameter); trace concrete fragment					8 50		10	-	1344	Poor recovery due to concrete fragment plugging up the sampler.
10						43 50 3		0	-	1349	No recovery
	NATIVE Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; fine-grained sand with some silt; (0,80,20); trace shell fragments; micaceous; no odor					28 17 17		-	-	1355	Sample PNL-PD1B
	SAND (SP): dark greenish gray [GLE Y1 3/10Y]; wet; fine-grained sand with trace silt; (0,100,tr); micaceous; no odor					8 12 23		100	-	1400	@ 12.5' - liquids observed
15											Stopped drilling at a depth of 14 ft-bgs at 1400 on 14 June 2004. Abandoned borehole at 1411 on 14 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (6 bags).
20											
25											
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: PNL-PD1B is located 2 ft west of PNL-PD1A

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

START DRILL DATE 14 Jun 04
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LOCATION Huntington Beach, CA
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PNL-PE1

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
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DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
5 											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG



BORING

PNL-PG1

SHEET 1 OF 1

START DRILL DATE 14 Jun 04
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DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
5	ARTIFICIAL FILL Sandy SILT (SM/ML): light olive brown [2.5Y 5/3]; dry; silt with some fine-grained sand; (0,20,80)		1013			-		-	-	-	Began drilling at 1013 on 14 June.
					14		30	12	1017		
					14						
					18						
10	NATIVE Sandy SILT (SM/ML): very dark greenish gray [GLE Y1 3/10Y]; wet; silt with fine-grained sand (0,10,90); trace shell fragments; micaceous; no odor		1026			5		10	11	1024	@ 9' - liquids observed Sample PNL-PG1
					5						
					6						
15						3		70	9	1026	Stopped drilling at a depth of 12 ft-bgs at 1031 on 14 June 2004. Abandoned borehole at 1043 on 14 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (5 bags).
						3					
						3					
20											
25											
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GeoSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-PG1A

SHEET 1 OF 1

START DRILL DATE 15 Jun 04

ELEVATION DATA:

FINISH DRILL DATE 15 Jun 04





GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL Sandy SILT (SM/ML): light olive brown [2.5Y 5/3]; dry; silt with some fine-grained sand; (0,20,80)					-		-	-	-	Began drilling at 1529 on 14 June 2004. PID temporarily not functioning properly.
5	@ 5' - Clayey SILT (ML): olive brown [2.5Y 3/3]; dry; silt with little fine-grained sand; trace gravel (angular to subangular, <3mm diameter); some clay; (tr,tr,100) @ 6' - white Carbonate-like inclusions; very slightly micaceous					25 36 30		90	0	1534	FID=0.44 ppm
						6 9 8		0	-	1539	No recovery
	NATIVE CLAY (CL): very dark greenish gray [GLE Y1 3/10Y]; moist: high plasticity; moderately soft; no odor					3 3 3		90	0	1542	FID=1.22 ppm
10	SILT (ML): very dark greenish gray [GLE Y1 3/10Y]; moist; some clay; trace fine-grained sand; (0,tr,100); micaceous; no odor					4 5 5		100	0	1545	FID=0.88 ppm
											Stopped drilling at a depth of 11 ft-bgs at 1545 on 14 June 2004. Abandoned borehole at 1600 on 14 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (4 bags).
15											
20											
25											
30											

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GS FORM:
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BOREHOLE LOG

BORING

START DRILL DATE 15 Jun 04
FINISH DRILL DATE 15 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-PH1

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL Sandy SILT (SM): light olive brown [2.5Y 5/3]; dry; silt with fine- to medium-grained sand; trace fine gravel (subrounded, <4mm diameter); (tr,30,70)					-		-	-	-	Began drilling at 1218 on 15 June 2004.
	@ 3' - SILT (ML): light brownish gray [2.5Y 6/2] silt mottled with light olive brown [2.5Y 5/6] silt; dry; trace fine-grained sand; (0,tr,100); no odor					16 21 28		100	283	1224	FID = 2.7 ppm
5	@ 4.5' - asphalt fragments with tar					10 11 15		20	151	-	FID = 10.54 ppm
	WASTE CLAY (CL): dark greenish gray [GLE Y1 4/10Y]; moist; (0,0,100); high plasticity; soft; oil saturated; hydrocarbon staining; hydrocarbon odor					2 2 3		100	130	1232	FID = 104 ppm Sample PNL-PH1-7 Sample PNL-PH1-7-EC
						2 2 2		100	160	1234	FID = 422 ppm Sample PNL-PH1-8.5 Sample PNL-PH1-8.5-EC
10	@ 10' - SILT (ML): dark greenish gray [GLE Y1 4/10Y]; moist; micaceous; hydrocarbon stained; hydrocarbon odor					2 2 2		30	392	1241	FID = 747 ppm FID = 18.59 ppm Sample PNL-PH1-11
	@ 10.5' - CLAY (CL): dark greenish gray [GLE Y1 4/5GY]; moist; high plasticity; soft; hydrocarbon staining; hydrocarbon odor					3 3 4		-	58	-	FID = 285 ppm Sample PNL-PH1-12.5
	NATIVE Sandy SILT (SM): very dark greenish gray [GLE Y1 3/10Y]; moist; silt with some fine-grained sand; (0,30,70); trace shell fragments; micaceous					2 2 4		100	91	1301	FID = 143 ppm
15						4 4 3 4 5		100	26	1308	FID = 77.30 ppm
											FID = 35.55 ppm Stopped drilling at a depth of 16.5 ft-bgs at 1308 on 15 June 2004. Abandoned borehole at 1320 on 15 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (2 bags) and backfilled remaining volume with cuttings from borehole.
20											
25											
30											

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REVIEWER MR

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG**BORING****PNL-21****SHEET 1 OF 2**

START DRILL DATE 16 Jun 04
FINISH DRILL DATE 17 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
5	ARTIFICIAL FILL Sandy SILT (SM): light olive brown [2.5Y 5/3]; dry; silt with fine- to coarse-grained sand (subrounded); trace fine gravel (subangular, <25mm diameter); (tr,30,70)					-		-	-	-	Begin drilling 7-inch pilot at 1536 on 16 June 2004. Began drilling 12-inch ream at 0859 on 17 June, 2004.
					50		0	-	1545	Rig chatter No recovery due to hard material at a depth of 3 ft-bgs (possibly asphalt).	
10	WASTE Sandy SILT (SM): black [2.5Y 2.5/1]; silt with fine- to coarse-grained sand (subrounded); trace fine gravel (subangular, <25mm diameter); (tr,30,70); high plasticity; oil saturated; hydrocarbon staining (tar); strong hydrocarbon odor; gummy @ 9' - CLAY (CL): dark greenish gray [GLE Y1 4/10Y]; high plasticity; soft; oil saturated; strong hydrocarbon odor					17 50		20	-	1557	
					5 5 6		100	-	1605		
					50		0	-	1609	No recovery due to rock	
					21 10 15		25	-	1620	@ 15' - liquids observed	
20	@ 15' - Sandy SILT (ML): very dark greenish gray [GLE Y1 3/10Y]; wet; silt with fine- to coarse-grained sand (subangular); trace fine gravel (subangular, <4mm diameter); (tr,15,85); hydrocarbon odor @ 18' - becomes moist					30 50		60	-	1630	
					2 2 2		100	-	1640		
	@ 21' - CLAY (CL): dark greenish gray [GLE Y1 4/10Y]; high plasticity; soft; oil saturated; strong hydrocarbon odor					-		100	-	1657	
					*		100	-	-	Stopped drilling pilot at a depth of 24 ft-bgs at 1657 on 16 June 2004. Resumed drilling pilot at 0735 on 17 June 2004.	
25	NATIVE CLAY (CL): dark greenish gray [GLE Y1 4/5GY]; moist; stiff; hydrocarbon odor					22 26 17		50	-	0750	Stopped drilling ream at a depth of 25 ft-bgs at 0929 on 17 June 2004. Resumed drilling 7-inch borehole inside 12-inch diameter auger left in place at 0950 on 17 June 2004.
30	Silty SAND (SM): very dark greenish gray [GLE Y1 3/5GY]; moist; fine-grained sand; some silt; (0,70,30); trace shell fragments; micaceous; hydrocarbon odor @ 30' - decrease in silt content (0,80,20); becomes wet					6 10 16		50	-	1001	
					30 40 50		60	-	1010	Bulk Sample: PNL-21-33'-34'	
35	SAND (SP): dark greenish gray [GLE Y1 4/5GY]; wet; fine- to medium-grained sand; trace silt; (0,100,tr); trace shell fragments; micaceous; slight hydrocarbon										

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REVIEWER MR

NOTES: Blow counts for Standard Penetration Test samples are without sample rings.

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG










BORING

PNL-21

SHEET 2 OF 2

START DRILL DATE 16 Jun 04
FINISH DRILL DATE 17 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 6) Plasticity 2) Color 7) Density/Consistency 3) Moisture 8) Other (Mineral Content, 4) Grain Size Discoloration, Odor, etc.) 5) Percentage	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane		
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)			
	odor @ 34' - shell fragment content 20% @ 36' - color change to dark greenish gray [GLE Y1 4/10Y]; predominately medium-grained sand					18 27 50		100	-	1028	Begin to add water to control heaving sand. Bulk Sample: PNL-21-36'-37'		
40					7 12 50		50	-	1034				
	@ 42' - abundant shell fragments ~30%; color change to dark greenish gray [GLE Y1 4/5GY] @ 43.5' - shell fragment content 25%				27 50		90	-	1043				
45	@ 45' - predominately fine-grained sand with little silt (0,95,5) @ 47' - increase in silt (0,90,10)				19 20 34		70	-	1051	Bulk Sample: PNL-21-45'-46'			
50					15 30 50		50	-	1059				
	@ 51' - predominately medium-grained sand; color change to dark greenish gray [GLE Y1 4/10Y] @ 54' - predominately fine-grained sand				7 9 9		100	-	1111			Bulk Sample: PNL-21-51'-52'	
55					9 19 32		100	-	1117				
					19 20 50		100	-	1122				
60	SAND and SILT (SM): very dark greenish gray [GLE Y1 3/5GY]; wet; fine-grained sand and silt; (0,50,50); low plasticity; micaceous @ 60' - increase in sand content						32 50		100	-		1127	Stopped drilling at depth of 61.5 ft-bgs at 1127 on 17 June 2004. Abandoned borehole using ~200 gal bentonite slurry, Wyoben Grout Well (7 bags), at 1400 on 17 June 2004.
65													
70													

CONTRACTOR West Hazmat
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DIAMETER 7-inch
LOGGER GTY

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG**BORING**

START DRILL DATE 15 Jun 04
FINISH DRILL DATE 16 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-23**SHEET 1 OF 2****ELEVATION DATA:**

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL SILT (ML): light olive brown [2.5Y 5/3]; dry; little fine- to medium-grained sand; trace fine to medium gravel (angular to subrounded, <20mm diameter); (tr,10,90)					-		-	-	-	Begin drilling 8-inch pilot at 1427 on 15 June 2004. Began drilling 12-inch ream at 0754 on 16 June, 2004.
5	WASTE SILT (ML): dark greenish gray [GLE Y1 4/10Y]; slightly moist; little fine- to medium-grained sand; trace fine to medium gravel (angular to subrounded, <20mm diameter); (tr,10,90); no plasticity; hydrocarbon staining; hydrocarbon odor; tar @ 6' - seam of medium-grained sand; oil saturated @ 6.5 to 7' - seam of clay; high plasticity; soft; strong hydrocarbon odor; oil saturated					3 3 3		90	-	1431	
						2 3 4		100	-	1437	
10						4 6 6		100	-	1439	
	@ 12 to 13' - composited silt and medium- to coarse-grained sand; becomes moist; oil saturated @ 13' - CLAY (CL): greenish gray [GLE Y1 5/5GY]; (0,0,100); high plasticity; moderately stiff; strong hydrocarbon odor; oil saturated					4 5 8		100	-	1444	
15	@ 15' - color change to dark greenish gray [GLE Y1 4/10Y]; high plasticity; moderately soft; slightly micaceous					3 5 7		100	-	1450	
								-	-	1508	
20	@ 19' - white carbonate-like inclusions @ 19.5' - SILT (ML): dark greenish gray [GLE Y1 4/10Y]; moist; (0,0,100); low plasticity; micaceous; hydrocarbon odor					8 11 11		100	-	1512	
	NATIVE CLAY (CL): dark greenish gray [GLE Y1 4/10Y] clay mottled with black [GLE Y1 2.5/N] clay; (0,0,100); high plasticity; stiff; slightly micaceous @ 23' - white bioturbation-like inclusions; becomes moist; no odor					4 7 8		100	-	0840	
25								100	-	0843	
	SILT (ML): very dark greenish gray [GLE Y1 3/10Y]; moist; trace fine-grained sand; (0,tr,100); trace shell fragments; soft; no odor					4 5 5		100	-	0913	Stopped drilling 12-inch ream at a depth of 25 ft-bgs at 0843 on 16 June 2004. Resumed drilling 7-inch borehole inside 12-inch diameter auger left in place at 0904 on 16 June 2004. Bulk Sample: PNL-23-26'-27' Begin to add water to control heaving sand.
30	SAND (SP): very dark greenish gray [GLE Y1 3/10Y]; very moist; fine-grained sand; little silt; (0,90,10); 5% shell fragments; micaceous @ 30' - becomes wet @ 30.5' - seam of Sandy CLAY (SC): very dark greenish gray [GLE Y1 3/10Y]; wet; (0,20,80) @ 32' - color change to dark greenish gray [GLE Y1 4/10Y]; wet; decrease in silt; increase in medium-grained sand; (0,100,tr)					7 10 14		80	-	0914	
						21 50		55	-	0931	Bulk Sample: PNL-23-32'-33'
35											

CONTRACTOR West Hazmat
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LOGGER GTY

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GS FORM:
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BOREHOLE LOG

BORING

PNL-23

SHEET 2 OF 2

START DRILL DATE 15 Jun 04
FINISH DRILL DATE 16 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 6) Plasticity 2) Color 7) Density/Consistency 3) Moisture 8) Other (Mineral Content, 4) Grain Size Discoloration, Odor, etc.) 5) Percentage	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane		
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)	
	@ 35' - predominately medium-grained sand; trace shell fragment					19 31 50		60	-	0942		
40						19 36 50		100	-	0948		
						28 50		100	-	0954		
45						38 50		100	-	1003		
						24 50 50		100	-	1019		
50	@ 50' - fine- to medium-grained sand					4 15 15		100	-	1026		Bulk Sample: PNL-23-50'-51'
	@ 53' - predominately medium-grained sand					36 39 36		100	-	1039		
55						28 36 50		60	-	1046		Bulk Sample: PNL-23-56'-57'
60						13 15 22		-	-	1103		
65												
70												

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG**BORING**

START DRILL DATE 17 Jun 04
FINISH DRILL DATE 18 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-28**SHEET 1 OF 2****ELEVATION DATA:**

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL Silty SAND (SM): light olive brown [2.5Y 5/3]; dry; fine-to medium-grained sand; some silt; trace fine to medium gravel (angular to subrounded, <30mm diameter); (tr,60,40); concrete material @ 3.5' - Sandy SILT (ML): black [2.5Y 2.5/1]; slightly moist; fine- to coarse-grained sand (angular to subangular); fine gravel (angular, <5mm diameter); (5,20,75); asphalt material; low plasticity @ 6' - concrete fragment @ 9' - concrete fragment										Begin drilling 7-inch pilot at 1556 on 17 June 2004. Began drilling 12-inch ream on 18 June 2004. From 2 to 4 ft-bgs - hard drilling
5						3 7 20		30	-	1602	
						9 50		25	-	1611	
10	WASTE CLAY (CL): very dark greenish gray [GLE Y1 3/5GY]; wet; high plasticity; soft; strong hydrocarbon odor; oil saturated					4 8 15		25	-	1614	@ 9' - liquids observed Split Spoon Sampler bent
						-		100	-	1640	
15						-		-	-		
	NATIVE CLAY (CL): very dark greenish gray [GLE Y1 3/10Y]; wet; high plasticity; moderately stiff; hydrocarbon odor Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; wet; fine-grained sand with some silt; (0,80,20); trace shell fragments; very low plasticity; micaceous; slight hydrocarbon odor					-		100	-	1650	The bottom of the Shelby Tube is native sand with shells. Stopped drilling 7-inch pilot at 17 ft-bgs at 1700 on 17 June 2004. Mainly slough in sampler.
20						9 12 18		70	-	1700	Stop drilling 12-inch ream at 20 ft-bgs at 0816 on 17 June 2004. Resume drilling 7-inch borehole inside 12-inch diameter auger left in place on 18 June 2004.
25	SAND (SP): dark greenish gray [GLE Y1 4/5GY]; wet; fine- to medium-grained sand; trace silt; (0,100,tr); trace shell fragments; micaceous; no odor					16 30 41		60	-	0838	Bulk Sample: PNL-28-23'-24.5'
						16 23 28		90	-	0846	
30	@ 29' - predominately medium-grained sand					9 13 16		100	-	0858	Begin to add water to control heaving sand.
	@ 31' - seam to Silty SAND (SM): dark greenish gray {GLE Y1 4/10Y}; wet; very fine-grained sand with some silt; (0,85,15); low plasticity; micaceous @ 32' - fine- to medium-grained sand @ 32.5' - abundant shell fragments ~50% @ 33.5' - abundant shell fragments ~50%					31 41 50		90	-	0912	
35											

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG












BORING

PNL-28

SHEET 2 OF 2

START DRILL DATE 17 Jun 04
FINISH DRILL DATE 18 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
						44 46 50		100	-	0917	
						15 32 41		100	-	0926	Bulk Sample: PNL-28-38'-39.5'
40	@ 38' - predominately fine-grained sand; little silt; (0,90,10); becomes wet; no odor					-		100	-	0937	
	@ 41' - fine- to medium-grained sand; trace silt; (0,100,tr); trace shell fragments					45 30 50		100	-	0942	
45						24 35 50		100	-	0951	
						19 27 38		100	-	0955	
50						21 32 39		100	-	1000	Bulk Sample: PNL-28-53'-54.5'
55						29 39 50		100	-	1016	
	@ 57' - predominately fine-grained sand					31 50		100	-	1018	
60	Silty SAND (SM): very dark greenish gray [GLEY1 3/10Y]; fine-grained sand with silt; (0,85,15); trace shell fragments; low plasticity										Bulk Sample: PNL-28-60'-60.5' Stopped drilling at a depth of 60.5 ft-bgs at 1018 on 18 June 2004. Abandoned borehole using ~200 gal bentonite slurry to 4 ft-bgs, Wyoben Grout Well (5 bags), at 1018 on 18 June 2004. Topped off borehole using hydrated Wyoben Medium Bentonite Chips (4 bags) at 1254 on 18 June 2004.
65											
70											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 7-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Blow counts for Standard Penetration Test samples are without sample rings.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

