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STAGE 1 & 2 REPORTS

(APPENDIX I - IV)

DATE:

MAY 2003

WESTGATE SUBDIVISION GRIMES BATTERY & TASKER ROAD

Stage 2 Abatement Plan Soil Remediation Activities Report

May 2003

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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

**SHELL EXPLORATION & PRODUCTION COMPANY
HOUSTON, TEXAS**

Prepared By:

**BBC International, Inc.
Hobbs, New Mexico**

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1.0 INTRODUCTION

This Stage 2 Abatement Plan, Remediation Activities Report for the Westgate Subdivision, Grimes Battery and Tasker Road, describes the activities related to the remediation of the site conducted in July 2001, September 2001, and the year of 2002.

2.0 2001 ACTIVITIES

2.1 Baseline Air Monitoring - Air Quality Survey and Test Excavation and Isolation Flux Chamber Sampling

The report detailing the baseline air quality monitoring and flux chamber air monitoring activities was submitted to the NMOCD on September 17, 2002 by BBC International, Inc. (BBC). This report describes the activities conducted in July 2001 by URS Corporation and is titled *Characterization Of Potential Air Emissions Associated With Remediation Activities Near The Westgate Subdivision, Phase I Final Air Monitoring Report, March 2002*.

2.2 Surface Soil Removal - West Grimes Battery Area and Backfilling of Previous Soil Removal Areas

In September 2001, surficial soils that had been impacted by hydrocarbons on the west and northeast sides of the Grimes Battery site were removed, disposed of, and backfilled with clean top soil. These impacted soils had been discovered and investigated in the previous site investigations. In addition, three (3) areas that had been previously excavated and disposed of were backfilled with clean top soil (*See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, October 1999, Sections 4.1.1 Task 1; 4.1.2. Task 2; 4.1.3. Task 3*). These activities were approved by the NMOCD in their letter dated May 2, 2001.

The volume of soil that was removed in Tasks 1 and 2 was 10,248 cubic yards with a maximum depth of five (5) feet in places. The soil was disposed of at the NMOCD-approved disposal facility owned and operated by Sundance Services in Eunice, NM.

During the beginning of the process of soil removal (Tasks 1 and 2), plaintiff representatives¹ were present and requested taking some samples. BBC split samples with the plaintiffs on September 14, 2001 and BBC's data results are located in **APPENDIX I – Table 1**. The analytical tests run were USEPA Method 418.1 TPH. Soil removal continued and again samples were taken and split with the plaintiffs on September 18, 2001 with the results located in **APPENDIX I – Table 2**. The analytical tests performed were USEPA Methods 418.1 TPH, 8260B BTEX, and New Mexico Water Quality Control Commission (WQCC) metals. Soil removal continued and again samples were taken and split with the plaintiffs on September 18, 2001 with the results located in **APPENDIX I – Table 3**. Soil removal continued and on September 25, 2001 bottom confirmation samples were taken with the results located in **APPENDIX I – Table 4**. The analytical tests run were USEPA Methods 418.1 TPH, 8260B BTEX, and New Mexico Water Quality Control Commission (WQCC) metals. The results were below NMOCD-approved Stage 2 Abatement Plan levels and the sites were backfilled with clean top soil. During soil removal and backfilling operations, a water truck was used for dust control and compaction per the Stage 2 Abatement Plan.

The amount of top soil backfilled for all three areas (Tasks 1, 2, and 3) was 11,232 cubic yards.

¹ The referenced plaintiffs are those in the Conception and Rosario Acosta, et al., Plaintiffs vs. Shell Western Exploration and Production, Inc.; Shell Oil Company, Altura Energy, L.L.C.; Altura Energy LTD.; and Los Cuarto, Inc. a/k/a Los Cuarto, Defendants.

The data obtained by the plaintiffs was not made available; therefore no plaintiff data is included with this report.

2.3 Air Discharge Permit Activities

As discussed with the NMOCD (*See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, May 2000, Section 2.9*) the New Mexico Environment Department, Air Quality Bureau (AQB), was contacted for a determination of necessary discharge permits. Mr. R.C. Cudney of Environmental Services, Inc. of Albuquerque was contracted to contact the AQB to determine the necessity of a discharge permit for the air treatment system to be utilized on the site. Mr. Cudney utilized the data acquired by URS Corporation (*See report: Characterization Of Potential Air Emissions Associated With Remediation Activities Near The Westgate Subdivision, Phase I Final Air Monitoring Report*) and the required models to file a Notice of Intent with the AQB. This Notice of Intent was submitted to the AQB on December 19, 2001 and was reviewed by the AQB. On January 9, 2002, the AQB issued a determination that the emissions from the air treatment units were too low to trigger 20 NMAC 2.72 – Construction Permits or 2.73 – Notice of Intent and Emissions Inventory Requirements. Therefore the AQB issued a notice of No Permit Required (NPR) authorizing the operation of the facility as stated in the application (the letter of January 9, 2002). In addition, the AQB determined that the New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAPS) did not apply to this activity. A copy of this letter was submitted to the NMOCD.

3.0 2002 ACTIVITIES

3.1 Westgate Remediation Site Preparations

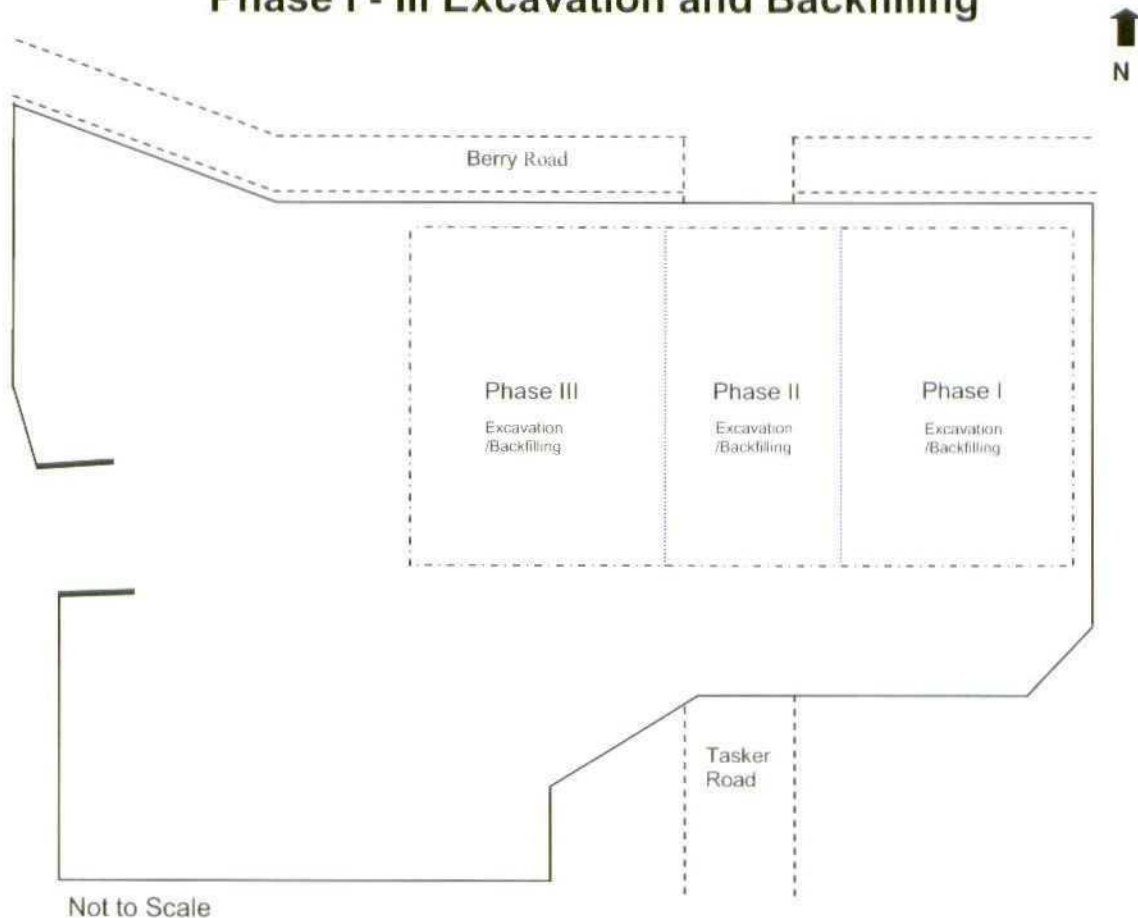
Upon the completion of all requirements necessary to start the site preparation for the Tasker Road remediation activities (*See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, October 1999, Sections 4.1.4 Task 4; 4.1.5. Task 5 and See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, May 2000, Section 2.8*) the site was fenced off closing Tasker Road to through traffic for security and street barricades and detour signs were installed around the neighborhood according to the City of Hobbs regulations (*See Diagram 1*). These activities were performed starting February 26, 2002 through March 6, 2002. In addition, a bus turnaround was installed on the south side of the fenced site on Tasker Road for school buses that operated in the neighborhood. The rest of the site was prepared with the installation of office trailers, electrical wiring, the tire wash station, and a storm water diversion berm around the site perimeter through March 15, 2002.

On March 18, 2002, the installation of the fabric structure began. This structure was manufactured by Universal Fabric Structures of Quakertown, Pennsylvania. The structure consisted of an aluminum metal framework with a durable all-weather PVC membrane fabric covering. This structure provided the best technology for control of dust and any volatilized organic emissions and also provided protection from the elements during excavation. The structure had an opening large enough for earth moving equipment to pass through with a roll up door and man-door for entrance and exit.

In addition to providing a cover for the excavations, the structure was operated in a negative pressure atmosphere with four air intake vents on the north side of the structure. On the south side of the structure four outlet vents were connected to an air treatment system adjacent to the structure via ductwork. This air scrubbing system was comprised of two electrically powered low pressure, high volume (cubic feet per minute or cfm) blowers that drew the air from inside the structure through two fixed beds of activated carbon then to vent pipes for release to the atmosphere. The activated carbon beds removed dust and stripped the air of any volatile organics. The air treatment system was

designed and manufactured by TIGG Corporation of Pittsburg, Pennsylvania. In order to assist in the reduction of noise associated with the air treatment system, insulated wooden sound barriers were erected around the blowers. In addition, a meteorological station and two PM-10 particulate monitoring stations were installed. The site was completed and ready for implementation on April 3, 2002. Photographs of the set up activities can be found in **Appendix II: Site Photographs; Structure Assembly.**

Diagram 1: Westgate Site Layout Phase I - III Excavation and Backfilling



3.2 Open House

Prior to the start of remediation activities, two open houses were held at the site. The purpose of the open houses was to allow a tour of the site and to explain the operations that were to be conducted at the site. The first open house held on April 5, 2002 was for NMOCD officials, the media, and city and state officials. The second open house held on April 6, 2002 was for the residents of the Westgate neighborhood.

3.3 Phase I – Excavating and Backfilling

On April 15, 2002, Phase I soil removal operations started on property east of Tasker Road (**See Diagram 1**). All soil removal operations were conducted inside the fabric structure. The air treatment system was operated with both carbon filtration beds and blowers during all soil removal operations which were conducted during the hours of 8 to 5 Monday through Friday. Due to the placement of the air treatment system being close to one residence on Tasker, the air blower closest to the residence was turned off at night and on weekends to reduce the amount of noise. The other blower and carbon bed was dedicated to run 24 hours a day, 7 days a week during soil removal and soil backfilling operations. In addition to the air treatment and filtration system, a water truck was used to spray water inside the structure and outside in the fenced area to control dust. In addition, the open area just west of the fence perimeter and the exit road to Sanger Street was watered frequently for dust control.

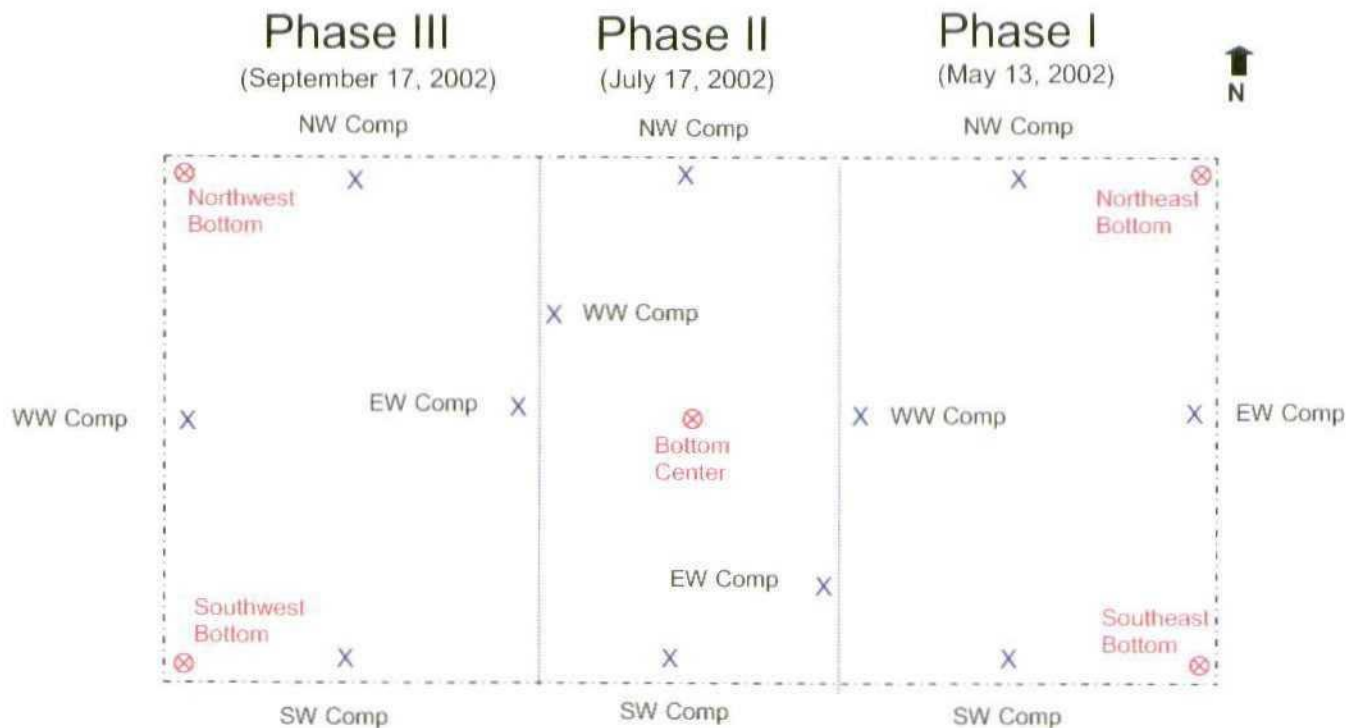
The soil was removed utilizing an excavator and was placed in 22 yard capacity dump trucks. Each truck was tarped before leaving the inside of the fabric structure and then stopped at a tire wash station to wash off the truck and trailer tires before leaving the site. The trucks followed a main caliche road to the south to Sanger Street, then headed west to West County Road, then headed south on the truck by-pass around the south side of Hobbs then to the disposal facility near Eunice, NM. The depth of the soil excavation area was ten (10) to eleven (11) feet below ground surface and approximately 120 feet by 120 feet in size (**See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, May 2000, Section 2.8**). A total of 7,010 cubic yards of soil was removed during Phase I. All soils were disposed of at the NMOCD-approved disposal facility owned and operated by Sundance Services in Eunice, NM. All fluids generated from the tire washing activities were also disposed of at the NMOCD-approved disposal facility owned and operated by Sundance Services in Eunice, NM.

After the removal of the soil, confirmation soil samples were taken (**See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, May 2000, Section 2.7**). On May 13, 2002, discrete samples were taken in the northeast and southeast bottom and four-point composite samples were taken from each sidewall (**See Diagram 2**). The samples were analyzed for TPH, BTEX, and New Mexico Water Quality Control Commission (WQCC) metals using USEPA Methods 418.1, 8260B, and 6010B, respectively. The results of this sampling event are in **Appendix III: Soil Confirmation Sampling Data; Table 1**. The results met the Stage 2 Abatement Plan approved by the NMOCD on May 2, 2001.

The excavation was then backfilled with 489 cubic yards of red clay creating a liner of approximately one foot in thickness. The clay was compacted using a vibratory compactor. Upon completion of the installation of the clay liner, backfilling of the excavation commenced with 4,460 cubic yards of caliche added and compacted with a vibratory compactor. The final layer of approximately two feet in thickness was backfilled with 1,800 cubic yards of top soil and compacted with a vibratory compactor to the 95 Modified Standard for compaction according to the New Mexico Building Code.

Phase I was completed on May 24, 2002. Photographs of activities conducted during Phase I can be found in **Appendix II: Site Photographs; Phase I**.

Diagram 2: Westgate Site Layout Excavation Bottom Sampling



3.4 Phase II – Excavating and Backfilling

Phase II was started on May 28, 2002 with the movement of the air treatment system further to the west to accommodate the movement of the fabric structure. The fabric structure was split in two parts and moved by a 200 ton crane further west to cover the second excavation area and secured in place starting on June 3, 2002 and completed on June 14, 2002. The air system was reconnected to the fabric structure during this time also.

On June 17, 2002, Phase II soil removal operations started on Tasker (**See Diagram 1**). This phase included the removal of a portion of Tasker Road. All soil removal operations were conducted inside the fabric structure. The air treatment system was operated with both carbon filtration beds and blowers during all soil removal operations which were conducted during the hours of 8 to 5 Monday through Friday. Due to the placement of the air treatment system being close to one residence on Tasker, the air blower closest to the residence was turned off at night and on weekends to reduce the amount of noise. The other blower and carbon bed was dedicated to run 24 hours a day, 7 days a week during soil removal and soil backfilling operations. In addition to the air treatment and filtration system, a water truck was used to spray water inside the structure and outside in the fenced area to control dust. In addition, the open area just west of the fence perimeter and the exit road to Sanger Street was watered frequently for dust control.

The soil was removed utilizing an excavator and was placed in 22 yard capacity dump trucks. Each truck was covered with a tarp before leaving the inside of the fabric structure and then stopped at a tire wash station to wash off the truck and trailer tires before leaving the site. The trucks followed a main caliche road to the south to Sanger Street, then headed west to West County Road, then headed south on the truck by-pass around the south side of Hobbs then to the disposal facility near Eunice, NM. The depth of the soil excavation area was ten (10) to eleven (11) feet below ground surface and approximately 75 feet by 120 feet in size (**See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, May 2000, Section 2.8**). A total of 4,840 cubic yards of soil was removed during Phase II. All soils were disposed of at the NMOCD-approved disposal facility owned and operated by Sundance Services in Eunice, NM. All fluids generated from the tire washing activities were also disposed of at the NMOCD-approved disposal facility owned and operated by Sundance Services in Eunice, NM.

After the removal of the soil, confirmation soil samples were taken (**See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, May 2000, Section 2.7**). On July 17, 2002, a discrete sample was taken in the center of the bottom and four-point composite samples were taken from each sidewall (**See Diagram 2**). The samples were analyzed for TPH, BTEX, and New Mexico Water Quality Control Commission (WQCC) metals using USEPA Methods 418.1, 8260B, and 6010B, respectively. The results of this sampling event are in **Appendix III: Soil Confirmation Sampling Data; Table 2**. The results met the Stage 2 Abatement Plan approved by the NMOCD on May 2, 2001.

The excavation was then backfilled with 491 cubic yards of red clay creating a liner of approximately one foot in thickness. The clay was compacted using a vibratory compactor. Upon completion of the installation of the clay liner, backfilling of the excavation commenced with 3,200 cubic yards of caliche added and compacted with a vibratory compactor. The final layer of approximately two feet in thickness was backfilled with 1,500 cubic yards of top soil and compacted with a vibratory compactor to the 95 Modified Standard for compaction according to the New Mexico Building Code.

Phase II was completed on July 25, 2002. Photographs of activities conducted during Phase II can be found in **Appendix II: Site Photographs, Phase II**.

3.5 Phase III – Excavating and Backfilling

Phase III was started on July 26, 2002 with the reconfiguration of the air treatment system to accommodate the movement of the fabric structure. The fabric structure was split in two parts and moved by a 200 ton crane further west to cover the third excavation area and secured in place starting on August 5, 2002 and completed on August 9, 2002. The air system was reconnected to the fabric structure during this time also.

On August 12, 2002, Phase III soil excavation operations started on property west of Tasker Road (**See Diagram 1**). All soil removal operations were conducted inside the fabric structure. The air treatment system was operated with both carbon filtration beds and blowers during all soil removal operations which were conducted during the hours of 8 to 5 Monday through Friday. Due to the placement of the air treatment system being close to one residence on Tasker, the air blower closest to the residence was turned off at night and on weekends to reduce the amount of noise. The other blower and carbon bed was dedicated to run 24 hours a day, 7 days a week during soil removal and soil backfilling operations. In addition to the air treatment and filtration system, a water truck was used to spray water inside the structure and outside in the fenced area to control dust. In addition, the open area just west of the fence perimeter and the exit road to Sanger Street was watered frequently for dust control.

The soil was removed utilizing an excavator and was placed in 22 yard capacity dump trucks. Each truck was tarped before leaving the inside of the fabric structure and then stopped at a tire wash station to wash off the truck and trailer tires before leaving the site. The trucks followed a main caliche road to the south to Sanger Street, then headed west to West County Road, then headed south on the truck by-pass around the south side of Hobbs then to the disposal facility near Eunice, NM. The depth of the soil excavation area was ten (10) to eleven (11) feet below ground surface and approximately 125 feet by 120 feet in size (**See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, May 2000, Section 2.8**). A total of 7,298 cubic yards of soil was removed during Phase III. All soils were disposed of at the NMOCD-approved disposal facility owned and operated by Sundance Services in Eunice, NM. All fluids generated from the tire washing activities were also disposed of at the NMOCD-approved disposal facility owned and operated by Sundance Services in Eunice, NM.

After the removal of the soil, confirmation soil samples were taken (**See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, May 2000, Section 2.7**). On September 17, 2002, discrete samples were taken in the northwest and southwest bottom and four-point composite samples were taken from each sidewall (**See Diagram 2**). The samples were analyzed for TPH, BTEX, and New Mexico Water Quality Control Commission (WQCC) metals using USEPA Methods 418.1, 8260B, and 6010B, respectively. The results of this sampling event are in **Appendix III: Soil Confirmation Sampling Data; Table 3**. The results met the Stage 2 Abatement Plan approved by the NMOCD on May 2, 2001.

The excavation was then backfilled with 646 cubic yards of red clay creating a liner of approximately one foot in thickness. The clay was compacted using a vibratory compactor. Upon completion of the installation of the clay liner, backfilling of the excavation commenced with 2,940 cubic yards of caliche added and compacted with a vibratory compactor. The final layer of approximately three feet in thickness was backfilled with 4,560 cubic yards of top soil and compacted with a vibratory compactor to the 95 Modified Standard for compaction according to the New Mexico Building Code.

Phase III was completed on October 1, 2002. A total of 19,148 cubic yards of soil was disposed of and a total of 20,086 cubic yards of clay and backfill was used at the site. Photographs of activities conducted during Phase III can be found in **Appendix II: Site Photographs; Phase III**.

3.6 Westgate Site Dismantle

The dismantling and restoration of the site started on October 2, 2002 and was completed on December 12, 2002. The air treatment system, sound barriers, and associated electrical equipment were disassembled starting on October 2, 2002 and the fabric structure was dismantled starting on October 11, 2002. These activities were completed on October 19, 2002. The rest of the site dismantle and restoration including the removal of office trailers, tire wash station, fencing, replacement of the portion of Tasker Road and sidewalks, removal of street barricades, and other site materials was completed in mid-November 2002 (**See Appendix II: Site Photographs; Structure Dismantle**). The entire site was smoothed, contoured, and compacted in early December. All site activities were completed by mid-December 2002 (**See Appendix II: Site Photographs; Completed Site**).

4.0 HEALTH, SAFETY, AND AIR MONITORING PLAN

As part of the Stage 2 Abatement Plan, a comprehensive health and safety plan was created to monitor the health and safety of the site personnel during the soil remediation activities. In addition, an on-site and off-site site perimeter air monitoring plan was created (**See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, May 2000, Appendix III**). This plan was developed to insure all site personnel followed the safety procedures developed specifically for the site and to monitor the air quality in and around the site and the Westgate neighborhood that may be impacted by site operations.

4.1 Safety

Prior to each day's site activities, a safety meeting was conducted by the on-site safety director for all personnel working on the site. Topics of concern, site specific operations, and other general safety factors were discussed among all personnel. During the course of site operations, there were no near misses, incidents, or accidents among any personnel working on the site.

4.2 Stationary Air Monitoring – PM₁₀

As previously mentioned, another part of the Health, Safety, and Air Monitoring Plan was air monitoring activities. This plan was designed to monitor the air quality on the site, the outer perimeter, and areas around the neighborhood. A general plan was created and reported in the Stage 2 Abatement Plan of May 2000, but the final plan was developed once the Phase I air monitoring (**See report: Characterization Of Potential Air Emissions Associated With Remediation Activities Near The Westgate Subdivision, Phase I Final Air Monitoring Report, March 2002**) results were reviewed.

There were two parts of the air monitoring program. The first part, conducted by URS Corporation, was the installation of two PM₁₀ monitoring stations and a meteorological monitoring station. This part of the air monitoring program is referred to as Phase II; with Phase I being the monitoring previously discussed in the above mentioned report. The objective of the Phase II monitoring was to monitor particulate matter concentrations at the site during remediation activities. The data was used to modify site activities or institute other control mechanisms, as appropriate, to maintain PM concentrations below a predetermined threshold value.

Ambient measurements began in March of 2002 and continued throughout the remediation with the exception of an approximate two week period in early June when the stations and excavation structure were being relocated. The particulate monitoring was conducted using a Ruppercht and

Patashnick TEOM monitor. This unit has U.S. EPA equivalency for PM₁₀ monitoring (EQPM-1090-079). The meteorological monitoring sensors were manufactured by MetOne instruments and met all U.S. EPA requirements for PSD monitoring.

The pre-determined threshold value used in this monitoring is the U.S. EPA National Ambient Air Quality Standard (NAAQS) for 24-hour PM₁₀ of 150 µg/m³. During the 181 days of monitoring this threshold was exceeded at the East site on five days and was not exceeded at the South site. The five exceedence days were caused by high winds causing off-site dust to pass through the site, off-site occurrences such as a City of Hobbs street sweeper passing by the PM₁₀ station causing dust clouds that were registered by the instruments, and normal site activities (See Appendix II: Site Photographs; Phase I; Pictures No. 31 & 32; Appendix IV: Results Of Particulate Measurements Made During Remediation Activities Near The Westgate Subdivision, Phase II Air Monitoring Report, March 2003, pages 3-2 and 3-3; Appendix IV: Results Of Particulate Measurements Made During Remediation Activities Near The Westgate Subdivision, Phase II Air Monitoring Report, March 2003, last section, Operations Log, last 4 pages).

For greater detail of the PM₁₀ monitoring activities, please see Appendix IV: Results Of Particulate Measurements Made During Remediation Activities Near The Westgate Subdivision, Phase II Air Monitoring Report, March 2003.

4.3 Walk-A-Round Air Monitoring

The second part of the air monitoring program was the walk-a-round monitoring of the ambient air both on-site and off-site during site activities only. The air monitoring was conducted using specialized hand-held instruments. These types of instruments were the same used during the flux chamber air testing that was conducted in the Phase I air monitoring in July 2001. Table 1 below is a list of the instruments used during the remediation activities and what air constituents each one was calibrated to detect:

Table 1: Air Monitoring Instruments

INSTRUMENT	CONSTITUENT
Foxboro TVA 1000	Volatile Organic Compounds PID/FID - ppm
Mini RAE 2000	Volatile Organic Compounds PID/FID - ppm
Jerome 431-X	Mercury - Hg Mg/m ³
Jerome 631-X	Hydrogen Sulfide - H ₂ S ppm
Gastech GT 201	%LEL; ppm; %O ₂
MIE PDR 1000	Dust - Mg/m ³

During the soil remediation activities, twice daily walk-a-round air monitoring was conducted at five sites that were off-site and outside of the fence perimeter using the above mentioned hand-held instruments (See Appendix V: Westgate Walk-A-Round Air Monitoring). Two of these monitoring sites were located in the vicinity of the previous sites that had stationary air monitoring stations during the Phase I air monitoring activities in July 2001. These sites were located near 1701 San Andres, northeast of the work site, and 1412 Berry, east of the work site. Additional off-site monitoring points were located just south of the site on Tasker Street at the bus turn-a-round that was built due to the closure of Tasker Street for the remediation, on the north side of the perimeter near 1401 Tasker, and west of the site entrance near the location of the groundwater monitor well GMW-10.

There were five other monitoring points inside the site perimeter. One point was near groundwater monitor well GMW-7 (monitored twice daily), which is located to the south of the excavation area and the others were the inlet and outlet sample ports of the two carbon air purification beds and inside the fabric structure. The inside of the structure, the inlets, and the outlets of the carbon beds were monitored once a day at the end of each day's activities (**See Appendix V: Westgate Walk-A-Round Air Monitoring**).

The results of the walk-a-round air monitoring did not indicate any detections over the thresholds outlined in the air monitoring plan (**See report: Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan, May 2000, Appendix III, Sections 10.2.3, 10.2.4, 10.3, and 10.3.1, pages 10-2 – 10-10**). Since there were no detections above the thresholds, no response action or adjustments were necessary.

5.0 RECOMMENDATION

With the submission of this report, Shell Exploration and Production Company (Shell E & P) respectfully requests the concurrence of the NMOCD that the requirements of the Westgate Subdivision, Grimes Battery and Tasker Road, Stage 2 Abatement Plan are completed, except for the requirements relating to groundwater. The remaining activities relating to groundwater will continue until the requirements of the NMOCD have been met. All activities associated with groundwater will continue to be reported in the annual groundwater reports submitted to the NMOCD.

APPENDIX I

Soil Data Tables and Laboratory Data
Split With Plaintiffs
September 2001

**Westgate Stage 2 Abatement Plan-
Remediation Activities Report**
Hobbs, New Mexico

Prepared for:
Shell Exploration & Production Company
Houston, Texas

May 2003

Prepared by:
BBC International, Inc.

Appendix 1
BBC's Split with Plaintiffs
September 14, 2001

Table 1

		WSB-03 (P)	WSB-04 (P)
Analyte	Method	Sample : 179360	Sample : 179361
		mg/Kg	mg/Kg
TRPHC	S 418.1	ND	ND

ND = Not Detected.

Appendix I
BBC's Preliminary Sampling
September 18, 2001

Table 2

Analyte	Method	GBN-8 Sample: 179677 mg/Kg	GBN-9 Sample: 179678 mg/Kg	GBN-10 Sample: 179679 mg/Kg	GBN-11 Sample: 179680 mg/Kg	GBN-12 Sample: 179681 mg/Kg	GBN-13 Sample: 179682 mg/Kg	GBN-14 Sample: 179683 mg/Kg	GBN-15 Sample: 179684 mg/Kg	GBN-16 Sample: 179685 mg/Kg	GBN-17 Sample: 179686 mg/Kg
Benzene	S-8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	S-8260B	ND	ND	ND	ND	ND	ND	ND	28.7	ND	ND
Ethylbenzene	S-8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-xylene	S-8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-xylene	S-8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Mercury	S-7471A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRPHC	E-418.1	ND	710	ND	ND	ND	ND	ND	ND	49	88.6
Total Aluminum	S-6010B	8780	9010	8870	9640	5800	5300	8230	6520	6940	7660
Total Antimony	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic	S-6010B	ND	ND	ND	ND	ND	5.67	ND	5.06	ND	ND
Total Barium	S-6010B	114	150	117	122	90	206	144	132	118	159
Total Beryllium	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Boron	S-6010B	44.8	44	37.8	39.3	31.1	23.3	31.7	30.8	35.2	33.2
Total Cadmium	S-6010B	0.665	0.606	0.598	0.604	0.51	0.394	0.571	0.515	0.552	0.526
Total Calcium	S-6010B	65340	49270	89830	82940	18530	183800	87320	120300	52700	90320
Total Chromium	S-6010B	7.06	8.15	7.61	7.74	6.05	4.14	6.58	5.57	6.64	6.34
Total Cobalt	S-6010B	3.29	3.78	3.54	3.31	2.14	2.42	3.12	2.81	3.82	2.99
Total Copper	S-6010B	5.81	7.02	6.22	6.68	4.84	3.54	5.39	3.63	7.86	4.75
Total Iron	S-6010B	7460	8120	7670	8190	5340	4340	7100	5350	5900	6610
Total Lead	S-6010B	5.89	7.83	5.93	5.44	5.55	ND	ND	ND	7.77	6.84
Total Magnesium	S-6010B	3312	3547	3358	3454	2172	2726	3089	2511	2539	3223
Total Manganese	S-6010B	165	226	162	157	126	61.9	134	119	194	128
Total Molybdenum	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nickel	S-6010B	7.54	9.24	8.36	8.64	5.82	5.24	7.48	6.78	8.23	6.92
Total Potassium	S-6010B	2979	3401	3137	3100	2051	1877	2564	1952	2049	2743
Total Selenium	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Silica	S-6010B	420	476	398	378	413	369	366	440	426	411
Total Silver	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Sodium	S-6010B	787	876	820	772	784	790	743	815	742	1294
Total Thallium	S-6010B	ND	ND	ND	ND	ND	ND	ND	2.08	ND	ND
Total Zinc	S-6010B	23.5	28.4	23.6	25.3	24	13.1	19.9	15.7	20.8	19.5

Appendix I
BBC's Split with Plaintiffs
September 18, 2001

Table 3

Analyte	Method	GBN-13P	GBN-14P	GBN-16P	GBN-17P	GBN-18P
		Sample : 179672	Sample : 179673	Sample : 179674	Sample : 179675	Sample : 179676
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	S-8260B	ND	ND	ND	ND	ND
Toluene	S-8260B	ND	ND	ND	ND	ND
Ethylbenzene	S-8260B	ND	ND	ND	ND	ND
m,p-xylene	S-8260B	ND	ND	ND	ND	ND
o-xylene	S-8260B	ND	ND	ND	ND	ND
TRPHC	E-418.1	9720	649	8620	3540	715

ND = Not Detected.

Appendix I

BBC' Bottom Confirmation

September 25, 2001

Table 4

Analyte	Method	GBN-19 Sample : 180301 mg/Kg	GBN-20 Sample : 180302 mg/Kg	GBN-21 Sample : 180303 mg/Kg	GBN-22 Sample : 180304 mg/Kg	GBN-23 Sample : 180305 mg/Kg	GBN-24 Sample : 180306 mg/Kg	GBN-25 Sample : 180307 mg/Kg	GBN-26 Sample : 180308 mg/Kg
Benzene	S-8260B	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	S-8260B	ND	ND	36.30	ND	ND	ND	27.00	ND
Ethylbenzene	S-8260B	ND	ND	ND	ND	ND	ND	ND	ND
m,p-xylene	S-8260B	ND	ND	ND	ND	ND	ND	ND	ND
o-xylene	S-8260B	ND	ND	ND	ND	ND	ND	ND	ND
Total Mercury	S-7471A	ND	ND	ND	ND	ND	ND	ND	ND
TRPHC	E-418.1	ND	ND	ND	ND	ND	ND	ND	ND
TRPHC	E-418.1	--	--	--	--	--	--	48.70	184.00
Total Aluminum	S-6010B	4530	3270	4660	2860	5010	5070	7770	7120
Total Antimony	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic	S-6010B	ND	5.58	ND	5.47	ND	7.19	5.73	ND
Total Barium	S-6010B	127.00	467.00	136.00	538.00	137.00	210.00	116.00	168.00
Total Beryllium	S-6010B	ND	ND	ND	ND	ND	ND	0.14	0.19
Total Boron	S-6010B	12.30	ND	12.90	ND	14.10	14.60	21.50	22.40
Total Cadmium	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND
Total Calcium	S-6010B	202000	231000	167000	191000	126000	196000	58600	72200
Total Chromium	S-6010B	ND	ND	ND	ND	ND	ND	5.80	5.78
Total Cobalt	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND
Total Copper	S-6010B	ND	2.36	ND	ND	2.30	3.63	5.57	5.77
Total Iron	S-6010B	3100.00	2050.00	3670.00	1990.00	3850.00	3990.00	6270.00	6400.00
Total Lead	S-6010B	ND	ND	ND	ND	ND	ND	5.16	8.23
Total Magnesium	S-6010B	4360.00	5860.00	3060.00	3750.00	3360.00	3650.00	3170.00	3760.00
Total Manganese	S-6010B	31.40	18.20	37.10	17.40	43.30	42.00	95.60	98.00
Total Molybdenum	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND
Total Nickel	S-6010B	4.44	5.18	4.79	4.19	4.83	5.46	7.32	7.12
Total Potassium	S-6010B	1420.00	1020.00	1570.00	911.00	1560.00	1810.00	2410.00	2610.00
Total Selenium	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND
Total Silica	S-6010B	104.00	124.00	87.80	99.00	116.00	135.00	230.00	200.00
Total Silver	S-6010B	ND	ND	ND	ND	ND	ND	ND	ND
Total Sodium	S-6010B	1250.00	1270.00	1040.00	969.00	950.00	1200.00	965.00	934.00
Total Thallium	S-6010B	ND	ND	ND	ND	ND	ND	ND	2.77
Total Zinc	S-6010B	8.28	6.43	9.14	5.30	10.50	11.60	22.80	35.90

ND = Not Detected.

Report Date: September 21, 2001
N/A

Order Number: A01091707
Shell Westgate

Page Number: 1 of 1
Hobbs, NM

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: September 21, 2001

Order ID Number: A01091707

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
179360	WSB-03 (P)	Soil	9/14/01	12:15	9/15/01
179361	WSB-04 (P)	Soil	9/14/01	12:17	9/15/01

This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	TPH TRPHC (ppm)
179360 - WSB-03 (P)	<10.0
179361 - WSB-04 (P)	<10.0

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas 79424
El Paso, Texas 79932

800•378•1296
888•588•3443
E-Mail: lab@traceanalysis.com

806•794•1296
915•585•3443

FAX 806•794•1298
FAX 915•585•4944

Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: September 21, 2001

Order ID Number: A01091707

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
179360	WSB-03 (P)	Soil	9/14/01	12:15	9/15/01
179361	WSB-04 (P)	Soil	9/14/01	12:17	9/15/01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 4 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 179360 - WSB-03 (P)

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14144 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12061 Date Prepared: 9/18/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 179361 - WSB-04 (P)

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14143 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Quality Control Report Method Blank

Method Blank QCBatch: QC14143

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Method Blank QCBatch: QC14144

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC14143

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	237	245	mg/Kg	1	250	<10.0	94	3	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC14144

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	249	253	mg/Kg	1	250	<10.0	99	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC14143

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	¹ 312	313	mg/Kg	1	250	<10.0	124	0	70 - 130	20

¹ Matrix spike recovery above limits due to matrix difficulties. LCS/LCSD show analysis in control.

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC14144

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	280	287	mg/Kg	1	250	<10.0	112	2	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC14143

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	100	100	75 - 125	9/20/01

ICV (1) QCBatch: QC14143

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	102	102	75 - 125	9/20/01

CCV (1) QCBatch: QC14144

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	102	102	75 - 125	9/20/01

ICV (1) QCBatch: QC14144

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	103	103	75 - 125	9/20/01

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4/25 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #

Ad 091707

Company Name:

e: ORC International Inc. Phone #: (505) 397-6388

Address: (Street, City, Zip)

Address: (Street, City, Zip)
1324 W. Macland Hobbs, W.M. 88240

Contact Person:

Cliff P. Pearson

Invoice to:

Invoice to: Shell E & P Company Attn: Wayne Hamilton
(If different from above)
Project Name: _____

Project #:		Project Name:	
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Project Name: Shell Westgate

Sampler Signature: _____

Project Location: Hobbs, NM

Sampler Signature: *Ken Sawyer*

[illegible]

Relinquished by:

Date: _____ Time: _____

Received by:

Date: _____ Time: _____

Yes Swine
Relinquished by

Date: 1-14-01 Time: 3:45 pm

Received by:

Date: _____ Time: _____

Relinquished by:

Date: _____ Time: _____

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Date: Time:

Beck, J. W. Bigd 9-13-01 0935

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ANALYSIS REQUEST

(Circle or Specify Method No.)

[illegible]

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Log-in Review

Carrier # BUS 300 0468559

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas 79424
El Paso, Texas 79932

800•378•1296

888•588•3443

806•794•1296

915•585•3443

FAX 806•794•1296

FAX 915•585•4944

E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: September 26, 2001

Order ID Number: A01092002

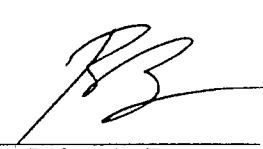
Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
179677	GBN-8	Soil	9/18/01	16:15	9/19/01
179678	GBN-9	Soil	9/18/01	16:20	9/19/01
179679	GBN-10	Soil	9/18/01	16:35	9/19/01
179680	GBN-11	Soil	9/18/01	16:44	9/19/01
179681	GBN-12	Soil	9/18/01	16:52	9/19/01
179682	GBN-13	Soil	9/18/01	17:00	9/19/01
179683	GBN-14	Soil	9/18/01	:	9/19/01
179684	GBN-15	Soil	9/18/01	:	9/19/01
179685	GBN-16	Soil	9/18/01	:	9/19/01
179686	GBN-17	Soil	9/18/01	:	9/19/01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 21 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.


Dr. Blair Leftwich, Director

Analytical Report

Sample: 179677 - GBN-8

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14199 Date Analyzed: 9/22/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12106 Date Prepared: 9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.1	µg/Kg	1	50	98	90 - 112
Toluene-d8		50.07	µg/Kg	1	50	100	91 - 107
4-Bromofluorobenzene		48.02	µg/Kg	1	50	96	83 - 110

Sample: 179677 - GBN-8

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14259 Date Analyzed: 9/25/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12158 Date Prepared: 9/24/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 179677 - GBN-8

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14143 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 179677 - GBN-8

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14243 Date Analyzed: 9/24/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12075 Date Prepared: 9/21/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		8780	mg/Kg	10000	0.50
Total Antimony		<2.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		114	mg/Kg	100	0.05
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		44.8	mg/Kg	1000	0.02
Total Cadmium		0.665	mg/Kg	100	0.002
Total Calcium		65340	mg/Kg	1	0.50
Total Chromium		7.06	mg/Kg	100	0.05

Continued ...

... Continued Sample: 179677 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Cobalt		3.29	mg/Kg	100	0.02
Total Copper		5.81	mg/Kg	100	0.02
Total Iron		7460	mg/Kg	10000	0.05
Total Lead		5.89	mg/Kg	100	0.05
Total Magnesium		3312	mg/Kg	1	0.50
Total Manganese		165	mg/Kg	1000	0.01
Total Molybdenum		<2.00	mg/Kg	100	0.10
Total Nickel		7.54	mg/Kg	100	0.05
Total Potassium		2979	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.05
Total Silica		420	mg/Kg	1000	0.05
Total Silver		<0.50	mg/Kg	100	0.01
Total Sodium		787	mg/Kg	1	0.50
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		23.5	mg/Kg	100	0.10

Sample: 179678 - GBN-9

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14199 Date Analyzed: 9/22/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12106 Date Prepared: 9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.86	µg/Kg	1	50	97	90 - 112
Toluene-d8		49.78	µg/Kg	1	50	99	91 - 107
4-Bromofluorobenzene		47.87	µg/Kg	1	50	95	83 - 110

Sample: 179678 - GBN-9

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14259 Date Analyzed: 9/25/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12158 Date Prepared: 9/24/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 179678 - GBN-9

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14143 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		710	mg/Kg	1	10

Sample: 179678 - GBN-9

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14243 Date Analyzed: 9/24/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12075 Date Prepared: 9/21/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		9010	mg/Kg	10000	0.50
Total Antimony		<2.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		150	mg/Kg	100	0.05
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		44	mg/Kg	1000	0.02
Total Cadmium		0.606	mg/Kg	100	0.002
Total Calcium		49270	mg/Kg	1	0.50
Total Chromium		8.15	mg/Kg	100	0.05
Total Cobalt		3.78	mg/Kg	100	0.02
Total Copper		7.02	mg/Kg	100	0.02
Total Iron		8120	mg/Kg	10000	0.05
Total Lead		7.83	mg/Kg	100	0.05
Total Magnesium		3547	mg/Kg	1	0.50
Total Manganese		226	mg/Kg	1000	0.01
Total Molybdenum		<2.00	mg/Kg	100	0.10
Total Nickel		9.24	mg/Kg	100	0.05
Total Potassium		3401	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.05
Total Silica		476	mg/Kg	1000	0.05
Total Silver		<0.50	mg/Kg	100	0.01
Total Sodium		876	mg/Kg	1	0.50
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		28.4	mg/Kg	100	0.10

Sample: 179679 - GBN-10

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14199 Date Analyzed: 9/22/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12106 Date Prepared: 9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.94	µg/Kg	1	50	97	90 - 112
Toluene-d8		49.84	µg/Kg	1	50	99	91 - 107
4-Bromofluorobenzene		48.21	µg/Kg	1	50	96	83 - 110

Sample: 179679 - GBN-10

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14259 Date Analyzed: 9/25/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12158 Date Prepared: 9/24/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 179679 - GBN-10

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14142 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 179679 - GBN-10

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14243 Date Analyzed: 9/24/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12075 Date Prepared: 9/21/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		8870	mg/Kg	10000	0.50
Total Antimony		<2.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		117	mg/Kg	100	0.05
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		37.8	mg/Kg	1000	0.02
Total Cadmium		0.598	mg/Kg	100	0.002
Total Calcium		89830	mg/Kg	1	0.50
Total Chromium		7.61	mg/Kg	100	0.05
Total Cobalt		3.54	mg/Kg	100	0.02
Total Copper		6.22	mg/Kg	100	0.02
Total Iron		7670	mg/Kg	10000	0.05
Total Lead		5.93	mg/Kg	100	0.05
Total Magnesium		3358	mg/Kg	1	0.50
Total Manganese		162	mg/Kg	1000	0.01
Total Molybdenum		<2.00	mg/Kg	100	0.10
Total Nickel		8.36	mg/Kg	100	0.05
Total Potassium		3137	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.05
Total Silica		398	mg/Kg	1000	0.05
Total Silver		<0.50	mg/Kg	100	0.01
Total Sodium		820	mg/Kg	1	0.50
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		23.6	mg/Kg	100	0.10

Sample: 179680 - GBN-11

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14199 Date Analyzed: 9/22/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12106 Date Prepared: 9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.74	µg/Kg	1	50	97	90 - 112
Toluene-d8		50	µg/Kg	1	50	100	91 - 107
4-Bromofluorobenzene		47.93	µg/Kg	1	50	95	83 - 110

Sample: 179680 - GBN-11

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14259 Date Analyzed: 9/25/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12158 Date Prepared: 9/24/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 179680 - GBN-11

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14142 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 179680 - GBN-11

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14243 Date Analyzed: 9/24/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12075 Date Prepared: 9/21/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		9640	mg/Kg	10000	0.50
Total Antimony		<2.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		122	mg/Kg	100	0.05
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		39.3	mg/Kg	1000	0.02
Total Cadmium		0.604	mg/Kg	100	0.002
Total Calcium		82940	mg/Kg	1	0.50
Total Chromium		7.74	mg/Kg	100	0.05
Total Cobalt		3.31	mg/Kg	100	0.02
Total Copper		6.68	mg/Kg	100	0.02
Total Iron		8190	mg/Kg	10000	0.05
Total Lead		5.44	mg/Kg	100	0.05
Total Magnesium		3454	mg/Kg	1	0.50
Total Manganese		157	mg/Kg	1000	0.01
Total Molybdenum		<2.00	mg/Kg	100	0.10
Total Nickel		8.64	mg/Kg	100	0.05
Total Potassium		3100	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.05
Total Silica		378	mg/Kg	1000	0.05
Total Silver		<0.50	mg/Kg	100	0.01
Total Sodium		772	mg/Kg	1	0.50
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		25.3	mg/Kg	100	0.10

Sample: 179681 - GBN-12

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14199 Date Analyzed: 9/22/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12106 Date Prepared: 9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.62	µg/Kg	1	50	99	90 - 112
Toluene-d8		49.69	µg/Kg	1	50	99	91 - 107
4-Bromofluorobenzene		48.03	µg/Kg	1	50	96	83 - 110

Sample: 179681 - GBN-12

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14259 Date Analyzed: 9/25/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12158 Date Prepared: 9/24/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 179681 - GBN-12

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14142 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 179681 - GBN-12

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14243 Date Analyzed: 9/24/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12075 Date Prepared: 9/21/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		5800	mg/Kg	10000	0.50
Total Antimony		<2.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		90.0	mg/Kg	100	0.05
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		31.1	mg/Kg	1000	0.02
Total Cadmium		0.51	mg/Kg	100	0.002
Total Calcium		18530	mg/Kg	1	0.50
Total Chromium		6.05	mg/Kg	100	0.05
Total Cobalt		2.14	mg/Kg	100	0.02
Total Copper		4.84	mg/Kg	100	0.02
Total Iron		5340	mg/Kg	10000	0.05
Total Lead		5.55	mg/Kg	100	0.05

Continued ...

... Continued Sample: 179681 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Magnesium		2172	mg/Kg	1	0.50
Total Manganese		126	mg/Kg	1000	0.01
Total Molybdenum		<2.00	mg/Kg	100	0.10
Total Nickel		5.82	mg/Kg	100	0.05
Total Potassium		2051	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.05
Total Silica		413	mg/Kg	1000	0.05
Total Silver		<0.50	mg/Kg	100	0.01
Total Sodium		784	mg/Kg	1	0.50
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		24.0	mg/Kg	100	0.10

Sample: 179682 - GBN-13

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14199 Date Analyzed: 9/22/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12106 Date Prepared: 9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.98	µg/Kg	1	50	97	90 - 112
Toluene-d8		50.12	µg/Kg	1	50	100	91 - 107
4-Bromofluorobenzene		48.48	µg/Kg	1	50	96	83 - 110

Sample: 179682 - GBN-13

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14259 Date Analyzed: 9/25/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12158 Date Prepared: 9/24/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 179682 - GBN-13

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14142 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 179682 - GBN-13

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14243 Date Analyzed: 9/24/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12075 Date Prepared: 9/21/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		5300	mg/Kg	10000	0.50
Total Antimony		<2.00	mg/Kg	100	0.05
Total Arsenic		5.67	mg/Kg	100	0.05
Total Barium		206	mg/Kg	100	0.05
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		23.3	mg/Kg	1000	0.02
Total Cadmium		0.394	mg/Kg	100	0.002
Total Calcium		183800	mg/Kg	1	0.50
Total Chromium		4.14	mg/Kg	100	0.05
Total Cobalt		2.42	mg/Kg	100	0.02
Total Copper		3.54	mg/Kg	100	0.02
Total Iron		4340	mg/Kg	10000	0.05
Total Lead		<5.00	mg/Kg	100	0.05
Total Magnesium		2726	mg/Kg	1	0.50
Total Manganese		61.9	mg/Kg	1000	0.01
Total Molybdenum		<2.00	mg/Kg	100	0.10
Total Nickel		5.24	mg/Kg	100	0.05
Total Potassium		1877	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.05
Total Silica		369	mg/Kg	1000	0.05
Total Silver		<0.50	mg/Kg	100	0.01
Total Sodium		790	mg/Kg	1	0.50
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		13.1	mg/Kg	100	0.10

Sample: 179683 - GBN-14

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14199 Date Analyzed: 9/22/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12106 Date Prepared: 9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.18	µg/Kg	1	50	98	90 - 112
Toluene-d8		49.86	µg/Kg	1	50	99	91 - 107
4-Bromofluorobenzene		47.56	µg/Kg	1	50	95	83 - 110

Sample: 179683 - GBN-14

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14259 Date Analyzed: 9/25/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12158 Date Prepared: 9/24/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 179683 - GBN-14

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14142 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 179683 - GBN-14

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14243 Date Analyzed: 9/24/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12075 Date Prepared: 9/21/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		8230	mg/Kg	10000	0.50
Total Antimony		<2.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		144	mg/Kg	100	0.05
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		31.7	mg/Kg	1000	0.02
Total Cadmium		0.571	mg/Kg	100	0.002
Total Calcium		87320	mg/Kg	1	0.50
Total Chromium		6.58	mg/Kg	100	0.05
Total Cobalt		3.12	mg/Kg	100	0.02
Total Copper		5.39	mg/Kg	100	0.02
Total Iron		7100	mg/Kg	10000	0.05
Total Lead		<5.00	mg/Kg	100	0.05
Total Magnesium		3089	mg/Kg	1	0.50
Total Manganese		134	mg/Kg	1000	0.01
Total Molybdenum		<2.00	mg/Kg	100	0.10
Total Nickel		7.48	mg/Kg	100	0.05
Total Potassium		2564	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.05
Total Silica		366	mg/Kg	1000	0.05
Total Silver		<0.50	mg/Kg	100	0.01
Total Sodium		743	mg/Kg	1	0.50
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		19.9	mg/Kg	100	0.10

Sample: 179684 - GBN-15

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14199 Date Analyzed: 9/22/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12106 Date Prepared: 9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		28.7	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.11	µg/Kg	1	50	98	90 - 112

Continued ...

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Toluene-d8		49.77	µg/Kg	1	50	99	91 - 107
4-Bromofluorobenzene		47.57	µg/Kg	1	50	95	83 - 110

Sample: 179684 - GBN-15

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14259 Date Analyzed: 9/25/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12158 Date Prepared: 9/24/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 179684 - GBN-15

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14142 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 179684 - GBN-15

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14243 Date Analyzed: 9/24/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12075 Date Prepared: 9/21/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		6520	mg/Kg	10000	0.50
Total Antimony		<2.00	mg/Kg	100	0.05
Total Arsenic		5.06	mg/Kg	100	0.05
Total Barium		132	mg/Kg	100	0.05
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		30.8	mg/Kg	1000	0.02
Total Cadmium		0.515	mg/Kg	100	0.002
Total Calcium		120300	mg/Kg	1	0.50
Total Chromium		5.57	mg/Kg	100	0.05
Total Cobalt		2.81	mg/Kg	100	0.02
Total Copper		3.63	mg/Kg	100	0.02
Total Iron		5350	mg/Kg	10000	0.05
Total Lead		<5.00	mg/Kg	100	0.05
Total Magnesium		2511	mg/Kg	1	0.50
Total Manganese		119	mg/Kg	1000	0.01
Total Molybdenum		<2.00	mg/Kg	100	0.10
Total Nickel		6.78	mg/Kg	100	0.05
Total Potassium		1952	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.05
Total Silica		440	mg/Kg	1000	0.05
Total Silver		<0.50	mg/Kg	100	0.01
Total Sodium		815	mg/Kg	1	0.50
Total Thallium		2.08	mg/Kg	100	0.02
Total Zinc		15.7	mg/Kg	100	0.10

Sample: 179685 - GBN-16

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14199 Date Analyzed: 9/22/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12106 Date Prepared: 9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.78	µg/Kg	1	50	97	90 - 112
Toluene-d8		49.79	µg/Kg	1	50	99	91 - 107
4-Bromofluorobenzene		47.93	µg/Kg	1	50	95	83 - 110

Sample: 179685 - GBN-16

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14259 Date Analyzed: 9/25/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12158 Date Prepared: 9/24/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 179685 - GBN-16

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14142 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		49	mg/Kg	1	10

Sample: 179685 - GBN-16

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14243 Date Analyzed: 9/24/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12075 Date Prepared: 9/21/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		6940	mg/Kg	10000	0.50
Total Antimony		<2.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		118	mg/Kg	100	0.05
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		35.2	mg/Kg	1000	0.02
Total Cadmium		0.552	mg/Kg	100	0.002
Total Calcium		52700	mg/Kg	1	0.50
Total Chromium		6.64	mg/Kg	100	0.05
Total Cobalt		3.82	mg/Kg	100	0.02
Total Copper		7.86	mg/Kg	100	0.02
Total Iron		5900	mg/Kg	10000	0.05
Total Lead		7.77	mg/Kg	100	0.05

Continued ...

... Continued Sample: 179685 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Magnesium		2539	mg/Kg	1	0.50
Total Manganese		194	mg/Kg	1000	0.01
Total Molybdenum		<2.00	mg/Kg	100	0.10
Total Nickel		8.23	mg/Kg	100	0.05
Total Potassium		2049	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.05
Total Silica		426	mg/Kg	1000	0.05
Total Silver		<0.50	mg/Kg	100	0.01
Total Sodium		742	mg/Kg	1	0.50
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		20.8	mg/Kg	100	0.10

Sample: 179686 - GBN-17

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14199 Date Analyzed: 9/22/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12106 Date Prepared: 9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.08	µg/Kg	1	50	98	90 - 112
Toluene-d8		49.90	µg/Kg	1	50	99	91 - 107
4-Bromofluorobenzene		48.10	µg/Kg	1	50	96	83 - 110

Sample: 179686 - GBN-17

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14259 Date Analyzed: 9/25/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12158 Date Prepared: 9/24/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 179686 - GBN-17

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14142 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		88.6	mg/Kg	1	10

Sample: 179686 - GBN-17

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14243 Date Analyzed: 9/24/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12075 Date Prepared: 9/21/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7660	mg/Kg	10000	0.50
Total Antimony		<2.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		159	mg/Kg	100	0.05
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		33.2	mg/Kg	1000	0.02
Total Cadmium		0.526	mg/Kg	100	0.002
Total Calcium		90320	mg/Kg	1	0.50
Total Chromium		6.34	mg/Kg	100	0.05
Total Cobalt		2.99	mg/Kg	100	0.02
Total Copper		4.75	mg/Kg	100	0.02
Total Iron		6610	mg/Kg	10000	0.05
Total Lead		6.84	mg/Kg	100	0.05
Total Magnesium		3223	mg/Kg	1	0.50
Total Manganese		128	mg/Kg	1000	0.01
Total Molybdenum		<2.00	mg/Kg	100	0.10
Total Nickel		6.92	mg/Kg	100	0.05
Total Potassium		2743	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.05
Total Silica		411	mg/Kg	1000	0.05
Total Silver		<0.50	mg/Kg	100	0.01
Total Sodium		1294	mg/Kg	1	0.50
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		19.5	mg/Kg	100	0.10

Quality Control Report Method Blank

Method Blank QCBatch: QC14142

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Method Blank QCBatch: QC14143

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Method Blank QCBatch: QC14199

Param	Flag	Results	Units	Reporting Limit
Benzene		<25.0	µg/Kg	1
Toluene		<25.0	µg/Kg	1
Ethylbenzene		<25.0	µg/Kg	1
m,p-Xylene		<25.0	µg/Kg	1
o-Xylene		<25.0	µg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.61	µg/Kg	1	50	95	90 - 112
Toluene-d8		49.62	µg/Kg	1	50	99	91 - 107
4-Bromofluorobenzene		48.36	µg/Kg	1	50	96	83 - 110

Method Blank QCBatch: QC14243

Param	Flag	Results	Units	Reporting Limit
Total Aluminum		<1.00	mg/Kg	0.50
Total Antimony		<0.050	mg/Kg	0.05
Total Arsenic		<0.050	mg/Kg	0.05
Total Barium		<0.050	mg/Kg	0.05
Total Beryllium		<0.001	mg/Kg	0.001
Total Boron		<0.100	mg/Kg	0.02
Total Cadmium		<0.020	mg/Kg	0.002
Total Calcium		<1.00	mg/Kg	0.50
Total Chromium		<0.050	mg/Kg	0.05
Total Cobalt		<0.040	mg/Kg	0.02
Total Copper		<0.020	mg/Kg	0.02
Total Iron		<2.00	mg/Kg	0.05

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Param	Flag	Results	Units	Reporting Limit
Total Lead		<0.050	mg/Kg	0.05
Total Magnesium		<1.00	mg/Kg	0.50
Total Manganese		<0.10	mg/Kg	0.01
Total Molybdenum		<0.020	mg/Kg	0.10
Total Nickel		<0.02	mg/Kg	0.05
Total Potassium		<1.00	mg/Kg	0.50
Total Selenium		<0.050	mg/Kg	0.05
Total Silica		<1.00	mg/Kg	0.05
Total Silver		<0.010	mg/Kg	0.01
Total Sodium		<5.00	mg/Kg	0.50
Total Thallium		<0.020	mg/Kg	0.02
Total Zinc		<0.050	mg/Kg	0.10

Method Blank

QCBatch: QC14259

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.19	mg/Kg	0.19

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC14142

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	217	246	mg/Kg	1	250	<10.0	86	12	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC14143

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	237	245	mg/Kg	1	250	<10.0	94	3	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC14199

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	96	97	µg/Kg	1	100	<25.0	96	1	78 - 120	20
Benzene	100	99	µg/Kg	1	100	<25.0	100	1	75 - 118	20
Trichloroethene (TCE)	93	93	µg/Kg	1	100	<25.0	93	0	71 - 106	20

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Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Toluene	98	97	µg/Kg	1	100	<25.0	98	1	75 - 115	20
Chlorobenzene	98	98	µg/Kg	1	100	<25.0	98	0	81 - 112	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	49.76	49.42	µg/Kg	1	50	99	98	90 - 112
Toluene-d8	50.37	50.17	µg/Kg	1	50	100	100	91 - 107
4-Bromofluorobenzene	49.79	49.01	µg/Kg	1	50	99	98	83 - 110

Laboratory Control Spikes

QCBatch: QC14243

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	91.6	92.6	mg/Kg	100	100	<1.00	91	1	80 - 120	20
Total Antimony	22.7	23.7	mg/Kg	100	25	<0.050	90	4	80 - 120	20
Total Arsenic	51.0	50.1	mg/Kg	100	50	<0.050	102	1	80 - 120	20
Total Barium	98.8	97.0	mg/Kg	100	100	<0.050	98	1	80 - 120	20
Total Beryllium	2.39	2.34	mg/Kg	100	2.50	<0.001	95	2	80 - 120	20
Total Boron	5.48	5.40	mg/Kg	100	5	<0.100	109	0	80 - 120	20
Total Cadmium	24.1	23.9	mg/Kg	100	25	<0.020	96	1	80 - 120	20
Total Calcium	10000	10130	mg/Kg	1	10000	<1.00	100	2	80 - 120	20
Total Chromium	9.97	9.92	mg/Kg	100	10	<0.050	99	0	80 - 120	20
Total Cobalt	24.6	24.6	mg/Kg	100	25	<0.040	98	0	80 - 120	20
Total Copper	13.8	12.9	mg/Kg	100	12.50	<0.020	110	6	80 - 120	20
Total Iron	107	109	mg/Kg	100	100	<2.00	107	0	80 - 120	20
Total Lead	48.8	48.4	mg/Kg	100	50	<0.050	97	0	80 - 120	20
Total Magnesium	10240	10000	mg/Kg	1	10000	<1.00	102	4	80 - 120	20
Total Manganese	23.6	23.6	mg/Kg	100	25	<0.10	94	0	80 - 120	20
Total Molybdenum	49.6	49.2	mg/Kg	100	50	<0.020	99	0	80 - 120	20
Total Nickel	26.2	24.9	mg/Kg	100	25	<0.02	104	2	80 - 120	20
Total Potassium	9476	9408	mg/Kg	1	10000	<1.00	94	0	80 - 120	20
Total Selenium	38.8	39.6	mg/Kg	100	50	<0.050	80	4	80 - 120	20
Total Silica	81.2	85.2	mg/Kg	100	100	<1.00	81	2	80 - 120	20
Total Silver	11.8	11.5	mg/Kg	100	12.50	<0.010	94	1	80 - 120	20
Total Sodium	9958	10080	mg/Kg	1	10000	<5.00	100	1	80 - 120	20
Total Thallium	44.8	44.5	mg/Kg	100	50	<0.020	89	0	80 - 120	20
Total Zinc	27.4	27.0	mg/Kg	100	25	<0.050	109	0	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC14259

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.48	2.57	mg/Kg	1	2.50	<0.19	99	3	83 - 124	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report

Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC14142

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	204	202	mg/Kg	1	250	<10.0	81	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC14143

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	¹ 312	313	mg/Kg	1	250	<10.0	124	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC14243

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	² 10900	³ 11300	mg/Kg	10000	10000	8780	21	17	75 - 125	20
Total Antimony	⁴ 11.5	⁵ 10.4	mg/Kg	100	25	<2.00	46	10	75 - 125	20
Total Arsenic	52.1	50.7	mg/Kg	100	50	<5.00	104	2	75 - 125	20
Total Barium	206	203	mg/Kg	100	100	114	91	3	75 - 125	20
Total Beryllium	1.97	2.02	mg/Kg	100	2.50	<0.100	78	2	75 - 125	20
Total Boron	⁶ 55.7	⁷ 49.4	mg/Kg	1000	5	44.8	0	0	75 - 125	20
Total Cadmium	21.8	22.2	mg/Kg	100	25	0.665	84	1	75 - 125	20
Total Calcium	⁸ 94340	⁹ 84800	mg/Kg	1	10000	65340	290	39	75 - 125	20
Total Chromium	18.0	18.1	mg/Kg	100	10	7.06	109	0	75 - 125	20
Total Cobalt	25.8	25.9	mg/Kg	100	25	3.29	90	0	75 - 125	20
Total Copper	18.3	18.3	mg/Kg	100	12.50	5.81	99	0	75 - 125	20
Total Iron	¹⁰ 8540	¹¹ 9130	mg/Kg	10000	10000	7460	108	42	75 - 125	20
Total Lead	51.1	52.1	mg/Kg	100	50	5.89	90	2	75 - 125	20
Total Magnesium	12760	12620	mg/Kg	1	10000	3312	94	1	75 - 125	20
Total Manganese	¹² 211	190	mg/Kg	1000	25	165	184	59	75 - 125	20
Total Molybdenum	45.3	45.3	mg/Kg	100	50	<2.00	90	0	75 - 125	20
Total Nickel	31.0	31.4	mg/Kg	100	25	7.54	92	1	75 - 125	20

Continued ...

¹ Matrix spike recovery above limits due to matrix difficulties. LCS/LCSD show analysis in control.

² Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

³ Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

⁴ Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.

⁵ Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.

⁶ Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

⁷ Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

⁸ MATRIX SPIKES INVALID DUE TO REQUIRED DILUTIONS. USE LCS AND LCSD TO SHOW RUN UNDER CONTROL.

⁹ MATRIX SPOKES INVALID DUE TO REQUIRED DILUTIONS. USE LCS AND LCSD TO SHOW RUN UNDER CONTROL.

¹⁰ Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

¹¹ Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

¹² Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

... Continued

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Potassium	12130	12330	mg/Kg	1	10000	2979	91	2	75 - 125	20
Total Selenium	36.7	36.4	mg/Kg	100	50	<1.00	73	0	75 - 125	20
Total Silica	¹³ 566	¹⁴ 511	mg/Kg	1000	50	420	292	46	75 - 125	20
Total Silver	11.2	11.2	mg/Kg	100	12.50	<0.50	89	0	75 - 125	20
Total Sodium	11140	11140	mg/Kg	1	10000	787	103	0	75 - 125	20
Total Thallium	37.8	39.5	mg/Kg	100	50	<2.00	75	4	75 - 125	20
Total Zinc	46.2	46.3	mg/Kg	100	25	23.5	90	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC14259

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.58	2.53	mg/Kg	1	2.50	<0.19	103	1	83 - 124	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report

Continuing Calibration Verification Standards

CCV (1) QCBatch: QC14142

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	98.6	98	75 - 125	9/20/01

ICV (1) QCBatch: QC14142

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	98.7	98	75 - 125	9/20/01

CCV (1) QCBatch: QC14143

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	100	100	75 - 125	9/20/01

¹³Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

¹⁴Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

ICV (1)

QCBatch: QC14143

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	102	102	75 - 125	9/20/01

CCV (1)

QCBatch: QC14199

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/Kg	100	87	87	80 - 120	9/22/01
1,1-Dichloroethene		µg/Kg	100	85	85	80 - 120	9/22/01
Chloroform		µg/Kg	100	94	94	80 - 120	9/22/01
1,2-Dichloropropane		µg/Kg	100	92	92	80 - 120	9/22/01
Toluene		µg/Kg	100	90	90	80 - 120	9/22/01
Chlorobenzene		µg/Kg	100	90	90	80 - 120	9/22/01
Ethylbenzene		µg/Kg	100	92	92	80 - 120	9/22/01
Dibromofluoromethane		µg/Kg	50	51.26	102	80 - 120	9/22/01
Toluene-d8		µg/Kg	50	49.73	99	80 - 120	9/22/01
4-Bromofluorobenzene		µg/Kg	50	50.90	101	80 - 120	9/22/01

CCV (1)

QCBatch: QC14243

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/L	2	1.92	96	90 - 110	9/24/01
Total Antimony		mg/L	0.50	0.510	102	90 - 110	9/24/01
Total Arsenic		mg/L	1	0.975	98	90 - 110	9/24/01
Total Barium		mg/L	2	1.97	98	90 - 110	9/24/01
Total Beryllium		mg/L	0.05	0.0492	98	90 - 110	9/24/01
Total Boron		mg/L	0.10	0.0987	99	90 - 110	9/24/01
Total Cadmium		mg/L	0.50	0.496	99	90 - 110	9/24/01
Total Calcium		mg/L	25	26.0	104	90 - 110	9/24/01
Total Chromium		mg/L	0.20	0.199	100	90 - 110	9/24/01
Total Cobalt		mg/L	0.50	0.500	100	90 - 110	9/24/01
Total Copper		mg/L	0.25	0.245	98	90 - 110	9/24/01
Total Iron		mg/L	1	0.997	99	90 - 110	9/24/01
Total Lead		mg/L	1	0.993	99	90 - 110	9/24/01
Total Magnesium		mg/L	25	24.6	98	90 - 110	9/24/01
Total Manganese		mg/L	0.50	0.499	99	90 - 110	9/24/01
Total Molybdenum		mg/L	1	0.995	100	90 - 110	9/24/01
Total Nickel		mg/L	0.50	0.491	96	90 - 110	9/24/01
Total Potassium		mg/L	25	24.6	98	90 - 110	9/24/01
Total Selenium		mg/L	1	0.980	98	90 - 110	9/24/01
Total Silica		mg/L	1	0.980	98	90 - 110	9/24/01
Total Silver		mg/L	0.25	0.247	99	90 - 110	9/24/01
Total Sodium		mg/L	25	24.2	96	90 - 110	9/24/01
Total Thallium		mg/L	1	0.950	95	90 - 110	9/24/01
Total Zinc		mg/L	0.50	0.494	99	90 - 110	9/24/01

ICV (1) QCBatch: QC14243

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/L	2	1.92	96	90 - 110	9/24/01
Total Antimony		mg/L	0.50	0.496	99	90 - 110	9/24/01
Total Arsenic		mg/L	1	1.00	100	90 - 110	9/24/01
Total Barium		mg/L	2	1.98	99	90 - 110	9/24/01
Total Beryllium		mg/L	0.05	0.0491	98	90 - 110	9/24/01
Total Boron		mg/L	0.10	0.101	101	90 - 110	9/24/01
Total Cadmium		mg/L	0.50	0.496	99	90 - 110	9/24/01
Total Calcium		mg/L	25	25.6	102	90 - 110	9/24/01
Total Chromium		mg/L	0.20	0.199	100	90 - 110	9/24/01
Total Cobalt		mg/L	0.50	0.501	100	90 - 110	9/24/01
Total Copper		mg/L	0.25	0.245	98	90 - 110	9/24/01
Total Iron		mg/L	1	0.986	98	90 - 110	9/24/01
Total Lead		mg/L	1	0.995	100	90 - 110	9/24/01
Total Magnesium		mg/L	25	26.2	104	90 - 110	9/24/01
Total Manganese		mg/L	0.50	0.495	99	90 - 110	9/24/01
Total Molybdenum		mg/L	1	1.00	100	90 - 110	9/24/01
Total Nickel		mg/L	0.50	0.494	96	90 - 110	9/24/01
Total Potassium		mg/L	25	25.8	103	90 - 110	9/24/01
Total Selenium		mg/L	1	0.981	98	90 - 110	9/24/01
Total Silica		mg/L	1	0.975	97	90 - 110	9/24/01
Total Silver		mg/L	0.25	0.246	98	90 - 110	9/24/01
Total Sodium		mg/L	25	24.9	99	90 - 110	9/24/01
Total Thallium		mg/L	1	0.970	97	90 - 110	9/24/01
Total Zinc		mg/L	0.50	0.496	99	90 - 110	9/24/01

CCV (1) QCBatch: QC14259

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00510	102	80 - 120	9/25/01

ICV (1) QCBatch: QC14259

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00521	104	80 - 120	9/25/01

Page - of 2

155 McCulcheon, Suite F
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # HD/042002

ANALYSIS REQUEST
Circle or Specify Method No.

BTEX 2000	TPH 418. 8260 B
PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 60108/200.7
	TCLP Metals Ag As Ba Cd Cr Pb Se Hg
	TCLP Volatiles
	TCLP Semi Volatiles
	TCLP Pesticides
	HCl
	GC/MS Vol. 8260B/524
	GC/MS Semi. Vol. 8270C/625
	PCBs 8082/608
	Pesticides 8081A/608
	BOD, TSS, pH
	WQEC OGD Metals
	Turn Around Time if different from standard
	Hold

LAB USE ONLY

Remarks: 9/27

Check If Special Reporting Limits Are Needed ☐

3-in Review MS

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

Carrier # PP Service 31378

ORIGINAL COPY

Report Date: September 26, 2001
N/AOrder Number: A01092001
Shell WestgatePage Number: 1 of 2
Hobbs, NM

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: September 26, 2001

Order ID Number: A01092001

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
179672	GBN-13P	Soil	9/18/01	17:00	9/19/01
179673	GBN-14P	Soil	9/18/01	17:10	9/19/01
179674	GBN-16P	Soil	9/18/01	17:17	9/19/01
179675	GBN-17P	Soil	9/18/01	17:20	9/19/01
179676	GBN-18P	Soil	9/18/01	17:32	9/19/01

This report consists of a total of 2 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	TPH TRPHC (ppm)
179672 - GBN-13P	9720
179673 - GBN-14P	649
179674 - GBN-16P	8620
179675 - GBN-17P	3540
179676 - GBN-18P	715

Sample: 179672 - GBN-13P

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

Sample: 179673 - GBN-14P

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

Report Date: September 26, 2001 Order Number: A01092001

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N/A

Shell Westgate

Hobbs, NM

Sample: 179674 - GBN-16P

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

Sample: 179675 - GBN-17P

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

Sample: 179676 - GBN-18P

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas 79424
El Paso, Texas 79932

800•378•1296
888•588•3443

806•794•1296
915•585•3443

FAX 806•794•1298
FAX 915•585•4944

E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: September 26, 2001

Order ID Number: A01092001

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
179672	GBN-13P	Soil	9/18/01	17:00	9/19/01
179673	GBN-14P	Soil	9/18/01	17:10	9/19/01
179674	GBN-16P	Soil	9/18/01	17:17	9/19/01
179675	GBN-17P	Soil	9/18/01	17:20	9/19/01
179676	GBN-18P	Soil	9/18/01	17:32	9/19/01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 7 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 179672 - GBN-13P

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14281 Date Analyzed: 9/25/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12176 Date Prepared: 9/25/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.78	µg/Kg	1	50	103	90 - 112
Toluene-d8		50.4	µg/Kg	1	50	100	91 - 107
4-Bromofluorobenzene		48.11	µg/Kg	1	50	96	83 - 110

Sample: 179672 - GBN-13P

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14143 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		9720	mg/Kg	1	10

Sample: 179673 - GBN-14P

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14281 Date Analyzed: 9/25/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12176 Date Prepared: 9/25/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.16	µg/Kg	1	50	104	90 - 112
Toluene-d8		51.19	µg/Kg	1	50	102	91 - 107
4-Bromofluorobenzene		49.42	µg/Kg	1	50	98	83 - 110

Sample: 179673 - GBN-14P

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14143 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Report Date: September 26, 2001
N/A

Order Number: A01092001
Shell Westgate

Page Number: 3 of 7
Hobbs,NM

Param	Flag	Result	Units	Dilution	RDL
TRPHC		649	mg/Kg	1	10

Sample: 179674 - GBN-16P

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14281 Date Analyzed: 9/25/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12176 Date Prepared: 9/25/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.09	µg/Kg	1	50	104	90 - 112
Toluene-d8		50.62	µg/Kg	1	50	101	91 - 107
4-Bromofluorobenzene		47.45	µg/Kg	1	50	94	83 - 110

Sample: 179674 - GBN-16P

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14143 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		8620	mg/Kg	1	10

Sample: 179675 - GBN-17P

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14281 Date Analyzed: 9/25/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12176 Date Prepared: 9/25/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.28	µg/Kg	1	50	102	90 - 112
Toluene-d8		52.02	µg/Kg	1	50	104	91 - 107
4-Bromofluorobenzene		47.61	µg/Kg	1	50	95	83 - 110

Sample: 179675 - GBN-17P

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14143 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Report Date: September 26, 2001
N/A

Order Number: A01092001
Shell Westgate

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Hobbs,NM

Param	Flag	Result	Units	Dilution	RDL
TRPHC		3540	mg/Kg	1	10

Sample: 179676 - GBN-18P

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14281 Date Analyzed: 9/25/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12176 Date Prepared: 9/25/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.39	µg/Kg	1	50	104	90 - 112
Toluene-d8		51.95	µg/Kg	1	50	103	91 - 107
4-Bromofluorobenzene		47.41	µg/Kg	1	50	94	83 - 110

Sample: 179676 - GBN-18P

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14143 Date Analyzed: 9/20/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12057 Date Prepared: 9/20/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		715	mg/Kg	1	10

Quality Control Report Method Blank

Method Blank QCBatch: QC14143

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Method Blank QCBatch: QC14281

Param	Flag	Results	Units	Reporting Limit
Benzene		<25.0	µg/Kg	1
Toluene		<25.0	µg/Kg	1
Ethylbenzene		<25.0	µg/Kg	1
m,p-Xylene		<25.0	µg/Kg	1
o-Xylene		<25.0	µg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		55.48	µg/Kg	1	50	110	90 - 112
Toluene-d8		50.39	µg/Kg	1	50	100	91 - 107
4-Bromofluorobenzene		48.91	µg/Kg	1	50	97	83 - 110

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC14143

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	237	245	mg/Kg	1	250	<10.0	94	3	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC14281

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	119	122	µg/Kg	1	100	<25.0	119	2	78 - 120	20
Benzene	110	109	µg/Kg	1	100	<25.0	110	0	75 - 118	20
Trichloroethene (TCE)	93	93	µg/Kg	1	100	<25.0	93	0	71 - 106	20
Toluene	104	103	µg/Kg	1	100	<25.0	104	0	75 - 115	20
Chlorobenzene	103	103	µg/Kg	1	100	<25.0	103	0	81 - 112	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	52.8	54.0	µg/Kg	1	50	105	108	90 - 112
Toluene-d8	51.1	50.9	µg/Kg	1	50	102	101	91 - 107
4-Bromofluorobenzene	51.6	49.4	µg/Kg	1	50	103	98	83 - 110

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC14143

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	¹ 312	313	mg/Kg	1	250	<10.0	124	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC14281

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	104	104	µg/Kg	1	100	<25.0	104	0	80 - 120	20
Toluene	99	99	µg/Kg	1	100	<25.0	99	0	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
Dibromofluoromethane	50.4	50.8	µg/Kg	1	50	100	101	90 - 112
Toluene-d8	50.3	50.7	µg/Kg	1	50	100	101	91 - 107
4-Bromofluorobenzene	50.9	50.0	µg/Kg	1	50	101	100	83 - 110

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC14143

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	100	100	75 - 125	9/20/01

ICV (1) QCBatch: QC14143

¹Matrix spike recovery above limits due to matrix difficulties. LCS/LCSD show analysis in control.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	102	102	75 - 125	9/20/01

CCV (1)

QCBatch: QC14281

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/Kg	100	97	97	80 - 120	9/25/01
1,1-Dichloroethene		µg/Kg	100	101	101	80 - 120	9/25/01
Chloroform		µg/Kg	100	105	105	80 - 120	9/25/01
1,2-Dichloropropane		µg/Kg	100	99	99	80 - 120	9/25/01
Toluene		µg/Kg	100	94	94	80 - 120	9/25/01
Chlorobenzene		µg/Kg	100	96	96	80 - 120	9/25/01
Ethylbenzene		µg/Kg	100	100	100	80 - 120	9/25/01
Dibromofluoromethane		µg/Kg	50	51.4	102	80 - 120	9/25/01
Toluene-d8		µg/Kg	50	49.9	99	80 - 120	9/25/01
4-Bromofluorobenzene		µg/Kg	50	52.5	105	80 - 120	9/25/01

155 McCulcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Fax (915) 585-4944
1 (888) 588-3443

Phone #:

(505)-397-6388

Fax #:

(505)-397-0397

Contact Person: CLIFF P. BRUNSON

Invoice to: Shell E & P Company Attn: Blake Hamilton
(If different from above)

Project Name:

Shell WcstratC

Sampler Signature: 

Harriet Ann Wallis

[illegible]

Date: _____ Time: _____

Received by:

Date: _____ Time: _____

Time: _____

Date: _____ Time: _____

Received by:

Date: _____ Time: _____

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LAB USE

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Date: _____ Time: _____

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Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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Report Date: October 4, 2001 Order Number: A01092701
N/A Shell Westgate

Page Number: 1 of 7
Hobbs, NM

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: October 4, 2001

Order ID Number: A01092701

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
180301	GBN-19	Soil	9/25/01	16:50	9/26/01
180302	GBN-20	Soil	9/25/01	16:56	9/26/01
180303	GBN-21	Soil	9/25/01	17:05	9/26/01
180304	GBN-22	Soil	9/25/01	17:11	9/26/01
180305	GBN-23	Soil	9/25/01	17:15	9/26/01
180306	GBN-24	Soil	9/25/01	17:30	9/26/01
180307	GBN-25	Soil	9/25/01	17:37	9/26/01
180308	GBN-26	Soil	9/25/01	17:45	9/26/01

This report consists of a total of 7 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	TPH TRPHC (ppm)
180301 - GBN-19	<10.0
180302 - GBN-20	<10.0
180303 - GBN-21	<10.0
180304 - GBN-22	<10.0
180305 - GBN-23	<10.0
180306 - GBN-24	<10.0
180307 - GBN-25	48.7
180308 - GBN-26	184

Sample: 180301 - GBN-19

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg
Total Mercury		<0.19	mg/Kg
Total Aluminum		4530	mg/Kg
Total Antimony		<5.00	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		127	mg/Kg
Total Beryllium		<0.100	mg/Kg

Continued on next page ...

Report Date: October 4, 2001 Order Number: A01092701

N/A

Shell Westgate

Page Number: 2 of 7

Hobbs, NM

Sample 180301 continued ...

Param	Flag	Result	Units
Total Boron		12.3	mg/Kg
Total Cadmium		<2.00	mg/Kg
Total Calcium		202000	mg/Kg
Total Chromium		<5.00	mg/Kg
Total Cobalt		<4.00	mg/Kg
Total Copper		<2.00	mg/Kg
Total Iron		3100	mg/Kg
Total Lead		<5.00	mg/Kg
Total Magnesium		4360	mg/Kg
Total Manganese		31.4	mg/Kg
Total Molybdenum		<2.00	mg/Kg
Total Nickel		4.44	mg/Kg
Total Potassium		1420	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		104	mg/Kg
Total Silver		<1.00	mg/Kg
Total Sodium		1250	mg/Kg
Total Thallium		<2.00	mg/Kg
Total Zinc		8.28	mg/Kg

Sample: 180302 - GBN-20

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg
Total Mercury		<0.19	mg/Kg
Total Aluminum		3270	mg/Kg
Total Antimony		<5.00	mg/Kg
Total Arsenic		5.58	mg/Kg
Total Barium		467	mg/Kg
Total Beryllium		<0.100	mg/Kg
Total Boron		<10.0	mg/Kg
Total Cadmium		<2.00	mg/Kg
Total Calcium		231000	mg/Kg
Total Chromium		<5.00	mg/Kg
Total Cobalt		<4.00	mg/Kg
Total Copper		2.36	mg/Kg
Total Iron		2050	mg/Kg
Total Lead		<5.00	mg/Kg
Total Magnesium		5860	mg/Kg
Total Manganese		18.2	mg/Kg
Total Molybdenum		<2.00	mg/Kg
Total Nickel		5.18	mg/Kg
Total Potassium		1020	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		124	mg/Kg
Total Silver		<1.00	mg/Kg
Total Sodium		1270	mg/Kg
Total Thallium		<2.00	mg/Kg

Continued on next page ...

Report Date: October 4, 2001 Order Number: A01092701

Page Number: 3 of 7

N/A

Shell Westgate

Hobbs, NM

Sample 180302 continued ...

Param	Flag	Result	Units
Total Zinc		6.43	mg/Kg

Sample: 180303 - GBN-21

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		36.3	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg
Total Mercury		<0.19	mg/Kg
Total Aluminum		4660	mg/Kg
Total Antimony		<5.00	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		136	mg/Kg
Total Beryllium		<0.100	mg/Kg
Total Boron		12.9	mg/Kg
Total Cadmium		<2.00	mg/Kg
Total Calcium		167000	mg/Kg
Total Chromium		<5.00	mg/Kg
Total Cobalt		<4.00	mg/Kg
Total Copper		<2.00	mg/Kg
Total Iron		3670	mg/Kg
Total Lead		<5.00	mg/Kg
Total Magnesium		3060	mg/Kg
Total Manganese		37.1	mg/Kg
Total Molybdenum		<2.00	mg/Kg
Total Nickel		4.79	mg/Kg
Total Potassium		1570	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		87.8	mg/Kg
Total Silver		<1.00	mg/Kg
Total Sodium		1040	mg/Kg
Total Thallium		<2.00	mg/Kg
Total Zinc		9.14	mg/Kg

Sample: 180304 - GBN-22

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg
Total Mercury		<0.19	mg/Kg
Total Aluminum		2860	mg/Kg
Total Antimony		<5.00	mg/Kg
Total Arsenic		5.47	mg/Kg
Total Barium		538	mg/Kg
Total Beryllium		<0.100	mg/Kg

Continued on next page ...

Report Date: October 4, 2001 Order Number: A01092701

Page Number: 4 of 7

N/A

Shell Westgate

Hobbs, NM

Sample 180304 continued ...

Param	Flag	Result	Units
Total Boron		<10.0	mg/Kg
Total Cadmium		<2.00	mg/Kg
Total Calcium		191000	mg/Kg
Total Chromium		<5.00	mg/Kg
Total Cobalt		<4.00	mg/Kg
Total Copper		<2.00	mg/Kg
Total Iron		1990	mg/Kg
Total Lead		<5.00	mg/Kg
Total Magnesium		3750	mg/Kg
Total Manganese		17.4	mg/Kg
Total Molybdenum		<2.00	mg/Kg
Total Nickel		4.19	mg/Kg
Total Potassium		911	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		99.0	mg/Kg
Total Silver		<1.00	mg/Kg
Total Sodium		969	mg/Kg
Total Thallium		<2.00	mg/Kg
Total Zinc		5.30	mg/Kg

Sample: 180305 - GBN-23

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg
Total Mercury		<0.19	mg/Kg
Total Aluminum		5010	mg/Kg
Total Antimony		<5.00	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		137	mg/Kg
Total Beryllium		<0.100	mg/Kg
Total Boron		14.1	mg/Kg
Total Cadmium		<2.00	mg/Kg
Total Calcium		126000	mg/Kg
Total Chromium		<5.00	mg/Kg
Total Cobalt		<4.00	mg/Kg
Total Copper		2.30	mg/Kg
Total Iron		3850	mg/Kg
Total Lead		<5.00	mg/Kg
Total Magnesium		3360	mg/Kg
Total Manganese		43.3	mg/Kg
Total Molybdenum		<2.00	mg/Kg
Total Nickel		4.83	mg/Kg
Total Potassium		1560	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		116	mg/Kg
Total Silver		<1.00	mg/Kg
Total Sodium		950	mg/Kg
Total Thallium		<2.00	mg/Kg

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Report Date: October 4, 2001 Order Number: A01092701

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N/A

Shell Westgate

Hobbs, NM

Sample 180305 continued ...

Param	Flag	Result	Units
Total Zinc		10.5	mg/Kg

Sample: 180306 - GBN-24

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg
Total Mercury		<0.19	mg/Kg
Total Aluminum		5070	mg/Kg
Total Antimony		<5.00	mg/Kg
Total Arsenic		7.19	mg/Kg
Total Barium		210	mg/Kg
Total Beryllium		<0.100	mg/Kg
Total Boron		14.6	mg/Kg
Total Cadmium		<2.00	mg/Kg
Total Calcium		196000	mg/Kg
Total Chromium		<5.00	mg/Kg
Total Cobalt		<4.00	mg/Kg
Total Copper		3.63	mg/Kg
Total Iron		3990	mg/Kg
Total Lead		<5.00	mg/Kg
Total Magnesium		3650	mg/Kg
Total Manganese		42.0	mg/Kg
Total Molybdenum		<2.00	mg/Kg
Total Nickel		5.46	mg/Kg
Total Potassium		1810	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		135	mg/Kg
Total Silver		<1.00	mg/Kg
Total Sodium		1200	mg/Kg
Total Thallium		<2.00	mg/Kg
Total Zinc		11.6	mg/Kg

Sample: 180307 - GBN-25

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		27.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg
Total Mercury		<0.19	mg/Kg
Total Aluminum		7770	mg/Kg
Total Antimony		<5.00	mg/Kg
Total Arsenic		5.73	mg/Kg
Total Barium		116	mg/Kg
Total Beryllium		0.141	mg/Kg

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N/A Shell WestgatePage Number: 6 of 7
Hobbs, NM

Sample 180307 continued ...

Param	Flag	Result	Units
Total Boron		21.5	mg/Kg
Total Cadmium		<2.00	mg/Kg
Total Calcium		58600	mg/Kg
Total Chromium		5.80	mg/Kg
Total Cobalt		<4.00	mg/Kg
Total Copper		5.57	mg/Kg
Total Iron		6270	mg/Kg
Total Lead		5.16	mg/Kg
Total Magnesium		3170	mg/Kg
Total Manganese		95.6	mg/Kg
Total Molybdenum		<2.00	mg/Kg
Total Nickel		7.32	mg/Kg
Total Potassium		2410	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		230	mg/Kg
Total Silver		<1.00	mg/Kg
Total Sodium		965	mg/Kg
Total Thallium		<2.00	mg/Kg
Total Zinc		22.8	mg/Kg

Sample: 180308 - GBN-26

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg
Total Mercury		<0.19	mg/Kg
Total Aluminum		7120	mg/Kg
Total Antimony		<5.00	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		168	mg/Kg
Total Beryllium		0.189	mg/Kg
Total Boron		22.4	mg/Kg
Total Cadmium		<2.00	mg/Kg
Total Calcium		72200	mg/Kg
Total Chromium		5.78	mg/Kg
Total Cobalt		<4.00	mg/Kg
Total Copper		5.77	mg/Kg
Total Iron		6400	mg/Kg
Total Lead		8.23	mg/Kg
Total Magnesium		3760	mg/Kg
Total Manganese		98.0	mg/Kg
Total Molybdenum		<2.00	mg/Kg
Total Nickel		7.12	mg/Kg
Total Potassium		2610	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		200	mg/Kg
Total Silver		<1.00	mg/Kg
Total Sodium		934	mg/Kg
Total Thallium		2.77	mg/Kg

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TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

Lubbock, TX 79424-1515

(806) 794-1296

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N/A

Shell Westgate

Hobbs,NM

Sample 180308 continued ...

Param	Flag	Result	Units
Total Zinc		35.9	mg/Kg

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas 79424
El Paso, Texas 79932

800•378•1296
888•588•3443

806•794•1296
915•585•3443

FAX 806•794•1298
FAX 915•585•4944

E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: October 4, 2001

Order ID Number: A01092701

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
180301	GBN-19	Soil	9/25/01	16:50	9/26/01
180302	GBN-20	Soil	9/25/01	16:56	9/26/01
180303	GBN-21	Soil	9/25/01	17:05	9/26/01
180304	GBN-22	Soil	9/25/01	17:11	9/26/01
180305	GBN-23	Soil	9/25/01	17:15	9/26/01
180306	GBN-24	Soil	9/25/01	17:30	9/26/01
180307	GBN-25	Soil	9/25/01	17:37	9/26/01
180308	GBN-26	Soil	9/25/01	17:45	9/26/01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 20 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.


Dr. Blair Leftwich, Director

Analytical Report

Sample: 180301 - GBN-19

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14470 Date Analyzed: 10/1/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12339 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.15	µg/Kg	1	50	94	70 - 130
Toluene-d8		48.31	µg/Kg	1	50	96	70 - 130
4-Bromofluorobenzene		50.82	µg/Kg	1	50	101	70 - 130

Sample: 180301 - GBN-19

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14433 Date Analyzed: 9/28/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12260 Date Prepared: 9/28/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 180301 - GBN-19

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14353 Date Analyzed: 9/27/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12240 Date Prepared: 9/27/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 180301 - GBN-19

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14451 Date Analyzed: 10/1/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12310 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		4530	mg/Kg	100	0.10
Total Antimony		<5.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		127	mg/Kg	100	0.10
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		12.3	mg/Kg	100	0.01
Total Cadmium		<2.00	mg/Kg	100	0.02
Total Calcium		202000	mg/Kg	10000	0.05
Total Chromium		<5.00	mg/Kg	100	0.05

Continued ...

... Continued Sample: 180301 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Cobalt		<4.00	mg/Kg	100	0.04
Total Copper		<2.00	mg/Kg	100	0.02
Total Iron		3100	mg/Kg	100	0.10
Total Lead		<5.00	mg/Kg	100	0.05
Total Magnesium		4360	mg/Kg	10000	0.05
Total Manganese		31.4	mg/Kg	100	0.05
Total Molybdenum		<2.00	mg/Kg	100	0.02
Total Nickel		4.44	mg/Kg	100	0.02
Total Potassium		1420	mg/Kg	10000	0.05
Total Selenium		<5.00	mg/Kg	100	0.05
Total Silica		104	mg/Kg	100	0.05
Total Silver		<1.00	mg/Kg	100	0.01
Total Sodium		1250	mg/Kg	10000	0.05
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		8.28	mg/Kg	100	0.05

Sample: 180302 - GBN-20

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14470 Date Analyzed: 10/1/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12339 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.3	µg/Kg	1	50	102	70 - 130
Toluene-d8		48.34	µg/Kg	1	50	96	70 - 130
4-Bromofluorobenzene		51.4	µg/Kg	1	50	102	70 - 130

Sample: 180302 - GBN-20

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14433 Date Analyzed: 9/28/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12260 Date Prepared: 9/28/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 180302 - GBN-20

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14353 Date Analyzed: 9/27/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12240 Date Prepared: 9/27/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 180302 - GBN-20

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14451 Date Analyzed: 10/1/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12310 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		3270	mg/Kg	100	0.10
Total Antimony		<5.00	mg/Kg	100	0.05
Total Arsenic		5.58	mg/Kg	100	0.05
Total Barium		467	mg/Kg	100	0.10
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		<10.0	mg/Kg	100	0.01
Total Cadmium		<2.00	mg/Kg	100	0.02
Total Calcium		231000	mg/Kg	10000	0.05
Total Chromium		<5.00	mg/Kg	100	0.05
Total Cobalt		<4.00	mg/Kg	100	0.04
Total Copper		2.36	mg/Kg	100	0.02
Total Iron		2050	mg/Kg	100	0.10
Total Lead		<5.00	mg/Kg	100	0.05
Total Magnesium		5860	mg/Kg	10000	0.05
Total Manganese		18.2	mg/Kg	100	0.05
Total Molybdenum		<2.00	mg/Kg	100	0.02
Total Nickel		5.18	mg/Kg	100	0.02
Total Potassium		1020	mg/Kg	10000	0.05
Total Selenium		<5.00	mg/Kg	100	0.05
Total Silica		124	mg/Kg	100	0.05
Total Silver		<1.00	mg/Kg	100	0.01
Total Sodium		1270	mg/Kg	10000	0.05
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		6.43	mg/Kg	100	0.05

Sample: 180303 - GBN-21

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14480 Date Analyzed: 10/2/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12348 Date Prepared: 10/2/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		36.3	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.89	µg/Kg	1	50	95	70 - 130
Toluene-d8		48.39	µg/Kg	1	50	96	70 - 130
4-Bromofluorobenzene		49.49	µg/Kg	1	50	98	70 - 130

Sample: 180303 - GBN-21

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14433 Date Analyzed: 9/28/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12260 Date Prepared: 9/28/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 180303 - GBN-21

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14353 Date Analyzed: 9/27/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12240 Date Prepared: 9/27/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 180303 - GBN-21

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14451 Date Analyzed: 10/1/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12310 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		4660	mg/Kg	100	0.10
Total Antimony		<5.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		136	mg/Kg	100	0.10
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		12.9	mg/Kg	100	0.01
Total Cadmium		<2.00	mg/Kg	100	0.02
Total Calcium		167000	mg/Kg	10000	0.05
Total Chromium		<5.00	mg/Kg	100	0.05
Total Cobalt		<4.00	mg/Kg	100	0.04
Total Copper		<2.00	mg/Kg	100	0.02
Total Iron		3670	mg/Kg	100	0.10
Total Lead		<5.00	mg/Kg	100	0.05
Total Magnesium		3060	mg/Kg	10000	0.05
Total Manganese		37.1	mg/Kg	100	0.05
Total Molybdenum		<2.00	mg/Kg	100	0.02
Total Nickel		4.79	mg/Kg	100	0.02
Total Potassium		1570	mg/Kg	10000	0.05
Total Selenium		<5.00	mg/Kg	100	0.05
Total Silica		87.8	mg/Kg	100	0.05
Total Silver		<1.00	mg/Kg	100	0.01
Total Sodium		1040	mg/Kg	10000	0.05
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		9.14	mg/Kg	100	0.05

Sample: 180304 - GBN-22

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14480 Date Analyzed: 10/2/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12348 Date Prepared: 10/2/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.79	µg/Kg	1	50	97	70 - 130
Toluene-d8		48.89	µg/Kg	1	50	97	70 - 130
4-Bromofluorobenzene		49.72	µg/Kg	1	50	99	70 - 130

Sample: 180304 - GBN-22

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14433 Date Analyzed: 9/28/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12260 Date Prepared: 9/28/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 180304 - GBN-22

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14353 Date Analyzed: 9/27/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12240 Date Prepared: 9/27/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 180304 - GBN-22

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14451 Date Analyzed: 10/1/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12310 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		2860	mg/Kg	100	0.10
Total Antimony		<5.00	mg/Kg	100	0.05
Total Arsenic		5.47	mg/Kg	100	0.05
Total Barium		538	mg/Kg	100	0.10
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		<10.0	mg/Kg	100	0.01
Total Cadmium		<2.00	mg/Kg	100	0.02
Total Calcium		191000	mg/Kg	10000	0.05
Total Chromium		<5.00	mg/Kg	100	0.05
Total Cobalt		<4.00	mg/Kg	100	0.04
Total Copper		<2.00	mg/Kg	100	0.02
Total Iron		1990	mg/Kg	100	0.10
Total Lead		<5.00	mg/Kg	100	0.05
Total Magnesium		3750	mg/Kg	10000	0.05
Total Manganese		17.4	mg/Kg	100	0.05
Total Molybdenum		<2.00	mg/Kg	100	0.02
Total Nickel		4.19	mg/Kg	100	0.02
Total Potassium		911	mg/Kg	10000	0.05
Total Selenium		<5.00	mg/Kg	100	0.05
Total Silica		99.0	mg/Kg	100	0.05
Total Silver		<1.00	mg/Kg	100	0.01
Total Sodium		969	mg/Kg	10000	0.05
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		5.30	mg/Kg	100	0.05

Sample: 180305 - GBN-23

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14470 Date Analyzed: 10/1/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12339 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.2	µg/Kg	1	50	100	70 - 130
Toluene-d8		49.28	µg/Kg	1	50	98	70 - 130
4-Bromofluorobenzene		50.79	µg/Kg	1	50	101	70 - 130

Sample: 180305 - GBN-23

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14433 Date Analyzed: 9/28/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12260 Date Prepared: 9/28/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 180305 - GBN-23

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14353 Date Analyzed: 9/27/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12240 Date Prepared: 9/27/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 180305 - GBN-23

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14451 Date Analyzed: 10/1/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12310 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		5010	mg/Kg	100	0.10
Total Antimony		<5.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		137	mg/Kg	100	0.10
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		14.1	mg/Kg	100	0.01
Total Cadmium		<2.00	mg/Kg	100	0.02
Total Calcium		126000	mg/Kg	10000	0.05
Total Chromium		<5.00	mg/Kg	100	0.05
Total Cobalt		<4.00	mg/Kg	100	0.04
Total Copper		2.30	mg/Kg	100	0.02
Total Iron		3850	mg/Kg	100	0.10
Total Lead		<5.00	mg/Kg	100	0.05

Continued ...

... Continued Sample: 180305 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Magnesium		3360	mg/Kg	10000	0.05
Total Manganese		43.3	mg/Kg	100	0.05
Total Molybdenum		<2.00	mg/Kg	100	0.02
Total Nickel		4.83	mg/Kg	100	0.02
Total Potassium		1560	mg/Kg	10000	0.05
Total Selenium		<5.00	mg/Kg	100	0.05
Total Silica		116	mg/Kg	100	0.05
Total Silver		<1.00	mg/Kg	100	0.01
Total Sodium		950	mg/Kg	10000	0.05
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		10.5	mg/Kg	100	0.05

Sample: 180306 - GBN-24

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14480 Date Analyzed: 10/2/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12348 Date Prepared: 10/2/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.81	µg/Kg	1	50	101	70 - 130
Toluene-d8		49.17	µg/Kg	1	50	98	70 - 130
4-Bromofluorobenzene		48.79	µg/Kg	1	50	97	70 - 130

Sample: 180306 - GBN-24

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14433 Date Analyzed: 9/28/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12260 Date Prepared: 9/28/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 180306 - GBN-24

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14353 Date Analyzed: 9/27/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12240 Date Prepared: 9/27/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 180306 - GBN-24

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14451 Date Analyzed: 10/1/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12310 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		5070	mg/Kg	100	0.10
Total Antimony		<5.00	mg/Kg	100	0.05
Total Arsenic		7.19	mg/Kg	100	0.05
Total Barium		210	mg/Kg	100	0.10
Total Beryllium		<0.100	mg/Kg	100	0.001
Total Boron		14.6	mg/Kg	100	0.01
Total Cadmium		<2.00	mg/Kg	100	0.02
Total Calcium		196000	mg/Kg	10000	0.05
Total Chromium		<5.00	mg/Kg	100	0.05
Total Cobalt		<4.00	mg/Kg	100	0.04
Total Copper		3.63	mg/Kg	100	0.02
Total Iron		3990	mg/Kg	100	0.10
Total Lead		<5.00	mg/Kg	100	0.05
Total Magnesium		3650	mg/Kg	10000	0.05
Total Manganese		42.0	mg/Kg	100	0.05
Total Molybdenum		<2.00	mg/Kg	100	0.02
Total Nickel		5.46	mg/Kg	100	0.02
Total Potassium		1810	mg/Kg	10000	0.05
Total Selenium		<5.00	mg/Kg	100	0.05
Total Silica		135	mg/Kg	100	0.05
Total Silver		<1.00	mg/Kg	100	0.01
Total Sodium		1200	mg/Kg	10000	0.05
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		11.6	mg/Kg	100	0.05

Sample: 180307 - GBN-25

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14480 Date Analyzed: 10/2/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12348 Date Prepared: 10/2/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		27.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.83	µg/Kg	1	50	101	70 - 130
Toluene-d8		49.58	µg/Kg	1	50	99	70 - 130
4-Bromofluorobenzene		49.09	µg/Kg	1	50	98	70 - 130

Sample: 180307 - GBN-25

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14433 Date Analyzed: 9/28/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12260 Date Prepared: 9/28/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 180307 - GBN-25

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14353 Date Analyzed: 9/27/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12240 Date Prepared: 9/27/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10
TRPHC		48.7	mg/Kg	1	10

Sample: 180307 - GBN-25

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14451 Date Analyzed: 10/1/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12310 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7770	mg/Kg	100	0.10
Total Antimony		<5.00	mg/Kg	100	0.05
Total Arsenic		5.73	mg/Kg	100	0.05
Total Barium		116	mg/Kg	100	0.10
Total Beryllium		0.141	mg/Kg	100	0.001
Total Boron		21.5	mg/Kg	100	0.01
Total Cadmium		<2.00	mg/Kg	100	0.02
Total Calcium		58600	mg/Kg	10000	0.05
Total Chromium		5.80	mg/Kg	100	0.05
Total Cobalt		<4.00	mg/Kg	100	0.04
Total Copper		5.57	mg/Kg	100	0.02
Total Iron		6270	mg/Kg	100	0.10
Total Lead		5.16	mg/Kg	100	0.05
Total Magnesium		3170	mg/Kg	10000	0.05
Total Manganese		95.6	mg/Kg	100	0.05
Total Molybdenum		<2.00	mg/Kg	100	0.02
Total Nickel		7.32	mg/Kg	100	0.02
Total Potassium		2410	mg/Kg	10000	0.05
Total Selenium		<5.00	mg/Kg	100	0.05
Total Silica		230	mg/Kg	100	0.05
Total Silver		<1.00	mg/Kg	100	0.01
Total Sodium		965	mg/Kg	10000	0.05
Total Thallium		<2.00	mg/Kg	100	0.02
Total Zinc		22.8	mg/Kg	100	0.05

Sample: 180308 - GBN-26

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC14480 Date Analyzed: 10/2/01
Analyst: JG Preparation Method: E 5035 Prep Batch: PB12348 Date Prepared: 10/2/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Continued ...

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.86	µg/Kg	1	50	105	70 - 130
Toluene-d8		50.15	µg/Kg	1	50	100	70 - 130
4-Bromofluorobenzene		47.63	µg/Kg	1	50	95	70 - 130

Sample: 180308 - GBN-26

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC14433 Date Analyzed: 9/28/01
Analyst: BC Preparation Method: N/A Prep Batch: PB12260 Date Prepared: 9/28/01

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 180308 - GBN-26

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14353 Date Analyzed: 9/27/01
Analyst: MS Preparation Method: E 3550B Prep Batch: PB12240 Date Prepared: 9/27/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10
TRPHC		184	mg/Kg	1	10

Sample: 180308 - GBN-26

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC14451 Date Analyzed: 10/1/01
Analyst: RR Preparation Method: E 3050B Prep Batch: PB12310 Date Prepared: 10/1/01

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7120	mg/Kg	100	0.10
Total Antimony		<5.00	mg/Kg	100	0.05
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		168	mg/Kg	100	0.10
Total Beryllium		0.189	mg/Kg	100	0.001
Total Boron		22.4	mg/Kg	100	0.01
Total Cadmium		<2.00	mg/Kg	100	0.02
Total Calcium		72200	mg/Kg	10000	0.05
Total Chromium		5.78	mg/Kg	100	0.05
Total Cobalt		<4.00	mg/Kg	100	0.04
Total Copper		5.77	mg/Kg	100	0.02
Total Iron		6400	mg/Kg	100	0.10
Total Lead		8.23	mg/Kg	100	0.05
Total Magnesium		3760	mg/Kg	10000	0.05
Total Manganese		98.0	mg/Kg	100	0.05
Total Molybdenum		<2.00	mg/Kg	100	0.02
Total Nickel		7.12	mg/Kg	100	0.02
Total Potassium		2610	mg/Kg	10000	0.05
Total Selenium		<5.00	mg/Kg	100	0.05
Total Silica		200	mg/Kg	100	0.05
Total Silver		<1.00	mg/Kg	100	0.01

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... Continued Sample: 180308 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Sodium		934	mg/Kg	10000	0.05
Total Thallium		2.77	mg/Kg	100	0.02
Total Zinc		35.9	mg/Kg	100	0.05

Quality Control Report Method Blank

Method Blank QC Batch: QC14353

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Method Blank QC Batch: QC14433

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.19	mg/Kg	0.19

Method Blank QC Batch: QC14451

Param	Flag	Results	Units	Reporting Limit
Total Aluminum		<0.10	mg/Kg	0.10
Total Antimony		<0.050	mg/Kg	0.05
Total Arsenic		<0.050	mg/Kg	0.05
Total Barium		<0.10	mg/Kg	0.10
Total Beryllium		<0.01	mg/Kg	0.001
Total Boron		<0.100	mg/Kg	0.01
Total Cadmium		<0.020	mg/Kg	0.02
Total Calcium		0.864	mg/Kg	0.05
Total Chromium		<0.050	mg/Kg	0.05
Total Cobalt		<0.040	mg/Kg	0.04
Total Copper		<0.020	mg/Kg	0.02
Total Iron		<0.10	mg/Kg	0.10
Total Lead		<0.050	mg/Kg	0.05
Total Magnesium		0.301	mg/Kg	0.05
Total Manganese		<0.05	mg/Kg	0.05
Total Molybdenum		<0.020	mg/Kg	0.02
Total Nickel		<0.02	mg/Kg	0.02
Total Potassium		0.698	mg/Kg	0.05
Total Selenium		<0.050	mg/Kg	0.05
Total Silica		<0.05	mg/Kg	0.05
Total Silver		<0.01	mg/Kg	0.01
Total Sodium		4.05	mg/Kg	0.05
Total Thallium		<0.020	mg/Kg	0.02
Total Zinc		<0.050	mg/Kg	0.05

Method Blank QC Batch: QC14470

Continued ...

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Param	Flag	Results	Units	Reporting Limit
Param	Flag	Results	Units	Reporting Limit
Benzene		<25.0	µg/Kg	1
Toluene		<25.0	µg/Kg	1
Ethylbenzene		<25.0	µg/Kg	1
m,p-Xylene		<25.0	µg/Kg	1
o-Xylene		<25.0	µg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		56.01	µg/Kg	1	50	112	70 - 130
Toluene-d8		48.4	µg/Kg	1	50	96	70 - 130
4-Bromofluorobenzene		51.04	µg/Kg	1	50	102	70 - 130

Method Blank

QCBatch: QC14480

Param	Flag	Results	Units	Reporting Limit
Param	Flag	Results	Units	Reporting Limit
Benzene		<25.0	µg/Kg	1
Toluene		<25.0	µg/Kg	1
Ethylbenzene		<25.0	µg/Kg	1
m,p-Xylene		<25.0	µg/Kg	1
o-Xylene		<25.0	µg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		55.4	µg/Kg	1	50	110	70 - 130
Toluene-d8		49.01	µg/Kg	1	50	98	70 - 130
4-Bromofluorobenzene		48.8	µg/Kg	1	50	97	70 - 130

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC14353

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	201	212	mg/Kg	1	250	<10.0	80	5	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC14433

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.33	2.38	mg/Kg	1	2.50	<0.19	93	2	83 - 124	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC14451

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	119	109	mg/Kg	100	100	<0.10	119	8	80 - 120	20
Total Antimony	23.4	22.5	mg/Kg	100	25	<0.050	93	3	80 - 120	20
Total Arsenic	52.8	51.0	mg/Kg	100	50	<0.050	105	3	80 - 120	20
Total Barium	101	101	mg/Kg	100	100	<0.10	101	0	80 - 120	20
Total Beryllium	2.36	2.35	mg/Kg	100	2.50	<0.01	94	0	80 - 120	20
Total Boron	5.01	4.83	mg/Kg	100	5	<0.100	100	3	80 - 120	20
Total Cadmium	24.6	24.5	mg/Kg	100	25	<0.020	98	0	80 - 120	20
Total Calcium	9770	9750	mg/Kg	400	10000	0.864	97	0	80 - 120	20
Total Chromium	9.96	10.0	mg/Kg	100	10	<0.050	99	0	80 - 120	20
Total Cobalt	25.6	25.2	mg/Kg	100	25	<0.040	102	1	80 - 120	20
Total Copper	13.2	13.3	mg/Kg	100	12.50	<0.020	105	0	80 - 120	20
Total Iron	50.2	50.7	mg/Kg	100	50	<0.10	100	0	80 - 120	20
Total Lead	50.2	49.4	mg/Kg	100	50	<0.050	100	1	80 - 120	20
Total Magnesium	10000	9980	mg/Kg	400	10000	0.301	100	0	80 - 120	20
Total Manganese	24.6	24.8	mg/Kg	100	25	<0.05	98	0	80 - 120	20
Total Molybdenum	50.6	50.8	mg/Kg	100	50	<0.020	101	0	80 - 120	20
Total Nickel	26.4	25.8	mg/Kg	100	25	<0.02	105	2	80 - 120	20
Total Potassium	9920	9910	mg/Kg	400	10000	0.698	99	0	80 - 120	20
Total Selenium	41.0	40.9	mg/Kg	100	50	<0.050	82	0	80 - 120	20
Total Silica	48.1	47.4	mg/Kg	100	50	<0.05	96	1	80 - 120	20
Total Silver	10.2	10.1	mg/Kg	100	12.50	<0.01	81	0	80 - 120	20
Total Sodium	10400	10300	mg/Kg	400	10000	4.05	104	0	80 - 120	20
Total Thallium	48.5	48.3	mg/Kg	100	50	<0.020	97	0	80 - 120	20
Total Zinc	26.9	27.5	mg/Kg	100	25	<0.050	107	2	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC14470

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	109	109	µg/Kg	1	100	<25.0	109	0	78 - 120	20
Benzene	97	98	µg/Kg	1	100	<25.0	97	1	75 - 118	20
Trichloroethene (TCE)	87	89	µg/Kg	1	100	<25.0	87	2	71 - 106	20
Toluene	95	96	µg/Kg	1	100	<25.0	95	1	75 - 115	20
Chlorobenzene	98	97	µg/Kg	1	100	<25.0	98	1	81 - 112	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	50.97	50.65	µg/Kg	1	50	101	101	70 - 130
Toluene-d8	49.39	48.67	µg/Kg	1	50	98	97	70 - 130
4-Bromofluorobenzene	52.30	52.01	µg/Kg	1	50	104	104	70 - 130

Laboratory Control Spikes

QCBatch: QC14480

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	103	109	µg/Kg	1	100	<25.0	103	5	78 - 120	20
Benzene	94	95	µg/Kg	1	100	<25.0	94	1	75 - 118	20
Trichloroethene (TCE)	88	88	µg/Kg	1	100	<25.0	88	0	71 - 106	20
Toluene	92	93	µg/Kg	1	100	<25.0	92	1	75 - 115	20
Chlorobenzene	96	96	µg/Kg	1	100	<25.0	96	0	81 - 112	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	49	52.73	µg/Kg	1	50	98	105	70 - 130
Toluene-d8	48.39	48.88	µg/Kg	1	50	96	97	70 - 130
4-Bromofluorobenzene	51.69	50.79	µg/Kg	1	50	103	101	70 - 130

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC14353

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	202	209	mg/Kg	1	250	<10.0	80	3	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC14433

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.33	2.45	mg/Kg	1	2.50	<0.19	93	5	83 - 124	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC14451

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	¹ 5350	² 6270	mg/Kg	100	100	4530	820	71	75 - 125	20
Total Antimony	³ 10.8	⁴ 9.19	mg/Kg	100	25	<5.00	43	16	75 - 125	20
Total Arsenic	50.1	47.5	mg/Kg	100	50	<5.00	100	5	75 - 125	20

Continued ...

¹Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.

²Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.

³Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.

⁴Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.

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Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Barium	210	214	mg/Kg	100	100	127	83	4	75 - 125	20
Total Beryllium	1.94	1.93	mg/Kg	100	2.50	<0.100	77	0	75 - 125	20
Total Boron	⁵ 19.3	⁶ 21.1	mg/Kg	100	5	12.3	139	22	75 - 125	20
Total Cadmium	20.3	20.4	mg/Kg	100	25	<2.00	81	0	75 - 125	20
Total Calcium	⁷ 208000	⁸ 218000	mg/Kg	10000	10000	202000	61	89	75 - 125	20
Total Chromium	12.3	12.4	mg/Kg	100	10	<5.00	123	0	75 - 125	20
Total Cobalt	22.0	22.3	mg/Kg	100	25	<4.00	88	1	75 - 125	20
Total Copper	12.8	12.9	mg/Kg	100	12.50	<2.00	102	0	75 - 125	20
Total Iron	⁹ 3800	¹⁰ 4380	mg/Kg	100	50	3100	1389	58	75 - 125	20
Total Lead	45.3	46.4	mg/Kg	100	50	<5.00	90	2	75 - 125	20
Total Magnesium	¹¹ 3650	¹² 3550	mg/Kg	10000	2500	4360	-28	-13	75 - 125	20
Total Manganese	54.3	60.0	mg/Kg	100	25	31.4	91	22	75 - 125	20
Total Molybdenum	42.2	42.3	mg/Kg	100	50	<2.00	84	0	75 - 125	20
Total Nickel	25.4	25.6	mg/Kg	100	25	4.44	83	0	75 - 125	20
Total Potassium	¹³ 3250	¹⁴ 3160	mg/Kg	10000	2500	1420	73	5	75 - 125	20
Total Selenium	¹⁵ 36.1	¹⁶ 35.3	mg/Kg	100	50	<5.00	72	2	75 - 125	20
Total Silica	¹⁷ 260	¹⁸ 244	mg/Kg	100	50	104	312	10	75 - 125	20
Total Silver	10.7	10.2	mg/Kg	100	12.50	<1.00	85	4	75 - 125	20
Total Sodium	3380	3290	mg/Kg	10000	2500	1250	85	4	75 - 125	20
Total Thallium	¹⁹ 36.0	²⁰ 37.3	mg/Kg	100	50	<2.00	72	3	75 - 125	20
Total Zinc	29.7	30.1	mg/Kg	100	25	8.28	85	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC14353

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	102	102	75 - 125	9/27/01

ICV (1)

QCBatch: QC14353

- ⁵Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.
⁶Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.
⁷Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.
⁸Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.
⁹Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.
¹⁰Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.
¹¹Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.
¹²Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.
¹³Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.
¹⁴Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.
¹⁵Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.
¹⁶Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.
¹⁷Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.
¹⁸Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.
¹⁹Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.
²⁰Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	102	102	75 - 125	9/27/01

CCV (1) QCBatch: QC14433

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00452	90	80 - 120	9/28/01

ICV (1) QCBatch: QC14433

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00477	95	80 - 120	9/28/01

CCV (1) QCBatch: QC14451

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/Kg	2	1.82	91	90 - 110	10/1/01
Total Antimony		mg/Kg	0.50	0.490	98	90 - 110	10/1/01
Total Arsenic		mg/Kg	1	0.949	94	90 - 110	10/1/01
Total Barium		mg/Kg	2	1.99	99	90 - 110	10/1/01
Total Beryllium		mg/Kg	0.05	0.0486	97	90 - 110	10/1/01
Total Boron		mg/Kg	0.10	0.0928	92	90 - 110	10/1/01
Total Cadmium		mg/Kg	0.50	0.503	100	90 - 110	10/1/01
Total Calcium		mg/Kg	25	25.4	101	90 - 110	10/1/01
Total Chromium		mg/Kg	0.20	0.198	99	90 - 110	10/1/01
Total Cobalt		mg/Kg	0.50	0.498	99	90 - 110	10/1/01
Total Copper		mg/Kg	0.25	0.236	94	90 - 110	10/1/01
Total Iron		mg/Kg	1	0.991	99	90 - 110	10/1/01
Total Lead		mg/Kg	1	0.987	98	90 - 110	10/1/01
Total Magnesium		mg/Kg	25	26.1	104	90 - 110	10/1/01
Total Manganese		mg/Kg	0.50	0.493	98	90 - 110	10/1/01
Total Molybdenum		mg/Kg	1	0.988	98	90 - 110	10/1/01
Total Nickel		mg/Kg	0.50	0.493	98	90 - 110	10/1/01
Total Potassium		mg/Kg	25	26.1	104	90 - 110	10/1/01
Total Selenium		mg/Kg	1	0.944	94	90 - 110	10/1/01
Total Silica		mg/Kg	1	0.955	95	90 - 110	10/1/01
Total Silver		mg/Kg	0.25	0.242	96	90 - 110	10/1/01
Total Sodium		mg/Kg	25	25.7	102	90 - 110	10/1/01
Total Thallium		mg/Kg	1	0.909	90	90 - 110	10/1/01
Total Zinc		mg/Kg	0.50	0.506	101	90 - 110	10/1/01

ICV (1) QCBatch: QC14451

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/Kg	2	1.92	96	90 - 110	10/1/01
Total Antimony		mg/Kg	0.50	0.490	98	90 - 110	10/1/01
Total Arsenic		mg/Kg	1	1.01	101	90 - 110	10/1/01
Total Barium		mg/Kg	2	1.97	98	90 - 110	10/1/01
Total Beryllium		mg/Kg	0.05	0.0492	98	90 - 110	10/1/01
Total Boron		mg/Kg	0.10	0.102	102	90 - 110	10/1/01
Total Cadmium		mg/Kg	0.50	0.495	99	90 - 110	10/1/01
Total Calcium		mg/Kg	25	26.0	104	90 - 110	10/1/01
Total Chromium		mg/Kg	0.20	0.198	99	90 - 110	10/1/01
Total Cobalt		mg/Kg	0.50	0.495	99	90 - 110	10/1/01
Total Copper		mg/Kg	0.25	0.245	98	90 - 110	10/1/01
Total Iron		mg/Kg	1	0.992	99	90 - 110	10/1/01
Total Lead		mg/Kg	1	0.985	98	90 - 110	10/1/01
Total Magnesium		mg/Kg	25	25.6	102	90 - 110	10/1/01
Total Manganese		mg/Kg	0.50	0.493	98	90 - 110	10/1/01
Total Molybdenum		mg/Kg	1	0.987	98	90 - 110	10/1/01
Total Nickel		mg/Kg	0.50	0.494	98	90 - 110	10/1/01
Total Potassium		mg/Kg	25	25.1	100	90 - 110	10/1/01
Total Selenium		mg/Kg	1	0.992	99	90 - 110	10/1/01
Total Silica		mg/Kg	1	0.989	98	90 - 110	10/1/01
Total Silver		mg/Kg	0.25	0.246	98	90 - 110	10/1/01
Total Sodium		mg/Kg	25	25.3	101	90 - 110	10/1/01
Total Thallium		mg/Kg	1	0.988	98	90 - 110	10/1/01
Total Zinc		mg/Kg	0.50	0.496	99	90 - 110	10/1/01

CCV (1) QCBatch: QC14470

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/Kg	100	113	113	80 - 120	10/1/01
1,1-Dichloroethene		µg/Kg	100	101	101	80 - 120	10/1/01
Chloroform		µg/Kg	100	108	108	80 - 120	10/1/01
1,2-Dichloropropane		µg/Kg	100	98	98	80 - 120	10/1/01
Toluene		µg/Kg	100	92	92	80 - 120	10/1/01
Chlorobenzene		µg/Kg	100	97	97	80 - 120	10/1/01
Ethylbenzene		µg/Kg	100	102	102	80 - 120	10/1/01
Dibromofluoromethane		µg/Kg	50	53.62	107	80 - 120	10/1/01
Toluene-d8		µg/Kg	50	49.51	99	80 - 120	10/1/01
4-Bromofluorobenzene		µg/Kg	50	53.01	106	80 - 120	10/1/01

CCV (1) QCBatch: QC14480

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/Kg	100	112	112	80 - 120	10/2/01

Continued ...

... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
1,1-Dichloroethene		µg/Kg	100	93	93	80 - 120	10/2/01
Chloroform		µg/Kg	100	98	98	80 - 120	10/2/01
1,2-Dichloropropane		µg/Kg	100	92	92	80 - 120	10/2/01
Toluene		µg/Kg	100	90	90	80 - 120	10/2/01
Chlorobenzene		µg/Kg	100	96	96	80 - 120	10/2/01
Ethylbenzene		µg/Kg	100	95	95	80 - 120	10/2/01
Dibromofluoromethane		µg/Kg	50	49.45	98	80 - 120	10/2/01
Toluene-d8		µg/Kg	50	48.64	97	80 - 120	10/2/01
4-Bromofluorobenzene		µg/Kg	50	52.45	104	80 - 120	10/2/01

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # AP01092701

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

ANALYSIS REQUEST
(Circle or Specify Method No.)

Company Name: BBC International Inc.
Address: 1324 W. MacLaren Hobbs rd
Contact Person: CLIFF PRICE BRUNSON
Phone #: (505)-397-6388
Fax #: (505)-397-0397

Project Name: Shell F&P company
Project #: ATTN: Wayne Hamilton
Project Location: Hobbs NM
Supplier Signature: Shelly Westgate

Project Name: Shell F&P company
Project #: ATTN: Wayne Hamilton
Project Location: Hobbs NM
Supplier Signature: Shelly Westgate

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD				SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCL	HNO3	ICE	NONE	DATE	TIME
180306	GBN-24	1	402	✓								9-25-01	5:30
307	GBN-25	1	40A	✓								9-25-01	5:37
	GBN-25	1	402	✓								9-25-01	5:37
308	GBN-26	1	40A	✓								9-25-01	5:45
	GBN-26	1	402	✓								9-25-01	5:45

REMARKS:

LAB USE ONLY

Intact Y / N

Headspace Y / N

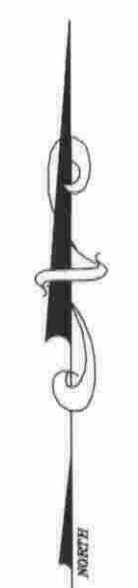
Temp 4 °

Log-in Review my

Relinquished by: [Signature] Date: 9-26-01 Time: 8:00am

Relinquished by: [Signature] Date: 9-26-01 Time: 8:00am

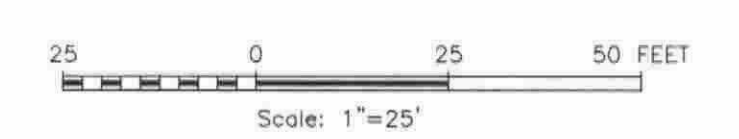
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SAN ANDRES

- LEGEND
- DENOTES EXCAVATED AREA
 - - - DENOTES EXCAVATION AREA - SEPTEMBER 2001
 - - - DENOTES DIRT LEASE ROAD
 - GMW - DENOTES GRIMES MONITOR WELL
 - GSB - DENOTES GRIMES SOIL BORING
 - GSB (P) - DENOTES PLAINTIFF SOIL SAMPLE
 - DENOTES ACTIVE WELL

RECEIVED
JUL 0 2003
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION



JOHN WEST SURVEYING COMPANY
HOBBBS, NEW MEXICO

BBC INTERNATIONAL, INC.			
GRIMES BATTERY & TASKER ROAD			
STAGE 2 ABATEMENT PLAN REMEDIATION - SEPTEMBER 2001			
MONITOR WELL, SOIL BORING & SURFACE SOIL SAMPLE			
LOCATIONS IN SECTION 25			
TOWNSHIP 18 SOUTH,			
RANGE 38 EAST, N.M.P.M.,			
LEA COUNTY, NEW MEXICO.			
SURVEYED BY: CARLES	DRAWN BY: DOOLINS	REV. DATE: 07/31/03	F-366
DATE BEGUN: 6/17/99	DATE: 6/22/99	FILE NUMBER: 1001	REMEDIAION
DATE END: 9/7/99	CHECKED BY:	SHEET: 1 OF 1	SITE OUTLINE
PROJECT #: 9810738	CHK #: BBC	Scale: 1"=40'	

APPENDIX II

Site Photographs
Structure Assembly
March 2002

**Westgate Stage 2 Abatement Plan-
Remediation Activities Report**
Hobbs, New Mexico

Prepared for:
Shell Exploration & Production Company
Houston, Texas

May 2003

Prepared by:
BBC International, Inc.

Structure Assembly



1. Structure ribs are raised and bolted in place.



2. View from inside structure. A panel of fabric is being guided up the structure ribs.

Structure Assembly

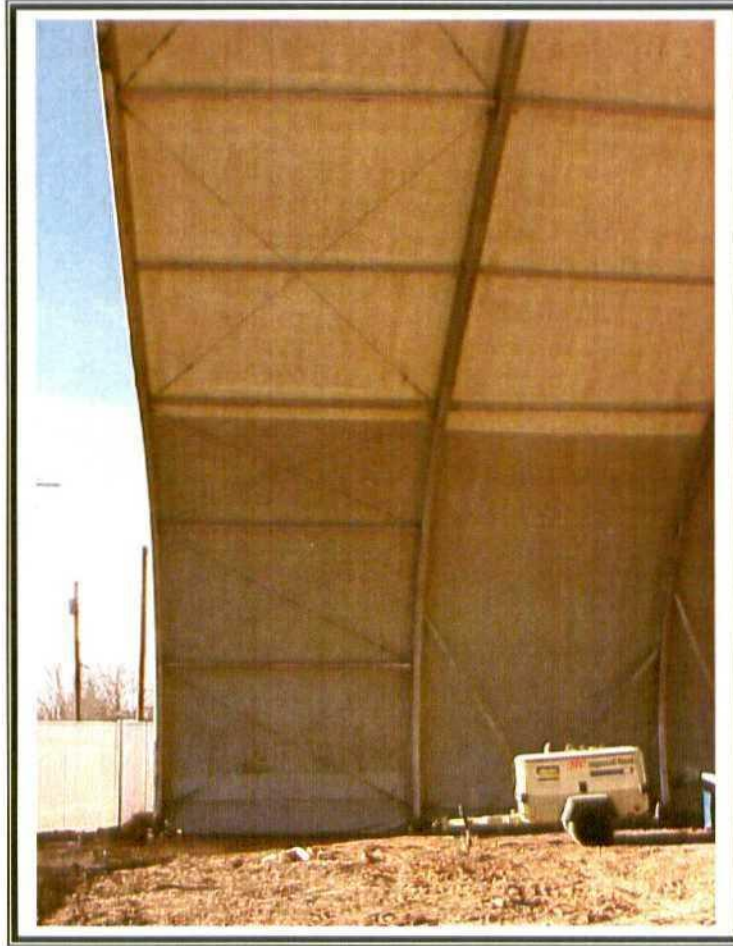


3. View from inside of structure.



4. Electrician wiring structure lighting.

Structure Assembly

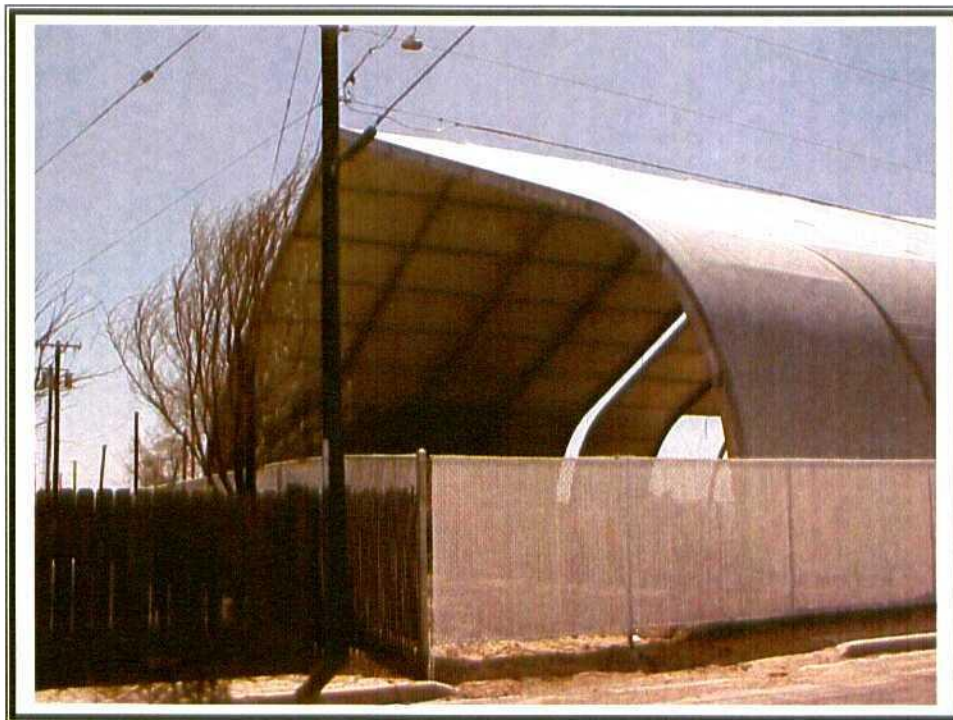


5. View from inside structure facing north wall. Cross beams and tension cables have been secured on first section.

Structure Assembly



6. Air intake inlets that lead to carbon filtration system.



7. Rear view of structure from the corner of San Andres.

Structure Assembly



8. Rear view of structure from San Andres.



9. View of structure assembly from North Tasker Street.

Structure Assembly



10. View of structure from nearby field.



11. View of structure assembly from South Tasker.

Structure Assembly



12. Distant view from South Tasker.



13. One structure panel left to be installed. Duct work for carbon filtration system is being assembled.

Structure Assembly

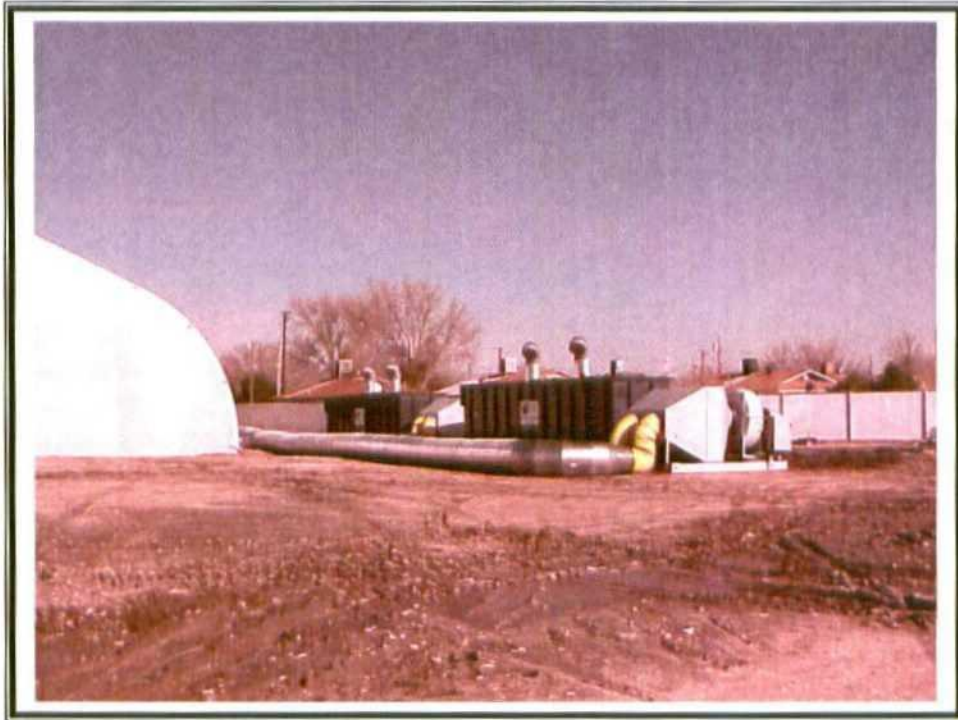


14. Assembling duct work for carbon filtration system.



15. Structure and carbon filtration system assembly complete.

Structure Assembly



16. Carbon Filtration Unit.



17. Bus turnaround at South Tasker.

Structure Assembly



18. Site Security office and visitor check – in.



19. Project identification sign at site entrance and designated smoking area.

APPENDIX II

Site Photographs

Phase I

April – June 2002

Westgate Stage 2 Abatement Plan- Remediation Activities Report Hobbs, New Mexico

Prepared for:

Shell Exploration & Production Company
Houston, Texas

May 2003

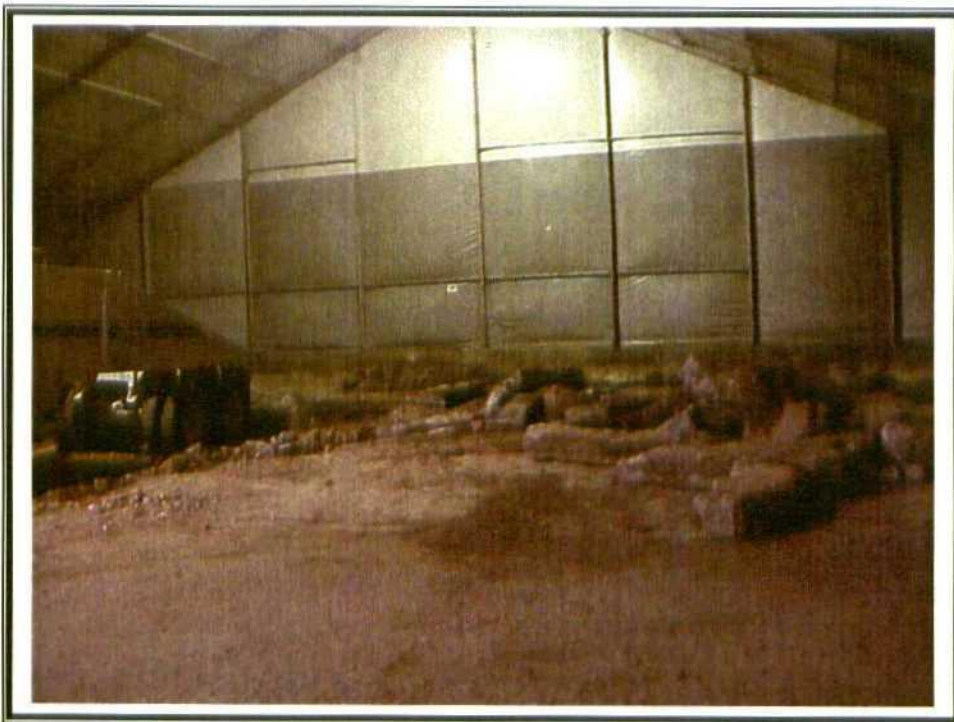
Prepared by:

BBC International, Inc.

Phase I



1. Phase I Excavation



2. Phase I Excavation

Phase I



3. Phase I Excavation



4. Phase I Excavation

Phase I



5. Phase I Excavation

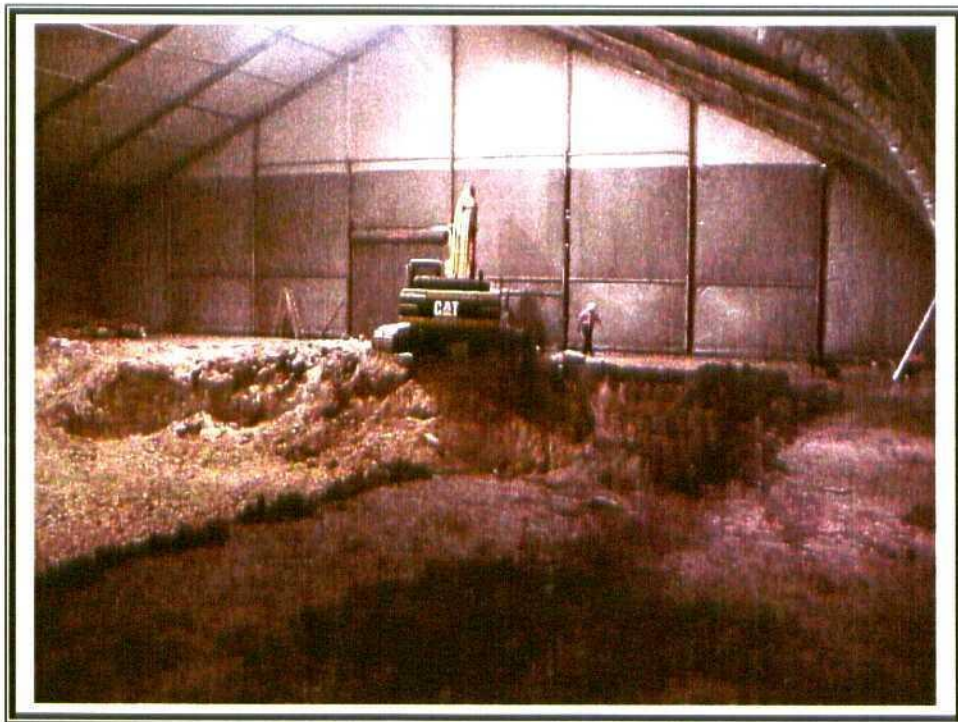


6. Phase I Excavation

Phase I



7. Phase I Excavation



8. Phase I Excavation

Phase I



9. Phase I Excavation



10. Phase I Excavation

Phase I



11. Phase I Excavation – Truck hauling soil out of structure



12. Phase I Excavation – ramp used to back into structure

Phase I



13. Phase I Excavation – Excavator loading dump truck



14. Phase I Excavation – Dump truck loading at bottom of excavated area

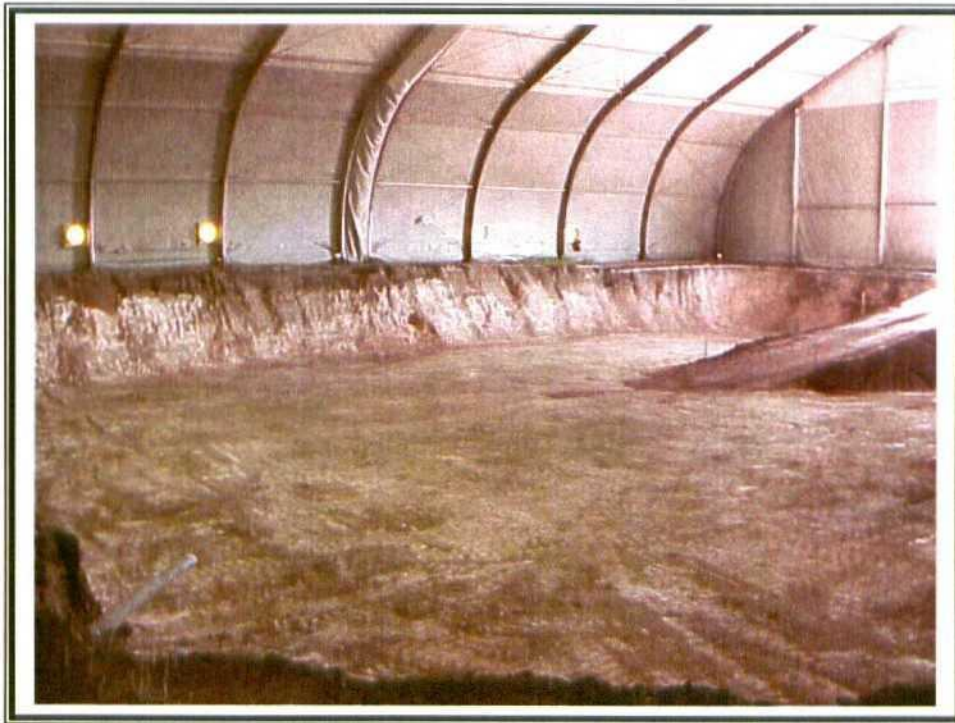
Phase I



15. Phase I Excavation – Bottom hole



16. Phase I Excavation – Bottom hole and clay ramp



17. Phase I Excavation – Bottom hole

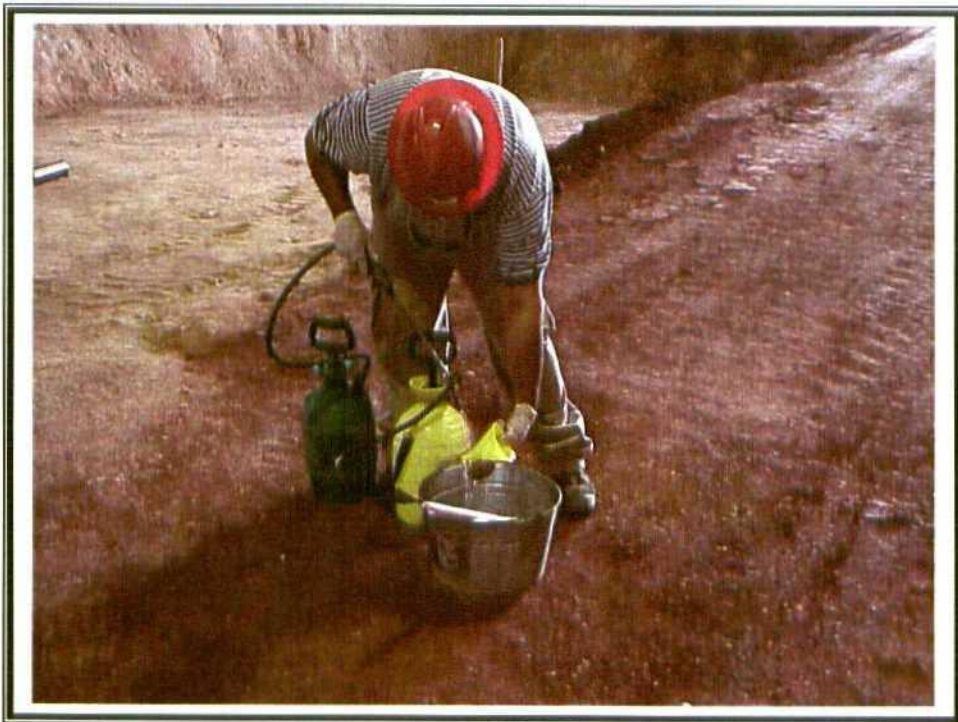


18. Phase I – Confirmation Sampling. Orange flag marks sample points on east wall and one at ground level.

Phase I

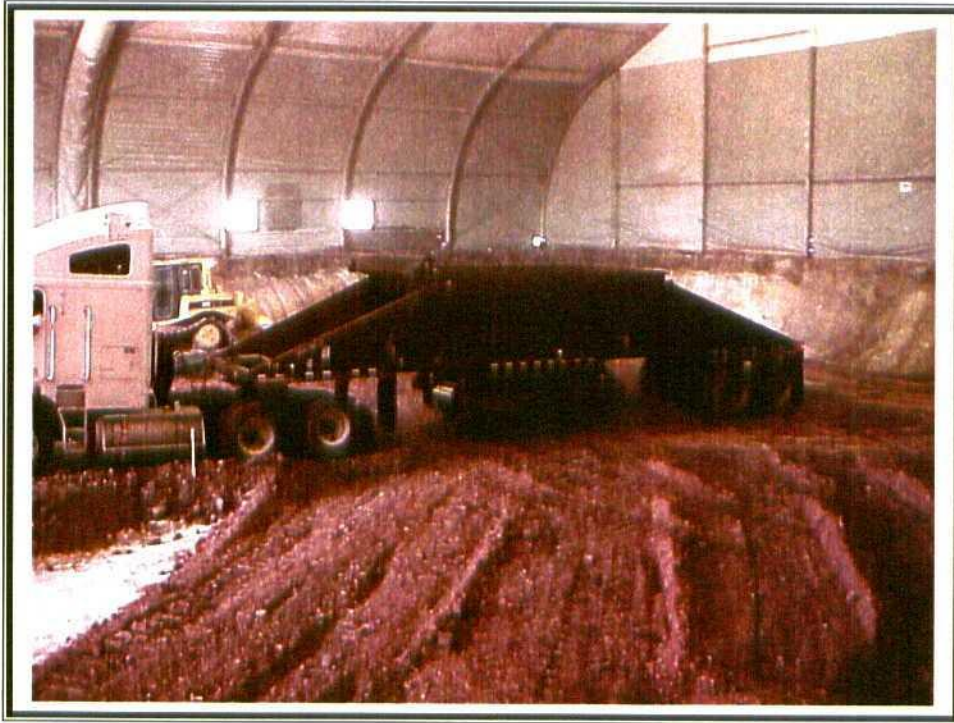


19. Phase I – Confirmation Sampling. Filling sample jar with composite soil sample.



20. Phase I – Confirmation Sampling. Technician performing decontamination procedures on sampling tools.

Phase I



21. Phase I – Backfilling. Dump truck dumping a load of clay at bottom of excavated area.



22. Phase I – Backfilling. Dozer leveling clay liner.

Phase I



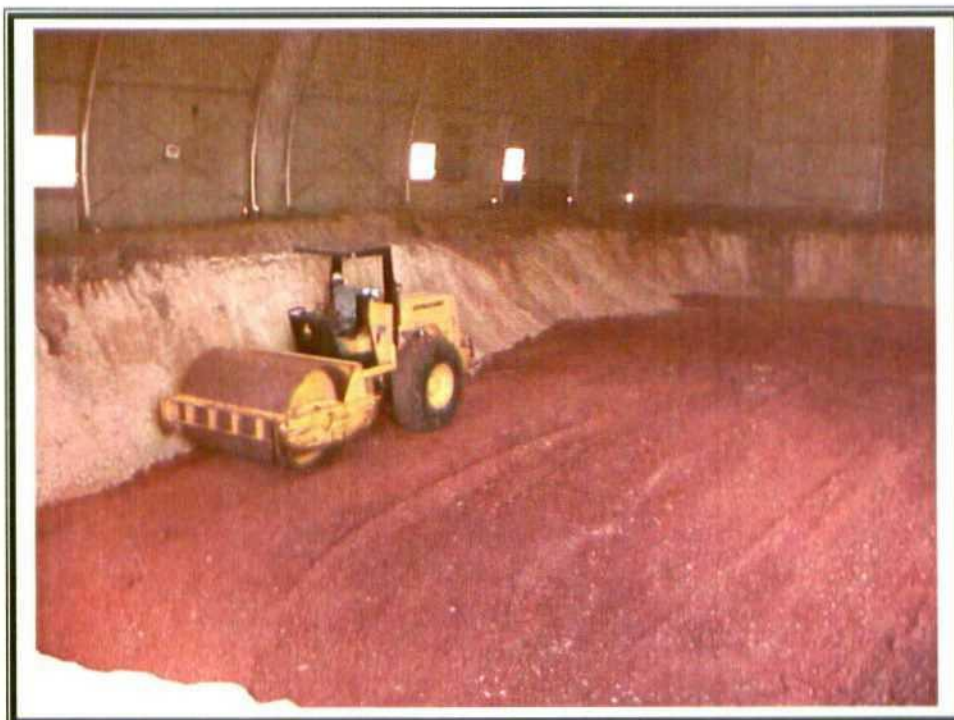
23. Phase I – Backfilling. Clay liner.



24. Phase I – Backfilling. Watering down clay to minimize dust.

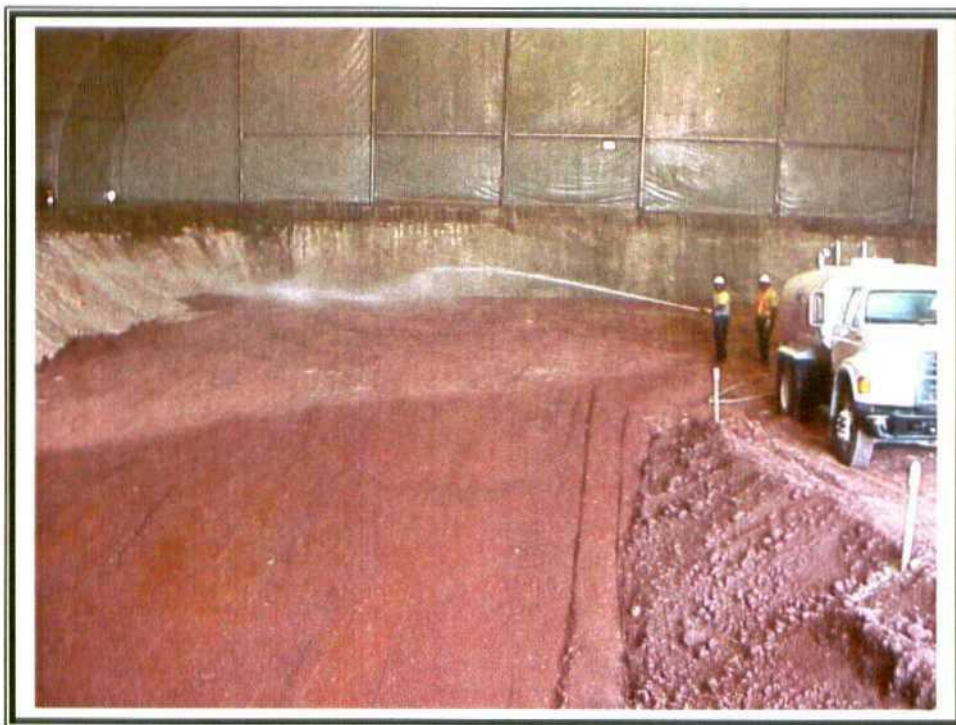


25. Phase I – Backfilling. Truck loading up clay to dump inside structure for clay liner.



26. Phase I – Backfilling. Roller packing down clay liner.

Phase I

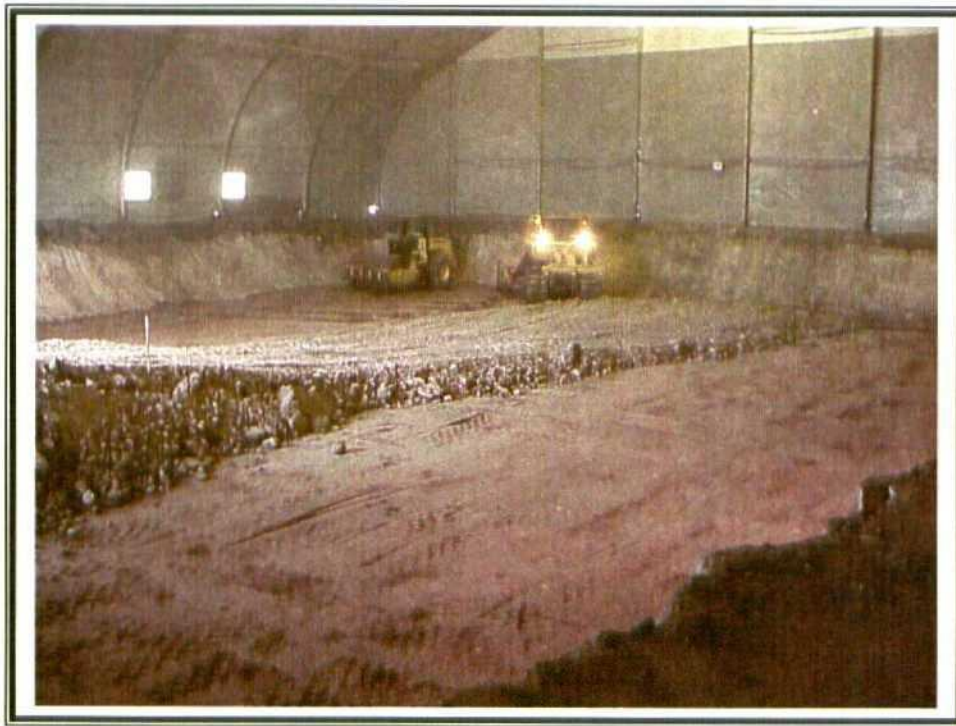


27. Phase I – Backfilling. Watering down clay liner inside structure.



28. Phase I – Backfilling. Dozer and vibratory roller spreading caliche backfill.

Phase I

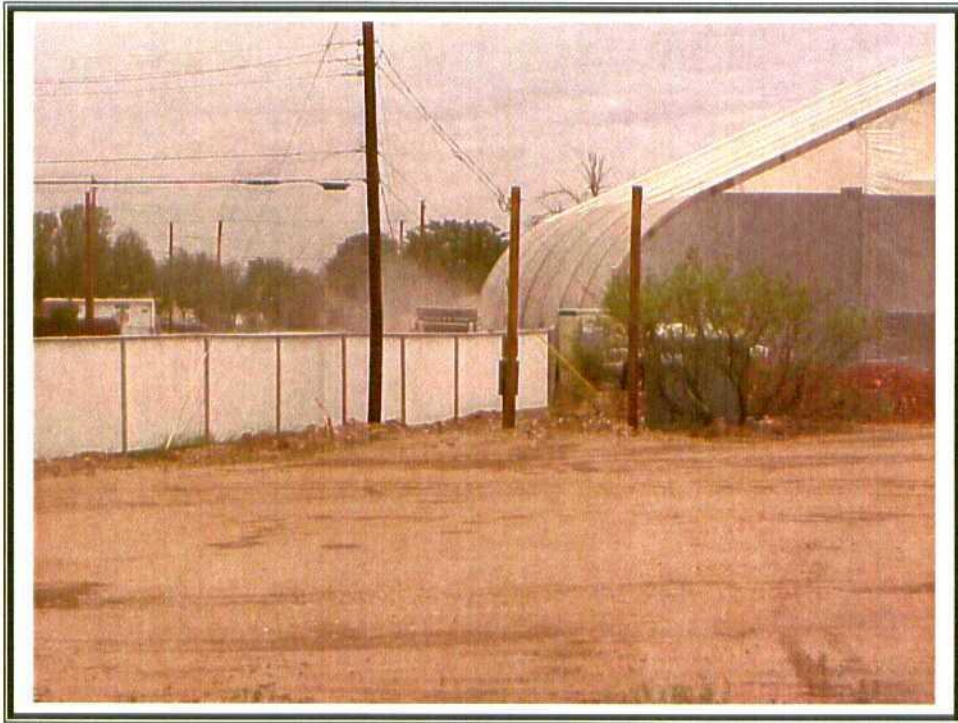


29. Phase I – Backfilling. Dozer and vibratory roller spreading caliche backfill.



30. Phase I – Backfilling. Final stage of backfill (topsoil).

Phase I



31. Phase I – Backfilling. City of Hobbs street sweeper off site on Berry Drive.



32. Phase I – Backfilling. City of Hobbs street sweeper off site on Berry Drive.



33. Phase I – Backfilling. Watering site to minimize dust.

APPENDIX II

Site Photographs

Phase II

June – August 2002

Westgate Stage 2 Abatement Plan- Remediation Activities Report Hobbs, New Mexico

Prepared for:

Shell Exploration & Production Company
Houston, Texas

May 2003

Prepared by:

BBC International, Inc.



1. First Structure Move. Crane supporting manlift while structure crew secure support beams.



2. Structure Move. Perspective photo of crane and manlift.



3. Structure Move. Perspective photo of structure and crane from neighborhood.



4. Universal Fabric Structure crewman working inside structure preparing for structure move.



5. Universal Fabric Structure crewman securing support beams in preparation for structure move.



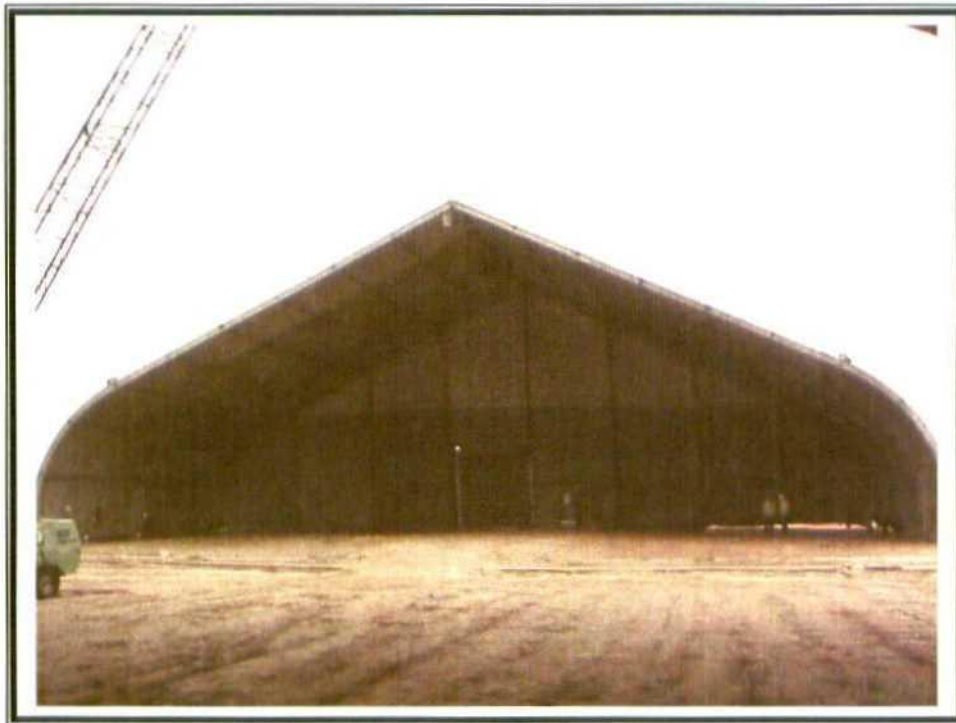
6. Rigging up crane cables to lift structure.



7. Ropes tied to corners of structure were used to minimize swaying motion.



8. First half of structure off the ground and moving slowly forward.



9. Rear view of the first half of the structure after being moved.



10. View from a nearby field of the structure move.



11. Lifting and moving back half of structure.



12. Lifting and moving back half of structure. Workers hold a rope tied to the corner of the structure to keep it steady.



13. Back half of structure is carefully and slowly moved into position.



14. The crane steadily closes the gap between the two massive structure halves.



15. A panel of fabric is guided up support beams to bridge the gap between the two halves of the structure.



16. A jackhammer is used to bolt structure beams into the ground.



17. Phase II Excavation.



18. Phase II Excavation. Dump truck backed into structure to load up soil.



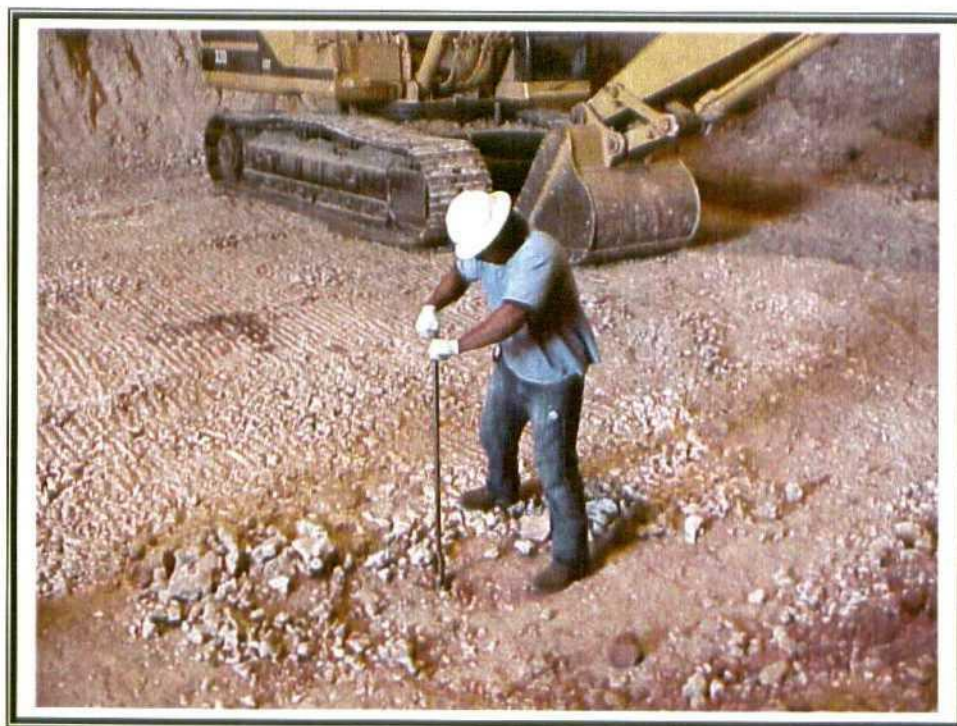
19. Phase II Excavation. Excavator loading up dump truck.



20. Phase II Excavation. Excavator piling up soil to be loaded into dump trucks.



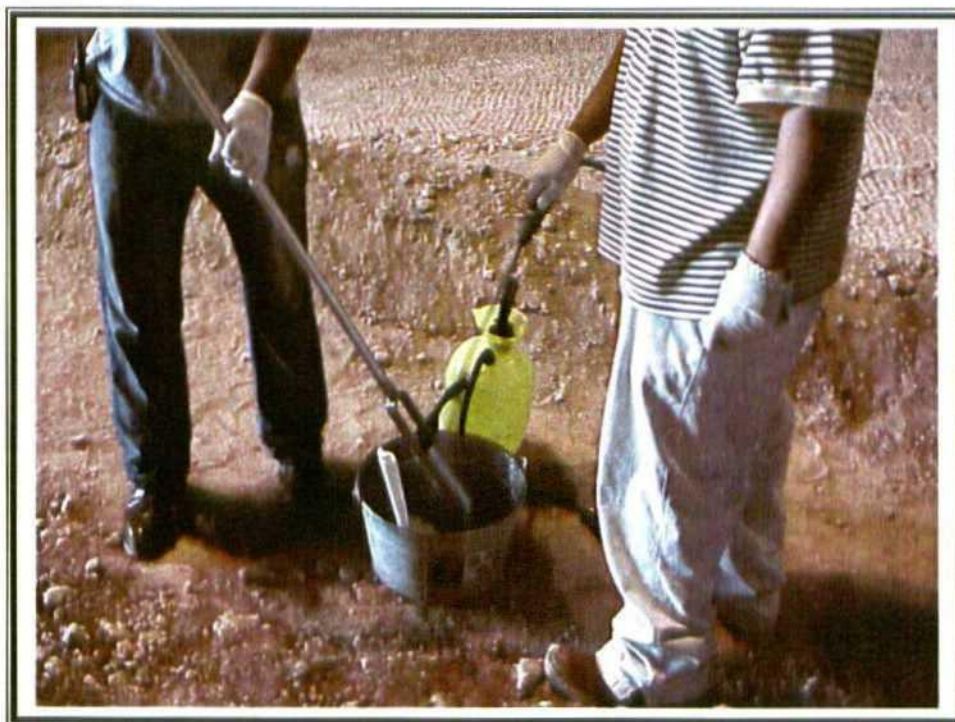
21. Phase II Excavation – bottom hole.



22. Phase II – Confirmation sampling.



23. Phase II – Confirmation sampling. Filling sample jars with soil composite sample.



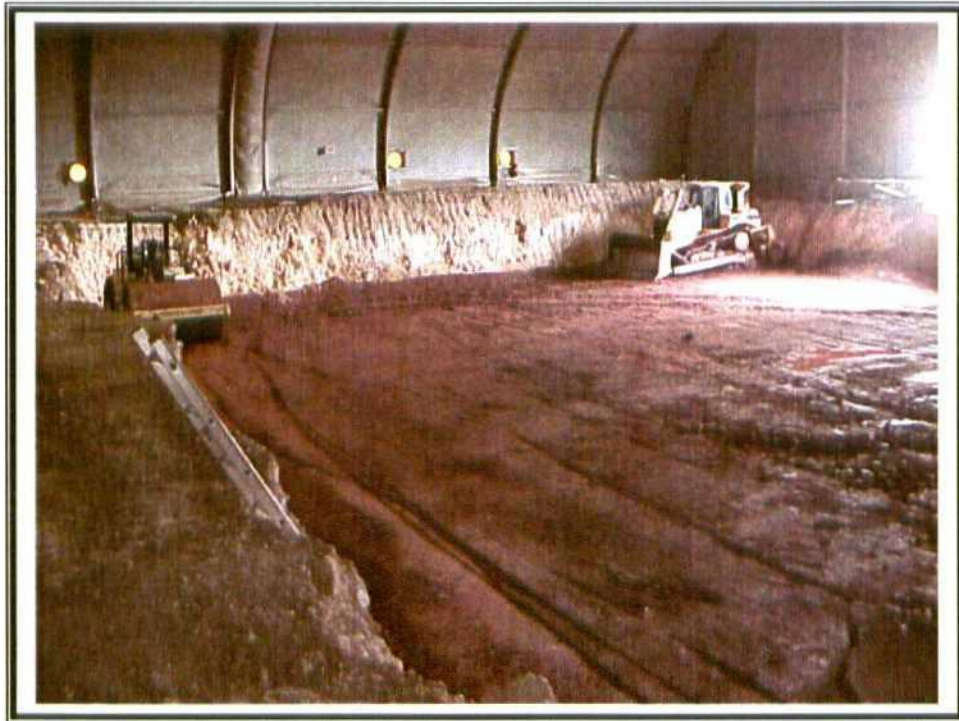
24. Phase II – Confirmation sampling. Deconning hand auger after sample collection.



25. Phase II – Backfill clay liner.



26. Phase II – Backfill clay liner.



27. Phase II – Clay liner finished and leveled.



28. Phase II – Backfill almost completed.



29. Phase II – Backfill at final stage with topsoil.



30. Phase II – Backfill completed and leveled.

APPENDIX II

Site Photographs

Phase III

August – October 2002

Westgate Stage 2 Abatement Plan- Remediation Activities Report Hobbs, New Mexico

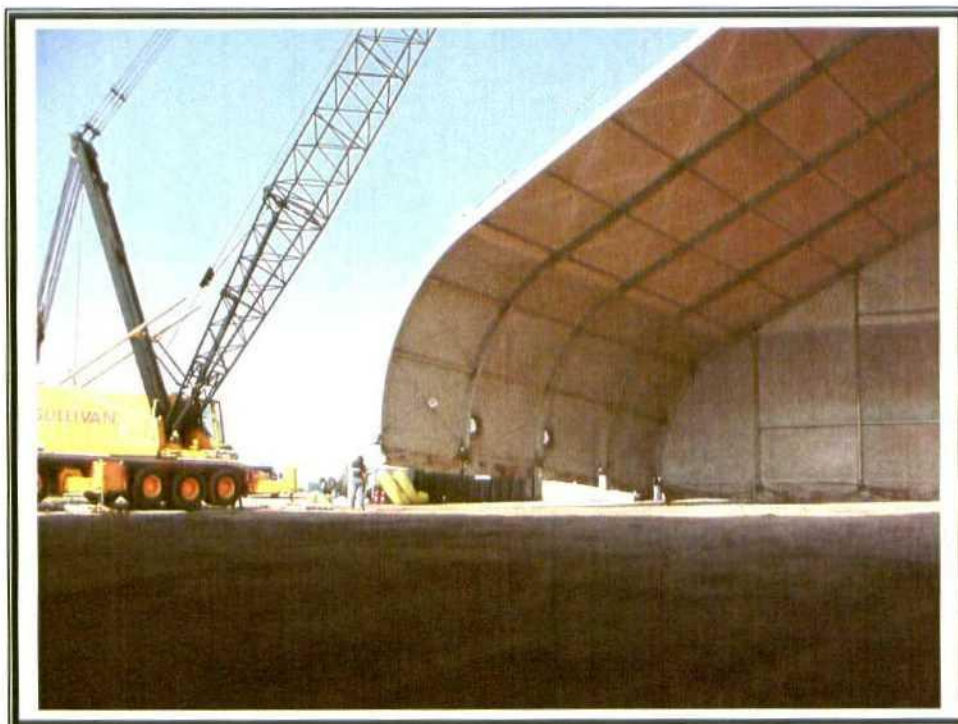
Prepared for:

Shell Exploration & Production Company
Houston, Texas

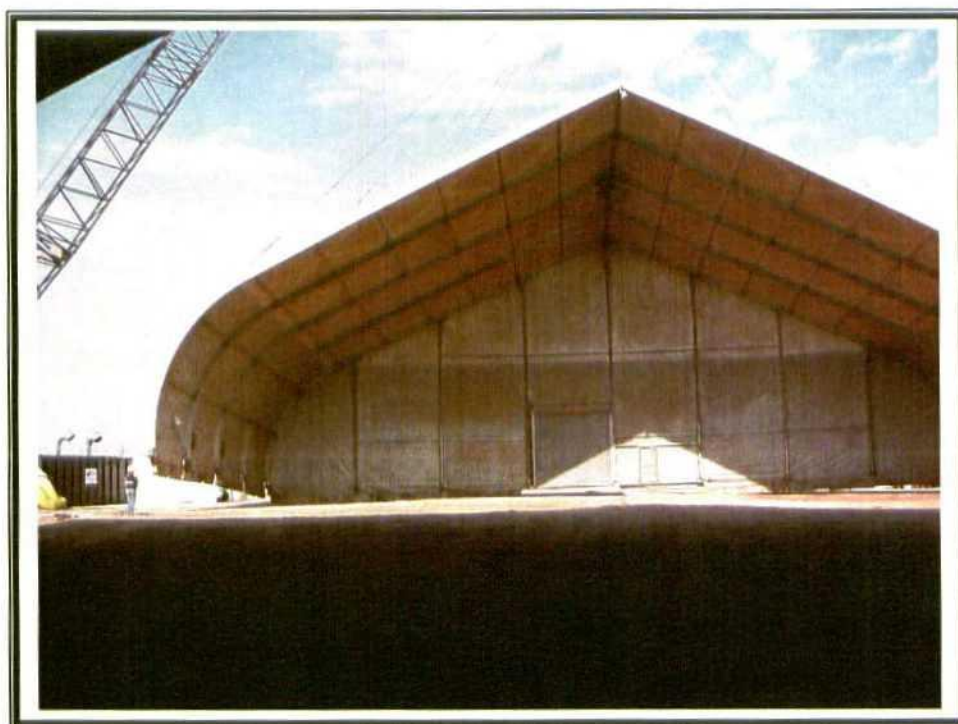
May 2003

Prepared by:

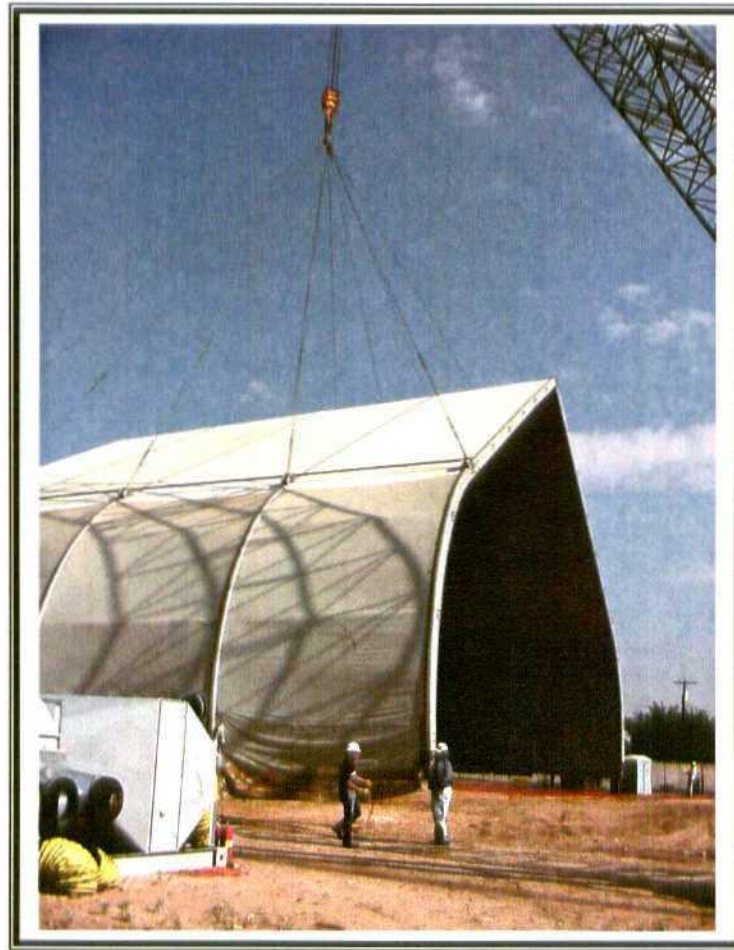
BBC International, Inc.



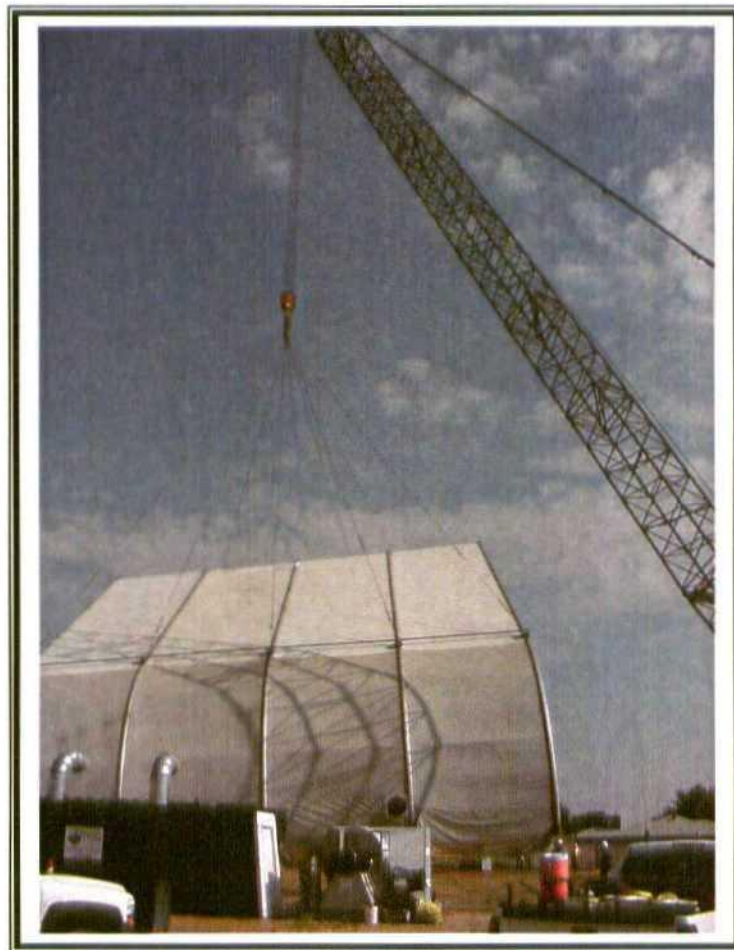
1. Moving structure for the second time for final phase of excavation – view from rear of front half of structure as it is moved slowly forward.



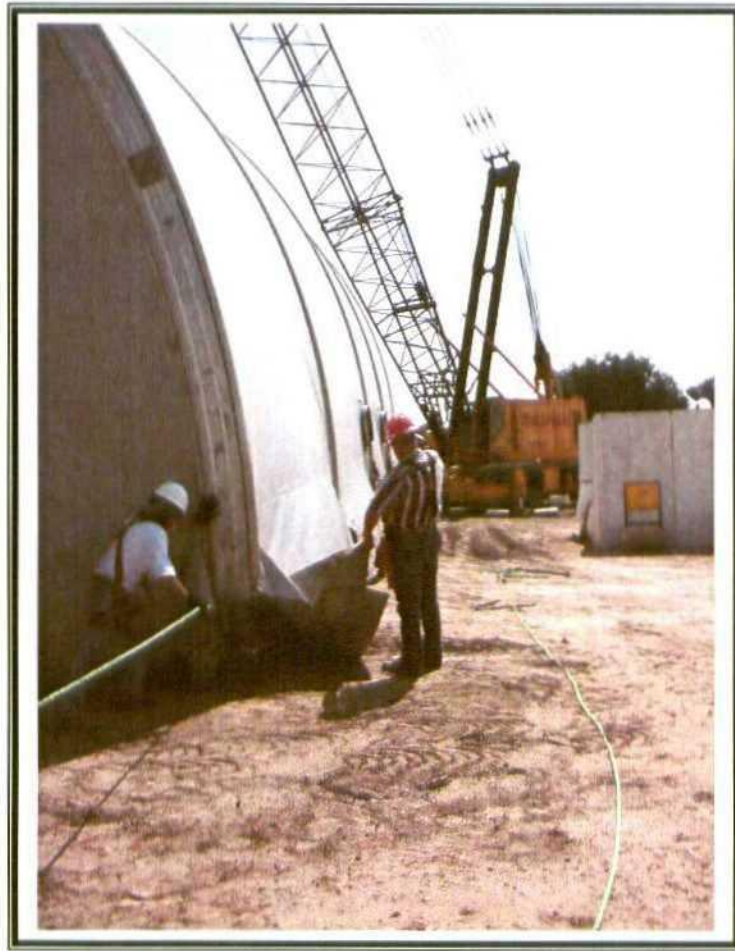
2. View from rear of front half of structure as it is being lifted and moved forward.



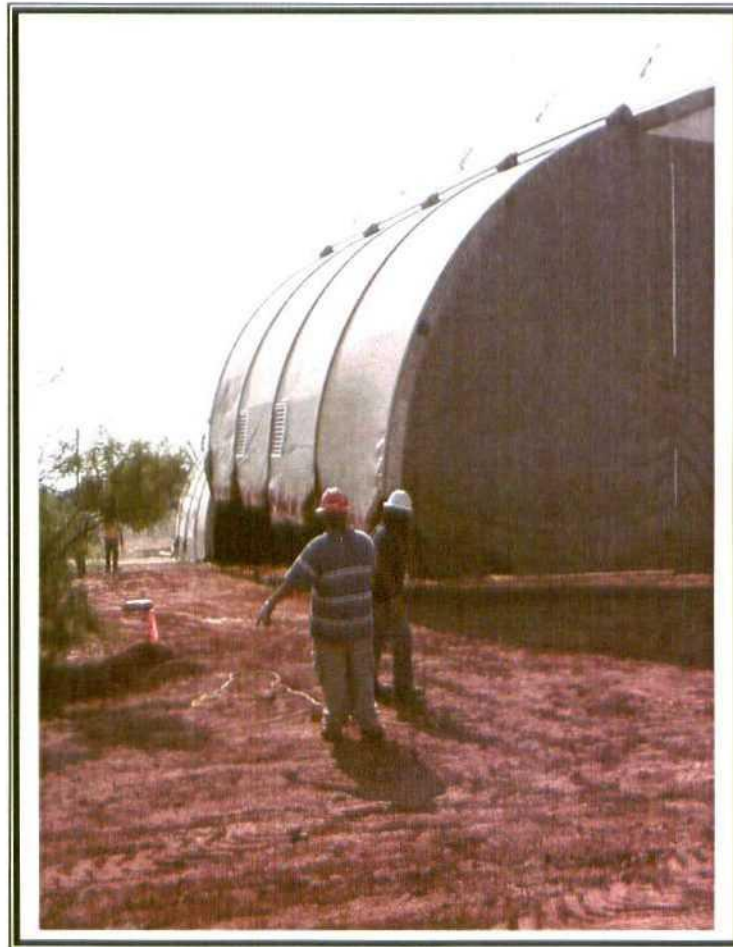
3. Moving front half of structure.