PID/FID CALIBRATION LOGS

Instrument Calibration Log

Pilot Study No. 3
Ascon Landfill Site

Instrument Information			
Instrument Name: TVA-1000	Manufacturer: Thermo Environmental Instruments		
Serial Number: R6245	Last Service Date: 6/14/04		
Parameters: Total VOCs	Calibration Gas: 50ppm Hexane		
Calibration Procedure:			
Daily Calibration Results			
Date: 6/14/04 1220 Notes:	Calibration Result: PID = 51.75 ppm FID = 50.49 ppm	Name: L. Dage	Signature: Lamm Dage
Date: 6/15/04 0718 Notes:	Calibration Result: PID = 50.30 ppm FID = 50.29 ppm	Name: L. Dage	Signature: Lamm Dage
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			

Instrument Calibration Log

Pilot Study No. 3

Ascon Landfill Site

Instrument Information			
Instrument Name: <i>JM-1000</i>	Manufacturer: <i>Thermo Environmental Instruments</i>		
Serial Number: <i>R5352</i>	Last Service Date: <i>6/4/04</i>		
Parameters: <i>Total VOCs + methane</i>	Calibration Gas: <i>50 ppm Hexane</i>		
Calibration Procedure: <i>Lot # JAD-209-50-1</i>			
Daily Calibration Results			
Date: <i>6/14/04</i> <i>0720</i>	Calibration Result: <i>PID = 48.45 ppm</i> <i>FID = 49.15 ppm</i>	Name: <i>L. Dege</i>	Signature: <i>Liam Dege</i>
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			
Date:	Calibration Result:	Name:	Signature:
Notes:			

Instrument Calibration Log

Pilot Study No. 3

Ascon Landfill Site

Instrument Information			
Instrument Name: <i>MiniRAE 2000</i>	Manufacturer: <i>MiniRAE</i>		
Serial Number: <i>R5610</i>	Last Service Date: <i>6/11/04</i>		
Parameters: <i>total VOCs</i>	Calibration Gas: <i>50 ppm Hexane</i>		
Calibration Procedure: <i>Lot # JAD-299-50-1</i>			
Daily Calibration Results			
Date: <i>6/11/04</i> <i>0730</i>	Calibration Result: <i>51.3 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Lamm Dage</i>
Notes:			
Date: <i>6/15/04</i> <i>0724</i>	Calibration Result: <i>51.7 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Lamm Dage</i>
Notes:			
Date: <i>06-16-04</i> <i>0710</i>	Calibration Result: <i>50.4 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Lamm Dage</i>
Notes:			
Date: <i>06-17-04</i> <i>07:17</i>	Calibration Result: <i>51.0 ppm</i>	Name: <i>Daggr Tokat</i>	Signature: <i>MT</i>
Notes:			
Date: <i>06-18-04</i> <i>06:46</i>	Calibration Result: <i>50.7 ppm</i>	Name: <i>Daggr Tokat</i>	Signature: <i>MT</i>
Notes:			

M E M O R A N D U M

TO: Tamara Zeier, P.E, Project Navigator, Ltd.
Ken Fredianelli, Project Navigator, Ltd.

FROM: Mike Reardon, P.E., GeoSyntec Consultants
Mark Grivetti, R.G., C.E.G., GeoSyntec Consultants

DATE: 15 July 2004

SUBJECT: **GeoSyntec Field Memorandum**
Pilot Study No. 3 – Phase VIII - Pit F
Ascon Landfill Site
Huntington Beach, California

This memorandum provides a summary of field activities conducted by GeoSyntec Consultants (GeoSyntec) for the Pilot Study No. 3, Phase VIII, Pit F Investigation program at the Ascon Landfill Site (Site) located in Huntington Beach, California. This memorandum was prepared for Project Navigator, Ltd. (PNL). Included with this memorandum are tabular summaries of borehole information, laboratory sample information, air monitoring data, GINT[®] borehole logs, and copies of field calibration and SUMMA canister sample logs.

The scope of work for Phase VIII, as described in the workplan, “Pilot Study No. 3, Waste Characterization, Emissions, and Excavation Testing Program, Phase VIII Addendum” [PNL, 2004], included the drilling of 23 hollow stem auger borings, collection of waste material from Pit F for chemical analysis, and downhole and surface chamber flux testing. Specific Phase VIII field activities performed by GeoSyntec included the lithologic logging of boreholes, field screening of soil and waste samples using a photoionization detector (PID) and flame ionization detector (FID), and hourly perimeter and worker health and safety air monitoring. PNL performed the modified Pit F sampling task as per Department of Toxic Substance Control’s (DTSC) Response to Comments.

PIT F DRILLING PROGRAM

Phase VIII fieldwork was conducted from 28 June 2004 through 2 July 2004. Drilling was performed by West Hazmat Drilling Corporation (West Hazmat), a C-57 licensed drilling firm under subcontract to GeoSyntec. A total of 23 boreholes (PNL-F1, 3, 4, 5, 6, 7, 11, 12, 13, 16, 17, 18, 19, 21, 22, 25, 26, 27, 28, 29, 30, 31, and 32) were drilled using a CME 85 hollow stem auger rig.

The primary objective of the borehole drilling task was to identify the vertical and horizontal extent of waste material that appears to have migrated from Pit F. Each borehole was drilled with an 8-inch diameter drill bit through fill, native, and impacted native materials to depths ranging from 12 ft-bgs to 29.5 ft-bgs. The scope also included a single 45 degree angled boring (PNL-F12) that was located adjacent to Pit F which was drilled 36.5 ft (approximately 26 ft vertical depth) angled toward the center of Pit F. The interface between Pit F waste and native soils was not observed in the angled borehole. Visually impacted materials were observed in boreholes PNL-F1, 3, 4, 5, 6, 7, 11, 12, 18, 19, 21, 22, 25, 28, and 29.

Samples were collected using an 18-inch California Modified Split Spoon sampler for lithologic logging and headspace screening utilizing an FID and PID. The FID and PID headspace readings are summarized in Table 1. Encore samples and composited waste samples were collected for laboratory analysis. For delineation purposes, additional samples were collected for lab testing at discrete depths from step-out boreholes. Table 2 provides a summary of samples collected for laboratory testing from each borehole. Del Mar Analytical laboratories was contracted to perform the chemical analyses for soil samples. Analytical testing of samples was requested per the Phase VIII Workplan Addendum.

Downhole flux chamber tests were performed in seven boreholes (PNL-F1, PNL-F3, PNL-F4, PNL-F5, PNL-F6, PNL-F7, and PNL-F19) at various depths within the native and impacted native material. Flux chamber testing data was collected from each test using a PID and FID. In addition, vapor samples were collected from select tests using SUMMA canisters and Tedlar bags. Lab testing of vapor samples included VOCs, total petroleum hydrocarbons, sulfur compounds, and odor. As shown in

Table 2, downhole flux chamber vapor samples were collected for laboratory testing from three locations at the perimeter of Pit F (PNL-F1, PNL-F4, and PNL-F5) and at two discrete depths from borehole PNL-F19 located at the eastern property boundary. Flux vapor samples were submitted to Odor Science and Engineering for testing of odor and Columbia Analytical for VOC, sulfur compounds, and TPH testing. A summary of FID and PID downhole flux chamber testing results was provided to PNL by Chuck Schmidt.

Phase VIII boreholes were abandoned using hydrated bentonite chips or a bentonite slurry pumped through a 1-inch PVC tremie pipe placed near the bottom of the borehole. Drill cuttings and decontamination water were placed in labeled drums. Drums were moved to the drum storage area of the Site by Mayfield Enterprises at the completion of field activities. A GeoSyntec field geologist observed and documented drilling activities. Between each borehole, the drilling equipment was decontaminated using a pressure steam washer. Table 3 presents a summary of Phase VIII drilling and borehole information. GINT[®] borehole logs are provided as an attachment. GINT[®] borehole logs can be provided electronically in Microsoft Access database format upon request.

AIR MONITORING

All air monitoring instruments including PIDs, FIDs, and dust monitors were calibrated daily. Equipment calibration sheets are included as an attachment. Perimeter air monitoring was performed in accordance with activities described in Appendix A of the workplan. Perimeter air monitoring consisted of hourly PID, dust, odor measurements, and the collection of one 8-hour integrated SUMMA canister air sample at each of the six designated perimeter air monitoring locations. A summary of SUMMA air samples submitted for analysis is presented in Table 4. Hourly measurements of wind speed and direction were also recorded on logs from the on-site wind station. Perimeter air monitoring was not performed on the last day of field activities given that fieldwork only included a limited number of step-out boreholes to confirm the absence of impacts. Air monitoring activities were conducted by a GeoSyntec field engineer. The perimeter air monitoring results for activities during the

first four days of Phase VIII fieldwork are presented in Tables 5A through 5D. No significant PID readings above background were measured at perimeter air monitoring locations over the period of the Phase VIII field activities.

PIT F SURFACE EMISSION FLUX MEASUREMENTS

Using the waste material collected from Pit F, surface flux chamber testing was performed under an uncontrolled and controlled condition utilizing selected vapor emission control suppressants. Flux chamber testing data were collected from each test using a PID and FID. In addition, vapor samples were collected using SUMMA canisters and Tedlar bags for laboratory analysis. Laboratory testing of vapor samples included VOCs, total petroleum hydrocarbons, sulfur compounds, and odor. A summary of FID and PID flux chamber test results was provided to PNL by Chuck Schmidt. Table 2 provides a summary of surface flux samples collected for laboratory testing from Pit F waste materials. All flux testing equipment for the mitigation measurement quantification was provided and operated by Chuck Schmidt.

Laboratory data from Columbia Analytical were provided to PNL in electronic format as received. EDDs for Phase VIII soil and waste testing results from Del Mar Analytical can be obtained through the web based portal set up for the project. Odor data were provided from the laboratory to GeoSyntec and were transmitted to PNL (Steve Howe) as received.

If you have any questions regarding this information please contact Mike Reardon at (714) 969-0800 or Mark Grivetti at (805) 897-3800. GeoSyntec appreciates the opportunity to provide PNL with technical services for the Ascon Project.

* * * * *

TABLES

TABLE 1
SOIL AND WASTE HEADSPACE SCREENING RESULTS
PHASE VIII PIT F DRILLING SAMPLING PROGRAM
ASCON LANDFILL SITE

GeoSyntec Consultants

Borehole ID	Date	Time	Depth of Sample (ft-bgs)	PID Reading (ppm)	FID Reading (ppm)
PNL-F1	6/30/2004	10:24	0.5	0	0
		10:30	2	0	0
		10:32	3.5	0	0
		10:37	5.5	0.79	0
		10:41	7	98	8.73
		10:57	8.5	375	39.59
		11:02	10	332	36.33
		11:05	12	410	35.39
		11:36	13.5	161	13.13
		11:40	14.5	22.47	1.83
		11:49	16	1.97	0.32
		11:55	17.5	0.55	0.43
PNL-F3	6/29/2004	8:11	2	68.07	0
		8:15	5	44.2	0.05
		8:20	8	42.96	0.22
		8:30	11.5	28.03	0.08
		8:50	14.5	947	55.43
		9:07	18	141	46.23
PNL-F4	6/28/2004	10:50	1.5	8.23	0.16
		10:54	5	5.13	0
		10:56	8	2.23	0
		11:03	11	9.26	7.41
		11:18	14	16.44	9.36
		11:38	16.5	6.03	143
		12:54	18.5	266	31.5
		13:00	20	84.36	46.01
PNL-F5	6/28/2004	9:02	2	144	0
		9:07	4.5	200	0.25
		9:10	8	196	0.13
		9:18	10.5	221	8.32
		9:47	14	125	20.31
		10:05	17	595	516
		10:20	19.5	4.45	3.27
PNL-F6	6/28/2004	13:28	1.5	4.47	0
		13:31	4.5	4.18	0.14
		13:34	7.5	2.82	0
		13:49	10	3.48	0.13
		13:55	13.5	1251	172
		14:15	15	336	41.52
PNL-F7	6/28/2004	14:45	2	7.32	0
		14:47	5	14.81	0
		14:51	8	3.96	0
		15:07	10.5	969	90.31
		15:20	13.5	447	74.62

TABLE 1
SOIL AND WASTE HEADSPACE SCREENING RESULTS
PHASE VIII PIT F DRILLING SAMPLING PROGRAM
ASCON LANDFILL SITE

GeoSyntec Consultants

Borehole ID	Date	Time	Depth of Sample (ft-bgs)	PID Reading (ppm)	FID Reading (ppm)
PNL-F11	6/29/2004	10:03	2	0	1.18
		10:11	5	0	0.38
		10:15	8	0	0.75
		10:24	11	0	0.89
PNL-F12 (angled)	6/30/2004	13:55	8.5	109	12.98
		14:08	12.5	23.79	2.23
		14:25	16	58.65	7.35
		14:40	20	14.25	2.32
		14:52	21.5	10.3	1.44
		14:58	23.5	112	17.42
		15:09	24.5	148	13.35
		15:10	26	738	62.89
		15:13	27	346	31.9
		15:16	27.5	201	19.31
		15:25	29	1179	122
		15:34	31.5	1139	91.38
PNL-F13	7/2/2004	15:47	36	63.39	6.6
		12:11	6.5	53.89	8.73
		12:13	8	22.03	5.65
		12:16	9.5	2.7	4.75
		12:20	11	0.57	2.22
		13:00	12.5	1.36	2.68
		13:03	14	1.14	2.06
		13:07	15.5	1.59	2.83
		13:13	17	2.75	3.33
		13:16	18.5	2.99	1.76
PNL-F16	7/2/2004	13:22	20	0.96	2.2
		14:01	6.5	0	0.01
		14:05	8	0	0.18
		14:08	9.5	0	0.15
		14:13	11	0	0.29
		14:15	12.5	0	0.1
		14:18	14	0	0.18
		14:21	15.5	0	4.56
		14:27	17	0	4.22
		14:42	19	0	0.02
		14:46	20.5	0	3.19
		14:51	22	0	0.32
		14:56	23.5	0	1.42
		15:02	25	0	0.09
		15:07	26.5	0	2.23
		15:12	28	0	11.14
		15:19	29.5	0	5.86

TABLE 1
SOIL AND WASTE HEADSPACE SCREENING RESULTS
PHASE VIII PIT F DRILLING SAMPLING PROGRAM
ASCON LANDFILL SITE

GeoSyntec Consultants

Borehole ID	Date	Time	Depth of Sample (ft-bgs)	PID Reading (ppm)	FID Reading (ppm)
PNL-F17	6/29/2004	12:55	2	5.34	0.26
		12:59	3.5	5.83	0.34
		13:03	5	10.44	0.4
		13:06	6	2.88	0.03
		13:11	9	3.32	0
		13:24	10.5	1.36	0
PNL-F18	6/29/2004	11:00	1.5	20.52	0.07
		11:02	3	18.48	0.05
		11:05	5	18.95	0.01
		11:07	7	11.32	0
		11:12	7.5	62.06	16.71
		11:18	10	1120	179
		11:26	10.5	155	113
		11:36	12.5	15.93	43.37
PNL-F19	6/30/2004	8:20	2.5	1.65	0
		8:45	5	0.05	0
		8:47	6.5	0.18	0
		9:25	10	47.25	10.43
		9:29	12	4.37	1.65
		9:35	13	5.43	1.28
		9:39	14	2.62	0.49
PNL-F21	6/29/2004	13:53	2	1.25	0
		13:56	4	3.34	0
		14:01	4.5	0.23	0
		14:04	6.5	0.9	0
		14:07	7.5	1.53	14.8
		14:17	9	73.16	19.4
		14:25	10	208	24.39
PNL-F22	7/1/2004	12:32	5.5	17.81	1.45
		12:35	7	6.22	0.1
		12:41	9	5.39	0.11
		12:45	10	1.96	0
		12:47	12	2.66	0.13
		12:50	13	3.92	0
		12:54	14.5	2.37	2.53
		13:02	16	5.81	39.15
		13:10	18	1390	325
PNL-F25	7/1/2004	13:17	19	1638	282
		9:05	8.5	50.31	0.09
		9:11	10	235	8.33
		9:15	11.5	66.96	1.17
		9:18	14	105	1.04
		9:21	15	200	8.56
		9:25	16	2002	316
		9:32	17.5	1716	214
		9:38	18.5	1206	120
		9:43	21	792	97.1

TABLE 1
SOIL AND WASTE HEADSPACE SCREENING RESULTS
PHASE VIII PIT F DRILLING SAMPLING PROGRAM
ASCON LANDFILL SITE

GeoSyntec Consultants

Borehole ID	Date	Time	Depth of Sample (ft-bgs)	PID Reading (ppm)	FID Reading (ppm)
PNL-F26	7/1/2004	10:22	8.5	6.43	70.35
		10:27	10	8.46	225
		10:30	11	7.57	41.86
		10:34	12.5	6.8	152
		10:37	14.5	435	316
		10:42	16	422	220
		10:45	17.5	418	525
		10:50	19	390	464
		10:54	21.5	97.24	142
PNL-F27	6/29/2004	15:41	2	103	9.27
		15:45	4	30.31	2.28
		15:48	5	9.03	0.73
		15:50	7	1.15	0
		15:53	7.5	2	0.11
		15:57	9.5	1.53	0.27
		16:00	11	2.05	1.03
		16:10	12	1.38	1.67
PNL-F28	7/1/2004	14:12	12.5	6.39	0.33
		14:14	14	4.85	0.25
		14:15	15.5	2.76	0.28
		14:27	19	993	161
PNL-F29	7/1/2004	15:03	12.5	0.27	0.18
		15:06	14	0	0.24
		15:14	15.5	0	0.17
		15:17	17	0	0.1
		15:24	18	48.69	4.68
		15:35	18.5	86.64	7.08
PNL-F30	7/1/2004	16:17	14	0.29	0.35
		16:20	15.5	0	0.2
		16:25	17	0	0.27
		16:30	18.5	0	0.5
		16:40	20	0	0.42
PNL-F31	7/2/2004	8:37	14	11	108
		8:45	15.5	17	0.8
		8:55	18.5	5.86	1.22
		8:57	20	2.4	0.56
		8:59	21.5	0	0.41
		9:03	22.5	0	0.32
		9:09	24	0	0.49

TABLE 1
SOIL AND WASTE HEADSPACE SCREENING RESULTS
PHASE VIII PIT F DRILLING SAMPLING PROGRAM
ASCON LANDFILL SITE

GeoSyntec Consultants

Borehole ID	Date	Time	Depth of Sample (ft-bgs)	PID Reading (ppm)	FID Reading (ppm)
PNL-F32	7/2/2004	9:42	8.5	0.78	0.08
		9:45	9.5	0	0.22
		9:48	11.5	4.2	1.39
		9:52	13	0.67	0.77
		9:57	14.5	0	0.49
		10:04	16	0	0.7
		10:07	17.5	0.26	1.14
		10:11	19	0	0.82
		10:22	20.5	0	0.15
		10:27	22	1.25	0.87
		10:33	23.5	0.01	0.24
		10:41	25	0	0.4
		10:45	26.5	0	0.3
		10:51	28	0	0.27
		10:58	29.5	0	0.12

Notes:

Sample depths are approximate.