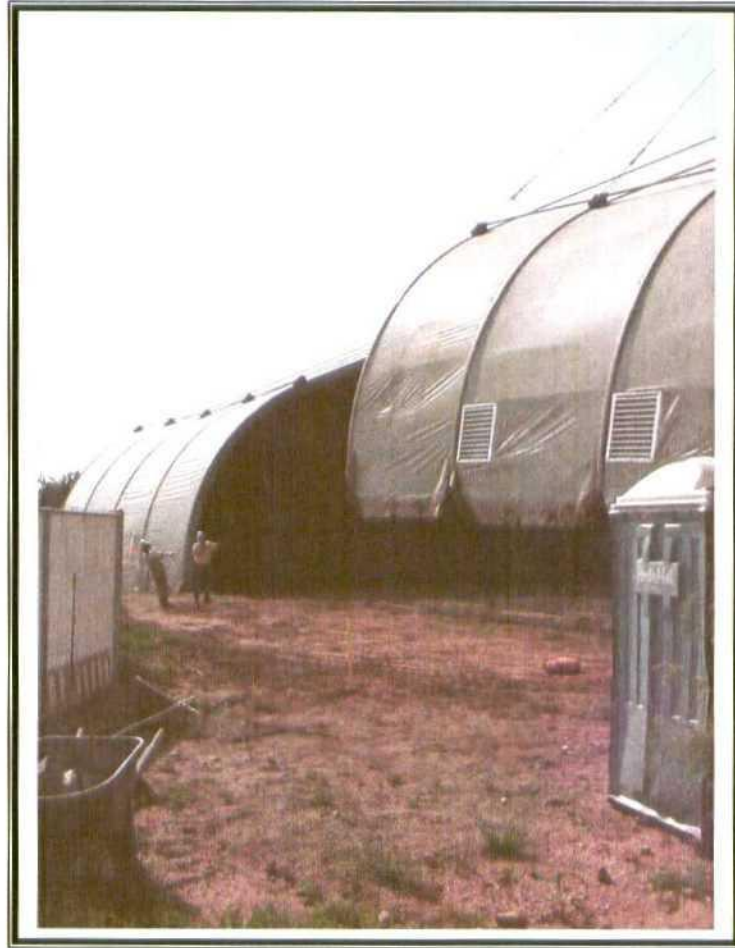
4. Side view of crane lifting structure off the ground.



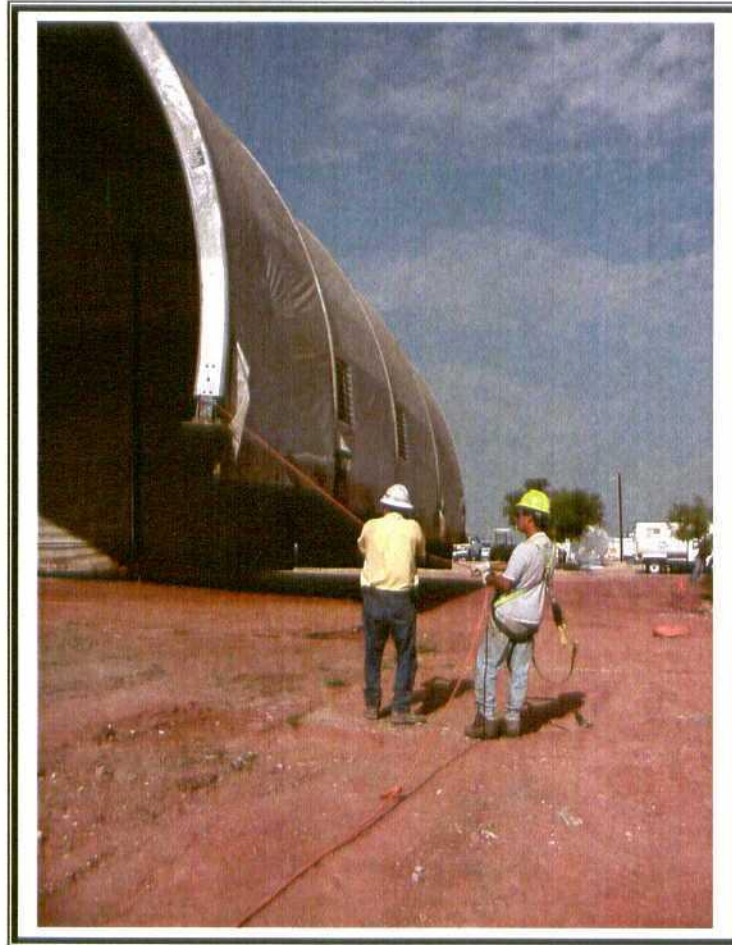
5. Structure crewmen slowly guiding the structure down to designated location.



6. Workers steady the structure using ropes tied at the corners.



7. View of structure lifted off of the ground.



8. Site crewmen steady structure.



9. View of structure move from nearby field.



10. View of structure move from Sanger Street.



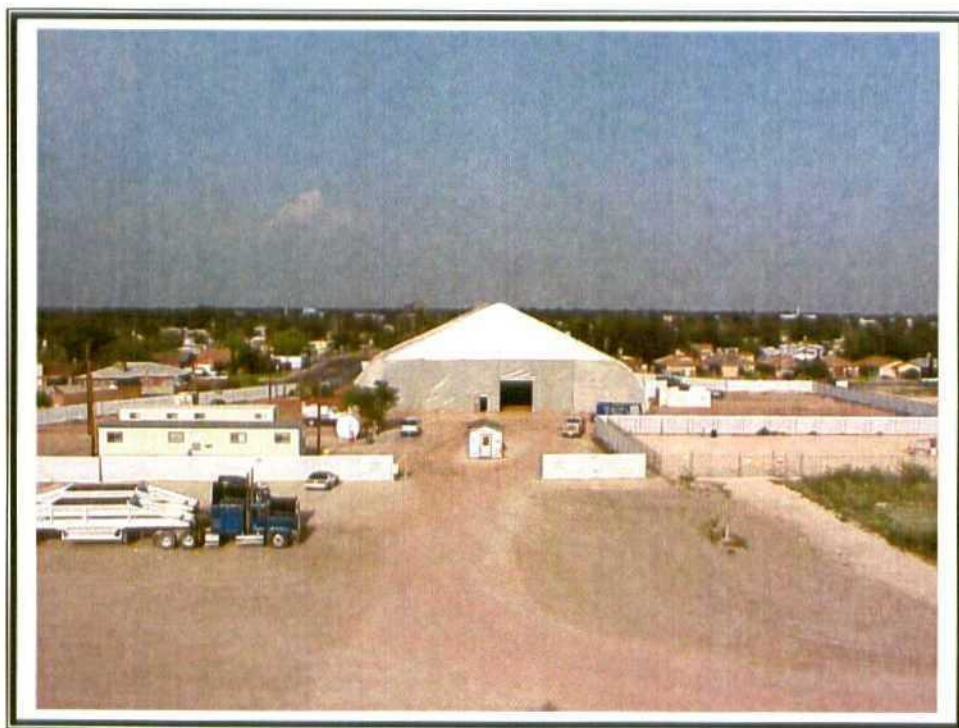
11. View of crane and structure move from nearby field.



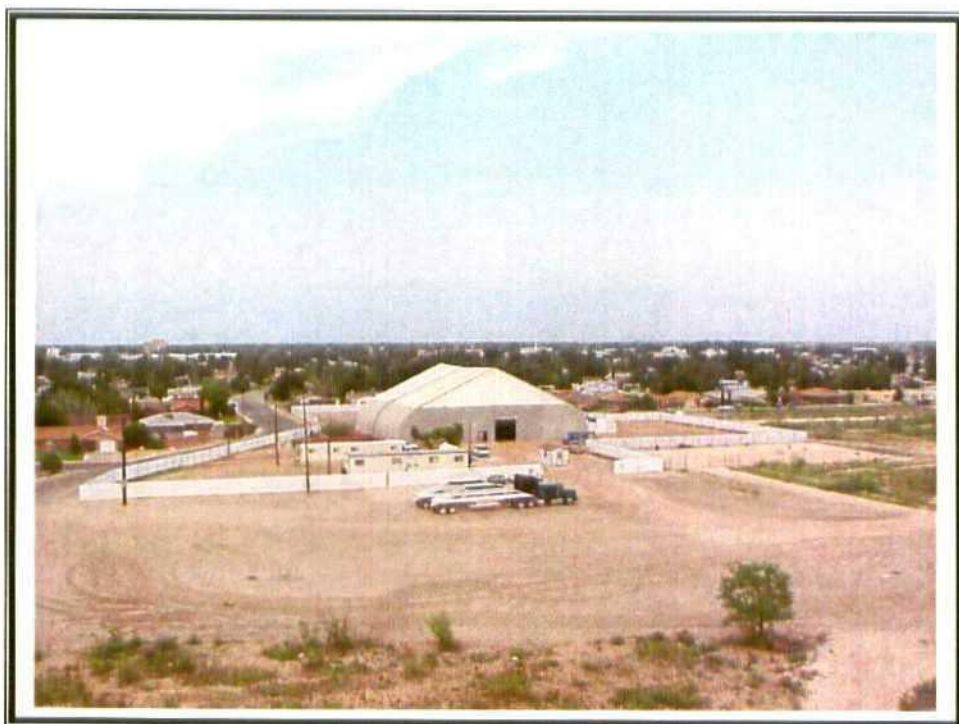
12. View of structure move from the corner of Cobb Street.



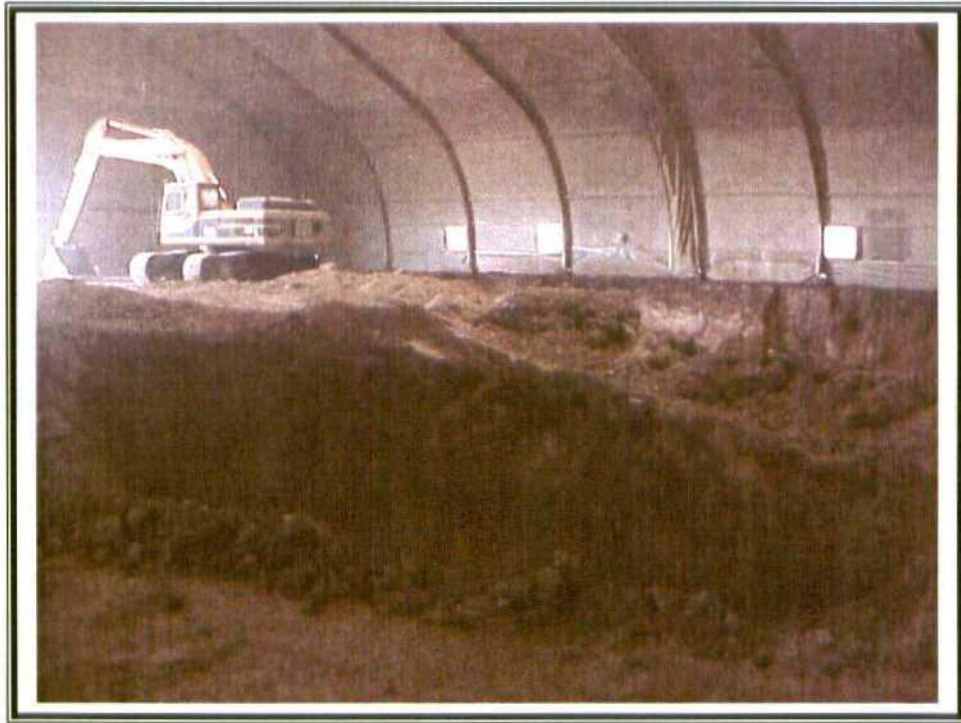
13. View of structure move from South Tasker.



14. Aerial photo of site.



15. Aerial photo of site.



16. Phase III – Excavation.



17. Phase III – Excavation.



18. Phase III – Excavation.



19. Phase III – Excavation.



20. Phase III – Excavation.



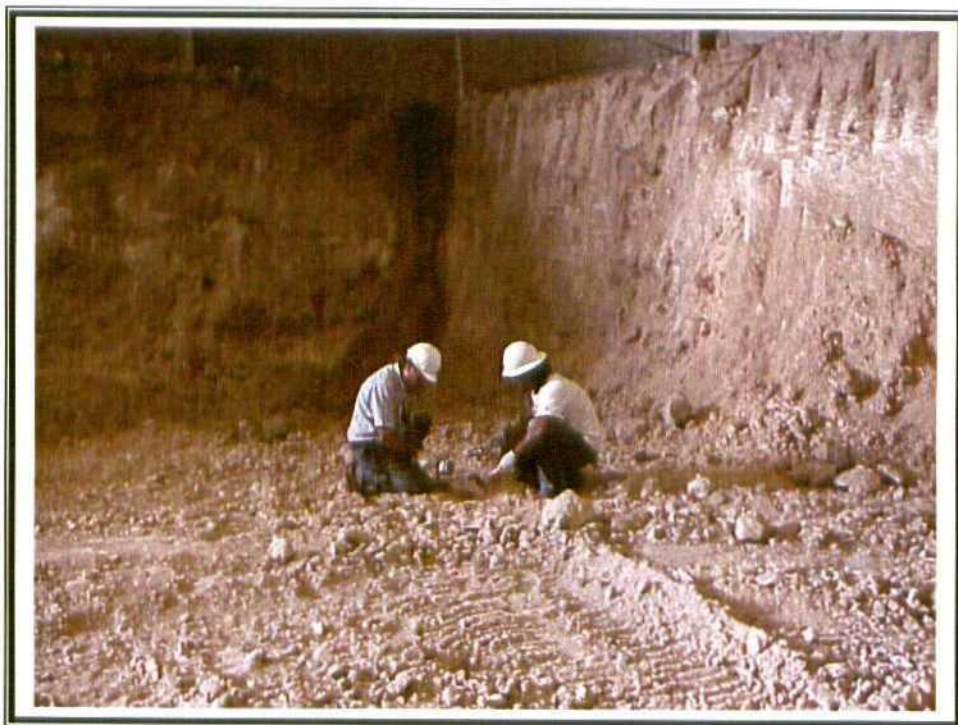
21. Phase III – Excavation.



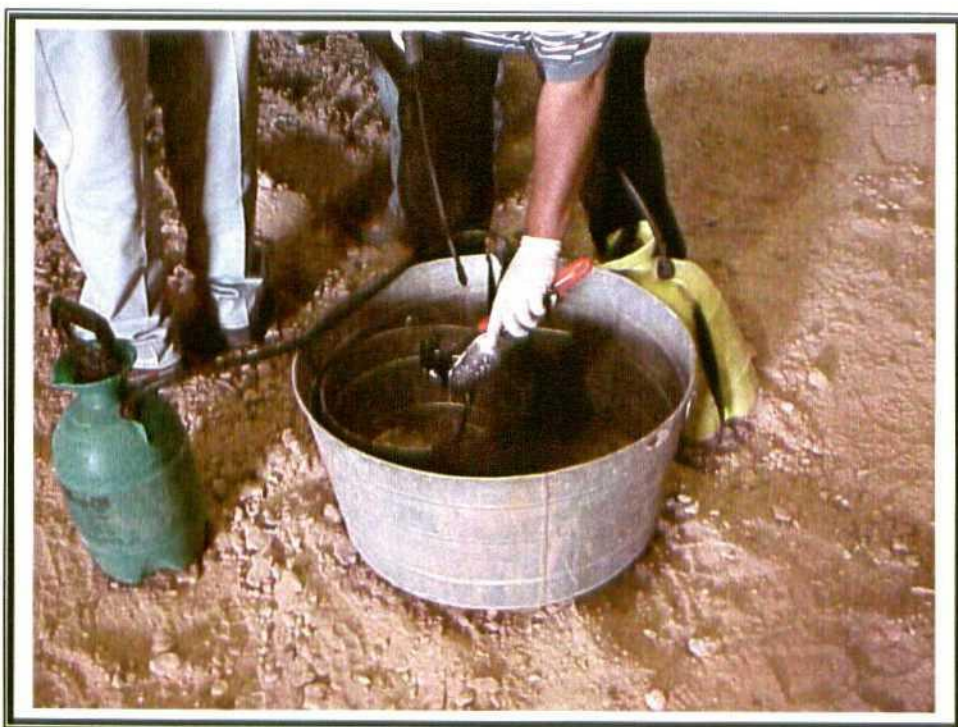
22. Phase III – Excavation – bottom hole.



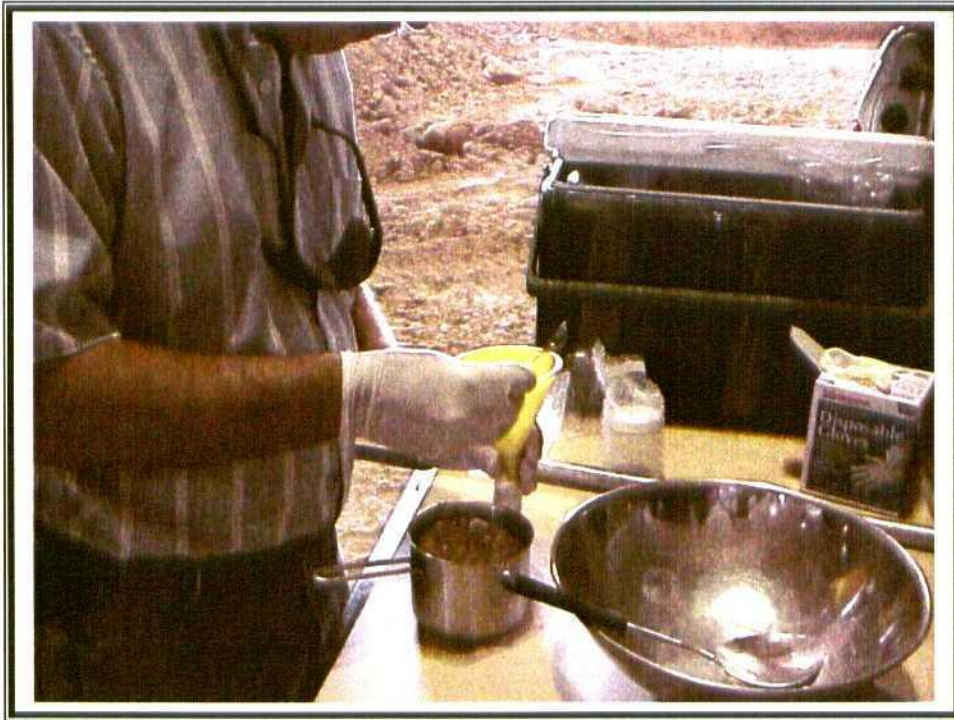
23. Phase III – Excavation – bottom hole.



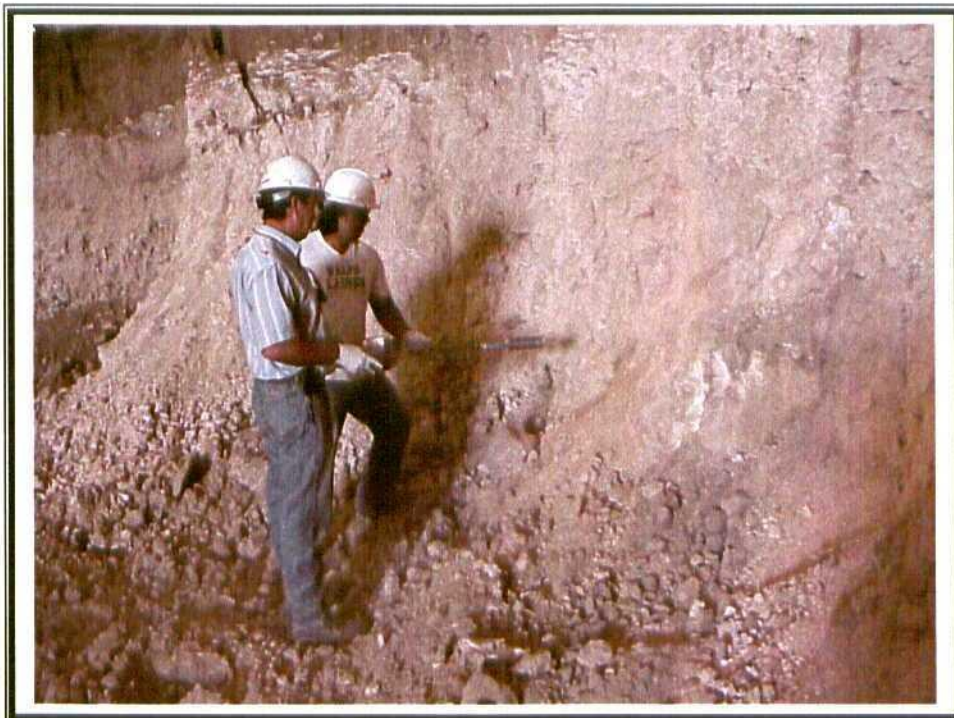
24. Phase III – Confirmation sampling.



25. Phase III – Confirmation sampling. Deconning sampling tools.



26. Phase III – Confirmation sampling. Filling sample jars.



27. Phase III – Confirmation sampling. Retrieving sample from side wall of excavated area.



28. Phase III – Backfill. Clay liner.



29. Phase III – Backfill. Roller packing down clay liner.



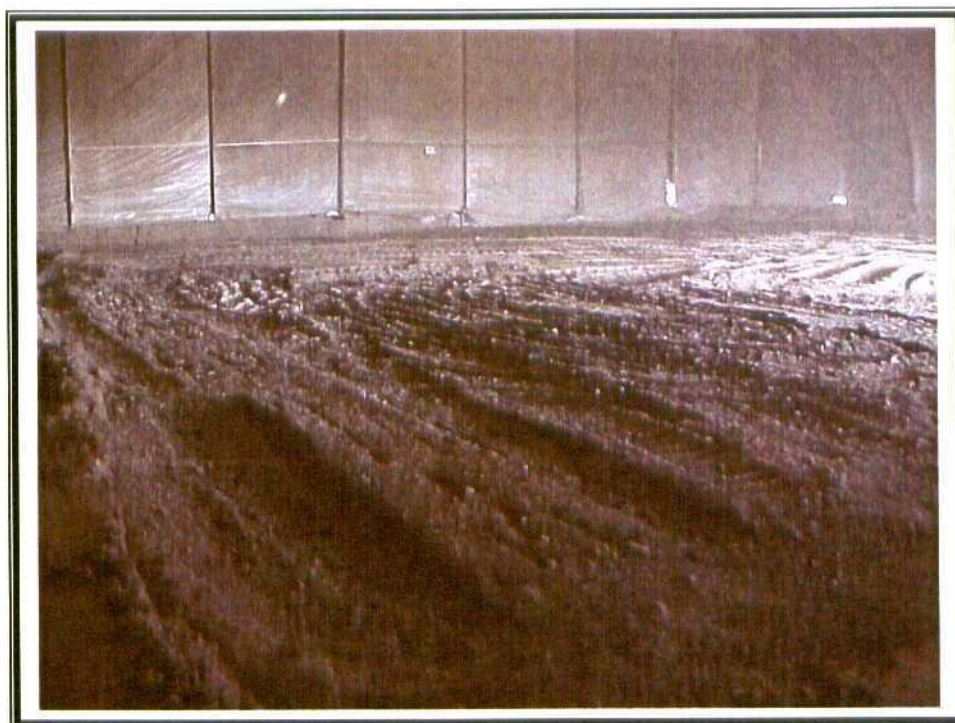
30. Phase III – Backfill. Dozer spreading caliche.



31. Phase III – Backfill. Dozer spreading caliche.



32. Phase III – Backfill caliche near surface.



33. Phase III – Backfill topsoil.



34. Phase III – Backfill topsoil.



35. Phase III – Backfill topsoil.



36. Phase III – Backfill topsoil.



37. Phase III – Backfill completed.

APPENDIX II

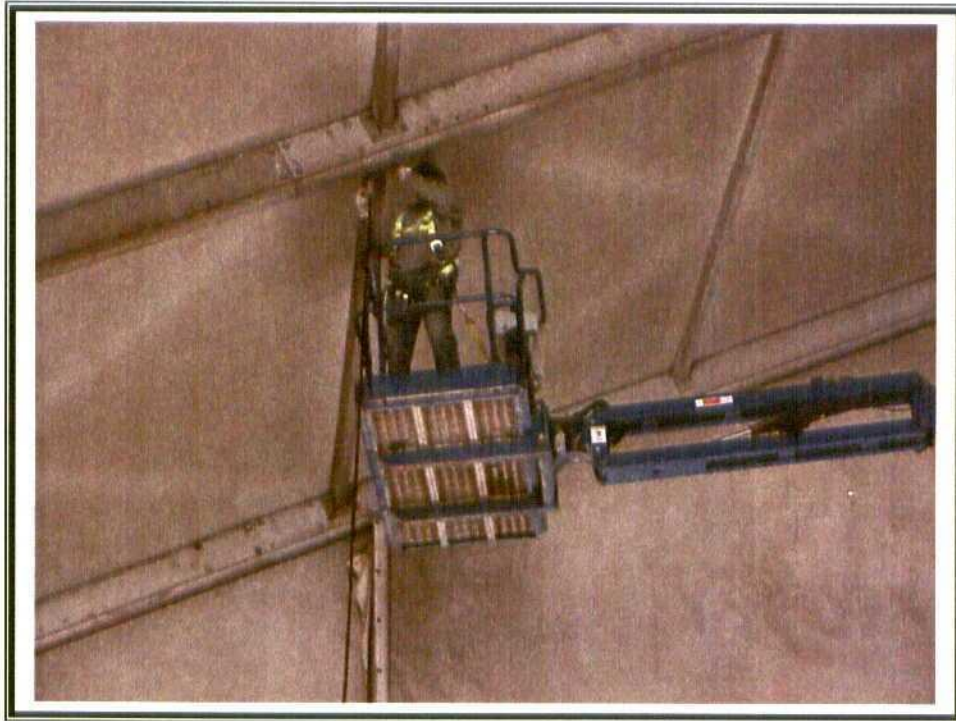
Site Photographs
Structure Dismantle
October 2002

**Westgate Stage 2 Abatement Plan-
Remediation Activities Report**
Hobbs, New Mexico

Prepared for:
Shell Exploration & Production Company
Houston, Texas

May 2003

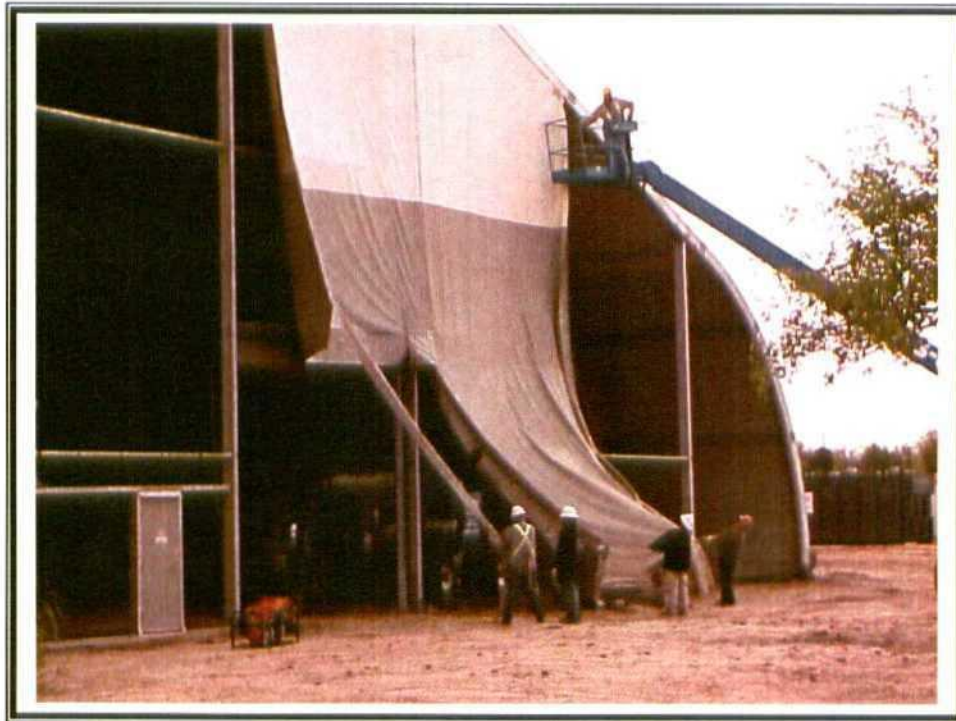
Prepared by:
BBC International, Inc.



1. Universal Fabric Structure crewman removing bolts on cross bar support beams.



2. Universal Fabric Structure crewman removing front panel of fabric.



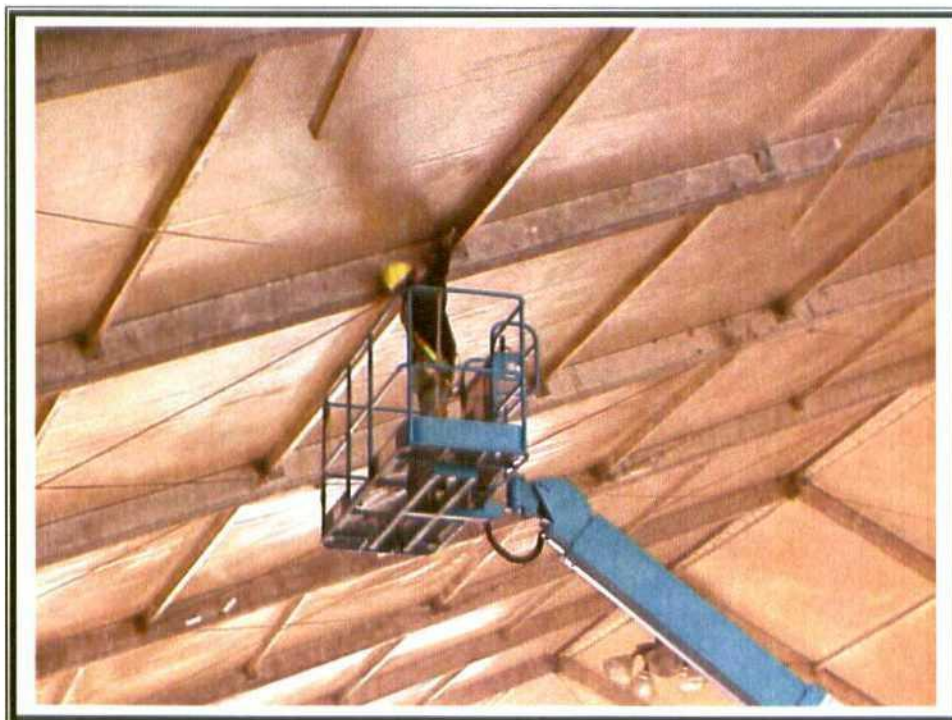
3. Universal Fabric Structure crewman removing another large panel of fabric from the front of structure.



4. Universal Fabric Structure crewman folding fabric that has been removed from structure.



5. Universal Fabric Structure crewman releasing upright support beam from the front of the structure.



6. Universal Fabric Structure crewman removing bolts and releasing tension cables that criss cross support beams.



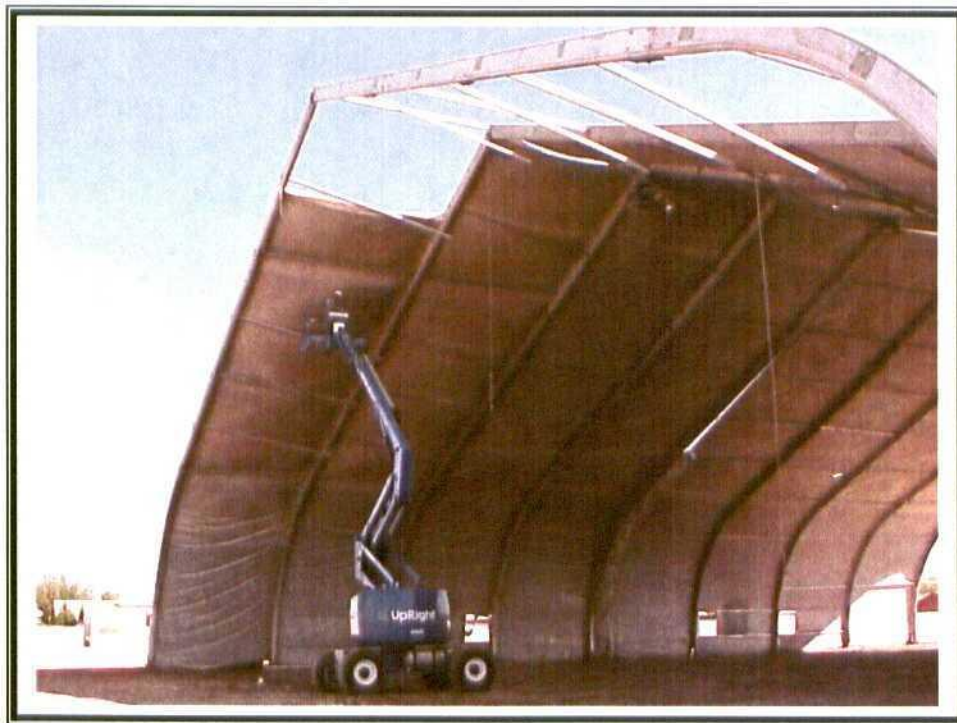
7. Support beams are detached on one side only and will be removed once each section is lowered to the ground.



8. Removing ventilation plates that were part of the carbon filtration system.



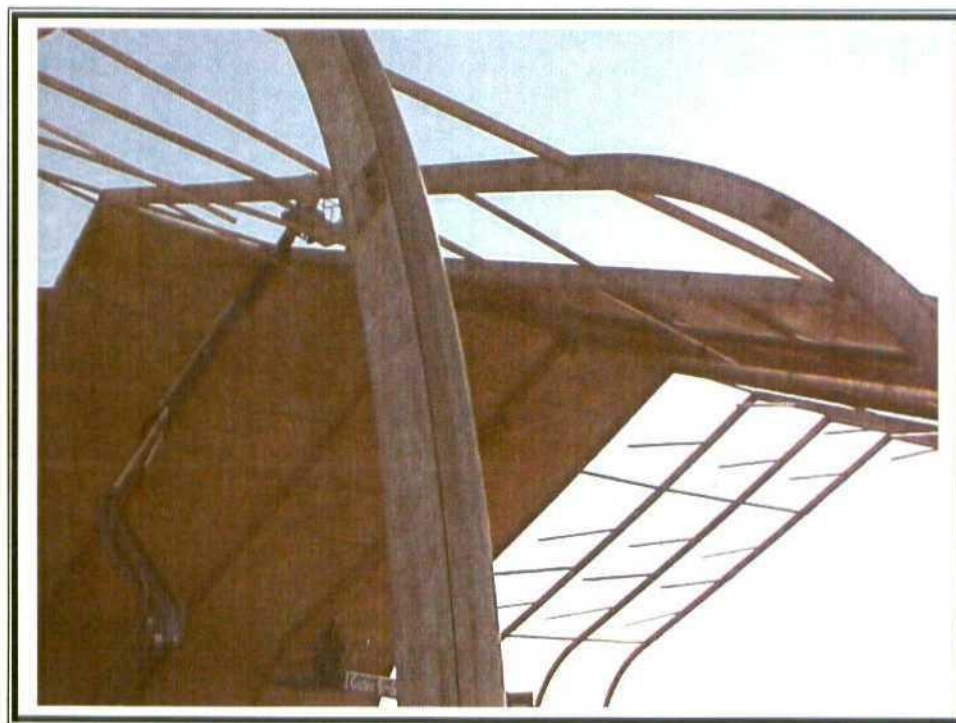
9. Front view of structure without fabric panels.



10. Fabric panels were removed a section at a time. Structure crewman in the manlift assists the panel downward.



11. View of structure with fabric removed.



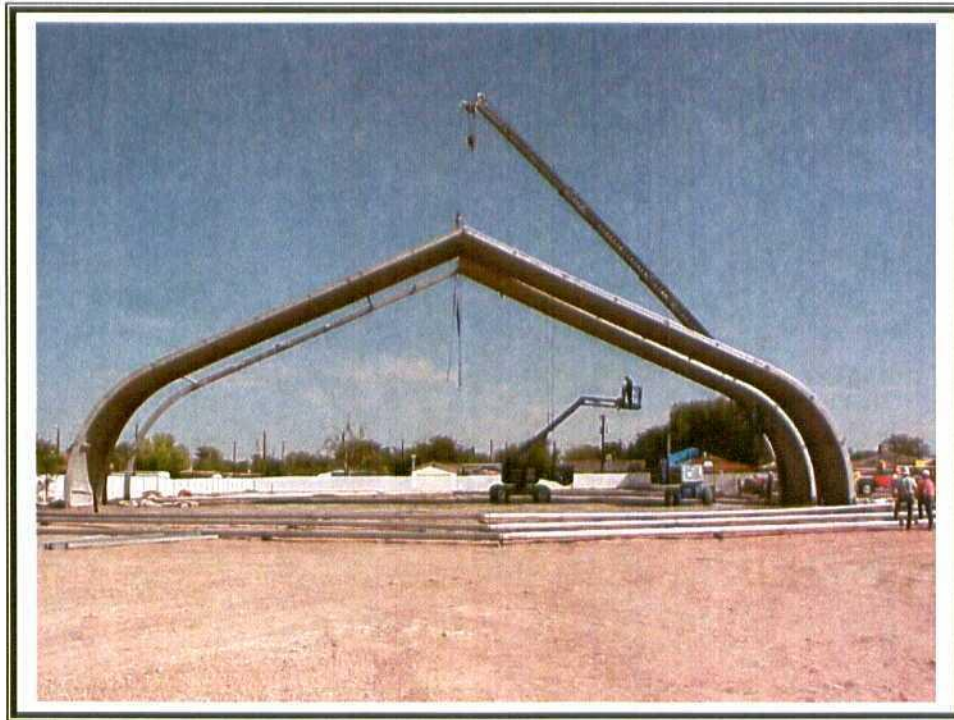
12. View of structure with fabric removed.



13. Front view of structure with fabric removed.



14. Structure crewman detaching crossbeams from the last ribs still standing.



15. View of structure with three sections left to be lowered to the ground. Several sections have already been lowered as seen at the bottom of the photo.



16. Three structure ribs remaining.



17. Crane lowering a rib of structure framework.



18. Last two pieces of framework standing. Final piece was tied down to stabilize it.



19. Final piece of structure framework is lowered.



20. Structure crewmen disassemble structure framework.



21. Structure crewmen disassemble framework and forklift stacks pieces.



22. Framework stacked in piles.



23. Carrier hauling off structure framework.



24. Winch truck loading carbon filtration unit on carrier truck.



25. Winch truck loading carbon beds onto carrier truck.

APPENDIX II

Site Photographs

Completed Site

November 2002

Westgate Stage 2 Abatement Plan- Remediation Activities Report Hobbs, New Mexico

Prepared for:

Shell Exploration & Production Company
Houston, Texas

May 2003

Prepared by:

BBC International, Inc.

Completed Site



1. West looking Northeast.



2. West looking East.

Completed Site



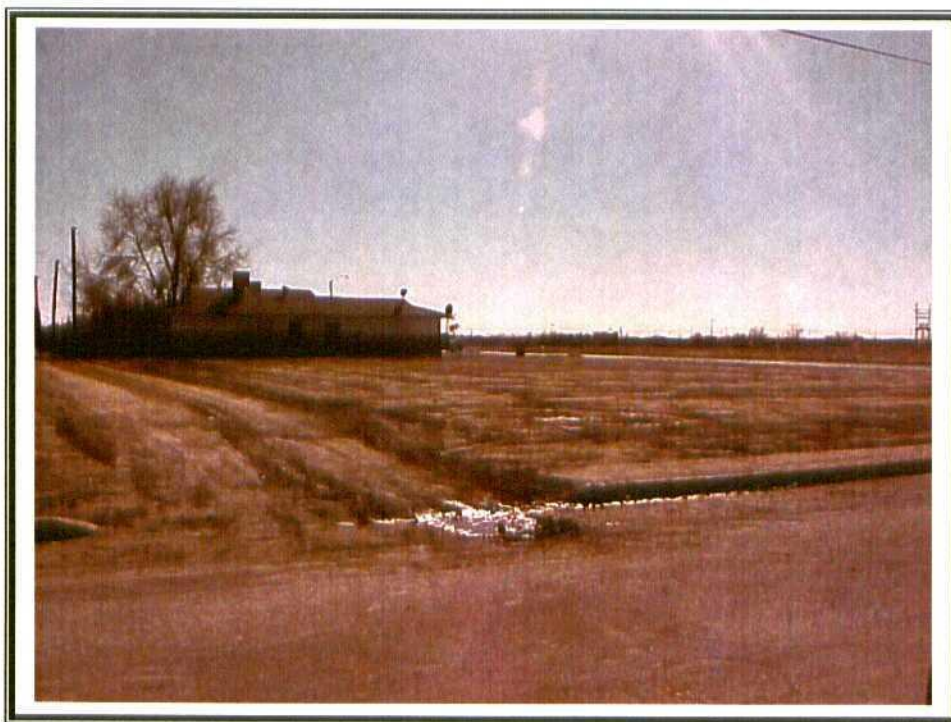
3. West looking Southeast.



4. East looking Northwest.



5. East looking West.



6. East Tasker – North looking South.



7. Tasker Street – North looking South.

APPENDIX III

Soil Confirmation Sampling Data Tables and Laboratory Data

May 13, 2002

Westgate Stage 2 Abatement Plan- Remediation Activities Report Hobbs, New Mexico

Prepared for:
Shell Exploration & Production Company
Houston, Texas

May 2003

Prepared by:
BBC International, Inc.

Appendix III
Phase I - Trace Analysis Confirmation Bottom and Side Wall Sampling and Analytical Data
May 13, 2002

Table 1

		NEB #1	SEB #2	EW COMP #3	NW COMP #4	SW COMP #5	WW COMP #6
Analyte	Method	Sample: 197118	Sample: 197119	Sample: 197120	Sample: 197121	Sample: 197122	Sample: 197123
		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Benzene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Toluene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Ethylbenzene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
m, p-Xylene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
o-Xylene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0

		NEB #1	SEB #2	EW COMP #3	NW COMP #4	SW COMP #5	WW COMP #6
Analyte	Method	Sample: 197179	Sample: 197180	Sample: 197181	Sample: 197182	Sample: 197183	Sample: 197184
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
TPH	E 418.1	71.3	1690	1260	24.4	15.9	1890
Total Mercury	S 7471A	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Total Aluminum	S 6010B	12700	7550	6730	8600	7800	7330
Total Arsenic	S 6010B	<5.00	<5.0	5.12	<5.00	<5.00	<5.00
Total Barium	S 6010B	191	294	245	652	132	209
Total Boron	S 6010B	48.3	28.9	23.6	30	30.4	27.4
Total Cadmium	S 6010B	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50
Total Calcium	S 6010B	52700	84100	117000	73300	72800	88300
Total Chromium	S 6010B	9.57	6.17	4.95	5.82	5.63	5.05
Total Cobalt	S 6010B	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50
Total Copper	S 6010B	2.22	3.5	3.02	2.35	2.14	2.58
Total Iron	S 6010B	8000	4760	4440	5330	6020	5030
Total Lead	S 6010B	2.67	2.2	2.05	1.54	2.84	2.31
Total Magnesium	S 6010B	9100	10900	6120	8420	3330	5480
Total Manganese	S 6010B	62.6	64.2	56.5	37.9	70.1	57.8
Total Molybdenum	S 6010B	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Total Nickel	S 6010B	7.99	6.37	5.8	6.59	5.21	6.14
Total Potassium	S 6010B	3420	2450	1950	2350	1960	2030
Total Selenium	S 6010B	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Total Silica	S 6010B	96.6	102	94.8	101	71	103
Total Silver	S 6010B	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25
Total Sodium	S 6010B	630	735	718	657	617	745
Total Zinc	S 6010B	21.3	16.9	14.1	17.1	16.9	18.2

Report Date: May 20, 2002 Order Number: A02051624
N/A Shell Westgate

Page Number: 1 of 1
Hobbs, NM

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: May 20, 2002

Order ID Number: A02051624

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
197179	1-NEB	Soil	5/13/02	9:36	5/15/02
197180	2-SEB	Soil	5/13/02	9:50	5/15/02
197181	3-EW Comp	Soil	5/13/02	10:10	5/15/02
197182	4-NW Comp	Soil	5/13/02	10:25	5/15/02
197183	5-SW Comp	Soil	5/13/02	10:33	5/15/02
197184	6-WW Comp	Soil	5/13/02	10:44	5/15/02

0 This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	TPH TRPHC (ppm)
197179 - 1-NEB	71.3
197180 - 2-SEB	1690
197181 - 3-EW Comp	1260
197182 - 4-NW Comp	24.4
197183 - 5-SW Comp	15.9
197184 - 6-WW Comp	1890

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Brunson
International Inc.
Box 805
s, NM 88241

Report Date: May 20, 2002

Order ID Number: A02051624

at Number: N/A
at Name: Shell Westgate
at Location: Hobbs, NM

sed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-
sis, Inc.

le	Description	Matrix	Date Taken	Time Taken	Date Received
9	1-NEB	Soil	5/13/02	9:36	5/15/02
0	2-SEB	Soil	5/13/02	9:50	5/15/02
1	3-EW Comp	Soil	5/13/02	10:10	5/15/02
2	4-NW Comp	Soil	5/13/02	10:25	5/15/02
3	5-SW Comp	Soil	5/13/02	10:33	5/15/02
4	6-WW Comp	Soil	5/13/02	10:44	5/15/02

results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch

All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.
the RDL is equal to MQL for all organic analytes including TPH.

est results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

eport consists of a total of 4 pages and shall not be reproduced except in its entirety including the chain of custody
, without written approval of TraceAnalysis, Inc.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 197179 - 1-NEB

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC20449 Date Analyzed: 5/20/02
Analyst: KM Preparation Method: N/A Prep Batch: PB19527 Date Prepared: 5/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		71.3	mg/Kg	1	10

Sample: 197180 - 2-SEB

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC20449 Date Analyzed: 5/20/02
Analyst: KM Preparation Method: N/A Prep Batch: PB19527 Date Prepared: 5/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		1690	mg/Kg	5	10

Sample: 197181 - 3-EW Comp

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC20449 Date Analyzed: 5/20/02
Analyst: KM Preparation Method: N/A Prep Batch: PB19527 Date Prepared: 5/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		1260	mg/Kg	5	10

Sample: 197182 - 4-NW Comp

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC20449 Date Analyzed: 5/20/02
Analyst: KM Preparation Method: N/A Prep Batch: PB19527 Date Prepared: 5/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		24.4	mg/Kg	1	10

Sample: 197183 - 5-SW Comp

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC20449 Date Analyzed: 5/20/02
Analyst: KM Preparation Method: N/A Prep Batch: PB19527 Date Prepared: 5/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		15.9	mg/Kg	1	10

Sample: 197184 - 6-WW Comp

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC20449 Date Analyzed: 5/20/02
Analyst: KM Preparation Method: N/A Prep Batch: PB19527 Date Prepared: 5/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		1890	mg/Kg	5	10

Quality Control Report Method Blank

Method Blank QCBatch: QC20449

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10	mg/Kg	10

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC20449

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	269	270	mg/Kg	1	250	<10	107	0	74 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC20449

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	311	318	mg/Kg	1	250	71.3	95	2	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC20449

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	101	101	80 - 120	5/20/02

CCV (2) QCBatch: QC20449

Report Date: May 20, 2002
N/A

Order Number: A02051624
Shell Westgate

Page Number: 4 of 4
Hobbs, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	101	101	80 - 120	5/20/02

ICV (1)

QCBatch: QC20449

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	104	104	80 - 120	5/20/02

Report Date: May 24, 2002 Order Number: A02051605
N/A Shell Westgate

Page Number: 1 of 2
Hobbs, NM

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: May 24, 2002

Order ID Number: A02051605

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
197118	1-NEB	Soil	5/13/02	9:36	5/15/02
197119	2-SEB	Soil	5/13/02	9:50	5/15/02
197120	3-EW Comp	Soil	5/13/02	10:10	5/15/02
197121	4-NW Comp	Soil	5/13/02	10:25	5/15/02
197122	5-SW Comp	Soil	5/13/02	10:33	5/15/02
197123	6-WW Comp	Soil	5/13/02	10:44	5/15/02

0 This report consists of a total of 2 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 197118 - 1-NEB

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

Sample: 197119 - 2-SEB

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

Sample: 197120 - 3-EW Comp

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: May 24, 2002 Order Number: A02051605
N/A Shell WestgatePage Number: 2 of 2
Hobbs, NM*Sample 197120 continued ...*

Param	Flag	Result	Units
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

Sample: 197121 - 4-NW Comp

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

Sample: 197122 - 5-SW Comp

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

Sample: 197123 - 6-WW Comp

Param	Flag	Result	Units
Benzene		<25.0	µg/Kg
Toluene		<25.0	µg/Kg
Ethylbenzene		<25.0	µg/Kg
m,p-Xylene		<25.0	µg/Kg
o-Xylene		<25.0	µg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1290 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: May 24, 2002

Order ID Number: A02051605

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
197118	1-NEB	Soil	5/13/02	9:36	5/15/02
197119	2-SEB	Soil	5/13/02	9:50	5/15/02
197120	3-EW Comp	Soil	5/13/02	10:10	5/15/02
197121	4-NW Comp	Soil	5/13/02	10:25	5/15/02
197122	5-SW Comp	Soil	5/13/02	10:33	5/15/02
197123	6-WW Comp	Soil	5/13/02	10:44	5/15/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH. The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

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Dr. Blair Leftwich, Director

Analytical Report

Sample: 197118 - 1-NEB

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC20577 Date Analyzed: 5/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB19632 Date Prepared: 5/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.2	µg/Kg	1	50	100	70 - 130
Toluene-d8		53.2	µg/Kg	1	50	106	70 - 130
4-Bromofluorobenzene		52.6	µg/Kg	1	50	105	70 - 130

Sample: 197119 - 2-SEB

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC20577 Date Analyzed: 5/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB19632 Date Prepared: 5/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.1	µg/Kg	1	50	102	70 - 130
Toluene-d8		53.2	µg/Kg	1	50	106	70 - 130
4-Bromofluorobenzene		53.3	µg/Kg	1	50	106	70 - 130

Sample: 197120 - 3-EW Comp

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC20577 Date Analyzed: 5/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB19632 Date Prepared: 5/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Report Date: May 24, 2002
N/A

Order Number: A02051605
Shell Westgate

Page Number: 3 of 6
Hobbs, NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		45.7	µg/Kg	1	50	91	70 - 130
Toluene-d8		52.6	µg/Kg	1	50	105	70 - 130
4-Bromofluorobenzene		53.4	µg/Kg	1	50	106	70 - 130

Sample: 197121 - 4-NW Comp

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC20577 Date Analyzed: 5/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB19632 Date Prepared: 5/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.3	µg/Kg	1	50	96	70 - 130
Toluene-d8		52.6	µg/Kg	1	50	105	70 - 130
4-Bromofluorobenzene		52.5	µg/Kg	1	50	105	70 - 130

Sample: 197122 - 5-SW Comp

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC20577 Date Analyzed: 5/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB19632 Date Prepared: 5/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.1	µg/Kg	1	50	96	70 - 130
Toluene-d8		52.5	µg/Kg	1	50	105	70 - 130
4-Bromofluorobenzene		52	µg/Kg	1	50	104	70 - 130

Sample: 197123 - 6-WW Comp

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC20577 Date Analyzed: 5/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB19632 Date Prepared: 5/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1

Continued ...

Report Date: May 24, 2002
N/A

Order Number: A02051605
Shell Westgate

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Hobbs, NM

... Continued Sample: 197123 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.6	µg/Kg	1	50	95	70 - 130
Toluene-d8		52.7	µg/Kg	1	50	105	70 - 130
4-Bromofluorobenzene		51.5	µg/Kg	1	50	103	70 - 130

Quality Control Report Method Blank

Method Blank QCBatch: QC20577

Param	Flag	Results	Units	Reporting Limit
Benzene		<25.0	µg/Kg	1
Toluene		<25.0	µg/Kg	1
Ethylbenzene		<25.0	µg/Kg	1
m,p-Xylene		<25.0	µg/Kg	1
o-Xylene		<25.0	µg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.5	µg/Kg	1	50	97	70 - 130
Toluene-d8		54.5	µg/Kg	1	50	109	70 - 130
4-Bromofluorobenzene		51.7	µg/Kg	1	50	103	70 - 130

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC20577

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	101	100	µg/Kg	1	100	<25.0	101	0	80 - 120	20
Benzene	97	97	µg/Kg	1	100	<25.0	97	0	80 - 120	20
Trichloroethene (TCE)	91	90	µg/Kg	1	100	<25.0	91	1	80 - 120	20
Toluene	93	94	µg/Kg	1	100	<25.0	93	1	84 - 108	20
Chlorobenzene	99	99	µg/Kg	1	100	<25.0	99	0	93 - 109	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	49.6	50.1	µg/Kg	1	50	99	100	70 - 130
Toluene-d8	53.8	53.0	µg/Kg	1	50	107	106	70 - 130
4-Bromofluorobenzene	50.7	52.3	µg/Kg	1	50	101	104	70 - 130

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC20577

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/Kg	50	55	110	80 - 120	5/23/02
1,1-Dichloroethene		µg/Kg	50	53	106	80 - 120	5/23/02
Chloroform		µg/Kg	50	54	108	80 - 120	5/23/02
1,2-Dichloropropane		µg/Kg	50	53	106	80 - 120	5/23/02
Toluene		µg/Kg	50	50	100	80 - 120	5/23/02
Chlorobenzene		µg/Kg	50	50	100	80 - 120	5/23/02
Ethylbenzene		µg/Kg	50	51	102	80 - 120	5/23/02
Dibromofluoromethane		µg/Kg	50	52.8	105	80 - 120	5/23/02
Toluene-d8		µg/Kg	50	53.4	106	80 - 120	5/23/02
4-Bromofluorobenzene		µg/Kg	50	52.6	105	80 - 120	5/23/02

Report Date: June 5, 2002 Order Number: A02051624
N/A Shell WestgatePage Number: 1 of 4
Hobbs, NM

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: June 5, 2002

Order ID Number: A02051624

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
197179	1-NEB	Soil	5/13/02	9:36	5/15/02
197180	2-SEB	Soil	5/13/02	9:50	5/15/02
197181	3-EW Comp	Soil	5/13/02	10:10	5/15/02
197182	4-NW Comp	Soil	5/13/02	10:25	5/15/02
197183	5-SW Comp	Soil	5/13/02	10:33	5/15/02
197184	6-WW Comp	Soil	5/13/02	10:44	5/15/02

0 This report consists of a total of 4 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 197179 - 1-NEB

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		12700	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		191	mg/Kg
Total Boron		48.3	mg/Kg
Total Cadmium		<2.50	mg/Kg
Total Calcium		52700	mg/Kg
Total Chromium		9.57	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		2.22	mg/Kg
Total Iron		8000	mg/Kg
Total Lead		2.67	mg/Kg
Total Magnesium		9100	mg/Kg
Total Manganese		62.6	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		7.99	mg/Kg
Total Potassium		3420	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		96.6	mg/Kg
Total Silver		<1.25	mg/Kg
Total Sodium		630	mg/Kg
Total Zinc		21.3	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: June 5, 2002 Order Number: A02051624

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N/A

Shell Westgate

Hobbs, NM

Sample: 197180 - 2-SEB

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		7550	mg/Kg
Total Arsenic		<5.0	mg/Kg
Total Barium		294	mg/Kg
Total Boron		28.9	mg/Kg
Total Cadmium		<2.50	mg/Kg
Total Calcium		84100	mg/Kg
Total Chromium		6.17	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		3.5	mg/Kg
Total Iron		4760	mg/Kg
Total Lead		2.2	mg/Kg
Total Magnesium		10900	mg/Kg
Total Manganese		64.2	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		6.37	mg/Kg
Total Potassium		2450	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		102	mg/Kg
Total Silver		<1.25	mg/Kg
Total Sodium		735	mg/Kg
Total Zinc		16.9	mg/Kg

Sample: 197181 - 3-EW Comp

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		6730	mg/Kg
Total Arsenic		5.12	mg/Kg
Total Barium		245	mg/Kg
Total Boron		23.6	mg/Kg
Total Cadmium		<2.50	mg/Kg
Total Calcium		117000	mg/Kg
Total Chromium		4.95	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		3.02	mg/Kg
Total Iron		4440	mg/Kg
Total Lead		2.05	mg/Kg
Total Magnesium		6120	mg/Kg
Total Manganese		56.5	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		5.8	mg/Kg
Total Potassium		1950	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		94.8	mg/Kg
Total Silver		<1.25	mg/Kg
Total Sodium		718	mg/Kg
Total Zinc		14.1	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: June 5, 2002 Order Number: A02051624
N/A Shell WestgatePage Number: 3 of 4
Hobbs, NM**Sample: 197182 - 4-NW Comp**

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		8600	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		652	mg/Kg
Total Boron		30	mg/Kg
Total Cadmium		<2.50	mg/Kg
Total Calcium		73300	mg/Kg
Total Chromium		5.82	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		2.35	mg/Kg
Total Iron		5330	mg/Kg
Total Lead		1.54	mg/Kg
Total Magnesium		8420	mg/Kg
Total Manganese		37.9	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		6.59	mg/Kg
Total Potassium		2350	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		101	mg/Kg
Total Silver		<1.25	mg/Kg
Total Sodium		657	mg/Kg
Total Zinc		17.1	mg/Kg

Sample: 197183 - 5-SW Comp

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		7800	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		132	mg/Kg
Total Boron		30.4	mg/Kg
Total Cadmium		<2.50	mg/Kg
Total Calcium		72800	mg/Kg
Total Chromium		5.63	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		2.14	mg/Kg
Total Iron		6020	mg/Kg
Total Lead		2.84	mg/Kg
Total Magnesium		3330	mg/Kg
Total Manganese		70.1	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		5.21	mg/Kg
Total Potassium		1960	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		71	mg/Kg
Total Silver		<1.25	mg/Kg
Total Sodium		617	mg/Kg
Total Zinc		16.9	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: June 5, 2002 Order Number: A02051624

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N/A

Shell Westgate

Hobbs, NM

Sample: 197184 - 6-WW Comp

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		7330	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		209	mg/Kg
Total Boron		27.4	mg/Kg
Total Cadmium		<2.50	mg/Kg
Total Calcium		88300	mg/Kg
Total Chromium		5.05	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		2.58	mg/Kg
Total Iron		5030	mg/Kg
Total Lead		2.31	mg/Kg
Total Magnesium		5480	mg/Kg
Total Manganese		57.8	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		6.14	mg/Kg
Total Potassium		2030	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		103	mg/Kg
Total Silver		<1.25	mg/Kg
Total Sodium		745	mg/Kg
Total Zinc		18.2	mg/Kg

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas 79424
El Paso, Texas 79932

800•378•1296
888•588•3443
E-Mail: lab@traceanalysis.com

806•794•1296
915•585•3443

FAX 806•794•1298
FAX 915•585•4944

Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: June 5, 2002

Order ID Number: A02051624

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
197179	1-NEB	Soil	5/13/02	9:36	5/15/02
197180	2-SEB	Soil	5/13/02	9:50	5/15/02
197181	3-EW Comp	Soil	5/13/02	10:10	5/15/02
197182	4-NW Comp	Soil	5/13/02	10:25	5/15/02
197183	5-SW Comp	Soil	5/13/02	10:33	5/15/02
197184	6-WW Comp	Soil	5/13/02	10:44	5/15/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 10 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.



Dr. Blair Leftwich, Director

Report Date: June 5, 2002
N/A

Order Number: A02051624
Shell Westgate

Page Number: 2 of 10
Hobbs, NM

Analytical Report

Sample: 197179 - 1-NEB

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 5/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 5/21/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 197179 - 1-NEB

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 5/21/02
Analyst: BP Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 5/17/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		12700	mg/Kg	1	0.10
Total Arsenic		<5.00	mg/Kg	1	0.05
Total Barium		191	mg/Kg	1	0.10
Total Boron		48.3	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		52700	mg/Kg	1	0.50
Total Chromium		9.57	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		2.22	mg/Kg	1	0.01
Total Iron		8000	mg/Kg	1	0.05
Total Lead		2.67	mg/Kg	1	0.01
Total Magnesium		9100	mg/Kg	1	0.50
Total Manganese		62.6	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		7.99	mg/Kg	1	0.02
Total Potassium		3420	mg/Kg	1	0.50
Total Selenium		<5.00	mg/Kg	1	0.01
Total Silica		96.6	mg/Kg	1	0.05
Total Silver		<1.25	mg/Kg	1	0.002
Total Sodium		630	mg/Kg	1	0.50
Total Zinc		21.3	mg/Kg	1	0.02

Sample: 197180 - 2-SEB

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 5/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 5/21/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 197180 - 2-SEB

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 5/21/02
Analyst: BP Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 5/17/02

Report Date: June 5, 2002
N/A

Order Number: A02051624
Shell Westgate

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Hobbs,NM

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7550	mg/Kg	1	0.10
Total Arsenic		<5.0	mg/Kg	1	0.05
Total Barium		294	mg/Kg	1	0.10
Total Boron		28.9	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		84100	mg/Kg	1	0.50
Total Chromium		6.17	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		3.5	mg/Kg	1	0.01
Total Iron		4760	mg/Kg	1	0.05
Total Lead		2.2	mg/Kg	1	0.01
Total Magnesium		10900	mg/Kg	1	0.50
Total Manganese		64.2	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		6.37	mg/Kg	1	0.02
Total Potassium		2450	mg/Kg	1	0.50
Total Selenium		<5.00	mg/Kg	1	0.01
Total Silica		102	mg/Kg	1	0.05
Total Silver		<1.25	mg/Kg	1	0.002
Total Sodium		735	mg/Kg	1	0.50
Total Zinc		16.9	mg/Kg	1	0.02

Sample: 197181 - 3-EW Comp

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 5/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 5/21/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 197181 - 3-EW Comp

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 5/21/02
Analyst: BP Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 5/17/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		6730	mg/Kg	1	0.10
Total Arsenic		5.12	mg/Kg	1	0.05
Total Barium		245	mg/Kg	1	0.10
Total Boron		23.6	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		117000	mg/Kg	1	0.50
Total Chromium		4.95	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		3.02	mg/Kg	1	0.01
Total Iron		4440	mg/Kg	1	0.05
Total Lead		2.05	mg/Kg	1	0.01
Total Magnesium		6120	mg/Kg	1	0.50
Total Manganese		56.5	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		5.8	mg/Kg	1	0.02
Total Potassium		1950	mg/Kg	1	0.50

Continued ...

Report Date: June 5, 2002
N/A

Order Number: A02051624
Shell Westgate

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Hobbs,NM

... Continued Sample: 197181 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Selenium		<5.00	mg/Kg	1	0.01
Total Silica		94.8	mg/Kg	1	0.05
Total Silver		<1.25	mg/Kg	1	0.002
Total Sodium		718	mg/Kg	1	0.50
Total Zinc		14.1	mg/Kg	1	0.02

Sample: 197182 - 4-NW Comp

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 5/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 5/21/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 197182 - 4-NW Comp

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 5/21/02
Analyst: BP Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 5/17/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		8600	mg/Kg	1	0.10
Total Arsenic		<5.00	mg/Kg	1	0.05
Total Barium		652	mg/Kg	1	0.10
Total Boron		30	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		73300	mg/Kg	1	0.50
Total Chromium		5.82	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		2.35	mg/Kg	1	0.01
Total Iron		5330	mg/Kg	1	0.05
Total Lead		1.54	mg/Kg	1	0.01
Total Magnesium		8420	mg/Kg	1	0.50
Total Manganese		37.9	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		6.59	mg/Kg	1	0.02
Total Potassium		2350	mg/Kg	1	0.50
Total Selenium		<5.00	mg/Kg	1	0.01
Total Silica		101	mg/Kg	1	0.05
Total Silver		<1.25	mg/Kg	1	0.002
Total Sodium		657	mg/Kg	1	0.50
Total Zinc		17.1	mg/Kg	1	0.02

Sample: 197183 - 5-SW Comp

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 5/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 5/21/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Report Date: June 5, 2002
N/A

Order Number: A02051624
Shell Westgate

Page Number: 5 of 10
Hobbs, NM

Sample: 197183 - 5-SW Comp

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 5/21/02
Analyst: BP Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 5/17/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7800	mg/Kg	1	0.10
Total Arsenic		<5.00	mg/Kg	1	0.05
Total Barium		132	mg/Kg	1	0.10
Total Boron		30.4	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		72800	mg/Kg	1	0.50
Total Chromium		5.63	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		2.14	mg/Kg	1	0.01
Total Iron		6020	mg/Kg	1	0.05
Total Lead		2.84	mg/Kg	1	0.01
Total Magnesium		3330	mg/Kg	1	0.50
Total Manganese		70.1	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		5.21	mg/Kg	1	0.02
Total Potassium		1960	mg/Kg	1	0.50
Total Selenium		<5.00	mg/Kg	1	0.01
Total Silica		71	mg/Kg	1	0.05
Total Silver		<1.25	mg/Kg	1	0.002
Total Sodium		617	mg/Kg	1	0.50
Total Zinc		16.9	mg/Kg	1	0.02

Sample: 197184 - 6-WW Comp

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 5/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 5/21/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 197184 - 6-WW Comp

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 5/21/02
Analyst: BP Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 5/17/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7330	mg/Kg	1	0.10
Total Arsenic		<5.00	mg/Kg	1	0.05
Total Barium		209	mg/Kg	1	0.10
Total Boron		27.4	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		88300	mg/Kg	1	0.50
Total Chromium		5.05	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		2.58	mg/Kg	1	0.01
Total Iron		5030	mg/Kg	1	0.05
Total Lead		2.31	mg/Kg	1	0.01
Total Magnesium		5480	mg/Kg	1	0.50

Continued ...

Report Date: June 5, 2002
N/A

Order Number: A02051624
Shell Westgate

Page Number: 6 of 10
Hobbs, NM

... Continued Sample: 197184 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Manganese		57.8	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		6.14	mg/Kg	1	0.02
Total Potassium		2030	mg/Kg	1	0.50
Total Selenium		<5.00	mg/Kg	1	0.01
Total Silica		103	mg/Kg	1	0.05
Total Silver		<1.25	mg/Kg	1	0.002
Total Sodium		745	mg/Kg	1	0.50
Total Zinc		18.2	mg/Kg	1	0.02

Quality Control Report Method Blank

Method Blank QCBatch: QC20549

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.19	mg/Kg	0.19

Method Blank QCBatch: QC20574

Param	Flag	Results	Units	Reporting Limit
Total Aluminum		0.394	mg/Kg	0.10
Total Arsenic		<0.050	mg/Kg	0.05
Total Barium		<0.100	mg/Kg	0.10
Total Boron		0.0117	mg/Kg	0.005
Total Cadmium		<0.025	mg/Kg	0.005
Total Calcium		85.2	mg/Kg	0.50
Total Chromium		<0.010	mg/Kg	0.01
Total Cobalt		<0.025	mg/Kg	0.02
Total Copper		<0.0125	mg/Kg	0.01
Total Iron		2.05	mg/Kg	0.05
Total Lead		<0.010	mg/Kg	0.01
Total Magnesium		<50	mg/Kg	0.50
Total Manganese		0.0573	mg/Kg	0.02
Total Molybdenum		<0.050	mg/Kg	0.05
Total Nickel		<0.025	mg/Kg	0.02
Total Potassium		86.8	mg/Kg	0.50
Total Selenium		<0.050	mg/Kg	0.01
Total Silica		1.16	mg/Kg	0.05
Total Silver		<0.0125	mg/Kg	0.002
Total Sodium		328	mg/Kg	0.50
Total Zinc		0.0516	mg/Kg	0.02

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC20549

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.14	2.14	mg/Kg	1	2.50	<0.19	85	0	88 - 123	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC20574

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	90.6	89.4	mg/Kg	1	100	0.394	90	1	75 - 125	20
Total Arsenic	44.5	44.2	mg/Kg	1	50	<0.050	89	0	75 - 125	20
Total Barium	96.4	95.9	mg/Kg	1	100	<0.100	96	0	75 - 125	20
Total Boron	5.59	5.68	mg/Kg	1	5	0.0117	111	1	75 - 125	20
Total Cadmium	23.2	23.3	mg/Kg	1	25	<0.025	92	0	75 - 125	20
Total Calcium	8590	8390	mg/Kg	1	10000	85.2	85	2	75 - 125	20
Total Chromium	9.78	9.94	mg/Kg	1	10	<0.010	97	1	75 - 125	20
Total Cobalt	24.2	24	mg/Kg	1	25	<0.025	96	0	75 - 125	20
Total Copper	12.6	12.4	mg/Kg	1	12.50	<0.0125	100	1	75 - 125	20
Total Iron	45.8	45.8	mg/Kg	1	50	2.05	91	0	75 - 125	20
Total Lead	47.3	46.6	mg/Kg	1	50	<0.010	94	1	75 - 125	20
Total Magnesium	8600	8220	mg/Kg	1	10000	<50	86	4	75 - 125	20
Total Manganese	28.6	28.7	mg/Kg	1	25	0.0573	114	0	75 - 125	20
Total Molybdenum	48.1	48	mg/Kg	1	50	<0.050	96	0	75 - 125	20
Total Nickel	24.6	24.4	mg/Kg	1	25	<0.025	98	0	75 - 125	20
Total Potassium	8980	9170	mg/Kg	1	10000	86.8	89	2	75 - 125	20
Total Selenium	39.9	39.6	mg/Kg	1	50	<0.050	79	0	75 - 125	20
Total Silica	97.1	94.7	mg/Kg	1	100	1.16	97	2	75 - 125	20
Total Silver	11.5	11.4	mg/Kg	1	12.50	<0.0125	92	0	75 - 125	20
Total Sodium	9140	8970	mg/Kg	1	10000	328	91	1	75 - 125	20
Total Zinc	28.8	31	mg/Kg	1	25	0.0516	115	7	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC20549

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.46	2.61	mg/Kg	1	2.50	<0.19	98	5	45 - 157	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC20574

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	¹ 14800	12300	mg/Kg	1	100	12700	2100	294	75 - 125	20
Total Arsenic	46.9	45.4	mg/Kg	1	50	<5.00	93	3	75 - 125	20
Total Barium	² 236	297	mg/Kg	1	100	191	45	80	75 - 125	20
Total Boron	³ 60.9	52.5	mg/Kg	1	5	48.3	252	100	75 - 125	20
Total Cadmium	20.7	20.1	mg/Kg	1	25	<2.50	82	2	75 - 125	20

Continued ...

¹MS and MSD were out of range due to matrix effects. LCS and LCSD were within sampling parameters.

²MS and MSD were out of range due to matrix effects. RPD for MS and MSD were also over range. LCS and LCSD were within sampling parameters.

³MS and MSD were out of range due to matrix effects. LCS and LCSD were within sampling parameters.

... Continued

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Calcium	62000	⁴ 55400	mg/Kg	1	10000	52700	93	110	75 - 125	20
Total Chromium	18.8	17.5	mg/Kg	1	10	9.57	92	15	75 - 125	20
Total Cobalt	23.8	22.9	mg/Kg	1	25	<2.50	95	3	75 - 125	20
Total Copper	13.7	14.2	mg/Kg	1	12.50	2.22	91	4	75 - 125	20
Total Iron	⁵ 9050	7460	mg/Kg	1	50	8000	2100	623	75 - 125	20
Total Lead	46.1	44.5	mg/Kg	1	50	2.67	86	3	75 - 125	20
Total Magnesium	18000	17300	mg/Kg	1	10000	9100	89	8	75 - 125	20
Total Manganese	84.8	83.1	mg/Kg	1	25	62.6	88	7	75 - 125	20
Total Molybdenum	43.9	42.5	mg/Kg	1	50	<5.00	87	3	75 - 125	20
Total Nickel	29.8	28.1	mg/Kg	1	25	7.99	87	8	75 - 125	20
Total Potassium	13000	12900	mg/Kg	1	10000	3420	95	1	75 - 125	20
Total Selenium	⁶ 37	36	mg/Kg	1	50	<5.00	74	2	75 - 125	20
Total Silica	⁷ 137	155	mg/Kg	1	100	96.6	40	36	75 - 125	20
Total Silver	10.5	10.5	mg/Kg	1	12.50	<1.25	84	0	75 - 125	20
Total Sodium	10400	10300	mg/Kg	1	10000	630	97	1	75 - 125	20
Total Zinc	46.9	41.6	mg/Kg	1	25	21.3	102	23	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC20549

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00515	103	80 - 120	5/22/02

ICV (1) QCBatch: QC20549

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00521	104	80 - 120	5/22/02

CCV (1) QCBatch: QC20574

⁴ms recovery invalid due to matrix effect/dilution factor, use lcs/lcsd to demonstrate the run is under control.⁵MS and MSD were out of range due to matrix effects. LCS and LCSD were within sampling parameters.⁶MS and MSD were out of range due to matrix effects. LCS and LCSD were within sampling parameters.⁷MS and MSD were out of range due to matrix effects. LCS and LCSD were within sampling parameters.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/Kg	2	1.87	93	90 - 110	5/21/02
Total Arsenic		mg/Kg	1	0.972	97	90 - 110	5/21/02
Total Barium		mg/Kg	2	1.95	97	90 - 110	5/21/02
Total Boron		mg/Kg	0.10	0.0963	96	90 - 110	5/21/02
Total Cadmium		mg/Kg	0.50	0.491	98	90 - 110	5/21/02
Total Calcium		mg/Kg	25	22.6	90	90 - 110	5/21/02
Total Chromium		mg/Kg	0.20	0.194	97	90 - 110	5/21/02
Total Cobalt		mg/Kg	0.50	0.486	97	90 - 110	5/21/02
Total Copper		mg/Kg	0.25	0.236	94	90 - 110	5/21/02
Total Iron		mg/Kg	1	0.97	97	90 - 110	5/21/02
Total Lead		mg/Kg	1	0.965	96	90 - 110	5/21/02
Total Magnesium		mg/Kg	25	23.0	92	90 - 110	5/21/02
Total Manganese		mg/Kg	0.50	0.486	97	90 - 110	5/21/02
Total Molybdenum		mg/Kg	1	0.966	96	90 - 110	5/21/02
Total Nickel		mg/Kg	0.50	0.485	97	90 - 110	5/21/02
Total Potassium		mg/Kg	25	25.0	100	90 - 110	5/21/02
Total Selenium		mg/Kg	1	0.965	96	90 - 110	5/21/02
Total Silica		mg/Kg	1	0.966	96	90 - 110	5/21/02
Total Silver		mg/Kg	0.25	0.241	96	90 - 110	5/21/02
Total Sodium		mg/Kg	25	24.2	96	90 - 110	5/21/02
Total Zinc		mg/Kg	0.50	0.498	99	90 - 110	5/21/02

ICV (1)

QCBatch: QC20574

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/Kg	2	1.96	98	95 - 105	5/21/02
Total Arsenic		mg/Kg	1	0.984	98	95 - 105	5/21/02
Total Barium		mg/Kg	2	2	100	95 - 105	5/21/02
Total Boron		mg/Kg	0.10	0.0994	99	95 - 105	5/21/02
Total Cadmium		mg/Kg	0.50	0.497	99	95 - 105	5/21/02
Total Calcium		mg/Kg	25	25.1	100	95 - 105	5/21/02
Total Chromium		mg/Kg	0.20	0.197	98	95 - 105	5/21/02
Total Cobalt		mg/Kg	0.50	0.492	98	95 - 105	5/21/02
Total Copper		mg/Kg	0.25	0.247	98	95 - 105	5/21/02
Total Iron		mg/Kg	1	0.99	99	95 - 105	5/21/02
Total Lead		mg/Kg	1	0.977	97	95 - 105	5/21/02
Total Magnesium		mg/Kg	25	24.3	97	95 - 105	5/21/02
Total Manganese		mg/Kg	0.50	0.498	99	95 - 105	5/21/02
Total Molybdenum		mg/Kg	1	0.982	98	95 - 105	5/21/02
Total Nickel		mg/Kg	0.50	0.498	99	95 - 105	5/21/02
Total Potassium		mg/Kg	25	24.1	96	95 - 105	5/21/02
Total Selenium		mg/Kg	1	0.986	98	95 - 105	5/21/02
Total Silica		mg/Kg	1	0.994	99	95 - 105	5/21/02
Total Silver		mg/Kg	0.25	0.248	99	95 - 105	5/21/02
Total Sodium		mg/Kg	25	24.8	99	95 - 105	5/21/02
Total Zinc		mg/Kg	0.50	0.495	99	95 - 105	5/21/02

APPENDIX III

Soil Confirmation Sampling Data Tables and Laboratory Data

July 17, 2002

Westgate Stage 2 Abatement Plan- Remediation Activities Report Hobbs, New Mexico

Prepared for:
Shell Exploration & Production Company
Houston, Texas

May 2003

Prepared by:
BBC International, Inc.

Appendix III
Phase II - Trace Analysis Confirmation Bottom and Side Wall Sampling and Analytical Results
July 17, 2002

Table 2

		BOTTOM CENTER	NORTH WALL COMP	EAST WALL COMP	SOUTH WALL COMP	WEST WALL COMP
Analyte	Method	Sample : 201950	Sample: 201951	Sample: 201952	Sample: 201953	Sample: 201954
		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Benzene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0
Toluene	S 8260B	<25.0	31.6	<25.0	<25.0	93.6
Ethylbenzene	S 8260B	<25.0	<25.0	<25.0	<25.0	1470
m, p-Xylene	S 8260B	119	<25.0	<25.0	<25.0	4580
o-Xylene	S 8260B	<25.0	<25.0	<25.0	<25.0	78.6

		BOTTOM CENTER	NORTH WALL COMP	EAST WALL COMP	SOUTH WALL COMP	WEST WALL COMP
Analyte	Method	Sample : 201950	Sample: 201951	Sample: 201952	Sample: 201953	Sample: 201954
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
TPH	E 418.1	3840	10.5	126	<10.0	6550
Total Mercury	S 7471A	<0.19	<0.19	<0.19	<0.19	<0.19
Total Aluminum	S 6010B	12700	7550	6730	8600	7800
Total Arsenic	S 6010B	<5.00	<5.0	5.12	<5.00	<5.00
Total Barium	S 6010B	191	294	245	652	132
Total Boron	S 6010B	48.3	28.9	23.6	30	30.4
Total Cadmium	S 6010B	<2.50	<2.50	<2.50	<2.50	<2.50
Total Calcium	S 6010B	52700	84100	117000	73300	72800
Total Chromium	S 6010B	9.57	6.17	4.95	5.82	5.63
Total Cobalt	S 6010B	<2.50	<2.50	<2.50	<2.50	<2.50
Total Copper	S 6010B	2.22	3.5	3.02	2.35	2.14
Total Iron	S 6010B	8000	4760	4440	5330	6020
Total Lead	S 6010B	2.67	2.2	2.05	1.54	2.84
Total Magnesium	S 6010B	9100	10900	6120	8420	3330
Total Manganese	S 6010B	62.6	64.2	56.5	37.9	70.1
Total Molybdenum	S 6010B	<5.00	<5.00	<5.00	<5.00	<5.00
Total Nickel	S 6010B	7.99	6.37	5.8	6.59	5.21
Total Potassium	S 6010B	3420	2450	1950	2350	1960
Total Selenium	S 6010B	<5.00	<5.00	<5.00	<5.00	<5.00
Total Silica	S 6010B	96.6	102	94.8	101	71
Total Silver	S 6010B	<1.25	<1.25	<1.25	<1.25	<1.25
Total Sodium	S 6010B	630	735	718	657	617
Total Zinc	S 6010B	21.3	16.9	14.1	17.1	16.9

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas 79424
El Paso, Texas 79932

800•378•1296
888•588•3443

806•794•1296
915•585•3443

FAX 806•794•1298
FAX 915•585•4944

E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: July 24, 2002

Order ID Number: A02071805

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
201950	Bottom Center	Soil	7/17/02	8:40	7/17/02
201951	North Wall Composite	Soil	7/17/02	8:50	7/17/02
201952	East Wall Composite	Soil	7/17/02	9:00	7/17/02
201953	South Wall Composite	Soil	7/17/02	9:15	7/17/02
201954	West Wall Composite	Soil	7/17/02	9:30	7/17/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 7 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 201950 - Bottom Center

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC22047 Date Analyzed: 7/22/02
Analyst: KM Preparation Method: N/A Prep Batch: PB20857 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		3840	mg/Kg	10	10

Sample: 201950 - Bottom Center

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC22126 Date Analyzed: 7/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20925 Date Prepared: 7/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		119	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		40.6	µg/Kg	1	50	81	70 - 130
Toluene-d8		51.6	µg/Kg	1	50	103	70 - 130
4-Bromofluorobenzene		56.8	µg/Kg	1	50	113	70 - 130

Sample: 201951 - North Wall Composite

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC22047 Date Analyzed: 7/22/02
Analyst: KM Preparation Method: N/A Prep Batch: PB20857 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		10.5	mg/Kg	1	10

Sample: 201951 - North Wall Composite

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC22126 Date Analyzed: 7/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20925 Date Prepared: 7/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		31.6	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		34.2	µg/Kg	1	50	68	70 - 130
Toluene-d8		49.9	µg/Kg	1	50	99	70 - 130
4-Bromofluorobenzene		52.2	µg/Kg	1	50	104	70 - 130

Sample: 201952 - East Wall Composite

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC22047 Date Analyzed: 7/22/02
Analyst: KM Preparation Method: N/A Prep Batch: PB20857 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		126	mg/Kg	1	10

Sample: 201952 - East Wall Composite

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC22126 Date Analyzed: 7/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20925 Date Prepared: 7/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		37.5	µg/Kg	1	50	75	70 - 130
Toluene-d8		50.2	µg/Kg	1	50	100	70 - 130
4-Bromofluorobenzene		51.7	µg/Kg	1	50	103	70 - 130

Sample: 201953 - South Wall Composite

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC22047 Date Analyzed: 7/22/02
Analyst: KM Preparation Method: N/A Prep Batch: PB20857 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 201953 - South Wall Composite

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC22126 Date Analyzed: 7/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20925 Date Prepared: 7/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1

Continued ...

Report Date: July 24, 2002
Westgate

Order Number: A02071805
1331 Tasker

Page Number: 4 of 7
Hobbs,NM

... Continued Sample: 201953 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		38.0	µg/Kg	1	50	76	70 - 130
Toluene-d8		50.5	µg/Kg	1	50	101	70 - 130
4-Bromofluorobenzene		50.8	µg/Kg	1	50	101	70 - 130

Sample: 201954 - West Wall Composite

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC22047 Date Analyzed: 7/22/02
Analyst: KM Preparation Method: N/A Prep Batch: PB20857 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		6550	mg/Kg	10	10

Sample: 201954 - West Wall Composite

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC22126 Date Analyzed: 7/23/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20925 Date Prepared: 7/23/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		93.6	µg/Kg	25	1
Ethylbenzene		1470	µg/Kg	25	1
m,p-Xylene		4580	µg/Kg	25	1
o-Xylene		78.6	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		39.8	µg/Kg	1	50	79	70 - 130
Toluene-d8		55.8	µg/Kg	1	50	111	70 - 130
4-Bromofluorobenzene		57.6	µg/Kg	1	50	115	70 - 130

Quality Control Report Method Blank

Method Blank QCBatch: QC22047

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Method Blank QCBatch: QC22126

Param	Flag	Results	Units	Reporting Limit
Benzene		<25.0	µg/Kg	1
Toluene		<25.0	µg/Kg	1
Ethylbenzene		<25.0	µg/Kg	1
m,p-Xylene		<25.0	µg/Kg	1
o-Xylene		<25.0	µg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		40.1	µg/Kg	1	50	80	70 - 130
Toluene-d8		50.7	µg/Kg	1	50	101	70 - 130
4-Bromofluorobenzene		50.2	µg/Kg	1	50	100	70 - 130

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC22047

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	245	254	mg/Kg	1	250	<10.0	98	3	74 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC22126

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	2546	2574	µg/Kg	1	2500	<25.0	101	1	70 - 130	20
Benzene	2312	2355	µg/Kg	1	2500	<25.0	92	1	70 - 130	20
Trichloroethene (TCE)	2241	2287	µg/Kg	1	2500	<25.0	89	2	70 - 130	20
Toluene	2320	2365	µg/Kg	1	2500	<25.0	92	1	70 - 130	20
Chlorobenzene	2354	2391	µg/Kg	1	2500	<25.0	94	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	41.6	41.6	µg/Kg	1	50	83	83	70 - 130
Toluene-d8	51.1	50.8	µg/Kg	1	50	102	102	70 - 130
4-Bromofluorobenzene	52.4	51.6	µg/Kg	1	50	105	103	70 - 130

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC22047

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	¹ 3650	3750	mg/Kg	1	250	3840	-76	-71	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC22047

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	107	107	80 - 120	7/22/02

CCV (2) QCBatch: QC22047

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	107	107	80 - 120	7/22/02

ICV (1) QCBatch: QC22047

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	111	111	80 - 120	7/22/02

¹Matrix spikes out of range due to high TPH content in sample. LCS/LCSD show analysis in control.

CCV (1) QCBatch: QC22126

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/Kg	50	46.0	92	80 - 120	7/23/02
1,1-Dichloroethene		µg/Kg	50	48.0	96	80 - 120	7/23/02
Chloroform		µg/Kg	50	47.0	94	80 - 120	7/23/02
1,2-Dichloropropane		µg/Kg	50	48.0	96	80 - 120	7/23/02
Toluene		µg/Kg	50	48.0	96	80 - 120	7/23/02
Chlorobenzene		µg/Kg	50	51.0	102	80 - 120	7/23/02
Ethylbenzene		µg/Kg	50	51.0	102	80 - 120	7/23/02
Dibromofluoromethane		µg/Kg	50	48.3	97	80 - 120	7/23/02
Toluene-d8		µg/Kg	50	51.4	103	80 - 120	7/23/02
4-Bromofluorobenzene		µg/Kg	50	53.0	106	80 - 120	7/23/02

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas: 79424
El Paso, Texas: 79932

800•378•1296
888•588•3443

806•794•1296
915•585•3443

FAX 806•794•1296
FAX 915•585•4944

E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: July 24, 2002

Order ID Number: A02071805

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
01955	Bottom Center	Soil	7/17/02	8:40	7/17/02
201956	North Wall Composite	Soil	7/17/02	8:50	7/17/02
201957	East Wall Composite	Soil	7/17/02	9:00	7/17/02
201958	South Wall Composite	Soil	7/17/02	9:15	7/17/02
201959	West Wall Composite	Soil	7/17/02	9:30	7/17/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 9 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.



Dr. Blair Leftwich, Director

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: June 5, 2002

Order ID Number: A02051624

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
201955	Bottom Center	Soil	5/13/02	9:36	5/15/02
201956	North Wall Composite	Soil	5/13/02	9:50	5/15/02
201957	East Wall Composite	Soil	5/13/02	10:10	5/15/02
201958	South Wall Composite	Soil	5/13/02	10:25	5/15/02
201959	West Wall Composite	Soil	5/13/02	10:33	5/15/02

0 This report consists of a total of 4 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 201955 – 1- Bottom Center

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		18000	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		283	mg/Kg
Total Boron		23.6	mg/Kg
Total Cadmium		<2.50	mg/Kg
Total Calcium		64200	mg/Kg
Total Chromium		7.87	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		4.48	mg/Kg
Total Iron		5670	mg/Kg
Total Lead		4.87	mg/Kg
Total Magnesium		11700	mg/Kg
Total Manganese		53.1	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		7.42	mg/Kg
Total Potassium		2250	mg/Kg
Total Selenium		2.76	mg/Kg
Total Silica		101	mg/Kg
Total Silver		<1.25	mg/Kg
Total Sodium		938	mg/Kg
Total Zinc		13.58	mg/Kg

Sample: 201956 – North Wall Composite

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		7550	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		294	mg/Kg
Total Boron		28.9	mg/Kg

Continued on next page...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: July 24, 2002 Order Number: A02051624

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N/A Shell Westgate

Hobbs, NM

Sample 201956 continued...

Total Cadmium		mg/Kg
Total Calcium	<2.5	mg/Kg
Total Chromium	64100	mg/Kg
Total Cobalt	<2.50	mg/Kg
Total Copper	3.5	mg/Kg
Total Iron	4760	mg/Kg
Total Lead	2.2	mg/Kg
Total Magnesium	6900	mg/Kg
Total Manganese	49.2	mg/Kg
Total Molybdenum	<5.00	mg/Kg
Total Nickel	6.37	mg/Kg
Total Potassium	2450	mg/Kg
Total Selenium	<5.00	mg/Kg
Total Silica	102	mg/Kg
Total Silver	<1.25	mg/Kg
Total Sodium	684	mg/Kg
Total Zinc	16.9	mg/Kg

Sample: 201957 – East Wall Composite

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		7630	mg/Kg
Total Arsenic		5.13	mg/Kg
Total Barium		265	mg/Kg
Total Boron		19.8	mg/Kg
Total Cadmium		<2.50	mg/Kg
Total Calcium		107300	mg/Kg
Total Chromium		5.05	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		4.35	mg/Kg
Total Iron		4650	mg/Kg
Total Lead		3.68	mg/Kg
Total Magnesium		7800	mg/Kg
Total Manganese		53.2	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		6.3	mg/Kg
Total Potassium		1680	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		112.3	mg/Kg
Total Silver		<1.25	mg/Kg
Total Sodium		712	mg/Kg
Total Zinc		12.6	mg/Kg

Sample: 201958 – South Wall Composite

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		8350	mg/Kg
Total Arsenic		<2.50	mg/Kg
Total Barium		154	mg/Kg
Total Boron		30	mg/Kg
Total Cadmium		<2.50	mg/Kg

*Continued on next page...**This is only a summary. Please, refer to the complete report package for quality control data.*

Report Date: July 24, 2002 Order Number: A02051624

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N/A Shell Westgate

Hobbs.NM

Sample 201958 continued...

Total Calcium	73300	mg/Kg
Total Chromium	5.82	mg/Kg
Total Cobalt	<2.50	mg/Kg
Total Copper	2.35	mg/Kg
Total Iron	5630	mg/Kg
Total Lead	3.54	mg/Kg
Total Magnesium	8420	mg/Kg
Total Manganese	37.9	mg/Kg
Total Molybdenum	<5.00	mg/Kg
Total Nickel	6.59	mg/Kg
Total Potassium	1750	mg/Kg
Total Selenium	<5.00	mg/Kg
Total Silica	74	mg/Kg
Total Silver	<1.25	mg/Kg
Total Sodium	657	mg/Kg
Total Zinc	16.1	mg/Kg

Sample: 201959 – West Wall Composite

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		7800	mg/Kg
Total Arsenic		<2.50	mg/Kg
Total Barium		205	mg/Kg
Total Boron		24.2	mg/Kg
Total Cadmium		<2.50	mg/Kg
Total Calcium		89500	mg/Kg
Total Chromium		5.63	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		3.56	mg/Kg
Total Iron		6020	mg/Kg
Total Lead		2.84	mg/Kg
Total Magnesium		6330	mg/Kg
Total Manganese		57.3	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		7.23	mg/Kg
Total Potassium		1960	mg/Kg
Total Selenium		<5.00	mg/Kg
Total Silica		71	mg/Kg
Total Silver		<1.25	mg/Kg
Total Sodium		820	mg/Kg
Total Zinc		16.9	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

Analytical Report

Sample: 201955 – Bottom Center

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 7/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 201955 – Bottom Center

Analysis: Total Metal Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 7/22/02
Analyst: BC Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		11800	mg/Kg	1	0.10
Total Arsenic		<5.00	mg/Kg	1	0.05
Total Barium		283	mg/Kg	1	0.10
Total Boron		23.6	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		64200	mg/Kg	1	0.50
Total Chromium		7.87	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		4.48	mg/Kg	1	0.01
Total Iron		5670	mg/Kg	1	0.05
Total Lead		4.87	mg/Kg	1	0.01
Total Magnesium		11700	mg/Kg	1	0.50
Total Manganese		53.1	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		7.42	mg/Kg	1	0.02
Total Potassium		2250	mg/Kg	1	0.50
Total Selenium		2.76	mg/Kg	1	0.01
Total Silica		101	mg/Kg	1	0.05
Total Silver		<1.25	mg/Kg	1	0.002
Total Sodium		938	mg/Kg	1	0.50
Total Zinc		13.58	mg/Kg	1	0.02

Sample: 201956 – North Wall Composite

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 7/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 201956 – North Wall Composite

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 7/22/02
Analyst: BC Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7550	mg/Kg	1	0.10
Total Arsenic		<5.00	mg/Kg	1	0.05
Total Barium		294	mg/Kg	1	0.10
Total Boron		28.9	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		64100	mg/Kg	1	0.50
Total Chromium		6.17	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		3.5	mg/Kg	1	0.01
Total Iron		4760	mg/Kg	1	0.05
Total Lead		2.2	mg/Kg	1	0.01
Total Magnesium		6900	mg/Kg	1	0.50
Total Manganese		49.2	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		6.37	mg/Kg	1	0.02
Total Potassium		2450	mg/Kg	1	0.50
Total Selenium		<5.00	mg/Kg	1	0.01
Total Silica		102	mg/Kg	1	0.05
Total Silver		<1.25	mg/Kg	1	0.002
Total Sodium		684	mg/Kg	1	0.50
Total Zinc		16.9	mg/Kg	1	0.02

Sample: 201957 – East Wall Composite

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 7/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 201957 – East Wall Composite

Analysis: Total Metal Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 7/22/02
Analyst: BC Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7630	mg/Kg	1	0.10
Total Arsenic		5.13	mg/Kg	1	0.05
Total Barium		265	mg/Kg	1	0.10
Total Boron		19.8	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		107300	mg/Kg	1	0.50
Total Chromium		5.05	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		4.35	mg/Kg	1	0.01
Total Iron		4650	mg/Kg	1	0.05
Total Lead		3.68	mg/Kg	1	0.01
Total Magnesium		7800	mg/Kg	1	0.50
Total Manganese		53.2	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		6.3	mg/Kg	1	0.02
Total Potassium		1680	mg/Kg	1	0.50
Total Selenium		<5.00	mg/Kg	1	0.01
Total Silica		112.3	mg/Kg	1	0.05

Continued on next page...

...Continued Sample: 201957 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Silver		<5.00	mg/Kg	1	0.002
Total Sodium		712	mg/Kg	1	0.50
Total Zinc		12.6	mg/Kg	1	0.02

Sample: 201958 – South Wall Composite

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 7/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 201958 – South Wall Composite

Analysis: Total Metal Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 7/22/02
Analyst: BC Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		8350	mg/Kg	1	0.10
Total Arsenic		<5.00	mg/Kg	1	0.05
Total Barium		154	mg/Kg	1	0.10
Total Boron		30	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		73300	mg/Kg	1	0.50
Total Chromium		5.82	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		2.35	mg/Kg	1	0.01
Total Iron		5630	mg/Kg	1	0.05
Total Lead		3.54	mg/Kg	1	0.01
Total Magnesium		8420	mg/Kg	1	0.50
Total Manganese		37.9	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		6.59	mg/Kg	1	0.02
Total Potassium		1750	mg/Kg	1	0.50
Total Selenium		<5.00	mg/Kg	1	0.01
Total Silica		74	mg/Kg	1	0.05
Total Silver		<1.25	mg/Kg	1	0.002
Total Sodium		657	mg/Kg	1	0.50
Total Zinc		16.1	mg/Kg	1	0.02

Sample: 201959 – West Wall Composite

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC20549 Date Analyzed: 7/22/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19615 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 201959 – West Wall Composite

Analysis: Total Metal Analytical Method: S 6010B QC Batch: QC20574 Date Analyzed: 7/22/02
Analyst: BC Preparation Method: S 3050B Prep Batch: PB19476 Date Prepared: 7/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7800	mg/Kg	1	0.10
Total Arsenic		<5.00	mg/Kg	1	0.05
Total Barium		205	mg/Kg	1	0.10
Total Boron		24.2	mg/Kg	1	0.005
Total Cadmium		<2.50	mg/Kg	1	0.005
Total Calcium		89500	mg/Kg	1	0.50
Total Chromium		5.63	mg/Kg	1	0.01
Total Cobalt		<2.50	mg/Kg	1	0.02
Total Copper		3.56	mg/Kg	1	0.01
Total Iron		6020	mg/Kg	1	0.05
Total Lead		2.84	mg/Kg	1	0.01
Total Magnesium		6330	mg/Kg	1	0.50
Total Manganese		57.3	mg/Kg	1	0.02
Total Molybdenum		<5.00	mg/Kg	1	0.05
Total Nickel		7.23	mg/Kg	1	0.02
Total Potassium		1960	mg/Kg	1	0.50
Total Selenium		<5.00	mg/Kg	1	0.01
Total Silica		71	mg/Kg	1	0.05
Total Silver		<1.25	mg/Kg	1	0.002
Total Sodium		820	mg/Kg	1	0.50
Total Zinc		16.9	mg/Kg	1	0.02

Quality Control Report Method Blank

Method Blank QCBatch: QC20549

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.19	mg/Kg	0.19

Method Blank QCBatch: QC20574

Param	Flag	Results	Units	Reporting Limit
Total Aluminum		0.394	mg/Kg	0.10
Total Arsenic		<0.050	mg/Kg	0.05
Total Barium		<0.100	mg/Kg	0.10
Total Boron		0.0117	mg/Kg	0.005
Total Cadmium		<0.025	mg/Kg	0.005
Total Calcium		85.2	mg/Kg	0.50
Total Chromium		<0.010	mg/Kg	0.01
Total Cobalt		<0.025	mg/Kg	0.02
Total Copper		<0.0125	mg/Kg	0.01
Total Iron		2.05	mg/Kg	0.05
Total Lead		<0.010	mg/Kg	0.01
Total Magnesium		<50	mg/Kg	0.50
Total Manganese		0.0573	mg/Kg	0.02
Total Molybdenum		<0.050	mg/Kg	0.05
Total Nickel		<0.025	mg/Kg	0.02
Total Potassium		86.8	mg/Kg	0.50
Total Selenium		<0.050	mg/Kg	0.01
Total Silica		1.16	mg/Kg	0.05
Total Silver		<0.0125	mg/Kg	0.002
Total Sodium		328	mg/Kg	0.50
Total Zinc		0.0516	mg/Kg	0.02

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC20549

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.14	2.14	mg/Kg	1	2.50	<0.19	85	0	88 - 123	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC20574

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	90.6	89.4	mg/Kg	1	100	0.394	90	1	75 - 125	20
Total Arsenic	44.5	44.2	mg/Kg	1	50	<0.050	89	0	75 - 125	20
Total Barium	96.4	95.9	mg/Kg	1	100	<0.100	96	0	75 - 125	20
Total Boron	5.59	5.68	mg/Kg	1	5	0.0117	111	1	75 - 125	20
Total Cadmium	23.2	23.3	mg/Kg	1	25	<0.025	92	0	75 - 125	20
Total Calcium	8590	8390	mg/Kg	1	10000	85.2	85	2	75 - 125	20
Total Chromium	9.78	9.94	mg/Kg	1	10	<0.030	97	1	75 - 125	20
Total Cobalt	24.2	24	mg/Kg	1	25	<0.025	96	0	75 - 125	20
Total Copper	12.6	12.4	mg/Kg	1	12.50	<0.0125	100	1	75 - 125	20
Total Iron	45.8	45.8	mg/Kg	1	50	2.05	91	0	75 - 125	20
Total Lead	47.3	46.6	mg/Kg	1	50	<0.010	94	1	75 - 125	20
Total Magnesium	8600	8220	mg/Kg	1	10000	<50	86	4	75 - 125	20
Total Manganese	28.6	28.7	mg/Kg	1	25	0.0573	114	0	75 - 125	20
Total Molybdenum	48.1	48	mg/Kg	1	50	<0.050	96	0	75 - 125	20
Total Nickel	24.6	24.4	mg/Kg	1	25	<0.025	98	0	75 - 125	20
Total Potassium	8980	9170	mg/Kg	1	10000	86.8	89	2	75 - 125	20
Total Selenium	39.9	39.6	mg/Kg	1	50	<0.050	79	0	75 - 125	20
Total Silica	97.1	94.7	mg/Kg	1	100	1.16	97	2	75 - 125	20
Total Silver	11.5	11.4	mg/Kg	1	12.50	<0.0125	92	0	75 - 125	20
Total Sodium	9140	8970	mg/Kg	1	10000	328	91	1	75 - 125	20
Total Zinc	28.8	31	mg/Kg	1	25	0.0516	115	7	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC20549

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.46	2.61	mg/Kg	1	2.50	<0.19	98	5	45 - 157	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC20574

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	¹ 14800	12300	mg/Kg	1	100	12700	2100	294	75 - 125	20
Total Arsenic	46.9	45.4	mg/Kg	1	50	<5.00	93	3	75 - 125	20
Total Barium	² 236	297	mg/Kg	1	100	191	45	80	75 - 125	20
Total Boron	³ 60.9	52.5	mg/Kg	1	5	48.3	252	100	75 - 125	20
Total Cadmium	20.7	20.1	mg/Kg	1	25	<2.50	82	2	75 - 125	20

Continued ...

¹MS and MSD were out of range due to matrix effects. LCS and LCSD were within sampling parameters.

²MS and MSD were out of range due to matrix effects. RPD for MS and MSD were also over range. LCS and LCSD were within sampling parameters.

³MS and MSD were out of range due to matrix effects. LCS and LCSD were within sampling parameters.

... Continued

Param	MS Result	MSD Result	Units	Dil.	Spike Amount / Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Calcium	62000	⁴ 55400	mg/Kg	1	10000	52700	93	110	75 - 125	20
Total Chromium	18.8	17.5	mg/Kg	1	10	9.57	92	15	75 - 125	20
Total Cobalt	23.8	22.9	mg/Kg	1	25	<2.50	95	3	75 - 125	20
Total Copper	13.7	14.2	mg/Kg	1	12.50	2.22	91	4	75 - 125	20
Total Iron	⁵ 9050	7460	mg/Kg	1	50	8000	2100	623	75 - 125	20
Total Lead	46.1	44.5	mg/Kg	1	50	2.67	86	3	75 - 125	20
Total Magnesium	18000	17300	mg/Kg	1	10000	9100	89	8	75 - 125	20
Total Manganese	84.8	83.1	mg/Kg	1	25	62.6	88	7	75 - 125	20
Total Molybdenum	43.9	42.5	mg/Kg	1	50	<5.00	87	3	75 - 125	20
Total Nickel	29.8	28.1	mg/Kg	1	25	7.99	87	8	75 - 125	20
Total Potassium	13000	12900	mg/Kg	1	10000	3420	95	1	75 - 125	20
Total Selenium	⁶ 37	36	mg/Kg	1	50	<5.00	74	2	75 - 125	20
Total Silica	⁷ 137	155	mg/Kg	1	100	96.6	40	36	75 - 125	20
Total Silver	10.5	10.5	mg/Kg	1	12.50	<1.25	84	0	75 - 125	20
Total Sodium	10400	10300	mg/Kg	1	10000	630	97	1	75 - 125	20
Total Zinc	46.9	41.6	mg/Kg	1	25	21.3	102	23	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC20549

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00515	103	80 - 120	5/22/02

ICV (1) QCBatch: QC20549

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00521	104	80 - 120	5/22/02

CCV (1) QCBatch: QC20574

⁴ms recovery invalid due to matrix effect/dilution factor, use lcs/lcsd to demonstrate the run is under control.

⁵MS and MSD were out of range due to matrix effects. LCS and LCSD were within sampling parameters.

⁶MS and MSD were out of range due to matrix effects. LCS and LCSD were within sampling parameters.

⁷MS and MSD were out of range due to matrix effects. LCS and LCSD were within sampling parameters.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/Kg	2	1.87	93	90 - 110	5/21/02
Total Arsenic		mg/Kg	1	0.972	97	90 - 110	5/21/02
Total Barium		mg/Kg	2	1.95	97	90 - 110	5/21/02
Total Boron		mg/Kg	0.10	0.0963	96	90 - 110	5/21/02
Total Cadmium		mg/Kg	0.50	0.491	98	90 - 110	5/21/02
Total Calcium		mg/Kg	25	22.6	90	90 - 110	5/21/02
Total Chromium		mg/Kg	0.20	0.194	97	90 - 110	5/21/02
Total Cobalt		mg/Kg	0.50	0.486	97	90 - 110	5/21/02
Total Copper		mg/Kg	0.25	0.236	94	90 - 110	5/21/02
Total Iron		mg/Kg	1	0.97	97	90 - 110	5/21/02
Total Lead		mg/Kg	1	0.965	96	90 - 110	5/21/02
Total Magnesium		mg/Kg	25	23.0	92	90 - 110	5/21/02
Total Manganese		mg/Kg	0.50	0.486	97	90 - 110	5/21/02
Total Molybdenum		mg/Kg	1	0.966	96	90 - 110	5/21/02
Total Nickel		mg/Kg	0.50	0.485	97	90 - 110	5/21/02
Total Potassium		mg/Kg	25	25.0	100	90 - 110	5/21/02
Total Selenium		mg/Kg	1	0.965	96	90 - 110	5/21/02
Total Silica		mg/Kg	1	0.966	96	90 - 110	5/21/02
Total Silver		mg/Kg	0.25	0.241	96	90 - 110	5/21/02
Total Sodium		mg/Kg	25	24.2	96	90 - 110	5/21/02
Total Zinc		mg/Kg	0.50	0.498	99	90 - 110	5/21/02

ICV (1)

QCBatch: QC20574

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/Kg	2	1.96	98	95 - 105	5/21/02
Total Arsenic		mg/Kg	1	0.984	98	95 - 105	5/21/02
Total Barium		mg/Kg	2	2	100	95 - 105	5/21/02
Total Boron		mg/Kg	0.10	0.0994	99	95 - 105	5/21/02
Total Cadmium		mg/Kg	0.50	0.497	99	95 - 105	5/21/02
Total Calcium		mg/Kg	25	25.1	100	95 - 105	5/21/02
Total Chromium		mg/Kg	0.20	0.197	98	95 - 105	5/21/02
Total Cobalt		mg/Kg	0.50	0.492	98	95 - 105	5/21/02
Total Copper		mg/Kg	0.25	0.247	98	95 - 105	5/21/02
Total Iron		mg/Kg	1	0.99	99	95 - 105	5/21/02
Total Lead		mg/Kg	1	0.977	97	95 - 105	5/21/02
Total Magnesium		mg/Kg	25	24.3	97	95 - 105	5/21/02
Total Manganese		mg/Kg	0.50	0.498	99	95 - 105	5/21/02
Total Molybdenum		mg/Kg	1	0.982	98	95 - 105	5/21/02
Total Nickel		mg/Kg	0.50	0.498	99	95 - 105	5/21/02
Total Potassium		mg/Kg	25	24.1	96	95 - 105	5/21/02
Total Selenium		mg/Kg	1	0.986	98	95 - 105	5/21/02
Total Silica		mg/Kg	1	0.994	99	95 - 105	5/21/02
Total Silver		mg/Kg	0.25	0.248	99	95 - 105	5/21/02
Total Sodium		mg/Kg	25	24.8	99	95 - 105	5/21/02
Total Zinc		mg/Kg	0.50	0.495	99	95 - 105	5/21/02

155 McCulcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (800) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Fax (915) 585-4944
1 (888) 588-3443

LAB Order ID #

5081007805

Phone #: 703-240-1250

Address: P.O. Box 805 (Street, City, Zip) Fax #: 505-397-0399
Hobby's M. 0788240

Contact Person: Cliff P. Branson

Invoice to: Well E & P Company - Waymouth, Mass.
(If different from above)

Project #: _____ Project Name: _____

Project Location: 4056 N. M. 1

Sampler Signature: 

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME
201950	Bottom Center	1	V0A	✓									7/10/02	8:40	
51	North Wall Composite	1	V0A	✓									7/10/02	8:50	
52	East Wall Composite	1	V0A	✓									7/10/02	9:00	
53	South Wall Composite	1	V0A	✓									7/10/02	9:15	
54	West Wall Composite	1	V0A	✓									7/10/02	9:30	
55	Bottom Center	1	402	✓								✓	"	8:40	
56	North wall Composite	1	402	✓								✓	"	8:50	
57	East wall Composite	1	402	✓								✓	"	9:00	
58	South wall Composite	1	402	✓								✓	"	9:15	
59	West wall Composite	1	402	✓								✓	"	9:30	

Relinquished by: Date: 7-10-02 Time: 11:11

Received by:

Date: _____ Time: _____

Refracted by: W. J. Smith Date: 11-1-58 Time: 11:00

Received by:

Date:	Time:
-------	-------

Polymers used in:	Date:	Time:

7

Figure 1. The effect of the concentration of the solution on the adsorption of the dye. The concentration of the solution was 0.01, 0.02, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 15.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0, 150.0, 200.0, 300.0, 400.0, 500.0, 600.0, 700.0, 800.0, 900.0, 1000.0, 1500.0, 2000.0, 3000.0, 4000.0, 5000.0, 6000.0, 7000.0, 8000.0, 9000.0, 10000.0, 15000.0, 20000.0, 30000.0, 40000.0, 50000.0, 60000.0, 70000.0, 80000.0, 90000.0, 100000.0, 150000.0, 200000.0, 300000.0, 400000.0, 500000.0, 600000.0, 700000.0, 800000.0, 900000.0, 1000000.0, 1500000.0, 2000000.0, 3000000.0, 4000000.0, 5000000.0, 6000000.0, 7000000.0, 8000000.0, 9000000.0, 10000000.0, 15000000.0, 20000000.0, 30000000.0, 40000000.0, 50000000.0, 60000000.0, 70000000.0, 80000000.0, 90000000.0, 100000000.0, 150000000.0, 200000000.0, 300000000.0, 400000000.0, 500000000.0, 600000000.0, 700000000.0, 800000000.0, 900000000.0, 1000000000.0, 1500000000.0, 2000000000.0, 3000000000.0, 4000000000.0, 5000000000.0, 6000000000.0, 7000000000.0, 8000000000.0, 9000000000.0, 10000000000.0, 15000000000.0, 20000000000.0, 30000000000.0, 40000000000.0, 50000000000.0, 60000000000.0, 70000000000.0, 80000000000.0, 90000000000.0, 100000000000.0, 150000000000.0, 200000000000.0, 300000000000.0, 400000000000.0, 500000000000.0, 600000000000.0, 700000000000.0, 800000000000.0, 900000000000.0, 1000000000000.0, 1500000000000.0, 2000000000000.0, 3000000000000.0, 4000000000000.0, 5000000000000.0, 6000000000000.0, 7000000000000.0, 8000000000000.0, 9000000000000.0, 10000000000000.0, 15000000000000.0, 20000000000000.0, 30000000000000.0, 40000000000000.0, 50000000000000.0, 60000000000000.0, 70000000000000.0, 80000000000000.0, 90000000000000.0, 100000000000000.0, 150000000000000.0, 200000000000000.0, 300000000000000.0, 400000000000000.0, 500000000000000.0, 600000000000000.0, 700000000000000.0, 800000000000000.0, 900000000000000.0, 1000000000000000.0, 1500000000000000.0, 2000000000000000.0, 3000000000000000.0, 4000000000000000.0, 5000000000000000.0, 6000000000000000.0, 7000000000000000.0, 8000000000000000.0, 9000000000000000.0, 10000000000000000.0, 15000000000000000.0, 20000000000000000.0, 30000000000000000.0, 40000000000000000.0, 50000000000000000.0, 60000000000000000.0, 70000000000000000.0, 80000000000000000.0, 90000000000000000.0, 100000000000000000.0, 150000000000000000.0, 200000000000000000.0, 300000000000000000.0, 400000000000000000.0, 500000000000000000.0, 600000000000000000.0, 700000000000000000.0, 800000000000000000.0, 900000000000000000.0, 1000000000000000000.0, 1500000000000000000.0, 2000000000000000000.0, 3000000000000000000.0, 4000000000000000000.0, 5000000000000000000.0, 6000000000000000000.0, 7000000000000000000.0, 8000000000000000000.0, 9000000000000000000.0, 10000000000000000000.0, 15000000000000000000.0, 20000000000000000000.0, 30000000000000000000.0, 40000000000000000000.0, 50000000000000000000.0, 60000000000000000000.0, 70000000000000000000.0, 80000000000000000000.0, 90000000000000000000.0, 100000000000000000000.0, 150000000000000000000.0, 200000000000000000000.0, 300000000000000000000.0, 400000000000000000000.0, 500000000000000000000.0, 600000000000000000000.0, 700000000000000000000.0, 800000000000000000000.0, 900000000000000000000.0, 1000000000000000000000.0, 1500000000000000000000.0, 2000000000000000000000.0, 3000000000000000000000.0, 4000000000000000000000.0, 5000000000000000000000.0, 6000000000000000000000.0, 7000000000000000000000.0, 8000000000000000000000.0, 9000000000000000000000.0, 10000000000000000000000.0, 15000000000000000000000.0, 20000000000000000000000.0, 30000000000000000000000.0, 40000000000000000000000.0, 50000000000000000000000.0, 60000000000000000000000.0, 70000000000000000000000.0, 80000000000000000000000.0, 90000000000000000000000.0, 100000000000000000000000.0, 150000000000000000000000.0, 200000000000000000000000.0, 300000000000000000000000.0, 400000000000000000000000.0, 500000000000000000000000.0, 600000000000000000000000.0, 700000000000000000000000.0, 800000000000000000000000.0, 900000000000000000000000.0, 10000000

name of	date	time	observed at	date	time
				11.6.11	7.17.08 2.30

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of COC.

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Carrier # Chas F. P. Newman

REMARKS:

LAB USE ONLY

1221

contact $Y \cup N$

V / N

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Log-in Review *ad*

Book 11 Special Reporting

APPENDIX III

Soil Confirmation Sampling Data Tables and Laboratory Data *September 17, 2002*

Westgate Stage 2 Abatement Plan- Remediation Activities Report Hobbs, New Mexico

Prepared for:
Shell Exploration & Production Company
Houston, Texas

May 2003

Prepared by:
BBC International, Inc.

Appendix III
Phase III - Trace Analysis Confirmation Bottom and Side Wall Sampling and Analytical Results
September 17, 2002

Table 3

		NW BOTTOM	SW BOTTOM	SOUTH WALL	WEST WALL	NORTH WALL	EAST WALL
Analyte	Method	Sample : 208231	Sample: 208232	Sample: 208233	Sample: 208234	Sample: 208235	Sample: 208236
		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Benzene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Toluene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Ethylbenzene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
m, p-Xylene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
o-Xylene	S 8260B	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0

		NW BOTTOM	SW BOTTOM	SOUTH WALL	WEST WALL	NORTH WALL	EAST WALL
Analyte	Method	Sample : 208237	Sample: 208238	Sample: 208239	Sample: 208240	Sample: 208241	Sample: 208242
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
TPH	E 418.1	109	<10.0	<10.0	<10.0	<10.0	<10.0
Total Mercury	S 7471A	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Total Aluminum	S 6010B	10300	7140	8550	10200	10900	8630
Total Arsenic	S 6010B	5.09	<5.00	5.16	<5.00	<5.00	5.16
Total Barium	S 6010B	254	286	174	202	145	376
Total Boron	S 6010B	16.9	13.6	14.6	16.6	14.5	13
Total Cadmium	S 6010B	2.21	2.1	2.06	2.35	2.6	2.08
Total Calcium	S 6010B	118000	65500	128000	94600	56100	99400
Total Chromium	S 6010B	6.07	4.84	5.24	6.42	7	5.3
Total Cobalt	S 6010B	3.31	<2.50	3.38	4.1	3.57	3.41
Total Copper	S 6010B	5.9	6.58	3.75	3.67	3.38	5.27
Total Iron	S 6010B	6190	4110	5330	6670	7150	5490
Total Lead	S 6010B	8.84	5.14	5.48	7.04	8.12	5.72
Total Magnesium	S 6010B	17700	34900	10800	6680	5970	14600
Total Manganese	S 6010B	52	28.1	35.7	56.8	48.5	46.7
Total Molybdenum	S 6010B	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Total Nickel	S 6010B	7.75	7.51	7.39	7.65	7.94	7.77
Total Potassium	S 6010B	2020	1130	1630	1980	2030	1530
Total Selenium	S 6010B	3.89	3.76	3.81	3.01	3.28	4.48
Total Silica	S 6010B	104	133	75.2	73.8	70.6	114
Total Silver	S 6010B	<0.200	0.254	<0.200	<0.200	0.358	<0.200
Total Sodium	S 6010B	1140	1170	993	1130	574	682
Total Zinc	S 6010B	17.9	9.85	11.7	14.6	15.2	11.9

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: September 26, 2002

Order ID Number: A02091819

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
208237	Northwest Bottom	Soil	9/17/02	13:50	9/18/02
208238	Southwest Bottom	Soil	9/17/02	14:00	9/18/02
208239	South Wall	Soil	9/17/02	14:10	9/18/02
208240	West Wall	Soil	9/17/02	14:20	9/18/02
208241	North Wall	Soil	9/17/02	14:25	9/18/02
208242	East Wall	Soil	9/17/02	14:35	9/18/02

0 This report consists of a total of 4 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	TPH TRPHC (ppm)
208237 - Northwest Bottom	109
208238 - Southwest Bottom	<10.0
208239 - South Wall	<10.0
208240 - West Wall	<10.0
208241 - North Wall	<10.0
208242 - East Wall	<10.0

Sample: 208237 - Northwest Bottom

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		10300	mg/Kg
Total Arsenic		5.09	mg/Kg
Total Barium		254	mg/Kg
Total Boron		16.9	mg/Kg
Total Cadmium		2.21	mg/Kg
Total Calcium		118000	mg/Kg
Total Chromium		6.07	mg/Kg
Total Cobalt		3.31	mg/Kg
Total Copper		5.90	mg/Kg
Total Iron		6190	mg/Kg
Total Lead		8.84	mg/Kg

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

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Westgate

1331 Tasker

Hobbs, NM

Sample 208237 continued ...

Param	Flag	Result	Units
Total Magnesium		17700	mg/Kg
Total Manganese		52.0	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		7.75	mg/Kg
Total Potassium		2020	mg/Kg
Total Selenium		3.89	mg/Kg
Total Silica		104	mg/Kg
Total Silver		<0.200	mg/Kg
Total Sodium		1140	mg/Kg
Total Zinc		17.9	mg/Kg

Sample: 208238 - Southwest Bottom

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		7140	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		286	mg/Kg
Total Boron		13.6	mg/Kg
Total Cadmium		2.10	mg/Kg
Total Calcium		65500	mg/Kg
Total Chromium		4.84	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		6.58	mg/Kg
Total Iron		4110	mg/Kg
Total Lead		5.14	mg/Kg
Total Magnesium		34900	mg/Kg
Total Manganese		28.1	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		7.51	mg/Kg
Total Potassium		1130	mg/Kg
Total Selenium		3.76	mg/Kg
Total Silica		133	mg/Kg
Total Silver		0.254	mg/Kg
Total Sodium		1170	mg/Kg
Total Zinc		9.85	mg/Kg

Sample: 208239 - South Wall

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		8550	mg/Kg
Total Arsenic		5.16	mg/Kg
Total Barium		174	mg/Kg
Total Boron		14.6	mg/Kg
Total Cadmium		2.06	mg/Kg
Total Calcium		128000	mg/Kg

*Continued on next page ...**This is only a summary. Please, refer to the complete report package for quality control data.*

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Sample 208239 continued ...

Param	Flag	Result	Units
Total Chromium		5.24	mg/Kg
Total Cobalt		3.38	mg/Kg
Total Copper		3.75	mg/Kg
Total Iron		5330	mg/Kg
Total Lead		5.48	mg/Kg
Total Magnesium		10800	mg/Kg
Total Manganese		35.7	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		7.39	mg/Kg
Total Potassium		1630	mg/Kg
Total Selenium		3.81	mg/Kg
Total Silica		75.2	mg/Kg
Total Silver		<0.200	mg/Kg
Total Sodium		993	mg/Kg
Total Zinc		11.7	mg/Kg

Sample: 208240 - West Wall

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		10200	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Barium		202	mg/Kg
Total Boron		16.6	mg/Kg
Total Cadmium		2.35	mg/Kg
Total Calcium		94600	mg/Kg
Total Chromium		6.42	mg/Kg
Total Cobalt		4.10	mg/Kg
Total Copper		3.67	mg/Kg
Total Iron		6670	mg/Kg
Total Lead		7.04	mg/Kg
Total Magnesium		6680	mg/Kg
Total Manganese		56.8	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		7.65	mg/Kg
Total Potassium		1980	mg/Kg
Total Selenium		3.01	mg/Kg
Total Silica		73.8	mg/Kg
Total Silver		<0.200	mg/Kg
Total Sodium		1130	mg/Kg
Total Zinc		14.6	mg/Kg

Sample: 208241 - North Wall

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		10900	mg/Kg

*Continued on next page ...**This is only a summary. Please, refer to the complete report package for quality control data.*

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Sample 208241 continued ...

Param	Flag	Result	Units
Total Arsenic		<5.00	mg/Kg
Total Barium		145	mg/Kg
Total Boron		14.5	mg/Kg
Total Cadmium		2.60	mg/Kg
Total Calcium		56100	mg/Kg
Total Chromium		7.00	mg/Kg
Total Cobalt		3.57	mg/Kg
Total Copper		3.38	mg/Kg
Total Iron		7150	mg/Kg
Total Lead		8.12	mg/Kg
Total Magnesium		5970	mg/Kg
Total Manganese		48.5	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		7.94	mg/Kg
Total Potassium		2030	mg/Kg
Total Selenium		3.28	mg/Kg
Total Silica		70.6	mg/Kg
Total Silver		0.358	mg/Kg
Total Sodium		574	mg/Kg
Total Zinc		15.2	mg/Kg

Sample: 208242 - East Wall

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		8630	mg/Kg
Total Arsenic		5.16	mg/Kg
Total Barium		376	mg/Kg
Total Boron		13.0	mg/Kg
Total Cadmium		2.08	mg/Kg
Total Calcium		99400	mg/Kg
Total Chromium		5.30	mg/Kg
Total Cobalt		3.41	mg/Kg
Total Copper		5.27	mg/Kg
Total Iron		5490	mg/Kg
Total Lead		5.72	mg/Kg
Total Magnesium		14600	mg/Kg
Total Manganese		46.7	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		7.77	mg/Kg
Total Potassium		1530	mg/Kg
Total Selenium		4.48	mg/Kg
Total Silica		114	mg/Kg
Total Silver		<0.200	mg/Kg
Total Sodium		682	mg/Kg
Total Zinc		11.9	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas 79424
El Paso, Texas 79932

800•378•1296
888•588•3443
E-Mail: lab@traceanalysis.com

806•794•1296
915•585•3443

FAX 806•794•1298
FAX 915•585•4944

Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: September 26, 2002

Order ID Number: A02091819

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
208237	Northwest Bottom	Soil	9/17/02	13:50	9/18/02
208238	Southwest Bottom	Soil	9/17/02	14:00	9/18/02
208239	South Wall	Soil	9/17/02	14:10	9/18/02
208240	West Wall	Soil	9/17/02	14:20	9/18/02
208241	North Wall	Soil	9/17/02	14:25	9/18/02
208242	East Wall	Soil	9/17/02	14:35	9/18/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH. The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 13 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 208237 - Northwest Bottom

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC23725 Date Analyzed: 9/23/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22200 Date Prepared: 9/23/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 208237 - Northwest Bottom

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC23660 Date Analyzed: 9/20/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22145 Date Prepared: 9/20/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		109	mg/Kg	1	10

Sample: 208237 - Northwest Bottom

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC23668 Date Analyzed: 9/20/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22136 Date Prepared: 9/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		10300	mg/Kg	10000	0.10
Total Arsenic		5.09	mg/Kg	100	0.05
Total Barium		254	mg/Kg	100	0.10
Total Boron		16.9	mg/Kg	100	0.005
Total Cadmium		2.21	mg/Kg	100	0.005
Total Calcium		118000	mg/Kg	1	0.50
Total Chromium		6.07	mg/Kg	100	0.01
Total Cobalt		3.31	mg/Kg	100	0.02
Total Copper		5.90	mg/Kg	100	0.01
Total Iron		6190	mg/Kg	10000	0.05
Total Lead		8.84	mg/Kg	100	0.01
Total Magnesium		17700	mg/Kg	1	0.50
Total Manganese		52.0	mg/Kg	100	0.02
Total Molybdenum		<5.00	mg/Kg	100	0.05
Total Nickel		7.75	mg/Kg	100	0.02
Total Potassium		2020	mg/Kg	1	0.50
Total Selenium		3.89	mg/Kg	100	0.01
Total Silica		104	mg/Kg	100	0.05
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		1140	mg/Kg	1	0.50
Total Zinc		17.9	mg/Kg	100	0.02

Sample: 208238 - Southwest Bottom

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC23725 Date Analyzed: 9/23/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22200 Date Prepared: 9/23/02

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Westgate

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Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 208238 - Southwest Bottom

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC23660 Date Analyzed: 9/20/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22145 Date Prepared: 9/20/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 208238 - Southwest Bottom

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC23668 Date Analyzed: 9/20/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22136 Date Prepared: 9/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7140	mg/Kg	10000	0.10
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		286	mg/Kg	100	0.10
Total Boron		13.6	mg/Kg	100	0.005
Total Cadmium		2.10	mg/Kg	100	0.005
Total Calcium		65500	mg/Kg	1	0.50
Total Chromium		4.84	mg/Kg	100	0.01
Total Cobalt		<2.50	mg/Kg	100	0.02
Total Copper		6.58	mg/Kg	100	0.01
Total Iron		4110	mg/Kg	10000	0.05
Total Lead		5.14	mg/Kg	100	0.01
Total Magnesium		34900	mg/Kg	1	0.50
Total Manganese		28.1	mg/Kg	100	0.02
Total Molybdenum		<5.00	mg/Kg	100	0.05
Total Nickel		7.51	mg/Kg	100	0.02
Total Potassium		1130	mg/Kg	1	0.50
Total Selenium		3.76	mg/Kg	100	0.01
Total Silica		133	mg/Kg	100	0.05
Total Silver		0.254	mg/Kg	100	0.002
Total Sodium		1170	mg/Kg	1	0.50
Total Zinc		9.85	mg/Kg	100	0.02

Sample: 208239 - South Wall

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC23725 Date Analyzed: 9/23/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22200 Date Prepared: 9/23/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 208239 - South Wall

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC23660 Date Analyzed: 9/20/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22145 Date Prepared: 9/20/02

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Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 208239 - South Wall

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC23668 Date Analyzed: 9/20/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22136 Date Prepared: 9/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		8550	mg/Kg	10000	0.10
Total Arsenic		5.16	mg/Kg	100	0.05
Total Barium		174	mg/Kg	100	0.10
Total Boron		14.6	mg/Kg	100	0.005
Total Cadmium		2.06	mg/Kg	100	0.005
Total Calcium		128000	mg/Kg	1	0.50
Total Chromium		5.24	mg/Kg	100	0.01
Total Cobalt		3.38	mg/Kg	100	0.02
Total Copper		3.75	mg/Kg	100	0.01
Total Iron		5330	mg/Kg	10000	0.05
Total Lead		5.48	mg/Kg	100	0.01
Total Magnesium		10800	mg/Kg	1	0.50
Total Manganese		35.7	mg/Kg	100	0.02
Total Molybdenum		<5.00	mg/Kg	100	0.05
Total Nickel		7.39	mg/Kg	100	0.02
Total Potassium		1630	mg/Kg	1	0.50
Total Selenium		3.81	mg/Kg	100	0.01
Total Silica		75.2	mg/Kg	100	0.05
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		993	mg/Kg	1	0.50
Total Zinc		11.7	mg/Kg	100	0.02

Sample: 208240 - West Wall

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC23725 Date Analyzed: 9/23/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22200 Date Prepared: 9/23/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 208240 - West Wall

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC23660 Date Analyzed: 9/20/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22145 Date Prepared: 9/20/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 208240 - West Wall

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC23668 Date Analyzed: 9/20/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22136 Date Prepared: 9/19/02

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Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		10200	mg/Kg	10000	0.10
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		202	mg/Kg	100	0.10
Total Boron		16.6	mg/Kg	100	0.005
Total Cadmium		2.35	mg/Kg	100	0.005
Total Calcium		94600	mg/Kg	1	0.50
Total Chromium		6.42	mg/Kg	100	0.01
Total Cobalt		4.10	mg/Kg	100	0.02
Total Copper		3.67	mg/Kg	100	0.01
Total Iron		6670	mg/Kg	10000	0.05
Total Lead		7.04	mg/Kg	100	0.01
Total Magnesium		6680	mg/Kg	1	0.50
Total Manganese		56.8	mg/Kg	100	0.02
Total Molybdenum		<5.00	mg/Kg	100	0.05
Total Nickel		7.65	mg/Kg	100	0.02
Total Potassium		1980	mg/Kg	1	0.50
Total Selenium		3.01	mg/Kg	100	0.01
Total Silica		73.8	mg/Kg	100	0.05
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		1130	mg/Kg	1	0.50
Total Zinc		14.6	mg/Kg	100	0.02

Sample: 208241 - North Wall

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC23725 Date Analyzed: 9/23/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22200 Date Prepared: 9/23/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 208241 - North Wall

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC23660 Date Analyzed: 9/20/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22145 Date Prepared: 9/20/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 208241 - North Wall

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC23668 Date Analyzed: 9/20/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22136 Date Prepared: 9/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		10900	mg/Kg	10000	0.10
Total Arsenic		<5.00	mg/Kg	100	0.05
Total Barium		145	mg/Kg	100	0.10
Total Boron		14.5	mg/Kg	100	0.005
Total Cadmium		2.60	mg/Kg	100	0.005
Total Calcium		56100	mg/Kg	1	0.50
Total Chromium		7.00	mg/Kg	100	0.01

Continued ...

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Westgate

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... Continued Sample: 208241 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Cobalt		3.57	mg/Kg	100	0.02
Total Copper		3.38	mg/Kg	100	0.01
Total Iron		7150	mg/Kg	10000	0.05
Total Lead		8.12	mg/Kg	100	0.01
Total Magnesium		5970	mg/Kg	1	0.50
Total Manganese		48.5	mg/Kg	100	0.02
Total Molybdenum		<5.00	mg/Kg	100	0.05
Total Nickel		7.94	mg/Kg	100	0.02
Total Potassium		2030	mg/Kg	1	0.50
Total Selenium		3.28	mg/Kg	100	0.01
Total Silica		70.6	mg/Kg	100	0.05
Total Silver		0.358	mg/Kg	100	0.002
Total Sodium		574	mg/Kg	1	0.50
Total Zinc		15.2	mg/Kg	100	0.02

Sample: 208242 - East Wall

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC23726 Date Analyzed: 9/23/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22200 Date Prepared: 9/23/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 208242 - East Wall

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC23660 Date Analyzed: 9/20/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22145 Date Prepared: 9/20/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 208242 - East Wall

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC23668 Date Analyzed: 9/20/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22136 Date Prepared: 9/19/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		8630	mg/Kg	10000	0.10
Total Arsenic		5.16	mg/Kg	100	0.05
Total Barium		376	mg/Kg	100	0.10
Total Boron		13.0	mg/Kg	100	0.005
Total Cadmium		2.08	mg/Kg	100	0.005
Total Calcium		99400	mg/Kg	1	0.50
Total Chromium		5.30	mg/Kg	100	0.01
Total Cobalt		3.41	mg/Kg	100	0.02
Total Copper		5.27	mg/Kg	100	0.01
Total Iron		5490	mg/Kg	10000	0.05
Total Lead		5.72	mg/Kg	100	0.01
Total Magnesium		14600	mg/Kg	1	0.50
Total Manganese		46.7	mg/Kg	100	0.02

Continued ...

Report Date: September 26, 2002
Westgate

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Hobbs,NM

... Continued Sample: 208242 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Molybdenum		<5.00	mg/Kg	100	0.05
Total Nickel		7.77	mg/Kg	100	0.02
Total Potassium		1530	mg/Kg	1	0.50
Total Selenium		4.48	mg/Kg	100	0.01
Total Silica		114	mg/Kg	100	0.05
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		682	mg/Kg	1	0.50
Total Zinc		11.9	mg/Kg	100	0.02

Quality Control Report Method Blank

Method Blank QCBatch: QC23660

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Method Blank QCBatch: QC23668

Param	Flag	Results	Units	Reporting Limit
Total Aluminum		0.458	mg/Kg	0.10
Total Arsenic		<0.050	mg/Kg	0.05
Total Barium		<0.100	mg/Kg	0.10
Total Boron		0.00709	mg/Kg	0.005
Total Cadmium		0.0203	mg/Kg	0.005
Total Calcium		<50	mg/Kg	0.50
Total Chromium		<0.010	mg/Kg	0.01
Total Cobalt		<0.025	mg/Kg	0.02
Total Copper		0.018	mg/Kg	0.01
Total Iron		2.59	mg/Kg	0.05
Total Lead		0.0221	mg/Kg	0.01
Total Magnesium		<50	mg/Kg	0.50
Total Manganese		0.0733	mg/Kg	0.02
Total Molybdenum		<0.050	mg/Kg	0.05
Total Nickel		<0.025	mg/Kg	0.02
Total Potassium		91.8	mg/Kg	0.50
Total Selenium		0.0323	mg/Kg	0.01
Total Silica		0.689	mg/Kg	0.05
Total Silver		0.00873	mg/Kg	0.002
Total Sodium		206	mg/Kg	0.50
Total Zinc		0.0373	mg/Kg	0.02

Method Blank QCBatch: QC23725

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.19	mg/Kg	0.19

Method Blank QCBatch: QC23726

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.19	mg/Kg	0.19

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC23660

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	257	252	mg/Kg	1	250	<10.0	102	1	74 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC23668

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	99.9	100	mg/Kg	100	100	0.458	99	0	75 - 125	20
Total Arsenic	54.6	50.7	mg/Kg	100	50	<0.050	109	7	75 - 125	20
Total Barium	102	101	mg/Kg	100	100	<0.100	102	0	75 - 125	20
Total Boron	5.48	5.10	mg/Kg	100	5	0.00709	109	7	75 - 125	20
Total Cadmium	25.9	25.6	mg/Kg	100	25	0.0203	103	1	75 - 125	20
Total Calcium	9510	9360	mg/Kg	1	10000	<50	95	1	75 - 125	20
Total Chromium	10.4	10.2	mg/Kg	100	10	<0.010	104	1	75 - 125	20
Total Cobalt	25.9	25.5	mg/Kg	100	25	<0.025	103	1	75 - 125	20
Total Copper	13.9	13.2	mg/Kg	100	12.50	0.018	111	5	75 - 125	20
Total Iron	51.7	51.7	mg/Kg	100	50	2.59	103	0	75 - 125	20
Total Lead	51.0	49.1	mg/Kg	100	50	0.0221	102	3	75 - 125	20
Total Magnesium	9050	9150	mg/Kg	1	10000	<50	90	1	75 - 125	20
Total Manganese	27.7	25.8	mg/Kg	100	25	0.0733	110	7	75 - 125	20
Total Molybdenum	52.7	52.5	mg/Kg	100	50	<0.050	105	0	75 - 125	20
Total Nickel	26.3	26.1	mg/Kg	100	25	<0.025	105	0	75 - 125	20
Total Potassium	9120	8780	mg/Kg	1	10000	91.8	91	3	75 - 125	20
Total Selenium	42.5	41.7	mg/Kg	100	50	0.0323	85	1	75 - 125	20
Total Silica	96.1	91.1	mg/Kg	100	100	0.689	96	5	75 - 125	20
Total Silver	12.5	12.4	mg/Kg	100	12.50	0.00873	100	0	75 - 125	20
Total Sodium	9730	9500	mg/Kg	1	10000	206	97	2	75 - 125	20
Total Zinc	28.0	27.1	mg/Kg	100	25	0.0373	112	3	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC23725

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.59	2.47	mg/Kg	1	2.50	<0.19	103	4	88 - 123	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC23726

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.59	2.47	mg/Kg	1	2.50	<0.19	103	4	88 - 123	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC23660

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	202	211	mg/Kg	1	250	<10.0	80	4	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC23668

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	¹ 10100	10500	mg/Kg	10000	100	10300	-201	-27177	75 - 125	20
Total Arsenic	56.2	52.6	mg/Kg	100	50	5.09	102	7	75 - 125	20
Total Barium	² 324	285	mg/Kg	100	100	254	70	76	75 - 125	20
Total Boron	20.9	21.4	mg/Kg	100	5	16.9	80	11	75 - 125	20
Total Cadmium	23.1	23.0	mg/Kg	100	25	2.21	83	0	75 - 125	20
Total Calcium	³ 174000	⁴ 140000	mg/Kg	1	10000	118000	560	87	75 - 125	20
Total Chromium	14.6	14.7	mg/Kg	100	10	6.07	85	1	75 - 125	20
Total Cobalt	26.0	25.4	mg/Kg	100	25	3.31	90	2	75 - 125	20
Total Copper	19.6	18.9	mg/Kg	100	12.50	5.90	109	5	75 - 125	20
Total Iron	⁵ 5960	6250	mg/Kg	10000	50	6190	-462	-336	75 - 125	20
Total Lead	56.0	56.3	mg/Kg	100	50	8.84	94	0	75 - 125	20
Total Magnesium	⁶ 36400	⁷ 30400	mg/Kg	1	10000	17700	187	38	75 - 125	20
Total Manganese	71.2	72.2	mg/Kg	100	25	52.0	76	5	75 - 125	20
Total Molybdenum	48.3	47.6	mg/Kg	100	50	<5.00	96	1	75 - 125	20
Total Nickel	29.4	29.2	mg/Kg	100	25	7.75	86	0	75 - 125	20
Total Potassium	⁸ 17600	⁹ 16800	mg/Kg	1	10000	2020	155	5	75 - 125	20
Total Selenium	¹⁰ 39.6	40.5	mg/Kg	100	50	3.89	71	2	75 - 125	20
Total Silica	155	150	mg/Kg	100	50	104	101	10	75 - 125	20
Total Silver	12.0	11.9	mg/Kg	100	12.50	<0.200	96	0	75 - 125	20

Continued ...

¹ Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

² Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

³ ms recovery invalid due to matrix effect, use lcs/lcsd to demonstrate the run is under control.

⁴ ms recovery invalid due to matrix effect, use lcs/lcsd to demonstrate the run is under control.

⁵ Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

⁶ ms recovery invalid due to matrix effect, use lcs/lcsd to demonstrate the run is under control.

⁷ ms recovery invalid due to matrix effect, use lcs/lcsd to demonstrate the run is under control.

⁸ ms recovery invalid due to matrix effect, use lcs/lcsd to demonstrate the run is under control.

⁹ ms recovery invalid due to matrix effect, use lcs/lcsd to demonstrate the run is under control.

¹⁰ Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

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Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Sodium	11200	10400	mg/Kg	1	10000	1140	100	8	75 - 125	20
Total Zinc	¹¹ 36.4	38.0	mg/Kg	100	25	17.9	74	8	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC23725

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.51	2.51	mg/Kg	1	2.50	<0.19	100	0	45 - 157	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC23726

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.40	2.43	mg/Kg	1	2.50	<0.19	96	1	45 - 157	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC23660

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	101	101	80 - 120	9/20/02

CCV (2) QCBatch: QC23660

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	100	100	80 - 120	9/20/02

ICV (1) QCBatch: QC23660

¹¹Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	105	105	80 - 120	9/20/02

CCV (1) QCBatch: QC23668

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/Kg	2	1.97	98	90 - 110	9/20/02
Total Arsenic		mg/Kg	1	0.994	99	90 - 110	9/20/02
Total Barium		mg/Kg	2	1.98	99	90 - 110	9/20/02
Total Boron		mg/Kg	0.10	0.103	103	90 - 110	9/20/02
Total Cadmium		mg/Kg	0.50	0.490	98	90 - 110	9/20/02
Total Calcium		mg/Kg	25	25.3	101	90 - 110	9/20/02
Total Chromium		mg/Kg	0.20	0.198	99	90 - 110	9/20/02
Total Cobalt		mg/Kg	0.50	0.499	99	90 - 110	9/20/02
Total Copper		mg/Kg	0.25	0.245	98	90 - 110	9/20/02
Total Iron		mg/Kg	1	1.00	100	90 - 110	9/20/02
Total Lead		mg/Kg	1	0.974	97	90 - 110	9/20/02
Total Magnesium		mg/Kg	25	24.4	97	90 - 110	9/20/02
Total Manganese		mg/Kg	0.50	0.494	98	90 - 110	9/20/02
Total Molybdenum		mg/Kg	1	0.996	99	90 - 110	9/20/02
Total Nickel		mg/Kg	0.50	0.495	99	90 - 110	9/20/02
Total Potassium		mg/Kg	25	25.0	100	90 - 110	9/20/02
Total Selenium		mg/Kg	1	0.992	99	90 - 110	9/20/02
Total Silica		mg/Kg	1	0.986	98	90 - 110	9/20/02
Total Silver		mg/Kg	0.25	0.246	98	90 - 110	9/20/02
Total Sodium		mg/Kg	25	25.0	100	90 - 110	9/20/02
Total Zinc		mg/Kg	0.50	0.525	105	90 - 110	9/20/02

ICV (1) QCBatch: QC23668

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/Kg	2	1.98	99	95 - 105	9/20/02
Total Arsenic		mg/Kg	1	1.01	101	95 - 105	9/20/02
Total Barium		mg/Kg	2	1.97	98	95 - 105	9/20/02
Total Boron		mg/Kg	0.10	0.105	105	95 - 105	9/20/02
Total Cadmium		mg/Kg	0.50	0.491	98	95 - 105	9/20/02
Total Calcium		mg/Kg	25	24.3	97	95 - 105	9/20/02
Total Chromium		mg/Kg	0.20	0.198	99	95 - 105	9/20/02
Total Cobalt		mg/Kg	0.50	0.495	99	95 - 105	9/20/02
Total Copper		mg/Kg	0.25	0.244	97	95 - 105	9/20/02
Total Iron		mg/Kg	1	1.00	100	95 - 105	9/20/02
Total Lead		mg/Kg	1	0.989	98	95 - 105	9/20/02
Total Magnesium		mg/Kg	25	23.0	92	95 - 105	9/20/02
Total Manganese		mg/Kg	0.50	0.493	98	95 - 105	9/20/02
Total Molybdenum		mg/Kg	1	1.00	100	95 - 105	9/20/02

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Nickel		mg/Kg	0.50	0.496	99	95 - 105	9/20/02
Total Potassium		mg/Kg	25	25.2	100	95 - 105	9/20/02
Total Selenium		mg/Kg	1	0.996	99	95 - 105	9/20/02
Total Silica		mg/Kg	1	0.982	98	95 - 105	9/20/02
Total Silver		mg/Kg	0.25	0.247	98	95 - 105	9/20/02
Total Sodium		mg/Kg	25	25.4	101	95 - 105	9/20/02
Total Zinc		mg/Kg	0.50	0.495	99	95 - 105	9/20/02

CCV (1) QCBatch: QC23725

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.005	0.00522	104	80 - 120	9/23/02

ICV (1) QCBatch: QC23725

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.005	0.00535	107	80 - 120	9/23/02

CCV (1) QCBatch: QC23726

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00522	104	80 - 120	9/23/02

ICV (1) QCBatch: QC23726

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00535	107	80 - 120	9/23/02

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas 79424 800•378•1296
El Paso, Texas 79932 888•588•3443
E-Mail: lab@traceanalysis.com

806•794•1296 FAX 806•794•1298
915•585•3443 FAX 915•585•4944

Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: October 2, 2002

Order ID Number: A02091818

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
208231	Northwest Bottom	Soil	9/17/02	13:50	9/18/02
208232	Southwest Bottom	Soil	9/17/02	14:00	9/18/02
208233	South Wall	Soil	9/17/02	14:20	9/18/02
208234	West Wall	Soil	9/17/02	14:30	9/18/02
208235	North Wall	Soil	9/17/02	14:25	9/18/02
208236	East Wall	Soil	9/17/02	14:45	9/18/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 6 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 208231 - Northwest Bottom

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC23865 Date Analyzed: 9/28/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22311 Date Prepared: 9/28/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.0	µg/Kg	1	50	92	70 - 130
Toluene-d8		49.2	µg/Kg	1	50	98	70 - 130
4-Bromofluorobenzene		49.9	µg/Kg	1	50	99	70 - 130

Sample: 208232 - Southwest Bottom

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC23865 Date Analyzed: 9/28/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22311 Date Prepared: 9/28/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.0	µg/Kg	1	50	92	70 - 130
Toluene-d8		49.0	µg/Kg	1	50	98	70 - 130
4-Bromofluorobenzene		49.5	µg/Kg	1	50	99	70 - 130

Sample: 208233 - South Wall

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC23865 Date Analyzed: 9/28/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22311 Date Prepared: 9/28/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Report Date: October 2, 2002
Westgate

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Hobbs,NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.0	µg/Kg	1	50	92	70 - 130
Toluene-d8		48.8	µg/Kg	1	50	97	70 - 130
4-Bromofluorobenzene		49.4	µg/Kg	1	50	98	70 - 130

Sample: 208234 - West Wall

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC23865 Date Analyzed: 9/28/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22311 Date Prepared: 9/28/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.8	µg/Kg	1	50	93	70 - 130
Toluene-d8		48.9	µg/Kg	1	50	97	70 - 130
4-Bromofluorobenzene		50.1	µg/Kg	1	50	100	70 - 130

Sample: 208235 - North Wall

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC23865 Date Analyzed: 9/28/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22311 Date Prepared: 9/28/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.0	µg/Kg	1	50	94	70 - 130
Toluene-d8		49.3	µg/Kg	1	50	98	70 - 130
4-Bromofluorobenzene		51.1	µg/Kg	1	50	102	70 - 130

Sample: 208236 - East Wall

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC23865 Date Analyzed: 9/28/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22311 Date Prepared: 9/28/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<25.0	µg/Kg	25	1
Toluene		<25.0	µg/Kg	25	1

Continued ...

Report Date: October 2, 2002
Westgate

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1331 Tasker

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... Continued Sample: 208236 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Ethylbenzene		<25.0	µg/Kg	25	1
m,p-Xylene		<25.0	µg/Kg	25	1
o-Xylene		<25.0	µg/Kg	25	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.9	µg/Kg	1	50	93	70 - 130
Toluene-d8		48.5	µg/Kg	1	50	97	70 - 130
4-Bromofluorobenzene		49.7	µg/Kg	1	50	99	70 - 130

Quality Control Report Method Blank

Method Blank QCBatch: QC23865

Param	Flag	Results	Units	Reporting Limit
Benzene		<10.0	µg/Kg	1
Toluene		<10.0	µg/Kg	1
Ethylbenzene		<10.0	µg/Kg	1
m,p-Xylene		<10.0	µg/Kg	1
o-Xylene		<10.0	µg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		45.3	µg/Kg	1	50	91	70 - 130
Toluene-d8		49.2	µg/Kg	1	50	98	70 - 130
4-Bromofluorobenzene		50.9	µg/Kg	1	50	102	70 - 130

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC23865

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	2630	2570	µg/Kg	1	2500	<10.0	105	2	70 - 130	20
Benzene	2380	2310	µg/Kg	1	2500	<10.0	95	2	70 - 130	20
Trichloroethene (TCE)	2300	2280	µg/Kg	1	2500	<10.0	92	0	70 - 130	20
Toluene	2440	2250	µg/Kg	1	2500	<10.0	97	8	70 - 130	20
Chlorobenzene	2450	2380	µg/Kg	1	2500	<10.0	98	2	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	37.7	36.3	µg/Kg	1	50	75	73	70 - 130
Toluene-d8	50.9	50.7	µg/Kg	1	50	102	101	70 - 130
4-Bromofluorobenzene	50.7	50.5	µg/Kg	1	50	101	101	70 - 130

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC23865

Report Date: October 2, 2002
Westgate

Order Number: A02091818
1331 Tasker

Page Number: 6 of 6
Hobbs,NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/Kg	50	49.0	98	80 - 120	9/28/02
1,1-Dichloroethene		µg/Kg	50	49.0	98	80 - 120	9/28/02
Chloroform		µg/Kg	50	51.0	102	80 - 120	9/28/02
1,2-Dichloropropane		µg/Kg	50	50.0	100	80 - 120	9/28/02
Toluene		µg/Kg	50	49.0	98	80 - 120	9/28/02
Chlorobenzene		µg/Kg	50	51.0	102	80 - 120	9/28/02
Ethylbenzene		µg/Kg	50	52.0	104	80 - 120	9/28/02
Dibromofluoromethane		µg/Kg	50	50.3	101	80 - 120	9/28/02
Toluene-d8		µg/Kg	50	49.4	99	80 - 120	9/28/02
4-Bromofluorobenzene		µg/Kg	50	50.0	100	80 - 120	9/28/02

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

Trace Analysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #

AD2091818

Company Name:

ABC International, Inc.

Phone #:

505 597-6388

Address:

(Street, City, Zip)

P.O. Box 805 Hobbs N.M. 88241

Fax #:

505 392-0397

Contact Person:

Cliff P. Brunson

Invoice to:

(If different from above)

Shell E & P Company Wayne Hamilton

Project #:

Project Name:

Westgate

Project Location:

Hobbs N.M.

Sampler Signature:

Non Lawrence

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD					SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	DATE	TIME
208231	Northwest Bottom	1	VOA	✓									✓ 9-17-02	1:30p
32	Southeast Bottom	1	VOA	✓									✓ 9-17-02	1:30p
33	South Wall	1	VOA	✓									✓ 9-17-02	2:10p
34	West Wall	1	VOA	✓									✓ 9-17-02	2:10p
35	North Wall	1	VOA	✓									✓ 9-17-02	2:15p
36	East Wall	1	VOA	✓									✓ 9-17-02	2:15p

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	
BTEX 8021B/602	
TPH 418.1/TX1005	
PAH 8270C	
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
TCLP Pesticides	
RCI	
GC/MS Vol. 8260B/624	✓
GC/MS Semi. Vol. 8270C/625	✓
PCBs 8082/608	
Pesticides 8081A/608	
BOD, TSS, pH	
Turn Around Time if different from standard	

Relinquished by:

Date:

Time:

Received by:

Date:

Time:

LAB USE ONLY

Relinquished by:

Date:

Time:

Received by:

Date:

Time:

Relinquished by:

Date:

Time:

Received at Laboratory by:

Date:

Time:

Intact ☒ Y / N
Headspace ☐ Y / N
Temp ☐ °
Log-in Review ☒ MA
☐ Check If Special Reporting Limits Are Needed

10/35

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 00204184

Company Name:

Phone #:

BBC International, Inc.

505 397-6188

Address:

(Street, City, Zip)

Fax #:

P.O. Box 805 Hobbs N.M. 88241

505 397-0327

Contact Person:

Cliff P. Branson

Invoice to:

(If different from above) Shell E & P Company - Wayne Hamilton

Project #:

Project Name:

Westgate

Project Location:

Hobbs N.M.

Sampler Signature:

Tom Dunning

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME
208237	Northwest Bottom	1	402	✓									✓	9-17-02	1:15 pm
38	Southwest Bottom	1	402	✓									✓	9-17-02	2:00 pm
34	South Wall	1	402	✓									✓	9-17-02	2:10 pm
40	West Wall	1	402	✓									✓	9-17-02	2:10 pm
41	North Wall	1	402	✓									✓	9-17-02	2:15 pm
42	East Wall	1	402	✓									✓	9-17-02	2:35 pm

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	
BTEX 8021B/602	
TPH 418.1/41.006	
PAH 8270C	
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
TCLP Pesticides	
RCI	
GC/MS Vol. 8260B/624	
GC/MS Semi. Vol. 8270C/625	
PCB's 8082/608	
Pesticides 8081A/608	
BOD, TSS, pH	

GC/MS Vol. 8260B/624
GC/MS Semi. Vol. 8270C/625
PCB's 8082/608
Pesticides 8081A/608
BOD, TSS, pH
Turn Around Time if different from standard

REMARKS:

LAB USE ONLY

Intact ☒ Y ☐ N
Headspace ☐ Y ☐ N
Temp 7 °
Log-in Review MA

☐ Check if Special Reporting Limits Are Needed

FF 9/27/02

Date: Time:

Received by:

Date: Time:

Relinquished by:

Date: Time:

Received by:

Date: Time:

Relinquished by:

Date: Time:

Received at Laboratory by:

Date: Time:

Relinquished by:

Tom Dunning 9-17-02 5:00pm
Cliff Branson 9-18-02 10:00am

Submission of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

Carrier # FedEx 9906-0089-7070

APPENDIX IV

Results Of Particulate Measurements Made During Remediation Activities Near The Westgate Subdivision

March – October 2002

Westgate Stage 2 Abatement Plan- Remediation Activities Report Hobbs, New Mexico

Prepared for:
Shell Exploration & Production Company
Houston, Texas

May 2003

Prepared by:
BBC International, Inc.

1:30 pm	Watering site. Trucks loading 3 rd haul.
3:00 pm	1 st truck back for 4 th haul.
4:10 pm	Dust storm blew through site.

5-7 (OVER LIMIT DAY)

8:30 am	Site activities beginning.
9:30 am	Water truck watering site.
10:30 am	Very dusty from wind.
11:30 am	Very dusty from wind. Watering site. Trucks loading 2 nd haul.
1:00 pm	Windy.
1:10 pm	Trucks back for 3 rd haul.
1:45 pm	Water truck watering.
2:30 pm	Shut down site operations due to wind and dust blowing into neighborhood. Excavator moved back into structure.
2:50 pm	Watering site and in front of tent. Put extra water around clay mounds.
2:55 pm	Truck back for 4 th haul. Work commenced after watering down site.
3:09 pm	Two more trucks on site.
3:40 pm	Watering site.
4:00 pm	Wallach dumping load of clay.
4:30 pm	Watering site.

5-8 (OVER LIMIT DAY)

7:30 am	Watered site.
8:20 am	Trucks positioning for 1 st haul.
9:18 am	Watering site. All other trucks loaded and gone. No other site activity.
10:00 am	Windy. Site well watered.
10:04 am	Wallach dumped another load of clay. No visible dust blowing.
10:30 am	No truck activity. Site well watered.
11:00 am	Trucks returning for 2 nd haul.
11:15 am	Kids riding 4-wheelers outside site fence on south and west end.
11:35 am	Winds picked up blowing dust.
11:47 am	Watering front of tent.
11:50 am	Huge mass of dirt and dust blew across site. Site well watered.
12:05 pm	Dust blowing across site.
1:35 pm	Wind gust blew large mass of dust across site. No truck activity at this time.
1:45 pm	1 st truck back for 3 rd haul. Site well watered.
2:35 pm	Dumping load of clay. School bus riding along fenceline stirring up dust.
3:07 pm	1 st truck back for 4 th haul.
3:30 pm	Watering site.
4:15 pm	Last truck gone.
4:30 pm	Watering site.

9-26

Not much notation on Thursday??? I was absent possibly.

9-27 (OVER LIMIT DAY) Friday

9-11:00 am	Truck activity.
2:00-4:20 pm	Truck activity.
3:23 pm	Watering site and roads. Watered inside structure.
3:30 pm	Windy. A lot of dust blowing off trucks across site.
4:20 pm	Loader working on ramp. Site watered. Low dust.

No weekend notes for 9-28, 9-30

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/27/02	16:00	200	4.7	32
08/27/02	17:00	187	4.7	16
08/27/02	18:00	99	6.9	14
08/27/02	19:00	151	10.4	23
08/27/02	20:00	174	16.1	9
08/27/02	21:00	162	8.9	13
08/27/02	22:00	88	5.5	17
08/27/02	23:00	84	7.3	15
08/28/02	0:00	89	8.5	11
08/28/02	1:00	88	9.3	12
08/28/02	2:00	90	8.4	13
08/28/02	3:00	97	8.3	15
08/28/02	4:00	85	9.7	12
08/28/02	5:00	90	9.4	12
08/28/02	6:00	93	8.0	15
08/28/02	7:00	86	7.7	16
08/28/02	8:00	89	8.7	15
08/28/02	9:00	92	8.8	17
08/28/02	10:00	102	8.2	21
08/28/02	11:00	85	8.0	23
08/28/02	12:00	88	8.2	20
08/28/02	13:00	110	7.9	25
08/28/02	14:00	100	9.9	18
08/28/02	15:00	100	8.6	19
08/28/02	16:00	95	10.0	17
08/28/02	17:00	113	10.1	18
08/28/02	18:00	148	10.8	20
08/28/02	19:00	159	8.9	22
08/28/02	20:00	163	7.0	20
08/28/02	21:00	161	9.5	18
08/28/02	22:00	163	9.9	18
08/28/02	23:00	159	7.9	22
08/29/02	0:00	347	5.5	29
08/29/02	1:00	112	2.6	50
08/29/02	2:00	38	15.0	16
08/29/02	3:00	29	13.0	16
08/29/02	4:00	36	12.4	16
08/29/02	5:00	54	11.6	17
08/29/02	6:00	72	9.7	15
08/29/02	7:00	81	9.4	13
08/29/02	8:00	91	8.9	15
08/29/02	9:00	120	6.1	24
08/29/02	10:00	147	7.9	26
08/29/02	11:00	149	10.4	23
08/29/02	12:00	174	10.8	22
08/29/02	13:00	192	8.9	22
08/29/02	14:00	187	8.3	22
08/29/02	15:00	184	7.9	21
08/29/02	16:00	181	6.8	36
08/29/02	17:00	166	8.0	22
08/29/02	18:00	158	8.3	22

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/29/02	19:00	149	8.5	16
08/29/02	20:00	110	7.4	17
08/29/02	21:00	117	9.0	16
08/29/02	22:00	122	7.4	19
08/29/02	23:00	120	8.0	17
08/30/02	0:00	129	6.5	24
08/30/02	1:00	107	5.0	14
08/30/02	2:00	108	5.4	14
08/30/02	3:00	99	6.0	14
08/30/02	4:00	117	5.7	18
08/30/02	5:00	128	5.4	24
08/30/02	6:00	125	4.1	24
08/30/02	7:00	118	5.5	17
08/30/02	8:00	132	6.3	25
08/30/02	9:00	150	6.7	27
08/30/02	10:00	140	6.8	25
08/30/02	11:00	145	8.4	26
08/30/02	12:00	160	8.6	26
08/30/02	13:00	147	8.4	28
08/30/02	14:00	149	8.2	30
08/30/02	15:00	134	10.5	24
08/30/02	16:00	115	10.4	20
08/30/02	17:00	111	10.3	18
08/30/02	18:00	104	9.9	16
08/30/02	19:00	155	11.0	24
08/30/02	20:00	210	9.5	11
08/30/02	21:00	177	6.5	12
08/30/02	22:00	137	5.9	20
08/30/02	23:00	119	7.0	15
08/31/02	0:00	121	9.5	16
08/31/02	1:00	121	8.3	17
08/31/02	2:00	121	8.0	16
08/31/02	3:00	129	6.0	22
08/31/02	4:00	125	5.6	22
08/31/02	5:00	120	5.9	18
08/31/02	6:00	127	6.1	21
08/31/02	7:00	158	7.4	21
08/31/02	8:00	168	11.5	13
08/31/02	9:00	173	11.9	12
08/31/02	10:00	168	10.0	19
08/31/02	11:00	165	10.3	23
08/31/02	12:00	155	8.8	27
08/31/02	13:00	133	7.3	29
08/31/02	14:00	124	8.7	27
08/31/02	15:00	115	10.2	23
08/31/02	16:00	113	9.5	22
08/31/02	17:00	122	9.8	22
08/31/02	18:00	116	8.9	18
08/31/02	19:00	123	8.2	16
08/31/02	20:00	129	6.2	23
08/31/02	21:00	129	6.2	23

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/31/02	22:00	119	6.7	15
08/31/02	23:00	114	6.0	15
09/01/02	0:00	117	6.4	15
09/01/02	1:00	134	5.7	24
09/01/02	2:00	165	7.2	13
09/01/02	3:00	177	4.9	6
09/01/02	4:00	206	3.3	5
09/01/02	5:00	185	5.3	4
09/01/02	6:00	182	5.0	5
09/01/02	7:00	178	7.3	8
09/01/02	8:00	184	10.0	10
09/01/02	9:00	188	12.1	11
09/01/02	10:00	200	11.2	13
09/01/02	11:00	200	8.4	23
09/01/02	12:00	193	6.7	34
09/01/02	13:00	180	7.5	31
09/01/02	14:00	158	6.3	34
09/01/02	15:00	129	5.4	36
09/01/02	16:00	148	6.8	27
09/01/02	17:00	122	7.0	25
09/01/02	18:00	127	8.9	19
09/01/02	19:00	159	6.8	21
09/01/02	20:00	166	6.9	11
09/01/02	21:00	166	5.7	9
09/01/02	22:00	160	4.9	18
09/01/02	23:00	173	2.8	18
09/02/02	0:00	163	5.5	14
09/02/02	1:00	191	4.6	4
09/02/02	2:00	239	2.8	3
09/02/02	3:00	230	2.7	4
09/02/02	4:00	204	4.5	3
09/02/02	5:00	172	7.2	6
09/02/02	6:00	177	7.4	8
09/02/02	7:00	178	9.5	9
09/02/02	8:00	187	11.4	9
09/02/02	9:00	190	10.6	11
09/02/02	10:00	192	9.8	13
09/02/02	11:00	194	7.7	25
09/02/02	12:00	182	7.3	30
09/02/02	13:00	175	7.5	33
09/02/02	14:00	140	7.2	30
09/02/02	15:00	182	8.0	30
09/02/02	16:00	170	8.1	26
09/02/02	17:00	128	6.5	28
09/02/02	18:00	154	7.2	24
09/02/02	19:00	138	4.6	28
09/02/02	20:00	122	5.4	16
09/02/02	21:00	123	5.3	21
09/02/02	22:00	138	5.1	24
09/02/02	23:00	161	5.2	18
09/03/02	0:00	159	5.3	19

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/03/02	1:00	164	5.7	14
09/03/02	2:00	183	3.6	5
09/03/02	3:00	150	3.9	11
09/03/02	4:00	133	4.5	20
09/03/02	5:00	156	5.5	22
09/03/02	6:00	167	4.4	23
09/03/02	7:00	182	2.7	11
09/03/02	8:00	181	8.6	11
09/03/02	9:00	182	9.0	14
09/03/02	10:00	173	7.1	24
09/03/02	11:00	134	6.1	29
09/03/02	12:00	138	7.6	29
09/03/02	13:00	103	9.2	24
09/03/02	14:00	103	9.5	23
09/03/02	15:00	104	9.2	23
09/03/02	16:00	110	9.4	22
09/03/02	17:00	116	8.6	21
09/03/02	18:00	116	8.6	18
09/03/02	19:00	115	8.1	16
09/03/02	20:00	110	7.2	16
09/03/02	21:00	106	6.9	15
09/03/02	22:00	100	5.9	14
09/03/02	23:00	101	6.5	15
09/04/02	0:00	117	7.4	15
09/04/02	1:00	127	6.9	21
09/04/02	2:00	106	5.7	14
09/04/02	3:00	107	5.2	14
09/04/02	4:00	132	5.1	23
09/04/02	5:00	124	5.4	18
09/04/02	6:00	121	3.2	20
09/04/02	7:00	150	5.2	19
09/04/02	8:00	185	9.8	11
09/04/02	9:00	195	9.9	13
09/04/02	10:00	187	6.1	34
09/04/02	11:00	162	5.1	47
09/04/02	12:00	149	5.4	41
09/04/02	13:00	133	5.6	35
09/04/02	14:00	124	7.8	24
09/04/02	15:00	119	6.6	26
09/04/02	16:00	153	9.7	25
09/04/02	17:00	166	8.8	15
09/04/02	18:00	148	6.4	25
09/04/02	19:00	124	6.7	18
09/04/02	20:00	125	7.9	16
09/04/02	21:00	111	8.2	15
09/04/02	22:00	109	7.7	16
09/04/02	23:00	116	6.8	16
09/05/02	0:00	124	6.2	20
09/05/02	1:00	153	5.0	25
09/05/02	2:00	138	4.0	27
09/05/02	3:00	156	4.1	19

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/05/02	4:00	166	6.1	7
09/05/02	5:00	171	3.4	7
09/05/02	6:00	184	1.9	14
09/05/02	7:00	170	4.5	9
09/05/02	8:00	186	9.5	10
09/05/02	9:00	178	11.7	11
09/05/02	10:00	187	9.6	13
09/05/02	11:00	168	7.5	27
09/05/02	12:00	162	7.6	28
09/05/02	13:00	150	7.4	33
09/05/02	14:00	139	7.4	32
09/05/02	15:00	138	7.6	27
09/05/02	16:00	170	7.8	22
09/05/02	17:00	114	8.1	18
09/05/02	18:00	126	6.2	23
09/05/02	19:00	116	6.6	16
09/05/02	20:00	113	8.0	16
09/05/02	21:00	113	8.1	17
09/05/02	22:00	116	8.3	16
09/05/02	23:00	133	6.7	24
09/06/02	0:00	155	6.4	22
09/06/02	1:00	127	5.0	23
09/06/02	2:00	126	5.4	23
09/06/02	3:00	145	4.6	28
09/06/02	4:00	163	6.2	15
09/06/02	5:00	154	6.4	25
09/06/02	6:00	165	6.9	19
09/06/02	7:00	174	6.4	9
09/06/02	8:00	172	11.7	10
09/06/02	9:00	167	9.0	18
09/06/02	10:00	154	9.4	25
09/06/02	11:00	141	10.3	27
09/06/02	12:00	112	11.4	20
09/06/02	13:00	121	12.0	21
09/06/02	14:00	137	9.6	26
09/06/02	15:00	112	10.1	21
09/06/02	16:00	120	10.7	23
09/06/02	17:00	118	9.6	22
09/06/02	18:00	126	7.1	21
09/06/02	19:00	121	5.9	18
09/06/02	20:00	107	5.7	14
09/06/02	21:00	105	5.7	15
09/06/02	22:00	104	6.1	14
09/06/02	23:00	111	6.1	15
09/07/02	0:00	108	6.4	15
09/07/02	1:00	110	7.4	15
09/07/02	2:00	117	7.9	16
09/07/02	3:00	114	6.6	16
09/07/02	4:00	113	6.8	16
09/07/02	5:00	112	5.6	15
09/07/02	6:00	100	4.6	13

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/07/02	7:00	97	6.6	13
09/07/02	8:00	124	7.1	20
09/07/02	9:00	139	8.8	25
09/07/02	10:00	127	9.1	23
09/07/02	11:00	124	7.9	23
09/07/02	12:00	104	7.8	26
09/07/02	13:00	97	9.0	24
09/07/02	14:00	104	10.0	21
09/07/02	15:00	99	8.8	24
09/07/02	16:00	103	9.0	22
09/07/02	17:00	93	8.9	15
09/07/02	18:00	95	8.5	14
09/07/02	19:00	88	7.4	11
09/07/02	20:00	89	7.0	13
09/07/02	21:00	92	6.7	13
09/07/02	22:00	96	6.4	13
09/07/02	23:00	92	5.4	12
09/08/02	0:00	92	5.8	13
09/08/02	1:00	89	5.8	13
09/08/02	2:00	85	5.4	11
09/08/02	3:00	76	4.8	12
09/08/02	4:00	56	3.8	16
09/08/02	5:00	54	3.7	14
09/08/02	6:00	13	3.2	13
09/08/02	7:00	26	3.7	13
09/08/02	8:00	71	5.6	18
09/08/02	9:00	65	3.6	37
09/08/02	10:00	73	5.1	32
09/08/02	11:00	70	6.6	24
09/08/02	12:00	76	7.5	29
09/08/02	13:00	74	8.6	26
09/08/02	14:00	76	9.2	22
09/08/02	15:00	70	9.4	21
09/08/02	16:00	75	9.8	18
09/08/02	17:00	87	8.8	17
09/08/02	18:00	86	9.0	14
09/08/02	19:00	108	8.9	15
09/08/02	20:00	104	8.2	14
09/08/02	21:00	105	8.5	15
09/08/02	22:00	110	8.4	15
09/08/02	23:00	109	6.6	16
09/09/02	0:00	109	6.4	16
09/09/02	1:00	106	6.1	16
09/09/02	2:00	92	5.5	12
09/09/02	3:00	84	4.5	14
09/09/02	4:00	98	5.3	15
09/09/02	5:00	107	5.0	15
09/09/02	6:00	119	2.7	19
09/09/02	7:00	89	3.7	14
09/09/02	8:00	131	2.8	29
09/09/02	9:00	87	5.2	23

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/09/02	10:00	93	5.6	32
09/09/02	11:00	92	6.5	24
09/09/02	12:00	103	7.1	26
09/09/02	13:00	86	7.8	28
09/09/02	14:00	90	8.4	22
09/09/02	15:00	101	8.4	27
09/09/02	16:00	98	9.5	21
09/09/02	17:00	99	8.6	19
09/09/02	18:00	101	8.4	16
09/09/02	19:00	108	6.9	16
09/09/02	20:00	108	6.9	16
09/09/02	21:00	102	8.3	15
09/09/02	22:00	106	7.7	16
09/09/02	23:00	109	7.2	16
09/10/02	0:00	107	5.8	17
09/10/02	1:00	97	6.5	14
09/10/02	2:00	97	6.6	15
09/10/02	3:00	96	5.9	14
09/10/02	4:00	95	5.8	15
09/10/02	5:00	92	5.9	14
09/10/02	6:00	96	5.4	15
09/10/02	7:00	97	5.5	17
09/10/02	8:00	92	5.5	16
09/10/02	9:00	107	5.6	19
09/10/02	10:00	95	6.3	19
09/10/02	11:00	89	6.4	23
09/10/02	12:00	103	9.0	21
09/10/02	13:00	90	5.2	17
09/10/02	14:00	94	7.2	23
09/10/02	15:00	113	6.7	20
09/10/02	16:00	131	6.1	18
09/10/02	17:00	127	3.3	23
09/10/02	18:00	70	1.8	22
09/10/02	19:00	71	3.2	12
09/10/02	20:00	93	4.6	12
09/10/02	21:00	101	4.4	14
09/10/02	22:00	65	6.7	21
09/10/02	23:00	72	6.8	17
09/11/02	0:00	55	8.0	16
09/11/02	1:00	57	9.0	15
09/11/02	2:00	54	7.0	16
09/11/02	3:00	63	7.5	15
09/11/02	4:00	69	7.4	14
09/11/02	5:00	69	7.1	14
09/11/02	6:00	71	6.9	13
09/11/02	7:00	79	7.3	13
09/11/02	8:00	87	7.6	13
09/11/02	9:00	92	9.4	15
09/11/02	10:00	98	9.5	18
09/11/02	11:00	130	7.4	25
09/11/02	12:00	135	7.0	27

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/11/02	13:00	121	7.1	23
09/11/02	14:00	129	7.9	25
09/11/02	15:00	113	8.7	20
09/11/02	16:00	129	7.2	22
09/11/02	17:00	107	8.0	17
09/11/02	18:00	97	7.2	14
09/11/02	19:00	94	8.1	14
09/11/02	20:00	93	8.1	13
09/11/02	21:00	75	5.5	15
09/11/02	22:00	18	6.6	17
09/11/02	23:00	342	9.9	13
09/12/02	0:00	9	5.2	13
09/12/02	1:00	57	4.0	12
09/12/02	2:00	109	5.5	13
09/12/02	3:00	88	4.1	9
09/12/02	4:00	93	4.4	10
09/12/02	5:00	120	3.8	17
09/12/02	6:00	101	1.2	33
09/12/02	7:00	32	1.4	29
09/12/02	8:00	179	3.6	16
09/12/02	9:00	181	11.0	11
09/12/02	10:00	178	11.3	13
09/12/02	11:00	173	9.3	18
09/12/02	12:00	180	9.3	20
09/12/02	13:00	175	9.1	21
09/12/02	14:00	181	8.3	23
09/12/02	15:00	177	8.4	20
09/12/02	16:00	153	8.1	26
09/12/02	17:00	165	9.0	22
09/12/02	18:00	170	7.6	20
09/12/02	19:00	166	6.9	12
09/12/02	20:00	155	6.1	23
09/12/02	21:00	140	4.2	27
09/12/02	22:00	127	4.3	26
09/12/02	23:00	347	12.5	16
09/13/02	0:00	345	9.0	13
09/13/02	1:00	290	7.5	11
09/13/02	2:00	305	12.6	10
09/13/02	3:00	302	7.7	10
09/13/02	4:00	169	8.1	21
09/13/02	5:00	133	9.0	22
09/13/02	6:00	123	6.3	17
09/13/02	7:00	130	4.0	23
09/13/02	8:00	171	7.1	13
09/13/02	9:00	174	11.6	11
09/13/02	10:00	184	12.4	11
09/13/02	11:00	193	12.0	13
09/13/02	12:00	199	11.5	13
09/13/02	13:00	213	10.2	14
09/13/02	14:00	205	10.5	14
09/13/02	15:00	207	11.6	14

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/13/02	16:00	206	9.7	14
09/13/02	17:00	286	20.3	13
09/13/02	18:00	338	10.1	12
09/13/02	19:00	2	6.5	12
09/13/02	20:00	128	5.7	16
09/13/02	21:00	174	6.3	8
09/13/02	22:00	174	6.7	10
09/13/02	23:00	186	4.6	6
09/14/02	0:00	188	5.2	6
09/14/02	1:00	202	6.1	7
09/14/02	2:00	211	6.3	7
09/14/02	3:00	258	4.9	5
09/14/02	4:00	235	3.7	12
09/14/02	5:00	149	4.0	16
09/14/02	6:00	252	3.4	18
09/14/02	7:00	324	3.0	17
09/14/02	8:00	19	6.4	15
09/14/02	9:00	24	8.2	18
09/14/02	10:00	16	9.0	18
09/14/02	11:00	11	10.0	16
09/14/02	12:00	13	10.8	15
09/14/02	13:00	28	9.5	20
09/14/02	14:00	14	10.6	20
09/14/02	15:00	15	9.4	20
09/14/02	16:00	23	11.0	18
09/14/02	17:00	20	11.7	16
09/14/02	18:00	22	10.1	14
09/14/02	19:00	21	7.6	14
09/14/02	20:00	37	9.6	15
09/14/02	21:00	56	7.0	16
09/14/02	22:00	32	5.9	14
09/14/02	23:00	37	9.3	16
09/15/02	0:00	64	8.4	15
09/15/02	1:00	39	5.8	15
09/15/02	2:00	46	6.4	16
09/15/02	3:00	44	7.8	16
09/15/02	4:00	38	8.1	15
09/15/02	5:00	37	9.2	16
09/15/02	6:00	38	8.3	18
09/15/02	7:00	24	11.5	15
09/15/02	8:00	32	11.8	16
09/15/02	9:00	32	11.5	16
09/15/02	10:00	35	11.1	17
09/15/02	11:00	49	10.2	19
09/15/02	12:00	50	10.5	20
09/15/02	13:00	54	8.8	22
09/15/02	14:00	54	9.0	23
09/15/02	15:00	54	10.4	17
09/15/02	16:00	62	8.5	16
09/15/02	17:00	71	7.5	17
09/15/02	18:00	85	6.4	14

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/15/02	19:00	81	4.2	12
09/15/02	20:00	87	4.4	13
09/15/02	21:00	109	5.6	16
09/15/02	22:00	117	4.4	19
09/15/02	23:00	160	4.1	19
09/16/02	0:00	148	3.0	24
09/16/02	1:00	142	3.0	20
09/16/02	2:00	125	2.5	20
09/16/02	3:00	356	1.7	11
09/16/02	4:00	351	2.6	7
09/16/02	5:00	355	2.5	8
09/16/02	6:00	16	2.5	7
09/16/02	7:00	359	1.7	10
09/16/02	8:00	182	4.0	23
09/16/02	9:00	184	5.4	18
09/16/02	10:00	187	4.5	18
09/16/02	11:00	194	6.2	21
09/16/02	12:00	191	5.7	26
09/16/02	13:00	191	5.7	31
09/16/02	14:00	191	5.2	36
09/16/02	15:00	184	5.8	31
09/16/02	16:00	176	6.0	25
09/16/02	17:00	183	8.3	17
09/16/02	18:00	186	8.2	10
09/16/02	19:00	189	6.0	7
09/16/02	20:00	177	5.5	7
09/16/02	21:00	170	6.2	8
09/16/02	22:00	167	7.6	10
09/16/02	23:00	171	6.4	9
09/17/02	0:00	177	5.3	7
09/17/02	1:00	181	5.1	6
09/17/02	2:00	176	5.9	7
09/17/02	3:00	178	6.8	8
09/17/02	4:00	189	9.4	8
09/17/02	5:00	195	9.3	8
09/17/02	6:00	194	8.0	8
09/17/02	7:00	198	9.7	9
09/17/02	8:00	201	10.9	10
09/17/02	9:00	210	14.6	10
09/17/02	10:00	218	15.2	11
09/17/02	11:00	224	14.2	13
09/17/02	12:00	241	14.1	14
09/17/02	13:00	236	13.8	16
09/17/02	14:00	249	12.3	16
09/17/02	15:00	240	12.1	14
09/17/02	16:00	239	12.7	12
09/17/02	17:00	235	12.4	13
09/17/02	18:00	247	11.8	10
09/17/02	19:00	237	5.7	5
09/17/02	20:00	198	5.2	8
09/17/02	21:00	195	6.4	5

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/17/02	22:00	189	8.0	7
09/17/02	23:00	182	9.6	7
09/18/02	0:00	182	15.2	9
09/18/02	1:00	185	15.1	9
09/18/02	2:00	189	12.8	9
09/18/02	3:00	191	12.0	9
09/18/02	4:00	191	11.8	9
09/18/02	5:00	196	9.8	8
09/18/02	6:00	200	8.5	7
09/18/02	7:00	197	10.2	9
09/18/02	8:00	219	10.6	9
09/18/02	9:00	244	16.4	10
09/18/02	10:00	246	16.5	11
09/18/02	11:00	251	18.0	12
09/18/02	12:00	243	20.1	11
09/18/02	13:00	243	19.7	11
09/18/02	14:00	240	18.1	12
09/18/02	15:00	228	19.5	11
09/18/02	16:00	228	21.0	10
09/18/02	17:00	231	21.9	9
09/18/02	18:00	260	20.4	11
09/18/02	19:00	344	17.2	13
09/18/02	20:00	346	16.0	13
09/18/02	21:00	340	19.4	13
09/18/02	22:00	330	18.0	12
09/18/02	23:00	315	18.6	10
09/19/02	0:00	291	10.8	11
09/19/02	1:00	261	6.7	11
09/19/02	2:00	224	6.8	8
09/19/02	3:00	247	10.1	9
09/19/02	4:00	284	15.6	10
09/19/02	5:00	313	19.6	10
09/19/02	6:00	331	21.5	12
09/19/02	7:00	336	17.3	13
09/19/02	8:00	341	20.7	13
09/19/02	9:00	352	21.0	14
09/19/02	10:00	347	17.3	13
09/19/02	11:00	353	16.9	14
09/19/02	12:00	353	16.6	14
09/19/02	13:00	353	14.8	15
09/19/02	14:00	358	14.6	15
09/19/02	15:00	358	13.0	15
09/19/02	16:00	356	12.0	17
09/19/02	17:00	352	11.0	14
09/19/02	18:00	355	7.4	13
09/19/02	19:00	358	3.0	11
09/19/02	20:00	60	2.7	9
09/19/02	21:00	196	1.9	10
09/19/02	22:00	263	3.4	10
09/19/02	23:00	317	1.8	15
09/20/02	0:00	265	2.8	7

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/20/02	1:00	309	2.2	7
09/20/02	2:00	280	3.5	8
09/20/02	3:00	274	3.5	5
09/20/02	4:00	305	2.6	6
09/20/02	5:00	255	2.9	3
09/20/02	6:00	215	5.3	3
09/20/02	7:00	215	6.9	7
09/20/02	8:00	222	10.2	8
09/20/02	9:00	225	11.6	10
09/20/02	10:00	237	12.3	11
09/20/02	11:00	249	14.1	12
09/20/02	12:00	254	13.6	16
09/20/02	13:00	237	13.4	14
09/20/02	14:00	253	11.4	17
09/20/02	15:00	259	12.0	17
09/20/02	16:00	249	11.2	14
09/20/02	17:00	242	10.8	13
09/20/02	18:00	249	8.1	9
09/20/02	19:00	280	5.5	4
09/20/02	20:00	284	5.0	3
09/20/02	21:00	329	3.3	9
09/20/02	22:00	351	3.3	20
09/20/02	23:00	159	5.4	26
09/21/02	0:00	191	5.4	5
09/21/02	1:00	164	8.0	13
09/21/02	2:00	168	8.9	9
09/21/02	3:00	180	7.4	8
09/21/02	4:00	223	4.6	7
09/21/02	5:00	292	4.2	7
09/21/02	6:00	313	3.8	7
09/21/02	7:00	291	1.8	12
09/21/02	8:00	246	1.5	24
09/21/02	9:00	334	3.1	31
09/21/02	10:00	286	4.2	40
09/21/02	11:00	255	7.2	31
09/21/02	12:00	241	8.5	21
09/21/02	13:00	288	8.8	25
09/21/02	14:00	293	8.4	27
09/21/02	15:00	270	9.2	25
09/21/02	16:00	289	8.9	20
09/21/02	17:00	305	7.3	14
09/21/02	18:00	320	6.1	9
09/21/02	19:00	345	4.9	10
09/21/02	20:00	1	4.4	9
09/21/02	21:00	351	5.2	10
09/21/02	22:00	12	5.4	12
09/21/02	23:00	7	5.2	9
09/22/02	0:00	5	5.8	8
09/22/02	1:00	8	5.8	9
09/22/02	2:00	7	9.8	12
09/22/02	3:00	24	16.5	15