Sample headspace screened using plastic bag and PID and FID air monitoring instruments

ft-bgs: feet below ground surface

ppm: parts per million concentration

TABLE 2

**SAMPLE COLLECTION SUMMARY
PHASE VIII PIT F DRILLING & SAMPLING PROGRAM
ASCON LANDFILL SITE**

Sampling Location	Date Sampled	Sample ID [Del Mar Analytical]	Flux Chamber Odor Samples [Odor Science & Engineering, Inc]	Flux Chamber TO-15/TO-3 Vapor Samples [Columbia Analytical Services]	Flux Chamber Sulfur Vapor Samples [Columbia Analytical Services]
PNL-F5	6/28/04	PNL-F5 (composite), PNL-F5-17-EC	PNL-F5-13.5-O	PNL-F5-13.5-T	PNL-F5-13.5-S
PNL-F4	6/28/04	PNL-F4 (composite), PNL-F4-11-EC PNL-F4-14-EC PNL-F4-16.5-EC	PNL-F4-15-O	PNL-F4-15-T	PNL-F4-15-S
PNL-F6	6/28/04	PNL-F6 (composite), PNL-F6-10.5-EC	-	-	-
PNL-F7	6/28/04	PNL-F7 (composite), PNL-F7-11.5-EC	-	-	-
PNL-F3	6/29/04	PNL-F3-14.5 PNL-F3-15-EC	-	-	-
PNL-F18	6/29/04	PNL-F18-9.5 PNL-F18-12	-	-	-
PNL-F17	6/29/04	PNL-F17-10	-	-	-
PNL-F21	6/29/04	PNL-F21-9.5 PNL-F21-11.5	-	-	-
PNL-F27	6/29/04	PNL-F27-8.5	-	-	-
PNL-F19	6/30/04	PNL-F19-10.5 PNL-F19-14	PNL-F19-4-O PNL-F19-10-O	PNL-F19-4-T PNL-F19-10-T	PNL-F19-4-S PNL-F19-10-S
PNL-F1	6/30/04	PNL-F1 (composite) PNL-F1-8.5 -EC	PNL-F1-13-O PNL-F1-13-OR	PNL-F1-13-T PNL-F1-13-TR	PNL-F1-13-S PNL-F1-13-SR
Pit F	6/30/04	Pit F_SAMPLE Pit F_BOTTOM	--	-	-

TABLE 2 (cont.)

**SAMPLE COLLECTION SUMMARY
PHASE VIII PIT F DRILLING & SAMPLING PROGRAM
ASCON LANDFILL SITE**

Sampling Location	Date Sampled	Sample ID [Del Mar Analytical]	Flux Chamber Odor Samples [Odor Science & Engineering, Inc]	Flux Chamber TO-15/TO-3 Vapor Samples [Columbia Analytical Services]	Flux Chamber Sulfur Vapor Samples [Columbia Analytical Services]
PNL-F25	7/01/04	PNL-F25-19	-	-	-
Pit F	6/30/04	Surface Flux Samples	SF-STY2-U-O SF-STY2-C1-O SF-STY2-C2-O	SF-STY2-U-T SF-STY2-U-TR SF-STY2-C1-T SF-STY2-C2-T	SF-STY2-U-S SF-STY2-C1-S SF-STY2-C2-S
PNL-F1	6/30/04	Surface Flux Samples	SF-STY1-U-O SF-STY1-U-OR SF-STY1-C1-O SF-STY1-C2-O	SF-STY1-U-T SF-STY1-C1-T SF-STY1-C2-T	SF-STY1-U-S SF-STY1-U-SR SF-STY1-C1-S SF-STY1-C2-S
Blank Samples	6/28/04 - 6/30/04		PNL-F75-1-O SF-BLK-ODOR	PNL-F75-1-T SF-BLK	PNL-F75-1-S SF-BLK-S

TABLE 3
SUMMARY OF BOREHOLE INFORMATION
PHASE VIII PIT F DRILLING & SAMPLING PROGRAM
ASCON LANDFILL SITE

Borehole Location	Boring Type	Date Drilled	Total Depth (ft-bgs)	Depth of Styrene Waste (ft-bgs)	Styrene Waste Thickness (ft)	Top of Native (ft-bgs)	First Water Encountered (ft-bgs)	Borehole Abandoned
PNL-F01	Proposed	06/30/04	19.0	5.5 to 13.5	8.0	5.5	14.5	06/30/04
PNL-F03	Proposed	06/29/04	19.0	12 to 17.5	5.5	10.5	NE	06/29/04
PNL-F04	Proposed	06/28/04	21.0	17.5 to 20	2.5	11.0	18.0	06/28/04
PNL-F05	Proposed	06/28/04	21.0	--	NA	11.5	16.5	06/28/04
PNL-F06	Proposed	06/28/04	16.5	10.5 to 16.5 *	> 6.0	10.5	13.5	06/28/04
PNL-F07	Proposed	06/28/04	15.0	8.5 to 12.0	3.5	8.5	13.5	06/28/04
PNL-F11	Proposed	06/29/04	12.0	trace	ND	2.5	10.5	06/29/04
PNL-F12 ¹	Proposed - Angled	06/30/04	26 ²	5.5 to 26 ²	> 21 ²	5.5 ²	13.5 ²	06/30/04
PNL-F13	Step-Out	07/02/04	20.0	--	NA	7.0	8.0	07/02/04
PNL-F16	Step-Out	07/02/04	29.5	--	NA	5.0	8.0	07/02/04
PNL-F17	Step-Out	06/29/04	12.0	--	NA	4.0	9.0	06/29/04
PNL-F18	Step-Out	06/29/04	13.5	9.5 to 10.5	1.0	2.0	9.5	06/29/04
PNL-F19	Step-Out	06/30/04	14.5	10.0 to 10.5	0.5	5.0	10.5	06/30/04
PNL-F21	Step-Out	06/29/04	12.0	9.0 to 10.5	1.5	5.0	9.0	06/29/04
PNL-F22	Step-Out	07/01/04	20.0	17.0 to 20 *	> 3.0	10.0	15.5	07/01/04
PNL-F25	Step-Out	07/01/04	21.5	10.0 to 21.5 *	11.5	14.0	17.0	07/01/04
PNL-F26	Step-Out	07/01/04	21.5	--	NA	18.0	18.0	07/01/04
PNL-F27	Step-Out	06/29/04	13.5	--	NA	5.0	9.0	06/29/04
PNL-F28	Step-Out	07/01/04	19.5	18.0 to 19.5 *	> 1.5	ND	16.5	07/01/04
PNL-F29	Step-Out	07/01/04	19.5	16.5 to 19.5 *	> 3.0	ND	16.5	07/01/04
PNL-F30	Step-Out	07/01/04	21.0	--	NA	ND	15.0	07/01/04
PNL-F31	Step-Out	07/02/04	24.5	--	NA	ND	15.0	07/02/04
PNL-F32	Step-Out	07/02/04	29.5	--	NA	ND	9.5	07/02/04

Note: ft-bgs is feet below ground surface.

NA is Not Applicable

ND is Not Determined

* vertical extent of styrene waste not delineated

(1) 45 degree angle boring

(2) depths are ft bgs calculated based upon 45 degree angle boring, (total drilled footage on angle was 36.5 ft)

TABLE 4

**PERIMETER AIR SAMPLE COLLECTION SUMMARY
PHASE VIII PIT F DRILLING & SAMPLING PROGRAM
ASCON LANDFILL SITE**

Station ID	Date Collected	Container ID (Serial #)	Flow Controller (Serial #)	Sample ID [Columbia Analytical Services]
AA-01	6/28/04	02036	01926	AA-01-062804
	6/29/04	00181	01957	AA-01-062904
	6/30/04	00488	01677	AA-01-063004
	7/1/04	01345	01676	AA-01-070104
AA-02	6/28/04	01426	02058	AA-02-062804
	6/29/04	00589	01980	AA-02-062904
	6/30/04	00298	01657	AA-02-063004
	7/1/04	00523	01992	AA-02-070104
AA-03	6/28/04	01339	01361	AA-03-062804
	6/29/04	01510	01692	AA-03-062904
	6/30/04	00102	01029	AA-03-063004
	7/1/04	00566	01301	AA-03-070104
AA-04A	6/28/04	02007	01684	AA-04A-062804
	6/29/04	00546	02048	AA-04A-062904
	6/30/04	01760	01414	AA-04A-063004
	7/1/04	01212	01800	AA-04A-070104
AA-05	6/28/04	02004	01815	AA-05-062804
	6/29/04	00228	01990	AA-05-062904
	6/30/04	01936	01682	AA-05-063004
	7/1/04	01434	01646	AA-05-070104
AA-07	6/28/04	01488	01025	AA-07-062804
	6/29/04	01715	01947	AA-07-062904
	6/30/04	01882	00899	AA-07-063004
	7/1/04	01289	01764	AA-07-070104

TABLE 5A

PERIMETER AIR MONITORING DATA SUMMARY
28 JUNE 2004
PHASE VIII PIT F DRILLING & SAMPLING PROGRAM

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	6/28/2004	9:28 AM	4.0	156	0	2.8	0.043
AA-01	6/28/2004	10:31 AM	7.4	160	0	3.0	0.033
AA-01	6/28/2004	11:31 AM	10.0	172	0	2.2	0.029
AA-01	6/28/2004	1:17 PM	9.4	220	0	1.5	0.030
AA-01	6/28/2004	2:26 PM	10.0	230	0	0.0	0.031
AA-01	6/28/2004	3:36 PM	9.3	225	0	0.0	0.024
AA-02	6/28/2004	9:32 AM	4.0	156	0	2.8	0.039
AA-02	6/28/2004	10:35 AM	7.4	160	0	3.3	0.030
AA-02	6/28/2004	11:34 AM	10.0	172	0	2.0	0.030
AA-02	6/28/2004	1:20 PM	9.4	220	0	1.3	0.029
AA-02	6/28/2004	2:29 PM	10.0	230	0	0.0	0.033
AA-02	6/28/2004	3:39 PM	9.3	225	0	0.0	0.029
AA-03	6/28/2004	9:36 AM	4.0	156	0	3.0	0.038
AA-03	6/28/2004	10:38 AM	7.4	160	0	2.8	0.031
AA-03	6/28/2004	11:38 AM	10.0	172	0	1.9	0.028
AA-03	6/28/2004	1:24 PM	9.4	220	0	1.2	0.034
AA-03	6/28/2004	2:32 PM	10.0	230	0	0.1	0.034
AA-03	6/28/2004	3:43 PM	9.3	225	0	0.0	0.031
AA-04A	6/28/2004	9:14 AM	4.0	156	0	3.0	0.042
AA-04A	6/28/2004	10:21 AM	7.4	160	0	2.5	0.028
AA-04A	6/28/2004	11:21 AM	10.0	172	0	2.1	0.026
AA-04A	6/28/2004	1:06 PM	9.4	220	0	1.2	0.042
AA-04A	6/28/2004	2:17 PM	10.0	230	0	0.2	0.040
AA-04A	6/28/2004	3:26 PM	9.3	225	0	0.1	0.025
AA-05	6/28/2004	9:11 AM	4.0	156	0	3.1	0.039
AA-05	6/28/2004	10:17 AM	7.4	160	0	4.5	0.032
AA-05	6/28/2004	11:18 AM	10.0	172	0	1.8	0.029
AA-05	6/28/2004	1:03 PM	9.4	220	0	1.8	0.027
AA-05	6/28/2004	2:12 PM	10.0	230	0	0.2	0.030
AA-05	6/28/2004	3:23 PM	9.3	225	0	0.0	0.025
AA-07	6/28/2004	9:08 AM	4.0	156	0	3.0	0.033
AA-07	6/28/2004	10:14 AM	7.4	160	0	4.4	0.028
AA-07	6/28/2004	11:14 AM	10.0	172	0	1.9	0.022
AA-07	6/28/2004	12:58 PM	9.4	220	0	1.8	0.025
AA-07	6/28/2004	2:09 PM	10.0	230	0	0.3	0.032
AA-07	6/28/2004	3:19 PM	9.3	225	0	0.0	0.025

TABLE 5B

PERIMETER AIR MONITORING DATA SUMMARY

29 JUNE 2004

PHASE VIII PIT F DRILLING & SAMPLING PROGRAM

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	6/29/2004	8:22 AM	1.3	77	0	0.2	0.038
AA-01	6/29/2004	9:26 AM	5.8	182	0	0.0	0.023
AA-01	6/29/2004	10:39 AM	9.5	165	0	0.0	0.024
AA-01	6/29/2004	11:43 AM	10.9	184	0	0.0	0.033
AA-01	6/29/2004	1:10 PM	6.9	186	0	0.0	0.046
AA-01	6/29/2004	2:16 PM	7.3	175	0	0.0	0.037
AA-01	6/29/2004	3:23 PM	8.8	181	0	0.0	0.033
AA-02	6/29/2004	8:27 AM	1.3	77	0	0.0	0.039
AA-02	6/29/2004	9:29 AM	5.8	182	0	0.0	0.020
AA-02	6/29/2004	10:42 AM	9.5	165	0	0.0	0.027
AA-02	6/29/2004	11:46 AM	10.9	184	0	0.0	0.026
AA-02	6/29/2004	1:13 PM	6.9	186	0	0.0	0.035
AA-02	6/29/2004	2:19 PM	7.3	175	0	0.0	0.029
AA-02	6/29/2004	3:26 PM	8.8	181	0	0.0	0.038
AA-03	6/29/2004	8:33 AM	1.3	77	0	0.0	0.041
AA-03	6/29/2004	9:32 AM	5.8	182	0	0.0	0.022
AA-03	6/29/2004	10:45 AM	9.5	165	0	0.0	0.023
AA-03	6/29/2004	11:49 AM	10.9	184	0	0.0	0.025
AA-03	6/29/2004	1:16 PM	6.9	186	0	0.0	0.031
AA-03	6/29/2004	2:23 PM	7.3	175	0	0.0	0.032
AA-03	6/29/2004	3:29 PM	8.8	181	0	0.0	0.040
AA-04A	6/29/2004	8:09 AM	1.3	77	0	0.0	0.032
AA-04A	6/29/2004	9:16 AM	5.8	182	0	0.0	0.022
AA-04A	6/29/2004	10:29 AM	9.5	165	0	0.0	0.021
AA-04A	6/29/2004	11:33 AM	10.9	184	0	0.0	0.024
AA-04A	6/29/2004	1:00 PM	6.9	186	0	0.0	0.043
AA-04A	6/29/2004	2:06 PM	7.3	175	0	0.0	0.039
AA-04A	6/29/2004	3:15 PM	8.8	181	0	0.0	0.041
AA-05	6/29/2004	8:06 AM	1.3	77	0	0.0	0.041
AA-05	6/29/2004	9:11 AM	5.8	182	0	0.0	0.019
AA-05	6/29/2004	10:26 AM	9.5	165	0	0.0	0.026
AA-05	6/29/2004	11:30 AM	10.9	184	0	0.0	0.030
AA-05	6/29/2004	12:57 PM	6.9	186	0	0.0	0.027
AA-05	6/29/2004	2:03 PM	7.3	175	0	0.0	0.053
AA-05	6/29/2004	3:11 PM	8.8	181	0	0.0	0.032
AA-07	6/29/2004	7:59 AM	1.3	77	0	0.1	0.040
AA-07	6/29/2004	9:08 AM	5.8	182	0	0.0	0.025
AA-07	6/29/2004	10:22 AM	9.5	165	0	0.0	0.019
AA-07	6/29/2004	11:27 AM	10.9	184	0	0.0	0.019
AA-07	6/29/2004	12:53 PM	6.9	186	0	0.0	0.034
AA-07	6/29/2004	1:59 PM	7.3	175	0	0.0	0.033
AA-07	6/29/2004	3:08 PM	8.8	181	0	0.0	0.029

TABLE 5C

PERIMETER AIR MONITORING DATA SUMMARY

30 JUNE 2004

PHASE VIII PIT F DRILLING & SAMPLING PROGRAM

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	6/30/2004	8:44 AM	7.6	180	0	0.2	0.040
AA-01	6/30/2004	9:47 AM	5.9	192	0	0.0	0.039
AA-01	6/30/2004	10:55 AM	9.3	176	0	0.0	0.023
AA-01	6/30/2004	1:46 PM	8.7	175	0	0.0	0.042
AA-01	6/30/2004	2:59 PM	11.6	204	0	0.0	0.048
AA-02	6/30/2004	8:48 AM	7.6	180	0	0.3	0.036
AA-02	6/30/2004	9:50 AM	5.9	192	0	0.0	0.040
AA-02	6/30/2004	10:58 AM	9.3	176	0	0.0	0.031
AA-02	6/30/2004	1:49 PM	8.7	175	0	0.0	0.043
AA-02	6/30/2004	3:02 PM	11.6	204	0	0.0	0.051
AA-03	6/30/2004	8:52 AM	7.6	180	0	0.0	0.037
AA-03	6/30/2004	9:53 AM	5.9	192	0	0.0	0.041
AA-03	6/30/2004	11:01 AM	9.3	176	0	0.0	0.028
AA-03	6/30/2004	1:52 PM	8.7	175	0	0.0	0.046
AA-03	6/30/2004	3:05 PM	11.6	204	0	0.0	0.047
AA-04A	6/30/2004	8:32 AM	7.6	180	0	0.3	0.034
AA-04A	6/30/2004	9:37 AM	5.9	192	0	0.0	0.038
AA-04A	6/30/2004	10:45 AM	9.3	176	0	0.0	0.022
AA-04A	6/30/2004	1:36 PM	8.7	175	0	0.0	0.063
AA-04A	6/30/2004	2:49 PM	11.6	204	0	0.0	0.052
AA-05	6/30/2004	8:28 AM	7.6	180	0	0.7	0.040
AA-05	6/30/2004	9:33 AM	5.9	192	0	0.0	0.033
AA-05	6/30/2004	10:42 AM	9.3	176	0	0.0	0.032
AA-05	6/30/2004	1:33 PM	8.7	175	0	0.0	0.046
AA-05	6/30/2004	2:46 PM	11.6	204	0	0.0	0.039
AA-07	6/30/2004	8:24 AM	7.6	180	0	1.6	0.036
AA-07	6/30/2004	9:29 AM	5.9	192	0	0.0	0.031
AA-07	6/30/2004	10:39 AM	9.3	176	0	0.0	0.013
AA-07	6/30/2004	1:29 PM	8.7	175	0	0.0	0.037
AA-07	6/30/2004	2:43 PM	11.6	204	0	0.0	0.046

TABLE 5D

PERIMETER AIR MONITORING DATA SUMMARY

1 JULY 2004

PHASE VIII PIT F DRILLING & SAMPLING PROGRAM

Monitoring Location	Date	Time	Wind Speed (mph)	Wind Direction (°azimuth)	Odor (Worker Perception)	PID (ppm)	Dust Concentration (mg/m ³)
AA-01	7/1/2004	9:26 AM	1.6	66	0	0.0	0.032
AA-01	7/1/2004	10:35 AM	5.7	222	0	0.0	0.047
AA-01	7/1/2004	12:49 PM	11.3	260	0	0.0	0.043
AA-01	7/1/2004	1:50 PM	12.1	253	0	0.0	0.059
AA-01	7/1/2004	2:54 PM	9.8	232	0	0.0	0.043
AA-02	7/1/2004	9:30 AM	1.6	66	0	0.0	0.034
AA-02	7/1/2004	10:38 AM	5.7	222	0	0.0	0.038
AA-02	7/1/2004	12:52 PM	11.3	260	0	0.0	0.052
AA-02	7/1/2004	1:54 PM	12.1	253	0	0.0	0.061
AA-02	7/1/2004	2:57 PM	9.8	232	0	0.0	0.057
AA-03	7/1/2004	9:34 AM	1.6	66	0	0.0	0.039
AA-03	7/1/2004	10:42 AM	5.7	222	0	0.0	0.029
AA-03	7/1/2004	12:55 PM	11.3	260	0	0.0	0.045
AA-03	7/1/2004	1:57 PM	12.1	253	0	0.0	0.067
AA-03	7/1/2004	3:00 PM	9.8	232	0	0.0	0.059
AA-04A	7/1/2004	9:13 AM	1.6	66	0	0.0	0.043
AA-04A	7/1/2004	10:25 AM	5.7	222	0	0.0	0.031
AA-04A	7/1/2004	12:39 PM	11.3	260	0	0.0	0.061
AA-04A	7/1/2004	1:40 PM	12.1	253	0	0.0	0.072
AA-04A	7/1/2004	2:44 PM	9.8	232	0	0.0	0.034
AA-05	7/1/2004	9:09 AM	1.6	66	0	0.0	0.030
AA-05	7/1/2004	10:22 AM	5.7	222	0	0.0	0.038
AA-05	7/1/2004	12:36 PM	11.3	260	0	0.0	0.045
AA-05	7/1/2004	1:37 PM	12.1	253	0	0.0	0.053
AA-05	7/1/2004	2:41 PM	9.8	232	0	0.0	0.049
AA-07	7/1/2004	9:05 AM	1.6	66	0	0.0	0.028
AA-07	7/1/2004	10:18 AM	5.7	222	0	0.0	0.032
AA-07	7/1/2004	12:33 PM	11.3	260	0	0.0	0.039
AA-07	7/1/2004	1:33 PM	12.1	253	0	0.0	0.042
AA-07	7/1/2004	2:38 PM	9.8	232	0	0.0	0.038

AIR SAMPLE LOGS

SAMPLE LOG SHEET **AMBIENT AIR SAMPLING** **ASCON LANDFILL**

DATE: 6/28/04Page 1 of 1
 Sampler: Lauren Dage (in Hg) (in Hg)

Sample ID	Summa PAI #	Flow Controller PAI #	Pre- Sample Vacuum	Post Sample Vacuum	Sample Collection Time (initial)
AA-07-062804	01488	01025	>30	18	0809 / 1605
AA-05-062804	02004	01815	>30	10	0811 / 1608
AA-04A-062804	02007	01684	>30	7.5	0815 / 1610
AA-01-062804	02036	01926	>30	10	0822 / 1613
AA-02-062804	01426	02058	>30	12.5	0823 / 1615
AA-03-062804	01339	01361	>30	4.5	0826 / 1617

SAMPLE LOG SHEET **AMBIENT AIR SAMPLING** **ASCON LANDFILL**

DATE: 29 June 2004Page 1 of 1
 Sampler: Lauren Dagg
 (in Hg)

Sample ID	Summa PAI #	Flow Controller PAI #	Pre- Sample Vacuum	Post Sample Vacuum	Sample Collection Time (initial)
AA-07-062904	01715	01947	>30	8.0	0741 / 1533 0828
AA-05-062904	00228	01990	>30	8.0	0743 / 1535
AA-04A-062904	00546	02048	>30	8.5	0753 / 1537
AA-01-062904	00181	01957	>30	8.5	0746 / 1541 0828
AA-02-062904	00589	01980	>30	7.0	0747 / 1543
AA-03-062904	01510	01692	>30	9.0	0749 / 1545

SAMPLE LOG SHEET **AMBIENT AIR SAMPLING** **ASCON LANDFILL**

DATE: 6-30-04Page 1 of 1
 Sampler : Lauren Daaf (in Hg) (in Hg)

Sample ID	Summa PAI #	Flow Controller PAI #	Pre- Sample Vacuum	Post Sample Vacuum	Sample Collection Time (initial)
AA-07-063004	01882	00899	>30	11.5	0729 1534
AA-05-063004	01936	01682	>30	7.0	0731 1538
AA-04A-063004	01760	61414	>30	8.5	0732 1550
AA-07-063004	00488	01677	>30	7.5	0744 1541
AA-02-063004	00298	01657	>30	6.0	0746 1543
AA-03-063004	00102	01029	>30	9.5	0748 1545

SAMPLE LOG SHEET AMBIENT AIR SAMPLING ASCON LANDFILL

DATE: 01 July 2004Page 1 of 1Sampler: Lauren Dage

Sample ID	Summa PAI #	Flow Controller PAI #	Pre- Sample Vacuum	Post Sample Vacuum	Sample Collection Time (initial)
AA-07-070104	01289	01764	>30	35	0738 / 1530
AA-05-070104	01434	01646	>30	8.5	0740 / 1532
AA-04A-070104	01212	01800	>30	8.5	0742 / 1534
AA-07- ⁰⁷⁰¹⁰⁴ 07	01345	01676	>30	8.0	0745 / 1540
AA-02-070104	00523	01992	>30	8.0	0747 / 1542
AA-03-070104	00566	01301	>30	11.5	0749 / 1544

BORING LOGS

**GEO SYNTEC CONSULTANTS**

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG**BORING****PNL-F1****SHEET 1 OF 1**

START DRILL DATE 30 Jun 04
FINISH DRILL DATE 30 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS		
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)			
5	ARTIFICIAL FILL SILT (ML): grayish brown [2.5Y 5/2] mottled with dark yellowish brown [10YR 3/6]; slightly moist; (0,0,100); trace plant material; slightly micaceous; no odor @ 2' - increase in clay content @ 2.5' - color change to dark grayish brown [2.5Y 4/2]; decrease in clay; no odor @ 4.5' - color change to olive brown [2.5Y 4/2]		▽			5		90	0	1027	Began drilling at 1024 on 30 June 2004. FID = 8.73 ppm PNL-F1-7.5 @ 8' - flux measurement FID = 39.59 ppm PNL-F1-8.5-EC PNL-F1-9 FID = 36.33 ppm PNL-F1-10.5 FID = 35.39 ppm PNL-F1-12.5 @ 13' - flux measurement FID = 13.13 ppm PNL-F1-13.5 @ 14.5' - liquids observed FID = 1.83 ppm FID = 0.32 ppm FID = 0.43 ppm Stopped drilling at a depth of 19 ft-bgs at 1154 on 30 June 2004. Abandoned borehole at 1340 on 30 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (6 bags).		
						9							
						10							
						9		60	0	1029			
						11							
						12							
						10		90	0	1032			
						12							
						30							
						8		90	0.8	1037			
	STYRENE IMPACTED NATIVE CLAY (CL): dark greenish gray [GLE Y1 4/10Y] mottled with black [GLE Y1 2.5/N]; moist; high plasticity; stiff; styrene impacted yellow brown material; strong styrene odor					10							
						14							
						8		65	98	1042			
						10							
						12							
				10				5		65		375	1055
								6					
								7					
								5		60		332	1100
								5					
		5											
		5				100	410	1105					
		5											
		8				100	161	1135					
		9											
15	NATIVE Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; moist; fine-grained sand with some silt; (0,75,25); trace shell fragments; micaceous; styrene odor @ 15' - decrease in silt (0,90,10); styrene odor @ 15.5' - shell fragments 5%; slight styrene odor				10								
					10								
					10		100	22	1141				
					11								
					12								
					9		100	2	1149				
					10								
					12								
					11		100	0.6	1154				
					12								
		14											
20	SAND (SP): very dark greenish gray [GLE Y1 3/10Y]; fine- to medium-grained sand; trace silt; (0,100,tr); trace shell fragments; faint styrene odor @ 18.5' - predominantly medium-grained sand; trace coarse-grained sand (subrounded); faint odor												
25													
30													

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY
NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GeoSYNTEC CONSULTANTS

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(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING



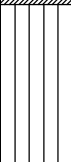

START DRILL DATE 29 Jun 04
FINISH DRILL DATE 29 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-F3

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)		
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)										1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
5	ARTIFICIAL FILL SILT (ML): light olive brown [2.5Y 5/3]; dry; silt with little fine- to medium-grained sand; trace fine gravel (subangular to subrounded, <10mm diameter); (tr,10,90); trace plant fragment; no odor @ 2' - faint styrene odor; iron oxide staining; predominant silt; becomes slightly moist					-		-	-	-	Began drilling at 0800 on 29 June 2004.	
					7		100	68	0812			
					8							
					6							
					10		100	44	0815	FID = 0.05 ppm		
					15							
					18		100	43	0819	FID = 0.22 ppm		
					31							
					36							
15	NATIVE CLAY (CL): dark greenish gray [GLEY1 4/10Y] mottled with olive brown [2.5Y 4/4]; moist; (0,0,100); high plasticity; stiff; styrene odor STYRENE IMPACTED NATIVE Styrene impacted yellow-brown material					8		60	28	0828	FID = 0.08 ppm	
					14							
					23							
20	SILT (ML): very dark greenish gray [GLEY1 3/10Y]; moist; (0,0,100); low plasticity; very micaceous; styrene impacted yellow-brown material; strong styrene odor					4		100	947	0848	@ 14' - flux measurement FID = 55.43 ppm PNL-F3-14.5 PNL-F3-15-EC	
					5							
					5							
25	NATIVE Sandy SILT (SM): very dark greenish gray [GLEY1 3/10Y]; moist; silt with some fine-grained sand; (0,20,80); trace shell fragments; micaceous; styrene odor					5		100	141	0905	@ 17' - flux measurement FID = 46.23 ppm	
					8							
					12							
30											Stopped drilling at a depth of 19 ft-bgs 0905 on 29 June 2004. Abandoned borehole at 0934 on 29 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (7 bags).	

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

START DRILL DATE 28 Jun 04
FINISH DRILL DATE 28 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-F4

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	
	ARTIFICIAL FILL Sandy SILT (SM): light olive brown [2.5Y 5/3]; dry; silt with fine- to medium-grained sand; (0,20,80) @ 1.5 trace medium gravel (subangular, <40mm); (tr,20,80)					-	-	-	-	Began drilling at 1045 on 28 June 2004.
						9	30	8	1050	FID = 0.16
						12				
						12				
5	@ 4.5' - SILT (ML): interbedded dark yellowish brown [10Y 4/6] with olive brown [2.5Y 4/4]; and dark gray [2.5Y 4/1]; moist; silt with little clay; (0,0,100); very low plasticity; moderately stiff; slightly micaceous; iron oxide staining; no odor					4	80	5	1052	
						7				
						8				
						4	100	2	1055	
						7				
						8				
10						13	70	9	1102	FID = 7.41 ppm PNL-F4-11-EC PNL-F4-11.5
						17				
						18				
	NATIVE @ 4.5' - SILT (ML): dark greenish gray [GLE Y1 4/10Y] mottled with black [GLE Y1 2.5/N]; moist; (0,0,100); very micaceous; slight styrene odor					4	50	16	1119	@ 13.5' - flux measurement FID = 9.36 ppm PNL-F4-14-EC PNL-F4-14.5
						7				
						7				
15	CLAY (CL): dark greenish gray [GLE Y1 4/10Y] mottled with black [GLE Y1 2.5/N]; moist; low plasticity; soft; micaceous; styrene odor CLAY (CL): dark greenish gray [GLE Y1 4/10Y] mottled with black [GLE Y1 2.5/N]; moist; (0,0,100); high plasticity; stiff; styrene odor					8	100	6	1136	@ 16.5' - flux measurement FID = 143 ppm PNL-F4-16.5-EC
						14				
						16				
	STYRENE IMPACTED NATIVE Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; fine-grained sand with silt; (0,85,15); trace shell fragment; micaceous; styrene impacted yellow brown material; strong styrene odor @ 18' - becomes wet					12	65	266	1255	PNL-F4-17 PNL-F4-17.5
						15				
						16				@ 18' - flux measurement and liquids observed
20	NATIVE SAND (SP): very dark greenish gray [GLE Y1 3/10Y]; wet; fine-grained sand; trace silt; well sorted; (0,100,tr); trace shell fragments; micaceous; no visible styrene; styrene odor					7	100	84	1258	FID = 31.5 ppm FID = 46.01 ppm
						14				Stopped drilling at a depth of 21 ft-bgs at 1258 on 28 June 2004.
						18				Abandoned borehole at 1318 on 28 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (8.5 bags).
25										
30										

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

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02-GEOTECH1 ASCONSB0202_04.GPJ GEOSNTEC.GDT 28/10/04



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BOREHOLE LOG

BORING

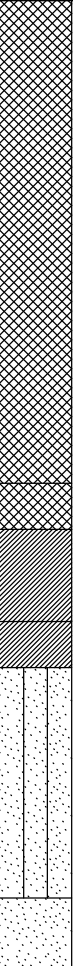
START DRILL DATE 28 Jun 04
FINISH DRILL DATE 28 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-F5

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane		
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)	
5	ARTIFICIAL FILL Silty SAND (SM): olive brown [2.5Y 4/3]; dry; fine- to coarse-grained sand (angular to subangular); trace fine gravel (subangular, <5mm diameter); some silt; (tr,70,30); trace plant material @ 2' - Clayey SILT (CL/ML): olive brown [2.5Y 4/3]; slightly moist; silt with some clay; interbedded with predominantly fine-grained sand; low plasticity; moderately soft; slightly micaceous; no odor @ 7.5' - color change to dark yellowish brown [10YR 4/6] mottled with olive brown [2.5Y 4/4] and dark gray [2.5Y 4/1] silt; becomes moist; iron oxide staining					-		-	-	-	Began drilling at 0856 on 28 June 2004. FID = 0.25 ppm FID = 0.13 ppm FID = 8.32 ppm @ 13.5' - flux measurement FID = 20.31 ppm PNL-F5-14 PNL-F5-14.5 @ 15' - flux measurement @ 16.5' - liquids observed FID = 516 ppm PNL-F5-17-EC FID = 3.27 ppm Stopped drilling at a depth of 21 ft-bgs at 1019 on 28 June 2004. Abandoned borehole at 1040 on 28 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (9 bags).	
						8 8 8		90	144	0901		
						4 8 10		65	200	0904		
						6 8 9		90	196	0908		
						10 17 19		100	221	0916		
						10 12 15		65	125	0945		
						6 11 14		100	595	1008		
						16 19 25		100	4	1019		
20	SAND (SP): dark greenish gray [GLE Y1 4/5GY]; wet; fine-grained sand; trace silt; (0,100,tr); micaceous; no odor											
25												
30												

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

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GS FORM:
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BOREHOLE LOG

BORING

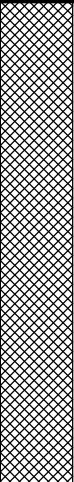
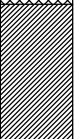

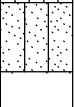



START DRILL DATE 28 Jun 04
FINISH DRILL DATE 28 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-F6

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane		
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)	
5	ARTIFICIAL FILL SILT (ML): light olive brown [2.5Y 5/3]; dry; silt with little fine- to medium-grained sand; trace plant material @ 1.5' - Silty CLAY (ML/CL): olive brown [2.5Y 4/3]; slightly moist; clay with silt; trace plant fragments; trace shells; slightly micaceous; no odor @ 5.5' - CLAY (CL): dark greenish gray [GLE Y1 4/5GY]; clay (almost solidified); crystallized tar within clay; high plasticity; stiff to hard; hydrocarbon staining; hydrocarbon odor @ 7.5' - Silty CLAY (ML/CL): mottled dark yellowish brown [10YR 4/6] with dark gray [2.5Y 4/1] and olive brown [2.5Y 4/4]; moist; clay with some silt; (0,0,100); high plasticity; stiff; micaceous; iron oxide staining; no odor					-		-	-	-	Began drilling at 1322 on 28 June 2004. FID = 0.14 ppm PNL-F6-5.5	
						6		100	4	1327		
						6						
						7						
						5		100	4	1330		
						7						
						10						
10	STYRENE IMPACTED NATIVE CLAY (CL): greenish gray [GLE Y1 5/5GY]; high plasticity; stiff; styrene impacted yellow-brown material; strong styrene odor										FID = 0.13 ppm @ 10.5' - flux measurement PNL-F6-10.5-EC PNL-F6-11.5 PNL-F6-12	
						4		100	3	1349		
						4						
15	Sandy SILT (ML): very dark greenish gray [GLE Y1 3/5GY]; wet; silt with fine-grained sand; (0,20,80); micaceous; styrene impacted yellow-brown material; strong styrene odor Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; fine-grained sand; little silt; trace shell fragments; micaceous; trace styrene impacted yellow-brown staining; styrene odor	 									@ 13.5' - liquids observed FID = 172 ppm PNL-F6-14 @ 15' - flux measurement FID = 41.52 ppm Stopped drilling at a depth of 16.5 ft-bgs at 1415 on 28 June 2004. Abandoned borehole at 1430 on 28 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (7 bags).	
						5		100	1251	1352		
						7						
						9						
						7		100	336	1415		
20												
25												
30												

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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BOREHOLE LOG

BORING

PNL-F11

SHEET 1 OF 1

START DRILL DATE 29 Jun 04
FINISH DRILL DATE 29 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
5	POSSIBLE ARTIFICIAL FILL Silty SAND (SM): light olive brown [2.5Y 5/3]; dry; fine- to coarse-grained sand (subangular); trace fine gravel (subangular, <5mm diameter); some silt; (tr,70,30); no odor @ 2' - color change to dark grayish brown [2.5Y 4/2] NATIVE CLAY (CL): greenish gray [GLE Y1 6/10Y] mottled with dark yellowish brown [10YR 4/6] and olive brown [2.5Y 4/4]; moist; (0,0,100); high plasticity; stiff; micaceous; iron oxide staining; no odor @ 5' - faint styrene odor					-		-	-	-	Began drilling at 0958 on 29 June 2004.
						5 7 9		80	0	1001	FID = 1.18 ppm
						4 5 6		100	0	1009	FID = 0.38 ppm
						6 7 9		100	0	1013	FID = 0.75 ppm
						5 6 8		100	0	1022	@ 10.5' - liquids observed FID = 0.89 ppm
10	Sandy SILT (SM/ML): dark greenish gray [GLE Y1 4/10Y]; silt with some fine-grained sand; (0,30,70); 5% shell fragments; micaceous; black stains mottled in silt; no odor Silty SAND (SM): dark greenish gray [GLE Y1 4/5GY]; wet; fine-grained sand; some silt; (0,80,20); trace shell fragments; micaceous; no odor										Stopped drilling at a depth of 12 ft-bgs at 1022 on 29 June 2004. Abandoned borehole at 1300 on 29 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (5 bags).
15											
20											
25											
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

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GS FORM:
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BOREHOLE LOG

BORING

START DRILL DATE 30 Jun 04
FINISH DRILL DATE 30 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-F12

SHEET 1 OF 2

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
5 											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Pit F angled boring at 45-degrees; no blow counts recorded due to angled drilling.