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/22/02	4:00	26	17.1	15
09/22/02	5:00	30	16.4	15
09/22/02	6:00	32	14.5	15
09/22/02	7:00	41	15.2	16
09/22/02	8:00	50	16.0	17
09/22/02	9:00	57	15.6	17
09/22/02	10:00	59	12.2	18
09/22/02	11:00	60	8.7	23
09/22/02	12:00	75	7.0	26
09/22/02	13:00	99	5.1	38
09/22/02	14:00	91	5.9	37
09/22/02	15:00	87	4.9	32
09/22/02	16:00	105	5.2	32
09/22/02	17:00	98	5.0	25
09/22/02	18:00	95	4.9	18
09/22/02	19:00	106	4.0	14
09/22/02	20:00	103	7.2	14
09/22/02	21:00	104	7.9	15
09/22/02	22:00	109	8.7	16
09/22/02	23:00	118	9.3	15
09/23/02	0:00	131	7.3	23
09/23/02	1:00	161	6.1	20
09/23/02	2:00	178	5.0	6
09/23/02	3:00	169	5.0	9
09/23/02	4:00	148	4.2	23
09/23/02	5:00	115	4.6	17
09/23/02	6:00	90	5.7	11
09/23/02	7:00	89	7.1	11
09/23/02	8:00	107	7.7	17
09/23/02	9:00	144	7.8	25
09/23/02	10:00	162	10.2	21
09/23/02	11:00	175	10.1	19
09/23/02	12:00	175	9.4	21
09/23/02	13:00	174	7.6	27
09/23/02	14:00	159	7.5	28
09/23/02	15:00	148	7.8	26
09/23/02	16:00	133	7.2	24
09/23/02	17:00	118	9.5	22
09/23/02	18:00	115	8.3	17
09/23/02	19:00	117	9.0	16
09/23/02	20:00	122	9.4	15
09/23/02	21:00	116	8.5	15
09/23/02	22:00	120	10.6	15
09/23/02	23:00	109	7.5	16
09/24/02	0:00	108	6.9	17
09/24/02	1:00	116	8.2	16
09/24/02	2:00	121	9.0	14
09/24/02	3:00	112	6.6	17
09/24/02	4:00	120	6.7	19
09/24/02	5:00	116	6.5	20
09/24/02	6:00	108	6.5	15

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/24/02	7:00	123	9.2	17
09/24/02	8:00	130	8.1	23
09/24/02	9:00	133	8.2	26
09/24/02	10:00	144	9.0	26
09/24/02	11:00	151	8.1	26
09/24/02	12:00	150	6.7	31
09/24/02	13:00	140	5.9	38
09/24/02	14:00	127	7.2	26
09/24/02	15:00	90	5.6	42
09/24/02	16:00	96	6.8	23
09/24/02	17:00	116	5.7	20
09/24/02	18:00	106	5.9	16
09/24/02	19:00	110	6.5	16
09/24/02	20:00	107	8.0	15
09/24/02	21:00	112	7.9	16
09/24/02	22:00	120	7.9	15
09/24/02	23:00	127	7.5	19
09/25/02	0:00	127	7.6	19
09/25/02	1:00	131	6.9	25
09/25/02	2:00	173	5.6	16
09/25/02	3:00	168	5.4	6
09/25/02	4:00	166	5.1	9
09/25/02	5:00	213	2.2	8
09/25/02	6:00	151	1.7	24
09/25/02	7:00	134	3.5	19
09/25/02	8:00	183	6.7	11
09/25/02	9:00	180	8.3	11
09/25/02	10:00	189	6.7	20
09/25/02	11:00	191	4.4	44
09/25/02	12:00	140	4.8	32
09/25/02	13:00	213	4.7	41
09/25/02	14:00	156	5.0	42
09/25/02	15:00	129	6.1	31
09/25/02	16:00	148	5.2	30
09/25/02	17:00	148	5.6	26
09/25/02	18:00	122	6.3	18
09/25/02	19:00	126	6.1	20
09/25/02	20:00	137	5.7	23
09/25/02	21:00	158	6.4	22
09/25/02	22:00	175	5.7	7
09/25/02	23:00	159	6.4	19
09/26/02	0:00	158	7.6	22
09/26/02	1:00	184	5.9	8
09/26/02	2:00	255	4.3	6
09/26/02	3:00	284	3.9	7
09/26/02	4:00	231	5.1	3
09/26/02	5:00	238	4.6	3
09/26/02	6:00	281	3.4	8
09/26/02	7:00	256	4.8	7
09/26/02	8:00	202	8.4	9
09/26/02	9:00	212	9.5	11

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/26/02	10:00	223	8.5	15
09/26/02	11:00	222	8.5	18
09/26/02	12:00	199	7.3	27
09/26/02	13:00	208	7.2	35
09/26/02	14:00	190	8.3	22
09/26/02	15:00	197	7.2	29
09/26/02	16:00	191	8.9	17
09/26/02	17:00	194	8.9	11
09/26/02	18:00	180	9.0	8
09/26/02	19:00	180	8.6	7
09/26/02	20:00	180	8.7	8
09/26/02	21:00	177	7.9	7
09/26/02	22:00	186	7.7	6
09/26/02	23:00	195	6.9	6
09/27/02	0:00	181	2.5	24
09/27/02	1:00	259	3.4	14
09/27/02	2:00	215	6.7	3
09/27/02	3:00	206	4.4	18
09/27/02	4:00	231	4.6	15
09/27/02	5:00	83	5.5	8
09/27/02	6:00	92	5.0	11
09/27/02	7:00	74	6.8	11
09/27/02	8:00	88	6.7	13
09/27/02	9:00	125	5.4	25
09/27/02	10:00	139	4.6	29
09/27/02	11:00	170	9.3	21
09/27/02	12:00	177	13.0	14
09/27/02	13:00	188	15.0	13
09/27/02	14:00	193	14.3	15
09/27/02	15:00	192	14.3	13
09/27/02	16:00	195	13.0	13
09/27/02	17:00	187	11.5	10
09/27/02	18:00	166	12.8	12
09/27/02	19:00	158	11.4	21
09/27/02	20:00	156	11.6	24
09/27/02	21:00	161	13.9	17
09/27/02	22:00	168	13.3	10
09/27/02	23:00	172	12.6	9
09/28/02	0:00	171	12.5	9
09/28/02	1:00	174	11.5	9
09/28/02	2:00	176	12.6	9
09/28/02	3:00	179	10.8	8
09/28/02	4:00	182	9.6	8
09/28/02	5:00	178	8.3	8
09/28/02	6:00	170	9.0	8
09/28/02	7:00	171	9.9	9
09/28/02	8:00	175	15.0	9
09/28/02	9:00	179	14.9	10
09/28/02	10:00	177	16.3	10
09/28/02	11:00	175	17.2	11
09/28/02	12:00	173	14.3	15

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/28/02	13:00	163	12.7	22
09/28/02	14:00	155	10.3	24
09/28/02	15:00	183	8.8	20
09/28/02	16:00	191	7.2	21
09/28/02	17:00	161	6.5	23
09/28/02	18:00	149	5.5	24
09/28/02	19:00	132	6.6	25
09/28/02	20:00	132	6.9	25
09/28/02	21:00	141	6.9	28
09/28/02	22:00	151	8.4	27
09/28/02	23:00	161	9.2	17
09/29/02	0:00	150	7.8	24
09/29/02	1:00	147	8.3	26
09/29/02	2:00	149	7.9	25
09/29/02	3:00	144	7.8	26
09/29/02	4:00	141	6.3	29
09/29/02	5:00	128	7.3	22
09/29/02	6:00	130	6.5	24
09/29/02	7:00	131	7.2	22
09/29/02	8:00	152	8.2	26
09/29/02	9:00	164	12.9	17
09/29/02	10:00	160	10.6	23
09/29/02	11:00	157	11.8	23
09/29/02	12:00	165	11.1	21
09/29/02	13:00	168	10.2	21
09/29/02	14:00	182	10.0	16
09/29/02	15:00	177	9.8	18
09/29/02	16:00	171	10.3	18
09/29/02	17:00	160	10.2	22
09/29/02	18:00	157	7.8	23
09/29/02	19:00	146	5.5	29
09/29/02	20:00	141	6.0	29
09/29/02	21:00	155	8.0	25
09/29/02	22:00	161	7.7	20
09/29/02	23:00	179	4.5	8
09/30/02	0:00	165	6.1	13
09/30/02	1:00	169	9.3	10
09/30/02	2:00	170	9.3	9
09/30/02	3:00	171	9.6	9
09/30/02	4:00	173	7.9	9
09/30/02	5:00	171	8.2	9
09/30/02	6:00	176	6.2	8
09/30/02	7:00	193	5.2	10
09/30/02	8:00	177	6.2	18
09/30/02	9:00	199	8.7	11
09/30/02	10:00	198	7.1	12
09/30/02	11:00	212	6.4	15
09/30/02	12:00	278	7.5	14
09/30/02	13:00	320	5.2	21
09/30/02	14:00	102	4.2	31
09/30/02	15:00	112	5.1	34

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
09/30/02	16:00	109	6.0	35
09/30/02	17:00	116	8.7	17
09/30/02	18:00	111	6.4	17
09/30/02	19:00	107	5.3	15
09/30/02	20:00	116	6.5	15
09/30/02	21:00	122	7.6	16
09/30/02	22:00	154	7.9	24
09/30/02	23:00	170	9.4	10
10/01/02	0:00	169	11.1	9
10/01/02	1:00	170	9.8	10
10/01/02	2:00	158	7.4	23
10/01/02	3:00	155	7.7	21
10/01/02	4:00	150	7.7	21
10/01/02	5:00	191	5.1	18
10/01/02	6:00	115	4.6	34
10/01/02	7:00	97	4.9	14
10/01/02	8:00	149	8.5	22
10/01/02	9:00	164	11.3	16
10/01/02	10:00	160	10.1	21
10/01/02	11:00	169	11.1	15
10/01/02	12:00	167	9.8	18
10/01/02	13:00	165	9.6	20
10/01/02	14:00	177	11.0	17
10/01/02	15:00	178	12.1	12
10/01/02	16:00	179	11.0	13
10/01/02	17:00	178	11.1	11
10/01/02	18:00	151	13.0	18
10/01/02	19:00	138	10.8	24
10/01/02	20:00	124	9.8	17
10/01/02	21:00	121	9.5	15
10/01/02	22:00	128	7.3	22
10/01/02	23:00	160	9.8	19
10/02/02	0:00	158	7.3	20
10/02/02	1:00	152	8.1	26
10/02/02	2:00	158	7.2	21
10/02/02	3:00	162	6.6	17
10/02/02	4:00	164	6.2	12
10/02/02	5:00	167	4.5	13
10/02/02	6:00	170	5.7	10
10/02/02	7:00	174	6.6	8
10/02/02	8:00	192	10.3	9
10/02/02	9:00	196	11.4	11
10/02/02	10:00	235	9.2	14
10/02/02	11:00	236	6.9	18
10/02/02	12:00	182	5.5	27
10/02/02	13:00	182	5.8	33
10/02/02	14:00	150	6.2	36
10/02/02	15:00	162	8.7	24
10/02/02	16:00	159	8.4	22
10/02/02	17:00	170	9.4	14
10/02/02	18:00	179	6.2	8

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
10/02/02	19:00	150	5.3	20
10/02/02	20:00	134	9.4	25
10/02/02	21:00	159	6.4	19
10/02/02	22:00	144	6.9	26
10/02/02	23:00	155	10.3	18
10/03/02	0:00	138	6.4	28
10/03/02	1:00	134	6.1	26
10/03/02	2:00	113	5.6	18
10/03/02	3:00	104	6.8	14
10/03/02	4:00	115	8.1	15
10/03/02	5:00	115	3.8	20
10/03/02	6:00	114	4.0	18
10/03/02	7:00	110	3.8	17
10/03/02	8:00	151	5.7	23
10/03/02	9:00	179	7.8	16
10/03/02	10:00	247	13.3	12
10/03/02	11:00	268	15.5	11
10/03/02	12:00	259	15.2	13
10/03/02	13:00	252	14.0	15
10/03/02	14:00	244	14.1	12
10/03/02	15:00	245	14.6	13
10/03/02	16:00	238	16.0	12
10/03/02	17:00	255	17.9	9
10/03/02	18:00	274	14.8	8
10/03/02	19:00	286	10.0	8
10/03/02	20:00	281	11.6	9
10/03/02	21:00	288	14.1	8
10/03/02	22:00	286	15.3	8
10/03/02	23:00	294	12.3	8
10/04/02	0:00	301	16.1	8
10/04/02	1:00	311	13.6	9
10/04/02	2:00	330	10.3	10
10/04/02	3:00	327	13.1	10
10/04/02	4:00	338	11.0	12
10/04/02	5:00	351	9.1	12
10/04/02	6:00	344	7.3	11
10/04/02	7:00	337	8.0	13
10/04/02	8:00	332	11.3	13
10/04/02	9:00	347	11.4	14
10/04/02	10:00	2	9.0	17
10/04/02	11:00	24	7.9	20
10/04/02	12:00	34	4.8	45
10/04/02	13:00	84	5.4	37
10/04/02	14:00	131	5.5	32
10/04/02	15:00	160	4.9	28
10/04/02	16:00	142	5.4	33
10/04/02	17:00	151	5.9	24
10/04/02	18:00	134	4.3	25
10/04/02	19:00	107	5.7	13
10/04/02	20:00	96	8.3	13
10/04/02	21:00	98	7.3	13

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
10/04/02	22:00	105	8.0	15
10/04/02	23:00	109	9.7	17
10/05/02	0:00	103	8.2	14
10/05/02	1:00	89	6.4	11
10/05/02	2:00	87	6.9	11
10/05/02	3:00	88	7.4	11
10/05/02	4:00	97	9.0	13
10/05/02	5:00	102	10.3	14
10/05/02	6:00	103	9.2	14
10/05/02	7:00	109	9.1	15
10/05/02	8:00	118	10.3	16
10/05/02	9:00	126	9.8	21
10/05/02	10:00	129	8.8	22
10/05/02	11:00	153	9.0	27
10/05/02	12:00	164	11.7	20
10/05/02	13:00	169	15.9	12
10/05/02	14:00	175	15.4	15
10/05/02	15:00	182	14.1	11
10/05/02	16:00	179	12.3	11
10/05/02	17:00	178	11.4	9
10/05/02	18:00	160	6.5	18
10/05/02	19:00	112	4.5	24
10/05/02	20:00	124	9.1	16
10/05/02	21:00	127	5.5	23
10/05/02	22:00	155	6.8	28
10/05/02	23:00	167	7.8	11
10/06/02	0:00	168	8.2	11
10/06/02	1:00	175	8.3	7
10/06/02	2:00	177	7.6	7
10/06/02	3:00	183	8.5	7
10/06/02	4:00	183	8.1	7
10/06/02	5:00	179	6.2	6
10/06/02	6:00	167	5.8	8
10/06/02	7:00	223	2.5	12
10/06/02	8:00	198	3.7	16
10/06/02	9:00	211	5.2	12
10/06/02	10:00	195	6.4	16
10/06/02	11:00	167	3.7	30
10/06/02	12:00	151	3.9	31
10/06/02	13:00	106	6.3	30
10/06/02	14:00	90	8.6	20
10/06/02	15:00	61	10.0	19
10/06/02	16:00	72	12.5	14
10/06/02	17:00	75	12.5	14
10/06/02	18:00	80	9.9	14
10/06/02	19:00	80	11.7	14
10/06/02	20:00	77	13.3	14
10/06/02	21:00	78	15.1	14
10/06/02	22:00	74	14.9	15
10/06/02	23:00	79	14.5	13
10/07/02	0:00	77	12.7	15

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
10/07/02	1:00	72	12.0	14
10/07/02	2:00	68	10.1	14
10/07/02	3:00	70	10.6	14
10/07/02	4:00	59	9.9	15
10/07/02	5:00	59	9.2	15
10/07/02	6:00	75	8.9	13
10/07/02	7:00	84	10.2	14
10/07/02	8:00	69	8.8	16
10/07/02	9:00	50	7.5	18
10/07/02	10:00	65	7.3	17
10/07/02	11:00	63	8.2	16
10/07/02	12:00	70	7.2	17
10/07/02	13:00	84	6.8	16
10/07/02	14:00	65	7.1	17
10/07/02	15:00	78	5.8	17
10/07/02	16:00	93	7.8	14
10/07/02	17:00	97	7.3	15
10/07/02	18:00	93	6.6	13
10/07/02	19:00	86	5.5	13
10/07/02	20:00	83	2.6	15
10/07/02	21:00	85	3.6	14
10/07/02	22:00	107	4.0	13
10/07/02	23:00	115	4.3	16

Appendix B

Monthly Wind Roses

Wind Rose

Shell Westgate

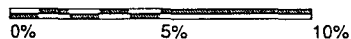
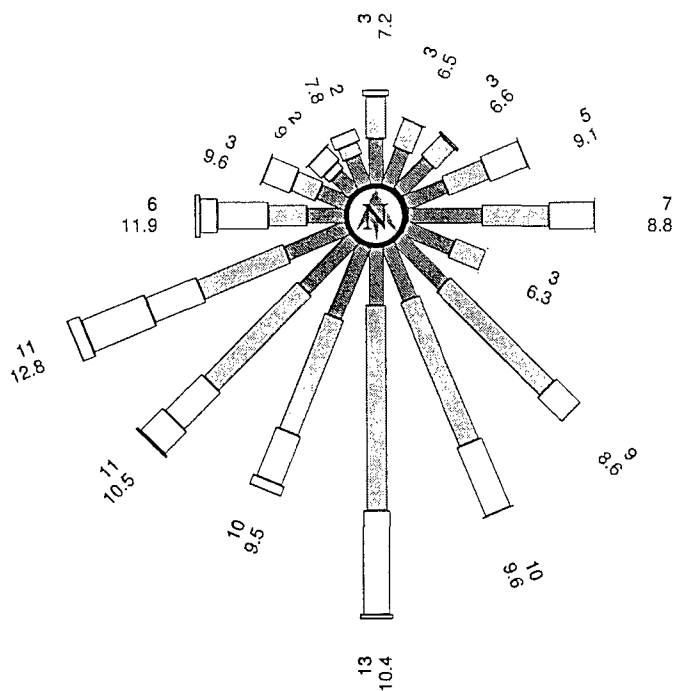
April 9-30, 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24

mph



Values shown as: Percent Total Frequency
Average WSA in mph

0% Calms

12/18/02 15:53

RADIAN
INTEGRAL

Wind Rose

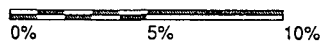
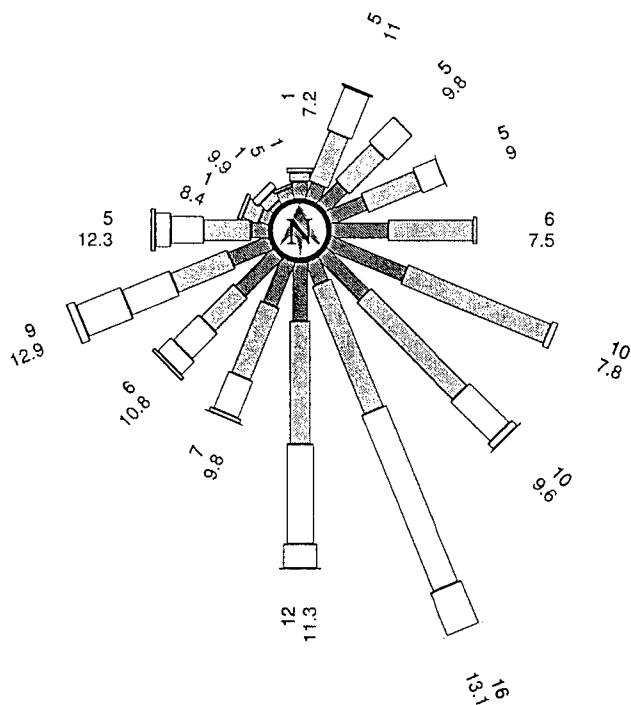
Shell Westgate

May 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



Values shown as: Percent Total Frequency
Average WSA in mph

0% Calms

12/17/02 16:45

RADIAN
NETWORK

Wind Rose

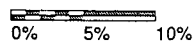
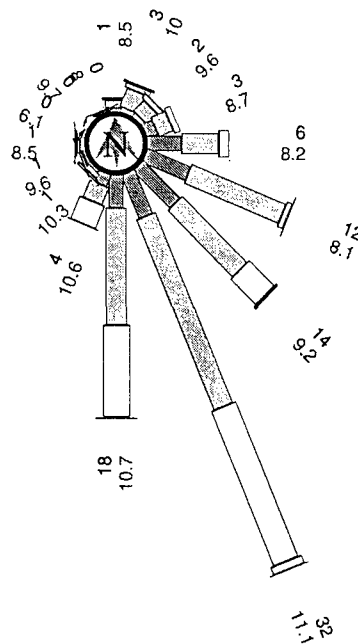
Shell Westgate

June 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



Values shown as: Percent Total Frequency
Average WSA in mph

0% Calms

12/17/02 16:46

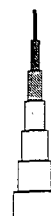
RADIAN
INTERNATIONAL

Wind Rose

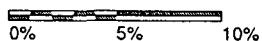
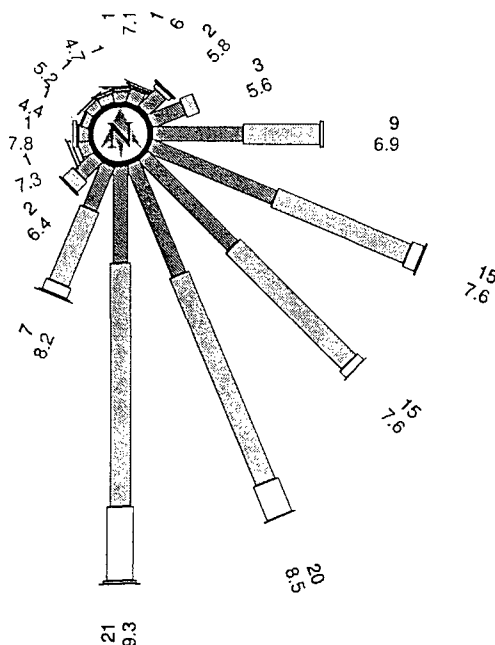
Shell Westgate

July 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



Values shown as: Percent Total Frequency
Average WSA in mph

0% Calms

12/17/02 16:46

RADIAN
METEOROLOGICAL

Wind Rose

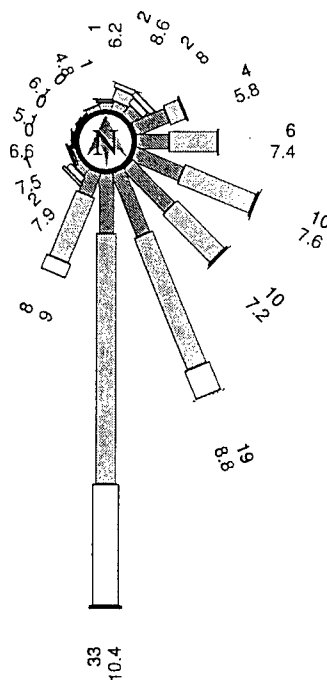
Shell Westgate

August 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



0% 5% 10%

Values shown as: Percent Total Frequency
Average WSA in mph

0% Calms

12/17/02 16:48

RADIAN
METEOR

Wind Rose

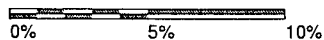
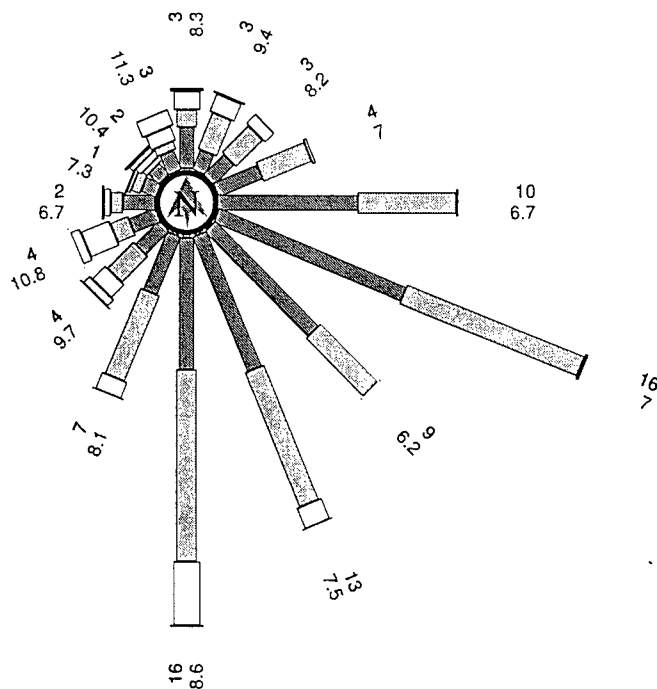
Shell Westgate

September 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



Values shown as: Percent Total Frequency
Average WSA in mph

0% Calms

12/17/02 16:48

RADIAN
INTERNATIONAL

Wind Rose

Shell Westgate

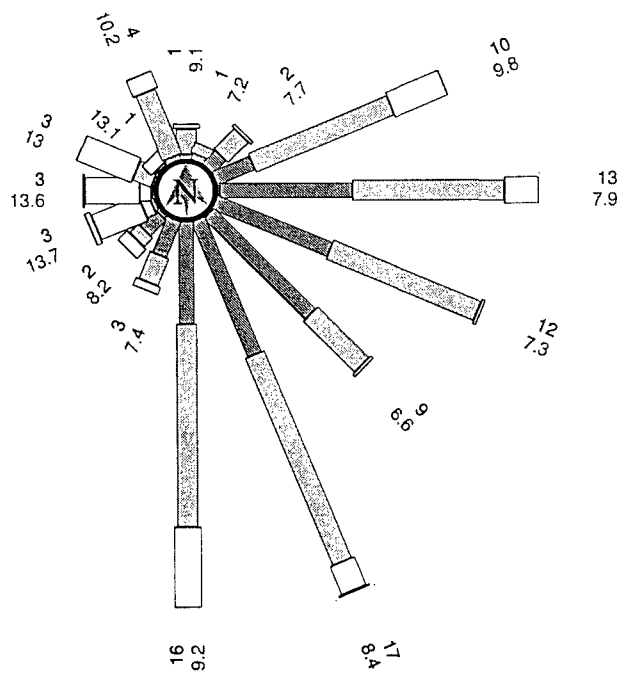
October 1-7, 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24

mph



0% Calms

Values shown as: Percent Total Frequency
Average WSA in mph

12/18/02 15:54

RADIAN
INTERNATIONAL, INC.

Appendix C

Monthly Pollution Roses

Pollution Rose

East Site

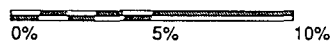
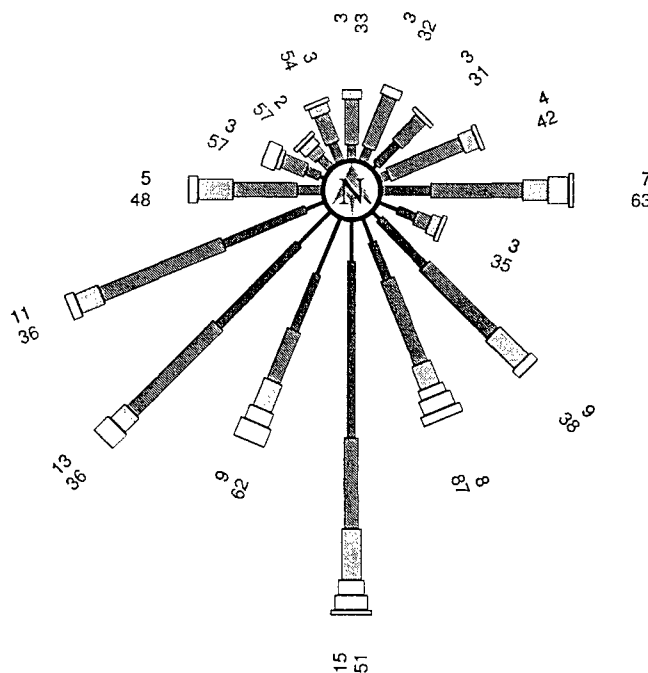
April 2002

TEOM PM10



LE 10
25
50
100
250
500
GT 500

ug/m3



Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/17/02 15:31

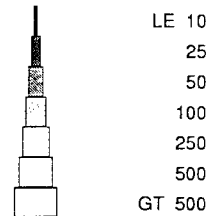
RADIANT
INTEGRITY

Pollution Rose

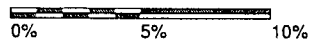
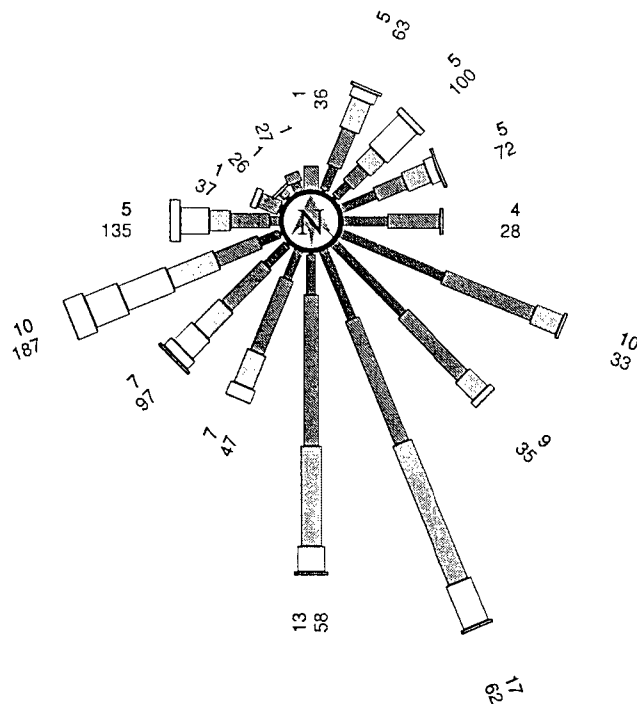
East Site

May 2002

TEOM PM10



ug/m3



Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/17/02 15:32

RADIAN
METEOROLOGICAL

Pollution Rose

East Site

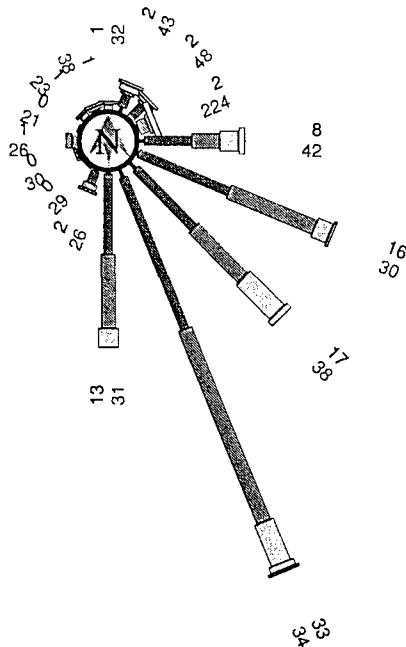
June 2002

TEOM PM10



LE 10
25
50
100
250
500
GT 500

ug/m3



0% 5% 10%

Values shown as: Percent Total Frequency
Average APM10 in ug/m3

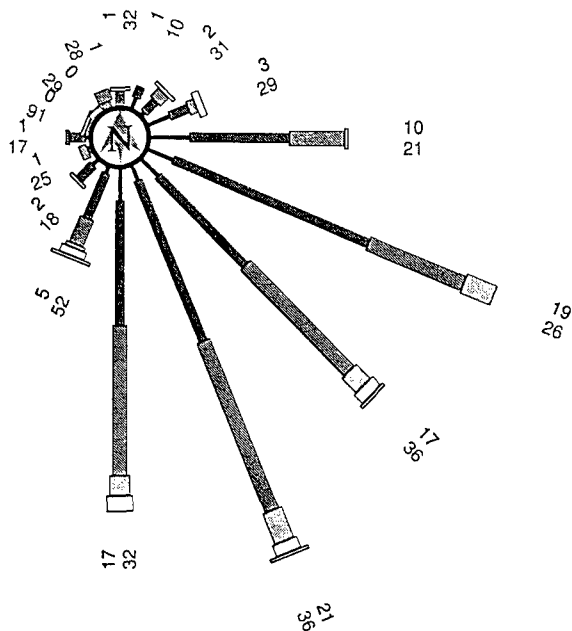
0% Calms

12/17/02 15:32

RADIAN
INTERNATIONAL

July 2002

ug/m3



Response	Percentage
U.S. should take more action	100%
U.S. should not take more action	0%

Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/17/02 15:33

RADIAN
INTERNATIONAL

Pollution Rose

East Site

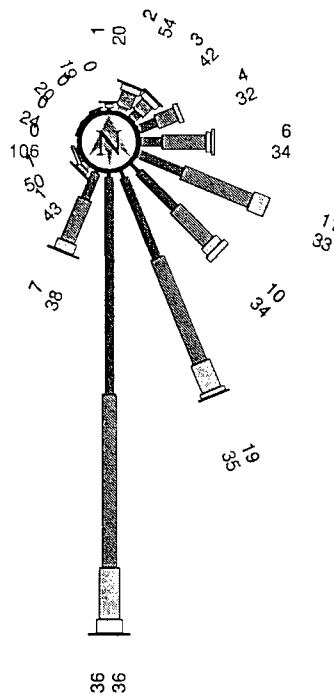
August 2002

TEOM PM10



LE 10
25
50
100
250
500
GT 500

ug/m3



0% 5% 10%

Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/17/02 16:47

RADIAN
INTERNATIONAL

Pollution Rose

East Site

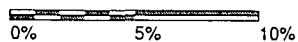
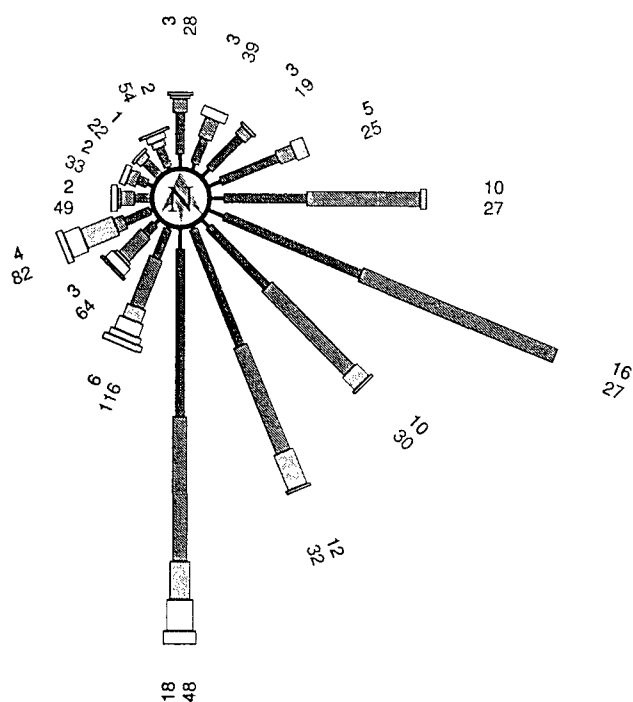
September 2002

TEOM PM10



LE 10
25
50
100
250
500
GT 500

ug/m3



Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/17/02 16:31

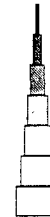
RADIAN
INTERNATIONAL, LLC

Pollution Rose

East Site

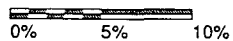
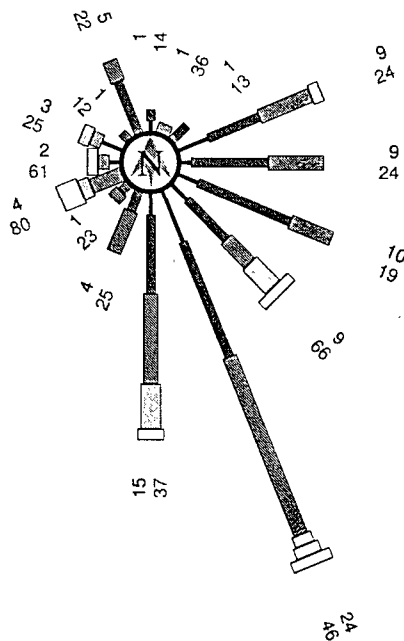
October 1-7, 2002

TEOM PM10



LE 10
25
50
100
250
500
GT 500

ug/m3



Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/18/02 15:54

RADIAN
INTERNATIONAL, INC.

Pollution Rose

South Site

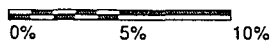
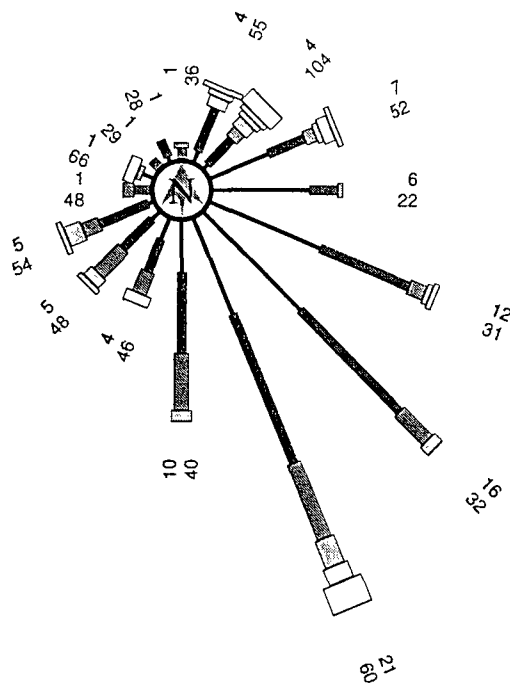
May 17-31, 2002

TEOM PM10



LE 25
50
75
100
125
150
GT 150

ug/m3



Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/18/02 15:58

RADIAN
INTERNATIONAL

Pollution Rose

South Site

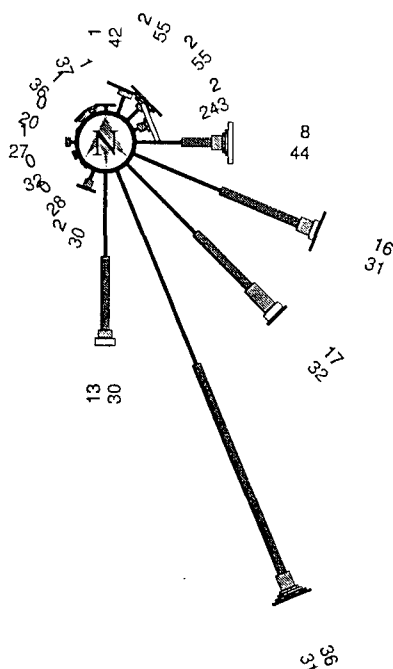
June 2002

TEOM PM10



LE 25
50
75
100
125
150
GT 150

ug/m3



0% 5% 10%

Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/18/02 16:04

RADIAN
INTERNATIONAL

Pollution Rose

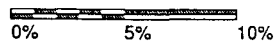
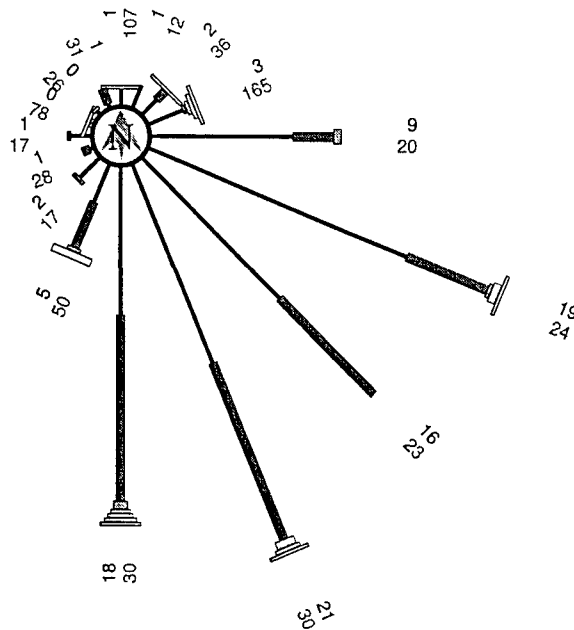
South Site

July 2002

TEOM PM10



LE 25
50
75
100
125
150
GT 150
ug/m3



Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/18/02 15:57

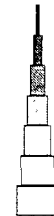
RADIAN
INTEGRITY

Pollution Rose

South Site

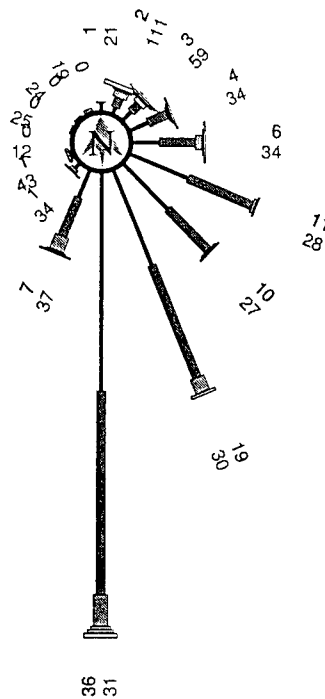
August 2002

TEOM PM10



LE 25
50
75
100
125
150
GT 150

ug/m3



0% 5% 10%

Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/17/02 16:47

RADIAN
INTERNATIONAL

Pollution Rose

South Site

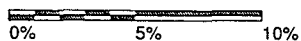
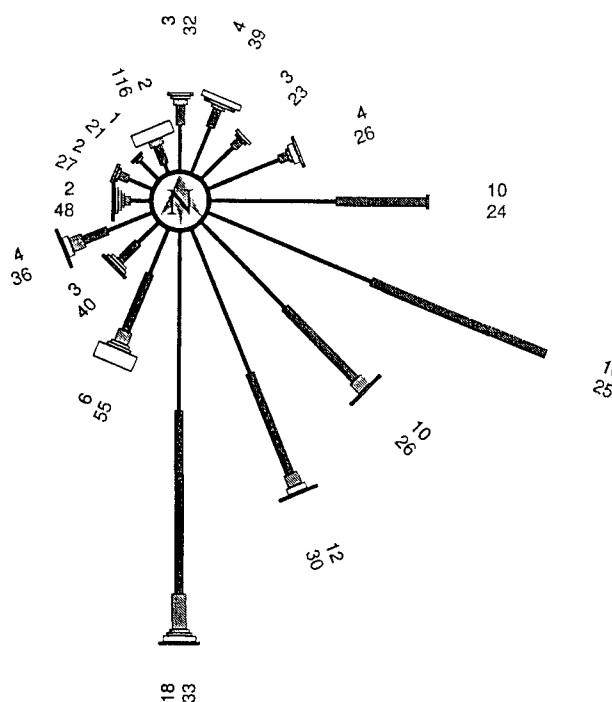
September 2002

TEOM PM10



LE 25
50
75
100
125
150
GT 150

ug/m3



Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/17/02 16:32

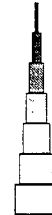
RADIAN
NETWORK, INC.

Pollution Rose

South Site

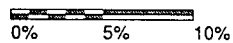
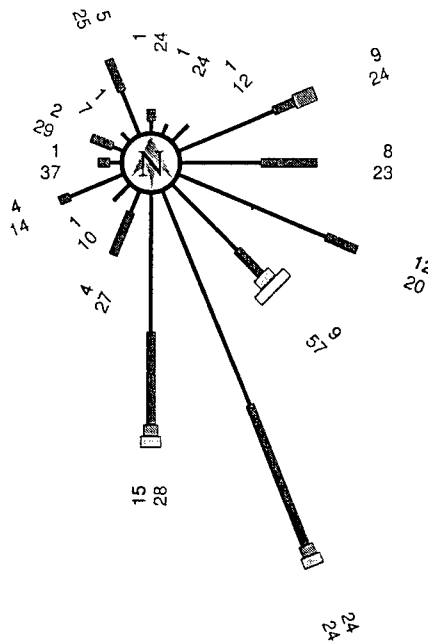
October 1-7, 2002

TEOM PM10



LE 25
50
75
100
125
150
GT 150

ug/m3



Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

12/18/02 15:55

RADIAN
INSTRUMENTS, LLC

Appendix D

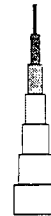
Wind Roses for Highest 24-Hour Average Particulate Matter Concentrations

Wind Rose

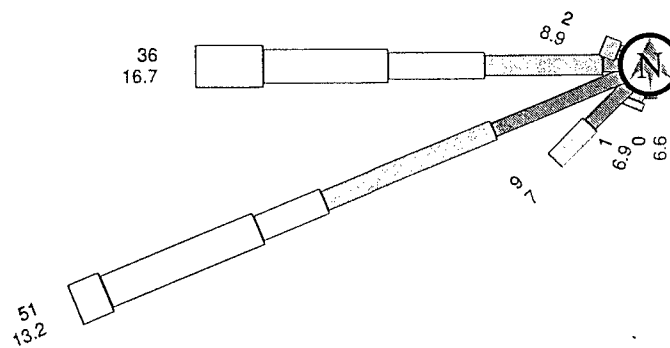
Shell Westgate

May 1, 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



0% 5% 10%

Values shown as: Percent Total Frequency
Average WSA in mph

0% Calms

12/19/02 13:45

RADIAN
INTERNATIONAL LLC

Wind Rose

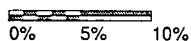
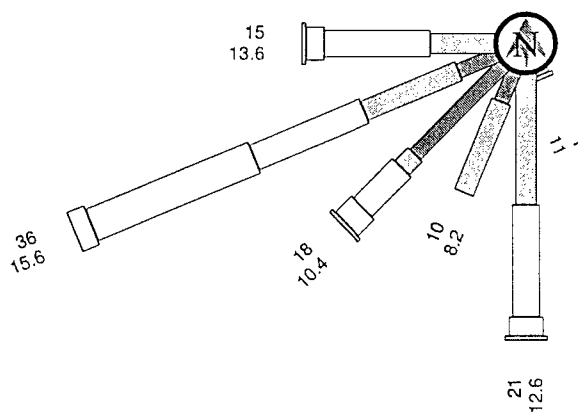
Shell Westgate

May 6, 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



0% Calms

Values shown as: Percent Total Frequency
Average WSA in mph

12/19/02 13:46

RADIAN
INTERNATIONAL, LLC

Wind Rose

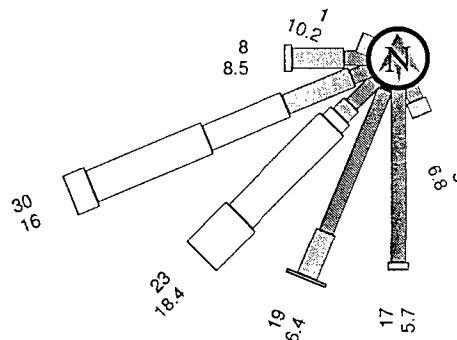
Shell Westgate

May 7, 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



0% 5% 10%

Values shown as: Percent Total Frequency
Average WSA in mph

0% Calms

12/19/02 13:47

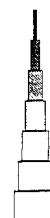
RADIAN
INTERNATIONAL, LLC

Wind Rose

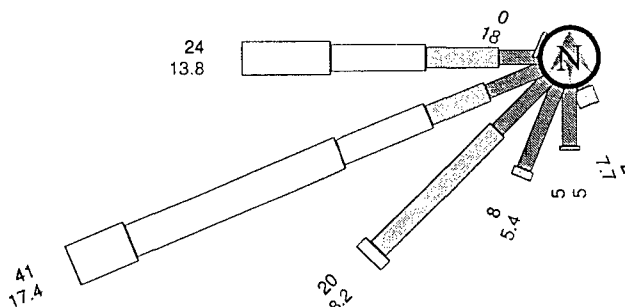
Shell Westgate

May 8, 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



0% 5% 10%

Values shown as: Percent Total Frequency
Average WSA in mph

0% Calms

12/19/02 14:13

RADIAN
INTERNATIONAL

Wind Rose

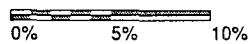
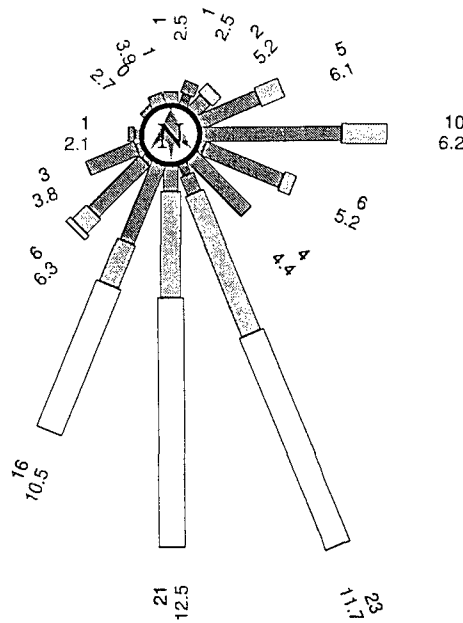
Shell Westgate

September 27, 2002

Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



Values shown as: Percent Total Frequency
Average WSA in mph

0% Calms

12/19/02 13:48

RADIAN
INTERNATIONAL, LLC

Appendix E

One-Hour TEOM Averages

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
3/27/02 21:00	30.6		3/29/02 19:00	210.2		3/31/02 17:00	14.5	
3/27/02 22:00	20.8		3/29/02 20:00	207.0		3/31/02 18:00	17.4	
3/27/02 23:00	23.5		3/29/02 21:00	113.1		3/31/02 19:00	17.2	
3/28/02 0:00	15.3		3/29/02 22:00	48.8		3/31/02 20:00	15.3	
3/28/02 1:00	13.6		3/29/02 23:00	41.3		3/31/02 21:00	13.9	
3/28/02 2:00	12.6		3/30/02 0:00	50.7		3/31/02 22:00	14.5	
3/28/02 3:00	12.3		3/30/02 1:00	35.6		3/31/02 23:00	13.7	
3/28/02 4:00	11.1		3/30/02 2:00	27.4		4/1/02 0:00	12.1	
3/28/02 5:00	10.9		3/30/02 3:00	19.7		4/1/02 1:00	10.9	
3/28/02 6:00	12.0		3/30/02 4:00	15.1		4/1/02 2:00	9.8	
3/28/02 7:00	12.6		3/30/02 5:00	8.8		4/1/02 3:00	10.6	
3/28/02 8:00	8.2		3/30/02 6:00	5.3		4/1/02 4:00	9.8	
3/28/02 9:00	14.0		3/30/02 7:00	4.9		4/1/02 5:00	10.7	
3/28/02 10:00	13.4		3/30/02 8:00	5.5		4/1/02 6:00	10.6	
3/28/02 11:00	39.5		3/30/02 9:00	9.3		4/1/02 7:00	12.6	
3/28/02 12:00			3/30/02 10:00	9.0		4/1/02 8:00	9.7	
3/28/02 13:00	2.6		3/30/02 11:00	12.9		4/1/02 9:00	8.9	
3/28/02 14:00	3.1		3/30/02 12:00	14.1		4/1/02 10:00	12.3	
3/28/02 15:00	56.3		3/30/02 13:00	10.6		4/1/02 11:00	9.3	
3/28/02 16:00	140.8		3/30/02 14:00	11.2		4/1/02 12:00	12.5	
3/28/02 17:00	447.9		3/30/02 15:00	11.5		4/1/02 13:00	12.9	
3/28/02 18:00	59.2		3/30/02 16:00	11.9		4/1/02 14:00	18.2	
3/28/02 19:00	23.3		3/30/02 17:00	13.1		4/1/02 15:00	25.7	
3/28/02 20:00	26.3		3/30/02 18:00	17.0		4/1/02 16:00	43.9	
3/28/02 21:00	17.3		3/30/02 19:00	18.6		4/1/02 17:00	26.8	
3/28/02 22:00	17.0		3/30/02 20:00	18.1		4/1/02 18:00	32.4	
3/28/02 23:00	14.1		3/30/02 21:00	23.5		4/1/02 19:00	32.3	
3/29/02 0:00	11.3		3/30/02 22:00	19.0		4/1/02 20:00	25.2	
3/29/02 1:00	9.4		3/30/02 23:00	22.4		4/1/02 21:00	28.7	
3/29/02 2:00	10.1		3/31/02 0:00	19.8		4/1/02 22:00	21.4	
3/29/02 3:00	11.0		3/31/02 1:00	21.6		4/1/02 23:00	16.8	
3/29/02 4:00	14.2		3/31/02 2:00	21.4		4/2/02 0:00	15.2	
3/29/02 5:00	13.9		3/31/02 3:00	16.3		4/2/02 1:00	16.7	
3/29/02 6:00	19.7		3/31/02 4:00	14.4		4/2/02 2:00	17.6	
3/29/02 7:00	30.3		3/31/02 5:00	16.3		4/2/02 3:00	16.9	
3/29/02 8:00	28.7		3/31/02 6:00	16.7		4/2/02 4:00	17.3	
3/29/02 9:00	51.5		3/31/02 7:00	19.6		4/2/02 5:00	18.1	
3/29/02 10:00			3/31/02 8:00	18.6		4/2/02 6:00	19.6	
3/29/02 11:00			3/31/02 9:00	17.9		4/2/02 7:00	23.6	
3/29/02 12:00	205.4		3/31/02 10:00	19.8		4/2/02 8:00	276.9	
3/29/02 13:00	318.4		3/31/02 11:00	19.3		4/2/02 9:00	765.8	
3/29/02 14:00	490.0		3/31/02 12:00	20.4		4/2/02 10:00	517.5	
3/29/02 15:00	845.1		3/31/02 13:00	27.2		4/2/02 11:00	346.8	
3/29/02 16:00	237.0		3/31/02 14:00	19.0		4/2/02 12:00	329.1	
3/29/02 17:00	218.9		3/31/02 15:00	21.1		4/2/02 13:00	236.9	
3/29/02 18:00	375.2		3/31/02 16:00	15.7		4/2/02 14:00	156.7	

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
4/2/02 15:00	112.5		4/4/02 13:00	29.9		4/6/02 11:00	7.1	
4/2/02 16:00	98.3		4/4/02 14:00	44.9		4/6/02 12:00	8.5	
4/2/02 17:00	99.0		4/4/02 15:00	33.7		4/6/02 13:00	8.2	
4/2/02 18:00	91.3		4/4/02 16:00	36.9		4/6/02 14:00	6.7	
4/2/02 19:00	82.6		4/4/02 17:00	37.2		4/6/02 15:00	8.8	
4/2/02 20:00	53.2		4/4/02 18:00	37.4		4/6/02 16:00	12.5	
4/2/02 21:00	48.4		4/4/02 19:00	38.1		4/6/02 17:00	10.8	
4/2/02 22:00	45.2		4/4/02 20:00	35.6		4/6/02 18:00	10.8	
4/2/02 23:00	36.9		4/4/02 21:00	31.9		4/6/02 19:00	7.1	
4/3/02 0:00	26.6		4/4/02 22:00	28.9		4/6/02 20:00	7.1	
4/3/02 1:00	31.5		4/4/02 23:00	27.9		4/6/02 21:00	4.6	
4/3/02 2:00	30.3		4/5/02 0:00	29.1		4/6/02 22:00	9.9	
4/3/02 3:00	36.0		4/5/02 1:00	26.6		4/6/02 23:00	8.9	
4/3/02 4:00	25.2		4/5/02 2:00	26.5		4/7/02 0:00	8.1	
4/3/02 5:00	26.4		4/5/02 3:00	27.7		4/7/02 1:00	14.9	
4/3/02 6:00	24.1		4/5/02 4:00	26.0		4/7/02 2:00	3.8	
4/3/02 7:00	22.6		4/5/02 5:00	25.7		4/7/02 3:00	3.9	
4/3/02 8:00	23.2		4/5/02 6:00	25.2		4/7/02 4:00	6.7	
4/3/02 9:00	20.3		4/5/02 7:00	26.8		4/7/02 5:00	9.6	
4/3/02 10:00	22.1		4/5/02 8:00	28.6		4/7/02 6:00	13.3	
4/3/02 11:00	21.4		4/5/02 9:00	30.8		4/7/02 7:00	14.1	
4/3/02 12:00	32.7		4/5/02 10:00	35.4		4/7/02 8:00	14.8	
4/3/02 13:00	26.5		4/5/02 11:00	35.4		4/7/02 9:00	5.3	
4/3/02 14:00	35.7		4/5/02 12:00	39.7		4/7/02 10:00	12.1	
4/3/02 15:00	49.3		4/5/02 13:00	45.8		4/7/02 11:00	74.8	
4/3/02 16:00	30.4		4/5/02 14:00	36.6		4/7/02 12:00	303.4	
4/3/02 17:00	44.5		4/5/02 15:00	37.4		4/7/02 13:00	170.1	
4/3/02 18:00	34.6		4/5/02 16:00	38.3		4/7/02 14:00	38.4	
4/3/02 19:00	27.4		4/5/02 17:00	36.4		4/7/02 15:00	330.0	
4/3/02 20:00	24.1		4/5/02 18:00	35.5		4/7/02 16:00	260.9	
4/3/02 21:00	21.6		4/5/02 19:00	33.2		4/7/02 17:00	193.9	
4/3/02 22:00	20.0		4/5/02 20:00	24.0		4/7/02 18:00	93.6	
4/3/02 23:00	19.0		4/5/02 21:00	25.0		4/7/02 19:00	70.0	
4/4/02 0:00	19.1		4/5/02 22:00	25.4		4/7/02 20:00	35.4	
4/4/02 1:00	16.3		4/5/02 23:00	27.3		4/7/02 21:00	31.9	
4/4/02 2:00	14.7		4/6/02 0:00	21.6		4/7/02 22:00	31.9	
4/4/02 3:00	13.9		4/6/02 1:00	17.1		4/7/02 23:00	17.5	
4/4/02 4:00	14.9		4/6/02 2:00	17.1		4/8/02 0:00	8.8	
4/4/02 5:00	14.8		4/6/02 3:00	20.4		4/8/02 1:00	10.8	
4/4/02 6:00	18.2		4/6/02 4:00	18.5		4/8/02 2:00	15.5	
4/4/02 7:00	18.6		4/6/02 5:00	18.8		4/8/02 3:00	14.5	
4/4/02 8:00	18.7		4/6/02 6:00	14.3		4/8/02 4:00	7.7	
4/4/02 9:00	20.5		4/6/02 7:00	10.1		4/8/02 5:00	7.9	
4/4/02 10:00	58.9		4/6/02 8:00	7.3		4/8/02 6:00	10.4	
4/4/02 11:00	33.6		4/6/02 9:00	7.0		4/8/02 7:00	18.2	
4/4/02 12:00	34.4		4/6/02 10:00	4.7		4/8/02 8:00	19.9	

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
4/8/02 9:00	17.4		4/10/02 7:00	11.2		4/12/02 5:00	29.2	
4/8/02 10:00	11.8		4/10/02 8:00	23.9		4/12/02 6:00	32.5	
4/8/02 11:00	17.1		4/10/02 9:00	21.6		4/12/02 7:00	27.2	
4/8/02 12:00	16.3		4/10/02 10:00	16.3		4/12/02 8:00	42.6	
4/8/02 13:00	21.0		4/10/02 11:00	22.9		4/12/02 9:00	46.0	
4/8/02 14:00	52.2		4/10/02 12:00	21.7		4/12/02 10:00	46.4	
4/8/02 15:00	33.6		4/10/02 13:00	26.1		4/12/02 11:00	41.2	
4/8/02 16:00	23.0		4/10/02 14:00			4/12/02 12:00	44.8	
4/8/02 17:00	18.1		4/10/02 15:00			4/12/02 13:00	39.8	
4/8/02 18:00	33.8		4/10/02 16:00	66.5		4/12/02 14:00	53.9	
4/8/02 19:00	30.8		4/10/02 17:00	73.4		4/12/02 15:00	75.2	
4/8/02 20:00	31.0		4/10/02 18:00	72.2		4/12/02 16:00	45.5	
4/8/02 21:00	31.2		4/10/02 19:00	42.8		4/12/02 17:00	48.6	
4/8/02 22:00	19.8		4/10/02 20:00	33.0		4/12/02 18:00	59.9	
4/8/02 23:00	16.0		4/10/02 21:00	41.1		4/12/02 19:00	59.5	
4/9/02 0:00	16.0		4/10/02 22:00	41.6		4/12/02 20:00	52.5	
4/9/02 1:00	14.3		4/10/02 23:00	38.2		4/12/02 21:00	58.2	
4/9/02 2:00	12.3		4/11/02 0:00	34.0		4/12/02 22:00	38.0	
4/9/02 3:00	8.4		4/11/02 1:00	70.2		4/12/02 23:00	34.3	
4/9/02 4:00	10.0		4/11/02 2:00	41.5		4/13/02 0:00	36.1	
4/9/02 5:00	9.1		4/11/02 3:00	32.2		4/13/02 1:00	32.3	
4/9/02 6:00	13.0		4/11/02 4:00	28.9		4/13/02 2:00	28.8	
4/9/02 7:00	18.0		4/11/02 5:00	27.3		4/13/02 3:00	25.9	
4/9/02 8:00	12.3		4/11/02 6:00	26.1		4/13/02 4:00	20.5	
4/9/02 9:00	9.7		4/11/02 7:00	34.7		4/13/02 5:00	24.8	
4/9/02 10:00	12.9		4/11/02 8:00	45.2		4/13/02 6:00	22.5	
4/9/02 11:00			4/11/02 9:00	68.0		4/13/02 7:00	25.2	
4/9/02 12:00			4/11/02 10:00	47.2		4/13/02 8:00	30.9	
4/9/02 13:00	9.9		4/11/02 11:00	60.6		4/13/02 9:00	31.8	
4/9/02 14:00	15.1		4/11/02 12:00	53.2		4/13/02 10:00	35.9	
4/9/02 15:00	13.1		4/11/02 13:00	39.2		4/13/02 11:00	46.9	
4/9/02 16:00	30.9		4/11/02 14:00	32.0		4/13/02 12:00	47.7	
4/9/02 17:00	21.9		4/11/02 15:00	72.7		4/13/02 13:00	39.8	
4/9/02 18:00	14.7		4/11/02 16:00	68.2		4/13/02 14:00	35.8	
4/9/02 19:00	20.5		4/11/02 17:00	19.1		4/13/02 15:00	34.2	
4/9/02 20:00	18.9		4/11/02 18:00	24.8		4/13/02 16:00	17.4	
4/9/02 21:00	17.1		4/11/02 19:00	68.1		4/13/02 17:00	20.4	
4/9/02 22:00	13.5		4/11/02 20:00	60.8		4/13/02 18:00	67.3	
4/9/02 23:00	11.0		4/11/02 21:00	92.3		4/13/02 19:00	71.7	
4/10/02 0:00	9.4		4/11/02 22:00	78.0		4/13/02 20:00	42.0	
4/10/02 1:00	8.3		4/11/02 23:00	72.5		4/13/02 21:00	47.2	
4/10/02 2:00	7.3		4/12/02 0:00	41.4		4/13/02 22:00	44.3	
4/10/02 3:00	8.4		4/12/02 1:00	33.2		4/13/02 23:00	29.1	
4/10/02 4:00	9.3		4/12/02 2:00	28.5		4/14/02 0:00	23.9	
4/10/02 5:00	8.1		4/12/02 3:00	57.5		4/14/02 1:00	18.8	
4/10/02 6:00	8.9		4/12/02 4:00	49.3		4/14/02 2:00	29.5	

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
4/14/02 3:00	25.7		4/16/02 1:00	27.2		4/17/02 23:00	56.6	
4/14/02 4:00	20.0		4/16/02 2:00	24.1		4/18/02 0:00	39.9	
4/14/02 5:00	31.7		4/16/02 3:00	122.0		4/18/02 1:00	38.1	
4/14/02 6:00	16.5		4/16/02 4:00	30.8		4/18/02 2:00	35.4	
4/14/02 7:00	10.8		4/16/02 5:00	15.1		4/18/02 3:00	43.0	
4/14/02 8:00	18.9		4/16/02 6:00	16.4		4/18/02 4:00	37.9	
4/14/02 9:00	4.5		4/16/02 7:00	30.1		4/18/02 5:00	41.7	
4/14/02 10:00	10.6		4/16/02 8:00	76.8		4/18/02 6:00	30.5	
4/14/02 11:00	13.2		4/16/02 9:00	462.0		4/18/02 7:00	25.5	
4/14/02 12:00	11.9		4/16/02 10:00	237.1		4/18/02 8:00	26.6	
4/14/02 13:00	5.5		4/16/02 11:00	133.6		4/18/02 9:00	26.0	
4/14/02 14:00			4/16/02 12:00	163.4		4/18/02 10:00	25.3	
4/14/02 15:00	14.4		4/16/02 13:00	92.2		4/18/02 11:00	44.0	
4/14/02 16:00	68.5		4/16/02 14:00	241.3		4/18/02 12:00	114.7	
4/14/02 17:00	85.9		4/16/02 15:00	101.3		4/18/02 13:00	17.4	
4/14/02 18:00	145.9		4/16/02 16:00	80.0		4/18/02 14:00	66.6	
4/14/02 19:00	63.8		4/16/02 17:00	73.3		4/18/02 15:00	36.6	
4/14/02 20:00	55.4		4/16/02 18:00	49.6		4/18/02 16:00	38.4	
4/14/02 21:00	37.4		4/16/02 19:00	38.9		4/18/02 17:00	42.9	
4/14/02 22:00	36.2		4/16/02 20:00	29.6		4/18/02 18:00	17.1	
4/14/02 23:00	30.0		4/16/02 21:00	28.4		4/18/02 19:00	54.1	
4/15/02 0:00	31.5		4/16/02 22:00	26.5		4/18/02 20:00	30.6	
4/15/02 1:00	21.5		4/16/02 23:00	37.1		4/18/02 21:00	16.0	
4/15/02 2:00	15.3		4/17/02 0:00	49.5		4/18/02 22:00	130.9	
4/15/02 3:00	16.2		4/17/02 1:00	43.6		4/18/02 23:00	80.9	
4/15/02 4:00	11.3		4/17/02 2:00	38.7		4/19/02 0:00	48.1	
4/15/02 5:00	12.6		4/17/02 3:00	38.6		4/19/02 1:00	38.1	
4/15/02 6:00	19.4		4/17/02 4:00	32.7		4/19/02 2:00	36.3	
4/15/02 7:00	19.3		4/17/02 5:00	20.5		4/19/02 3:00	16.5	
4/15/02 8:00	38.7		4/17/02 6:00	35.8		4/19/02 4:00	23.1	
4/15/02 9:00	34.7		4/17/02 7:00	54.1		4/19/02 5:00	26.8	
4/15/02 10:00	108.9		4/17/02 8:00	68.7		4/19/02 6:00	28.5	
4/15/02 11:00	320.0		4/17/02 9:00	67.2		4/19/02 7:00	28.3	
4/15/02 12:00	523.7		4/17/02 10:00	5.3		4/19/02 8:00	32.8	
4/15/02 13:00	141.5		4/17/02 11:00	12.7		4/19/02 9:00	30.4	
4/15/02 14:00	372.4		4/17/02 12:00	12.6		4/19/02 10:00	9.3	
4/15/02 15:00	199.0		4/17/02 13:00	21.1		4/19/02 11:00	2.0	
4/15/02 16:00	423.5		4/17/02 14:00	45.4		4/19/02 12:00	16.7	
4/15/02 17:00	234.2		4/17/02 15:00	63.4		4/19/02 13:00	28.2	
4/15/02 18:00	154.1		4/17/02 16:00	55.6		4/19/02 14:00	124.6	
4/15/02 19:00	62.5		4/17/02 17:00	136.5		4/19/02 15:00	56.5	
4/15/02 20:00	42.5		4/17/02 18:00	29.4		4/19/02 16:00	102.0	
4/15/02 21:00	30.9		4/17/02 19:00	25.4		4/19/02 17:00	48.3	
4/15/02 22:00	70.6		4/17/02 20:00	28.9		4/19/02 18:00	42.4	
4/15/02 23:00	246.7		4/17/02 21:00	131.4		4/19/02 19:00	111.8	
4/16/02 0:00	14.4		4/17/02 22:00	74.1		4/19/02 20:00	87.9	

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
4/19/02 21:00	46.1		4/21/02 19:00	37.1		4/23/02 17:00	25.2	
4/19/02 22:00	33.5		4/21/02 20:00	36.2		4/23/02 18:00	73.1	
4/19/02 23:00	28.6		4/21/02 21:00	27.3		4/23/02 19:00	67.7	
4/20/02 0:00	23.6		4/21/02 22:00	35.8		4/23/02 20:00	86.0	
4/20/02 1:00	21.7		4/21/02 23:00	32.1		4/23/02 21:00	38.2	
4/20/02 2:00	21.9		4/22/02 0:00	23.9		4/23/02 22:00	36.2	
4/20/02 3:00	24.5		4/22/02 1:00	24.5		4/23/02 23:00	114.5	
4/20/02 4:00	28.6		4/22/02 2:00	29.6		4/24/02 0:00	31.2	
4/20/02 5:00	24.6		4/22/02 3:00	29.7		4/24/02 1:00	21.0	
4/20/02 6:00	32.0		4/22/02 4:00	23.3		4/24/02 2:00	24.6	
4/20/02 7:00	42.7		4/22/02 5:00	36.7		4/24/02 3:00	23.4	
4/20/02 8:00	43.2		4/22/02 6:00	36.3		4/24/02 4:00	21.7	
4/20/02 9:00	33.1		4/22/02 7:00	45.6		4/24/02 5:00	16.4	
4/20/02 10:00	29.5		4/22/02 8:00	46.1		4/24/02 6:00	8.3	
4/20/02 11:00			4/22/02 9:00	71.0		4/24/02 7:00		
4/20/02 12:00	11.7		4/22/02 10:00	72.5		4/24/02 8:00	30.7	
4/20/02 13:00	296.7		4/22/02 11:00	73.8		4/24/02 9:00	40.8	
4/20/02 14:00	228.6		4/22/02 12:00	72.3		4/24/02 10:00	40.7	
4/20/02 15:00	225.7		4/22/02 13:00	44.2		4/24/02 11:00	50.1	
4/20/02 16:00	68.1		4/22/02 14:00	93.3		4/24/02 12:00	25.9	
4/20/02 17:00	30.8		4/22/02 15:00	26.8		4/24/02 13:00	15.7	
4/20/02 18:00	40.3		4/22/02 16:00	109.5		4/24/02 14:00	23.3	
4/20/02 19:00	51.9		4/22/02 17:00	75.7		4/24/02 15:00	20.2	
4/20/02 20:00	46.1		4/22/02 18:00	63.1		4/24/02 16:00	81.1	
4/20/02 21:00	33.7		4/22/02 19:00	60.6		4/24/02 17:00	28.7	
4/20/02 22:00	133.2		4/22/02 20:00	112.4		4/24/02 18:00	117.4	
4/20/02 23:00	206.3		4/22/02 21:00	68.8		4/24/02 19:00	290.6	
4/21/02 0:00	211.6		4/22/02 22:00	79.6		4/24/02 20:00	194.5	
4/21/02 1:00	98.3		4/22/02 23:00	40.7		4/24/02 21:00	165.1	
4/21/02 2:00	73.3		4/23/02 0:00	28.5		4/24/02 22:00	122.8	
4/21/02 3:00	52.2		4/23/02 1:00	27.9		4/24/02 23:00	83.3	
4/21/02 4:00	28.1		4/23/02 2:00	28.3		4/25/02 0:00	78.2	
4/21/02 5:00	18.2		4/23/02 3:00	26.8		4/25/02 1:00	74.6	
4/21/02 6:00	27.9		4/23/02 4:00	29.6		4/25/02 2:00	62.8	
4/21/02 7:00	28.5		4/23/02 5:00	30.2		4/25/02 3:00	71.9	
4/21/02 8:00	36.0		4/23/02 6:00	33.6		4/25/02 4:00	64.7	
4/21/02 9:00	14.6		4/23/02 7:00	37.6		4/25/02 5:00	66.6	
4/21/02 10:00	13.0		4/23/02 8:00	32.9		4/25/02 6:00	91.5	
4/21/02 11:00	18.3		4/23/02 9:00			4/25/02 7:00	48.4	
4/21/02 12:00	20.4		4/23/02 10:00	38.5		4/25/02 8:00	102.7	
4/21/02 13:00	18.2		4/23/02 11:00	24.5		4/25/02 9:00	92.0	
4/21/02 14:00	9.6		4/23/02 12:00	27.0		4/25/02 10:00	52.6	
4/21/02 15:00	18.9		4/23/02 13:00	15.7		4/25/02 11:00	66.7	
4/21/02 16:00	14.5		4/23/02 14:00	97.1		4/25/02 12:00	75.9	
4/21/02 17:00	10.0		4/23/02 15:00	14.9		4/25/02 13:00	48.3	
4/21/02 18:00	16.2		4/23/02 16:00	227.7		4/25/02 14:00	30.7	

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
4/25/02 15:00	33.3		4/27/02 13:00	232.6		4/29/02 11:00	82.1	
4/25/02 16:00	20.5		4/27/02 14:00	136.6		4/29/02 12:00	122.2	
4/25/02 17:00	13.6		4/27/02 15:00	207.4		4/29/02 13:00	58.1	
4/25/02 18:00	13.0		4/27/02 16:00	130.8		4/29/02 14:00	80.5	
4/25/02 19:00	12.6		4/27/02 17:00	82.4		4/29/02 15:00	48.3	
4/25/02 20:00	17.1		4/27/02 18:00	81.2		4/29/02 16:00	31.3	
4/25/02 21:00	22.0		4/27/02 19:00	66.5		4/29/02 17:00	70.5	
4/25/02 22:00	26.3		4/27/02 20:00	55.6		4/29/02 18:00	33.0	
4/25/02 23:00	20.0		4/27/02 21:00	58.5		4/29/02 19:00	29.4	
4/26/02 0:00	19.2		4/27/02 22:00	48.8		4/29/02 20:00	41.5	
4/26/02 1:00	8.9		4/27/02 23:00	52.2		4/29/02 21:00	28.3	
4/26/02 2:00	10.6		4/28/02 0:00	36.7		4/29/02 22:00	36.1	
4/26/02 3:00	11.4		4/28/02 1:00	40.7		4/29/02 23:00	36.6	
4/26/02 4:00	16.6		4/28/02 2:00	51.7		4/30/02 0:00	27.1	
4/26/02 5:00	14.2		4/28/02 3:00	52.3		4/30/02 1:00	23.6	
4/26/02 6:00	16.6		4/28/02 4:00	61.5		4/30/02 2:00	27.1	
4/26/02 7:00	12.5		4/28/02 5:00	55.2		4/30/02 3:00	25.6	
4/26/02 8:00	11.8		4/28/02 6:00	54.3		4/30/02 4:00	31.7	
4/26/02 9:00	16.5		4/28/02 7:00	54.9		4/30/02 5:00	27.0	
4/26/02 10:00	16.2		4/28/02 8:00	59.8		4/30/02 6:00	30.1	
4/26/02 11:00	15.7		4/28/02 9:00	46.3		4/30/02 7:00	47.0	
4/26/02 12:00	31.2		4/28/02 10:00	33.0		4/30/02 8:00	67.2	
4/26/02 13:00	24.3		4/28/02 11:00	11.9		4/30/02 9:00	43.1	
4/26/02 14:00	34.8		4/28/02 12:00	30.5		4/30/02 10:00	73.0	
4/26/02 15:00	36.3		4/28/02 13:00			4/30/02 11:00	85.7	
4/26/02 16:00	44.8		4/28/02 14:00	13.9		4/30/02 12:00	222.0	
4/26/02 17:00	43.8		4/28/02 15:00	46.3		4/30/02 13:00	149.0	
4/26/02 18:00	35.6		4/28/02 16:00	1.9		4/30/02 14:00	609.6	
4/26/02 19:00	38.4		4/28/02 17:00	12.9		4/30/02 15:00	137.6	
4/26/02 20:00	27.1		4/28/02 18:00	24.8		4/30/02 16:00	269.9	
4/26/02 21:00	27.9		4/28/02 19:00	18.1		4/30/02 17:00	138.2	
4/26/02 22:00	21.5		4/28/02 20:00	73.6		4/30/02 18:00	51.4	
4/26/02 23:00	17.0		4/28/02 21:00	28.8		4/30/02 19:00	60.0	
4/27/02 0:00	17.2		4/28/02 22:00	16.2		4/30/02 20:00	49.2	
4/27/02 1:00	24.4		4/28/02 23:00	41.9		4/30/02 21:00	71.0	
4/27/02 2:00	25.3		4/29/02 0:00	17.7		4/30/02 22:00	66.4	
4/27/02 3:00	28.0		4/29/02 1:00	12.7		4/30/02 23:00	83.8	
4/27/02 4:00	186.6		4/29/02 2:00	12.4		5/1/02 0:00	90.6	
4/27/02 5:00	525.9		4/29/02 3:00	3.3		5/1/02 1:00	78.3	
4/27/02 6:00	369.2		4/29/02 4:00	11.5		5/1/02 2:00	84.1	
4/27/02 7:00	202.2		4/29/02 5:00	15.0		5/1/02 3:00	101.7	
4/27/02 8:00	88.4		4/29/02 6:00	31.1		5/1/02 4:00	85.6	
4/27/02 9:00	66.5		4/29/02 7:00	42.3		5/1/02 5:00	77.1	
4/27/02 10:00	188.9		4/29/02 8:00	68.9		5/1/02 6:00	65.4	
4/27/02 11:00	116.7		4/29/02 9:00			5/1/02 7:00	54.3	
4/27/02 12:00	271.9		4/29/02 10:00			5/1/02 8:00	63.7	

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
5/1/02 9:00	74.4		5/3/02 7:00	31.4		5/5/02 5:00	30.3	
5/1/02 10:00	186.6		5/3/02 8:00	16.6		5/5/02 6:00	39.3	
5/1/02 11:00	162.6		5/3/02 9:00	59.9		5/5/02 7:00	40.9	
5/1/02 12:00	868.5		5/3/02 10:00	33.5		5/5/02 8:00	39.3	
5/1/02 13:00	208.6		5/3/02 11:00	33.8		5/5/02 9:00	47.5	
5/1/02 14:00	524.9		5/3/02 12:00	26.6		5/5/02 10:00	47.5	
5/1/02 15:00	532.2		5/3/02 13:00	50.1		5/5/02 11:00	50.1	
5/1/02 16:00	233.2		5/3/02 14:00	24.5		5/5/02 12:00	57.5	
5/1/02 17:00	224.1		5/3/02 15:00	66.3		5/5/02 13:00	41.8	
5/1/02 18:00	103.2		5/3/02 16:00	52.1		5/5/02 14:00	63.3	
5/1/02 19:00	95.7		5/3/02 17:00	48.6		5/5/02 15:00	44.0	
5/1/02 20:00	97.9		5/3/02 18:00	44.8		5/5/02 16:00	87.0	
5/1/02 21:00	151.0		5/3/02 19:00	193.0		5/5/02 17:00	186.5	
5/1/02 22:00	164.9		5/3/02 20:00	67.0		5/5/02 18:00	63.1	
5/1/02 23:00	107.5		5/3/02 21:00	28.2		5/5/02 19:00	61.3	
5/2/02 0:00	62.2		5/3/02 22:00	26.0		5/5/02 20:00	51.9	
5/2/02 1:00	55.2		5/3/02 23:00	14.0		5/5/02 21:00	60.9	
5/2/02 2:00	33.9		5/4/02 0:00	21.3		5/5/02 22:00	56.8	
5/2/02 3:00	29.5		5/4/02 1:00	17.6		5/5/02 23:00	68.7	
5/2/02 4:00	29.4		5/4/02 2:00	12.6		5/6/02 0:00	45.5	
5/2/02 5:00	213.9		5/4/02 3:00	15.4		5/6/02 1:00	71.5	
5/2/02 6:00	176.4		5/4/02 4:00	17.0		5/6/02 2:00	24.5	
5/2/02 7:00	92.4		5/4/02 5:00	18.0		5/6/02 3:00	21.6	
5/2/02 8:00	50.4		5/4/02 6:00	19.1		5/6/02 4:00	23.9	
5/2/02 9:00	35.6		5/4/02 7:00	25.9		5/6/02 5:00	24.6	
5/2/02 10:00	33.0		5/4/02 8:00	34.8		5/6/02 6:00	28.2	
5/2/02 11:00	34.0		5/4/02 9:00	75.0		5/6/02 7:00	25.7	
5/2/02 12:00	28.5		5/4/02 10:00	57.2		5/6/02 8:00	30.1	
5/2/02 13:00	33.9		5/4/02 11:00	35.2		5/6/02 9:00	14.4	
5/2/02 14:00	34.8		5/4/02 12:00	32.8		5/6/02 10:00	49.6	
5/2/02 15:00	24.4		5/4/02 13:00	41.6		5/6/02 11:00	53.9	
5/2/02 16:00	34.8		5/4/02 14:00	14.3		5/6/02 12:00	262.2	
5/2/02 17:00	30.0		5/4/02 15:00	41.3		5/6/02 13:00	779.7	
5/2/02 18:00	25.6		5/4/02 16:00	27.1		5/6/02 14:00	603.2	
5/2/02 19:00	29.2		5/4/02 17:00	30.3		5/6/02 15:00	228.1	
5/2/02 20:00	28.6		5/4/02 18:00	35.0		5/6/02 16:00	205.5	
5/2/02 21:00	24.8		5/4/02 19:00	73.9		5/6/02 17:00	1231.1	
5/2/02 22:00	19.5		5/4/02 20:00	118.2		5/6/02 18:00	247.4	
5/2/02 23:00	23.4		5/4/02 21:00	60.1		5/6/02 19:00	40.2	
5/3/02 0:00	20.7		5/4/02 22:00	68.9		5/6/02 20:00	34.2	
5/3/02 1:00	18.4		5/4/02 23:00	98.7		5/6/02 21:00	118.0	
5/3/02 2:00	14.7		5/5/02 0:00	80.4		5/6/02 22:00	73.5	
5/3/02 3:00	12.9		5/5/02 1:00	55.0		5/6/02 23:00	52.5	
5/3/02 4:00	22.6		5/5/02 2:00	50.2		5/7/02 0:00	56.2	
5/3/02 5:00	20.0		5/5/02 3:00	33.3		5/7/02 1:00	55.9	
5/3/02 6:00	20.2		5/5/02 4:00	28.4		5/7/02 2:00	58.3	

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
5/7/02 3:00	49.8		5/9/02 1:00	39.7		5/10/02 23:00	37.4	
5/7/02 4:00	49.0		5/9/02 2:00	44.9		5/11/02 0:00	68.9	
5/7/02 5:00	46.7		5/9/02 3:00	232.9		5/11/02 1:00	66.1	
5/7/02 6:00	48.6		5/9/02 4:00	358.2		5/11/02 2:00	49.6	
5/7/02 7:00	50.9		5/9/02 5:00	258.9		5/11/02 3:00	55.6	
5/7/02 8:00	55.3		5/9/02 6:00	186.1		5/11/02 4:00	45.1	
5/7/02 9:00	30.9		5/9/02 7:00	163.3		5/11/02 5:00	42.6	
5/7/02 10:00	71.9		5/9/02 8:00	139.4		5/11/02 6:00	42.4	
5/7/02 11:00	580.2		5/9/02 9:00	114.6		5/11/02 7:00	41.4	
5/7/02 12:00	503.9		5/9/02 10:00	121.0		5/11/02 8:00	42.5	
5/7/02 13:00	263.9		5/9/02 11:00	134.3		5/11/02 9:00	43.6	
5/7/02 14:00	456.4		5/9/02 12:00	144.2		5/11/02 10:00	40.2	
5/7/02 15:00	608.6		5/9/02 13:00	146.1		5/11/02 11:00	31.3	
5/7/02 16:00	495.2		5/9/02 14:00	129.4		5/11/02 12:00	51.2	
5/7/02 17:00	208.0		5/9/02 15:00	108.3		5/11/02 13:00		
5/7/02 18:00	226.0		5/9/02 16:00	97.0		5/11/02 14:00	4.9	
5/7/02 19:00	39.3		5/9/02 17:00	83.3		5/11/02 15:00	58.2	
5/7/02 20:00	45.7		5/9/02 18:00	75.6		5/11/02 16:00	63.0	
5/7/02 21:00	18.5		5/9/02 19:00	59.0		5/11/02 17:00	30.1	
5/7/02 22:00	23.7		5/9/02 20:00	160.0		5/11/02 18:00	50.4	
5/7/02 23:00	40.5		5/9/02 21:00	43.8		5/11/02 19:00	239.7	
5/8/02 0:00	36.7		5/9/02 22:00	40.3		5/11/02 20:00	102.9	
5/8/02 1:00	40.2		5/9/02 23:00	40.4		5/11/02 21:00	80.6	
5/8/02 2:00	28.4		5/10/02 0:00	34.6		5/11/02 22:00	68.6	
5/8/02 3:00	48.5		5/10/02 1:00	34.3		5/11/02 23:00	56.7	
5/8/02 4:00	30.5		5/10/02 2:00	32.8		5/12/02 0:00	51.7	
5/8/02 5:00	26.5		5/10/02 3:00	29.5		5/12/02 1:00	43.3	
5/8/02 6:00	17.0		5/10/02 4:00	22.9		5/12/02 2:00	40.1	
5/8/02 7:00	42.5		5/10/02 5:00	26.5		5/12/02 3:00	36.3	
5/8/02 8:00	77.6		5/10/02 6:00	26.4		5/12/02 4:00	37.3	
5/8/02 9:00	38.8		5/10/02 7:00	38.0		5/12/02 5:00	34.2	
5/8/02 10:00	65.5		5/10/02 8:00	39.5		5/12/02 6:00	34.8	
5/8/02 11:00	123.5		5/10/02 9:00	52.8		5/12/02 7:00	36.3	
5/8/02 12:00	207.5		5/10/02 10:00	71.7		5/12/02 8:00	17.2	
5/8/02 13:00	294.1		5/10/02 11:00	89.6		5/12/02 9:00	55.6	
5/8/02 14:00	391.5		5/10/02 12:00	90.4		5/12/02 10:00	60.8	
5/8/02 15:00	410.1		5/10/02 13:00	96.4		5/12/02 11:00	60.3	
5/8/02 16:00	624.7		5/10/02 14:00	100.0		5/12/02 12:00	58.9	
5/8/02 17:00	476.7		5/10/02 15:00	93.6		5/12/02 13:00	38.7	
5/8/02 18:00	308.6		5/10/02 16:00	93.1		5/12/02 14:00	41.5	
5/8/02 19:00	133.4		5/10/02 17:00	83.0		5/12/02 15:00	36.5	
5/8/02 20:00	48.6		5/10/02 18:00	86.1		5/12/02 16:00	40.0	
5/8/02 21:00	54.6		5/10/02 19:00	122.2		5/12/02 17:00	71.3	
5/8/02 22:00	54.5		5/10/02 20:00	200.8		5/12/02 18:00	37.3	
5/8/02 23:00	47.0		5/10/02 21:00	53.6		5/12/02 19:00	34.8	
5/9/02 0:00	42.9		5/10/02 22:00	57.5		5/12/02 20:00	53.5	

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
5/12/02 21:00	38.9		5/14/02 19:00	45.3		5/16/02 17:00	162.4	39.6
5/12/02 22:00	98.7		5/14/02 20:00	43.1		5/16/02 18:00		92.4
5/12/02 23:00	47.7		5/14/02 21:00	29.9		5/16/02 19:00		180.4
5/13/02 0:00	62.1		5/14/02 22:00	32.5		5/16/02 20:00		45.3
5/13/02 1:00	41.7		5/14/02 23:00	20.5		5/16/02 21:00	33.8	52.1
5/13/02 2:00	22.0		5/15/02 0:00	22.0		5/16/02 22:00	31.2	45.5
5/13/02 3:00	9.4		5/15/02 1:00	26.0		5/16/02 23:00	29.4	40.0
5/13/02 4:00	23.9		5/15/02 2:00	24.9		5/17/02 0:00	30.5	44.9
5/13/02 5:00	22.9		5/15/02 3:00	23.3		5/17/02 1:00	33.4	43.5
5/13/02 6:00	21.1		5/15/02 4:00	18.1		5/17/02 2:00	33.5	44.4
5/13/02 7:00	21.1		5/15/02 5:00	19.9		5/17/02 3:00	54.2	69.1
5/13/02 8:00	13.4		5/15/02 6:00	22.0		5/17/02 4:00	38.7	50.9
5/13/02 9:00	9.2		5/15/02 7:00	29.9		5/17/02 5:00	61.6	85.5
5/13/02 10:00	14.3		5/15/02 8:00	32.0		5/17/02 6:00	95.2	124.6
5/13/02 11:00	30.6		5/15/02 9:00	37.1		5/17/02 7:00	145.9	179.8
5/13/02 12:00	30.7		5/15/02 10:00	32.3		5/17/02 8:00		
5/13/02 13:00	26.0		5/15/02 11:00	39.6		5/17/02 9:00		
5/13/02 14:00	30.8		5/15/02 12:00	53.3		5/17/02 10:00	214.0	249.8
5/13/02 15:00	26.4		5/15/02 13:00	33.1		5/17/02 11:00	113.9	107.6
5/13/02 16:00	29.3		5/15/02 14:00	161.6		5/17/02 12:00	160.5	130.0
5/13/02 17:00	22.1		5/15/02 15:00	112.9		5/17/02 13:00	90.2	80.8
5/13/02 18:00	25.5		5/15/02 16:00	325.8		5/17/02 14:00	185.9	164.1
5/13/02 19:00	27.3		5/15/02 17:00	249.2		5/17/02 15:00		
5/13/02 20:00	31.0		5/15/02 18:00	72.8		5/17/02 16:00		110.3
5/13/02 21:00	27.2		5/15/02 19:00	116.7		5/17/02 17:00	786.5	317.8
5/13/02 22:00	24.1		5/15/02 20:00	200.1		5/17/02 18:00	65.0	117.8
5/13/02 23:00	19.2		5/15/02 21:00	99.0		5/17/02 19:00	64.4	69.5
5/14/02 0:00	16.7		5/15/02 22:00	94.0		5/17/02 20:00	68.0	69.5
5/14/02 1:00	16.1		5/15/02 23:00	55.2		5/17/02 21:00	83.2	88.6
5/14/02 2:00	19.4		5/16/02 0:00	45.4	19.6	5/17/02 22:00	27.5	35.2
5/14/02 3:00	18.1		5/16/02 1:00	36.0	13.7	5/17/02 23:00	23.5	28.8
5/14/02 4:00	17.0		5/16/02 2:00	34.2	12.3	5/18/02 0:00	28.8	25.1
5/14/02 5:00	16.4		5/16/02 3:00	28.0	13.0	5/18/02 1:00	21.4	21.2
5/14/02 6:00	16.1		5/16/02 4:00	28.0	13.2	5/18/02 2:00	16.1	14.2
5/14/02 7:00	19.7		5/16/02 5:00	25.7	12.7	5/18/02 3:00	19.9	18.9
5/14/02 8:00	23.1		5/16/02 6:00	31.4	13.9	5/18/02 4:00	10.8	12.4
5/14/02 9:00	22.9		5/16/02 7:00	35.2	14.6	5/18/02 5:00	11.3	11.8
5/14/02 10:00	29.8		5/16/02 8:00	39.7	14.4	5/18/02 6:00	11.7	12.4
5/14/02 11:00	58.6		5/16/02 9:00			5/18/02 7:00	15.4	12.9
5/14/02 12:00	40.0		5/16/02 10:00			5/18/02 8:00	14.7	13.9
5/14/02 13:00	39.8		5/16/02 11:00	202.1	146.7	5/18/02 9:00	13.0	27.3
5/14/02 14:00	31.6		5/16/02 12:00	108.3	123.1	5/18/02 10:00	12.7	13.9
5/14/02 15:00	62.5		5/16/02 13:00	75.7	48.3	5/18/02 11:00	17.7	15.8
5/14/02 16:00	90.5		5/16/02 14:00	350.0	97.6	5/18/02 12:00	15.6	16.8
5/14/02 17:00	82.0		5/16/02 15:00	217.3		5/18/02 13:00	13.6	15.3
5/14/02 18:00	73.7		5/16/02 16:00			5/18/02 14:00	14.4	18.8

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
5/18/02 15:00	16.2	27.4	5/20/02 13:00	33.9	32.3	5/22/02 11:00	61.4	57.2
5/18/02 16:00	14.8	14.8	5/20/02 14:00	100.3	37.2	5/22/02 12:00	142.6	49.1
5/18/02 17:00	19.3	25.1	5/20/02 15:00	106.1	38.8	5/22/02 13:00	42.6	54.5
5/18/02 18:00	21.0	53.4	5/20/02 16:00	81.0	38.0	5/22/02 14:00	108.0	102.9
5/18/02 19:00	22.4	49.0	5/20/02 17:00	113.5	51.9	5/22/02 15:00	201.8	79.9
5/18/02 20:00	20.5	25.7	5/20/02 18:00	70.5	85.3	5/22/02 16:00	137.7	102.3
5/18/02 21:00	21.4	22.4	5/20/02 19:00	56.3	72.3	5/22/02 17:00	175.4	83.3
5/18/02 22:00	24.6	25.6	5/20/02 20:00	63.4	71.8	5/22/02 18:00	98.9	92.4
5/18/02 23:00	24.9	22.3	5/20/02 21:00	47.9	49.3	5/22/02 19:00	87.7	122.0
5/19/02 0:00	19.1	19.7	5/20/02 22:00	88.7	78.0	5/22/02 20:00	78.4	83.7
5/19/02 1:00	16.7	22.7	5/20/02 23:00	23.4	24.6	5/22/02 21:00	63.9	73.8
5/19/02 2:00	15.8	17.4	5/21/02 0:00	23.4	23.2	5/22/02 22:00	59.2	66.7
5/19/02 3:00	18.1	17.3	5/21/02 1:00	18.5	18.7	5/22/02 23:00	53.8	55.6
5/19/02 4:00	16.4	17.3	5/21/02 2:00	16.5	18.8	5/23/02 0:00	44.5	45.4
5/19/02 5:00	17.0	18.7	5/21/02 3:00	17.0	19.2	5/23/02 1:00	48.8	51.4
5/19/02 6:00	16.6	18.6	5/21/02 4:00	17.1	17.1	5/23/02 2:00	57.3	61.1
5/19/02 7:00	19.4	18.9	5/21/02 5:00	17.9	18.9	5/23/02 3:00	56.0	60.1
5/19/02 8:00	16.4	15.9	5/21/02 6:00	22.0	22.2	5/23/02 4:00	55.3	58.0
5/19/02 9:00	23.5	24.6	5/21/02 7:00	25.3	25.4	5/23/02 5:00	51.8	54.7
5/19/02 10:00	27.1	32.2	5/21/02 8:00	30.1	29.9	5/23/02 6:00	55.1	59.4
5/19/02 11:00	32.9	39.4	5/21/02 9:00	35.5	36.9	5/23/02 7:00	60.6	64.2
5/19/02 12:00	26.1	39.0	5/21/02 10:00	76.1	36.1	5/23/02 8:00	68.6	69.8
5/19/02 13:00	25.0	27.8	5/21/02 11:00	52.1	44.5	5/23/02 9:00	94.2	102.8
5/19/02 14:00	25.8	31.7	5/21/02 12:00	117.3	69.2	5/23/02 10:00	89.4	86.9
5/19/02 15:00	33.6	50.2	5/21/02 13:00	85.2	52.7	5/23/02 11:00	121.0	73.0
5/19/02 16:00	44.6	47.9	5/21/02 14:00	161.9	82.3	5/23/02 12:00	297.6	89.4
5/19/02 17:00	45.3	57.4	5/21/02 15:00	164.5	112.8	5/23/02 13:00	173.0	55.6
5/19/02 18:00	43.7	58.0	5/21/02 16:00	198.9	155.4	5/23/02 14:00	479.9	135.3
5/19/02 19:00	42.6	50.6	5/21/02 17:00	281.6	280.3	5/23/02 15:00	195.8	82.4
5/19/02 20:00	34.0	47.8	5/21/02 18:00	237.7	416.6	5/23/02 16:00	144.2	50.7
5/19/02 21:00	35.1	36.0	5/21/02 19:00	161.3	266.8	5/23/02 17:00	128.7	70.0
5/19/02 22:00	21.1	22.2	5/21/02 20:00	141.3	192.6	5/23/02 18:00	185.1	93.2
5/19/02 23:00	17.6	18.9	5/21/02 21:00	71.0	101.5	5/23/02 19:00	37.1	55.2
5/20/02 0:00	16.2	15.8	5/21/02 22:00	65.5	89.7	5/23/02 20:00	27.8	32.5
5/20/02 1:00	15.3	15.2	5/21/02 23:00	49.0	53.4	5/23/02 21:00	81.9	78.2
5/20/02 2:00	13.6	14.9	5/22/02 0:00	45.0	56.5	5/23/02 22:00	72.4	67.8
5/20/02 3:00	15.8	16.6	5/22/02 1:00	46.2	49.6	5/23/02 23:00	67.9	63.0
5/20/02 4:00	16.9	19.0	5/22/02 2:00	63.8	66.6	5/24/02 0:00	50.1	50.9
5/20/02 5:00	17.7	20.6	5/22/02 3:00	54.1	56.7	5/24/02 1:00	29.6	34.8
5/20/02 6:00	20.1	21.0	5/22/02 4:00	48.5	49.6	5/24/02 2:00	26.8	27.1
5/20/02 7:00	24.3	27.3	5/22/02 5:00	44.1	45.7	5/24/02 3:00	26.5	26.8
5/20/02 8:00	33.7	40.5	5/22/02 6:00	40.1	42.1	5/24/02 4:00	30.3	29.0
5/20/02 9:00	28.0	28.8	5/22/02 7:00	36.8	36.6	5/24/02 5:00	32.4	33.3
5/20/02 10:00	49.6	23.7	5/22/02 8:00	38.0	37.5	5/24/02 6:00	34.2	38.9
5/20/02 11:00	50.8	41.5	5/22/02 9:00	37.3	38.9	5/24/02 7:00	49.8	55.8
5/20/02 12:00	43.8	27.1	5/22/02 10:00	48.7	43.1	5/24/02 8:00	38.0	40.0

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
5/24/02 9:00	24.6	29.0	5/26/02 7:00	15.3	18.4	5/28/02 5:00	11.3	12.6
5/24/02 10:00	4.0	28.7	5/26/02 8:00	20.9	22.1	5/28/02 6:00	16.7	16.2
5/24/02 11:00	39.3	103.9	5/26/02 9:00	27.6	35.4	5/28/02 7:00	19.2	17.6
5/24/02 12:00	41.3	124.0	5/26/02 10:00	21.4	24.0	5/28/02 8:00	20.3	19.6
5/24/02 13:00	56.6	55.9	5/26/02 11:00	17.0	27.5	5/28/02 9:00	24.8	24.4
5/24/02 14:00	284.0	61.5	5/26/02 12:00	22.5	16.3	5/28/02 10:00	28.7	36.6
5/24/02 15:00	90.4	51.1	5/26/02 13:00	11.8	17.5	5/28/02 11:00	30.5	42.8
5/24/02 16:00	29.3	39.4	5/26/02 14:00	31.9	43.7	5/28/02 12:00	22.2	30.9
5/24/02 17:00	50.8	37.4	5/26/02 15:00	2.4	5.0	5/28/02 13:00	18.9	19.5
5/24/02 18:00	17.9	27.5	5/26/02 16:00	20.3	20.0	5/28/02 14:00	14.9	16.4
5/24/02 19:00	25.1	26.6	5/26/02 17:00	15.8	17.8	5/28/02 15:00	12.4	13.7
5/24/02 20:00	20.5	50.4	5/26/02 18:00	65.1	85.5	5/28/02 16:00	18.6	20.5
5/24/02 21:00	23.7	29.9	5/26/02 19:00	23.1	32.9	5/28/02 17:00	18.7	26.2
5/24/02 22:00	24.7	25.8	5/26/02 20:00	47.6	59.0	5/28/02 18:00	19.9	29.7
5/24/02 23:00	93.7	95.7	5/26/02 21:00	51.8	53.0	5/28/02 19:00	32.0	34.3
5/25/02 0:00	308.2	472.8	5/26/02 22:00	23.3	25.6	5/28/02 20:00	42.2	65.2
5/25/02 1:00	73.3	80.0	5/26/02 23:00	23.0	25.4	5/28/02 21:00	61.7	63.4
5/25/02 2:00	34.2	35.3	5/27/02 0:00	23.7	24.1	5/28/02 22:00	10.9	20.0
5/25/02 3:00	33.2	34.3	5/27/02 1:00	32.2	33.9	5/28/02 23:00	17.1	18.7
5/25/02 4:00	33.2	35.7	5/27/02 2:00	31.1	36.1	5/29/02 0:00	46.0	46.6
5/25/02 5:00	42.3	43.0	5/27/02 3:00	33.7	35.2	5/29/02 1:00	36.4	36.0
5/25/02 6:00	28.3	27.2	5/27/02 4:00	27.2	27.2	5/29/02 2:00	27.1	26.8
5/25/02 7:00	24.9	25.8	5/27/02 5:00	25.4	26.5	5/29/02 3:00	24.5	22.9
5/25/02 8:00	36.6	37.5	5/27/02 6:00	29.7	35.8	5/29/02 4:00	25.5	27.1
5/25/02 9:00	39.6	39.8	5/27/02 7:00	22.8	22.8	5/29/02 5:00	29.4	29.8
5/25/02 10:00	39.0	38.1	5/27/02 8:00	25.2	25.6	5/29/02 6:00	30.1	30.5
5/25/02 11:00	35.9	35.4	5/27/02 9:00	22.7	25.7	5/29/02 7:00	32.5	34.7
5/25/02 12:00	35.3	35.7	5/27/02 10:00	28.2	26.6	5/29/02 8:00	44.1	52.7
5/25/02 13:00	28.8	33.3	5/27/02 11:00		5.9	5/29/02 9:00	29.9	41.9
5/25/02 14:00	32.5	33.1	5/27/02 12:00	8.4	39.3	5/29/02 10:00		20.1
5/25/02 15:00	31.1	27.5	5/27/02 13:00	38.6	53.1	5/29/02 11:00		17.1
5/25/02 16:00	33.4	41.5	5/27/02 14:00			5/29/02 12:00		28.8
5/25/02 17:00	36.9	36.2	5/27/02 15:00	49.5	49.3	5/29/02 13:00		12.5
5/25/02 18:00	30.8	32.8	5/27/02 16:00	46.3	23.9	5/29/02 14:00		21.3
5/25/02 19:00	36.2	48.5	5/27/02 17:00	21.9	40.0	5/29/02 15:00		24.5
5/25/02 20:00	38.3	42.2	5/27/02 18:00	13.6	27.5	5/29/02 16:00		14.9
5/25/02 21:00	44.9	48.1	5/27/02 19:00	27.2	24.9	5/29/02 17:00		19.1
5/25/02 22:00	43.3	44.8	5/27/02 20:00	25.5	34.4	5/29/02 18:00		72.8
5/25/02 23:00	28.3	31.7	5/27/02 21:00	20.1	25.4	5/29/02 19:00		62.8
5/26/02 0:00	19.0	22.0	5/27/02 22:00	87.3	78.5	5/29/02 20:00		34.8
5/26/02 1:00	19.4	19.8	5/27/02 23:00	74.9	61.5	5/29/02 21:00		14.4
5/26/02 2:00	26.2	26.1	5/28/02 0:00	38.5	34.0	5/29/02 22:00		20.2
5/26/02 3:00	18.5	17.6	5/28/02 1:00	20.8	19.6	5/29/02 23:00		14.9
5/26/02 4:00	16.0	16.0	5/28/02 2:00	13.6	13.4	5/30/02 0:00		11.9
5/26/02 5:00	18.0	20.8	5/28/02 3:00	11.9	11.7	5/30/02 1:00		10.2
5/26/02 6:00	18.0	16.4	5/28/02 4:00	10.2	9.8	5/30/02 2:00		6.3

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
5/30/02 3:00		9.7	6/1/02 1:00		22.1	6/2/02 23:00		19.3
5/30/02 4:00		14.7	6/1/02 2:00		18.6	6/3/02 0:00		18.6
5/30/02 5:00		16.5	6/1/02 3:00		18.1	6/3/02 1:00		20.1
5/30/02 6:00		23.9	6/1/02 4:00		23.8	6/3/02 2:00		17.4
5/30/02 7:00		40.1	6/1/02 5:00		22.1	6/3/02 3:00		18.0
5/30/02 8:00		41.6	6/1/02 6:00		30.1	6/3/02 4:00		19.6
5/30/02 9:00		48.3	6/1/02 7:00		29.4	6/3/02 5:00		18.6
5/30/02 10:00		114.1	6/1/02 8:00		30.0	6/3/02 6:00		42.8
5/30/02 11:00		37.3	6/1/02 9:00		24.8	6/3/02 7:00		39.8
5/30/02 12:00		70.3	6/1/02 10:00		21.8	6/3/02 8:00		26.7
5/30/02 13:00		21.3	6/1/02 11:00		18.2	6/3/02 9:00		44.1
5/30/02 14:00		31.2	6/1/02 12:00		15.5	6/3/02 10:00		50.4
5/30/02 15:00		53.6	6/1/02 13:00		11.9	6/3/02 11:00		40.0
5/30/02 16:00		47.6	6/1/02 14:00		24.2	6/3/02 12:00		18.9
5/30/02 17:00		32.2	6/1/02 15:00		14.8	6/3/02 13:00		14.6
5/30/02 18:00		24.1	6/1/02 16:00		26.4	6/3/02 14:00		43.2
5/30/02 19:00		24.7	6/1/02 17:00		24.1	6/3/02 15:00		44.0
5/30/02 20:00		64.2	6/1/02 18:00		36.7	6/3/02 16:00		51.0
5/30/02 21:00		34.5	6/1/02 19:00		40.3	6/3/02 17:00		34.0
5/30/02 22:00		30.9	6/1/02 20:00		33.8	6/3/02 18:00		
5/30/02 23:00		34.6	6/1/02 21:00		29.4	6/3/02 19:00		
5/31/02 0:00		34.4	6/1/02 22:00		27.1	6/3/02 20:00		
5/31/02 1:00		27.4	6/1/02 23:00		26.8	6/3/02 21:00		
5/31/02 2:00		24.2	6/2/02 0:00		23.3	6/3/02 22:00		
5/31/02 3:00		25.1	6/2/02 1:00		25.6	6/3/02 23:00		
5/31/02 4:00		19.3	6/2/02 2:00		30.4	6/4/02 0:00		
5/31/02 5:00		19.6	6/2/02 3:00		26.0	6/4/02 1:00		
5/31/02 6:00		22.9	6/2/02 4:00		25.0	6/4/02 2:00		
5/31/02 7:00		24.1	6/2/02 5:00		20.3	6/4/02 3:00		
5/31/02 8:00		26.5	6/2/02 6:00		23.0	6/4/02 4:00		
5/31/02 9:00		19.4	6/2/02 7:00		24.2	6/4/02 5:00		
5/31/02 10:00		16.8	6/2/02 8:00		25.8	6/4/02 6:00		
5/31/02 11:00		21.3	6/2/02 9:00		34.4	6/4/02 7:00		
5/31/02 12:00		22.1	6/2/02 10:00		33.6	6/4/02 8:00		
5/31/02 13:00		14.2	6/2/02 11:00		23.0	6/4/02 9:00		
5/31/02 14:00		30.2	6/2/02 12:00		15.9	6/4/02 10:00		
5/31/02 15:00		19.3	6/2/02 13:00		23.4	6/4/02 11:00		
5/31/02 16:00		16.9	6/2/02 14:00		14.8	6/4/02 12:00		
5/31/02 17:00		19.6	6/2/02 15:00		13.5	6/4/02 13:00		
5/31/02 18:00		19.4	6/2/02 16:00		21.6	6/4/02 14:00		
5/31/02 19:00		27.6	6/2/02 17:00		29.5	6/4/02 15:00		
5/31/02 20:00		49.9	6/2/02 18:00		20.7	6/4/02 16:00		
5/31/02 21:00		37.3	6/2/02 19:00		28.7	6/4/02 17:00		
5/31/02 22:00		37.7	6/2/02 20:00		29.2	6/4/02 18:00		
5/31/02 23:00		27.3	6/2/02 21:00		35.5	6/4/02 19:00		
6/1/02 0:00		22.0	6/2/02 22:00		23.5	6/4/02 20:00		

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
6/4/02 21:00			6/6/02 19:00			6/8/02 17:00		
6/4/02 22:00			6/6/02 20:00			6/8/02 18:00		
6/4/02 23:00			6/6/02 21:00			6/8/02 19:00		
6/5/02 0:00			6/6/02 22:00			6/8/02 20:00		
6/5/02 1:00			6/6/02 23:00			6/8/02 21:00		
6/5/02 2:00			6/7/02 0:00			6/8/02 22:00		
6/5/02 3:00			6/7/02 1:00			6/8/02 23:00		
6/5/02 4:00			6/7/02 2:00			6/9/02 0:00		
6/5/02 5:00			6/7/02 3:00			6/9/02 1:00		
6/5/02 6:00			6/7/02 4:00			6/9/02 2:00		
6/5/02 7:00			6/7/02 5:00			6/9/02 3:00		
6/5/02 8:00			6/7/02 6:00			6/9/02 4:00		
6/5/02 9:00			6/7/02 7:00			6/9/02 5:00		
6/5/02 10:00			6/7/02 8:00			6/9/02 6:00		
6/5/02 11:00			6/7/02 9:00			6/9/02 7:00		
6/5/02 12:00			6/7/02 10:00			6/9/02 8:00		
6/5/02 13:00			6/7/02 11:00			6/9/02 9:00		
6/5/02 14:00			6/7/02 12:00			6/9/02 10:00		
6/5/02 15:00			6/7/02 13:00			6/9/02 11:00		
6/5/02 16:00			6/7/02 14:00			6/9/02 12:00		
6/5/02 17:00			6/7/02 15:00			6/9/02 13:00		
6/5/02 18:00			6/7/02 16:00			6/9/02 14:00		
6/5/02 19:00			6/7/02 17:00			6/9/02 15:00		
6/5/02 20:00			6/7/02 18:00			6/9/02 16:00		
6/5/02 21:00			6/7/02 19:00			6/9/02 17:00		
6/5/02 22:00			6/7/02 20:00			6/9/02 18:00		
6/5/02 23:00			6/7/02 21:00			6/9/02 19:00		
6/6/02 0:00			6/7/02 22:00			6/9/02 20:00		
6/6/02 1:00			6/7/02 23:00			6/9/02 21:00		
6/6/02 2:00			6/8/02 0:00			6/9/02 22:00		
6/6/02 3:00			6/8/02 1:00			6/9/02 23:00		
6/6/02 4:00			6/8/02 2:00			6/10/02 0:00		
6/6/02 5:00			6/8/02 3:00			6/10/02 1:00		
6/6/02 6:00			6/8/02 4:00			6/10/02 2:00		
6/6/02 7:00			6/8/02 5:00			6/10/02 3:00		
6/6/02 8:00			6/8/02 6:00			6/10/02 4:00		
6/6/02 9:00			6/8/02 7:00			6/10/02 5:00		
6/6/02 10:00			6/8/02 8:00			6/10/02 6:00		
6/6/02 11:00			6/8/02 9:00			6/10/02 7:00		
6/6/02 12:00			6/8/02 10:00			6/10/02 8:00		
6/6/02 13:00			6/8/02 11:00			6/10/02 9:00		
6/6/02 14:00			6/8/02 12:00			6/10/02 10:00		
6/6/02 15:00			6/8/02 13:00			6/10/02 11:00		
6/6/02 16:00			6/8/02 14:00			6/10/02 12:00		
6/6/02 17:00			6/8/02 15:00			6/10/02 13:00		
6/6/02 18:00			6/8/02 16:00			6/10/02 14:00		

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
6/10/02 15:00			6/12/02 13:00			6/14/02 11:00	33.2	13.7
6/10/02 16:00			6/12/02 14:00			6/14/02 12:00	22.6	17.5
6/10/02 17:00			6/12/02 15:00			6/14/02 13:00	7.8	7.4
6/10/02 18:00			6/12/02 16:00			6/14/02 14:00	13.4	15.5
6/10/02 19:00			6/12/02 17:00			6/14/02 15:00	10.1	9.2
6/10/02 20:00			6/12/02 18:00			6/14/02 16:00	7.8	6.5
6/10/02 21:00			6/12/02 19:00			6/14/02 17:00	11.9	8.4
6/10/02 22:00			6/12/02 20:00			6/14/02 18:00	17.3	12.9
6/10/02 23:00			6/12/02 21:00			6/14/02 19:00	14.0	15.5
6/11/02 0:00			6/12/02 22:00			6/14/02 20:00	15.2	15.9
6/11/02 1:00			6/12/02 23:00			6/14/02 21:00	16.8	16.4
6/11/02 2:00			6/13/02 0:00			6/14/02 22:00	17.2	17.7
6/11/02 3:00			6/13/02 1:00			6/14/02 23:00	17.0	16.5
6/11/02 4:00			6/13/02 2:00			6/15/02 0:00	18.3	16.5
6/11/02 5:00			6/13/02 3:00			6/15/02 1:00	14.7	14.5
6/11/02 6:00			6/13/02 4:00			6/15/02 2:00	14.5	14.6
6/11/02 7:00			6/13/02 5:00			6/15/02 3:00	14.5	13.5
6/11/02 8:00			6/13/02 6:00			6/15/02 4:00	13.0	12.8
6/11/02 9:00			6/13/02 7:00			6/15/02 5:00	11.9	11.2
6/11/02 10:00			6/13/02 8:00			6/15/02 6:00	21.1	19.7
6/11/02 11:00			6/13/02 9:00			6/15/02 7:00	16.3	18.8
6/11/02 12:00			6/13/02 10:00			6/15/02 8:00	10.6	9.3
6/11/02 13:00			6/13/02 11:00			6/15/02 9:00		
6/11/02 14:00			6/13/02 12:00			6/15/02 10:00	13.7	13.9
6/11/02 15:00			6/13/02 13:00			6/15/02 11:00	9.4	3.9
6/11/02 16:00			6/13/02 14:00			6/15/02 12:00	26.8	27.5
6/11/02 17:00			6/13/02 15:00			6/15/02 13:00	24.8	27.0
6/11/02 18:00			6/13/02 16:00			6/15/02 14:00	16.2	20.0
6/11/02 19:00			6/13/02 17:00	76.5	88.4	6/15/02 15:00	23.1	21.3
6/11/02 20:00			6/13/02 18:00	217.1	262.7	6/15/02 16:00	12.4	14.4
6/11/02 21:00			6/13/02 19:00	205.1	214.0	6/15/02 17:00	18.6	24.4
6/11/02 22:00			6/13/02 20:00	76.3	69.9	6/15/02 18:00	17.4	19.2
6/11/02 23:00			6/13/02 21:00	54.2	53.6	6/15/02 19:00	24.1	31.8
6/12/02 0:00			6/13/02 22:00	15.4	9.9	6/15/02 20:00	31.9	31.4
6/12/02 1:00			6/13/02 23:00	17.1	17.0	6/15/02 21:00	33.1	35.8
6/12/02 2:00			6/14/02 0:00	32.0	31.1	6/15/02 22:00	28.1	27.7
6/12/02 3:00			6/14/02 1:00	7.5	3.5	6/15/02 23:00	28.8	27.9
6/12/02 4:00			6/14/02 2:00	12.2	5.3	6/16/02 0:00	27.5	25.3
6/12/02 5:00			6/14/02 3:00	12.0	7.6	6/16/02 1:00	502.5	623.7
6/12/02 6:00			6/14/02 4:00	22.8	21.5	6/16/02 2:00	878.7	1109.1
6/12/02 7:00			6/14/02 5:00	20.5	17.6	6/16/02 3:00	233.3	273.0
6/12/02 8:00			6/14/02 6:00	7.1	2.9	6/16/02 4:00	73.1	82.1
6/12/02 9:00			6/14/02 7:00			6/16/02 5:00	53.0	56.2
6/12/02 10:00			6/14/02 8:00	30.1		6/16/02 6:00	19.7	20.1
6/12/02 11:00			6/14/02 9:00	70.1	9.2	6/16/02 7:00	14.5	14.9
6/12/02 12:00			6/14/02 10:00	22.9	31.1	6/16/02 8:00	7.7	10.3

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
6/16/02 9:00	12.7	13.3	6/18/02 7:00	31.3	31.6	6/20/02 5:00	16.6	17.5
6/16/02 10:00	16.2	13.4	6/18/02 8:00	34.5	35.1	6/20/02 6:00	22.8	24.6
6/16/02 11:00	20.9	19.5	6/18/02 9:00	40.2	36.3	6/20/02 7:00	34.5	38.3
6/16/02 12:00	28.5	30.3	6/18/02 10:00	35.1	51.7	6/20/02 8:00	67.3	71.7
6/16/02 13:00	25.4	28.8	6/18/02 11:00	56.6	41.6	6/20/02 9:00	65.5	56.5
6/16/02 14:00	33.2	33.2	6/18/02 12:00	38.2	38.0	6/20/02 10:00	60.7	57.0
6/16/02 15:00	37.1	39.2	6/18/02 13:00	23.5	23.9	6/20/02 11:00	90.6	75.3
6/16/02 16:00	31.0	31.2	6/18/02 14:00	38.1	27.2	6/20/02 12:00	87.4	74.6
6/16/02 17:00	33.6	26.8	6/18/02 15:00	33.9	29.7	6/20/02 13:00	51.4	53.5
6/16/02 18:00	22.3	22.1	6/18/02 16:00	41.3	24.3	6/20/02 14:00	57.6	36.3
6/16/02 19:00	24.1	27.4	6/18/02 17:00	46.7	30.8	6/20/02 15:00	75.3	58.5
6/16/02 20:00	25.8	27.4	6/18/02 18:00	30.8	32.5	6/20/02 16:00	153.1	62.1
6/16/02 21:00	27.2	30.5	6/18/02 19:00	83.2	94.5	6/20/02 17:00	89.9	83.0
6/16/02 22:00	27.3	33.5	6/18/02 20:00	137.7	119.6	6/20/02 18:00	69.1	60.3
6/16/02 23:00	23.0	26.4	6/18/02 21:00	143.2	144.1	6/20/02 19:00	63.1	56.5
6/17/02 0:00	22.3	23.0	6/18/02 22:00	48.6	51.1	6/20/02 20:00	34.4	38.2
6/17/02 1:00	14.0	14.8	6/18/02 23:00	48.3	48.0	6/20/02 21:00	28.0	36.7
6/17/02 2:00	11.5	12.2	6/19/02 0:00	53.2	54.7	6/20/02 22:00	35.7	35.3
6/17/02 3:00	13.0	13.5	6/19/02 1:00	37.1	38.2	6/20/02 23:00	28.2	32.8
6/17/02 4:00	26.8	27.9	6/19/02 2:00	27.1	27.2	6/21/02 0:00	49.2	51.6
6/17/02 5:00	13.6	14.3	6/19/02 3:00	21.0	20.6	6/21/02 1:00	36.9	38.0
6/17/02 6:00	12.7	12.1	6/19/02 4:00	30.7	29.1	6/21/02 2:00	23.8	24.0
6/17/02 7:00	17.0	17.1	6/19/02 5:00	37.6	37.7	6/21/02 3:00	22.9	22.9
6/17/02 8:00	13.9	14.3	6/19/02 6:00	34.4	34.9	6/21/02 4:00	25.7	29.8
6/17/02 9:00	26.6	23.0	6/19/02 7:00	41.3	45.7	6/21/02 5:00	21.7	23.1
6/17/02 10:00	35.4	17.7	6/19/02 8:00	62.0	56.9	6/21/02 6:00	27.5	27.4
6/17/02 11:00	22.6	19.8	6/19/02 9:00	66.2	49.5	6/21/02 7:00	34.1	33.2
6/17/02 12:00	31.0	49.6	6/19/02 10:00	43.7	41.2	6/21/02 8:00	42.2	44.7
6/17/02 13:00	21.4	15.9	6/19/02 11:00	41.5	41.5	6/21/02 9:00	51.2	38.6
6/17/02 14:00	65.4	30.0	6/19/02 12:00	34.7	41.0	6/21/02 10:00	28.8	29.2
6/17/02 15:00	13.2	2.3	6/19/02 13:00	42.1	46.6	6/21/02 11:00	28.4	27.0
6/17/02 16:00	60.7	60.9	6/19/02 14:00	36.7	23.9	6/21/02 12:00	37.5	26.6
6/17/02 17:00	38.4	39.7	6/19/02 15:00	33.1	27.0	6/21/02 13:00	21.6	13.2
6/17/02 18:00	31.4	25.4	6/19/02 16:00	52.5	28.6	6/21/02 14:00	52.7	28.5
6/17/02 19:00	28.9	30.0	6/19/02 17:00	42.0	40.8	6/21/02 15:00	58.8	25.9
6/17/02 20:00	31.3	31.9	6/19/02 18:00	38.9	36.1	6/21/02 16:00	57.6	23.5
6/17/02 21:00	37.9	41.3	6/19/02 19:00	89.7	83.7	6/21/02 17:00	30.9	24.5
6/17/02 22:00	44.4	45.5	6/19/02 20:00	343.7	312.8	6/21/02 18:00	28.4	31.9
6/17/02 23:00	62.7	70.4	6/19/02 21:00	146.0	123.3	6/21/02 19:00	30.8	30.1
6/18/02 0:00	33.9	34.6	6/19/02 22:00	98.4	70.3	6/21/02 20:00	26.4	24.2
6/18/02 1:00	36.6	40.1	6/19/02 23:00	64.4	44.9	6/21/02 21:00	28.7	25.7
6/18/02 2:00	27.2	29.6	6/20/02 0:00	25.7	25.9	6/21/02 22:00	23.9	23.2
6/18/02 3:00	24.3	24.5	6/20/02 1:00	21.1	21.5	6/21/02 23:00	22.3	23.5
6/18/02 4:00	22.3	22.6	6/20/02 2:00	21.8	21.9	6/22/02 0:00	16.7	16.6
6/18/02 5:00	21.0	23.9	6/20/02 3:00	19.3	20.0	6/22/02 1:00	19.0	19.7
6/18/02 6:00	28.0	27.0	6/20/02 4:00	17.8	18.4	6/22/02 2:00	24.8	25.5

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
6/22/02 3:00	29.3	28.4	6/24/02 1:00	19.7	19.4	6/25/02 23:00	71.1	75.6
6/22/02 4:00	28.2	29.6	6/24/02 2:00	19.8	19.8	6/26/02 0:00	41.8	44.1
6/22/02 5:00	29.6	30.5	6/24/02 3:00	19.5	19.6	6/26/02 1:00	39.0	43.9
6/22/02 6:00	24.2	24.3	6/24/02 4:00	18.4	19.0	6/26/02 2:00	51.8	55.5
6/22/02 7:00	34.3	34.2	6/24/02 5:00	16.2	16.2	6/26/02 3:00	50.2	52.9
6/22/02 8:00	46.2	48.2	6/24/02 6:00	20.5	29.6	6/26/02 4:00	45.1	48.7
6/22/02 9:00	38.9	39.3	6/24/02 7:00	30.1	27.6	6/26/02 5:00	45.1	49.1
6/22/02 10:00	32.5	32.2	6/24/02 8:00	39.4	82.2	6/26/02 6:00	63.6	65.7
6/22/02 11:00	18.5	16.9	6/24/02 9:00	54.0	82.8	6/26/02 7:00	40.5	42.3
6/22/02 12:00	17.9	16.0	6/24/02 10:00	56.0	85.6	6/26/02 8:00	39.2	41.9
6/22/02 13:00	24.6	23.9	6/24/02 11:00	42.3	47.9	6/26/02 9:00	36.1	33.2
6/22/02 14:00	25.8	18.3	6/24/02 12:00	58.5	51.0	6/26/02 10:00	58.7	38.3
6/22/02 15:00	25.4	25.9	6/24/02 13:00	29.5	36.8	6/26/02 11:00	28.8	30.4
6/22/02 16:00	25.0	26.5	6/24/02 14:00	61.8	77.7	6/26/02 12:00	38.8	25.4
6/22/02 17:00	19.7	19.3	6/24/02 15:00	32.4	30.6	6/26/02 13:00	19.5	23.1
6/22/02 18:00	40.3	45.2	6/24/02 16:00	48.0	38.7	6/26/02 14:00	52.4	50.1
6/22/02 19:00	38.3	35.1	6/24/02 17:00	49.5	39.0	6/26/02 15:00	31.2	39.8
6/22/02 20:00	32.3	33.8	6/24/02 18:00	32.6	35.2	6/26/02 16:00	54.1	59.4
6/22/02 21:00	34.4	32.5	6/24/02 19:00	29.3	34.5	6/26/02 17:00	25.2	29.9
6/22/02 22:00	29.9	30.2	6/24/02 20:00	32.3	33.4	6/26/02 18:00	25.2	28.1
6/22/02 23:00	28.5	27.5	6/24/02 21:00	32.2	34.2	6/26/02 19:00	34.6	36.6
6/23/02 0:00	23.6	25.8	6/24/02 22:00	25.1	29.3	6/26/02 20:00	64.7	75.0
6/23/02 1:00	22.8	23.9	6/24/02 23:00	16.6	19.7	6/26/02 21:00	61.8	71.8
6/23/02 2:00	22.9	23.2	6/25/02 0:00	15.7	18.0	6/26/02 22:00	42.8	50.9
6/23/02 3:00	22.1	22.6	6/25/02 1:00	9.5	7.3	6/26/02 23:00	61.7	94.4
6/23/02 4:00	21.7	23.5	6/25/02 2:00	15.2	16.0	6/27/02 0:00	171.5	345.8
6/23/02 5:00	22.3	23.0	6/25/02 3:00	13.6	14.3	6/27/02 1:00	98.4	109.5
6/23/02 6:00	24.2	25.4	6/25/02 4:00	28.8	14.4	6/27/02 2:00	48.8	47.3
6/23/02 7:00	26.1	27.2	6/25/02 5:00	14.3	18.2	6/27/02 3:00	12.4	11.6
6/23/02 8:00	23.4	23.4	6/25/02 6:00	34.0	35.9	6/27/02 4:00	41.3	45.0
6/23/02 9:00	23.6	24.3	6/25/02 7:00	32.9	35.4	6/27/02 5:00	17.9	17.3
6/23/02 10:00	21.8	22.5	6/25/02 8:00	54.6	52.8	6/27/02 6:00	10.6	9.9
6/23/02 11:00	14.3	13.1	6/25/02 9:00		40.2	6/27/02 7:00	17.0	16.2
6/23/02 12:00	13.7	15.3	6/25/02 10:00	32.5	32.3	6/27/02 8:00	32.4	39.7
6/23/02 13:00	8.3	6.6	6/25/02 11:00	31.8	25.9	6/27/02 9:00	24.7	27.0
6/23/02 14:00	14.9	23.6	6/25/02 12:00	44.8	24.3	6/27/02 10:00	21.0	20.1
6/23/02 15:00	16.6	21.3	6/25/02 13:00	25.9	28.7	6/27/02 11:00	22.6	53.3
6/23/02 16:00	20.5	22.0	6/25/02 14:00	81.2	26.6	6/27/02 12:00	10.6	102.1
6/23/02 17:00	22.7	18.2	6/25/02 15:00	31.7	28.3	6/27/02 13:00	24.7	22.5
6/23/02 18:00	17.5	19.2	6/25/02 16:00	48.5	27.9	6/27/02 14:00	1.2	2.1
6/23/02 19:00	18.7	18.3	6/25/02 17:00	27.6	30.5	6/27/02 15:00	19.3	19.2
6/23/02 20:00	26.2	27.2	6/25/02 18:00	36.9	34.8	6/27/02 16:00	26.4	22.2
6/23/02 21:00	29.6	35.7	6/25/02 19:00	33.0	32.9	6/27/02 17:00	29.0	30.5
6/23/02 22:00	20.1	18.9	6/25/02 20:00	40.9	42.3	6/27/02 18:00	21.6	22.7
6/23/02 23:00	17.1	18.5	6/25/02 21:00	92.2	99.9	6/27/02 19:00	19.2	16.4
6/24/02 0:00	20.7	19.3	6/25/02 22:00	153.4	168.1	6/27/02 20:00	17.5	17.6

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
6/27/02 21:00	30.2	32.2	6/29/02 19:00	17.2	16.7	7/1/02 17:00	50.3	24.2
6/27/02 22:00	25.0	25.0	6/29/02 20:00	30.7	32.6	7/1/02 18:00	30.0	20.0
6/27/02 23:00	16.7	16.5	6/29/02 21:00	35.1	36.2	7/1/02 19:00	28.5	27.0
6/28/02 0:00	15.4	15.3	6/29/02 22:00	25.5	27.5	7/1/02 20:00	31.4	28.3
6/28/02 1:00	25.6	33.6	6/29/02 23:00	25.2	24.9	7/1/02 21:00	31.5	28.7
6/28/02 2:00	69.8	70.3	6/30/02 0:00	37.8	46.5	7/1/02 22:00	31.5	27.6
6/28/02 3:00	10.1	9.8	6/30/02 1:00	22.1	22.4	7/1/02 23:00	42.8	24.6
6/28/02 4:00	19.1	20.9	6/30/02 2:00	19.2	19.2	7/2/02 0:00	16.2	11.7
6/28/02 5:00	15.8	15.0	6/30/02 3:00	18.9	22.7	7/2/02 1:00	16.2	12.2
6/28/02 6:00	28.3	24.2	6/30/02 4:00	16.3	16.6	7/2/02 2:00	13.3	8.8
6/28/02 7:00	28.1	27.4	6/30/02 5:00	18.5	16.9	7/2/02 3:00	10.1	9.3
6/28/02 8:00	10.4	8.8	6/30/02 6:00	14.7	15.8	7/2/02 4:00	5.2	5.1
6/28/02 9:00	24.1	26.4	6/30/02 7:00	16.6	16.9	7/2/02 5:00	7.0	6.7
6/28/02 10:00	34.5	29.4	6/30/02 8:00	15.6	15.5	7/2/02 6:00	12.2	12.2
6/28/02 11:00	22.4	28.7	6/30/02 9:00	15.9	14.9	7/2/02 7:00	14.9	15.5
6/28/02 12:00	11.8	14.5	6/30/02 10:00	8.1	5.3	7/2/02 8:00	24.0	24.8
6/28/02 13:00	10.2	8.4	6/30/02 11:00	6.1	5.0	7/2/02 9:00	25.8	15.9
6/28/02 14:00	42.5	23.5	6/30/02 12:00	5.2	1.7	7/2/02 10:00	24.7	10.7
6/28/02 15:00	14.3	11.0	6/30/02 13:00	15.9	10.6	7/2/02 11:00	54.1	7.9
6/28/02 16:00	19.4	17.9	6/30/02 14:00	53.4	2.0	7/2/02 12:00	36.9	18.1
6/28/02 17:00	22.6	22.1	6/30/02 15:00	18.9	17.0	7/2/02 13:00	23.0	10.0
6/28/02 18:00	16.7	16.6	6/30/02 16:00	14.1	12.5	7/2/02 14:00	30.4	13.9
6/28/02 19:00	23.0	22.8	6/30/02 17:00	16.4	18.9	7/2/02 15:00	16.1	9.1
6/28/02 20:00	36.5	29.5	6/30/02 18:00	14.8	14.8	7/2/02 16:00	50.8	19.6
6/28/02 21:00	30.9	35.5	6/30/02 19:00	16.1	15.5	7/2/02 17:00	43.2	28.8
6/28/02 22:00	36.1	44.5	6/30/02 20:00	29.8	30.9	7/2/02 18:00	25.4	22.7
6/28/02 23:00	28.2	29.3	6/30/02 21:00	20.9	22.7	7/2/02 19:00	25.7	24.5
6/29/02 0:00	23.8	23.9	6/30/02 22:00	20.1	21.5	7/2/02 20:00	37.9	40.7
6/29/02 1:00	19.0	18.9	6/30/02 23:00	26.5	28.4	7/2/02 21:00	33.8	33.2
6/29/02 2:00	25.4	25.6	7/1/02 0:00	28.1	30.1	7/2/02 22:00	19.8	19.0
6/29/02 3:00	31.7	33.3	7/1/02 1:00	43.3	47.8	7/2/02 23:00	17.9	21.1
6/29/02 4:00	21.5	24.1	7/1/02 2:00	16.7	15.3	7/3/02 0:00	26.5	27.7
6/29/02 5:00	21.0	22.1	7/1/02 3:00	21.8	21.9	7/3/02 1:00	13.7	12.6
6/29/02 6:00	23.5	23.6	7/1/02 4:00	29.2	28.7	7/3/02 2:00	4.6	4.5
6/29/02 7:00	29.0	31.7	7/1/02 5:00	25.8	25.9	7/3/02 3:00	9.1	9.6
6/29/02 8:00	26.3	28.2	7/1/02 6:00	21.1	22.4	7/3/02 4:00	12.0	12.2
6/29/02 9:00	17.3	15.8	7/1/02 7:00	27.7	29.0	7/3/02 5:00	10.9	10.7
6/29/02 10:00	11.5	10.2	7/1/02 8:00	24.2	24.4	7/3/02 6:00	19.2	18.8
6/29/02 11:00			7/1/02 9:00	39.3	19.5	7/3/02 7:00	29.1	30.4
6/29/02 12:00	3.4	0.9	7/1/02 10:00	38.2	18.9	7/3/02 8:00	34.8	35.1
6/29/02 13:00	10.1	10.4	7/1/02 11:00	20.7	13.6	7/3/02 9:00	19.7	14.3
6/29/02 14:00	18.2	12.7	7/1/02 12:00	42.6	14.9	7/3/02 10:00	0.7	
6/29/02 15:00	14.5	12.9	7/1/02 13:00	12.4		7/3/02 11:00	32.5	33.9
6/29/02 16:00	12.9	10.4	7/1/02 14:00	127.2	29.3	7/3/02 12:00	17.0	13.7
6/29/02 17:00	23.3	16.3	7/1/02 15:00	53.0	15.4	7/3/02 13:00	23.4	21.9
6/29/02 18:00	16.6	15.6	7/1/02 16:00	122.8	16.0	7/3/02 14:00	23.4	22.2

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
7/3/02 15:00	39.9	29.6	7/5/02 13:00	14.5	13.1	7/7/02 11:00	8.3	4.7
7/3/02 16:00	40.1	29.6	7/5/02 14:00	16.9	16.2	7/7/02 12:00	5.7	5.7
7/3/02 17:00	19.8	19.1	7/5/02 15:00	26.7	28.0	7/7/02 13:00	6.5	6.9
7/3/02 18:00	23.7	18.8	7/5/02 16:00	26.7	27.1	7/7/02 14:00	11.6	12.7
7/3/02 19:00	9.3	5.4	7/5/02 17:00	27.2	30.1	7/7/02 15:00	12.1	10.8
7/3/02 20:00	42.3	37.1	7/5/02 18:00	34.0	35.6	7/7/02 16:00	10.9	9.8
7/3/02 21:00	39.8	41.8	7/5/02 19:00	43.6	44.6	7/7/02 17:00	19.6	22.3
7/3/02 22:00	29.1	27.9	7/5/02 20:00	34.7	37.7	7/7/02 18:00	35.4	40.8
7/3/02 23:00	13.3	11.8	7/5/02 21:00	60.7	58.1	7/7/02 19:00	28.8	26.9
7/4/02 0:00	155.3	127.9	7/5/02 22:00	85.5	89.1	7/7/02 20:00	19.2	22.2
7/4/02 1:00	18.7	21.5	7/5/02 23:00	56.8	61.0	7/7/02 21:00	11.6	11.9
7/4/02 2:00	11.3	8.2	7/6/02 0:00	28.2	30.8	7/7/02 22:00	4.1	6.5
7/4/02 3:00	9.9	11.3	7/6/02 1:00			7/7/02 23:00	16.4	18.8
7/4/02 4:00	9.1	9.9	7/6/02 2:00	6.7		7/8/02 0:00	19.8	20.2
7/4/02 5:00	17.9	16.6	7/6/02 3:00	11.2		7/8/02 1:00	16.4	16.2
7/4/02 6:00	15.6	15.6	7/6/02 4:00	20.0		7/8/02 2:00	14.4	15.3
7/4/02 7:00	16.8	16.6	7/6/02 5:00	24.9		7/8/02 3:00	16.5	18.3
7/4/02 8:00	10.3	11.3	7/6/02 6:00	31.8		7/8/02 4:00	15.5	15.4
7/4/02 9:00	5.9	5.6	7/6/02 7:00	35.1	33.8	7/8/02 5:00	2.9	
7/4/02 10:00	2.6	2.5	7/6/02 8:00	35.6	36.0	7/8/02 6:00	19.2	20.0
7/4/02 11:00	8.9	8.6	7/6/02 9:00	28.6	28.8	7/8/02 7:00	22.1	24.1
7/4/02 12:00	8.7	6.5	7/6/02 10:00	37.6	39.0	7/8/02 8:00	20.4	20.4
7/4/02 13:00	6.3	7.7	7/6/02 11:00	28.0	27.5	7/8/02 9:00	24.7	27.5
7/4/02 14:00	8.6	7.7	7/6/02 12:00	30.1	30.7	7/8/02 10:00	32.4	26.3
7/4/02 15:00	5.1	4.2	7/6/02 13:00	35.5	37.2	7/8/02 11:00	40.3	30.7
7/4/02 16:00	8.8	6.8	7/6/02 14:00	2.2	16.8	7/8/02 12:00	54.2	26.7
7/4/02 17:00	9.2	8.9	7/6/02 15:00	110.7	1819.8	7/8/02 13:00	57.4	31.0
7/4/02 18:00	10.6	13.0	7/6/02 16:00	76.6	195.3	7/8/02 14:00	63.7	21.6
7/4/02 19:00	10.3	12.4	7/6/02 17:00	18.0	18.0	7/8/02 15:00	200.2	32.5
7/4/02 20:00	15.7	11.3	7/6/02 18:00	8.5	5.8	7/8/02 16:00	179.6	20.2
7/4/02 21:00	119.8	122.6	7/6/02 19:00	22.2	23.6	7/8/02 17:00	77.8	21.3
7/4/02 22:00	99.8	474.6	7/6/02 20:00	18.2	16.9	7/8/02 18:00	39.6	19.5
7/4/02 23:00	27.6	31.9	7/6/02 21:00	16.9	18.0	7/8/02 19:00	133.7	43.1
7/5/02 0:00	23.9	24.4	7/6/02 22:00	15.8	17.3	7/8/02 20:00	34.4	29.4
7/5/02 1:00	13.7	18.6	7/6/02 23:00	9.7	8.7	7/8/02 21:00	37.8	40.6
7/5/02 2:00	13.3	15.0	7/7/02 0:00	9.5	10.6	7/8/02 22:00	38.2	37.8
7/5/02 3:00	14.6	14.9	7/7/02 1:00	12.4	13.8	7/8/02 23:00	41.0	42.7
7/5/02 4:00	10.6	11.9	7/7/02 2:00	14.2	17.0	7/9/02 0:00	35.9	37.1
7/5/02 5:00	15.5	15.2	7/7/02 3:00	13.4	13.0	7/9/02 1:00	35.1	35.7
7/5/02 6:00	13.6	13.6	7/7/02 4:00	13.2	14.1	7/9/02 2:00	36.4	36.6
7/5/02 7:00	18.8	19.8	7/7/02 5:00	9.8	10.5	7/9/02 3:00	34.7	35.9
7/5/02 8:00	16.4	16.1	7/7/02 6:00	14.3	16.4	7/9/02 4:00	36.0	35.9
7/5/02 9:00	8.2	9.3	7/7/02 7:00	19.1	16.5	7/9/02 5:00	35.9	35.0
7/5/02 10:00	13.1	14.5	7/7/02 8:00	12.2	13.7	7/9/02 6:00	32.6	39.6
7/5/02 11:00	26.2	24.4	7/7/02 9:00	14.8	14.0	7/9/02 7:00	52.6	57.2
7/5/02 12:00	11.7	14.0	7/7/02 10:00	14.6	17.0	7/9/02 8:00	38.6	45.9

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
7/9/02 9:00	38.2	34.3	7/11/02 7:00	18.5	21.9	7/13/02 5:00	11.4	12.2
7/9/02 10:00	63.1	37.0	7/11/02 8:00	18.1	18.0	7/13/02 6:00	26.0	12.0
7/9/02 11:00	31.4	29.2	7/11/02 9:00	12.7	33.8	7/13/02 7:00	43.5	53.4
7/9/02 12:00	29.0	39.9	7/11/02 10:00	17.9	10.6	7/13/02 8:00	38.9	37.8
7/9/02 13:00	32.4	21.2	7/11/02 11:00	16.7	14.6	7/13/02 9:00	8.6	7.5
7/9/02 14:00	56.0	40.1	7/11/02 12:00	8.9	11.2	7/13/02 10:00		
7/9/02 15:00	28.9	29.0	7/11/02 13:00	16.9	14.9	7/13/02 11:00	9.0	10.1
7/9/02 16:00	36.2	32.1	7/11/02 14:00	17.3	15.4	7/13/02 12:00	12.4	25.8
7/9/02 17:00	47.7	30.6	7/11/02 15:00	22.3	16.8	7/13/02 13:00	17.1	11.6
7/9/02 18:00	25.7	24.9	7/11/02 16:00	21.3	19.2	7/13/02 14:00	44.8	6.3
7/9/02 19:00	19.5	20.7	7/11/02 17:00	13.5	13.8	7/13/02 15:00	8.0	7.5
7/9/02 20:00	27.9	26.3	7/11/02 18:00	15.5	8.2	7/13/02 16:00	4.1	
7/9/02 21:00	35.7	39.0	7/11/02 19:00	118.4	159.1	7/13/02 17:00		
7/9/02 22:00	44.2	43.5	7/11/02 20:00	9.1	7.6	7/13/02 18:00	21.6	17.8
7/9/02 23:00	44.8	47.2	7/11/02 21:00	4.4	6.2	7/13/02 19:00	16.7	14.0
7/10/02 0:00	38.0	40.8	7/11/02 22:00	31.8	31.4	7/13/02 20:00	32.6	29.1
7/10/02 1:00	28.6	28.4	7/11/02 23:00	29.0	32.5	7/13/02 21:00	44.1	41.2
7/10/02 2:00	33.1	35.0	7/12/02 0:00	30.3	29.6	7/13/02 22:00	45.3	50.6
7/10/02 3:00	32.9	34.0	7/12/02 1:00	38.3	39.4	7/13/02 23:00	76.8	77.1
7/10/02 4:00	35.5	36.1	7/12/02 2:00	27.9	29.6	7/14/02 0:00	37.7	37.8
7/10/02 5:00	36.8	37.3	7/12/02 3:00	30.0	30.3	7/14/02 1:00	16.4	15.3
7/10/02 6:00	42.9	43.3	7/12/02 4:00	31.2	29.3	7/14/02 2:00	26.9	27.7
7/10/02 7:00	50.3	52.6	7/12/02 5:00	25.9	27.9	7/14/02 3:00	25.3	25.6
7/10/02 8:00	39.3	42.8	7/12/02 6:00	24.8	30.5	7/14/02 4:00	19.3	19.2
7/10/02 9:00	49.3	31.0	7/12/02 7:00	32.9	37.4	7/14/02 5:00	18.9	19.6
7/10/02 10:00	30.9	21.7	7/12/02 8:00	32.2	21.0	7/14/02 6:00	24.0	23.6
7/10/02 11:00	23.5	30.4	7/12/02 9:00	26.3	22.8	7/14/02 7:00	20.6	21.2
7/10/02 12:00	25.0	40.4	7/12/02 10:00	13.8	9.6	7/14/02 8:00	21.5	22.6
7/10/02 13:00	23.0	22.5	7/12/02 11:00	47.3	25.9	7/14/02 9:00	13.8	11.2
7/10/02 14:00	39.8	19.6	7/12/02 12:00	41.0	30.7	7/14/02 10:00	9.0	5.3
7/10/02 15:00	10.6	15.0	7/12/02 13:00	24.5	18.9	7/14/02 11:00		
7/10/02 16:00	12.8	13.3	7/12/02 14:00	28.8	41.4	7/14/02 12:00		
7/10/02 17:00	18.7	13.3	7/12/02 15:00	16.6	9.2	7/14/02 13:00	12.2	11.1
7/10/02 18:00	43.5	39.6	7/12/02 16:00	21.0	20.8	7/14/02 14:00	12.7	11.3
7/10/02 19:00	29.5	29.6	7/12/02 17:00	17.5	13.9	7/14/02 15:00	20.7	14.9
7/10/02 20:00	28.7	27.6	7/12/02 18:00	20.2	19.5	7/14/02 16:00	32.7	15.6
7/10/02 21:00	39.6	42.0	7/12/02 19:00	30.9	23.8	7/14/02 17:00	22.6	18.2
7/10/02 22:00	35.2	33.4	7/12/02 20:00	46.5	28.6	7/14/02 18:00	24.7	17.3
7/10/02 23:00	30.8	31.6	7/12/02 21:00	23.4	25.2	7/14/02 19:00	20.7	19.3
7/11/02 0:00	26.7	26.5	7/12/02 22:00	27.5	29.8	7/14/02 20:00	24.6	21.0
7/11/02 1:00	25.3	27.1	7/12/02 23:00	18.5	18.8	7/14/02 21:00	32.3	34.9
7/11/02 2:00	29.2	30.2	7/13/02 0:00	22.0	43.9	7/14/02 22:00	24.9	26.0
7/11/02 3:00	24.7	26.1	7/13/02 1:00	23.8	37.9	7/14/02 23:00	125.4	80.8
7/11/02 4:00	12.8	13.0	7/13/02 2:00	21.0	22.0	7/15/02 0:00	37.4	31.1
7/11/02 5:00	7.3	7.0	7/13/02 3:00	14.9	15.0	7/15/02 1:00	17.7	15.8
7/11/02 6:00	16.7	16.0	7/13/02 4:00	13.0	13.1	7/15/02 2:00	24.2	24.9

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
7/15/02 3:00	18.4	19.0	7/17/02 1:00	13.5	14.1	7/18/02 23:00	7.7	7.2
7/15/02 4:00	11.6	11.2	7/17/02 2:00	18.7	20.9	7/19/02 0:00	14.1	14.2
7/15/02 5:00	15.8	13.8	7/17/02 3:00	25.8	27.0	7/19/02 1:00	14.9	14.7
7/15/02 6:00	17.1	15.8	7/17/02 4:00	33.9	37.9	7/19/02 2:00	8.3	8.8
7/15/02 7:00	16.8	17.8	7/17/02 5:00	15.9	16.0	7/19/02 3:00	15.0	14.6
7/15/02 8:00	19.4	21.2	7/17/02 6:00	34.2	23.8	7/19/02 4:00	23.6	24.1
7/15/02 9:00	27.5	24.6	7/17/02 7:00	38.2	36.0	7/19/02 5:00	19.9	20.3
7/15/02 10:00	16.9	14.9	7/17/02 8:00	21.8	23.5	7/19/02 6:00	19.5	18.0
7/15/02 11:00			7/17/02 9:00	16.0	13.7	7/19/02 7:00	33.8	34.1
7/15/02 12:00	14.1	12.4	7/17/02 10:00	65.1	18.9	7/19/02 8:00	36.4	34.8
7/15/02 13:00	6.5	3.3	7/17/02 11:00	311.3	7.7	7/19/02 9:00	22.8	30.9
7/15/02 14:00	13.1	9.2	7/17/02 12:00	63.7		7/19/02 10:00	120.3	36.3
7/15/02 15:00	21.1	18.7	7/17/02 13:00	38.7	34.7	7/19/02 11:00	137.4	154.6
7/15/02 16:00	14.8	10.9	7/17/02 14:00	65.7	7.8	7/19/02 12:00	132.8	117.3
7/15/02 17:00	12.2	10.0	7/17/02 15:00	17.4	13.9	7/19/02 13:00	22.7	18.7
7/15/02 18:00	15.9	13.0	7/17/02 16:00	14.0	16.0	7/19/02 14:00	123.4	91.5
7/15/02 19:00	16.5	14.7	7/17/02 17:00	20.7	17.5	7/19/02 15:00	124.5	22.9
7/15/02 20:00	18.7	16.9	7/17/02 18:00	11.3	9.9	7/19/02 16:00	64.0	148.0
7/15/02 21:00	27.8	31.3	7/17/02 19:00	8.1	9.4	7/19/02 17:00	63.8	34.1
7/15/02 22:00	27.1	23.7	7/17/02 20:00	44.0	20.8	7/19/02 18:00	501.8	468.0
7/15/02 23:00	28.6	27.2	7/17/02 21:00	18.4	19.0	7/19/02 19:00	19.2	21.9
7/16/02 0:00	31.6	33.6	7/17/02 22:00	93.7	79.7	7/19/02 20:00	16.0	14.8
7/16/02 1:00	19.8	22.1	7/17/02 23:00	28.0	27.3	7/19/02 21:00	16.0	18.6
7/16/02 2:00	15.7	17.0	7/18/02 0:00	16.2	15.5	7/19/02 22:00	24.4	25.5
7/16/02 3:00	28.7	27.5	7/18/02 1:00	24.2	25.0	7/19/02 23:00	27.4	39.7
7/16/02 4:00	17.4	20.9	7/18/02 2:00	17.4	18.0	7/20/02 0:00	28.8	29.2
7/16/02 5:00	25.0	24.7	7/18/02 3:00	24.0	24.8	7/20/02 1:00	26.4	26.8
7/16/02 6:00	21.6	26.0	7/18/02 4:00	28.8	29.1	7/20/02 2:00	29.2	28.2
7/16/02 7:00	27.5	34.6	7/18/02 5:00	21.1	21.3	7/20/02 3:00	27.5	27.9
7/16/02 8:00	28.9	30.3	7/18/02 6:00	15.9	15.4	7/20/02 4:00	23.4	23.6
7/16/02 9:00	14.3	18.7	7/18/02 7:00	23.3	26.1	7/20/02 5:00	33.9	34.0
7/16/02 10:00		5.8	7/18/02 8:00	28.2	30.0	7/20/02 6:00	38.5	34.9
7/16/02 11:00	4.6		7/18/02 9:00	36.6	28.7	7/20/02 7:00	40.7	45.1
7/16/02 12:00			7/18/02 10:00	83.9	27.4	7/20/02 8:00	35.6	43.3
7/16/02 13:00		11.9	7/18/02 11:00	48.5	60.3	7/20/02 9:00	30.7	33.1
7/16/02 14:00	17.6	15.0	7/18/02 12:00	62.2	100.3	7/20/02 10:00	23.7	32.1
7/16/02 15:00	11.8	9.4	7/18/02 13:00	15.1	10.4	7/20/02 11:00	15.6	15.3
7/16/02 16:00	20.1	14.0	7/18/02 14:00	30.0	26.7	7/20/02 12:00	19.3	47.9
7/16/02 17:00	12.0	11.7	7/18/02 15:00	83.7	16.9	7/20/02 13:00	23.6	21.6
7/16/02 18:00	18.6	18.9	7/18/02 16:00	68.4	17.8	7/20/02 14:00	12.6	14.8
7/16/02 19:00	16.2	14.4	7/18/02 17:00	66.9	7.5	7/20/02 15:00	5.6	5.7
7/16/02 20:00	24.9	23.9	7/18/02 18:00	540.2	446.2	7/20/02 16:00	21.4	27.1
7/16/02 21:00	44.0	34.9	7/18/02 19:00	105.2	160.5	7/20/02 17:00	8.0	13.6
7/16/02 22:00	25.8	27.0	7/18/02 20:00	0.5	0.1	7/20/02 18:00	19.8	22.1
7/16/02 23:00	23.4	18.0	7/18/02 21:00	6.4	6.2	7/20/02 19:00		2.9
7/17/02 0:00	20.8	21.7	7/18/02 22:00	14.8	16.0	7/20/02 20:00	34.5	52.3

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
7/20/02 21:00	20.7	23.3	7/22/02 19:00	27.5	30.3	7/24/02 17:00	34.4	27.9
7/20/02 22:00	31.1	31.7	7/22/02 20:00	15.2	15.2	7/24/02 18:00	2.6	5.1
7/20/02 23:00	32.4	33.0	7/22/02 21:00	32.9	36.8	7/24/02 19:00	10.9	10.3
7/21/02 0:00	40.2	40.8	7/22/02 22:00	34.8	34.0	7/24/02 20:00	19.3	23.8
7/21/02 1:00	40.3	41.0	7/22/02 23:00	19.6	21.9	7/24/02 21:00	23.1	17.3
7/21/02 2:00	36.3	36.7	7/23/02 0:00	14.5	16.7	7/24/02 22:00	21.1	19.2
7/21/02 3:00	29.7	29.7	7/23/02 1:00	21.3	20.9	7/24/02 23:00	20.8	20.6
7/21/02 4:00	30.5	31.5	7/23/02 2:00	36.6	38.5	7/25/02 0:00	17.1	18.2
7/21/02 5:00	31.8	32.7	7/23/02 3:00	23.1	23.6	7/25/02 1:00	22.2	23.5
7/21/02 6:00	30.6	31.1	7/23/02 4:00	21.9	22.1	7/25/02 2:00	25.0	26.3
7/21/02 7:00	26.4	27.5	7/23/02 5:00	24.1	24.5	7/25/02 3:00	23.5	24.5
7/21/02 8:00	21.5	22.0	7/23/02 6:00	19.8	20.8	7/25/02 4:00	21.9	23.0
7/21/02 9:00	25.1	25.8	7/23/02 7:00	50.6	52.6	7/25/02 5:00	22.1	22.8
7/21/02 10:00	20.6	20.2	7/23/02 8:00	26.8	31.9	7/25/02 6:00	24.6	22.2
7/21/02 11:00	7.9	10.0	7/23/02 9:00	21.0	37.2	7/25/02 7:00	36.2	88.3
7/21/02 12:00	12.0	11.4	7/23/02 10:00	37.1	6.7	7/25/02 8:00	43.9	43.5
7/21/02 13:00	12.4	13.0	7/23/02 11:00	15.0	11.4	7/25/02 9:00	36.9	65.2
7/21/02 14:00	4.9	4.0	7/23/02 12:00	19.6	6.4	7/25/02 10:00	101.3	100.2
7/21/02 15:00		0.5	7/23/02 13:00	17.6	5.8	7/25/02 11:00	69.4	11.6
7/21/02 16:00	21.1	30.0	7/23/02 14:00	17.7	8.5	7/25/02 12:00	5.7	31.0
7/21/02 17:00	22.3	26.1	7/23/02 15:00	40.2		7/25/02 13:00	9.9	7.1
7/21/02 18:00	8.3	7.2	7/23/02 16:00	52.3	26.7	7/25/02 14:00	80.2	12.5
7/21/02 19:00	29.6	29.2	7/23/02 17:00	8.3		7/25/02 15:00	56.7	10.6
7/21/02 20:00	17.5	16.9	7/23/02 18:00	16.0	15.2	7/25/02 16:00	78.7	15.8
7/21/02 21:00	22.9	21.8	7/23/02 19:00	14.5	14.6	7/25/02 17:00	14.5	16.1
7/21/02 22:00	16.1	16.4	7/23/02 20:00	24.2	20.4	7/25/02 18:00	8.4	10.8
7/21/02 23:00	38.7	40.9	7/23/02 21:00	21.5	15.6	7/25/02 19:00	19.5	16.8
7/22/02 0:00	36.7	38.0	7/23/02 22:00	15.2	14.8	7/25/02 20:00	17.3	17.2
7/22/02 1:00	33.8	34.6	7/23/02 23:00	20.6	22.5	7/25/02 21:00	34.6	39.2
7/22/02 2:00	33.9	35.8	7/24/02 0:00	19.5	23.7	7/25/02 22:00	16.0	18.1
7/22/02 3:00	27.6	27.4	7/24/02 1:00	20.1	21.6	7/25/02 23:00	14.0	12.3
7/22/02 4:00	21.0	21.3	7/24/02 2:00	23.7	23.9	7/26/02 0:00	20.3	20.7
7/22/02 5:00	22.2	21.3	7/24/02 3:00	28.3	25.5	7/26/02 1:00	15.2	13.4
7/22/02 6:00	21.8	21.1	7/24/02 4:00	21.0	20.7	7/26/02 2:00	33.6	33.5
7/22/02 7:00	26.9	28.9	7/24/02 5:00	21.6	22.7	7/26/02 3:00	38.5	39.8
7/22/02 8:00	53.7	35.5	7/24/02 6:00	26.5	27.3	7/26/02 4:00	30.1	31.5
7/22/02 9:00	27.0	25.5	7/24/02 7:00	44.1	38.2	7/26/02 5:00	32.0	32.5
7/22/02 10:00	64.0	78.8	7/24/02 8:00	46.5	59.9	7/26/02 6:00	43.3	38.8
7/22/02 11:00	24.6	6.3	7/24/02 9:00	21.4	38.4	7/26/02 7:00	80.5	92.8
7/22/02 12:00			7/24/02 10:00	17.6	24.2	7/26/02 8:00	39.0	37.8
7/22/02 13:00	3.5	5.8	7/24/02 11:00	68.9	25.1	7/26/02 9:00	16.7	26.6
7/22/02 14:00	12.0	2.3	7/24/02 12:00	9.5		7/26/02 10:00	14.9	15.5
7/22/02 15:00	42.8	6.2	7/24/02 13:00			7/26/02 11:00	21.1	19.5
7/22/02 16:00	67.0	22.6	7/24/02 14:00	106.5	54.2	7/26/02 12:00	19.3	15.6
7/22/02 17:00	22.3	18.0	7/24/02 15:00	114.1	36.0	7/26/02 13:00	10.3	13.9
7/22/02 18:00	31.6	31.1	7/24/02 16:00	80.1	86.8	7/26/02 14:00	21.2	18.7

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
7/26/02 15:00	22.3	17.2	7/28/02 13:00	25.5	10.7	7/30/02 11:00	18.5	14.0
7/26/02 16:00	19.8	10.1	7/28/02 14:00	5.9	6.4	7/30/02 12:00	33.2	21.0
7/26/02 17:00	17.2	18.2	7/28/02 15:00		1.0	7/30/02 13:00	19.2	17.0
7/26/02 18:00	11.9	14.3	7/28/02 16:00	7.5	7.1	7/30/02 14:00	19.7	13.6
7/26/02 19:00	19.8	19.0	7/28/02 17:00	2.4	1.8	7/30/02 15:00	12.4	28.9
7/26/02 20:00	40.7	34.5	7/28/02 18:00	77.0	25.4	7/30/02 16:00	12.7	12.1
7/26/02 21:00	26.9	26.1	7/28/02 19:00	22.5	20.5	7/30/02 17:00	14.2	18.9
7/26/02 22:00	83.5	61.2	7/28/02 20:00	30.2	29.7	7/30/02 18:00	17.2	14.6
7/26/02 23:00	29.3	28.7	7/28/02 21:00	34.2	45.6	7/30/02 19:00	22.2	19.1
7/27/02 0:00	34.9	47.4	7/28/02 22:00	16.7	11.8	7/30/02 20:00	22.4	22.5
7/27/02 1:00	40.5	36.9	7/28/02 23:00	28.9	27.8	7/30/02 21:00	21.9	20.9
7/27/02 2:00	38.1	39.4	7/29/02 0:00	114.0	80.6	7/30/02 22:00	21.0	22.3
7/27/02 3:00	40.7	42.0	7/29/02 1:00	58.6	60.7	7/30/02 23:00	19.0	18.6
7/27/02 4:00	45.7	45.7	7/29/02 2:00	29.3	29.6	7/31/02 0:00	25.8	24.6
7/27/02 5:00	30.0	29.6	7/29/02 3:00	12.4	13.1	7/31/02 1:00	13.0	12.9
7/27/02 6:00	30.3	27.2	7/29/02 4:00	19.6	19.9	7/31/02 2:00	15.4	15.4
7/27/02 7:00	33.3	34.8	7/29/02 5:00	10.6	10.1	7/31/02 3:00	12.6	12.3
7/27/02 8:00	28.2	29.7	7/29/02 6:00			7/31/02 4:00	14.0	14.3
7/27/02 9:00	19.2	21.5	7/29/02 7:00	17.3	19.4	7/31/02 5:00	11.6	11.4
7/27/02 10:00	4.0	4.2	7/29/02 8:00	18.8	18.2	7/31/02 6:00	17.8	15.5
7/27/02 11:00	13.2	17.7	7/29/02 9:00	19.9	20.8	7/31/02 7:00	18.5	24.1
7/27/02 12:00	17.1	17.6	7/29/02 10:00		23.4	7/31/02 8:00	27.3	25.7
7/27/02 13:00	10.2	8.7	7/29/02 11:00	69.9		7/31/02 9:00	23.0	21.2
7/27/02 14:00			7/29/02 12:00	96.2	90.4	7/31/02 10:00	28.5	20.3
7/27/02 15:00	39.4	15.6	7/29/02 13:00	430.2	445.3	7/31/02 11:00	20.5	27.3
7/27/02 16:00	6.8	7.3	7/29/02 14:00	162.3	157.1	7/31/02 12:00	12.0	18.3
7/27/02 17:00	28.0	25.8	7/29/02 15:00	155.3	158.9	7/31/02 13:00	11.7	10.1
7/27/02 18:00	77.9	158.8	7/29/02 16:00	127.7	135.2	7/31/02 14:00	21.7	10.9
7/27/02 19:00	44.3	26.3	7/29/02 17:00	66.3	65.7	7/31/02 15:00	13.4	13.9
7/27/02 20:00	97.2	128.3	7/29/02 18:00	29.2	28.5	7/31/02 16:00	33.8	13.1
7/27/02 21:00			7/29/02 19:00	29.6	25.1	7/31/02 17:00	12.8	12.7
7/27/02 22:00	36.8	32.3	7/29/02 20:00	19.8	19.5	7/31/02 18:00	13.7	12.0
7/27/02 23:00	30.5	27.4	7/29/02 21:00	17.6	18.0	7/31/02 19:00	9.9	13.0
7/28/02 0:00	99.6	57.7	7/29/02 22:00	19.1	19.5	7/31/02 20:00	18.2	18.9
7/28/02 1:00	58.9	25.7	7/29/02 23:00	17.2	16.1	7/31/02 21:00	29.3	28.0
7/28/02 2:00	19.1	14.9	7/30/02 0:00	17.4	17.4	7/31/02 22:00	12.6	11.3
7/28/02 3:00	40.1	34.4	7/30/02 1:00	11.8	11.8	7/31/02 23:00	16.3	15.4
7/28/02 4:00	4.0	5.4	7/30/02 2:00	10.6	10.2	8/1/02 0:00	44.3	43.1
7/28/02 5:00	15.0	14.9	7/30/02 3:00	10.1	10.2	8/1/02 1:00	48.9	48.0
7/28/02 6:00	26.7	27.3	7/30/02 4:00	9.5	9.5	8/1/02 2:00	41.9	41.8
7/28/02 7:00	21.8	20.7	7/30/02 5:00	11.8	12.1	8/1/02 3:00	36.2	36.1
7/28/02 8:00	24.8	31.3	7/30/02 6:00	12.8	11.6	8/1/02 4:00	34.4	33.4
7/28/02 9:00		11.2	7/30/02 7:00	10.5	9.7	8/1/02 5:00	33.4	33.0
7/28/02 10:00			7/30/02 8:00	17.6	15.1	8/1/02 6:00	33.0	32.3
7/28/02 11:00	4.7		7/30/02 9:00	13.8	15.7	8/1/02 7:00	39.5	40.6
7/28/02 12:00	26.0	38.5	7/30/02 10:00	13.3	9.9	8/1/02 8:00	49.1	49.7

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
8/1/02 9:00	44.7	44.7	8/3/02 7:00	17.2	17.3	8/5/02 5:00	32.6	32.1
8/1/02 10:00	35.9	36.1	8/3/02 8:00	17.2	17.3	8/5/02 6:00	34.1	33.9
8/1/02 11:00	28.3	41.9	8/3/02 9:00	16.0	15.7	8/5/02 7:00	37.0	37.2
8/1/02 12:00	24.3	24.9	8/3/02 10:00	15.9	15.0	8/5/02 8:00	37.2	36.0
8/1/02 13:00	17.0	18.2	8/3/02 11:00	15.5	16.1	8/5/02 9:00	43.9	34.9
8/1/02 14:00	17.6	15.1	8/3/02 12:00	16.0	17.1	8/5/02 10:00	40.4	36.1
8/1/02 15:00	17.9	15.9	8/3/02 13:00	18.0	13.9	8/5/02 11:00	40.9	31.4
8/1/02 16:00	17.6	16.0	8/3/02 14:00	16.3	14.2	8/5/02 12:00	82.5	25.6
8/1/02 17:00	17.1	17.2	8/3/02 15:00	11.0	10.5	8/5/02 13:00	40.4	24.5
8/1/02 18:00	18.5	18.0	8/3/02 16:00	14.8	16.7	8/5/02 14:00	59.5	26.2
8/1/02 19:00	30.4	36.2	8/3/02 17:00	11.8	12.0	8/5/02 15:00	109.2	20.2
8/1/02 20:00	41.1	37.3	8/3/02 18:00	13.4	13.6	8/5/02 16:00	57.2	22.5
8/1/02 21:00	27.8	26.1	8/3/02 19:00	10.5	13.3	8/5/02 17:00	41.7	26.1
8/1/02 22:00	33.8	33.1	8/3/02 20:00	16.5	14.8	8/5/02 18:00	27.5	23.1
8/1/02 23:00	36.8	30.6	8/3/02 21:00	18.4	17.3	8/5/02 19:00	26.7	25.5
8/2/02 0:00	17.0	16.9	8/3/02 22:00	19.1	18.0	8/5/02 20:00	31.1	32.1
8/2/02 1:00	16.9	16.1	8/3/02 23:00	15.7	15.4	8/5/02 21:00	38.9	37.8
8/2/02 2:00	22.9	22.5	8/4/02 0:00	17.3	16.4	8/5/02 22:00	124.1	107.9
8/2/02 3:00	20.7	20.5	8/4/02 1:00	21.7	19.9	8/5/02 23:00	66.1	66.2
8/2/02 4:00	19.7	19.1	8/4/02 2:00	20.9	21.0	8/6/02 0:00	40.9	44.8
8/2/02 5:00	20.1	20.6	8/4/02 3:00	22.5	21.2	8/6/02 1:00	24.0	24.4
8/2/02 6:00	21.5	21.8	8/4/02 4:00	28.4	21.2	8/6/02 2:00	17.8	17.8
8/2/02 7:00	19.4	19.1	8/4/02 5:00	21.1	20.9	8/6/02 3:00	19.9	18.9
8/2/02 8:00	23.3	22.5	8/4/02 6:00	20.4	20.6	8/6/02 4:00	22.7	22.4
8/2/02 9:00	17.5	17.2	8/4/02 7:00	19.8	20.4	8/6/02 5:00	22.2	21.8
8/2/02 10:00	1.8	2.7	8/4/02 8:00	22.6	21.8	8/6/02 6:00	38.4	35.6
8/2/02 11:00	5.7	3.3	8/4/02 9:00	24.6	25.2	8/6/02 7:00	38.4	70.8
8/2/02 12:00	7.6	7.2	8/4/02 10:00	25.9	30.1	8/6/02 8:00	42.6	41.5
8/2/02 13:00	9.6	10.5	8/4/02 11:00	20.1	20.6	8/6/02 9:00	39.7	30.4
8/2/02 14:00	12.9	22.0	8/4/02 12:00	17.9	18.2	8/6/02 10:00	34.4	26.1
8/2/02 15:00	16.3	19.8	8/4/02 13:00	16.5	16.3	8/6/02 11:00	55.0	22.1
8/2/02 16:00	23.7	22.3	8/4/02 14:00	15.3	15.3	8/6/02 12:00	56.3	19.9
8/2/02 17:00	21.6	20.8	8/4/02 15:00	16.5	15.6	8/6/02 13:00	37.0	23.8
8/2/02 18:00	23.2	22.5	8/4/02 16:00	17.7	16.1	8/6/02 14:00	94.3	21.1
8/2/02 19:00	32.3	31.0	8/4/02 17:00	13.6	12.7	8/6/02 15:00	75.6	22.6
8/2/02 20:00	34.5	33.6	8/4/02 18:00	22.7	19.5	8/6/02 16:00	49.5	25.1
8/2/02 21:00	30.0	30.2	8/4/02 19:00	23.6	23.3	8/6/02 17:00	66.1	24.4
8/2/02 22:00	29.0	29.1	8/4/02 20:00	29.2	30.0	8/6/02 18:00	45.0	26.0
8/2/02 23:00	24.3	24.8	8/4/02 21:00	30.3	30.0	8/6/02 19:00	69.3	33.3
8/3/02 0:00	35.8	39.1	8/4/02 22:00	29.4	28.0	8/6/02 20:00	24.5	24.7
8/3/02 1:00	26.7	26.2	8/4/02 23:00	29.8	30.1	8/6/02 21:00	32.3	33.2
8/3/02 2:00	21.4	20.5	8/5/02 0:00	39.2	39.3	8/6/02 22:00	29.2	29.7
8/3/02 3:00	19.8	19.3	8/5/02 1:00	35.1	35.4	8/6/02 23:00	29.1	27.2
8/3/02 4:00	18.5	18.4	8/5/02 2:00	30.3	30.7	8/7/02 0:00	26.1	27.8
8/3/02 5:00	17.8	17.3	8/5/02 3:00	30.4	30.7	8/7/02 1:00	22.7	24.0
8/3/02 6:00	17.0	16.6	8/5/02 4:00	31.2	31.5	8/7/02 2:00	23.1	24.0

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
8/7/02 3:00	23.5	23.1	8/9/02 1:00	60.3	63.3	8/10/02 23:00	42.2	39.0
8/7/02 4:00	36.9	35.4	8/9/02 2:00	63.2	64.8	8/11/02 0:00	23.9	24.6
8/7/02 5:00	38.1	37.6	8/9/02 3:00	43.9	45.0	8/11/02 1:00	19.6	19.8
8/7/02 6:00	33.6	32.6	8/9/02 4:00	35.1	33.7	8/11/02 2:00	13.5	13.7
8/7/02 7:00	35.3	31.5	8/9/02 5:00	31.9	31.8	8/11/02 3:00	18.3	20.9
8/7/02 8:00	44.2	34.6	8/9/02 6:00	32.8	32.5	8/11/02 4:00	18.7	17.7
8/7/02 9:00	57.9	35.5	8/9/02 7:00	38.6	45.7	8/11/02 5:00	19.5	19.3
8/7/02 10:00	58.4	32.3	8/9/02 8:00	37.4	39.4	8/11/02 6:00	22.2	22.2
8/7/02 11:00	45.9	23.2	8/9/02 9:00	66.0	39.6	8/11/02 7:00	25.4	25.3
8/7/02 12:00	35.5	27.9	8/9/02 10:00	51.2	52.0	8/11/02 8:00	28.1	26.8
8/7/02 13:00	196.4	28.2	8/9/02 11:00	104.6	80.6	8/11/02 9:00	19.6	19.5
8/7/02 14:00	42.7	19.1	8/9/02 12:00	132.9	45.7	8/11/02 10:00	16.7	16.6
8/7/02 15:00	36.6	74.6	8/9/02 13:00	81.9	22.8	8/11/02 11:00	13.0	14.0
8/7/02 16:00	22.1	19.6	8/9/02 14:00	76.2	28.8	8/11/02 12:00	14.4	13.7
8/7/02 17:00	28.2	30.1	8/9/02 15:00	108.1	28.0	8/11/02 13:00	18.7	14.6
8/7/02 18:00	24.8	20.6	8/9/02 16:00	87.2	27.8	8/11/02 14:00	17.6	11.7
8/7/02 19:00	35.0	30.9	8/9/02 17:00	134.1	29.3	8/11/02 15:00	16.1	24.0
8/7/02 20:00	36.6	35.7	8/9/02 18:00	38.6	32.7	8/11/02 16:00	15.9	17.4
8/7/02 21:00	47.7	44.9	8/9/02 19:00	30.0	30.2	8/11/02 17:00	22.0	15.8
8/7/02 22:00	39.1	33.5	8/9/02 20:00	35.8	35.5	8/11/02 18:00	20.6	15.2
8/7/02 23:00	28.2	27.1	8/9/02 21:00	37.2	38.8	8/11/02 19:00	15.8	13.3
8/8/02 0:00	24.0	22.6	8/9/02 22:00	31.6	31.8	8/11/02 20:00	13.1	14.4
8/8/02 1:00	24.9	24.2	8/9/02 23:00	32.8	32.3	8/11/02 21:00	21.6	18.0
8/8/02 2:00	38.1	37.3	8/10/02 0:00	31.9	31.7	8/11/02 22:00	18.9	16.3
8/8/02 3:00	37.1	37.3	8/10/02 1:00	43.9	37.1	8/11/02 23:00	14.1	17.2
8/8/02 4:00	35.6	35.3	8/10/02 2:00	32.5	28.4	8/12/02 0:00	18.2	19.9
8/8/02 5:00	33.3	34.0	8/10/02 3:00	23.3	23.0	8/12/02 1:00	21.8	22.7
8/8/02 6:00	40.1	40.8	8/10/02 4:00	21.6	21.9	8/12/02 2:00	17.7	17.5
8/8/02 7:00	50.2	48.2	8/10/02 5:00	15.5	17.1	8/12/02 3:00	16.9	16.7
8/8/02 8:00	51.8	54.8	8/10/02 6:00	17.0	17.0	8/12/02 4:00	17.8	17.9
8/8/02 9:00	39.9	37.1	8/10/02 7:00	20.9	20.3	8/12/02 5:00	18.1	17.6
8/8/02 10:00	37.8	33.5	8/10/02 8:00	23.8	23.3	8/12/02 6:00	21.1	20.5
8/8/02 11:00	36.7	23.3	8/10/02 9:00	26.0	22.8	8/12/02 7:00	35.6	33.9
8/8/02 12:00	51.9	35.6	8/10/02 10:00	72.3	112.0	8/12/02 8:00	36.0	30.8
8/8/02 13:00	51.5	24.5	8/10/02 11:00	146.0	326.1	8/12/02 9:00	43.6	37.8
8/8/02 14:00	136.6	26.5	8/10/02 12:00	63.9	132.4	8/12/02 10:00	49.8	59.5
8/8/02 15:00	717.3	29.6	8/10/02 13:00	31.6	34.2	8/12/02 11:00	47.9	29.6
8/8/02 16:00	78.1	22.5	8/10/02 14:00	21.8	22.1	8/12/02 12:00	57.8	41.8
8/8/02 17:00	51.4	22.6	8/10/02 15:00	22.3	21.7	8/12/02 13:00	25.5	6.8
8/8/02 18:00	64.8	27.4	8/10/02 16:00	23.5	22.7	8/12/02 14:00	79.5	12.9
8/8/02 19:00	32.4	29.9	8/10/02 17:00	30.4	28.1	8/12/02 15:00	31.4	9.9
8/8/02 20:00	34.4	32.0	8/10/02 18:00	30.6	32.6	8/12/02 16:00	126.1	51.0
8/8/02 21:00	45.3	50.8	8/10/02 19:00	27.9	24.8	8/12/02 17:00	71.2	17.9
8/8/02 22:00	35.6	38.8	8/10/02 20:00	33.6	30.7	8/12/02 18:00	46.5	56.4
8/8/02 23:00	53.0	46.1	8/10/02 21:00	52.2	61.5	8/12/02 19:00	38.3	19.5
8/9/02 0:00	87.7	92.4	8/10/02 22:00	176.0	165.1	8/12/02 20:00	33.3	20.5

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
8/12/02 21:00	20.6	19.4	8/14/02 19:00	18.0	39.6	8/16/02 17:00	46.4	48.1
8/12/02 22:00	27.3	24.8	8/14/02 20:00	24.0	44.3	8/16/02 18:00	52.9	56.3
8/12/02 23:00	50.2	28.1	8/14/02 21:00	19.1	22.0	8/16/02 19:00	64.1	59.9
8/13/02 0:00	205.5	43.3	8/14/02 22:00	17.9	19.1	8/16/02 20:00	97.8	52.9
8/13/02 1:00	49.6	35.2	8/14/02 23:00	29.3	26.8	8/16/02 21:00	49.7	44.5
8/13/02 2:00	30.9	27.7	8/15/02 0:00	19.5	19.5	8/16/02 22:00	51.6	31.1
8/13/02 3:00	23.5	23.3	8/15/02 1:00	20.4	20.9	8/16/02 23:00	49.7	45.2
8/13/02 4:00	19.0	19.1	8/15/02 2:00	26.1	27.4	8/17/02 0:00	28.7	29.3
8/13/02 5:00	19.0	18.9	8/15/02 3:00	30.4	28.9	8/17/02 1:00	27.7	28.6
8/13/02 6:00	22.3	30.0	8/15/02 4:00	29.8	28.7	8/17/02 2:00	23.3	23.9
8/13/02 7:00	33.1	36.9	8/15/02 5:00	33.3	32.9	8/17/02 3:00	23.3	24.0
8/13/02 8:00	31.8	22.0	8/15/02 6:00	34.2	32.6	8/17/02 4:00	22.4	22.5
8/13/02 9:00	24.0	26.3	8/15/02 7:00	35.5	32.4	8/17/02 5:00	22.9	22.5
8/13/02 10:00	27.3	27.3	8/15/02 8:00	37.0	45.6	8/17/02 6:00	21.5	21.7
8/13/02 11:00	31.7	36.7	8/15/02 9:00	61.1	52.7	8/17/02 7:00	25.1	25.2
8/13/02 12:00	84.7	626.6	8/15/02 10:00	37.7	58.9	8/17/02 8:00	34.3	34.4
8/13/02 13:00	66.0	232.4	8/15/02 11:00	39.1	36.4	8/17/02 9:00	34.5	36.0
8/13/02 14:00	51.7	83.7	8/15/02 12:00	56.5	39.8	8/17/02 10:00	23.3	23.8
8/13/02 15:00	63.3	58.4	8/15/02 13:00	55.4	25.6	8/17/02 11:00	22.1	22.8
8/13/02 16:00	46.0	74.0	8/15/02 14:00	107.6	37.3	8/17/02 12:00	14.0	19.1
8/13/02 17:00	49.7	64.9	8/15/02 15:00	22.4	34.1	8/17/02 13:00	18.5	20.9
8/13/02 18:00	49.3	57.2	8/15/02 16:00	52.5	81.7	8/17/02 14:00	23.6	21.2
8/13/02 19:00	43.4	49.2	8/15/02 17:00	34.1	42.0	8/17/02 15:00	24.4	76.5
8/13/02 20:00	52.4	56.0	8/15/02 18:00	34.8	57.1	8/17/02 16:00	34.3	42.8
8/13/02 21:00	38.8	39.7	8/15/02 19:00	52.9	49.8	8/17/02 17:00	27.0	25.9
8/13/02 22:00	79.7	77.3	8/15/02 20:00	83.6	74.1	8/17/02 18:00	32.7	31.4
8/13/02 23:00	32.2	38.2	8/15/02 21:00	61.5	71.5	8/17/02 19:00	41.2	40.5
8/14/02 0:00	21.2	25.1	8/15/02 22:00	36.6	41.9	8/17/02 20:00	32.0	32.3
8/14/02 1:00	19.8	21.0	8/15/02 23:00	80.3	52.5	8/17/02 21:00	39.5	40.0
8/14/02 2:00	20.0	21.5	8/16/02 0:00	36.5	38.1	8/17/02 22:00	45.4	44.5
8/14/02 3:00	19.0	21.0	8/16/02 1:00	36.5	33.5	8/17/02 23:00	31.7	32.1
8/14/02 4:00	17.2	18.1	8/16/02 2:00	30.9	32.1	8/18/02 0:00	44.4	53.8
8/14/02 5:00	19.6	20.0	8/16/02 3:00	31.4	30.4	8/18/02 1:00	34.4	35.7
8/14/02 6:00	16.6	16.7	8/16/02 4:00	34.1	34.1	8/18/02 2:00	26.4	27.3
8/14/02 7:00	18.2	17.3	8/16/02 5:00	32.2	32.2	8/18/02 3:00	23.5	23.9
8/14/02 8:00	25.9	26.4	8/16/02 6:00	25.0	26.2	8/18/02 4:00	19.4	20.3
8/14/02 9:00	17.8	16.6	8/16/02 7:00	26.4	27.3	8/18/02 5:00	18.2	19.4
8/14/02 10:00	41.2	23.9	8/16/02 8:00	30.0	31.6	8/18/02 6:00	22.9	23.5
8/14/02 11:00	29.7	26.6	8/16/02 9:00	96.5	53.4	8/18/02 7:00	23.4	22.9
8/14/02 12:00	41.3	24.6	8/16/02 10:00	54.5	39.7	8/18/02 8:00	17.7	25.2
8/14/02 13:00	26.0	25.0	8/16/02 11:00	55.5	49.1	8/18/02 9:00	27.7	27.9
8/14/02 14:00	144.6	59.9	8/16/02 12:00	57.1	56.1	8/18/02 10:00	25.1	25.2
8/14/02 15:00	34.0	28.4	8/16/02 13:00	58.0	63.1	8/18/02 11:00	18.1	20.7
8/14/02 16:00	92.2	102.5	8/16/02 14:00	104.8	111.2	8/18/02 12:00	17.2	20.6
8/14/02 17:00	27.9	29.2	8/16/02 15:00	81.1	143.2	8/18/02 13:00	14.6	15.9
8/14/02 18:00	20.4	21.2	8/16/02 16:00	75.2	85.0	8/18/02 14:00	6.2	8.3