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BOREHOLE LOG

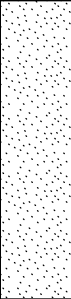
BORING

PNL-F12

SHEET 2 OF 2

START DRILL DATE 30 Jun 04
FINISH DRILL DATE 30 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	@ 31' - predominantly fine-grained sand; styrene impacted yellow-brown material; styrene odor					-		60	1139	1532	FID = 91.38 ppm
35						-		100	63	1544	FID = 6.6 ppm Stopped drilling at a depth of 45 ft-bgs at 1544 on 30 June 2004. Abandoned borehole at 1655 on 30 June 2004 using 70 gallons of hydrated Wyoben Bentonite Well Grout (3 bags).
40											
45											
50											
55											
60											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Pit F angled boring at 45-degrees; no blow counts recorded due to angled drilling.

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-F13

SHEET 1 OF 1

START DRILL DATE 2 Jul 04

ELEVATION DATA:

FINISH DRILL DATE 2 Jul 04

GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

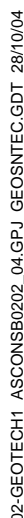
DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	ARTIFICIAL FILL Silty SAND (ML): light olive brown [2.5Y 5/3]; dry; fine- to coarse-grained sand (subangular); trace fine gravel (subangular, <5mm diameter); some silt; (tr,70,30)					-		-	-	-	Began drilling at 1201 on 2 July 2004.
5	@ 5' - color change to olive brown [2.5Y 4/3]; becomes slightly moist					5		60	54	1210	
	Gravelly SAND (GP): light olive brown [2.5Y 5/3]; moist; fine- to coarse-grained sand (subangular to subrounded); some fine gravel (subrounded); little silt @ 6.5' - mottle with black clay [GLE Y1 2.5/N]; hydrocarbon odor					5					
	NATIVE SILT (ML): dark greenish gray [GLE Y1 4/10Y] silt mottle in black [GLE Y1 2.5/N]; moist; low plasticity; micaceous; moderately soft; faint hydrocarbon odor @ 7.5' - trace shell fragments; becomes wet; no odor					2		100	22	1212	FID = 8.73 ppm
	Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; wet; fine-grained sand; some silt; (0,20,80); 30% shell fragments; micaceous; no odor					3		5	2.7	1215	@ 8' - liquids observed FID = 5.65 ppm
10	SAND (SP): very dark greenish gray [GLE Y1 3/10Y]; wet; fine-grained sand; trace silt; (0,90,tr); trace shells; micaceous; no odor @ 12' - increase in silt (0,90,10)					-					
	Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; wet; fine-grained sand; some silt; (0,20,80); 30% shell fragments; micaceous; no odor @ 14' - shell fragments 30%					9		100	0.6	1219	FID = 4.75 ppm
	SAND (SP): very dark greenish gray [GLE Y1 3/10Y]; wet; fine-grained sand; little silt; (0,90,10); trace shells; micaceous; no odor @ 17' - predominantly medium-grained sand; little fine-grained sand; (0,100,0); trace shells; micaceous; no odor					12		100	1.4	1259	FID = 2.22 ppm
15	@ 19.5' - trace coarse-grained sand (angular to subangular); fine gravel (angular to subangular, <3mm diameter)					14		100	1.1	1304	FID = 2.68 ppm
						21		100	1.6	1307	FID = 2.06 ppm
						13		100	2.8	1312	FID = 2.83 ppm
						18		100	3	1317	Began adding water, heaving sand FID = 3.33 ppm
						22		100	1.0	1325	FID = 1.76 ppm
20						13					
						19					
						27					
25											FID = 2.2 ppm Stopped drilling at depth of 20 ft-bgs at 1325 on 2 July 2004. Abandoned borehole at 1345 on 2 July 2004 using 40 gallons of Wyoben Grout Well (1.5 bags) and hydrated Wyoben Enviroplug Medium Bentonite Chips (1.5 bags).
30											

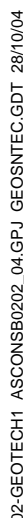
CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS





**GEOSYNTEC CONSULTANTS**



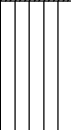


924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG**BORING****PNL-F19****SHEET 1 OF 1**

START DRILL DATE 30 Jun 04
FINISH DRILL DATE 30 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	<u>POSSIBLE ARTIFICIAL FILL</u>									Began drilling at 0815 on 30 June 2004.	
	@ 2' - Clayey SILT (ML): olive brown [2.5Y 4/3]; slightly moist; silt with some clay; (0,0,100); trace plant material; very low plasticity; micaceous; no odor					6 9 10		100	1.7	0820	
5	@ 3' - decrease in clay content; color change to greenish gray [GLE Y1 5/10Y] mottled with dark yellow brown [10YR 3/6]; becomes moist					6 7 8		100	0.1	0842	@ 4.5' - flux measurement
	<u>NATIVE</u> CLAY (CL): greenish gray [GLE Y1 5/10Y] mottled with dark yellow brown [10YR 3/6]; moist; high plasticity; stiff; micaceous; no odor					5 5 5		100	0.2	0850	
	SILT (ML): greenish gray [GLE Y1 5/10Y] mottled with dark yellow brown [10YR 3/6]; moist; trace fine-grained sand; (0,tr,100); low plasticity; soft; slightly micaceous; no odor										@ 8' - flux measurement @ 9' - flux measurement
10	<u>STYRENE IMPACTED NATIVE</u> @ 10' - color change to very dark greenish gray [GLE Y1 3/10Y]; styrene impacted yellow-brown material (from 10' to 10.5') ; styrene odor; trace shell fragments					4 4 7		100	47	0922	@ 10' - flux measurement FID = 10.43 ppm
	<u>NATIVE</u> Sandy SILT (SM): very dark greenish gray [GLE Y1 3/10Y]; silt with some fine-grained sand; (0,20,80); micaceous; weak styrene odor					9 17 22		100	4	0927	@ 10.5' - liquids observed PNL-F19-10.5 FID = 1.65 ppm
	@ 11' - shell fragments 5%					7 14 17		100	5.4	0933	FID = 1.28 ppm
15	SAND (SP): very dark greenish gray [GLE Y1 3/10Y]; fine-grained sand; trace silt; (0,tr,100); trace shell fragments; micaceous; weak styrene odor								2.6		FID = 0.49 ppm PNL-F19-14 Stopped drilling at a depth of 14.5 ft-bgs at 0933 on 30 June 2004. Abandoned borehole at 0945 on 30 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (5 bags).
20											
25											
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

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(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

START DRILL DATE 29 Jun 04
FINISH DRILL DATE 29 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-F21

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage	6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)									1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	POSSIBLE ARTIFICIAL FILL SILT (ML): light olive brown [2.5Y 5/3]; dry; trace fine-grained sand; (0,tr,100); wood debris 20%; no odor @ 2' to 2.5' - white carbonate-like inclusions; dry; micaceous; no odor					-		-	-	-	Began drilling at 1346 pm 29 June 2004.
						11		50	1	1351	
						13					
						14					
						7		15	3	1354	
						7					
						10					
5						5		65	0.2	1359	
						11					
						12					
	NATIVE CLAY (CL): dark greenish gray [GLEY1 4/10Y] mottled with dark yellowish brown [10YR 3/6]; (0,0,100); high plasticity; stiff; micaceous; no odor					3		100	0.9	1403	
	SILT (ML): greenish gray [GLEY1 5/10Y]; moist; some clay; (0,0,100); low plasticity; moderately soft; slightly micaceous; no odor					3					
	@ 7.5' - color change to very dark gray; trace shell fragments; sulfurous odor					10					
	STYRENE IMPACTED NATIVE Sandy SILT (SM): very dark greenish gray [GLEY1 3/10Y]; wet; silt with fine-grained sand; (0,20,80); trace shell fragments; micaceous; styrene odor					3		100	2	1405	FID = 14.8 ppm
						3					
						3					
						5		100	73	1425	@ 9' - liquids observed
10						9					FID = 19.4 ppm
						10					PNL-F21-9.5
						6		90	208	1425	FID = 24.39 ppm
	NATIVE SAND (SP): very dark greenish gray [GLEY1 3/10Y]; wet; fine-grained sand; trace shell fragments; micaceous; styrene odor					9					Observed 1.5' to 2' of styrene
						15					yellow-brown material on sampler
											hammer for this zone while sampling
											10.5' to 12'.
											PNL-F21-11.5
											Stopped drilling at a depth of 12
											ft-bgs at 1425 on 29 June 2004.
											Abandoned borehole at 1447 on 29
15											June 2004 using hydrated Wyoben
											Enviroplug Medium Bentonite Chips
											(5 bags).

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY
NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

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Santa Barbara, California 93101
(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

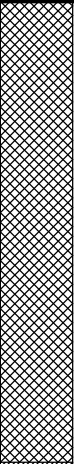
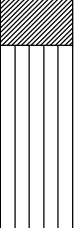
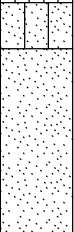
START DRILL DATE 1 Jul 04
FINISH DRILL DATE 1 Jul 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-F22

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL Asphalt paved surface										Began drilling at 1223 on 1 July 2004.
5	@ 5' - SILT (ML): dark grayish brown [2.5Y 4/2]; slightly moist; (0,0,100); no odor @ 5.5' - white carbonate-like inclusions @ 6' - color mottled with dark yellowish brown [10YR 4/6] and mottled with olive brown [2.5Y 4/4]; trace shell fragments; no odor @ 7' - becomes very micaceous					5 7 7		100	18	1232	FID = 1.45 ppm
						12 15 17		95	6	1235	FID = 0.1 ppm
						5 6 9		50	5	1241	
						5 7 11		65	2	1244	FID = 0.11 ppm
10	NATIVE CLAY (CL): dark greenish gray [GLE Y1 4/10Y] mottled with dark yellowish brown [10YR 3/6]; moist; high plasticity; stiff; micaceous; no odor SILT (ML): dark greenish gray [GLE Y1 4/10Y]; moist; trace fine-grained sand; (0,tr,100); trace shell fragments; micaceous; no odor @ 12.5' - increase in clay content					12 5 5		100	3	1246	
						5 6 7		100	4	1248	FID = 0.13 ppm
						5 5 5		100	2	1254	FID = 2.53 ppm
15	Sandy SILT (SM): very dark greenish gray [GLE Y1 3/10Y]; moist; silt with fine-grained sand; (0,80,20); trace shell fragments; low plasticity; micaceous; no odor @ 15.5' - becomes wet					-		100	6	1300	@ 15.5' - liquids observed FID = 39.15 ppm
	SAND (SP): very dark greenish gray [GLE Y1 3/10Y]; wet; fine- to medium-grained sand; trace silt; (0,100,tr); trace shell fragments; micaceous; no odor @ 16.5' - shell fragments 5%; faint styrene odor					5 9 10		100	1390	1307	FID = 325 ppm
	STYRENE IMPACTED NATIVE Styrene impacted yellow-brown material; styrene odor @ 18.5' - increase in shell fragments to 10%					11 14 17		100	1638	1318	FID = 282 ppm
20											Stopped drilling at a depth of 20 ft-bgs at 1318 on 1 July 2004. Abandoned borehole at 1340 on 1 July 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (7 bags).
25											
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-F26

SHEET 1 OF 1

START DRILL DATE 1 Jul 04

ELEVATION DATA:

FINISH DRILL DATE 1 Jul 04

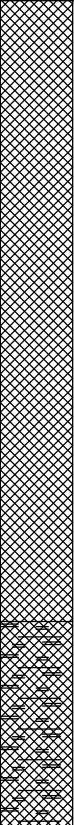
GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL @ 0.5' - SILT (ML): light olive brown [2.5Y 5/3]; dry; silt with little fine- to coarse-grained sand (subangular to subrounded); trace fine gravel (subrounded, <5mm); trace plant material; no odor				-		-	-	-	Began drilling at 1011 on 1 July 2004.	
5	@ 5' - color change to black[2.5Y 2.5/1]; becomes slightly moist; trace fine to medium gravel (subangular to subrounded, <25mm); asphalt-like material; very low plasticity; hydrocarbon odor										
	@ 8' - Clayey SILT (CL/ML): very dark greenish gray [GLE Y1 3/10Y]; moist; silt with little clay; trace shells; low plasticity; trace shells; micaceous; no odor				3		80	6	1021	FID = 70.35 ppm	
10					4						
					4		65	8	1026	FID = 225 ppm	
					5						
					5						
					3		90	8	1029	FID = 41.86 ppm	
					5						
	@ 12' - Sandy SILT (SM): dark greenish gray [GLE Y1 4/10Y]; silt with some fine- to coarse-grained sand (subangular to subrounded); trace fine to medium gravel (subrounded, <30mm); (tr,30,70); faint hydrocarbon odor				7						
	@ 13' - shell fragments 5%				3		100	7	1034	FID = 152 ppm	
15	WASTE CLAY (CL): very dark greenish gray [GLE Y1 3/10Y]; moist; high plasticity; soft; strong hydrocarbon odor; oil saturated				3						
					3		100	435	1037	FID = 316 ppm	
					3						
					3		100	422	1041	FID = 220 ppm	
					3						
					3		100	418	1045	FID = 525 ppm	
					3						@ 18' - liquids observed
20	NATIVE SILT (ML): dark greenish gray [GLE Y1 4/10Y]; wet; low plasticity; micaceous; hydrocarbon odor				3		80	390	1050	FID = 464 ppm	
	Silty SAND (SM): dark greenish gray [GLE Y1 4/10Y]; wet; fine-grained sand; some silt; (0,80,20); trace shell fragments; micaceous; hydrocarbon stained; hydrocarbon odor			5							
				8							
	SAND (SP): dark greenish gray [GLE Y1 4/10Y]; wet; fine-grained sand; little silt; (0,95,5); trace shell fragments; micaceous; hydrocarbon stained; hydrocarbon odor			13		80	97	1055			
				15							
				19							
										FID = 142 ppm	
25										Stopped drilling at a depth of 21.5 ft-bgs at 1055 on 1 July 2004.	
										Abandoned borehole at 1117 on 1 July 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (7 bags).	
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-F27

SHEET 1 OF 1

START DRILL DATE 29 Jun 04
FINISH DRILL DATE 29 Jun 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)		
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage	6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)									1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
5	POSSIBLE ARTIFICIAL FILL SILT (ML): light olive brown [2.5Y 5/3]; dry; silt with little fine- to coarse-grained sand (subangular); trace fine to medium gravel (subangular to subrounded, <40mm); (tr,10,90); abundant plant material @ 2.5' to 3' - white carbonate-like inclusions; becomes moist		▽			-		-	-	-	Began drilling at 1536 on 29 June 2004.	
												FID = 9.27 ppm
10	NATIVE CLAY (CL): dark greenish gray [GLEY1 4/10Y] mottled with dark yellowish brown [10YR 3/6]; moist; (0,0,100); high plasticity; stiff; micaceous; no odor										FID = 2.28 ppm	
15	Sandy SILT (SM): dark greenish gray [GLEY1 3/10Y]; very moist; silt with some sand (0,20,80); trace shell fragments; micaceous; no odor @ 9' - abundant shell fragments to 40%										FID = 0.73 ppm	
20	SAND (SP): dark greenish gray [GLEY1 3/10Y]; wet; fine-grained sand; trace silt; (0,100,tr); trace shell fragments; micaceous; no odor										FID = 0.11 ppm	
25											PNL-F27-8.5 @ 9' - liquids observed FID = 0.27 ppm	
30											FID = 1.03 ppm	
35											FID = 1.67 ppm	
40											Stopped drilling at a depth of 13.5 ft-bgs at 1609 on 29 June 2004. Abandoned borehole at 1630 on 29 June 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (5 bags).	