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
8/18/02 15:00	17.5	11.7	8/20/02 13:00	18.9	21.1	8/22/02 11:00	19.7	17.8
8/18/02 16:00	27.0	29.0	8/20/02 14:00	41.0	31.0	8/22/02 12:00	19.9	22.5
8/18/02 17:00	30.3	34.1	8/20/02 15:00	25.4	22.0	8/22/02 13:00	1.8	2.8
8/18/02 18:00	30.3	29.0	8/20/02 16:00	64.6	41.5	8/22/02 14:00	26.4	23.2
8/18/02 19:00	29.4	29.5	8/20/02 17:00	12.4	21.6	8/22/02 15:00	21.9	28.9
8/18/02 20:00	56.1	42.6	8/20/02 18:00	44.8	72.7	8/22/02 16:00	27.8	22.1
8/18/02 21:00	23.8	25.0	8/20/02 19:00	26.5	55.8	8/22/02 17:00	63.9	130.4
8/18/02 22:00	21.5	22.6	8/20/02 20:00	118.2	39.2	8/22/02 18:00	32.0	34.5
8/18/02 23:00	15.4	16.9	8/20/02 21:00	29.0	28.1	8/22/02 19:00	68.8	48.1
8/19/02 0:00	22.6	21.8	8/20/02 22:00	38.9	38.0	8/22/02 20:00	20.7	19.6
8/19/02 1:00	19.9	19.2	8/20/02 23:00	49.7	49.3	8/22/02 21:00	22.6	24.1
8/19/02 2:00	21.4	20.4	8/21/02 0:00	49.9	50.2	8/22/02 22:00	23.5	23.4
8/19/02 3:00	26.5	23.4	8/21/02 1:00	66.6	69.8	8/22/02 23:00	23.0	23.3
8/19/02 4:00	27.1	25.8	8/21/02 2:00	32.8	35.4	8/23/02 0:00	28.0	37.7
8/19/02 5:00	24.6	25.7	8/21/02 3:00	19.2	21.4	8/23/02 1:00	29.0	36.6
8/19/02 6:00	27.7	26.3	8/21/02 4:00	19.4	19.5	8/23/02 2:00	17.3	18.3
8/19/02 7:00	62.7	47.6	8/21/02 5:00	17.2	16.9	8/23/02 3:00	20.1	20.3
8/19/02 8:00	34.0	40.3	8/21/02 6:00	18.7	19.9	8/23/02 4:00	19.7	20.9
8/19/02 9:00	27.0	27.6	8/21/02 7:00	19.0	21.2	8/23/02 5:00	23.1	23.4
8/19/02 10:00		44.1	8/21/02 8:00	14.1	16.5	8/23/02 6:00	25.6	27.3
8/19/02 11:00		18.9	8/21/02 9:00	22.2	23.7	8/23/02 7:00	33.2	35.9
8/19/02 12:00		40.5	8/21/02 10:00	28.6	27.1	8/23/02 8:00	31.4	35.2
8/19/02 13:00		29.8	8/21/02 11:00	31.0	33.8	8/23/02 9:00	34.6	34.9
8/19/02 14:00		43.2	8/21/02 12:00	28.1	26.7	8/23/02 10:00	30.5	33.9
8/19/02 15:00	32.3	33.1	8/21/02 13:00	9.1	13.1	8/23/02 11:00	21.3	17.4
8/19/02 16:00	26.2	28.7	8/21/02 14:00	50.6	51.4	8/23/02 12:00	8.1	12.4
8/19/02 17:00	24.7	23.3	8/21/02 15:00	12.2	13.8	8/23/02 13:00	13.1	12.5
8/19/02 18:00	34.1	38.6	8/21/02 16:00	56.4	48.9	8/23/02 14:00	29.6	16.0
8/19/02 19:00	27.5	25.7	8/21/02 17:00	9.6	17.4	8/23/02 15:00	8.2	12.7
8/19/02 20:00	118.1	110.9	8/21/02 18:00	5.9	25.3	8/23/02 16:00	28.1	15.3
8/19/02 21:00	19.4	20.7	8/21/02 19:00	55.9	53.4	8/23/02 17:00	20.9	18.9
8/19/02 22:00	53.9	51.5	8/21/02 20:00	35.9	39.3	8/23/02 18:00	33.9	27.6
8/19/02 23:00	47.9	45.7	8/21/02 21:00	27.9	28.4	8/23/02 19:00	24.3	26.2
8/20/02 0:00	27.1	25.0	8/21/02 22:00	22.1	22.0	8/23/02 20:00	27.8	27.6
8/20/02 1:00	8.9	9.4	8/21/02 23:00	21.6	21.6	8/23/02 21:00	21.1	25.0
8/20/02 2:00	16.7	15.4	8/22/02 0:00	16.8	17.0	8/23/02 22:00	24.6	24.2
8/20/02 3:00	13.3	12.1	8/22/02 1:00	17.3	17.8	8/23/02 23:00	22.8	21.9
8/20/02 4:00	10.5	12.0	8/22/02 2:00	16.2	17.2	8/24/02 0:00	20.2	18.4
8/20/02 5:00	25.1	19.0	8/22/02 3:00	17.2	17.5	8/24/02 1:00	16.2	21.6
8/20/02 6:00	18.7	20.2	8/22/02 4:00	16.4	17.4	8/24/02 2:00	20.4	26.0
8/20/02 7:00	25.2	24.6	8/22/02 5:00	19.2	20.0	8/24/02 3:00	22.2	22.2
8/20/02 8:00	30.7	31.4	8/22/02 6:00	23.9	26.7	8/24/02 4:00	23.8	23.7
8/20/02 9:00	43.4	38.6	8/22/02 7:00	27.5	27.6	8/24/02 5:00	21.0	20.9
8/20/02 10:00	33.7	33.5	8/22/02 8:00	33.0	34.0	8/24/02 6:00	19.8	19.7
8/20/02 11:00	26.9	23.5	8/22/02 9:00	31.1	33.1	8/24/02 7:00	25.0	53.5
8/20/02 12:00	25.9	25.8	8/22/02 10:00	29.8	29.7	8/24/02 8:00	21.8	26.3

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
8/24/02 9:00	23.3	30.7	8/26/02 7:00	60.8	59.1	8/28/02 5:00	29.5	29.6
8/24/02 10:00	23.8	29.0	8/26/02 8:00	64.1	64.4	8/28/02 6:00	28.3	27.6
8/24/02 11:00	7.5	10.2	8/26/02 9:00	60.3	66.6	8/28/02 7:00	32.0	31.2
8/24/02 12:00	12.4	13.5	8/26/02 10:00	43.3	44.7	8/28/02 8:00	38.0	35.8
8/24/02 13:00	12.3	13.4	8/26/02 11:00	32.1	44.6	8/28/02 9:00		
8/24/02 14:00	9.0	12.0	8/26/02 12:00	33.2	38.2	8/28/02 10:00		
8/24/02 15:00	3.9	14.0	8/26/02 13:00	23.8	37.9	8/28/02 11:00	28.4	25.0
8/24/02 16:00	20.7	18.3	8/26/02 14:00	67.0	35.3	8/28/02 12:00	21.6	18.6
8/24/02 17:00	16.0	15.1	8/26/02 15:00	45.4	50.2	8/28/02 13:00	25.7	23.2
8/24/02 18:00	23.3	18.6	8/26/02 16:00	62.0	131.0	8/28/02 14:00	31.8	28.8
8/24/02 19:00	25.6	25.5	8/26/02 17:00	21.6	38.1	8/28/02 15:00	26.0	20.3
8/24/02 20:00	21.5	22.8	8/26/02 18:00	18.9	21.0	8/28/02 16:00	15.4	13.7
8/24/02 21:00	19.3	21.3	8/26/02 19:00	32.2	37.5	8/28/02 17:00	15.5	15.7
8/24/02 22:00	19.5	19.0	8/26/02 20:00	26.0	42.2	8/28/02 18:00	29.3	30.0
8/24/02 23:00	15.8	15.6	8/26/02 21:00	19.3	44.0	8/28/02 19:00	34.2	29.4
8/25/02 0:00	20.9	20.3	8/26/02 22:00	22.6	30.1	8/28/02 20:00	12.0	16.6
8/25/02 1:00	18.8	18.4	8/26/02 23:00	25.3	29.3	8/28/02 21:00	25.5	49.0
8/25/02 2:00	21.4	21.7	8/27/02 0:00	23.1	22.8	8/28/02 22:00	22.8	23.9
8/25/02 3:00	26.0	26.9	8/27/02 1:00	36.5	35.4	8/28/02 23:00	21.3	26.2
8/25/02 4:00	24.4	26.0	8/27/02 2:00	37.9	37.4	8/29/02 0:00	29.9	28.4
8/25/02 5:00	22.9	23.1	8/27/02 3:00	41.8	40.8	8/29/02 1:00	29.0	28.3
8/25/02 6:00	21.9	22.5	8/27/02 4:00	52.3	51.5	8/29/02 2:00	35.0	33.0
8/25/02 7:00	20.6	21.5	8/27/02 5:00	49.2	48.5	8/29/02 3:00	270.0	476.4
8/25/02 8:00	25.2	23.6	8/27/02 6:00	45.5	70.2	8/29/02 4:00	46.6	53.7
8/25/02 9:00	23.5	27.1	8/27/02 7:00	41.1	59.4	8/29/02 5:00	14.1	20.3
8/25/02 10:00	21.0	22.5	8/27/02 8:00	48.1	53.7	8/29/02 6:00	9.6	9.3
8/25/02 11:00	12.7	14.8	8/27/02 9:00	32.8	35.2	8/29/02 7:00	12.4	12.1
8/25/02 12:00	8.3	10.0	8/27/02 10:00	136.2	77.6	8/29/02 8:00	10.3	8.8
8/25/02 13:00	8.1	10.2	8/27/02 11:00	87.7	61.7	8/29/02 9:00	14.5	10.8
8/25/02 14:00	9.3	13.0	8/27/02 12:00	106.4	11.9	8/29/02 10:00	14.6	9.3
8/25/02 15:00	6.2	6.8	8/27/02 13:00	10.5	42.9	8/29/02 11:00	6.5	9.2
8/25/02 16:00	7.2	8.6	8/27/02 14:00	31.1	37.8	8/29/02 12:00	13.4	13.1
8/25/02 17:00	9.7	10.0	8/27/02 15:00	30.3	32.1	8/29/02 13:00	24.4	32.2
8/25/02 18:00	13.8	13.8	8/27/02 16:00	22.5	26.5	8/29/02 14:00	50.5	138.1
8/25/02 19:00	25.8	22.9	8/27/02 17:00	30.3	25.5	8/29/02 15:00	20.3	21.8
8/25/02 20:00	27.2	25.9	8/27/02 18:00	34.5	33.8	8/29/02 16:00	42.6	48.2
8/25/02 21:00	16.1	19.0	8/27/02 19:00	53.6	50.3	8/29/02 17:00	33.3	32.3
8/25/02 22:00	20.2	21.5	8/27/02 20:00	43.1	42.7	8/29/02 18:00	28.7	30.2
8/25/02 23:00	21.4	24.4	8/27/02 21:00	258.5	104.6	8/29/02 19:00	29.5	30.3
8/26/02 0:00	18.1	18.4	8/27/02 22:00	41.4	43.6	8/29/02 20:00	33.4	32.6
8/26/02 1:00	20.0	20.6	8/27/02 23:00	36.9	35.8	8/29/02 21:00	38.2	36.9
8/26/02 2:00	22.0	22.4	8/28/02 0:00	36.3	36.8	8/29/02 22:00	26.5	26.0
8/26/02 3:00	20.2	20.1	8/28/02 1:00	60.5	57.6	8/29/02 23:00	24.7	25.1
8/26/02 4:00	20.6	21.9	8/28/02 2:00	101.9	101.3	8/30/02 0:00	26.4	26.6
8/26/02 5:00	23.7	23.0	8/28/02 3:00	55.7	54.5	8/30/02 1:00	29.8	35.1
8/26/02 6:00	31.1	34.4	8/28/02 4:00	34.5	34.0	8/30/02 2:00	21.0	22.2

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
8/30/02 3:00	19.2	20.1	9/1/02 1:00	31.5	32.2	9/2/02 23:00	26.4	27.4
8/30/02 4:00	21.9	21.0	9/1/02 2:00	36.7	36.3	9/3/02 0:00	34.2	42.7
8/30/02 5:00	21.7	20.0	9/1/02 3:00	38.4	35.0	9/3/02 1:00	30.6	31.1
8/30/02 6:00	21.4	20.3	9/1/02 4:00	30.9	33.8	9/3/02 2:00	29.5	31.8
8/30/02 7:00	27.5	21.5	9/1/02 5:00	31.7	32.3	9/3/02 3:00	23.2	23.8
8/30/02 8:00	27.6	25.7	9/1/02 6:00	32.5	34.0	9/3/02 4:00	29.1	29.9
8/30/02 9:00	22.1	21.9	9/1/02 7:00	34.2	36.1	9/3/02 5:00	33.1	30.9
8/30/02 10:00	16.4	14.6	9/1/02 8:00	42.0	41.4	9/3/02 6:00	53.0	49.3
8/30/02 11:00	23.8	19.1	9/1/02 9:00	38.5	35.6	9/3/02 7:00	41.7	42.1
8/30/02 12:00	26.8	21.2	9/1/02 10:00	34.5	36.3	9/3/02 8:00	86.9	136.5
8/30/02 13:00	24.9	33.6	9/1/02 11:00	27.0	28.1	9/3/02 9:00	47.6	51.7
8/30/02 14:00	34.1	22.5	9/1/02 12:00	23.3	25.1	9/3/02 10:00	52.3	26.8
8/30/02 15:00	52.5	35.9	9/1/02 13:00	22.9	22.9	9/3/02 11:00	16.4	15.1
8/30/02 16:00	44.9	38.1	9/1/02 14:00	26.1	26.4	9/3/02 12:00	9.0	8.1
8/30/02 17:00	30.0	29.3	9/1/02 15:00	22.8	23.6	9/3/02 13:00	22.8	22.1
8/30/02 18:00	39.7	34.2	9/1/02 16:00	20.6	20.5	9/3/02 14:00	34.4	21.2
8/30/02 19:00	33.1	33.1	9/1/02 17:00	21.7	20.8	9/3/02 15:00	23.8	23.7
8/30/02 20:00	290.5	148.3	9/1/02 18:00	26.2	27.4	9/3/02 16:00	22.1	19.1
8/30/02 21:00	21.3	17.2	9/1/02 19:00	24.8	25.7	9/3/02 17:00	29.0	28.3
8/30/02 22:00	7.3	7.6	9/1/02 20:00	25.9	29.2	9/3/02 18:00	26.0	25.5
8/30/02 23:00	21.4	22.2	9/1/02 21:00	25.5	31.0	9/3/02 19:00	34.0	32.4
8/31/02 0:00	21.5	26.6	9/1/02 22:00	53.4	76.8	9/3/02 20:00	40.3	36.2
8/31/02 1:00	22.4	24.8	9/1/02 23:00	42.4	53.5	9/3/02 21:00	25.6	26.3
8/31/02 2:00	28.9	29.6	9/2/02 0:00	176.8	51.6	9/3/02 22:00	29.9	32.8
8/31/02 3:00	39.2	40.1	9/2/02 1:00	50.1	43.9	9/3/02 23:00	24.7	25.3
8/31/02 4:00	38.9	39.9	9/2/02 2:00	26.9	27.2	9/4/02 0:00	19.3	18.3
8/31/02 5:00	40.5	40.7	9/2/02 3:00	35.8	38.4	9/4/02 1:00	25.2	25.8
8/31/02 6:00	48.0	49.0	9/2/02 4:00	35.8	39.3	9/4/02 2:00	26.7	26.3
8/31/02 7:00	48.3	49.5	9/2/02 5:00	43.5	45.3	9/4/02 3:00	20.6	21.9
8/31/02 8:00	51.5	49.5	9/2/02 6:00	46.4	54.2	9/4/02 4:00	27.7	27.5
8/31/02 9:00	40.8	42.1	9/2/02 7:00	43.5	43.3	9/4/02 5:00	27.2	27.2
8/31/02 10:00	41.3	41.9	9/2/02 8:00	34.0	33.5	9/4/02 6:00	29.5	29.3
8/31/02 11:00	45.2	44.0	9/2/02 9:00	25.8	27.8	9/4/02 7:00	36.9	42.4
8/31/02 12:00	37.4	40.0	9/2/02 10:00	13.2	15.7	9/4/02 8:00	60.2	53.3
8/31/02 13:00	38.0	45.2	9/2/02 11:00	11.1	16.4	9/4/02 9:00	53.7	58.1
8/31/02 14:00	33.7	35.7	9/2/02 12:00	6.1	9.6	9/4/02 10:00	41.5	29.7
8/31/02 15:00	34.5	34.2	9/2/02 13:00	11.8	16.4	9/4/02 11:00	13.6	17.9
8/31/02 16:00	34.6	31.7	9/2/02 14:00	19.3	19.0	9/4/02 12:00	22.3	18.3
8/31/02 17:00	31.4	31.3	9/2/02 15:00	21.2	22.8	9/4/02 13:00	13.8	18.4
8/31/02 18:00	32.4	32.6	9/2/02 16:00	24.7	22.6	9/4/02 14:00	36.9	22.1
8/31/02 19:00	34.4	34.0	9/2/02 17:00	24.1	23.2	9/4/02 15:00	36.1	31.1
8/31/02 20:00	34.6	37.8	9/2/02 18:00	24.6	24.0	9/4/02 16:00	18.2	14.9
8/31/02 21:00	30.4	31.9	9/2/02 19:00	27.2	27.5	9/4/02 17:00	54.1	66.1
8/31/02 22:00	27.5	27.3	9/2/02 20:00	31.6	29.2	9/4/02 18:00	28.8	49.3
8/31/02 23:00	31.9	33.1	9/2/02 21:00	31.3	34.3	9/4/02 19:00	23.0	23.7
9/1/02 0:00	29.7	30.8	9/2/02 22:00	34.8	32.5	9/4/02 20:00	39.2	38.6

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
9/4/02 21:00	27.8	30.0	9/6/02 19:00	23.9	26.4	9/8/02 17:00	9.4	10.5
9/4/02 22:00	42.6	39.8	9/6/02 20:00	34.9	39.8	9/8/02 18:00	14.3	11.9
9/4/02 23:00	29.6	31.1	9/6/02 21:00	30.7	36.6	9/8/02 19:00	22.7	28.0
9/5/02 0:00	27.7	28.0	9/6/02 22:00	25.4	27.4	9/8/02 20:00	46.2	39.7
9/5/02 1:00	32.1	32.7	9/6/02 23:00	30.2	29.4	9/8/02 21:00	11.0	12.2
9/5/02 2:00	23.8	25.1	9/7/02 0:00	21.8	25.9	9/8/02 22:00	40.9	38.0
9/5/02 3:00	19.4	20.5	9/7/02 1:00	28.2	29.5	9/8/02 23:00	9.2	10.2
9/5/02 4:00	15.7	16.4	9/7/02 2:00	31.0	33.0	9/9/02 0:00	7.6	10.3
9/5/02 5:00	12.6	13.0	9/7/02 3:00	33.7	35.4	9/9/02 1:00	5.1	5.5
9/5/02 6:00	18.6	23.5	9/7/02 4:00	36.2	36.1	9/9/02 2:00	6.5	9.7
9/5/02 7:00	62.3	41.7	9/7/02 5:00	38.5	39.2	9/9/02 3:00	5.2	4.6
9/5/02 8:00	52.6	72.4	9/7/02 6:00	42.1	42.6	9/9/02 4:00	10.1	12.9
9/5/02 9:00	38.3	33.2	9/7/02 7:00	42.0	40.1	9/9/02 5:00		10.9
9/5/02 10:00	23.0	22.0	9/7/02 8:00	57.6	55.3	9/9/02 6:00		10.3
9/5/02 11:00	15.9	16.3	9/7/02 9:00	50.8	51.7	9/9/02 7:00		12.3
9/5/02 12:00	21.2	12.4	9/7/02 10:00	34.4	34.9	9/9/02 8:00		12.7
9/5/02 13:00	13.0	10.3	9/7/02 11:00	36.6	37.7	9/9/02 9:00		10.0
9/5/02 14:00	25.3	6.1	9/7/02 12:00	30.3	29.9	9/9/02 10:00		5.1
9/5/02 15:00	21.9	14.6	9/7/02 13:00	36.9	39.0	9/9/02 11:00		8.5
9/5/02 16:00	35.9	18.8	9/7/02 14:00	36.0	35.9	9/9/02 12:00		3.9
9/5/02 17:00	33.7	22.1	9/7/02 15:00	31.5	30.8	9/9/02 13:00		0.9
9/5/02 18:00	14.3	16.3	9/7/02 16:00	27.8	25.2	9/9/02 14:00	2.3	10.9
9/5/02 19:00	29.5	27.9	9/7/02 17:00	31.7	32.5	9/9/02 15:00	6.3	7.1
9/5/02 20:00	30.6	32.0	9/7/02 18:00	27.9	26.9	9/9/02 16:00		6.4
9/5/02 21:00	44.7	46.8	9/7/02 19:00	40.2	38.6	9/9/02 17:00	65.1	17.3
9/5/02 22:00	23.7	21.2	9/7/02 20:00	32.3	31.5	9/9/02 18:00	32.8	12.6
9/5/02 23:00	26.8	26.4	9/7/02 21:00	39.8	37.5	9/9/02 19:00	30.7	19.6
9/6/02 0:00	21.2	21.3	9/7/02 22:00	37.4	35.2	9/9/02 20:00	27.6	15.2
9/6/02 1:00	18.6	20.1	9/7/02 23:00	34.2	34.1	9/9/02 21:00	19.7	10.5
9/6/02 2:00	18.5	19.1	9/8/02 0:00	35.6	35.6	9/9/02 22:00	23.0	25.8
9/6/02 3:00	20.1	20.2	9/8/02 1:00	41.4	40.6	9/9/02 23:00	16.0	15.1
9/6/02 4:00	17.8	18.8	9/8/02 2:00	33.0	32.4	9/10/02 0:00	14.6	20.8
9/6/02 5:00	25.7	23.1	9/8/02 3:00	25.7	25.0	9/10/02 1:00	13.4	14.5
9/6/02 6:00	28.5	25.7	9/8/02 4:00	26.8	26.4	9/10/02 2:00	10.7	9.1
9/6/02 7:00	33.1	39.4	9/8/02 5:00	23.2	21.3	9/10/02 3:00	10.1	5.7
9/6/02 8:00	43.7	51.9	9/8/02 6:00	20.6	19.7	9/10/02 4:00	10.1	10.4
9/6/02 9:00	37.8	29.8	9/8/02 7:00	21.2	18.3	9/10/02 5:00	10.4	16.1
9/6/02 10:00	82.8	17.4	9/8/02 8:00	33.2	32.7	9/10/02 6:00	18.8	11.0
9/6/02 11:00	37.0	12.2	9/8/02 9:00	30.2	35.4	9/10/02 7:00	16.0	17.5
9/6/02 12:00	46.4	15.3	9/8/02 10:00	21.7	23.7	9/10/02 8:00	23.1	16.2
9/6/02 13:00	33.2	33.5	9/8/02 11:00	16.4	15.5	9/10/02 9:00	19.2	23.4
9/6/02 14:00	37.8	33.5	9/8/02 12:00	13.0	12.8	9/10/02 10:00	15.1	12.5
9/6/02 15:00	24.9	19.3	9/8/02 13:00	8.4	7.8	9/10/02 11:00	18.1	9.6
9/6/02 16:00	19.9	15.9	9/8/02 14:00	7.9	7.9	9/10/02 12:00	16.7	20.6
9/6/02 17:00	17.4	21.9	9/8/02 15:00	9.1	8.9	9/10/02 13:00	28.3	41.5
9/6/02 18:00	21.0	20.4	9/8/02 16:00	11.5	12.4	9/10/02 14:00	15.4	24.9

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
9/10/02 15:00	10.6	8.2	9/12/02 13:00	119.8	41.3	9/14/02 11:00		13.6
9/10/02 16:00	11.0	3.0	9/12/02 14:00	175.6	79.3	9/14/02 12:00		31.0
9/10/02 17:00	11.8	14.0	9/12/02 15:00		63.3	9/14/02 13:00		17.6
9/10/02 18:00	17.2	12.2	9/12/02 16:00		89.4	9/14/02 14:00		7.9
9/10/02 19:00	20.9	19.6	9/12/02 17:00		24.6	9/14/02 15:00	26.2	15.6
9/10/02 20:00	21.6	15.4	9/12/02 18:00		26.5	9/14/02 16:00	19.9	19.3
9/10/02 21:00	32.1		9/12/02 19:00		25.9	9/14/02 17:00	25.4	17.7
9/10/02 22:00	16.5	13.8	9/12/02 20:00		63.2	9/14/02 18:00	20.5	26.1
9/10/02 23:00	14.9	13.7	9/12/02 21:00		34.1	9/14/02 19:00	15.1	14.8
9/11/02 0:00	14.2	32.5	9/12/02 22:00		33.0	9/14/02 20:00	20.6	21.5
9/11/02 1:00	13.1	16.4	9/12/02 23:00		54.2	9/14/02 21:00	16.4	11.1
9/11/02 2:00	16.7	10.6	9/13/02 0:00		239.4	9/14/02 22:00	22.8	25.0
9/11/02 3:00	9.0	8.2	9/13/02 1:00		11.5	9/14/02 23:00	16.7	20.2
9/11/02 4:00	13.5	11.7	9/13/02 2:00		15.3	9/15/02 0:00	12.3	10.0
9/11/02 5:00	15.8	12.2	9/13/02 3:00		17.9	9/15/02 1:00	33.5	49.8
9/11/02 6:00	23.9	17.1	9/13/02 4:00		16.5	9/15/02 2:00	15.8	14.2
9/11/02 7:00	19.6	19.6	9/13/02 5:00		15.9	9/15/02 3:00	10.3	11.9
9/11/02 8:00	24.7	24.1	9/13/02 6:00		9.8	9/15/02 4:00	13.0	18.7
9/11/02 9:00	27.4	23.7	9/13/02 7:00		15.5	9/15/02 5:00	13.6	10.0
9/11/02 10:00	29.5	28.5	9/13/02 8:00		22.9	9/15/02 6:00	3.3	
9/11/02 11:00	28.3	28.0	9/13/02 9:00		33.4	9/15/02 7:00	8.5	9.0
9/11/02 12:00	29.2	10.6	9/13/02 10:00		38.8	9/15/02 8:00	9.1	6.3
9/11/02 13:00	21.8	12.9	9/13/02 11:00		32.7	9/15/02 9:00	10.1	7.2
9/11/02 14:00	26.4	12.6	9/13/02 12:00		30.5	9/15/02 10:00	13.9	6.5
9/11/02 15:00	25.3	10.6	9/13/02 13:00		20.1	9/15/02 11:00	9.7	7.6
9/11/02 16:00	23.8	10.3	9/13/02 14:00		19.9	9/15/02 12:00	11.9	13.0
9/11/02 17:00	22.7	18.8	9/13/02 15:00		50.7	9/15/02 13:00	5.0	0.6
9/11/02 18:00	25.3	22.2	9/13/02 16:00		63.1	9/15/02 14:00	12.8	8.1
9/11/02 19:00	31.1	35.8	9/13/02 17:00		55.1	9/15/02 15:00	15.2	16.4
9/11/02 20:00	30.4	36.9	9/13/02 18:00		511.1	9/15/02 16:00	12.6	15.9
9/11/02 21:00	30.1	22.8	9/13/02 19:00		13.6	9/15/02 17:00	12.4	7.9
9/11/02 22:00	30.6	32.2	9/13/02 20:00		9.2	9/15/02 18:00	15.0	14.2
9/11/02 23:00	33.0	56.3	9/13/02 21:00		38.8	9/15/02 19:00	15.5	19.6
9/12/02 0:00	12.3	12.1	9/13/02 22:00		22.7	9/15/02 20:00	15.2	15.7
9/12/02 1:00	12.5	9.7	9/13/02 23:00		15.2	9/15/02 21:00	14.0	14.3
9/12/02 2:00	13.7	15.6	9/14/02 0:00		12.7	9/15/02 22:00	10.3	11.5
9/12/02 3:00	15.8	16.0	9/14/02 1:00		4.3	9/15/02 23:00	10.2	12.2
9/12/02 4:00	18.5	19.5	9/14/02 2:00		14.9	9/16/02 0:00	8.8	9.4
9/12/02 5:00	18.8	19.5	9/14/02 3:00		17.7	9/16/02 1:00	9.2	10.3
9/12/02 6:00	25.3	21.6	9/14/02 4:00		17.8	9/16/02 2:00	8.0	7.6
9/12/02 7:00	31.9	36.6	9/14/02 5:00		17.0	9/16/02 3:00	8.0	5.8
9/12/02 8:00	263.6	53.8	9/14/02 6:00		20.8	9/16/02 4:00	7.8	10.1
9/12/02 9:00	395.0	37.1	9/14/02 7:00		18.0	9/16/02 5:00	14.3	16.0
9/12/02 10:00	311.9	51.2	9/14/02 8:00		29.9	9/16/02 6:00	13.3	10.0
9/12/02 11:00	170.2	40.1	9/14/02 9:00		9.3	9/16/02 7:00	23.6	31.2
9/12/02 12:00	216.5	40.2	9/14/02 10:00		15.0	9/16/02 8:00	28.2	34.7

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
9/16/02 9:00	25.8	34.5	9/18/02 7:00	17.2	22.4	9/20/02 5:00	10.8	14.0
9/16/02 10:00	9.5	8.6	9/18/02 8:00	25.4	33.9	9/20/02 6:00	14.4	20.2
9/16/02 11:00	8.5	25.9	9/18/02 9:00	23.3		9/20/02 7:00	29.0	45.2
9/16/02 12:00	5.4	3.9	9/18/02 10:00	92.3	10.9	9/20/02 8:00	44.8	44.9
9/16/02 13:00	8.2	6.0	9/18/02 11:00	89.7	16.7	9/20/02 9:00	46.2	19.3
9/16/02 14:00	20.7	18.8	9/18/02 12:00	307.2	39.3	9/20/02 10:00	54.2	57.1
9/16/02 15:00	12.2	10.9	9/18/02 13:00	222.1	40.6	9/20/02 11:00	92.2	177.6
9/16/02 16:00	16.8	6.7	9/18/02 14:00	373.8	41.9	9/20/02 12:00	69.6	28.9
9/16/02 17:00	27.5	55.6	9/18/02 15:00	210.0	27.9	9/20/02 13:00	89.7	27.4
9/16/02 18:00	20.9	45.1	9/18/02 16:00	261.7	46.5	9/20/02 14:00	149.3	77.7
9/16/02 19:00	15.1	26.0	9/18/02 17:00	217.1	91.5	9/20/02 15:00	80.6	62.2
9/16/02 20:00	19.2	16.8	9/18/02 18:00	177.2	103.4	9/20/02 16:00	88.6	89.2
9/16/02 21:00	14.4	15.8	9/18/02 19:00	338.2	385.5	9/20/02 17:00	126.6	50.6
9/16/02 22:00	16.5	18.1	9/18/02 20:00	19.8	38.8	9/20/02 18:00	19.4	16.2
9/16/02 23:00	12.6	14.1	9/18/02 21:00	5.4	8.4	9/20/02 19:00	18.3	17.5
9/17/02 0:00	11.7	12.5	9/18/02 22:00	14.8	28.8	9/20/02 20:00	47.1	29.7
9/17/02 1:00	13.0	13.3	9/18/02 23:00	11.3	9.2	9/20/02 21:00	50.6	44.1
9/17/02 2:00	12.3	12.3	9/19/02 0:00	9.4	6.9	9/20/02 22:00	47.4	57.8
9/17/02 3:00	14.4	16.7	9/19/02 1:00	15.6	22.5	9/20/02 23:00	32.5	39.8
9/17/02 4:00	20.2	25.0	9/19/02 2:00	4.9	0.3	9/21/02 0:00	16.8	15.7
9/17/02 5:00	25.6	29.3	9/19/02 3:00	7.6	5.2	9/21/02 1:00	16.2	16.5
9/17/02 6:00	26.5	28.0	9/19/02 4:00	8.3	8.4	9/21/02 2:00	14.2	19.5
9/17/02 7:00	30.7	35.8	9/19/02 5:00	14.0		9/21/02 3:00	9.1	12.4
9/17/02 8:00	29.7	33.5	9/19/02 6:00	17.2	21.4	9/21/02 4:00	9.7	11.3
9/17/02 9:00	28.5	29.5	9/19/02 7:00	18.1	40.9	9/21/02 5:00	14.5	12.2
9/17/02 10:00	37.8	21.4	9/19/02 8:00	23.0	15.3	9/21/02 6:00	21.8	25.7
9/17/02 11:00	32.4	25.8	9/19/02 9:00	37.2	87.6	9/21/02 7:00	23.5	23.9
9/17/02 12:00	54.8	24.9	9/19/02 10:00	75.6	228.6	9/21/02 8:00	51.7	43.8
9/17/02 13:00	27.7		9/19/02 11:00	26.9	23.6	9/21/02 9:00	27.6	36.0
9/17/02 14:00	119.4	12.5	9/19/02 12:00	15.2	61.3	9/21/02 10:00	33.4	44.8
9/17/02 15:00	100.1	39.7	9/19/02 13:00	17.2	118.8	9/21/02 11:00	12.3	9.8
9/17/02 16:00	51.0	50.7	9/19/02 14:00	18.4	32.1	9/21/02 12:00	16.9	13.5
9/17/02 17:00	32.9	32.8	9/19/02 15:00	13.8	16.4	9/21/02 13:00	33.8	88.3
9/17/02 18:00	32.1	24.4	9/19/02 16:00	161.2	35.3	9/21/02 14:00	84.3	10.6
9/17/02 19:00	21.6	16.1	9/19/02 17:00	55.3	45.3	9/21/02 15:00	28.7	1.6
9/17/02 20:00	35.2	46.6	9/19/02 18:00	19.1	17.2	9/21/02 16:00	55.8	6.6
9/17/02 21:00	23.7	27.6	9/19/02 19:00	10.0	16.6	9/21/02 17:00	28.9	10.8
9/17/02 22:00	21.8	37.6	9/19/02 20:00	16.6	17.8	9/21/02 18:00	11.5	20.8
9/17/02 23:00	18.2	22.6	9/19/02 21:00	137.0	34.3	9/21/02 19:00	23.7	32.4
9/18/02 0:00	20.0	23.0	9/19/02 22:00	46.3	164.3	9/21/02 20:00	28.6	34.7
9/18/02 1:00	24.6	29.1	9/19/02 23:00	53.1	67.4	9/21/02 21:00	24.7	24.6
9/18/02 2:00	26.5	41.3	9/20/02 0:00	30.1	30.8	9/21/02 22:00	27.3	48.7
9/18/02 3:00	21.4	31.0	9/20/02 1:00	27.2	24.4	9/21/02 23:00	24.2	26.0
9/18/02 4:00	20.1	22.9	9/20/02 2:00	12.3	13.4	9/22/02 0:00	18.7	20.4
9/18/02 5:00	18.5	22.2	9/20/02 3:00	19.0	19.0	9/22/02 1:00	17.8	18.1
9/18/02 6:00	37.9	18.7	9/20/02 4:00	13.9	11.3	9/22/02 2:00	7.3	20.1

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
9/22/02 3:00	42.0	56.0	9/24/02 1:00	26.0	27.2	9/25/02 23:00	21.6	27.3
9/22/02 4:00	119.9	161.7	9/24/02 2:00	23.5	25.4	9/26/02 0:00	20.7	20.6
9/22/02 5:00	162.8	215.5	9/24/02 3:00	19.8	22.0	9/26/02 1:00	15.9	15.9
9/22/02 6:00	112.1	130.5	9/24/02 4:00	18.6	19.4	9/26/02 2:00	22.2	21.5
9/22/02 7:00	45.2	57.6	9/24/02 5:00	19.3	19.2	9/26/02 3:00	24.6	32.0
9/22/02 8:00	63.1	97.0	9/24/02 6:00	20.4	20.6	9/26/02 4:00	21.6	22.2
9/22/02 9:00	87.7	127.7	9/24/02 7:00	21.1	22.7	9/26/02 5:00	18.5	18.4
9/22/02 10:00	78.8	97.5	9/24/02 8:00	27.2	22.4	9/26/02 6:00	34.2	39.7
9/22/02 11:00	64.2	76.6	9/24/02 9:00	21.5	22.6	9/26/02 7:00	47.5	52.4
9/22/02 12:00	55.6	63.5	9/24/02 10:00	26.6	25.8	9/26/02 8:00	167.8	153.2
9/22/02 13:00	46.8	54.0	9/24/02 11:00	57.2	26.3	9/26/02 9:00	63.5	88.9
9/22/02 14:00	46.1	46.8	9/24/02 12:00	50.5	24.3	9/26/02 10:00	64.4	137.5
9/22/02 15:00	40.6	40.6	9/24/02 13:00	20.2	18.3	9/26/02 11:00	114.0	117.1
9/22/02 16:00	37.2	39.3	9/24/02 14:00	43.2	16.5	9/26/02 12:00	180.1	151.5
9/22/02 17:00	35.7	38.4	9/24/02 15:00	52.0	46.7	9/26/02 13:00	26.3	7.1
9/22/02 18:00	39.0	40.8	9/24/02 16:00	47.5	22.6	9/26/02 14:00	127.2	186.7
9/22/02 19:00	37.4	40.0	9/24/02 17:00	40.1	21.2	9/26/02 15:00	200.3	319.0
9/22/02 20:00	46.3	42.5	9/24/02 18:00	24.1	20.6	9/26/02 16:00	146.7	61.6
9/22/02 21:00	30.4	30.5	9/24/02 19:00	29.0	25.3	9/26/02 17:00	254.2	39.1
9/22/02 22:00	25.1	24.3	9/24/02 20:00	39.4	36.2	9/26/02 18:00	28.9	22.6
9/22/02 23:00	23.3	25.8	9/24/02 21:00	26.5	23.8	9/26/02 19:00	17.6	27.9
9/23/02 0:00	22.9	25.4	9/24/02 22:00	14.9	15.0	9/26/02 20:00	16.3	32.1
9/23/02 1:00	20.6	22.9	9/24/02 23:00	17.4	17.3	9/26/02 21:00	26.1	25.5
9/23/02 2:00	20.1	23.5	9/25/02 0:00	14.9	12.7	9/26/02 22:00	23.6	23.8
9/23/02 3:00	18.9	20.2	9/25/02 1:00	15.2	13.1	9/26/02 23:00	17.7	19.2
9/23/02 4:00	19.0	21.4	9/25/02 2:00	13.7	11.2	9/27/02 0:00	16.8	17.4
9/23/02 5:00	21.7	26.9	9/25/02 3:00	19.7	17.9	9/27/02 1:00	20.1	18.5
9/23/02 6:00	21.8	22.6	9/25/02 4:00	15.6	16.5	9/27/02 2:00	17.9	18.8
9/23/02 7:00	21.4	21.4	9/25/02 5:00	41.6	50.8	9/27/02 3:00	18.9	23.7
9/23/02 8:00	33.1	30.2	9/25/02 6:00	34.3	36.2	9/27/02 4:00	23.2	24.1
9/23/02 9:00	27.1	29.0	9/25/02 7:00	38.8	36.9	9/27/02 5:00	37.8	34.9
9/23/02 10:00	40.3	29.2	9/25/02 8:00	53.2	38.1	9/27/02 6:00	37.7	31.4
9/23/02 11:00	62.6	22.5	9/25/02 9:00	36.5	42.5	9/27/02 7:00	44.3	32.9
9/23/02 12:00	59.8	32.1	9/25/02 10:00	43.2	32.7	9/27/02 8:00	48.5	46.3
9/23/02 13:00	26.7	21.6	9/25/02 11:00	138.2	147.6	9/27/02 9:00	58.3	52.6
9/23/02 14:00	77.9	26.6	9/25/02 12:00	138.3	55.0	9/27/02 10:00	45.6	21.5
9/23/02 15:00	69.0	18.7	9/25/02 13:00	25.9	9.2	9/27/02 11:00	61.5	16.6
9/23/02 16:00	68.8	24.6	9/25/02 14:00	86.1	267.9	9/27/02 12:00	165.6	
9/23/02 17:00	40.6	24.2	9/25/02 15:00	72.7	190.3	9/27/02 13:00	113.0	28.7
9/23/02 18:00	27.8	25.3	9/25/02 16:00	39.9	8.7	9/27/02 14:00	301.5	112.1
9/23/02 19:00	30.3	32.4	9/25/02 17:00	47.2	18.5	9/27/02 15:00	1015.2	259.6
9/23/02 20:00	28.2	32.3	9/25/02 18:00	17.6	14.2	9/27/02 16:00	1133.9	279.6
9/23/02 21:00	24.1	27.5	9/25/02 19:00	25.9	30.5	9/27/02 17:00	368.1	106.0
9/23/02 22:00	23.6	25.3	9/25/02 20:00	31.6	31.6	9/27/02 18:00	31.1	27.8
9/23/02 23:00	22.4	23.8	9/25/02 21:00	24.9	23.5	9/27/02 19:00	44.9	22.1
9/24/02 0:00	25.7	24.7	9/25/02 22:00	20.2	15.4	9/27/02 20:00	32.0	29.6

Shell Westgate TEOM Data (One-Hour Averages)

Date	East	South	Date	East	South	Date	East	South
9/27/02 21:00	26.3	16.5	9/29/02 19:00	23.6	21.9	10/1/02 17:00	35.7	23.4
9/27/02 22:00	22.6	12.8	9/29/02 20:00	24.3	22.2	10/1/02 18:00	33.5	26.4
9/27/02 23:00	23.6	24.2	9/29/02 21:00	31.4	33.4	10/1/02 19:00	519.3	419.6
9/28/02 0:00	19.4	18.0	9/29/02 22:00	25.4	25.2	10/1/02 20:00	54.8	39.9
9/28/02 1:00	26.8	26.8	9/29/02 23:00	24.1	23.4	10/1/02 21:00	19.5	18.4
9/28/02 2:00	39.5	44.3	9/30/02 0:00	23.5	23.3	10/1/02 22:00	6.6	1.3
9/28/02 3:00	35.6	38.1	9/30/02 1:00	26.1	25.4	10/1/02 23:00	26.5	28.8
9/28/02 4:00	31.4	33.0	9/30/02 2:00	24.9	26.5	10/2/02 0:00	30.4	27.9
9/28/02 5:00	28.5	29.1	9/30/02 3:00	23.8	27.0	10/2/02 1:00	37.6	35.2
9/28/02 6:00	26.7	26.8	9/30/02 4:00	25.3	27.8	10/2/02 2:00	34.7	33.4
9/28/02 7:00	36.4	40.2	9/30/02 5:00	21.6	20.3	10/2/02 3:00	42.9	41.9
9/28/02 8:00	41.0	39.9	9/30/02 6:00	19.2	18.6	10/2/02 4:00	39.6	38.3
9/28/02 9:00	31.7	20.3	9/30/02 7:00	23.3	21.1	10/2/02 5:00	39.1	37.6
9/28/02 10:00	2.9		9/30/02 8:00	30.7	32.8	10/2/02 6:00	32.0	32.5
9/28/02 11:00	45.1	2.4	9/30/02 9:00	35.3	36.8	10/2/02 7:00	32.9	35.3
9/28/02 12:00	91.6	30.1	9/30/02 10:00	50.9	24.6	10/2/02 8:00	29.4	33.8
9/28/02 13:00	37.9	15.1	9/30/02 11:00	93.3	43.7	10/2/02 9:00	31.6	32.6
9/28/02 14:00	58.7	47.7	9/30/02 12:00	109.5	82.1	10/2/02 10:00	30.3	7.3
9/28/02 15:00	14.4	7.4	9/30/02 13:00	11.8	5.3	10/2/02 11:00		
9/28/02 16:00	17.3	15.4	9/30/02 14:00	4.3	25.8	10/2/02 12:00	16.0	15.2
9/28/02 17:00	20.0	21.5	9/30/02 15:00	32.2	18.3	10/2/02 13:00	0.7	2.1
9/28/02 18:00	20.1	17.3	9/30/02 16:00	29.4	21.6	10/2/02 14:00	9.7	1.0
9/28/02 19:00	22.8	25.7	9/30/02 17:00	32.9	28.8	10/2/02 15:00	17.6	11.4
9/28/02 20:00	32.6	35.2	9/30/02 18:00	20.5	18.3	10/2/02 16:00	15.3	19.5
9/28/02 21:00	32.0	27.0	9/30/02 19:00	36.6	37.5	10/2/02 17:00	50.5	79.5
9/28/02 22:00	21.9	20.4	9/30/02 20:00	37.1	33.4	10/2/02 18:00	31.3	31.5
9/28/02 23:00	21.1	21.1	9/30/02 21:00	29.6	27.7	10/2/02 19:00	33.7	27.0
9/29/02 0:00	19.3	19.1	9/30/02 22:00	31.7	32.5	10/2/02 20:00	49.6	47.1
9/29/02 1:00	26.2	28.7	9/30/02 23:00	37.3	42.9	10/2/02 21:00	592.8	
9/29/02 2:00	27.7	30.6	10/1/02 0:00	30.0	31.1	10/2/02 22:00	53.6	
9/29/02 3:00	25.8	26.2	10/1/02 1:00	23.5	20.7	10/2/02 23:00	28.0	25.7
9/29/02 4:00	29.7	33.6	10/1/02 2:00	23.8	24.0	10/3/02 0:00	15.4	17.7
9/29/02 5:00	31.8	32.5	10/1/02 3:00	19.8	20.8	10/3/02 1:00	21.1	16.9
9/29/02 6:00	30.9	33.0	10/1/02 4:00	21.4	22.9	10/3/02 2:00	16.8	13.0
9/29/02 7:00	26.5	27.2	10/1/02 5:00	15.9	16.7	10/3/02 3:00		14.4
9/29/02 8:00	36.9	39.8	10/1/02 6:00	18.9	19.7	10/3/02 4:00		15.2
9/29/02 9:00	50.6	52.7	10/1/02 7:00	5.9		10/3/02 5:00		15.8
9/29/02 10:00	44.1	33.2	10/1/02 8:00	22.1	24.5	10/3/02 6:00	18.4	17.5
9/29/02 11:00	27.6	20.4	10/1/02 9:00	25.6	29.4	10/3/02 7:00	8.4	17.3
9/29/02 12:00	24.6	16.2	10/1/02 10:00	36.2	25.0	10/3/02 8:00	7.6	16.6
9/29/02 13:00	18.3	16.7	10/1/02 11:00	49.2	17.8	10/3/02 9:00	25.2	19.8
9/29/02 14:00	19.3	13.0	10/1/02 12:00	142.8	12.1	10/3/02 10:00	25.2	13.1
9/29/02 15:00	22.6	15.1	10/1/02 13:00	27.3	3.5	10/3/02 11:00		
9/29/02 16:00	21.7	19.3	10/1/02 14:00	98.4	39.1	10/3/02 12:00	3.5	
9/29/02 17:00	20.1	17.5	10/1/02 15:00	120.1	26.4	10/3/02 13:00	116.8	6.6
9/29/02 18:00	17.8	16.7	10/1/02 16:00	61.2	17.2	10/3/02 14:00	35.5	6.7

Shell Westgate TEOM Data (One-Hour Averages)

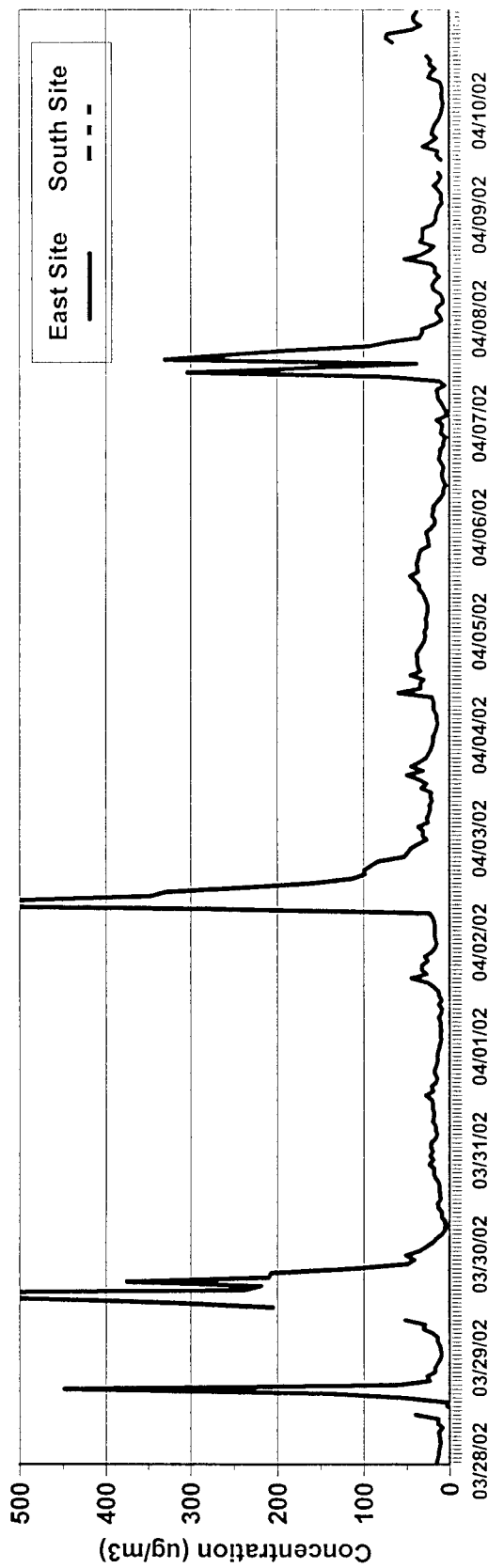
Date	East	South	Date	East	South	Date	East	South
10/3/02 15:00	178.3	6.4	10/5/02 13:00	69.3	79.7			
10/3/02 16:00	40.0	24.0	10/5/02 14:00	75.8	56.5			
10/3/02 17:00	84.6	27.5	10/5/02 15:00	38.2	31.4			
10/3/02 18:00	152.1	49.2	10/5/02 16:00	22.0	20.6			
10/3/02 19:00	61.7	44.2	10/5/02 17:00	27.9	35.1			
10/3/02 20:00	27.9	24.4	10/5/02 18:00	26.9	28.9			
10/3/02 21:00	27.2	34.1	10/5/02 19:00	28.0	29.8			
10/3/02 22:00	9.2	9.0	10/5/02 20:00	82.5	80.2			
10/3/02 23:00			10/5/02 21:00	19.8	14.5			
10/4/02 0:00	3.4		10/5/02 22:00	9.7	10.1			
10/4/02 1:00	12.4	6.7	10/5/02 23:00	16.0	14.8			
10/4/02 2:00	23.6	22.1	10/6/02 0:00	15.7	14.1			
10/4/02 3:00	27.3	34.6	10/6/02 1:00	10.0	7.9			
10/4/02 4:00	27.5	26.6	10/6/02 2:00	14.9	19.8			
10/4/02 5:00	20.5	26.2	10/6/02 3:00	17.6	19.9			
10/4/02 6:00	21.1	33.8	10/6/02 4:00	19.5	20.2			
10/4/02 7:00	19.6	19.9	10/6/02 5:00	20.6	20.5			
10/4/02 8:00	22.7	20.1	10/6/02 6:00	17.3	14.3			
10/4/02 9:00	14.2	15.1	10/6/02 7:00	16.1	13.6			
10/4/02 10:00	6.9	22.7	10/6/02 8:00	27.5	35.9			
10/4/02 11:00	35.5	24.2	10/6/02 9:00	26.1	26.0			
10/4/02 12:00	11.7	17.1	10/6/02 10:00	18.2	19.6			
10/4/02 13:00	16.1	8.2	10/6/02 11:00	22.0	15.5			
10/4/02 14:00	21.7	24.4	10/6/02 12:00	9.5	9.1			
10/4/02 15:00	6.8	1.5	10/6/02 13:00	7.0				
10/4/02 16:00	7.8	0.1	10/6/02 14:00	15.0	13.8			
10/4/02 17:00	14.7	12.7	10/6/02 15:00	1.5				
10/4/02 18:00	13.2	15.0	10/6/02 16:00	35.2	33.3			
10/4/02 19:00	28.0	32.2	10/6/02 17:00	50.3	61.1			
10/4/02 20:00	38.4	39.1	10/6/02 18:00	18.0	11.7			
10/4/02 21:00	33.5	32.0	10/6/02 19:00	40.9	41.6			
10/4/02 22:00	25.9	26.2	10/6/02 20:00	49.7	57.7			
10/4/02 23:00	21.3	21.7	10/6/02 21:00	19.7	14.6			
10/5/02 0:00	25.3	24.7	10/6/02 22:00	37.8	28.5			
10/5/02 1:00	28.9	30.0	10/6/02 23:00	45.5	29.1			
10/5/02 2:00	20.2	23.9	10/7/02 0:00	29.7	24.4			
10/5/02 3:00	17.2	19.4	10/7/02 1:00	27.0	22.1			
10/5/02 4:00	16.9	17.5	10/7/02 2:00	19.2	16.3			
10/5/02 5:00	14.8	17.4	10/7/02 3:00	13.9	11.6			
10/5/02 6:00	17.8	19.7	10/7/02 4:00	20.0	14.5			
10/5/02 7:00	21.2	21.3	10/7/02 5:00	8.0	4.6			
10/5/02 8:00	20.0	20.5	10/7/02 6:00	9.7	7.2			
10/5/02 9:00	25.6	22.9	10/7/02 7:00	16.1	14.5			
10/5/02 10:00	37.7	40.6	10/7/02 8:00	15.1	12.2			
10/5/02 11:00	37.1	42.5	10/7/02 9:00	15.1	7.3			
10/5/02 12:00	48.0	53.0						

Appendix F

Graphs of 1-Hour TEOM Averages

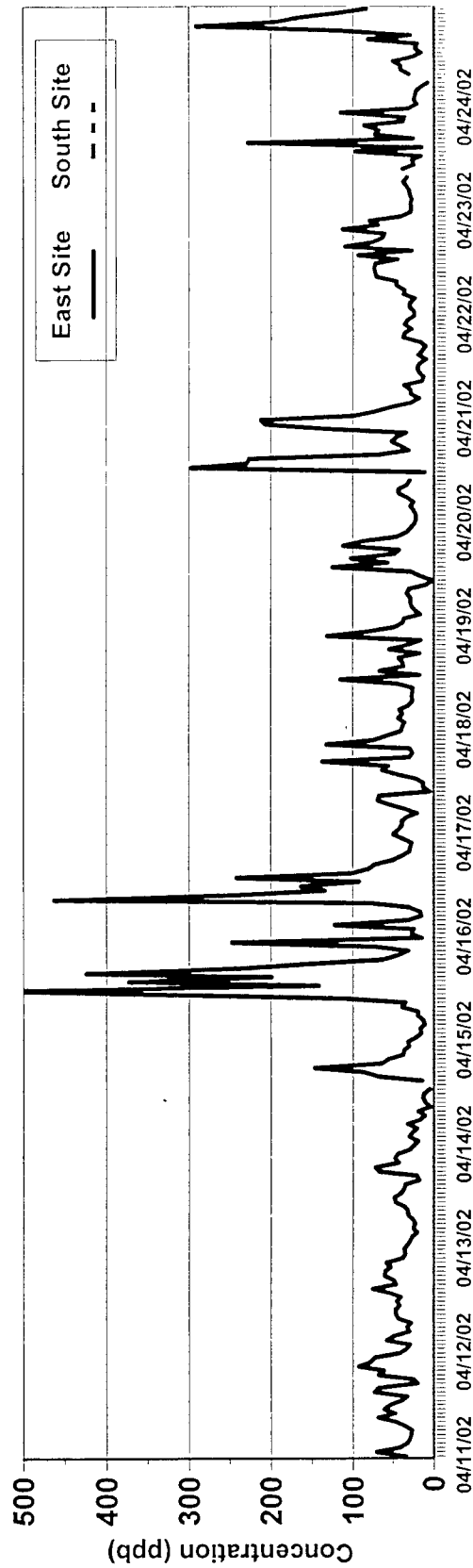
Summary of 1-Hour PM10 Concentrations

28 March through 10 April 2002



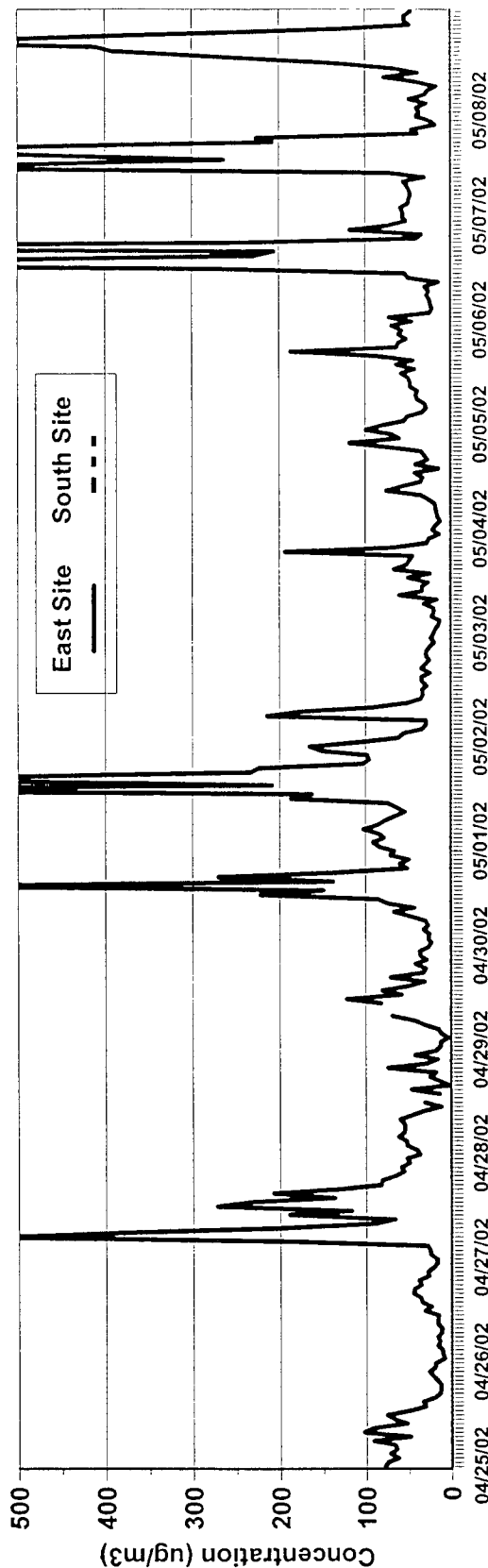
Summary of 1-Hour PM10 Concentrations

11 April through 24 April 2002



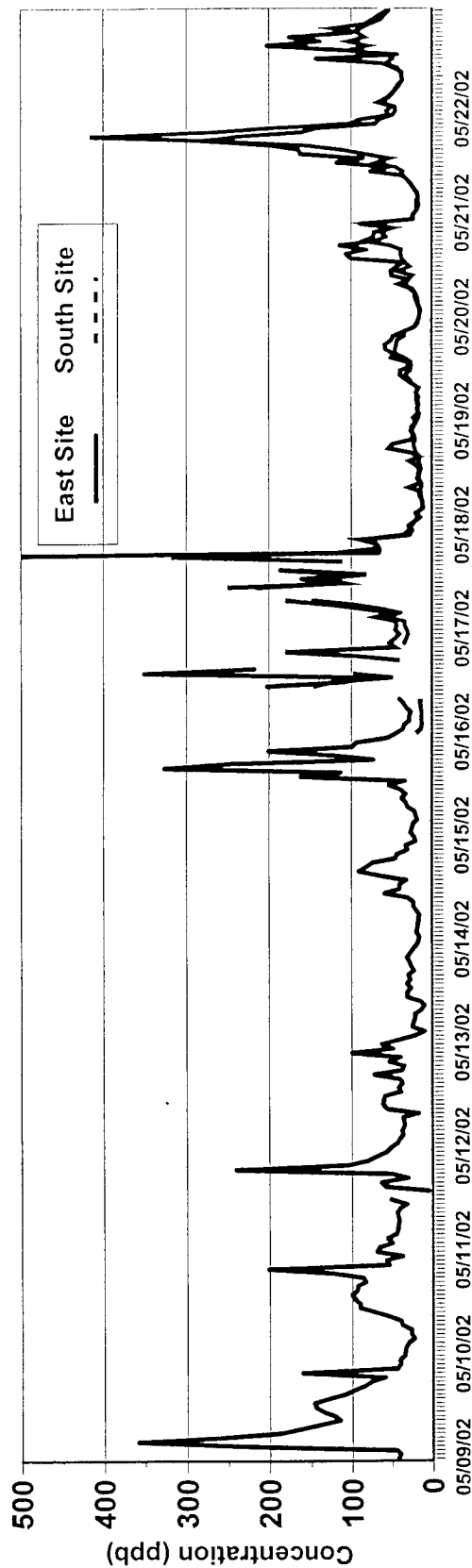
Summary of 1-Hour PM10 Concentrations

25 April through 18 May 2002



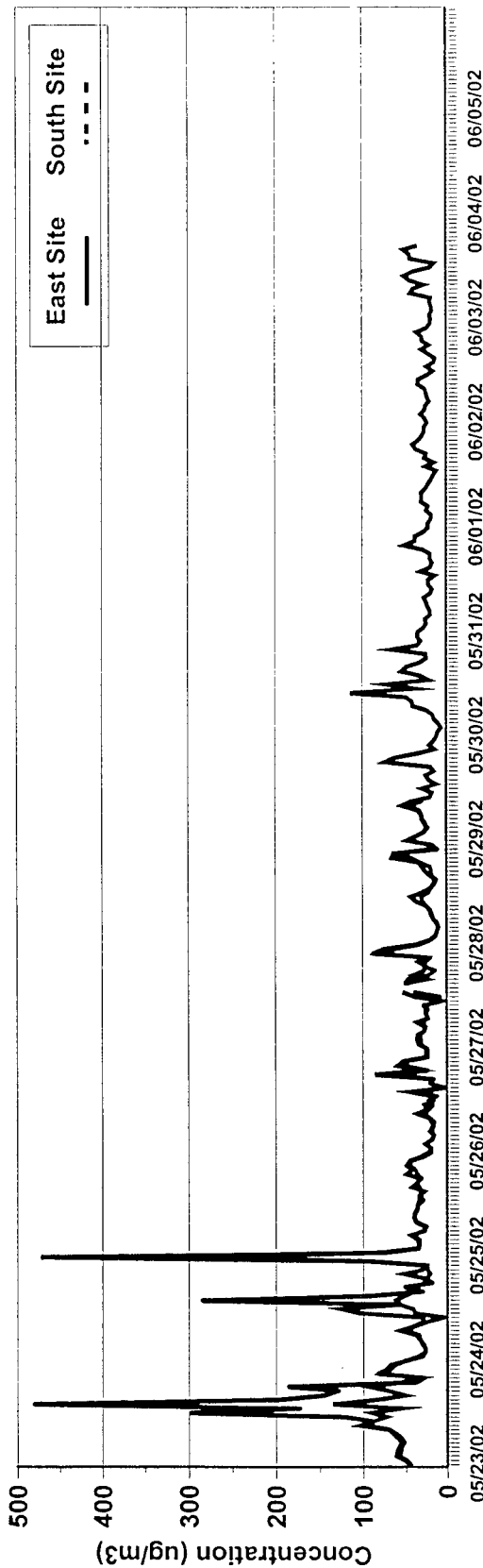
Summary of 1-Hour PM10 Concentrations

9 May through 22 May 2002



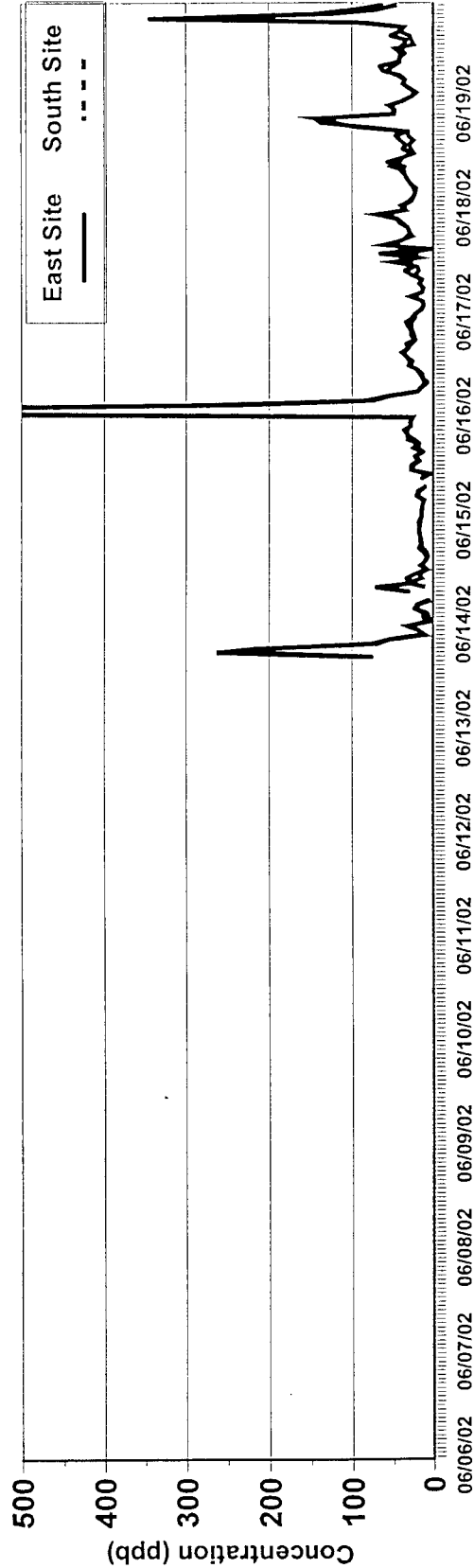
Summary of 1-Hour PM10 Concentrations

23 May through 5 June 2002



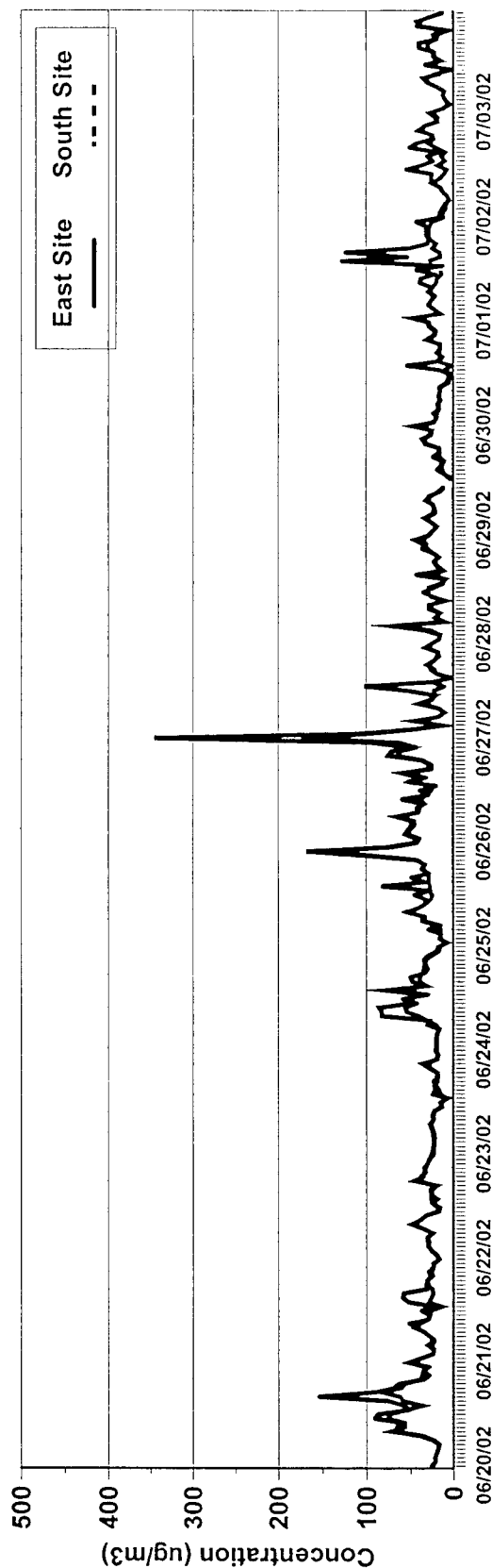
Summary of 1-Hour PM10 Concentrations

6 June through 19 June 2002



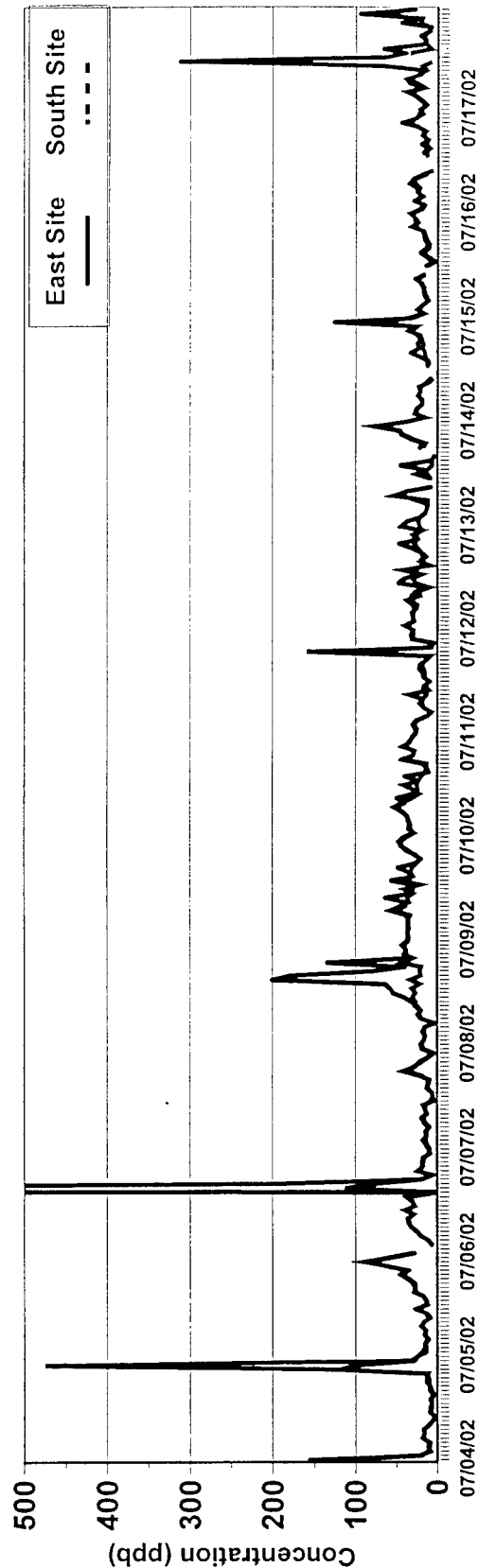
Summary of 1-Hour PM10 Concentrations

20 June through 3 July 2002



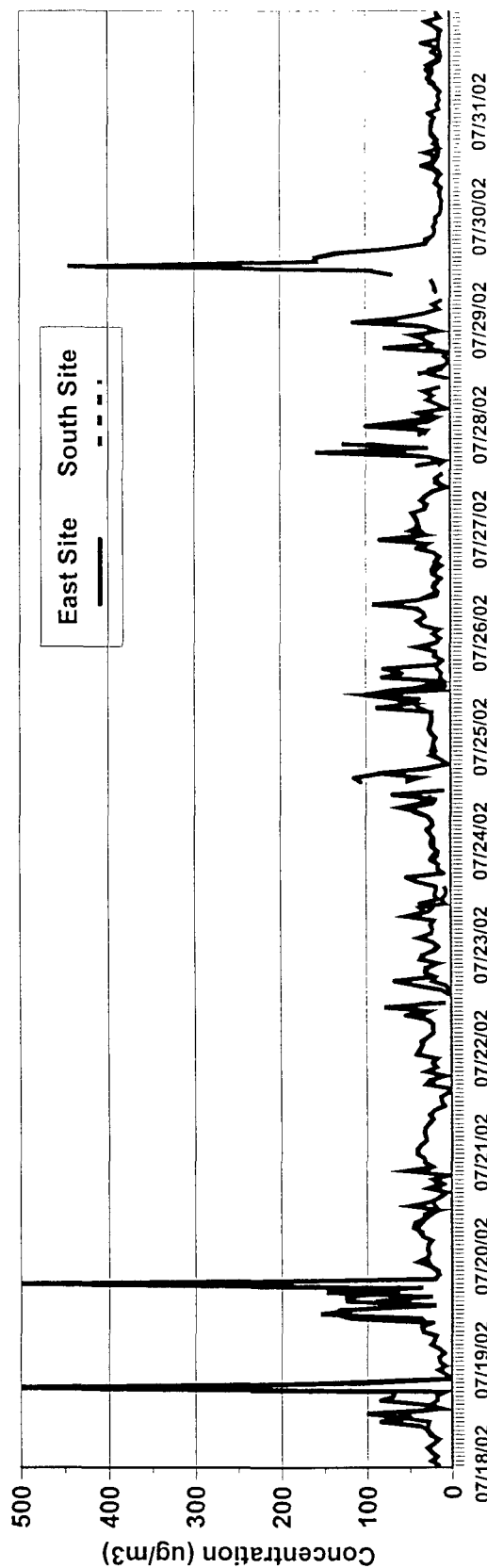
Summary of 1-Hour PM10 Concentrations

4 July through 17 July 2002



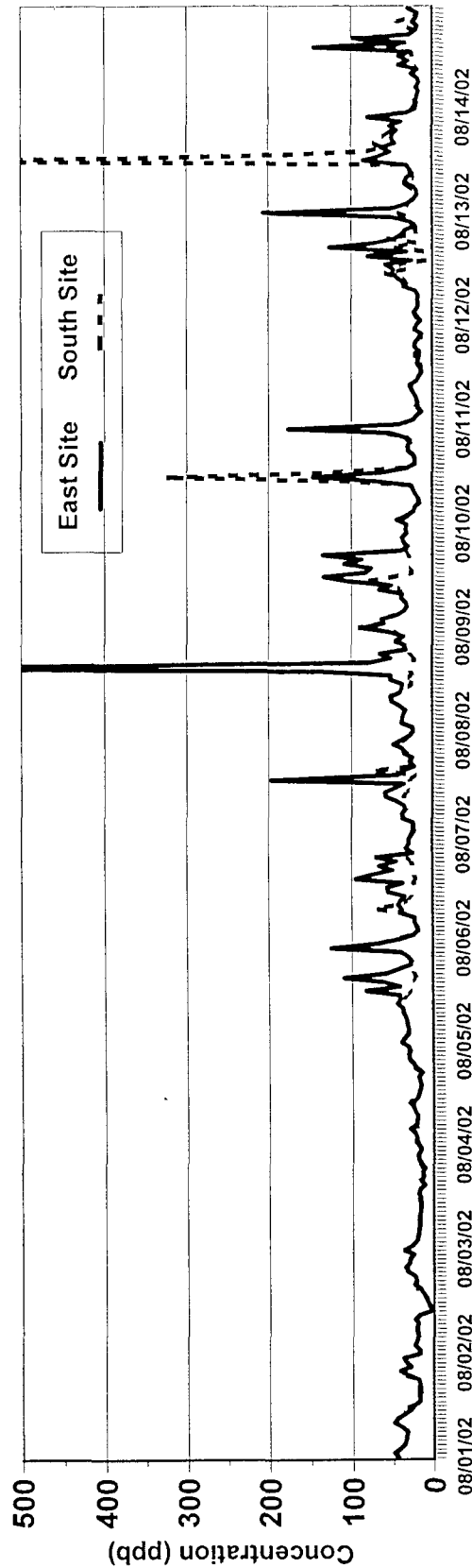
Summary of 1-Hour PM10 Concentrations

18 July through 31 July 2002



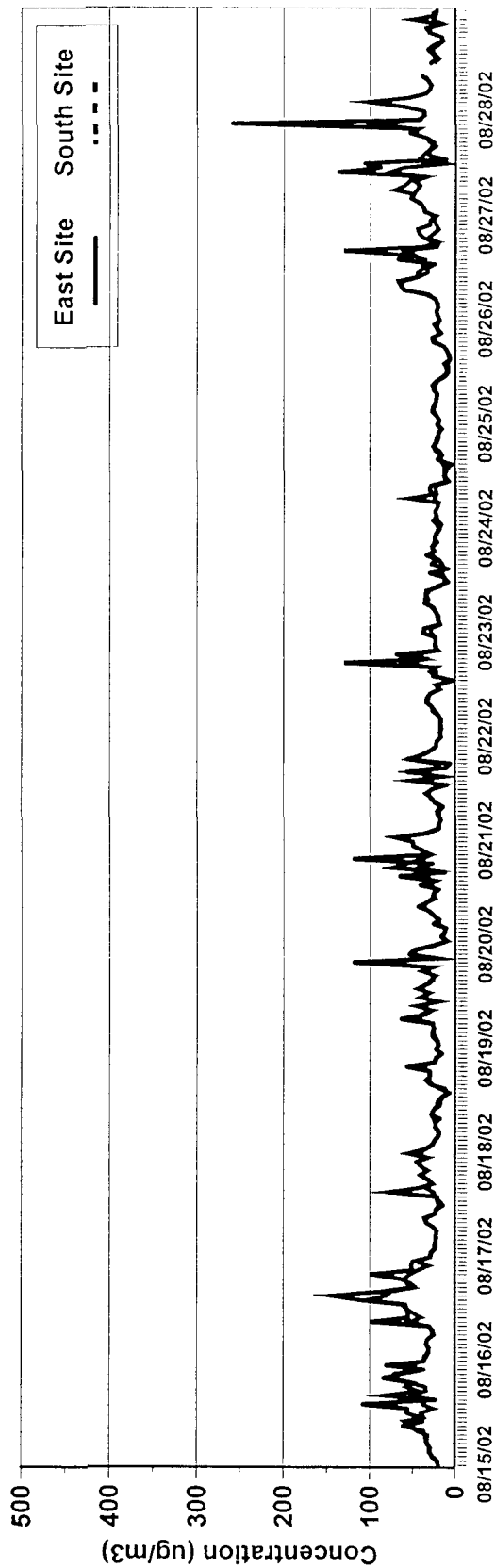
Summary of 1-Hour PM10 Concentrations

1 August through 14 August 2002



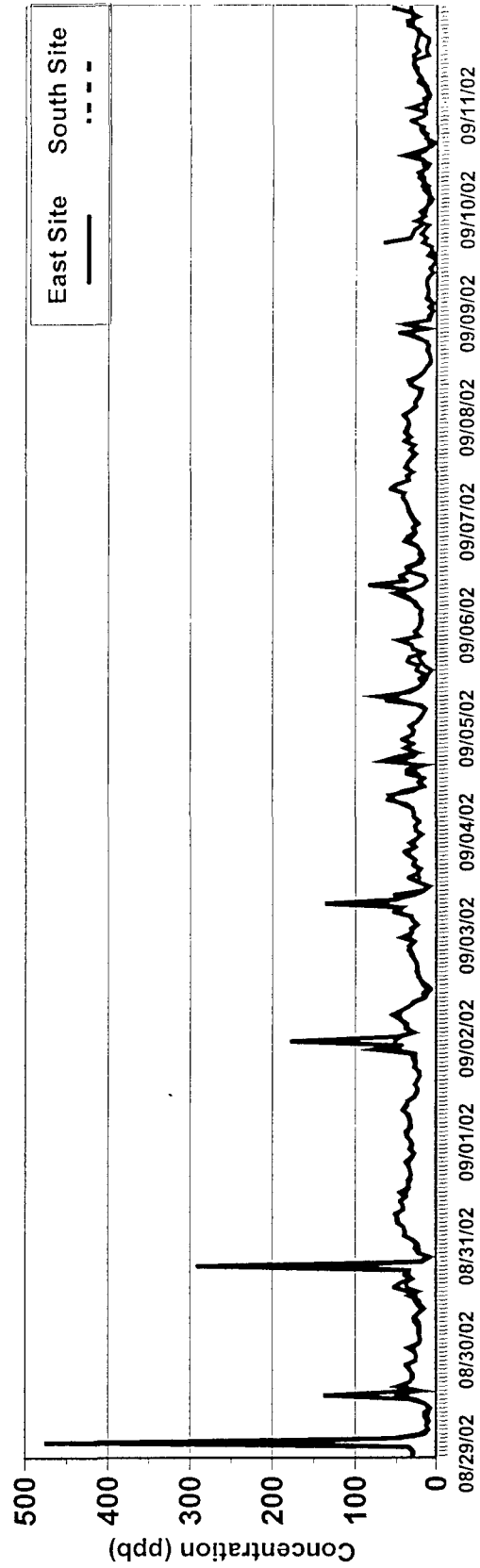
Summary of 1-Hour PM10 Concentrations

15 August through 28 August 2002



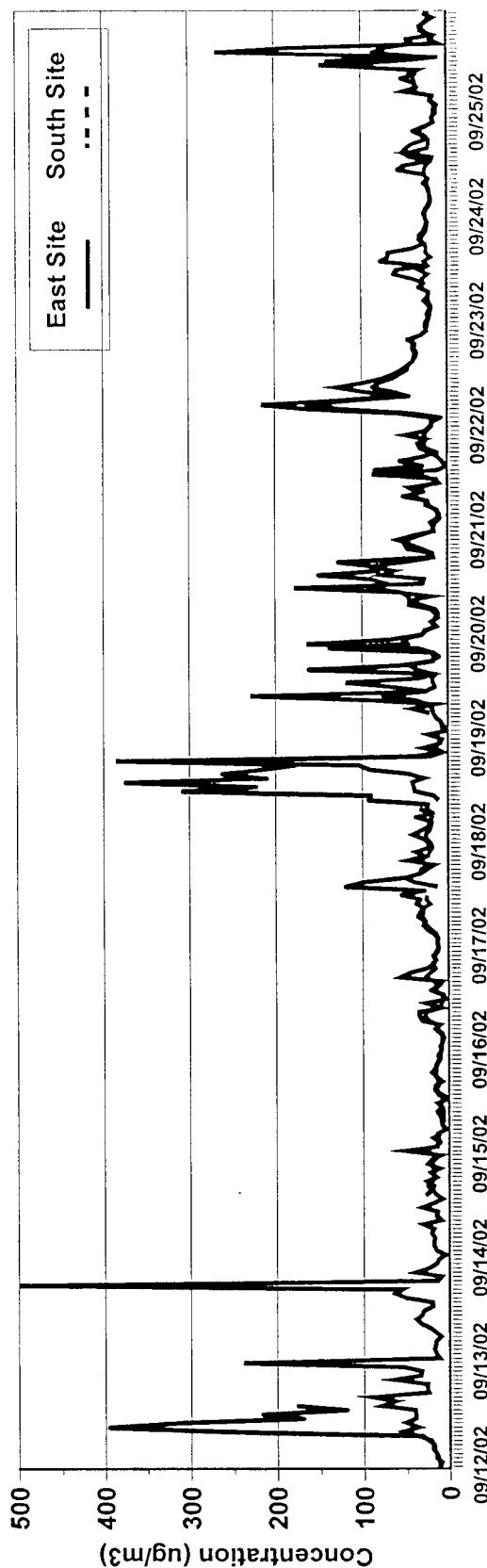
Summary of 1-Hour PM10 Concentrations

29 August through 11 September 2002



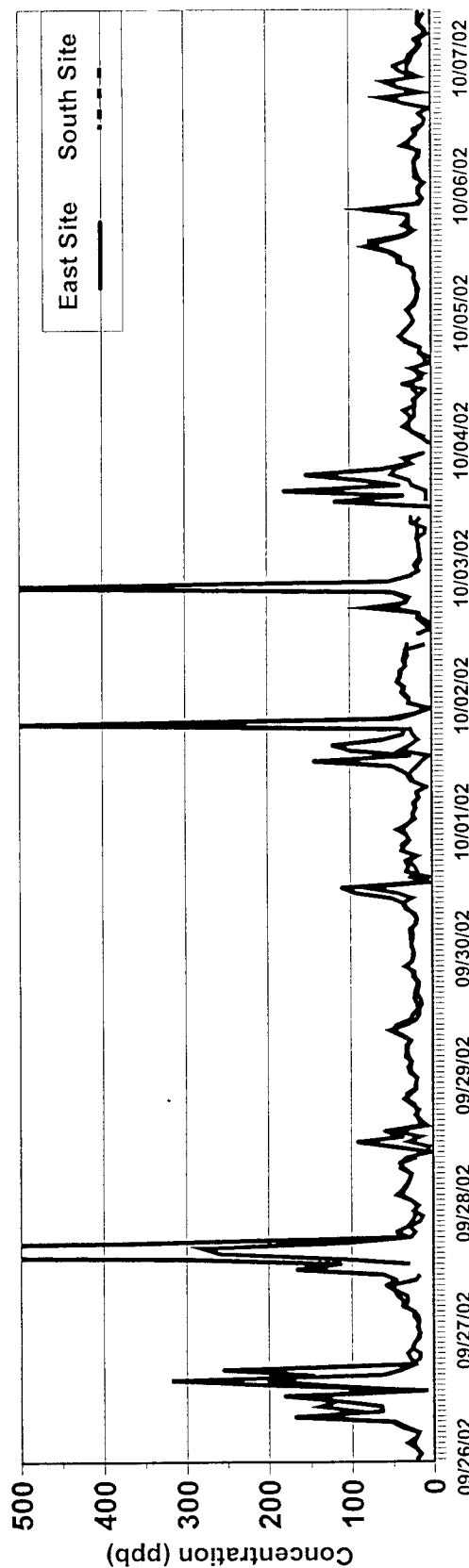
Summary of 1-Hour PM10 Concentrations

12 September through 25 September 2002



Summary of 1-Hour PM10 Concentrations

26 September through 7 October 2002



Appendix G
Operations Logs

4-12

5:00 pm 4-wheelers noted on south side of site across fence kicking up dust.

4-15

8:55 am Excavator moving into tent. Dump trucks positioning. Ground has not been watered down yet. Wallach truck dumping load of clay outside tent and near east monitor station.

9:10 am Water truck watering site.

10:06 am Wind picked up blowing dirt across site.

10:25 am Water truck watering. Wallach truck dumping another load of clay – truck causing some dust.

10:30 am Winds picked up again blowing dust around. Dump trucks moving around.

10:48 am Still watering around site.

11:15 am Windy. Truck backing into tent. Some dust blowing.

11:30 am Windy. Trucks moving around. Dusty.

12:00 pm Watered Site.

1:00 pm Watered Site.

1:10 pm Trucks positioning for 3rd haul. Some wind. Some light dust.

1:22 pm Watering site.

2:20 pm Watering site.

3:00 pm Dust devel blew through site.

3:18 pm Trucks positioning for 4th haul causing some dust.

4:00 pm Watering site.

4:10 pm High winds. No other truck activity.

4-16

8:30 am Trucks loading 1st haul.

8:40 am Very gusty. Dust blowing across site from the west.

8:45 am Watering site.

9:30 am Watering site.

10:30 am Watering site.

10:55 am High gusty winds. Dust blowing from off site.

11:05 am 1st truck leaving with second load.

11:10 am Site well watered. No dust from truck activity.

11:34 am Still very gusty. Light dust.

11:35 am Watering outside fence.

12:02 pm Last truck leaving with 2nd load.

1:05 pm 1st truck loading up. Some dust.

1:15 pm Watering site.

1:25 pm Wallach truck dumping gravel for road. Wind out of SW blowing across site. Dump truck creating some dust.

1:40 pm	Some dust in front of tent from trucks pulling out. Water truck watering in front of tent entrance.
1:50 pm	Excavator driving out of tent to refuel. Dust blowing off of excavator across to monitor station.
2:10 pm	Excavator spreading gravel in front of tent creating dust.
2:15 pm	Guy wet down gravel to try and minimize dust.
2:25 pm	Last truck leaving on 3 rd haul.
2:30 pm	Watering site.
2:50 pm	1 st truck back for last load. Watering site.
3:25 pm	2 nd truck pulling out of tent. Some light dust blowing.
3:35 pm	3 rd truck backing into tent. Some light dust blowing.
3:45 pm	3 rd truck pulling out of tent. Wind blowing dust across site.
4:00 pm	4 th truck leaving tent. Blowing dust.
4:30 pm	Watering site.

4-17

9:00 am	Watering site.
9:47 am	1 st truck leaving site. Three other trucks on site.
10:23 am	Watering site.
10:26 am	Breezy but low winds. Very little dust blowing.
10:30 am	Last truck leaving.
11:10 am	1 st truck back for 2 nd haul. No dust blowing. Site well watered.
12:30 pm	Last truck leaving.
1:47 pm	Watering site.
2:00 pm	Trucks loading 3 rd haul. Winds picking up a little.
2:42 pm	Last truck leaving site.
2:50 pm	Watering site.
3:31 pm	1 st truck back for 4 th haul. Light to no dust. Site well watered. Light winds.
3:41 pm	Watering dirt roads outside site fence.
4:05 pm	3 rd truck loading up.
4:10 pm	Dust devel in front of tent. Winds picked up blowing some dust.
4:30 pm	All trucks are gone.
5:00 pm	Watering site.

4-18

8:45 am	Trucks positioning. Site well watered – no dust.
9:45 am	Last truck leaving site. Excavator graveling road in front of tent. Visible dust.
10:45 am	1 st truck back for 2 nd haul.
11:00 am	Dust blowing across site.
11:54 am	Water truck watering in front of tent. Last truck leaving.
1:00 pm	1 st truck loading 3 rd haul. Two trucks on site.
1:37 pm	Last two trucks on site.
2:00 pm	Watering.

2:30 pm	Watering roads.
2:55 pm	Watering around trailers.
3:00 pm	1 st truck back for 4 th haul.
4:00 pm	Last truck leaving.
4:45 pm	Watering site for last time.

4-19

8:45 am	Trucks positioning.
9:07 am	Garbage truck 1 block on east side stirring up dust.
9:15 am	Last truck leaving.
9:27 am	Water truck watering.
10:48 am	Watering around site perimeter.
11:00 am	1 st truck back for 2 nd haul.
1:00 pm	Watering site.
2:50 pm	Watering roads.
3:07 pm	Dust from trucks.
3:20 pm	Watering site.
3:42 pm	Trucks returning.
4:50 pm	Watering site.

4-22

8:40 am	Watering site.
8:45 am	Trucks positioning. Site well watered. Overcast, no wind.
11:00 am	2 nd haul. Last truck leaving.
11:45 am	Watering site.
1:00 pm	Trucks loading 3 rd haul. Tractor moving gravel. Dusty. Water truck watering.
2:00 pm	Water truck watering.
3:00 pm	Trucks loading last haul.
4:00 pm	Last truck leaving. Tractor moving gravel to repair pot holes.
4:10 pm	Watering site.
5:00 pm	Watering site.

4-23

7:30 am	Watered site.
1:00 pm	1 st truck back loading 3 rd haul.
1:41 pm	Watering site.
3:15 pm	4-wheelers, motorcycles kicking up dust on south side of site.

4-24

7:45 am	Water truck watering.
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8:30-9:15 am Trucks loading up and leaving. Watering site.
10-11:00 am Trucks loading up and leaving.
1-2:00 pm Watered site. Trucks loading 3rd haul.
3-4:00 pm Watered site. Trucks last load for the day.
5:45 pm Bad dust storm.

4-25

8:45 am Trucks loading 1st haul.
9:30 am Last truck leaving. Water truck watering.
10:30 am Trucks loading 2nd haul.
11:30 am Raining.
1:00 pm Trucks loading 3rd haul.
3:00 pm Loading last haul.
4:00 pm All trucks gone. Rainy and cloudy most of the day.