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY
NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-F28

SHEET 1 OF 1

START DRILL DATE 1 Jul 04

ELEVATION DATA:

FINISH DRILL DATE 1 Jul 04

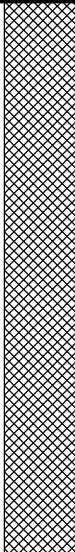

GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 6) Plasticity 2) Color 7) Density/Consistency 3) Moisture 8) Other (Mineral Content, 4) Grain Size Discoloration, Odor, etc.) 5) Percentage	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL Gravelly SAND (GP): light brownish gray [2.5Y 6/2]; dry; fine- to coarse-grained sand (subangular); little fine to medium grave (angular to subangular, <40mm); (10,50,40)					-		-	-	-	Began drilling at 1352 on 1 July 2004.
5											
10											
15	NATIVE CLAY (CL): dark greenish gray [GLEY1 4/10Y] mottled with dark yellowish brown [10YR 3/6]; moist; high plasticity; stiff; micaceous; no odor CLAY (CL): dark greenish gray [GLEY1 4/10Y] mottled with dark yellowish brown [10YR 3/6] and black [GLEY1 2.5/N]; moist; trace shell fragments; medium plasticity; soft; micaceous; no odor Sandy SILT (SM): very dark greenish gray [GLEY1 3/10Y]; moist; silt with little fine-grained sand; (0,30,70); trace shell fragments; micaceous; faint styrene odor					3 4 4 3 4 4 2 3 3 8 10 11 8 15 20		100 100 100 100 5 100	6 5 3 - 993	1405 1410 1414 1419 1425	FID = 0.33 ppm FID = 0.25 ppm FID = 0.28 ppm @ 16.5 liquids observed No sand catcher installed; poor recovery FID = 161 ppm Stopped drilling at a depth of 19.5 ft-bgs at 1425 on 1 July 2004. Abandoned borehole at 1445 on 1 July 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (7 bags).
20	STYRENE IMPACTED NATIVE @ 16.5' - becomes wet SAND (SP): very dark greenish gray [GLEY1 3/10Y]; fine-grained sand; trace silt; (0,100,tr); shell fragments 40%; micaceous; styrene impacted yellow-brown material; strong styrene odor										
25											
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-F29

SHEET 1 OF 1

START DRILL DATE 1 Jul 04

ELEVATION DATA:

FINISH DRILL DATE 1 Jul 04

GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
5 											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

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GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

PNL-F30

SHEET 1 OF 1

START DRILL DATE 1 Jul 04

ELEVATION DATA:

FINISH DRILL DATE 1 Jul 04


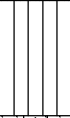

GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	ARTIFICIAL FILL Vegetative cover									Began drilling at 1603 on 1 July 2004.	
5											
10											
15	NATIVE SILT (ML): very dark greenish gray [GLE Y1 3/10Y]; moist; silt with little fine-grained sand; (0,10,90); trace shell fragments; no plasticity; micaceous; no odor		▽			9 10 13		0	-	1612	No recovery
						10 11 17		100	0.3	1616	FID = 0.35 ppm
						7 11 12		65	0	1620	@ 15' - liquids observed FID = 0.2 ppm
	Silty SAND (SM): very dark greenish gray [GLE Y1 3/10Y]; fine-grained sand with some silt; (0,70,30); micaceous; no odor @ 17' - increase in fine-grained sand; (0,80,20) @ 17.5' - abundant shell fragments 30%; predominantly fine- to medium-grained sand; (0,90,10); no odor					13 17 22		100	0	1624	FID = 0.27 ppm
20	@ 19.5' - predominantly coarse- to medium-grained sand					-		100	0	1629	FID = 0.5 ppm
						11 19 27		70	0	1636	FID = 0.42 ppm
25											Stopped drilling at a depth of 21 ft-bgs at 1636 on 1 July 2004. Abandoned borehole at 1703 on 1 July 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (8 bags).
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GeoSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
(805) 897-3800

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

BORING

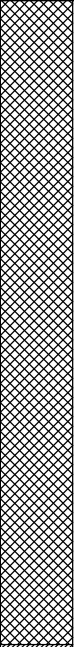
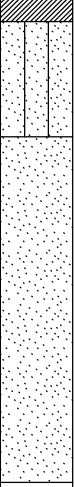
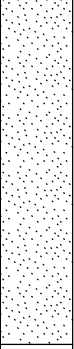
START DRILL DATE 2 Jul 04
FINISH DRILL DATE 2 Jul 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-F31

SHEET 1 OF 1

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
	ARTIFICIAL FILL SILT (ML): light olive brown [2.5Y 5/3]; dry; trace fine-grained sand; (0,tr,100); no odor					-		-	-	-	Began drilling at 0823 on 2 July 2004.
5											
10											
15	NATIVE CLAY (CL): very dark greenish gray [GLEY1 3/10Y] clay mottled with black [GLEY1 2.5/N]; moist; trace wood fragments; high plasticity; stiff; slightly micaceous; hydrocarbon odor; asphalt-like Silty SAND (SM): very dark greenish gray [GLEY1 3/10Y]; moist; fine-grained sand with silt; (0,65,35); trace shell fragments; micaceous; decrease in hydrocarbon odor @ 15' - becomes wet @ 16' - shell fragments 15%; increase in sand content (0,90,10)		▽			12 15 18		100	11	0835	FID = 108 ppm @ 15' - liquids observed FID = 0.8 ppm
20	SAND (SP): very dark greenish gray [GLEY1 3/10Y]; wet; fine-grained sand; trace silt; (0,100,tr); trace shells; micaceous; faint hydrocarbon odor @ 19.5' - seam of 30% shell fragments @ 20' - predominantly fine- to medium-grained sand; faint hydrocarbon odor; color change to dark greenish gray [GLEY1 4/10Y] @ 21.5' - predominantly medium- to coarse-grained sand with fine-grained sand; trace fine gravel (subangular, <10mm diameter); (tr,100,0) @ 23' - predominantly medium-grained sand; faint hydrocarbon odor					8 14 15		100	17	0839	
25						11 19 26		90	6	0843	
						10 19 25		100	2	0848	FID = 1.22 ppm
						14 20 23		100	0	0855	FID = 0.56 ppm
						16 29 37		55	0	0901	FID = 0.41 ppm
						-		100	0	0912	FID = 0.32 ppm FID = 0.49 ppm Stopped drilling at depth of 24.5 ft-bgs at 0912 on 2 July 2004. Abandoned borehole at 1220 on 2 July 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (7 bags).
30											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GEO SYNTEC CONSULTANTS

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Santa Barbara, California 93101
(805) 897-3800

GS FORM:
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BOREHOLE LOG

BORING

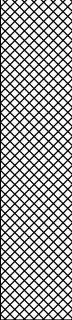

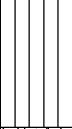

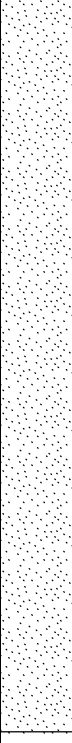
START DRILL DATE 2 Jul 04
FINISH DRILL DATE 2 Jul 04
LOCATION Huntington Beach, CA
PROJECT Ascon
NUMBER SB0202

PNL-F32

SHEET 1 OF 2

ELEVATION DATA:

GROUND SURF. ft
DATUM Mean Sea Level

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	POSSIBLE ARTIFICIAL FILL SILT (ML): light olive brown [2.5Y 5/3]; dry; silt with little fine- to coarse-grained sand (subangular); trace fine to medium gravel (subangular to subrounded, <40mm); (tr,10,90); trace plant material					-		-	-	-	Began drilling at 0936 on 2 July 2004.
5											
	NATIVE CLAY (CL): dark greenish gray [GLE Y1 4/10Y] mottled with dark yellowish brown [10YR 3/6]; moist; (0,0,100); high plasticity; stiff; micaceous; no odor					7 8 8		90	0.8	0944	
10	SILT (ML): greenish gray [GLE Y1 5/10Y]; moist; (0,0,100); trace shell fragments; no odor @ 9.5' - becomes wet @ 10' - increase in fine-grained sand; (0,tr,100) @ 10.5' - shell fragments 10%		▽			2 3 4		85	0	0945	FID = 0.08 ppm
	Silty SAND (SM): dark greenish gray [GLE Y1 4/10Y]; wet; fine-grained sand with silt; (0,70,30); no odor @ 13' - decrease in silt; (0.85,15)					5 5 5		65	4	0950	@ 9.5' - liquids observed FID = 0.22 ppm
15	SAND (SP): dark greenish gray [GLE Y1 4/5GY]; wet; fine-grained sand; trace silt; (0,100,tr); trace shell fragments; micaceous; no odor @ 15.5' - predominantly fine- to medium-grained sand					7 9 12		70	0.7	0953	FID = 1.39 ppm
	@ 17.5' - predominantly medium-grained sand; (0,100,0)					12 19 20		75	0	0958	FID = 0.77 ppm
20						13 20 28		100	0	1003	FID = 0.49 ppm
	@ 26.5' - increase in silt; fine-grained sand; (0,90,10);					22 27 36		100	0.3	1007	FID = 0.7 ppm
25	@ 28' - predominantly medium-grained sand; (0,100,0)					17 25 36		100	0	1014	Heaving sand, water used FID = 1.14 ppm
						19 30 40		100	0	1020	FID = 0.82 ppm
30						-		100	1.3	1026	FID = 0.15 ppm
						37 50		100	0	1032	FID = 0.87 ppm
						30 36 50		100	0	1039	FID = 0.24 ppm
						19 24 33		100	0	1046	FID = 0.4 ppm
						23 4 15		100	0	1053	FID = 0.3 ppm
						20 39 50		100	0	1057	FID = 0.27 ppm
											FID = 0.12 ppm

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:
REVIEWER MR

NOTES: Bottom of borehole tagged at 14 ft-bgs after removing augers.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GeoSYNTEC CONSULTANTS

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(805) 897-3800

GS FORM:
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BOREHOLE LOG

BORING

PNL-F32

SHEET 2 OF 2

START DRILL DATE 2 Jul 04

ELEVATION DATA:

FINISH DRILL DATE 2 Jul 04

GROUND SURF. ft

LOCATION Huntington Beach, CA

DATUM Mean Sea Level

PROJECT Ascon

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE							COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	
35											Stopped drilling at depth of 29.5 ft-bgs at 1057 on 2 July 2004. Abandoned borehole at 1115 on 2 July 2004 using hydrated Wyoben Enviroplug Medium Bentonite Chips (7 bags).
60											

CONTRACTOR West Hazmat
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER GTY

NORTHING
EASTING
COORDINATE SYSTEM:

REVIEWER MR

NOTES: Bottom of borehole tagged at 14 ft-bgs after removing augers.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

PID/FID CALIBRATION LOGS

Instrument Calibration Log

Pilot Study No. 3

Ascon Landfill Site

Instrument Information			
TVA-1000			
Instrument Name: RA	Manufacturer: Thermo Environmental Instruments		
Serial Number: R6245	Last Service Date: 6/14/04		
Parameters: Total VOCs & methane	Calibration Gas: 50 ppm Hexane		
Calibration Procedure:			
Daily Calibration Results			
Date: 6/28/04 0735	Calibration Result: PID = 50.47 ppm FID = 50.16 ppm	Name: L. Dage	Signature: L. Dage
Notes:			
Date: 6/29/04 0740	Calibration Result: PID = 50.4 PID = 50.83 ppm FID = 50.24 ppm	Name: D. Tokat L. Dage	Signature: DT L. Dage
Notes: 06-29-04 refilled Hydrogen 0711			
Date: 06-30-04 07:14	Calibration Result: PID = 50.02 FID = 49.70	Name: D. Tokat	Signature: DT
Notes: refilled H2			
Date: 07-01-04 07:15	Calibration Result: PID = 48.40 FID = 47.50	Name: D. Tokat	Signature: DT
Notes: refilled H2			
Date: 07-02-04 0735	Calibration Result: PID = 50.33 ppm FID = 50.88 ppm	Name: L. Dage	Signature: L. Dage
Notes: refilled hydrogen			

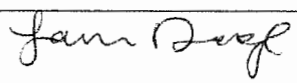
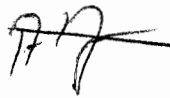
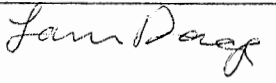
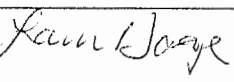
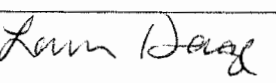
Instrument Calibration Log

Pilot Study No. 3
Ascon Landfill Site

Instrument Information			
Instrument Name: <i>Mini RAE-2000</i>	Manufacturer: <i>Mini RAE</i>		
Serial Number: <i>R5173</i>	Last Service Date: <i>6/25/04</i>		
Parameters: <i>Total VOCs</i>	Calibration Gas: <i>50 ppm Hexane</i>		
Calibration Procedure:		<i>LOT#: JAD-289-50-1</i>	
Daily Calibration Results			
Date: <i>6/28/04</i> <i>0720</i>	Calibration Result: <i>50.1 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Liam Dage</i>
Notes:			
Date: <i>6-29-04</i> <i>0710</i>	Calibration Result: <i>50.4 ppm</i>	Name: <i>D. Tokat</i>	Signature: <i>DT</i>
Notes:			
Date: <i>6-30-04</i> <i>0708</i>	Calibration Result: <i>50.1 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Liam Dage</i>
Notes:			
Date: <i>7-01-04</i> <i>0706</i>	Calibration Result: <i>50.2 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Liam Dage</i>
Notes:			
Date: <i>7-02-04</i>	Calibration Result: <i>50.4 ppm</i>	Name: <i>L. Dage</i>	Signature: <i>Liam Dage</i>
Notes:			

Instrument Calibration Log

Pilot Study No. 3
Ascon Landfill Site

Instrument Information			
Instrument Name: mini RAE 2000	Manufacturer: mini RAE		
Serial Number: R5610	Last Service Date: 6/11/04		
Parameters: Total VOCs	Calibration Gas: 50 ppm Hexane		
Calibration Procedure:		Lot#: JAD-289-50-1	
Daily Calibration Results			
Date: 6/28/04 0725	Calibration Result: 55.1 ppm	Name: L. Dage	Signature: 
Notes:			
Date: 6/29/04 07:10	Calibration Result: 50.4 ppm 51.9 ppm	Name: D. Tokat L. Dage	Signature: 
Notes: 6-29-04 0718			
Date: 6-30-04 0710	Calibration Result: 50.9 ppm	Name: L. Dage	Signature: 
Notes:			
Date: 7-01-04 0710	Calibration Result: 52.1 ppm	Name: L. Dage	Signature: 
Notes:			
Date: 7-02-04 0724	Calibration Result: 50.1 ppm	Name: L. Dage	Signature: 
Notes:			



July 23, 2004

Ms. Tamera Zeier
Project Navigator, Ltd.
One Pointe Drive, Suite 320
Brea, CA 92821

RE: Data Quality Review
Supplemental Feasibility Study Field Activities
Ascon Landfill Site
Huntington Beach, California

Dear Ms. Zeier:

GeoSyntec Consultants was requested by Project Navigator to conduct a data quality evaluation of the chemical analysis for soil and air samples collected during the Supplemental Feasibility Study (SFS) Field Activities. For the purposes of this evaluation the goal of reviewing approximately 25% of the data was established. Tables 1a and 1b contain the complete Electronic Data Deliverable (EDD) listing of the soil and air data received from the laboratory along with their associated sample identification numbers and sample descriptions. The yellow highlighted EDDs underwent our data validation effort. EDDs were randomly selected from the sample delivery groups with the exception of the samples from the miscellaneous category which were thought to be reanalyses of samples. More than 25% of the total sample population was validated - 25.8% for soil and 43.7% for air.

The data were reviewed with regards to holding times, blanks, field quality control samples, and lab quality control samples. Table 2 presents the qualifiers to the data recommended by our data validation group. Attachment A presents the data validation reports. The following is a summary of the QA/QC results.

Regional Offices:

Acton, MA • Atlanta, GA • Austin, TX • Boca Raton, FL • Chicago, IL
Columbia, MD • Guelph, ONT • Hamilton, OH • Pasadena, CA • Portland, OR
San Diego, CA • Santa Barbara, CA • Tampa, FL • Walnut Creek, CA

Laboratories:

Alpharetta, GA • Atlanta, GA
Boca Raton, FL

Ms. Tamera Zeier
July 24, 2004
Page 2

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- All technical sample holding times were met for all samples analyzed.
- All method blank results met method criteria.
- Duplicate analyses results were acceptable.
- Results from EPA Method 418.1 – Total Recoverable Petroleum Hydrocarbons, Modified EPA Method 8015 - Extractable Fuel Hydrocarbons, EPA Method 8082 - Polychlorinated Biphenyls, EPA Method 7470A - Mercury, EPA Method 6020 - Metals and Inorganic analyses are acceptable for use without qualification.
- In some instances the results from EPA Method 5030B/8260B – Volatile Organic Compounds (VOCs), EPA Method 3520C/8270C – Semivolatile Compounds (SVOC), and EPA Method 8081A – Organochlorine Pesticides have been qualified as “J” due to low recovery of the laboratory control sample (LCS) or low recovery of the MS/MSD samples. These values are still useable for risk assessment purposes with qualification.
- One sample result for benzidine in Sample PNL-PGI was qualified as “R” – rejected due to 0% recovery in the MS/MSD. This benzidine result from this one sample is not useable.

Ms. Tamera Zeier
July 24, 2004
Page 3

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If you have any questions regarding this information, please do not hesitate to give me a call.

Sincerely,
GeoSyntec Consultants, Inc.



Ruth Custance, M.P.H.
Principal

Attachments:

Tables 1a, 1b and 2
Attachments A

TABLE 1A
SOIL EDD SUMMARY

GeoSyntec Consultants

PHASE I - HOLLOW STEM AUGER DRILLING		
Work Order	GeoSyntec Sample ID	Sample Description
INC0993	PNL-02	Composite of PNL-2
	PNL-13-Fill	Composite of PNL-13 fill
	PNL-13	Composite of PNL-13
	PNL-13-9.5-EC	Encore of PNL-13 at 9.5 ft
	PNL-13-12.0-EC	Encore of PNL-13 at 12 ft
	PNL-13-15.0-EC	Encore of PNL-13 at 15 ft
INC1049	PNL-5	Composite of PNL-5
	PNL-5A-10-EC	Encore of PNL-5A at 10 ft
	PNL-5A-21.5-EC	Encore of PNL-5A at 21.5 ft
	PNL-5A-25-EC	Encore of PNL-5A at 25 ft
	PNL-12-FILL	Composite of PNL-12 fill
	PNL-12	Composite of PNL-12
	PNL-12-16-EC	Encore of PNL-12 at 16 ft
	PNL-12-18-EC	Encore of PNL-12 at 18 ft
	PNL-3	Composite of PNL-3
	PNL-3-19-EC	Encore of PNL-3 at 19 ft
	PNL-3-21.5-EC	Encore of PNL-3 at 21.5 ft
INE0031	PNL-1-16.5-EC	Encore of PNL-1 at 16.5 ft
	PNL-1-18.5/EC	Encore of PNL-1 at 18.5 ft
	PNL-1-21.5/EC	Encore of PNL-1 at 21.5 ft
	PNL-1	Composite of PNL-1
	PNL-14	Composite of PNL-14
	PNL-14-15-EC	Encore of PNL-14 at 15 ft
	PNL-14-18.5-EC	Encore of PNL-14 at 18.5 ft
	PNL-7	Composite of PNL-7
INE0119	PNL-7-12.5	Encore of PNL-7 at 12.5 ft
	PNL-4	Composite of PNL-4
	PNL-4-21.5	Encore of PNL-4 at 21.5 ft
	PNL-4-24.5	Encore of PNL-4 at 24.5 ft
	PNL-11	Composite of PNL-11
	PNL-11-12.5-EC	Encore of PNL-11 at 12.5 ft
	PNL-11-15.5-EC	Encore of PNL-11 at 15.5 ft
	PNL-11-22-EC	Encore of PNL-11 at 22 ft
	PNL-10-6-EC	Encore of PNL-10 at 6 ft
	PNL-10-9.5-EC	Encore of PNL-10 at 9.5 ft
INE0228	PNL-10-12-EC	Encore of PNL-10 at 12 ft
	PNL-10-18-EC	Encore of PNL-10 at 18 ft
	PNL-6-9.5-EC	Encore of PNL-6 at 9.5 ft
	PNL-6	Composite of PNL-6
	PNL-6-15.5-EC	Encore of PNL-6 at 15.5 ft
	PNL-6-21.5-EC	Encore of PNL-6 at 21.5 ft
	PNL-9-FILL	Composite of PNL-9 fill
	PNL-9-10-EC	Encore of PNL-9 at 10 ft
	PNL-9	Composite of PNL-9
	PNL-9-15.5-EC	Encore of PNL-9 at 15.5 ft
	PNL-9-18.5-EC	Encore of PNL-9 at 18.5 ft
	PNL-8-9.5-EC	Encore of PNL-8 at 9.5 ft
	PNL-8	Composite of PNL-8
	PNL-8-18.5-EC	Encore of PNL-8 at 18.5 ft
	PNL-8-24.5-EC	Encore of PNL-8 at 24.5 ft

**TABLE 1A
SOIL EDD SUMMARY**

GeoSyntec Consultants

PHASE II - BUCKET AUGER DRILLING		
Work Order	GeoSyntec Sample ID	Sample Description
INE0765-full	PNL-BA08-stockpile	Stockpile soil at PNL-BA08
	PNL-BA07-stockpile	Stockpile soil at PNL-BA07
	PNL-BA01-stockpile	Stockpile soil at PNL-BA01
INE0764-full	PNL-BA03-stockpile	Stockpile soil at PNL-BA03
	PNL-BA11-stockpile	Stockpile soil at PNL-BA11
	PNL-BA13-stockpile	Stockpile soil at PNL-BA13
INE0892-full	PNL-BA06-stockpile	Stockpile soil at PNL-BA06
PHASE III - TRENCHING		
INE0965	PNL-TP01-stockpile	Stockpile soil at PNL-TP01
INE1120	PNL-TP01-WASTE	Stockpile waste at PNL-TP01
	PNL-TP05-stockpile	Stockpile soil at PNL-TP05
	PNL-TP06-stockpile	Stockpile soil at PNL-TP06
INE1148	PNL-TP04-stockpile	Stockpile soil at PNL-TP04
	PNL-TP02-stockpile	Stockpile soil at PNL-TP02
	PNL-TP02-WASTE	Stockpile waste at PNL-TP02
	PNL-TP04-WASTE	Stockpile waste at PNL-TP04
INE1250	PNL-TP03-WASTE	Stockpile waste at PNL-TP03
	PNL-TP03-stockpile	Stockpile soil at PNL-TP03
	PNL-TP07-WASTE	Stockpile waste at PNL-TP07
	PNL-TP07-stockpile	Stockpile soil at PNL-TP07
PHASE IV - LAGOON SAMPLING		
INE1447	PNL-L5A	Lagoon material at PNL-L5A
	PNL-L4B	Lagoon material at PNL-L4B
	PNL-L4A	Lagoon material at PNL-L4A
INE1513	PNL-L5B	Lagoon material at PNL-L5B
	PNL-L3B	Lagoon material at PNL-L3B
	PNL-L3A	Lagoon material at PNL-L3A
INE1627	PNL-L2B	Lagoon material at PNL-L2B
	PNL-L1B	Lagoon material at PNL-L1B
	PNL-L2A	Lagoon material at PNL-L2A
	PNL-L1A	Lagoon material at PNL-L1A
ING0239	PNL-L4A	Lagoon material at PNL-L4A (STLC, TCLP, & CAM)
PHASE V - PIT A-H SAMPLING		
INF0844	PNL-PG1	Composite of PNL-PG1
	PNL-PC1	Composite of PNL-PG1
	PNL-PD1-4-EC	Encore of PNL-PD1 at 4 ft
	PNL-PD1	Composite of PNL-PG1
	PNL-PE1-12-EC	Encore of PNL-PE1 at 12 ft
	PNL-PE1-7-EC	Encore of PNL-PE1 at 7 ft
	PNL-PE1	Composite of PNL-PE1
	PNL-PD1B	Composite of PNL-PD1B
INF0940	PNL-PC1A	Composite of PNL-PC1A
	PNL-PA1-17-EC	Encore of PNL-PA1 at 17 ft
	PNL-PA1-19-EC	Encore of PNL-PA1 at 19 ft
	PNL-PA1-21-EC	Encore of PNL-PA1 at 21 ft
	PNL-PA1	Composite of PNL-PA1
	PNL-PH1-7-EC	Encore of PNL-PH1 at 7 ft
	PNL-PH1-8.5-EC	Encore of PNL-PH1 at 8.5 ft
	PNL-PH1-11	Discrete of PNL-PH1 at 11 ft
	PNL-PH1-7	Discrete of PNL-PH1 at 7 ft
	PNL-PH1-8.5	Discrete of PNL-PH1 at 8.5 ft

**TABLE 1A
SOIL EDD SUMMARY**

GeoSyntec Consultants

PHASE VIII - PIT F SAMPLING		
Work Order	GeoSyntec Sample ID	Sample Description
INF1737	PNL-F5-14 & 14.5	Composite of PNL-F5 at 14 and 14.5 ft
	PNL-F5-17-EC	Encore of PNL-F5 at 17 ft
	PNL-F4-11-EC	Encore of PNL-F4 at 11 ft
	PNL-F4-11.5 & 14.5	Composite of PNL-F4 at 11.5 and 14.5 ft
	PNL-F4-14-EC	Encore of PNL-F4 at 14 ft
	PNL-F4-16.5-EC	Encore of PNL-F4 at 16.5 ft
	PNL-F4-17 & 17.5	Composite of PNL-F4 at 17 and 17.5 ft
	PNL-F6-10.5-EC	Encore of PNL-F6 at 10.5 ft
	PNL-F6-5.5 & 11.5	Composite of PNL-F6 at 5.5 and 11.5 ft
	PNL-F6-12 & 14	Composite of PNL-F6 at 12 and 14 ft
	PNL-F7-8.5 & 11	Composite of PNL-F7 at 8.5 and 11 ft
	PNL-F7-11.5-EC	Encore of PNL-F7 at 11.5 ft
INF1826	PNL-F3-15-EC	Encore of PNL-F3 at 15 ft
	PNL-F3-14.5	Discrete of PNL-F3 at 14.5 ft
	PNL-F18-9.5	Discrete of PNL-F18 at 9.5 ft
	PNL-F18-12	Discrete of PNL-F18 at 12 ft
	PNL-F17-10	Discrete of PNL-F17 at 10 ft
	PNL-F21-9.5	Discrete of PNL-F21 at 9.5 ft
	PNL-F21-11.5	Discrete of PNL-F21 at 11.5 ft
ING0001	PNL-F27-8.5	Discrete of PNL-F27 at 8.5 ft
	PNL-F19-10.5	Discrete of PNL-F19 at 10.5 ft
	PNL-F14	Composite of PNL-F14
	PNL-F1-7.5 & 9	Composite of PNL-F1 at 7.5 and 9 ft
	PNL-F1-8.5-EC	Encore of PNL-1 at 8.5 ft
	PNL-F1-10.5, 12.5, 13.5	Composite of PNL-F1 at 10.5, 12.5, and 13.5 ft
ING0094	PIT-F-SAMPLE	Sample obtained from Pit F
	PIT-F-BOTTOM	Sample obtained from the bottom of Pit F
	PNL-F25-19	Discrete of PNL-25 at 19 ft
MISCELLANEOUS		
INE1120-partial	PNL-TP01-waste	VOC contaminated soil at PNL-TP01
INE1148-partial	PNL-TP02-waste	VOC contaminated soil at PNL-TP02
	PNL-TP04-waste	VOC contaminated soil at PNL-TP04
INE1250-partial	PNL-TP03-waste	VOC contaminated soil at PNL-TP03
	PNL-TP07-waste	VOC contaminated soil at PNL-TP07
INE1627-partial	PNL-BA8/13-waste	VOC contaminated soil at PNL-BA8 & 13
INF0242	PNL-TP01,02,03,04,07-waste	Steve Howe composite of Phase III waste
INF0549	PNL-TP01,02,03,04,07-waste	Lead/TCLP analysis for Phase III waste
INF1488	PNL-1	Steve Howe CA-WET and STLC of Phase I samples
	PNL-14	
	PNL-7	
	PNL-8	
	PNL-BA1-Stockpile	Steve Howe CA-WET and STLC of Phase II samples
	PNL-BA6-Stockpile	
	PNL-BA7-Stockpile	
	PNL-BA8-Stockpile	
	PNL-BA13-Stockpile	
	PNL-L1A	Steve Howe CA-WET and STLC of Phase IV samples
	PNL-L1B	
	PNL-L2A	
	PNL-L2B	
	PNL-L4A	
	PNL-L5B	Steve Howe CA-WET and STLC of Phase III samples
	PNL-TP01-stockpile	

TABLE 1A
SOIL EDD SUMMARY

GeoSyntec Consultants

MISCELLANEOUS cont.		
Work Order	GeoSyntec Sample ID	Sample Description
	PNL-TP02-stockpile/Waste	
	PNL-TP03-stockpile/Waste	
	PNL-TP04-stockpile/Waste	
	PNL-TP06-stockpile	
ING0240	Decon Tank	As requested by David Tietje sample of decon baker tank

**TABLE 1B
AIR EDD SUMMARY**

GeoSyntec Consultants

PHASE I - HOLLOW STEM AUGER DRILLING

Work Order	GeoSyntec Sample ID	Sample Description
P2400531	PNL-15-100DHF	Blank sample?
	PNL-2-15DHF	Down hole flux of PNL-2 at 15 ft
	PNL-15-12DHF	Down hole flux of PNL-15 at 12 ft
	PNL-13-12DHF	Down hole flux of PNL-13 at 12 ft
	PNL-12-100DHF	Blank sample?
	PNL-12-15DHF	Down hole flux of PNL-12 at 15 ft
	PNL-12-15RDHF	Down hole flux replicate? of PNL-12 at 15 ft
	PNL-5A-11DHF	Down hole flux of PNL-5A at 11 ft
	PNL-3-21DHF	Down hole flux of PNL-3 at 21 ft
P2400974	PNL-1-15DHF	Down hole flux of PNL-1 at 15 ft
	PNL-14-21DHF	Down hole flux of PNL-14 at 21 ft
	PNL-7-21DHF	Down hole flux of PNL-7 at 21 ft
	PNL-11-12DHF	Down hole flux of PNL-11 at 12 ft
	PNL-10A-13DHF	Down hole flux of PNL-10A at 13 ft
	PNL-6-15DHF	Down hole flux of PNL-6 at 15 ft
	PNL-6-15RDHF	Down hole flux replicate? of PNL-6 at 15 ft
	PNL-9-15DHF	Down hole flux of PNL-9 at 15 ft
	PNL-9-21BDHF	Blank sample?
	PNL-8-6DHF	Down hole flux of PNL-8 at 6 ft
	PNL-8-18DHF	Down hole flux of PNL-8 at 18 ft

PHASE II - BUCKET AUGER DRILLING

P2401046	PNLBA1-17SFU	Uncontrolled surface flux test at PNL-BA1
	PNLBA8-17-SFC1	Controlled surface flux test at PNL-BA8
	PNLBA8-17-SFC2	Controlled surface flux test at PNL-BA8
	PNLBA8-17-SFC3	Controlled surface flux test at PNL-BA8
	PNLBA8-17-SFC4	Controlled surface flux test at PNL-BA8
	PNLBA8-17-SFC5	Controlled surface flux test at PNL-BA8
	PNLBA8-17-SFC6	Controlled surface flux test at PNL-BA8
	PNLBA8-17-SFC7	Controlled surface flux test at PNL-BA8
	PNLBA1-17SFC1	Controlled surface flux test at PNL-BA1
	PNLBA3-X-SFU1	Uncontrolled surface flux replicate? at PNL-BA3
	PNLBA3-X-SFC	Controlled surface flux test at PNL-BA3
	PNLBA11-X-SFU	Uncontrolled surface flux test at PNL-BA11
	PNLBA11-X-SFC	Controlled surface flux test at PNL-BA11
	PNLBA13-X-SFU	Uncontrolled surface flux test at PNL-BA13
	PNLBA13-X-SFC	Controlled surface flux test at PNL-BA13
	PNLBA06-X-SFU	Uncontrolled surface flux test at PNL-BA6
	PNLBA06-X-SFC	Controlled surface flux test at PNL-BA6
	PNLBA07-X-SFU	Uncontrolled surface flux test at PNL-BA7
	PNLBA07-X-SFC	Controlled surface flux test at PNL-BA7
	PNL-100-100-SF	Blank sample?
	PNLBA8-17-SFU	Uncontrolled surface flux test at PNL-BA8
	PNLBA3-X-SFU	Uncontrolled surface flux test at PNL-BA3

**TABLE 1B
AIR EDD SUMMARY**

GeoSyntec Consultants

PHASE III - TRENCHING

Work Order	GeoSyntec Sample ID	Sample Description
P2401075	AA-01-051704	Ambient Air sample at AA-01
	AA-02-051704	Ambient Air sample at AA-02
	AA-03-051704	Ambient Air sample at AA-03
	AA-04-051704	Ambient Air sample at AA-04
	AA-05-051704	Ambient Air sample at AA-05
	AA-07-051704	Ambient Air sample at AA-07
	AA-01-051804	Ambient Air sample at AA-01
	AA-02-051804	Ambient Air sample at AA-02
	AA-03-051804	Ambient Air sample at AA-03
	AA-04-051804	Ambient Air sample at AA-04
	AA-05-051804	Ambient Air sample at AA-05
	AA-07-051804	Ambient Air sample at AA-07
	AA-01-051904	Ambient Air sample at AA-01
	AA-02-051904	Ambient Air sample at AA-02
	AA-03-051904	Ambient Air sample at AA-03
	AA-04-051904	Ambient Air sample at AA-04
	AA-05-051904	Ambient Air sample at AA-05
	AA-07-051904	Ambient Air sample at AA-07
P2401103 *NOTE: work order contains Phase IV ambient air samples	AA-01-052004	Ambient Air sample at AA-01
	AA-02-052004	Ambient Air sample at AA-02
	AA-03-052004	Ambient Air sample at AA-03
	AA-04-052004	Ambient Air sample at AA-04
	AA-05-052004	Ambient Air sample at AA-05
	AA-07-052004	Ambient Air sample at AA-07

PHASE IV - LAGOON SAMPLING

P2401090	PNL-L5A-SFUS	Uncontrolled surface flux sulfur sample at PNL-L5A
	PNL-L5A-SFC1S	Controlled surface flux sulfur sample at PNL-L5A
	PNL-L5A-SFC2S	Controlled surface flux sulfur sample at PNL-L5A
	PNL-L4B-SFUS	Uncontrolled surface flux sulfur sample at PNL-L4B
	PNL-L4B-SFC1S	Controlled surface flux sulfur sample at PNL-L4B
	PNL-L4B-SFC2S	Controlled surface flux sulfur sample at PNL-L4B
	PNL-L4A-SFUS	Uncontrolled surface flux sulfur sample at PNL-L4A
	PNL-L4A-SFC1S	Controlled surface flux sulfur sample at PNL-L4A
P2401094	PNL-L4A-SFC2S	Controlled surface flux sulfur sample at PNL-L4A
	PNL-L5B-SFUS	Uncontrolled surface flux sulfur sample at PNL-L5B
	PNL-L5B-SFC1S	Controlled surface flux sulfur sample at PNL-L5B
	PNL-L5B-SFC2S	Controlled surface flux sulfur sample at PNL-L5B
P2401103 *NOTE: work order contains Phase III ambient air samples	PNL-L3B-SFU	Uncontrolled surface flux sulfur sample at PNL-L3B
	PNL-L3B-SFC2	Controlled surface flux sulfur sample at PNL-L3B
	AA-01-052404	Ambient Air sample at AA-01
	AA-02-052404	Ambient Air sample at AA-02
	AA-03-052404	Ambient Air sample at AA-03
	AA-04-052404	Ambient Air sample at AA-04
P2401104	AA-05-052404	Ambient Air sample at AA-05
	AA-07-052404	Ambient Air sample at AA-07
	PNL-L5-100-SFU	Blank sample?
	PNL-L5A-SFU	Uncontrolled surface flux sample at PNL-L5A
	PNL-L5A-SFC1	Controlled surface flux sample at PNL-L5A

TABLE 1B
AIR EDD SUMMARY

PHASE IV - LAGOON SAMPLING cont.

Work Order	GeoSyntec Sample ID	Sample Description
P2401104 cont.	PNL-L5A-SFC2	Controlled surface flux sample at PNL-L5A
	PNL-L4B-SFU	Uncontrolled surface flux sample at PNL-L4B
	PNL-L4B-SFC1	Controlled surface flux sample at PNL-L4B
	PNL-L4B-SFC2	Controlled surface flux sample at PNL-L4B
	PNL-L4A-SFU	Uncontrolled surface flux sample at PNL-L4A
	PNL-L4A-SFC1	Controlled surface flux sample at PNL-L4A
	PNL-L4A-SFC2	Controlled surface flux sample at PNL-L4A
	PNL-L5B-SFU	Uncontrolled surface flux sample at PNL-L5B
	PNL-L5B-SFC1	Controlled surface flux sample at PNL-L5B
	PNL-L5B-SFC2	Controlled surface flux sample at PNL-L5B
	PNL-L3B-SFU	Uncontrolled surface flux sample at PNL-L3B
P2401105	PNL-L3B-SFC1S	Controlled surface flux sulfur sample at PNL-L3B
	PNL-L200-SFUS	Blank sample?
	PNL-L3A-SFUS	Uncontrolled surface flux sulfur sample at PNL-L3A
	PNL-L3A-SFC1S	Controlled surface flux sulfur sample at PNL-L3A
	PNL-L3A-SFC2S	Controlled surface flux sulfur sample at PNL-L3A
P2401123	PNL-L2B-SFUS	Uncontrolled surface flux sulfur sample at PNL-L2B
	PNL-L2B-SFC1S	Controlled surface flux sulfur sample at PNL-L2B
	PNL-L2B-SFC1SR	Controlled surface flux sulfur replicate at PNL-L2B
	PNL-L2B-SFC2S	Controlled surface flux sulfur sample at PNL-L2B
	PNL-L1B-SFUS	Uncontrolled surface flux sulfur sample at PNL-L1B
	PNL-L1B-SFC1S	Controlled surface flux sulfur sample at PNL-L1B
	PNL-L1B-SFC2S	Controlled surface flux sulfur sample at PNL-L1B
	PNL-L2A-SFUS	Uncontrolled surface flux sulfur sample at PNL-L2A
	PNL-L2A-SFC1S	Controlled surface flux sulfur sample at PNL-L2A
	PNL-L2A-SFC2S	Controlled surface flux sulfur sample at PNL-L2A
P2401130	PNL-L1A-SFUS	Uncontrolled surface flux sulfur sample at PNL-L1A
	PNL-L1A-SFC1S	Controlled surface flux sulfur sample at PNL-L1A
	PNL-L1A-SFC2S	Controlled surface flux sulfur sample at PNL-L1A
P2401135	PNL-L3B-SFC1	Controlled surface flux sample at PNL-L3B
	PNL-L3B-SFC2	Controlled surface flux sample at PNL-L3B
	PNL-L3A-SFU	Uncontrolled surface flux sample at PNL-L3A
	PNL-L3A-SFC1	Controlled surface flux sample at PNL-L3A
	PNL-L3A-SFC2	Controlled surface flux sample at PNL-L3A
	PNL-L2B-SFU	Uncontrolled surface flux sample at PNL-L2B
	PNL-L2B-SFC1	Controlled surface flux sample at PNL-L2B
	PNL-L2B-SFC2	Controlled surface flux sample at PNL-L2B
	PNL-L1B-SFU	Uncontrolled surface flux sample at PNL-L1B
	PNL-L1B-SFR	Uncontrolled surface flux replicate at PNL-L1B
	PNL-L1B-SFC1	Controlled surface flux sample at PNL-L1B
	PNL-L1B-SFC2	Controlled surface flux sample at PNL-L1B
	PNL-L2A-SFU	Uncontrolled surface flux sample at PNL-L2A
	PNL-L2A-SFC1	Controlled surface flux sample at PNL-L2A
	PNL-L2A-SFC2	Controlled surface flux sample at PNL-L2A
	PNL-L1A-SFU	Uncontrolled surface flux sample at PNL-L1A
	PNL-L1A-SFC1	Controlled surface flux sample at PNL-L1A
	PNL-L1A-SFC2	Controlled surface flux sample at PNL-L1A
	PNL-L1A-SF300	Blank sample?
P2401137	AA-01-052504	Ambient Air sample at AA-01

**TABLE 1B
AIR EDD SUMMARY**

GeoSyntec Consultants

PHASE IV - LAGOON SAMPLING cont.		
Work Order	GeoSyntec Sample ID	Sample Description
	AA-02-052504	Ambient Air sample at AA-02
	AA-03-052504	Ambient Air sample at AA-03
	AA-04-052504	Ambient Air sample at AA-04
	AA-05-052504	Ambient Air sample at AA-05
	AA-07-052504	Ambient Air sample at AA-07
	AA-01-052604	Ambient Air sample at AA-01
	AA-02-052604	Ambient Air sample at AA-02
	AA-03-052604	Ambient Air sample at AA-03
	AA-04-052604	Ambient Air sample at AA-04
	AA-05-052604	Ambient Air sample at AA-05
	AA-07-052604	Ambient Air sample at AA-07
	PNL-L3B-SFU	Uncontrolled surface flux sample at PNL-L3B
PHASE VIII - PIT F SAMPLING		
P2401374	PNL-F5-13.5-S	

TABLE 2
EXPERT REVIEW FINDINGS

GeoSyntec Consultants

SAMPLENAME	SAMPDATE	METHODNAME	ANALYTE	EXP_QUAL	UNITS
PNL-12	03/16/04	EPA 8270C	1,3-Dichlorobenzene	J	ug/kg
PNL-12	03/16/04	EPA 8270C	1,4-Dichlorobenzene	J	ug/kg
PNL-12	03/16/04	EPA 8270C	Hexachloroethane	J	ug/kg
PNL-12-FILL	03/16/04	EPA 8270C	1,3-Dichlorobenzene	J	ug/kg
PNL-12-FILL	03/16/04	EPA 8270C	1,4-Dichlorobenzene	J	ug/kg
PNL-12-FILL	03/16/04	EPA 8270C	Hexachloroethane	J	ug/kg
PNL-3	03/16/04	EPA 8270C	1,3-Dichlorobenzene	J	ug/kg
PNL-3	03/16/04	EPA 8270C	1,4-Dichlorobenzene	J	ug/kg
PNL-3	03/16/04	EPA 8270C	Hexachloroethane	J	ug/kg
PNL-5	03/16/04	EPA 8270C	1,3-Dichlorobenzene	J	ug/kg
PNL-5	03/16/04	EPA 8270C	1,4-Dichlorobenzene	J	ug/kg
PNL-5	03/16/04	EPA 8270C	Hexachloroethane	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,1,1,2-Tetrachloroethane	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,1,1-Trichloroethane	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,1,2,2-Tetrachloroethane	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,1-Dichloropropene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,2,3-Trichlorobenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,2,4-Trichlorobenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,2,4-Trimethylbenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,2-Dichlorobenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,3,5-Trimethylbenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,3-Dichlorobenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,3-Dichloropropane	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	1,4-Dichlorobenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	4-Chlorotoluene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Bromobenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Bromodichloromethane	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Bromoform	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Bromomethane	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Carbon tetrachloride	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Chlorobenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Dibromochloromethane	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Hexachlorobutadiene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Isopropylbenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Naphthalene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	n-Propylbenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	o-Xylene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	p-Isopropyltoluene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	sec-Butylbenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	tert-Butylbenzene	J	ug/kg
PNL-BA8/13-WASTE	05/26/04	EPA 8260B	Tetrachloroethene	J	ug/kg
PNL-F4-11.5 & 14.5	06/25/04	EPA 8270C	Benzo(b)fluoranthene	J	ug/kg
PNL-F4-17 & 17.5	06/25/04	EPA 3545/8081A	delta-BHC	J	ug/kg
PNL-F4-17 & 17.5	06/25/04	EPA 3545/8081A	Endosulfan II	J	ug/kg
PNL-F5-14 & 14.5	06/25/04	EPA 8270C	Benzo(b)fluoranthene	J	ug/kg
PNL-F6-12 & 14	06/25/04	EPA 8270C	Benzo(b)fluoranthene	J	ug/kg
PNL-F6-5.5 & 11.5	06/25/04	EPA 8270C	Benzo(b)fluoranthene	J	ug/kg
PNL-F7-8.5 & 11	06/25/04	EPA 8270C	Benzo(b)fluoranthene	J	ug/kg
PNL-L2A	05/26/04	EPA 3545/8081A	Aldrin	J	ug/kg
PNL-L2A	05/26/04	EPA 3545/8081A	alpha-BHC	J	ug/kg

TABLE 2
EXPERT REVIEW FINDINGS

GeoSyntec Consultants

SAMPLENAME	SAMPDATE	METHODNAME	ANALYTE	EXP_QUAL	UNITS
PNL-L2A	05/26/04	EPA 3545/8081A	gamma-BHC (Lindane)	J	ug/kg
PNL-PEI	06/14/04	EPA 8260B	1,2,3-Trichlorobenzene	J	ug/kg
PNL-PEI	06/14/04	EPA 8260B	1,2,4-Trichlorobenzene	J	ug/kg
PNL-PEI	06/14/04	EPA 8260B	Hexachlorobutadiene	J	ug/kg
PNL-PGI	06/14/04	EPA 8270C	Benzidine	R	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	1,1,1,2-Tetrachloroethane	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	1,1,2,2-Tetrachloroethane	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	1,2,3-Trichlorobenzene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	1,2,4-Trichlorobenzene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	1,2,4-Trimethylbenzene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	1,2-Dichlorobenzene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	1,3,5-Trimethylbenzene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	1,3-Dichlorobenzene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	1,4-Dichlorobenzene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	4-Chlorotoluene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	Bromobenzene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	Bromodichloromethane	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	Bromoform	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	Bromomethane	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	Carbon tetrachloride	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	cis-1,3-Dichloropropene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	Dibromochloromethane	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	Hexachlorobutadiene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	p-Isopropyltoluene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	sec-Butylbenzene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	tert-Butylbenzene	J	ug/kg
PNL-TP02-WASTE	05/19/04	EPA 8260B	Tetrachloroethene	J	ug/kg

Expert Qualifier Notes:

J = Estimated Value

R = Rejected Result

ATTACHMENT A

Data Validation – Ascon Soil Samples
July 21, 2004

Level II data packages were received in the Geosyntec-Knoxville, TN office July 19, 2004 for data validation. The following documents were referenced with regard to performing this data validation, USEPA National Functional Guidelines for Organic and Inorganic Data Review, EPA SW846 and Standard Methods. The data review process provides information on the analytical limitations of data based on specified quality control (QC) criteria.

The data are discussed by report number and analytical test as follows:

INE1148

<u>Client ID</u>	<u>Laboratory ID</u>
PNL-TP04-Stockpile	INE1148-01
PNL-TP02-Stockpile	INE1148-02
PNL-TP02-Waste	INE1148-03
PNL-TP04-Waste	INE1148-04

Matrix: Soil

All technical holding times were met for the samples.

EPA 418.1 – Total Recoverable Petroleum Hydrocarbons (TPH) – All results are acceptable for use without qualification.

Modified EPA 8015 Extractable Fuel Hydrocarbons – All results are acceptable for use without modification.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - Sample PNL-TP02-Waste, the following analytes are “J” qualified as estimated due to low MS/MSD recoveries: bromobenzene, bromodichloromethane, bromoform, bromomethane, sec-butylbenzene, tert-butylbenzene, carbon tetrachloride, 4-chlorotoluene, dibromochloromethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, cis-1,3-dichloropropane, hexachlorobutadiene, p-isopropyltoluene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethene, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene. All other results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – All results are acceptable for use without qualification.

EPA 8081A Organochlorine Pesticides – All results are acceptable for use without qualification.

EPA 8082 Polychlorinated Biphenyls – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – All results are acceptable for use without qualification.

Inorganics – All results are acceptable for use without qualification.

INE1627

<u>Client ID</u>	<u>Laboratory ID</u>
PNL-L2B	INE1627-01
PNL-L1B	INE1627-02
PNL-L2A	INE1627-03
PNL-L1A	INE1627-04
PNL-BA8/13-Waste	INE1627-05

Matrix: Soil

All technical holding times were met for the samples.

EPA 418.1 – Total Recoverable Petroleum Hydrocarbons (TPH) – All results are acceptable for use without qualification.

Modified EPA 8015 Extractable Fuel Hydrocarbons – All results are acceptable for use without modification.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - Sample PNL-BA8/13-Waste, the following analytes are “J” qualified as estimated due to low MS/MSD recoveries: bromobenzene, bromodichloromethane, bromoform, bromomethane, sec-butylbenzene, tert-butylbenzene, carbon tetrachloride, chlorobenzene, 4-chlorotoluene, dibromochloromethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,3-dichloropropane, 1,1-dichloropropene, hexachlorobutadiene, isopropylbenzene, p-isopropyltoluene, naphthalene, n-propylbenzene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethene, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and orthoxylene. All other results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – All results are acceptable for use without qualification.

EPA 8081A Organochlorine Pesticides – Sample PNL-L2A, the following analytes are “J” qualified as estimated due to low LCS recovery; aldrin, alpha-BHC, and gamma-BHC. All other results are acceptable for use without qualification.

EPA 8082 Polychlorinated Biphenyls – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – All results are acceptable for use without qualification.

Inorganics – All results are acceptable for use without qualification.

INF0844

<u>Client ID</u>	<u>Laboratory ID</u>
PNL-PGI	INF0844-01
PNL-PCI	INF0844-02
PNL-PDI-4-EC	INF0844-03
PNL-PDI	INF0844-04
PNL-PEI-12-EC	INF0844-05
PNL-PEI-7-EC	INF0844-06
PNL-PEI	INF0844-07
PNL-PD1B	INF0844-08
PNL-PCIA	INF0844-09

Matrix: Soil

All technical holding times were met for the samples.

EPA 418.1 – Total Recoverable Petroleum Hydrocarbons (TPH) – All results are acceptable for use without qualification.

Modified EPA 8015 Extractable Fuel Hydrocarbons – All results are acceptable for use without modification.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - Sample PNL-PEI, the following analytes are “J” qualified as estimated due to low MS/MSD recoveries: hexachlorobutadiene, 1,2,3-trichlorobenzene, and 1,2,4-trichlorobenzene. All other results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – Sample PNL-PGI, benzidine is “R” qualified as rejected due to 0% recovery in the MS/MSD. All other results are acceptable for use without qualification.

EPA 8081A Organochlorine Pesticides – All results are acceptable for use without qualification.

EPA 8082 Polychlorinated Biphenyls – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – All results are acceptable for use without qualification.

Inorganics – All results are acceptable for use without qualification.

INF1737

<u>Client ID</u>	<u>Laboratory ID</u>
PNL-F5-14 & 14.5	INF1737-01
PNL-F5-17-EC	INF1737-02
PNL-F4-11-EC	INF1737-03
PNL-F4-11.5 & 14.5	INF1737-04
PNL-F4-14-ED	INF1737-05
PNL-F4-16.5-EC	INF1737-06
PNL-F4-17 & 17.5	INF1737-07
PNL-F6-10.5-EC	INF1737-08
PNL-F6-5.5 & 11.5	INF1737-09
PNL-F6-12 & 14	INF1737-10
PNL-F7-8.5 & 11	INF1737-11

Matrix: Soil

All technical holding times were met for the samples.

EPA 418.1 – Total Recoverable Petroleum Hydrocarbons (TPH) – All results are acceptable for use without qualification.

Modified EPA 8015 Extractable Fuel Hydrocarbons – All results are acceptable for use without modification.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - All results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – Samples PNL-F5-14 & 14.5, PNL-F6-5.5 & 11.5, PNL-F6-12 & 14, PNL-F7-8.5 & 11, and PNL-F4-11.5 & 14.5; benzo(b)fluoranthene is “J” qualified estimated due to low recovery in the LCS. All other results are acceptable for use without qualification.

EPA 8081A Organochlorine Pesticides – Sample PNL-F4-17& 17.5, the following analytes are “J” qualified as estimated due to low MS/MSD recovery; delta-BHC, and endosulfan II. All other results are acceptable for use without qualification.

EPA 8082 Polychlorinated Biphenyls – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – All results are acceptable for use without qualification.

Inorganics – All results are acceptable for use without qualification.

INC1049

<u>Client ID</u>	<u>Laboratory ID</u>
PNL-5	INC1049-01
PNL-5-10'-EC	INC1049-02
PNL-5A-21.5'-EC	INC1049-03
PNL-5A-25'-EC	INC1049-04
PNL-12-Fill	INC1049-05
PNL-12	INC1049-06
PNL-12-16'-EC	INC1049-07
PNL-12-18'-EC	INC1049-08
PNL-3	INC1049-09
PNL-3-19'-EC	INC1049-10
PNL-3-21.5'-EC	INC1049-11

Matrix: Soil

All technical holding times were met for the samples.

EPA 418.1 – Total Recoverable Petroleum Hydrocarbons (TPH) – All results are acceptable for use without qualification.

Modified EPA 8015 Extractable Fuel Hydrocarbons – All results are acceptable for use without modification.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - All results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – Samples PNL-5, PNL-12-Fill, PNL-12, and PNL-3; 1,3-dichlorobenzene, 1,4-dichlorobenzene, and hexachloroethane are “J” qualified as estimated due to low recovery in the LCS. All other results are acceptable for use without qualification.

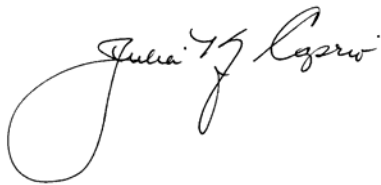
EPA 8081A Organochlorine Pesticides – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – All results are acceptable for use without qualification.

Inorganics – All results are acceptable for use without qualification.

The data packages were reviewed. The data are acceptable for use as qualified with the exception of one result for EPA 8270, benzidine which was qualified as “R” or rejected, due to no recoveries of the analyte in its associated MS/MSD. Overall, the analyses were generally within the requirements of the referenced methods.

A handwritten signature in black ink, reading "Julia K. Caprio". The signature is fluid and cursive, with a large loop at the beginning of the first name.

Reviewer: Julia K. Caprio
Geosyntec Consultants
July 21, 2004

**Data Validation Report
Ascon Landfill
July 21, 2004**

Level II data were received from Columbia Analytical Laboratory for data validation on five laboratory reports; P2400974, P2401046, P2401075, P2401104, and D2401374. The data were received on July 19, 2004 for review and validation.

The data were validated under the guidance of USEPA National Functional Guidelines for Organic Data Review and EPA Method TO15 and EPA Method TO3. The data review process provides information on analytical limitations of data based on specific quality control (QC) criteria. The reviewed items included:

- **Laboratory Certification Statement, signed by the laboratory manager or his designee**

NA

- **Laboratory Certified Narrative**

NA.

- **Holding times**

- **Documents reviewed include; Results forms, chain-of-custody,**

The technical holding time was met for all samples analyzed.

- **Blanks**

- **Documents reviewed include; Results forms,**

Method blanks met the method criteria.

- **Regional Quality Assurance and Quality Control – Field Duplicate Samples**

- **Documents reviewed include; Results forms,**

Duplicate analyses results were acceptable.

- **Target Compound Identification**

- **Documents reviewed include; Results forms, quantitation reports, mass spectra, and chromatograms**

Target compounds were appropriately identified.

- **Compound Quantitation and Reports, Contract Required Quantitation Limits (CRQLs)**

- **Documents reviewed include; Results forms**

The CRQLs met the specifications of the method and project. Although some elevated CRQLs were reported due to small sample volumes.

- **Tentatively Identified Compounds**
 - **Documents reviewed include; Results forms, chromatograms, and library search printouts and spectra for the TIC candidates**

All TICs were correctly reported per project specification.

- **System Performance**
 - **Documents reviewed include; Results forms and Electronic data**

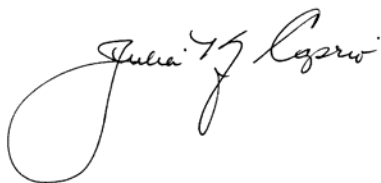
The data appear acceptable according to the documentation provided.

Laboratory Contact:

None required.

Data Use and Overall Assessment

The data were reviewed and compared against the chain of custody. All tests requested on the COC were performed. All samples were analyzed within the technical holding times. None of the data were qualified and are acceptable for use. The analyses were generally within the requirements of the referenced method.

A handwritten signature in black ink, reading "Julia K. Caprio". The signature is fluid and cursive, with a large loop at the beginning and a trailing flourish.

Reviewer: Julia K. Caprio
Geosyntec Consultants
July 21, 2004