4-26

8:45 am Trucks positioning for 1st haul using Cobb. Site muddy and wet.
Overcast.
10:20 am Trucks loading 2nd haul.
1:15 pm 3rd haul.
3:20 pm 4th haul

4-27

Watered site.
4-wheelers riding outside site.

4-28

Watered site. Gusty.

4-29

8:30 am Trucks loading 1st haul.
11:00 am Trucks loading 2nd haul.
1:00 pm 3rd haul.
3:30 pm 4th haul.
4:45 pm Site well watered.

4-30

7:30 am Site well watered.
8:30 am 1st haul loading.

9:15 am	Manlift delivered.
9:30 am	Watering site and in front of tent.
10:30 am	Windy w/high gusts.
11:30 am	Windy and high gusts. Dust blowing.
12:00 pm	Watering site.
1:15 pm	Wind blowing dust across site and in neighborhood.
1:30 pm	Manlift positioning in front of tent.
1:31 pm	A lot of dust blowing – mostly from off site and some from trucks moving around. High winds.
1:45 pm	Watering site.
1:51 pm	Dust blowing east across site from off site.
2:00 pm	Street sweeper on Berry Street stirring up dust.
2:06-2:15 pm	Sweeper making a pass along north end of site perimeter. Lots of dust.
4:15 pm	Site well watered. Manlift leaving.
4:40 pm	Watering site.

5-1

7:30 am	Site watered.
8:45 am	Loading 1 st haul.
9:30 am	Watering site. Trucks gone.
10:00 am	Winds picking up – gusty. Site well watered.
10:17 am	Street sweeper on Tasker on southeast end of site – stirring up a lot of dust.
11:13 am	Loading 2 nd haul. Two trucks on site.
11:25 am	Dust storm blowing through site. Very dusty.
11:36 am	Water truck watering on and off site. Gusty winds. Lots of dust from off site.
1:10 pm	1 truck on site loading 3 rd haul. Very dusty windy/dusty.
1:30 pm	Water truck watering site.
1:42 pm	Very gusty winds blowing dirt across site. Site well watered. Two trucks on site for 3 rd haul.
3:00 pm	Two trucks back on site for 4 th haul.
3:47 pm	Watering site.
4:30 pm	Watering site.

5-2

7:30 am	Site watered.
8:41 am	Trucks moving around loading 1 st haul.
11:00 am	Loading 2 nd haul. One truck on site.
11:17 am	Two more trucks on site for 2 nd haul.
1:15 pm	Two trucks on site for 3 rd haul.
2:08 pm	Wallach dumping load of clay.
3:15 am	Repairing tear in front of structure with manlift. One truck on site – 4 th haul.

5-3

7:30 am Watering site.
8:40 am Trucks loading 1st haul. 4 dump trucks on site.
8:57 am Wallach truck dumping load of clay in front of east station some dust.
10:07 am Wallach truck dumping another load of clay. No other truck activity.
11:00 am Watering site.
11:30 am Wallach dumping another load of clay. Trucks leaving with 2nd haul.
1:15 pm Trucks loading 3rd haul.
1:30 pm Wallach dumping load of clay.
2:45 pm Watering site.
3:15 pm Truck back for 4th haul. One dump truck on site.
4:00 pm Wallach bringing another load of clay.
4:45 pm Watering site.

5-4

6:00 pm Kids on 4-wheelers outside site on south side.

5-5

Rainy, windy and hail.

5-6

8:30 am Site activities beginning. Four trucks on site. Ground wet from weekend rains.
10:30 am Loading 2nd haul.
10:15 am Wallach – load of clay.
11:00 am Vacuum truck in front of office. Site wet still – no visible dust.
11:20 am Wallach – load of clay.
11:40 am Winds picked up – blowing dust across site.
1:30 pm Watering site. Trucks loading 3rd haul.
3:00 pm 1st truck back for 4th haul.
4:10 pm Dust storm blew through site.

5-7

8:30 am Site activities beginning.
9:30 am Water truck watering site.
10:30 am Very dusty from wind.
11:30 am Very dusty from wind. Watering site. Trucks loading 2nd haul.
1:00 pm Windy.
1:10 pm Trucks back for 3rd haul.

1:45 pm	Water truck watering.
2:30 pm	Shut down site operations due to wind and dust blowing into neighborhood. Excavator moved back into structure.
2:50 pm	Watering site and in front of tent. Put extra water around clay mounds.
2:55 pm	Truck back for 4 th haul. Work commenced after watering down site.
3:09 pm	Two more trucks on site.
3:40 pm	Watering site.
4:00 pm	Wallach dumping load of clay.
4:30 pm	Watering site.

5-8

7:30 am	Watered site.
8:20 am	Trucks positioning for 1 st haul.
9:18 am	Watering site. All other trucks loaded and gone. No other site activity.
10:00 am	Windy. Site well watered.
10:04 am	Wallach dumped another load of clay. No visible dust blowing.
10:30 am	No truck activity. Site well watered.
11:00 am	Trucks returning for 2 nd haul.
11:15 am	Kids riding 4-wheelers outside site fence on south and west end.
11:35 am	Winds picked up blowing dust.
11:47 am	Watering front of tent.
11:50 am	Huge mass of dirt and dust blew across site. Site well watered.
12:05 pm	Dust blowing across site.
1:35 pm	Wind gust blew large mass of dust across site. No truck activity at this time.
1:45 pm	1 st truck back for 3 rd haul. Site well watered.
2:35 pm	Dumping load of clay. School bus riding along fenceline stirring up dust.
3:07 pm	1 st truck back for 4 th haul.
3:30 pm	Watering site.
4:15 pm	Last truck gone.
4:30 pm	Watering site.

5-9

8:30 am	Trucks positioning for 1 st haul. Site well watered.
9:30 am	Last truck leaving.
9:45 am	Site still damp.
10:55 am	Watering site. Soil saturated. First truck back for 2 nd haul. One truck on site.
11:15 am	Three trucks on site; one in tent; one waiting; one in tire wash.
11:45 am	Last truck gone. No other site activity.
12:40 pm	Water truck saturated entire site.
1:10 pm	Trucks returning for 3 rd haul.
2:00 pm	Last truck gone.
2:34 pm	Watering site.

3:13 pm Trucks back for 4th haul. Two truck on site.
3:50 pm Last two trucks on site for 4th haul.
4:00 pm Watering site.
4:10 pm Excavator pulling out of tent to park near clay mounds.

5-10

8:00 am Watered site.
9:00 am Truck activity beginning. Only two trucks on site for the day.
9:20 am Site well watered.
10:15 am Site still damp. Activity inside structure – front end loader moving dirt.
No other site activity.
11:00 am Truck back on site to reload – 2nd haul.
1:25 pm Two trucks on site to haul.
2:02 pm Watering site. No other site activity.
2:45 pm Still no site activity. Nothing else for today.
5:00 pm Watered site.

5-11

Watered site.

5-12

Watered site.

5-13

No site activity for trucks or other dirt moving equipment.
9-10:45 am Sampling in tent.
11:15 am Watering site.

5-14

10:40 am Watering site. No other site activity.

5-15

7:30 am Watered site.
8:40 am Watered site. No other site activity.
1:00 pm Began moving clay from mounds outside structure inside. Two trucks, and excavator and a water truck all in area near monitor station. Lots of dust from excavator dumping clay into dump trucks.
1:41 pm Watering down clay as excavator loads trucks to minimize blowing dust.
3:20 pm Still loading trucks – dusty.
3:30 pm Water truck watering down clay with hose.

5-16

7:45 am Watering site.
8:30 am Watering site and roads. Watering roads near caliche pit off site.
9:30 am Watering site. No trucks on site – at caliche pit loading backfill.
9:38 am 1st truck back on site with 1st load of backfill.
9:40 am Truck dumped load in front of structure – dusty. Dozer pushing dirt into structure to create new ramp – dusty.
10:15 am Watering site.
10:40 am Watering site.
10:45am Truck pulling onto site kicked up dust along road.
11:15 am Watered in front of structure to minimize dust off moving vehicles.
1:15 pm Watering site and in front of structure. Trucks coming and going every 10-15 minutes unloading backfill.
1:30 pm Watering site and in front of structure.
1:50 pm Watering inside structure, around site and in front of structure. Trucks still hauling in caliche.
3:00 pm Trucks gone – no site activity.
3:30 pm Trucks back to unload caliche about 10 minutes apart.
3:45 pm Watering in front of structure and truck ramp.
4:05 pm Two trucks on site unloading.

5-17

8:00 am Watered roads and site.
9:00 am No site activity yet. Trucks @ pit loading caliche.
9:10 am Truck returning to site to unload caliche. Not a lot of dust off truck.
9:45 am Unloading caliche. Watering in front of tent.
10:30 am Trucks dumping caliche still about every 10 minutes. Windy some dust. Dust blowing from off site.
11:30 am Watering site and in front of tent.
1:00 pm Work resumed. A little dusty.
4:00 pm Garbage trucks on north side of site kicking up dust.
4:20 pm Watered site.

5-18

Watered site. No other site activity.

5-19

Watered site. No other site activity.

5-20

8:33 am	Site activity beginning. Trucks leaving to caliche pit.
9:00 am	Back from pit. Trucks every 10 minutes back and forth.
12:00 pm	Four trucks on site to unload.
1:30 pm	Truck backing into structure with caliche. Three vehicles (not dump trucks) in corner by station all with their engines on.
1:45 pm	Watered site.
2:00 pm	Site well watered.
2:15 pm	Two trucks on site – one coming and one leaving – some dust.
3:00 pm	Truck leaving.
3:27 pm	Watering in front of tent and on site.
3:45 pm	No site activity.
4:00 pm	1 truck on site to unload. Not much dust.
4:15 pm	2 trucks on site to unload.
4:20 pm	3 trucks on site.
4:30 pm	Truck pulling out of tent. Lots of dust. Last load today.
4:40 pm	Vehicle parked outside tent entrance and left running.
4:45 pm	Watering site.

5-21

8:30 am	Site activity beginning. Watered site.
9:00 am	Trucks back from pit. Watering site.
10:00 am	Trucks every 10 minutes from pit. Windy – some dust.
12:00 pm	Watered site.
1:30 pm	Trucks every 10 minutes from pit. Windy. Watering site.
4:00 pm	Site activities cease.
5:00 pm	Watering site.

5-22

8:00 am	Watered site.
8:30 am	Watering site. Site activity beginning. Trucks going to pit to unload caliche.
9:27 am	Site saturated. Truck backing into structure to dump caliche.
9:37 am	Truck backing into structure to unload. Site saturated – no dust from tires-dust blowing off trailers as they pull out.
11:20 am	Watering inside tent.
11:28 am	Truck on site to unload.
11:37 am	Trucks every 10 minutes.
1:15 pm	Dust storm blew through neighborhood to the north of site.
1:45 pm	Watered site twice in a row in front of structure to saturate since winds are drying it up quickly. Trucks pulling out of structure. No tire dust. Guy pulling away from structure.
1:50 pm	All trucks gone. No site activity.
2:16 pm	Truck returning to site with load.

** The water truck waters three different areas; the site within the fence, the parking area and dirt roads leading to site. Each area is watered approximately every fifteen minutes.

6-4

8:30 am Site activity beginning. Crane on site.
9:10 am Manlift in corner where east monitor station was. Crane crew rigging up crane near south station.
10:45 am Finished crane assembly.
11:30 am Watering around structure where working.
11:45 am Watering site thoroughly.
1:20 pm Huge dust storm blew through site.
3:30 pm Dust storm blew through site.
4:40 pm Dust storm.

6-5

5:00 am Site work began. Structure moving crew preparing for structure move.
Manlifts in operation.
10:00 am Moved structure.

6-6

8:30 am Moving 2nd half of structure. Crane, manlift and forklift in use.

6-7

Repairing fabric on structure. Manlift and forklift in use.

6-8

Repairing structure. Manlift and forklift in use.

6-10

Reconstructing duct work. Moving south monitor station.

6-11

Assembled carbon filter system.

6-12

Reconstructed sound barriers.

6-13

Reconstructed sound barriers. Got monitor stations on line.

6-14

Reconstructed sound barriers.

6-18

8:25 am	Site activity beginning.
8:40 am	Truck 1 positioning and backing into structure. Water truck watering site. Truck 2-3-4 waiting on site. Small dump truck and backhoe excavating behind structure. Watered behind structure to minimize dust off backhoe.
9:07 am	Truck 2 in structure. Truck 3-4 waiting.
9:30 am	Truck 3-4 gone.
9:52 am	No site activity except small dump truck and backhoe behind structure.
10:47 am	Truck 1 back on site to reload. Watering site.
11:00 am	Truck 2 on site.
11:20 am	Truck 3 backing into structure. Truck 4 on site and waiting.
11:30 am	Wallach truck dumping a load of clay. (near east monitor station)
11:40 am	Truck 4 leaving.
1:10 pm	Truck 1 back on site to reload. Water truck watering.
1:22 pm	Truck 2 in structure. Truck 3 waiting on site.
1:37 pm	Truck 4 in structure.
1:47 pm	Last truck leaving site. No other site activity except backhoe and small dump truck behind structure.
2:45 pm	Truck 1 back on site for last haul. Waiting at tire wash for workers/observers to get out of structure.
3:30 pm	All trucks back and waiting. Excavator digging inside structure. Small dump truck and backhoe still working behind structure. Watering site. No other hauling for today.

6-19

8:35 am	Site activity beginning. Watering site and behind structure to minimize dust from small dump truck and backhoe. First truck backing into structure. Truck 2-3-4 waiting.
9:10 am	Truck 3 in structure. Truck two at tire wash.
9:30 am	Truck 4 pulling out of structure. Trucks are tarped as they pull out. Very little dust coming off trucks.
10:26 am	Watering site.
10:55 am	Truck 1 back on site.

11:02 am	Truck 2 waiting outside structure. Truck 1 in structure.
11:05 am	Truck 1 leaving site. Truck 2 in structure.
11:20 am	Truck 3 in structure.
11:27 am	Truck 4 backing into structure.
1:00 pm	Four trucks back on site for 3 rd haul. Watering site.
1:35 pm	Truck 4 in structure. Watering site.
1:45 pm	Last truck leaving site.
2:00 pm	Watering site.
2:51 pm	Truck 1 back for last load.
3:00 pm	Truck 2 on site.
3:25 pm	Truck 3 in structure. Truck 4 on site waiting.
3:42 pm	Last truck leaving site. No other site activity.

6-20

8:20 am	Site activity beginning. Truck 1 positioning.
8:46 am	Truck 2 in structure. Truck 3-4 waiting.
9:20 am	All trucks gone. No other site activity.
11:02 am	Truck 1 back on site.
11:42 am	Last truck loaded and leaving.
1:07 pm	1 st truck loaded and leaving site. Truck 2 backing into structure. Watering site.
1:28 pm	Truck 3 waiting on site.
1:40 pm	Truck 3 in structure. Truck 4 waiting on site.
2:00 pm	Truck 4 leaving site.
3:00 pm	Truck 1 backing into structure. Truck 2 waiting on site.
3:07 pm	Truck 2 in structure. Truck 1 leaving.
3:16 pm	Backhoe parked near east station. Possible exhaust intake at monitor. Gusty winds.
3:30 pm	Watering site.
3:34 pm	Truck 3 on site for last haul.
3:40 pm	Truck 4 waiting on site. Truck 3 in structure. Gusty winds. Site well watered. Roads watered.
3:54 pm	High wind gusts blew through site.
4:00 pm	Last truck gone. No other site activity.
4:40 pm	Backhoe parked near east monitor station.

6-21

8:20 am	Site activity began. Trucks positioning.
8:50 am	Truck 3 in structure. Truck 4 waiting. Truck 1-2 already gone.
8:55 am	Truck 3 in tire wash. Truck 4 backing into structure. Watering site.
9:05 am	Site well watered. No other site activity.
10:00 am	Truck 1 back on site to reload.
10:30 am	Truck 3 leaving site.
11:30 am	All trucks gone. No other site activity.

1:30 pm	Truck 1 back on site and reloading. Truck 2 waiting on site.
1:47 pm	Truck 3 waiting. Truck 2 in structure.
1:52 pm	Truck 3 in structure.
2:05 pm	Truck 4 in structure.
3:20 pm	Truck 1 in structure.
3:27 pm	Truck 2 waiting outside.
3:35 pm	Truck 2 in structure. Truck 3 waiting.
4:00 pm	All trucks gone. Watering site.
4:15 pm	Watering site.

6-24

8:35 am	Site activity beginning. Slightly overcast and breezy.
8:40 am	1 st truck in structure. 2-3-4 waiting on site.
8:55 am	Truck 2 leaving. Three in structure. Four waiting. Watering site.
9:10 am	All trucks gone from site. No other site activity.
9:30 am	Watering roads.
10:30 am	1 st truck back on site in structure.
10:45 am	2 nd truck in structure.
10:55 am	2 nd truck at tire wash.
11:15 am	3 rd truck in structure. 4 th truck waiting outside structure.
11:25 am	4 th truck in structure.
11:30 am	All trucks gone from site. No other site activity. Watering site.
1:10 pm	1 st truck backing into structure. 2 nd truck waiting outside structure.
1:15 pm	1 st truck pulling out of structure. Dust blowing off truck.
1:25 pm	Truck 2 in structure. Three waiting. Watering site.
1:30 pm	Truck 3 backing into structure. Truck 4 waiting on site. Truck 2 in tire wash.
1:37 pm	Truck 3 leaving structure. Truck 4 backing in. Very little dust blowing.
1:50 pm	Last truck leaving site. Watering site.
3:20 pm	Truck 1 back on site.
3:30 pm	Truck 1 pulling out of structure. Truck 2 backing in.
3:40 pm	Truck 2 pulling out of structure. Truck 3 backing in.
3:44 pm	Truck 4 on site waiting.
4:00 pm	All trucks gone from site. No other site activity. Watering site and roads.

6-25

8:20 am	Site activity beginning.
8:35 am	1 st truck in structure. Truck 2 waiting outside structure. Three and four waiting outside fence.
8:37 am	Truck 2 backing into structure.
8:43 am	Truck 3 waiting outside structure.
8:45 am	Truck 3 backing into structure. 4 waiting outside structure. 2 in tire wash.
8:55 am	Truck 4 backing into structure.

9:10 am Truck 4 leaving site.
 10:42 am Truck 1 backing into structure for second haul.
 10:48 am Truck 2 on site waiting.
 10:50 am Truck 2 backing into structure.
 11:09 am Truck 3 on site backing into structure.
 11:13 am Truck 4 waiting on site.
 11:16 am Truck 3 pulling out of structure-kicking up some dust. Truck 4 backing in-kicking up dust.
 11:26 am Truck 4 pulling out of structure. Watering site.
 1:00 pm Truck 1 in structure. 2-3 waiting on site.
 1:10 pm Truck 1 pulling out of structure. 2 backing in. 3 waiting on site.
 1:16 pm Truck 2 pulling out of structure. 3 backing in stirring up dust.
 1:23 pm Truck 3 in tire wash. Watering site.
 1:42 pm Truck 4 arriving on site. Watering site and roads.
 1:55 pm Truck 4 pulling out of structure- dust blowing off truck. Excavator also pulling out of structure.
 3:15 pm Truck 1 backing into structure for last haul. 2 waiting on site. Some dust coming off truck pulling out.
 3:21 pm 2nd truck backing into structure.
 3:25 pm 3 and 4 on site waiting.
 3:46 pm Last truck leaving site for the day. Watering site. No other site activity.
 4:30 pm Watering site.

6-26

8:40 am Site activity beginning. Truck 1 backing into structure. Watering site. 2-3-4 waiting on site.
 8:54 am Truck 2 backing into structure. 3-4 waiting.
 9:02 am Truck 3 backing into structure. 4 waiting.
 9:10 am Truck 4 backing into structure. Some dust blowing.
 9:30 am Watering site. All trucks gone-no other site activity.
 10:46 am Truck 1 backing into structure for 2nd haul.
 10:53 am Truck 2 backing into structure. 1 in tire wash about to leave site.
 11:07 am Truck 3 backing into structure.
 11:13 am 4 backing into structure.
 11:25 am All trucks gone. No other site activity.

6-27

8:29 am Site activity began. Truck 1 backing into structure. Two trucks on site. Two trucks outside fence waiting. Watering site.
 8:37 am Truck 2 backing into structure.
 8:44 am 3 backing into structure.
 8:51 am Truck 4 backing into structure.
 9:00 am Watering site.
 9:05 am Last truck leaving site.

10:51 am 1st truck backing into structure.
 10:56 am 2nd truck waiting on site.
 11:06 am Truck 2 pulling out of structure. 3 backing in.
 1:11 pm Truck 4 backing into structure for 2nd haul. 1-2-3 waiting on site.
 1:22 pm Truck 1 backing into structure. 2-3 waiting.
 1:29 pm 2 backing into structure. 3 waiting. Watering site.
 1:35 pm 2 pulling out of structure kicking up some dust. 3 backing into structure.
 1:40 pm All trucks gone for now.
 3:19 pm Truck 4 in structure. 1-2-3 waiting on site.
 3:31 pm 1 backing into structure. 2-3 waiting on site. Some dust blowing.
 3:40 pm 2 backing into structure. 3 waiting. Dust blowing around.
 3:45 pm 3 backing into structure. Some dust.
 3:54 pm Last truck leaving site. No other site activity.

7-1

8:26 am Site activity beginning. Truck 1 backing into structure. Security Fence Company moving fence at east end of site behind structure. Truck 2-3-4 waiting off site.
 8:45 am Truck 2 backing into structure.
 8:55 am Truck 3 backing into structure. Watering site.
 9:09 am Truck 3 leaving site.
 9:24 am Truck 4 backing into structure.
 1:19 pm 1st truck backing into structure for 3rd haul. Dust blowing.
 1:25 pm Watering site.
 1:34 pm Truck 2 on site. 1 pulling out – dusty.
 1:37 pm Truck 3 on site. Fence Company (Explorer) driving fast on site kicking up dust. John Deere tractor working in front and around structure.
 1:43 pm Truck 3 backing into structure. 2 pulling out – dusty.
 1:53 pm Watering site.
 2:30 pm Wallach dumping a load of clay near structure (near east monitor station).
 3:07 pm 1st truck back for last haul.
 3:12 pm 2nd truck waiting outside structure.
 3:23 pm Truck 3 backing into structure.
 3:31 pm 3 pulling out – dusty. 4 backing in.
 3:40 pm All trucks gone for the day.
 3:53 pm Wallach dumping load of clay.

7-2

8:32 am Site activity beginning. Truck 1 backing into structure. 2-3-4 waiting.
 8:37 am Truck 2 backing into structure.
 8:56 am 3 in structure. 4 waiting outside structure.
 9:00 am 4 in structure.
 9:08 am All trucks gone from site. No other site activity.
 10:41 am Watering site and roads.

10:57 am	Truck 1 backing into structure.
11:23 am	Truck 3 backing into structure. 4 waiting. 2 in tire wash.
11:31 am	4 backing into structure.
1:11 pm	1 pulling out of structure.
1:26 pm	Truck 2 backing into structure.
1:37 pm	Truck 3 waiting outside structure.
1:41 pm	Truck 3 in structure. 2 in tire wash. Some dust blowing.
1:48 pm	Truck 4 outside structure waiting. 3 pulling out.
1:53 pm	Wind gust blew through site.
1:57 pm	Truck 4 leaving site. Watering site.
3:05 pm	Wallach dumping load of clay near structure.
3:10 pm	Truck 1 backing into structure for last haul.
3:19 pm	Truck 2 backing into structure. Two trucks on site. Watering site.
3:24 pm	Wallach dumping load of clay.
3:32 pm	Truck 3 backing into structure. 2 in tire wash. Site well watered.
3:40 pm	Truck 4 backing into structure.
3:55 pm	All trucks gone for the day. No other site activity.
4:18 pm	Wallach dumping load of clay.

7-3

8:37 am	Site activity beginning. Truck 1 backing into structure. 2-3-4 waiting off site. Watering site.
8:46 am	Truck 2 backing into structure. 3 waiting outside.
8:54 am	3 backing into structure. 4 waiting outside structure.
9:02 am	Truck 4 backing into structure. 3 pulling out.
9:05 am	Wallach dumping load of clay.
9:22 am	Last truck leaving site. No other site activity.
10:15 am	Watering site. 1 st truck back on in front of structure waiting on Wallach truck.
10:20 am	Truck 2 on site also waiting.
10:25 am	Truck 3 on site.
10:27 am	Wallach truck dumping a load of clay.
10:57 am	Truck 2 pulling out of structure.
11:08 am	3 rd truck pulling out of structure. Watering site.
11:20 am	Last truck leaving site. Site well watered.
12:57 pm	Truck 1 backing into structure. 2 waiting outside.
1:06 pm	Wallach dumping load of clay.
1:08 pm	Truck 1 leaving. 2 backing into structure.
1:15 pm	2 struggling to get up ramp – kicking up dust. 3 waiting outside structure.
1:17 pm	3 backing into structure.
1:26 pm	4 backing into structure.
2:28 pm	1 st truck back on site.
2:33 pm	Wallach dumping another load of clay.
2:37 pm	Truck 2 backing into structure. Dusty.
2:42 pm	Truck 3 waiting on site.

3:09 pm Truck 4 backing into structure.
3:20 pm All trucks gone for the day. No other site activity.
3:58 pm Wallach dumping load of clay.

7-4

No site activity.

7-5

No site activity.

7-6

Stormed all weekend. Windy and rainy.

7-9

8:36 am Truck 1 backing into structure. Other 3 trucks on site. Watering site.
8:50 am Truck 2 backing into structure. 3-4 waiting on site.
8:56 am Truck 3 backing into structure.
9:02 am Truck 4 backing into structure.
9:28 am Watering site.
11:07 am Truck 1 pulling out of structure. 2 backing in.
11:14 am Truck 3 backing into structure. 2 at tire wash.
11:16 am Truck 4 on site.
11:21 am Truck 3 pulling out; 4 backing in.
11:26 am Truck 4 leaving.
11:58 am Wallach dumping load of clay.
1:07 pm Truck 1 backing into structure.
1:19 pm Wallach dumping load of clay.
1:22 pm Truck 3 leaving. Truck 4 backing into structure.
1:33 pm Last truck leaving.
2:36 pm Wallach dumping load of clay near monitor station.
2:37 pm Truck 1 backing into structure.
2:45 pm Truck 2 waiting outside tent.
2:48 pm 2 backing in. 3-4 waiting outside structure.
2:54 pm 3 backing in, 4 waiting outside structure, 2 in tire wash.

7-10

8:27 am Truck 1 backing into structure. 3 trucks on site total. Backhoe doing work in alley – not on site.
 8:32 am All 4 trucks on site.
 8:33 am 1 pulling out, 2 backing in. 3-4 waiting on site.
 8:39 am Truck 2 pulling out, 3 backing in, 4 waiting on site.
 8:46 am 4 backing into structure, 3 in tire wash getting ready to leave.
 9:01 am Watering site.
 10:25 am Truck 1 backing into structure.
 10:31 am Truck 2 backing in, 1 pulling out. Three trucks total on site. Site well watered.
 10:38 am Truck 3 backing in, truck 2 in tire wash.
 10:57 am Truck 4 backing into structure.
 11:06 am All trucks gone.
 1:12 pm Truck 1 pulling out, 2 backing in. 3-4 waiting off site.
 1:34 pm All trucks loaded and gone from site.
 1:53 pm Watering site.
 2:38 pm Truck 1 backing into structure.
 2:47 pm Truck 2 backing into structure. Truck 1 leaving.
 2:54 pm Truck 3 and 4 waiting outside structure.
 3:10 pm All trucks gone from site. No other site activity.
 3:45 pm Truck 1 loading last haul. All other trucks done for the day. No other site activity.
 4:45 pm Sampling inside structure.

7-11

Sampling inside structure. No other site activity.

7-12

9:38 am Wallach dumping a load of clay (near east station).
 10:19 am Wallach dumping load of clay.
 10:28 am Wallach dumping load of clay.
 11:11 am Wallach dumping load of clay.
 11:20 am Wallach dumping load of clay.
 11:41 am Wallach dumping load of clay.
 11:49 am Wallach dumping load of clay. No other site activity.

7-15

No site activity pending sample results.

7-16

No site activity pending sample results.

7-17

8-9:00 am Sampling inside structure. No other site activity.
9:45 am Dozer, excavator, front end loader and water truck all running near east station. Dozer moving into structure. Excavator getting loaded onto trailer. Water truck filling up at hydrant. Front end loader loading clay and dumping into structure. Possible high exhaust emissions.
9:57 am Watering piles of clay to minimize dust.
10:02 am Watering clay. Dust blowing off front end loader while moving clay.
11:30 am Loader moving clay into structure. Watering to keep dust down. Still very dusty.
12:54 pm Wind gusts blowing dirt around.
1:43 pm Site well watered. Activity only inside structure.

7-18

9:00 am 1st truck dumping load of caliche in front of structure to start rebuilding ramp.
9:10 am 2nd truck dumping load of caliche in front of structure -- dusty.
9:15 am Loader pushing caliche into structure. Dust and exhaust emissions from loader.
9:18 am 3rd truck dumping caliche load in front of structure entrance -- dusty.
9:25 am Watering at entrance and in front of structure.
9:27 am 4th truck dumping caliche in front of structure.
9:30 am Watering around structure entrance to minimize dust. Loader pushing caliche into structure for ramp.
9:35 am Site well watered. Exhaust from loader blowing directly toward east station.
9:37 am Truck 1 dumping caliche load -- dusty.
9:42 am Truck 2 dumping caliche load.
9:48 am Truck 3 dumping caliche load. Loader still pushing caliche into structure. Site well watered. Loader exhaust emissions high.
9:55 am Truck 4 dumping caliche.
10:08 am Dozer pulled out of structure kicking up dust.
10:26 am Truck 1 dumping load of caliche.
10:35 am Truck 2 dumping load of caliche.
10:40 am Truck 3 dumping load of caliche.
10:45 am Truck 4 dumping load of caliche.
11:01 am Truck 1 dumping load of caliche.
11:08 am Truck 2 dumping load of caliche.
11:16 am Truck 3 dumping load of caliche.
11:22 am Truck 4 dumping load of caliche. Watering site.
11:35 am Truck 1 dumping load of caliche.
11:41 am Truck 2.
11:46 am Truck 3.
11:50 am Truck 4.

1:23 pm	Dozer moving into structure.
1:25 pm	Truck 1 dumping caliche inside structure now. Ramp completed.
1:27 pm	Dozer pushing dirt around on ramp and outside structure – dusty.
1:29 pm	Truck 2 dumping caliche load inside structure.
1:37 pm	Truck 3 dumping caliche.
1:45 pm	Watering inside structure. Truck 4 dumping inside structure.
1:59 pm	Truck 1 dumping caliche.
2:01 pm	Truck 2 dumping caliche – dusty.
2:05 pm	Truck 3 dumping caliche – dusty.
2:17 pm	Truck 4 – dusty.
2:35 pm	Truck 1 backing into structure – dusty.
2:38 pm	Truck 2 backing into structure.
2:41 pm	Dozer kicking up dust in front of structure.
2:43 pm	Truck 3 backing into structure.
2:50 pm	Truck 4 backing into structure.
2:52 pm	Dozer kicking up a lot of dust.
3:11 pm	Truck 1 backing into structure. Watering site. Truck 2 waiting on site.
3:19 pm	Truck 3 backing into structure.
3:23 pm	Dozer in front of structure kicking up a lot of dust.
3:28 pm	Truck 4 backing into structure. Dozer in front of structure kicking up a lot of dust.
3:53 pm	Truck 1 backing into structure.
3:55 pm	Truck 2 backing into structure – dusty.
4:02 pm	Truck 3 backing into structure – dusty.
4:04 pm	Dozer in front of structure – dusty. Watering site.
4:13 pm	Truck 4 backing into structure. Dozer in front of structure – dusty.
4:36 pm	Watering site.

7-19

9:12 am	Truck 1 backing into structure w/caliche load.
9:23 am	Truck 2 pulling out of structure. Dozer also working dirt outside structure –dusty.
9:30 am	Watering roads. Truck 3 backing into structure.
9:35 am	Truck 4 backing into structure – dusty.
9:46 am	Truck 1 backing into structure – dusty. Water hydrant connection broken – watering delayed.
9:53 am	Truck 2 backing into structure with caliche load.
9:58 am	Truck 3 backing into structure with caliche load.
10:02 am	Truck 4 backing into structure – dusty.
10:12 am	Truck 1 unloading.
10:23 am	Truck 2 and 3 on site – dusty.
10:28 am	Truck 4 on site – dusty. Dozer in front of structure kicking up dust.
10:52 am	Truck 1 backing into structure. Water connection still broken.
10:55 am	Truck 2 and 3 on site. Dozer kicking up a lot of dust in front of structure.
11:07 am	Watering in front of structure.

11:16 am Watering inside structure. Truck 1 backing into structure.
 11:19 am Dozer moving dirt in front of structure – dusty.
 11:21 am Truck 2 backing into structure.
 11:24 am Dozer in front of structure again kicking up dust.
 11:29 am Truck 3 pulling out of structure.
 11:33 am Truck 4 backing into structure.
 11:36 am Dusty in front of structure from dozer.
 1:20 pm Truck 1 backing into structure – dusty coming out. Truck 2 pulling on site.
 1:30 pm Truck 3 backing into structure – dusty.
 1:33 pm Watering site and in front of structure. Truck 4 backing into structure. Site well watered – very little visible dust.
 1:47 pm Truck 1 backing into structure. Site still well watered.
 1:50 pm Dozer kicking up a lot of dust near structure entrance. Watering roads.
 1:55 pm Truck 2 backing into structure.
 2:00 pm Truck 3 and 4 on site.
 2:10 pm Watering site. All trucks have already unloaded and left.
 2:15 pm Truck 1 back on site – dusty.
 2:22 pm Truck 2 on site – dusty.
 2:25 pm Dozer in front of structure kicking up a lot of dust. Truck 3 backing into structure.
 2:32 pm Truck 4 on site – dusty. Watering roads.
 2:54 pm Watering site.
 3:02 pm Truck 1 on site. Site well watered. Minimal dust.
 3:05 pm Truck 2 backing into structure.
 3:09 pm Truck 3 on site.
 3:11 pm Truck 4 on site.
 3:29 pm Truck 1 backing into structure. Site well watered.
 3:34 pm Truck 2 backing into structure.
 3:42 pm Truck 3 backing into structure. Site well watered.
 3:44 pm Dozer kicking up dust. Truck 4 backing into structure.
 4:07 pm Dozer in front of structure – dusty. All trucks gone for the day.

7-22

8:30 am Roller working inside structure – trucks gone to caliche pit.
 9:00 am Watering roads.
 9:06 am 1st truck backing into structure – low dust.
 9:13 am 2nd truck backing into structure.
 9:18 am 3rd truck backing into structure.
 9:20 am Dozer kicking up a lot of dust at structure entrance.
 9:21 am 4th truck backing into structure – dusty. Watering site in front of structure.
 9:33 am Truck 1 back on site. Site well watered.
 9:42 am Truck 2 backing into structure.

9:47 am	Truck 3 backing into structure.
9:51 am	Truck 4 backing into structure – low dust.
9:53 am	All trucks gone from site.
10:04 am	Truck 1 back on site – low dust.
10:09 am	Truck 2 – low dust. Site and roads well watered.
10:18 am	Truck 3 on site – low dust.
10:21 am	Watering site and in front of structure. Truck 4 backing into structure.
10:38 am	Truck 1 positioning. Site well watered.
10:45 am	Truck 2 backing into structure – low dust.
10:50 am	Truck 3 backing into structure – low dust. Site well watered.
10:53 am	Truck 4 backing into structure.
10:56 am	All trucks gone from site.
11:13 am	Truck 1 backing into structure – low dust.
11:18 am	Truck 2 backing into structure.
11:22 am	Truck 3 backing into structure.
11:26 am	Truck 4 backing into structure. Watering site and in front of structure.
11:31 am	All trucks gone from site.
11:40 am	Watering site.
1:10 pm	Watering site.
1:32 pm	1 st truck back on site – low dust.
1:36 pm	2 nd truck backing into structure.
1:40 pm	3 rd truck backing into structure.
1:43 pm	4 th truck – low dust.
2:08 pm	Truck 1 and 2 already came and went.
2:12 pm	Truck 3 backing into structure – low dust.
2:18 pm	Truck 4 backing into structure.
2:28 pm	Truck 1 backing into structure.
2:39 pm	Truck 2 backing into structure – dusty.
2:41 pm	Wind gust blew through site – dusty.
2:45 pm	Truck 3 pulling out of structure – dusty.
2:47 pm	Truck 4 backing into structure – dusty.
2:56 pm	Truck 1 backing into structure – dusty.
3:04 pm	Truck 2 backing into structure – dusty backing in and pulling out.
3:12 pm	Truck 3 backing into structure.
3:15 pm	Truck 4 backing into structure.
3:23 pm	Truck 1 backing into structure – dusty.
3:25 pm	Watering site.
3:34 pm	Truck 2 backing into structure. Site well watered – minimal dust.
3:40 pm	Truck 3 backing into structure.
3:46 pm	Truck 4 – low dust.
3:56 pm	Watering roads and site. No other site activity.

7-23

8:30 am	Trucks leaving to caliche pit.
9:06 am	Truck 1 backing into structure.
9:10 am	Truck 2 backing into structure – dusty.

9:16 am Truck 3 backing into structure –dusty. Watered roads but not site yet.
 9:22 am Truck 4 backing into structure – dusty.
 9:27 am Truck 1 backing into structure – dusty.
 9:36 am Watering site.
 9:38 am Truck 2 backing into structure. Site well watered – minimal dust.
 9:40 am Going over site again with water truck – site saturated.
 9:43 am Truck 3 backing into structure.
 9:48 am Truck 4 backing into structure.
 9:54 am Truck 1 backing into structure – site well watered – low dust.
 10:03 am Truck 2 backing into structure.
 10:10 am Watering site and roads.
 10:13 am Truck 3 backing into structure.
 10:17 am Truck 4 backing into structure – low dust – site well watered.
 10:46 am Truck 1 back on site – low dust – site well watered.
 10:48 am Truck 2 backing into structure.
 10:52 am Truck 3.
 10:56 am Truck 4.
 11:11 am Truck 1 backing into structure – dusty again.
 11:19 am Truck 2 – dusty.
 11:25 am Truck 3 – dusty.
 11:30 am Truck 4 – dusty.
 11:31 am Watering inside structure.
 11:36 am Dozer pulled out of structure and parked – kicked up a lot of dust.
 1:00 pm Trucks leaving site to go load caliche at the pit – roads (near south station) possibly dusty.
 1:16 pm Truck 1 back on site – dusty.
 1:21 pm Watering site.
 1:24 pm Truck 2 – site well watered – minimal dust.
 1:31 pm Truck 3 backing into structure – low dust.
 1:36 pm Truck 4 backing into structure – low dust.
 1:42 pm Watering roads.
 1:52 pm Truck 1 backing into structure.
 1:55 pm Truck 2.
 2:00 pm Truck 3.
 2:06 pm Truck 4 backing into structure. Watering roads.
 2:10 pm Noticed some kids riding go-kart near south monitor station. They have a ramp built about 3-5 yards directly in front of station. This area is off the roadway enough that it is not watered down.
 2:23 pm Truck 1 and 2 on site.
 2:28 pm Truck 3 backing into structure – dusty.
 2:33 pm Truck 4 backing into structure – dusty.
 2:40 pm Watering roads.
 2:45 pm Watering site and roads.
 3:02 pm Truck 1 backing into structure – site well watered.
 3:11 pm Truck 2.
 3:19 pm Truck 3 backing into structure.

3:25 pm Truck 4.
 3:31 pm Truck 1 backing into structure – dusty.
 3:38 pm Truck 2 backing into structure – dusty.
 3:45 pm Truck 3 backing into structure – dusty.
 3:49 pm Truck 4 – dusty.
 4:02 pm Watering inside structure. Dozer pulled out of structure – kicked up dust.
 No other site activity for the day.

7-24

8:20 am Trucks leaving to go load up.
 8:38 am Watering site.
 9:17 am Truck 1 backing into structure. Watering roads.
 9:21 am Truck 2 backing into structure.
 9:24 am Truck 3 backing into structure.
 9:26 am Truck 4 backing into structure.
 9:45 am Truck 1 backing into structure.
 10:07 am Truck 2 backing into structure – dusty.
 10:12 am Truck 3 backing into structure – dusty.
 10:14 am Truck 4 backing into structure – dusty.
 10:18 am Truck 1 – dusty.
 10:40 am Truck 2 – dusty.
 10:43 am Truck 3.
 10:47 am Watering site.
 10:51 am Truck 4 backing into structure.
 11:15 am Watered roads and site.
 11:33 am Truck 1 backing into structure – site well watered – minimal dust.
 11:35 am Truck 2 backing into structure – site well watered.
 11:37 am Truck 3 backing into structure.
 11:40 am Truck 4.
 1:29 pm Truck 1 unloading – dusty coming out of structure.
 1:34 pm Truck 2 – dusty.
 1:39 pm Truck 3 backing into structure. Watering site.
 1:44 pm Truck 4 unloading – dust blowing off trucks as they pull out.
 1:54 pm Truck 1 backing into structure – dusty pulling out. Site well watered.
 1:59 pm Truck 2 backing into structure. Watering site again.
 2:06 pm Truck 3 backing into structure – minimal dust.
 2:13 pm Truck 4 backing into structure – minimal dust.
 2:19 pm Truck 1 backing into structure – site well watered.
 2:24 pm Truck 2 backing into structure.
 2:40 pm Truck 3.
 2:42 pm Truck 4.
 2:44 pm Truck 1 backing into structure – low dust.
 2:53 pm Truck 2 backing into structure – low dust.
 3:04 pm Watering site.
 3:11 pm Truck 3 backing into structure – site saturated – minimal dust.

No site activity. Watered site throughout the day.

7-28

No site activity. Watered site a few times throughout the day.

7-29

Changed monitor station filters. Windy day.

7-30

8:36 am	NHB work truck in front of structure. Worker welding a piece to structure door.
9:00 am	Welder leaving. Tractor moving some dirt from near east monitor station to front of structure.
11:10 am	Watering site.

7-31

Watered site. No other site activity except someone weed eating around site trailers and fence perimeter.

8-1

No site activity.

8-2

No site activity.

8-5

8:30 am	Truck with trailer delivered manlift.
8:47 am	Crane is being delivered. Crane truck parked in front of east station.
11:05 am	Rigging up crane. Truck still parked in front of east station. Heavy truck exhaust visible.
1:06 am	Crane truck still parked near east station. Several pickups on site. Forklifts and manlifts in operation in and around structure.

8-6

Structure move today. Crane on site. Two manlifts and two forklifts in operation.

8-7

Staking down structure. Two manlifts and two forklifts in operation.

8-12

8:35 am	Excavator moved into structure. 1 st truck moving to back into structure. Structure front is now even with east monitor station since structure move.
8:40 am	Truck 1 in structure. Truck 2 positioning outside structure.
8:50 am	Truck 2 in structure. Truck 3 positioning outside structure.
9:07 am	Truck 3 leaving site. Truck 4 backing into structure.
10:00 am	Watering site.
11:00 am	Truck 1 in structure.
11:11 am	Truck 2 back on site.
11:24 am	Truck 3 backing into structure.
11:34 am	Truck 4 inside structure.
11:40 am	Last truck leaving site.
1:02 pm	Truck 1 backing into structure.
1:15 pm	Dust storm blowing through site heading east. Truck 2 pulling onto site.
1:24 pm	Truck 1 pulling out of structure. Truck 2 backing in.
1:32 pm	Truck 3 backing into structure. Watering site.
1:35 pm	Truck 4 pulling on site.
1:41 pm	Truck 3 pulling out of structure. Truck 4 backing in.
1:45 pm	Dust devel blew through site.
3:15 pm	Truck 1 backing into structure. Truck 2 waiting on site.
3:22 pm	Truck 2 backing into structure. Truck 1 in tire wash.
3:40 pm	Truck 3 backing into structure.
3:45 pm	Truck 4 on site.
3:50 pm	Truck 3 leaving site. Truck 4 in structure.
4:00 pm	Last truck leaving site. Watering roads.

8-13

8:40 am	Truck 1 backing into structure. Watering site and roads.
8:47 am	Truck 2 backing into structure. Truck 1 in tire wash.
8:55 am	Truck 3 and 4 on site waiting.
9:00 am	Truck 3 in structure. 4 waiting outside structure.
9:10 am	Truck 4 in structure. Truck 3 leaving site.
9:15 am	Truck 4 leaving site.
11:00 am	Truck 1 backing into structure – low dust.
11:05 am	Truck 2 backing into structure. Truck 1 in tire wash.
11:25 am	Truck 3 backing into structure – dusty.
11:30 am	Truck 4 on site.
11:45 am	Truck 4 leaving site.
11:50 am	Dust storm blowing through field – dusty near south station.

1:00 pm	Truck 1 backing into structure. Watering site and roads.
1:09 pm	Truck 2 on site waiting. Site well watered.
1:11 pm	Truck 2 backing into structure. Truck 1 in tire wash.
1:25 pm	Truck 3 pulling onto site.
1:33 pm	Truck 3 in tire wash. Truck 4 backing into structure.
1:45 pm	Last truck leaving site.
2:00 pm	Watering site and roads.
3:01 pm	Truck 1 back on site.
3:10 pm	Truck 1 leaving. Truck 2 backing in.
3:15 pm	Truck 3 pulling onto site.
3:20 pm	Truck 4 waiting on site.
3:25 pm	Truck 4 backing into structure. Truck 3 leaving.
3:30 pm	Last truck leaving. No other site activity for the day.

8-14

8:40 am	Truck 1 backing into structure.
8:47 am	Truck 2 backing into structure.
9:00 am	Truck 2 leaving. Watering site. Truck 3 backing into structure. Truck 4 on site waiting.
9:10 am	Truck 4 backing into structure. Site well watered – no visible dust.
9:20 am	Watering roads and site. All trucks gone from site.
10:52 am	Truck 1 leaving structure.
11:05 am	Truck 2 backing into structure.
11:10 am	Truck 3 on site waiting.
11:15 am	Truck 3 backed into structure. Truck 2 leaving.
11:20 am	Truck 3 leaving, truck 4 backing into structure – dust blowing off trucks.
1:05 pm	Truck 1 in structure. Truck 2 waiting on site.
1:15 pm	Truck 1 in tire wash. Truck 2 backing into structure. Truck 3 waiting on site.
1:20 pm	Truck 3 backing into structure. Truck 4 waiting on site.
1:30 pm	Truck 4 in structure.
1:35 pm	All trucks are gone from site. No activity stirring dust.
1:42 pm	Watering site.
2:47 pm	Truck 1 backing into structure.
2:52 pm	Truck 2 pulling onto site – waiting outside structure.
2:57 pm	Truck 1 pulling into tire wash and truck 2 backing into structure.
3:05 pm	Truck 3 on site.
3:10 pm	Truck 2 pulling out of structure. Truck 3 backing into structure – dusty and heavy truck exhaust.
3:15 pm	Truck 3 leaving. Truck 4 backing in – dusty.
3:30 pm	Watering site.
4:30 pm	Watering site and roads. No other site activity.

8-15

8:33 am	Truck 1 backing into structure.
8:43 am	Truck 2 backing into structure. Truck 3 waiting outside.
8:50 am	Truck 3 backing into structure. Truck 2 in tire wash.
9:00 am	Last truck leaving. Only 3 trucks running today. Watering site.
9:40 am	Watering site and roads.
10:40 am	Truck 1 backing into structure.
10:50 am	Truck 2 and 3 pulling onto site. Truck 1 pulling out of structure.
10:55 am	Truck 2 in structure and truck 3 on site waiting.
11:00 am	Truck 3 backing into structure. Truck 2 in tire wash.
11:10 am	Last truck leaving.
1:10 pm	Truck 1 backing into structure. Watering site.
1:20 pm	Truck 2 backing into structure. Watering site.
1:40 pm	Truck 3 backing into structure. Watered roads.
3:11 pm	Truck 1 backing into structure.
3:20 pm	Truck 2 on site - a little dusty from trucks.
3:25 pm	Truck 2 backing into structure. Truck 1 in tire wash. Truck 3 on site waiting.
3:30 pm	Truck 2 pulling into tire wash. Truck 3 backing into structure.
3:40 pm	Watering site.
3:45 pm	Truck 3 in tire wash.
3:50 pm	All trucks done for the day.
4:15 pm	Watering roads.

8-16

8:40 am	Truck 1 backing into structure.
8:43 am	Truck 2 on site.
8:48 am	Truck 1 pulling out of structure – dusty. Truck 2 backing in.
8:52 am	Watering site around structure.
8:55 am	Truck 3 backing into structure. Truck 2 in tire wash.
9:05 am	Truck 3 pulling into tire wash. Site well watered.
9:10 am	Last truck leaving. Only three trucks running today.
9:15 am	Watering inside of structure.
9:35 am	Watering roads.
10:30 am	Watering site and outside fence.
10:40 am	Truck 1 backing into structure – low dust. Site well watered.
10:42 am	Truck 2 on site.
10:45 am	Truck 2 backing into structure. Truck 1 leaving – low dust.
10:54 am	Truck 2 in tire wash.
11:05 am	Truck 3 backing into structure – low dust.
11:15 am	Last truck leaving. Watering site.
1:05 pm	Truck 1 backing into structure.
1:15 pm	Truck 2 backing into structure.
1:30 pm	Truck 3 backing into structure.
1:45 pm	Watering site.

2:00 pm Garage door repairmen driving two trucks and a trailer stirred up a lot of dust on roads near south station.

8-21

9:02 am Truck 1 backing into structure.
9:08 am Truck 2 on site.
9:11 am Truck 1 pulling into tire wash. Truck 2 backing into structure. Truck 3 and 4 waiting off site.
9:18 am Truck 2 in tire wash. Truck 3 backing into structure. Truck 4 waiting on site. Watering site.
9:30 am Truck 3 in tire wash. Truck 4 backing into structure.
9:42 am Maclaskey pump truck on site in front of office trailer (near east station) pumping water off road.
10:35 am Watering inside structure with hose.
10:57 am Truck 1 backing into structure. Maclaskey truck leaving.
11:08 am Truck 1 in tire wash. Truck 2 backing into structure.
11:13 am Truck 3 on site. Site well watered.
11:15 am Truck 2 pulling into tire wash. Truck 3 backing in.
11:30 am Truck 3 leaving site.
11:52 am Truck 4 backing into structure.
1:02 pm Truck 1 backing into structure.
1:11 pm Truck 1 in tire wash – dusty. Truck 2 backing into structure.
1:16 pm Truck 3 on site waiting.
1:20 pm Truck 2 pulling into tire wash. Truck 3 backing into structure.
1:30 pm Truck 4 backing into structure. Watering site.
1:42 pm Last truck leaving site.
3:03 pm Truck 1 backing into structure.
3:10 pm Truck 2 on site.
3:16 pm Truck 2 pulling out of structure – dusty.
3:23 pm Truck 3 backing into structure – dusty. Truck 4 on site waiting.
3:32 pm Unknown vehicle driving fast down dirt road near south station – very dusty. Truck 3 pulling out of structure and 4 backing in.
3:40 pm Truck 4 in tire wash.
3:50 pm Watering site.

8-22

8:30 am Craig Electric on site and working down by structure.
8:45 am Truck 1 backing into structure. Truck 2 on site and waiting.
8:51 am Truck 2 backing into structure. Truck 1 in tire wash. Watering site.
8:55 am Truck 3 on site waiting. Truck 1 leaving. Truck 2 in structure.
9:05 am Truck 3 backing into structure. Watering site.
9:15 am Truck 4 backing into structure.
9:25 am Last truck leaving. Watering site and roads.
11:00 am Truck 1 backing into structure.

11:02 am	Truck 2 backing into structure. Truck 1 in tire wash.
11:07 am	Truck 3 on site. Watering site. Truck 4 waiting on site.
11:10 am	Truck 2 pulling into tire wash. Truck 3 backing into structure. Truck 4 waiting outside structure.
11:18 am	Truck 3 pulling into tire wash. Truck 4 backing in.
11:22 am	Watering site. Truck 3 leaving site.
11:25 am	Truck 4 pulling into tire wash.
1 -1:20 pm	Trucks loading.
2:15 pm	Truck 1 backing into structure.
2:46 pm	Truck 2 backing into structure. Truck 3 on site.
2:53 pm	Truck 4 on site. Truck 3 backing into structure.
3:01 pm	Truck 4 backing into structure. Watering site.
3:30 pm	Watering site.
4:00 pm	Watering site.
4:30 pm	Watering site.

8-23

8:35 am	Truck 1 backing into structure. Site well watered.
8:44 am	Truck 2 backing in. Truck 1 in tire wash.
8:47 am	Truck 3 on site.
8:56 am	Truck 3 backing in. Truck 2 in tire wash. Truck 4 on site waiting.
9:04 am	Truck 4 backing into structure. Truck 3 in tire wash.
10:00 am	Watering site.
10:12 am	Watering site and roads.
10:27 am	Truck 1 leaving site.
10:30 am	Truck 2 backing into structure.
10:36 am	Truck 3 waiting on site.
10:40 am	Truck 2 pulling into tire wash. Truck 3 backing into structure.
10:46 am	Truck 3 pulling into tire wash.
11:10 am	Truck 4 backing into structure.
1:10 pm	Truck 1 backing into structure.
1:15 pm	Truck 2 backing into structure. Watering site.
1:30 pm	Truck 3 backing into structure.
1:34 pm	Truck 4 on site.
1:37 pm	Truck 4 backing into structure. Truck 3 in tire wash. Watering site.
2:53 pm	Truck 1 backing into structure. Truck 2 and 3 on site waiting. Site well watered – low dust.
2:57 pm	Watering site.
3:05 pm	Truck 4 pulling onto site. Truck 1 pulling into tire wash. Truck 2 backing into structure. Truck 3 and 4 on site waiting.
3:12 pm	Truck 2 pulling into tire wash. Truck 3 backing into structure. Truck 4 waiting on site. Site well watered.
3:20 pm	Truck 3 pulling into tire wash. Truck 4 backing into structure. Site saturated.
3:25 pm	Last truck leaving. No other truck activity for the day.

8-26

8:15 am Two Wallach trucks on site to unload clay on south side of structure.
8:32 am Truck 2 backing into structure. Truck 1 in tire wash.
8:40 am Truck 3 backing into structure. Truck 2 leaving. Truck 4 waiting off site.
8:46 am Truck 4 pulling on site. Truck 3 pulling into tire wash.
8:53 am Watering site and roads.
8:58 am Last truck leaving site.
9:13 am Watering site and roads.
9:20 am One Wallach truck leaving and one unloading clay. Watering site.
10:32 am Wallach trucks (2) delivering clay. Watering roads.
10:43 am Truck 1 backing into structure.
10:49 am Truck 2 on site waiting.
10:52 am Truck 2 backing into structure. Truck 1 in tire wash.
11:00 am Truck 2 leaving.
11:15 am Truck 3 and 4 on site. Truck 3 backing into structure. Watering site.
11:20 am Truck 3 pulling into tire wash. Truck 4 backing into structure.
11:30 am Last truck leaving site.
1:00 pm Truck 1 backing into structure.
1:07 pm Truck 1 pulling out of structure – dusty. Truck 2 backing into structure.
1:20 pm Watering site and roads.
1:30 pm Truck 3 backing into structure. Truck 4 on site waiting. Site well watered.
1:37 pm Truck 3 pulling into tire wash. Truck 4 backing into structure. Dust blowing off trucks coming out of the structure toward e. monitor.
1:50 pm Last truck leaving.
1:55 pm Wallach dumping load of clay.
2:20 pm Watering site and roads.
2:50 pm Truck 1 backing into structure.
3:02 pm Truck 2 backing into structure. Site well watered – low dust.

8-27

8-9:00 am Wallach delivered 4 loads of clay.
9:20 am Truck 1 backing into structure. Watering site.
9:27 am Truck 2 backing into structure. Truck 3 waiting on site.
9:33 am Truck 3 backing into structure. Truck 4 on site waiting.
9:42 am Truck 4 backing into structure. Watering site.
9:51 am Front end loader pushing dirt in front of structure.
10:43 am Wallach unloading clay.
11:00 am Watering site.
11:05 am Wallach dumping load of clay. Truck 1 backing into structure.
11:10 am Truck 2 on site waiting.
11:15 am Truck 2 backing into structure. Site well watered. Front end loader working on south side of structure – dusty.

11:21 am Truck 2 pulling into tire wash. Truck 3 backing into structure.
 11:26 am Truck 4 pulling onto site.
 11:30 am Truck 4 backing into structure. Truck 3 in tire wash.
 11:36 am Last truck leaving.
 1:10 pm Truck 1 pulling out of structure. Truck 2 backing into structure – dusty.
 1:15 pm Truck 3 on site. Truck 4 waiting off site.
 1:17 pm Truck 2 in tire wash. Truck 3 backing into structure. Truck 4 waiting on site – dusty.
 1:23 pm Truck 3 pulling into tire wash. Truck 4 backing into structure – dusty.
 1:31 pm Wallach dumping load of clay. Truck 4 leaving site. Watering site.
 2:00 pm Watered site and roads. Wallach dumping clay.
 2:31 pm Truck 1 backing into structure.
 2:38 pm Truck 2 backing into structure.
 2:42 pm Truck 3 on site.
 2:46 pm Truck 2 pulling out of structure. Truck 3 backing into structure. Wallach dumping clay.
 3:01 pm Truck 4 backing into structure. Site well watered.
 3:25 pm Wallach dumping load of clay.
 4:06 pm Wallach dumping load of clay.

8-28

8:40 am Truck 1 backed into structure. Truck 2 and 3 waiting on site. Truck 4 waiting off site.
 8:45 am Truck 1 in tire wash. Truck 2 backing into structure. Truck 3 and 4 waiting on site.
 8:53 am Truck 2 in tire wash. Truck 3 backing into structure. Truck 4 waiting on site.
 9:01 am Truck 3 in tire wash. Truck 4 backing into structure.
 9:11 am Truck 4 leaving site.
 9:22 am Front end loader working clay on south side of structure.
 9:26 am Watering site.
 9:30 am Loader working dirt in front of structure. Site well watered – low dust. Electric company cut power sometime between 9-9:30.
 10:50 am Watering site and roads. Truck 1 backing into structure.
 10:56 am Truck 2 on site waiting. Site well watered.
 11:10 am Truck 2 in tire wash. Truck 3 backing into structure. Truck 4 on site waiting.
 11:20 am Truck 4 leaving. Site and roads saturated.
 1:01 pm Truck 1 backing into structure. Truck 2 on site.
 1:10 pm Truck 2 backing into structure. Truck 3 on site.
 1:18 pm Truck 2 in tire wash. Truck 3 backing into structure. Truck 4 on site.
 1:24 pm Truck 3 in tire wash. Truck 4 backing into structure – low dust.
 1:32 pm Truck 4 pulling into tire wash – low dust.
 2:45 pm Truck 1 backing into structure. Wind blowing – dusty.
 2:47 pm Truck 2 on site.

2:51 pm Truck 3 on site.
 2:54 pm Truck 2 backing into structure. Truck 1 in tire wash. Truck 3 and 4 on site – low dust.
 3:01 pm Truck 2 in tire wash. Truck 3 backing into structure – low dust. Truck 4 waiting on site.
 3:10 pm Truck 4 backing into structure.
 3:16 pm Truck 4 leaving.

8-29

8:47 am Truck 1 backing into structure. Truck 2 on site.
 8:55 am Truck 2 backing into structure. Truck 1 in tire wash – low dust. Truck 3 on site waiting.
 9:02 am Truck 3 backing into structure – low dust.
 9:09 am Truck 4 backing into structure. Truck 3 in tire wash.
 9:20 am Last truck leaving. Watering site and roads.
 9:50 am Watering site and roads.
 10:50 am Truck 1 backing into structure. Truck 2 on site.
 11:00 am Truck 2 backing into structure. Truck 1 in tire wash. Wallach dumping load of clay. Truck 3 on site waiting.
 11:03 am Truck 3 backing into structure.
 11:10 am Truck 4 backing into structure. Truck 3 in tire wash.
 11:15 am Watering site.
 1:00 pm Truck 1 backing into structure – dusty.
 1:10 pm Truck 2 backing into structure. Truck 3 on site.
 1:13 pm Truck 3 backing into structure. Truck 4 on site.
 1:17 pm Truck 4 backing into structure.
 1:28 pm Watering site and roads.
 1:51 pm Site saturated.
 2:53 pm Wallach dumping load of clay.
 3:02 pm Truck 1 backing into structure. Site well watered. Truck 2 on site.
 3:10 pm Truck 3 on site – dusty. Truck 2 backing into structure. Truck 1 in tire wash. Dusty at structure entrance.
 3:16 pm Truck 3 backing into structure. Truck 2 in tire wash. Truck 4 waiting on site.
 3:23 pm Truck 3 in tire wash. Truck 4 backing into structure.
 3:30 pm Last truck leaving site.
 4:00 pm Watering site and roads.
 4:30 pm Watering site.

8-30

9:10 am Truck 1 backing into structure.
 9:16 am Truck 1 in tire wash. Truck 2 backing into structure.
 9:22 am Truck 2 in tire wash. Truck 3 backing into structure.
 9:27 am Truck 3 in tire wash. Truck 4 backing into structure.

9:33 am	Truck 4 in tire wash.
10:07 am	Watering site and roads.
10:52 am	Truck 1 backing into structure. Low dust – site well watered.
11:00 am	Truck 2 backing into structure. Truck 1 in tire wash.
11:06 am	Truck 2 in tire wash.
11:20 am	Watering site. Truck 3 in structure.
11:31 am	Truck 4 backing into structure.
1:00 pm	Truck 1 backing into structure.
1:35 pm	Fourth truck leaving.
3:30-4 pm	Truck activity.

9-3

8:30 am	Watering site.
9-11:30 am	Truck activity.
1-1:35 pm	Truck activity.
1:30 pm	Watering site.
3-3:26 pm	Truck activity.
4:30 pm	Watering site and roads.

9-5

8:20-8:50 am	Truck activity. Site well watered.
10:54-11:30 am	Truck activity.
1:00-1:22 pm	Truck activity. Delivered loader.
1:40 pm	Watering site and roads.
2:50-3:40 pm	Truck activity.
4:30 pm	Watering site.

9-6

9-9:30 am	Truck activity. Loader working behind structure. Watering site. Loader working clay on side and in front of structure.
11-11:45 am	Loader working dirt in front of structure building ramp. Site well watered. All trucks waiting on site.
1:30 pm	Watering site.
2:00 pm	Truck activity began again. Site well watered.
2:30 pm	All trucks gone.
2:30-3:50 pm	Loader working dirt in front of structure.
3:50-4:20 pm	Truck activity.

9-9

8:40-9:20 am	Truck activity.
10:40-11:20 am	Truck activity.
1-1:40 pm	Truck activity.

2:40-3:20 pm Truck activity.

9-10

8:45-9:15 am Truck activity.
9:30-10:15 am Loader working dirt ramp in front of structure. Site well watered.
10:35-11:10 am Truck activity.
12:55 pm No other truck activity for the rest of the day due to rain.

9-16

8:55-9:15 am Truck activity (only 3 trucks running).
Excavation completed. No other site activity for the rest of the day except sampling. Wallach delivered some clay.

9-17

No site activity. Wallach delivered some clay. Confirmation sampling.

9-18

8:40-11:15 am Loader and roller working inside structure. Loader kicking up dust at structure entrance. Windy.
1-2:00 pm Loader moving clay into structure. Dusty and windy.
3:30 pm Watered site. Windy and dusty.

9-19

8:30 am Two trucks leaving for caliche pit. Two parked off site.
8:40 am Roller and loader working inside of structure. Watering site and roads.
9:00 am Loader parked near east station. Roller working inside structure.
9:30-10:15 am Trucks unloading caliche and front end loader building ramp.
Watered site.
1:20 pm Trucks unloading caliche. Watering site and roads.
3:00 pm Dozer scraping dirt off road near east station. Dusty.
4:30 pm Truck activity finished.

9-20

8:30 am Trucks leaving for caliche pit.
9:15-10:30 am Unloading caliche. Site well watered. Dust levels still high.
1:20-4:00 pm Unloading caliche.

9-23

8:40 am	Trucks gone to pit. Roller working inside structure.
9-11:30 am	Trucks unloading caliche.
1:25-4:30 pm	Trucks unloading caliche.

9-24

9-11:30 am	Trucks activity – unloading caliche.
1:28-4:15 pm	Truck activity – unloading caliche.

9-25

8:30 am	Manlift being delivered.
9:00 am	One truck waiting on site to unload caliche. Repairing structure.
9:45 am	Manlift leaving structure. Roller parking near east station.
	Watering inside structure.
10:10-11:50 am	Trucks unloading.
1:15-4:30 pm	Trucks unloading caliche.

9-26

9-11:50 am	Truck activity.
1:20-4:30 pm	Truck activity.

9-27

9-11:00 am	Truck activity.
2:00-4:20 pm	Truck activity.
3:23 pm	Watering site and roads. Watered inside structure.
3:30 pm	Windy. A lot of dust blowing off trucks across site.
4:20 pm	Loader working on ramp. Site watered. Low dust.

9-30

9:00 am	Site activity began. Watering inside structure. Roller working inside structure. Trucks gone to load up. Site well watered (overcast and sprinkling outside).
9:30-9:45 am	Trucks unloading topsoil in structure.
10-10:20 am	Trucks unloading topsoil in structure.
10:35-10:50 am	Trucks unloading topsoil in structure.
11-11:35 am	Trucks unloading topsoil in structure.
1:15-1:50 pm	Trucks unloading topsoil in structure.
2:10-2:30 pm	Trucks unloading.
2:40-2:50 pm	Trucks unloading. Site saturated – low dust.
3:25-3:30 pm	One truck unloading.
3:50-4:20 pm	Trucks unloading. Site well watered – low dust.

10-1

9:00 am	Site activity began. Roller working in structure. Trucks going to load topsoil.
9:30-9:45 am	Trucks unloading.
10-10:20 am	Trucks unloading.
10:30-10:42 am	Trucks unloading.
11-11:30 am	Trucks unloading. Watering site.
1:30-2:15 pm	Trucks unloading.
2:30-3:30 pm	Roller working dirt inside structure. No other site activity for the day. Watered site and inside structure.

*****Notes are repeated here to show high value days and days preceding and following those days.**

4-30

7:30 am	Site well watered.
8:30 am	1 st haul loading.
9:15 am	Manlift delivered.
9:30 am	Watering site and in front of tent.
10:30 am	Windy w/high gusts.
11:30 am	Windy and high gusts. Dust blowing.
12:00 pm	Watering site.
1:15 pm	Wind blowing dust across site and in neighborhood.
1:30 pm	Manlift positioning in front of tent.
1:31 pm	A lot of dust blowing – mostly from off site and some from trucks moving around. High winds.
1:45 pm	Watering site.
1:51 pm	Dust blowing east across site from off site.
2:00 pm	Street sweeper on Berry Street stirring up dust.
2:06-2:15 pm	Sweeper making a pass along north end of site perimeter. Lots of dust.
4:15 pm	Site well watered. Manlift leaving.
4:40 pm	Watering site.

5-1 (OVER LIMIT DAY)

7:30 am	Site watered.
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8:45 am	Loading 1 st haul.
9:30 am	Watering site. Trucks gone.
10:00 am	Winds picking up – gusty. Site well watered.
10:17 am	Street sweeper on Tasker on southeast end of site – stirring up a lot of dust.
11:13 am	Loading 2 nd haul. Two trucks on site.
11:25 am	Dust storm blowing through site. Very dusty.
11:36 am	Water truck watering on and off site. Gusty winds. Lots of dust from off site.
1:10 pm	1 truck on site loading 3 rd haul. Very dusty windy/dusty.
1:30 pm	Water truck watering site.
1:42 pm	Very gusty winds blowing dirt across site. Site well watered. Two trucks on site for 3 rd haul.
3:00 pm	Two trucks back on site for 4 th haul.
3:47 pm	Watering site.
4:30 pm	Watering site.

5-2

7:30 am	Site watered.
8:41 am	Trucks moving around loading 1 st haul.
11:00 am	Loading 2 nd haul. One truck on site.
11:17 am	Two more trucks on site for 2 nd haul.
1:15 pm	Two trucks on site for 3 rd haul.
2:08 pm	Wallach dumping load of clay.
3:15 am	Repairing tear in front of structure with manlift. One truck on site – 4 th haul.

5-4

6:00 pm	Kids on 4-wheelers outside site on south side.
---------	--

5-5

Rainy, windy and hail. No Site Activity.

5-6 (OVER LIMIT DAY)

8:30 am	Site activities beginning. Four trucks on site. Ground wet from weekend rains.
10:30 am	Loading 2 nd haul.
10:15 am	Wallach – load of clay.
11:00 am	Vacuum truck in front of office. Site wet still – no visible dust.
11:20 am	Wallach – load of clay.
11:40 am	Winds picked up – blowing dust across site.

***RESULTS OF PARTICULATE
MEASUREMENTS MADE DURING
REMEDIATION ACTIVITIES NEAR
THE WESTGATE SUBDIVISION***

Phase II Draft Air Monitoring Report

*Submitted to:
Shell Exploration and Production Company*

*Prepared by:
Eric Anderson
URS Corporation*

17 March 2003

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ACRONYMS AND ABBREVIATIONS

AAM	Ambient air monitoring
Avg.	Average
Conc	Concentration
% CV	Percent coefficient of variation
DL	Detection limit
deg	Degree
EPA	Environmental Protection Agency
ft	Feet
min	Minute
NAAQS	National Ambient Air Quality Standard
NA or n/a	Not applicable
NC	Not calculated
ND	Not detected
PM	Particulate matter
PM10	Particulate matter with an aerodynamic diameter of 10 micrometers or less
RPD	Relative percent difference
T	Temperature
TEOM	Tapered element oscillating microbalance
μg	Microgram (1 μg = 10 ⁻⁶ g)

METRIC CONVERSIONS

Non-Metric Unit	Multiplied by	Yields Metric Unit
Degree Fahrenheit (°F)	0.555556 (°F-32)	Degree Celsius (°C)
Inch (in.)	2.54	Centimeter (cm)
Foot (ft.)	0.3048	Meter (m)
Mile	1609.344	Meter (m)
Pound (lb.)	0.453592	Kilogram (kg)
Gallon (gal.)	3.78541	Liter (L)
Miles per hour (mph)	0.44704	Meters per second (m/sec)

EXECUTIVE SUMMARY

A program to remediate contaminated soils was performed between March and October 2002 at the Westgate subdivision in Hobbs, New Mexico. During this remediation, air monitoring was conducted to measure particulate matter (PM) as PM_{10} and the meteorological parameters of wind speed, wind direction, and ambient temperature.

A portion of the Westgate Subdivision is built on property that is directly adjacent to the former oil and gas production facilities on the Grimes Lease. The subdivision is located on the western side of Hobbs and consists of single-family residences. The tank battery and other production facilities have been removed, but some soils in the vicinity of the Grimes Tank Battery were contaminated with crude oil. The Shell Exploration and Production Company performed an extensive remediation of soils on developed and undeveloped properties adjacent to and including portions of the Westgate Subdivision.

The objective of the Phase II monitoring was to monitor particulate matter concentrations at the site during remediation activities. The data was used to modify site activities or institute other control mechanisms, as appropriate, to maintain PM concentrations below a predetermined threshold value.

Ambient measurements began in March of 2002 and continued throughout the remediation with the exception of an approximate two week period in early June when the stations and excavation structure were being relocated. The particulate monitoring was conducted using a Ruppercht and Patashnick TEOM monitor. This unit has U.S. EPA equivalency for PM_{10} monitoring (EQPM-1090-079). The meteorological monitoring sensors were manufactured by MetOne instruments and met all U.S. EPA requirements for PSD monitoring.

The pre-determined threshold value used in this monitoring is the U.S. EPA National Ambient Air Quality Standard (NAAQS) for 24-hour PM_{10} of $150 \mu g/m^3$. During the 181 days of monitoring this threshold was exceeded at the East site on five days and was not exceeded at the South site.

1.0 Introduction

The Phase II Air Monitoring Study was performed during remediation activities conducted at the Westgate subdivision from March 2002 through October 2002. This report summarizes the results from the air monitoring study.

1.1 Site Description

The Westgate subdivision site is located in Hobbs, New Mexico. A portion of the Westgate Subdivision is built on property that is directly adjacent to the former oil and gas production facilities on the Grimes Lease. The subdivision is on the western side of Hobbs and consists of single-family residences built on relatively small lots. The tank battery and other production facilities have been removed, but some soils in the vicinity of the Grimes Tank Battery were contaminated with weathered crude oil residue. The Shell Exploration and Production Company remediated contaminated soils on developed and undeveloped properties adjacent to and including portions of the Westgate Subdivision.

There are homes immediately east and north of the site. The area to the west is an oil and gas field. There are oil and gas production facilities within a mile or two of the sites, including active wells to the west and processing facilities containing flares to the southwest of the site. The terrain in Hobbs is flat. In the area around the remediation site the natural vegetation is sparse and there are few trees to affect airflow patterns. The soils in this half of Lea County are characterized as "fine-loamy and clayey underlain by cemented calcium carbonate." According to the Hobbs Chamber of Commerce, the average annual rainfall is 14.6 inches and the average annual snowfall is five inches. There typically are 320 days of sunshine per year. The average summer daytime temperature in Hobbs is 80.1 °F, and its average winter daytime temperature is 33.9 °F.

1.2 Objective

The overall objective of the Phase II Air Monitoring Study was to monitor particulate matter concentrations at the site during remediation activities.

The data was to be used to modify site activities, as appropriate, to maintain PM concentrations below pre-determined threshold values.

1.3 Overview of the Phase II Scope of Work

The soil remediation was conducted between March and October of 2002. All activities were conducted within the confines of a large fabric structure designed to contain vapors and particulate matter that might otherwise be released during digging activities. The air from the structure was exhausted through an air pollution control system that removed particles and volatile organic constituents released during excavation and loading activities.

During the remediation effort, the excavation structure was moved several times as the excavation progressed. These moves resulted in the TEOM stations being moved twice. Figures 1-1 through 1-3 show the excavation structure in relation to the site boundaries and TEOM monitoring locations for each of these three locations.

Particulate matter was measured at two sites; one located west of the excavation structure (known as East site) with the other located south of the excavation structure (known as the South site). The two monitoring locations were selected based on the anticipated prevailing winds during the remediation period. This arrangement ensured that one site was generally downwind of site activities most of the time. PM concentrations were continuously measured with 30-minute, hourly, and 24-hour (rolling) averages calculated and stored in the instruments' data logger. The data were checked frequently by the on-site health and safety officer. If values exceeded predetermined threshold values, site activities were modified to reduce PM levels.

In addition to continuous PM monitoring, real-time (continuous) measurements were made for the following meteorological parameters:

- Wind speed;
- Wind direction; and
- Temperature.

These measurements were used to assist in the evaluation of the PM data. The overall data set was used to assess the potential impact from the remediation on the surrounding residents.

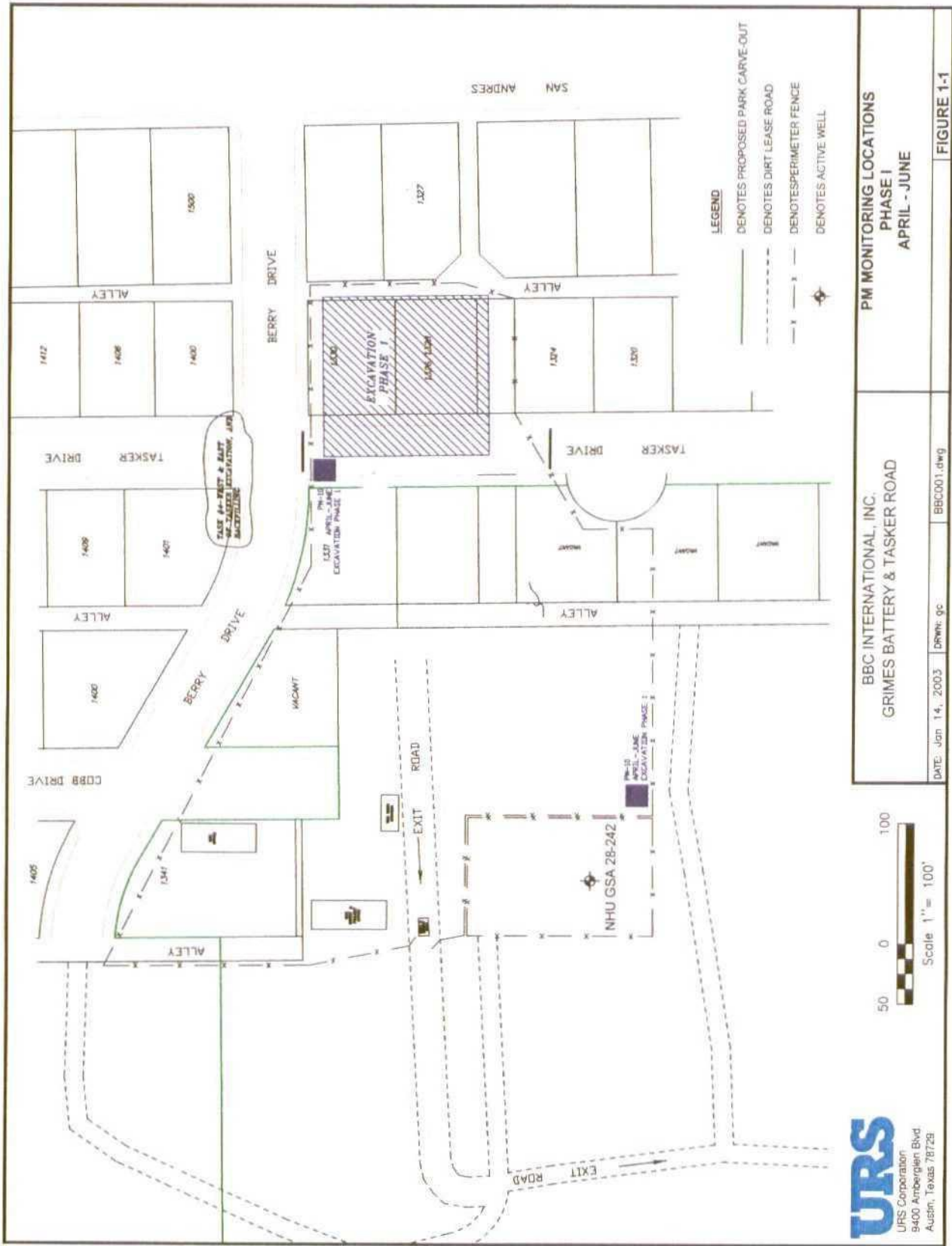


Figure 1-1. PM Monitoring Locations Phase 1, April - June

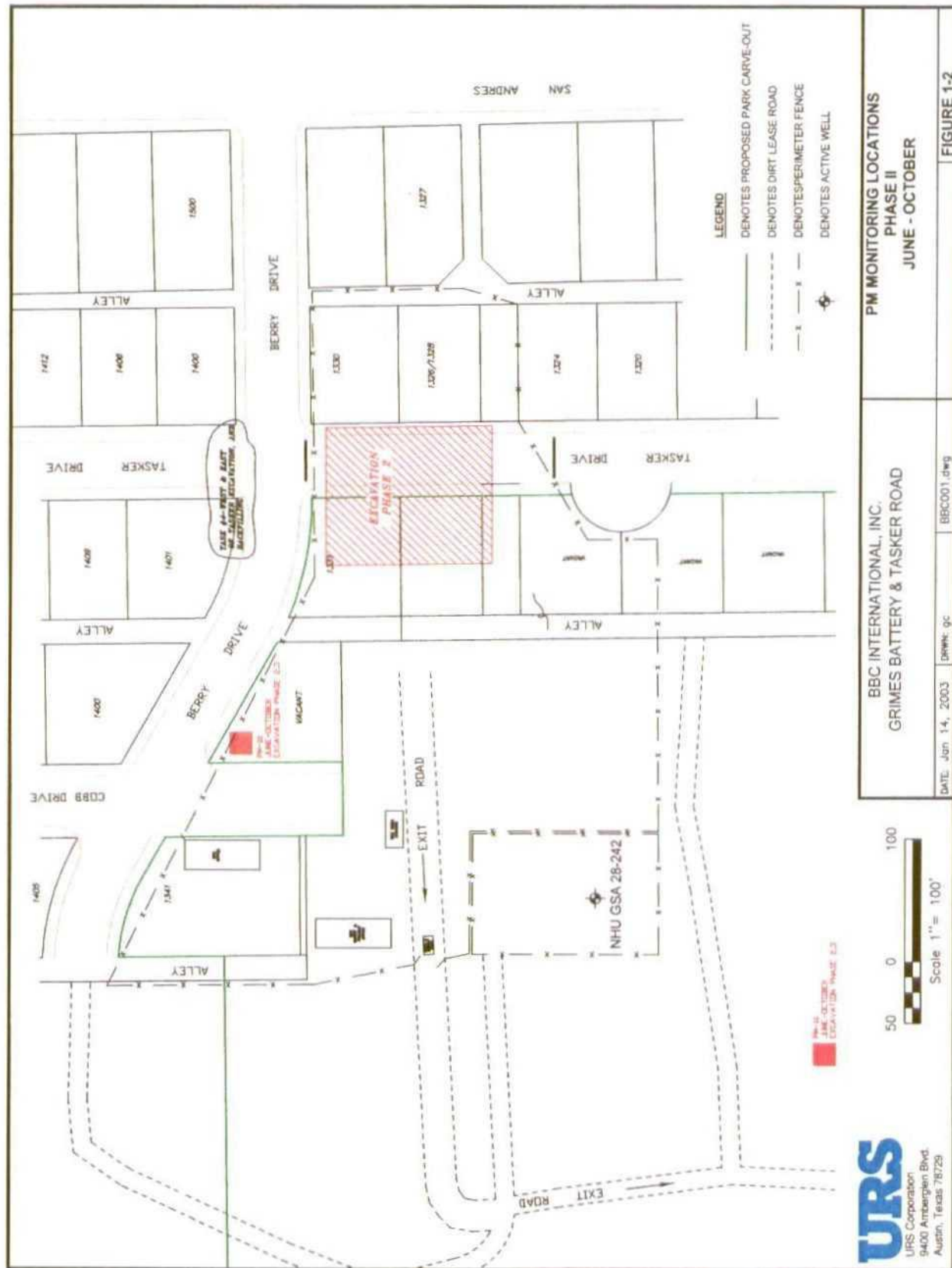


Figure 1-2. PM Monitoring Locations Phase II, June – October

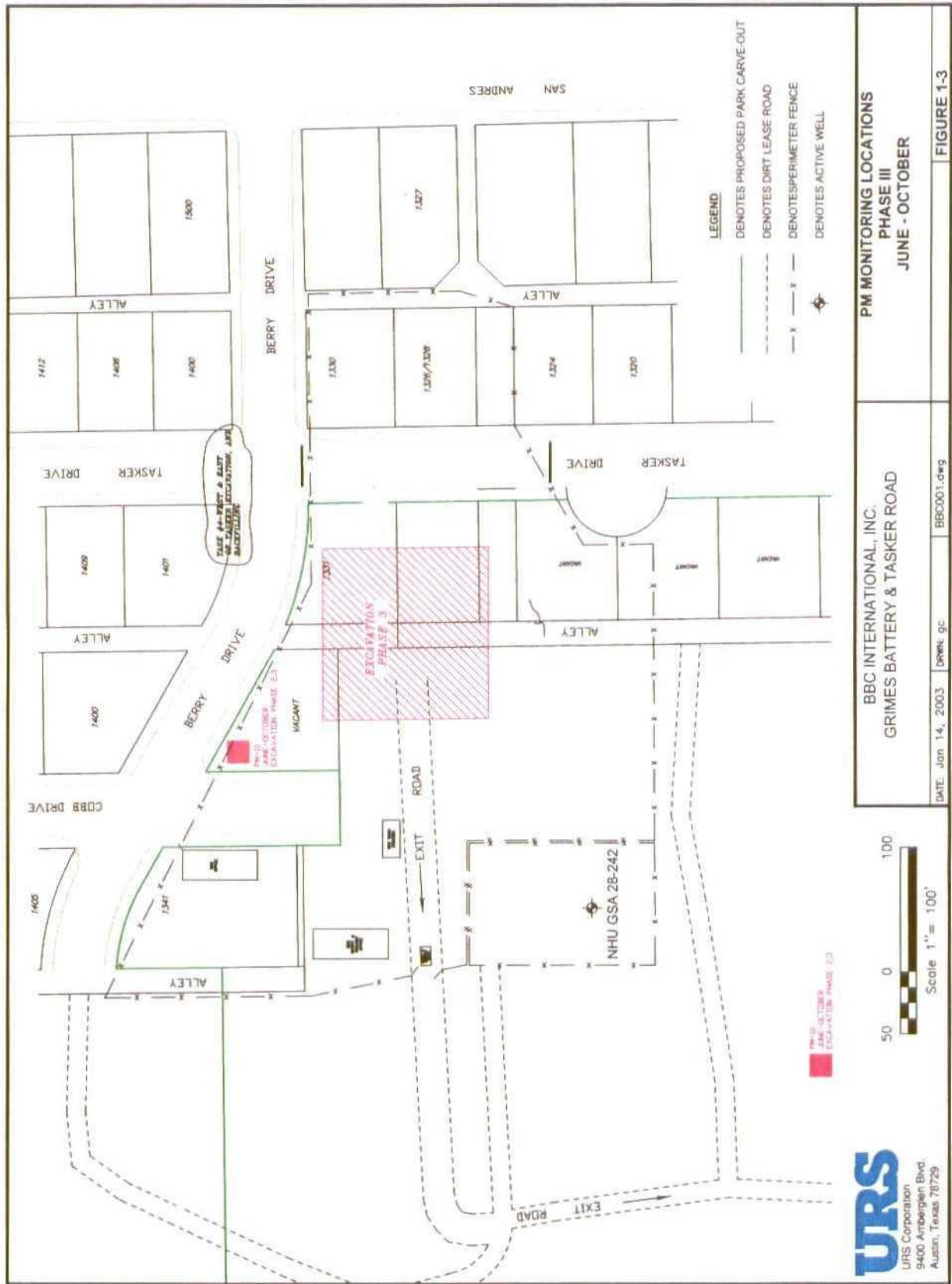


Figure 1-3. PM Monitoring Locations Phase III, June - October

2.0 Technical Approach

This section describes the sampling procedures that were used.

2.1 Monitoring Strategy

The ambient air quality was monitored during the remediation activities and continuous PM data were reviewed along with wind direction data. In general, the goal was to maintain PM levels at the site at $\leq 150 \mu\text{g}/\text{m}^3$. When the net ground level (NGL) concentration of PM began to approach this value, various control strategies were put in place to reduce PM levels. (NGL = downwind minus upwind). This included spraying water to control dust generated by trucks entering and leaving the site.

The East and South monitoring sites were positioned in accordance with predicted prevailing winds during the site activities. The South site was south of the fabric structure and the East site was west of it. The exact locations of the monitoring sites are shown in Figures 1-1 through 1-3. The meteorological monitoring site was located near one of the construction trailers.

2.2 Sampling Procedures

The PM and meteorological monitoring procedures are described below.

2.2.1 Procedures for Collecting Particulate Matter Samples

The respirable particulate matter (PM_{10}) was monitored continuously using a Rupprecht and Patashnick Company tapered element oscillating microbalance (TEOM). This unit uses a size-selective inlet to separate atmospheric particles into that fraction less than 10 microns (PM_{10}) and those greater than 10 microns. The PM_{10} fraction is then measured using the microbalance. Averages were calculated every 30 minutes, 1-hour, and 24-hours.

Each TEOM unit was equipped with a data logger capable of storing several months of PM data. The data were periodically downloaded by modem and the data (as 1-hour averages) were archived in an Oracle database for ambient data. On a regular basis, the data were reviewed and edited.

2.2.2 Meteorological Monitoring

The meteorological parameters of wind speed, wind direction, and ambient temperature were continuously monitored on-site. The station began operation on April 9, 2002 and was operated continuously during the remediation effort. The sensors were installed and calibrated at the start of the project using approved U.S. EPA methodology. MetOne Instrument sensors were used along with a Campbell Scientific data logger to store the data and calculate parameter averages and wind standard deviation. The sensors were mounted on a telephone pole at a height of approximately 10m. The pole was situated so it would provide accurate, representative data. On a regular basis, the data were reviewed and edited.

3.0 Results of Testing

This section presents the results of the air measurements performed during the remediation effort.

3.1 Results of Meteorological Monitoring

A 10-meter meteorological monitoring system was used to collect wind speed, wind direction, and ambient temperature data during the remediation effort. The data collection began on April 9, 2002 and continued until October 7, 2002.

A wind rose for the monitoring period (9 April through 7 October 2002) is shown in Figure 3-1. The wind rose shows that predominant winds during the program were southerly and easterly. Southerly winds (south southwest to southeast) accounted for 58% of the observed winds while easterly winds (east northeast to east southeast) accounted for 23% of the observed winds. The remaining wind direction vectors (northerly and westerly) represented less than 4% each of the observed winds. The hourly average meteorological data for wind speed, wind direction, and ambient temperature are presented in Appendix A, while monthly wind roses are presented in Appendix B.

3.2 Results of Particulate Matter (PM₁₀) Monitoring

The TEOM monitoring began operations on 27 March 2002. Table 3-1 presents a summary of the PM data collected during the monitoring program. The table shows the 24-hour average PM concentration and the maximum concentration during that 24-hour period. Appendix C contains the 1-hour average TEOM PM₁₀ concentrations. Appendix D contains graphs of the 1-hour average TEOM concentrations with both sites graphed together. These data show that generally the concentrations measured at the two sites were virtually identical.

During the installation, a piece of fiberglass insulation was accidentally trapped in the sample line between the PM₁₀ sampling head and the microbalance of the South site (upwind) monitor. This fiberglass acted as an in-line filter and resulted in values recorded by this unit prior to May 17th (when the problem was discovered and alleviated) being biased low. In addition, there is a gap in the TEOM data between 29 May and 13 June when the stations were shut down and moved. There were no remediation activities during this period, as this coincided with the repositioning of the excavation structure.

Figures 3-2 through 3-5 show the PM₁₀ 24-hour average concentration for each day of the monitoring program at the two sites. These graphs show that 24-hour average PM₁₀

concentrations exceeded $150 \mu\text{g}/\text{m}^3$ (equal to the National Ambient Air Quality Standard {NAAQS}) at the East site during 5 days out of approximately 180 days of the monitoring program. The South site did not register any days when the 24-hour PM_{10} concentration averages exceeded $150 \mu\text{g}/\text{m}^3$. Wind roses for the five days when 24-hour PM_{10} concentrations exceeded $150 \mu\text{g}/\text{m}^3$ are shown in Appendix E. During four of the five days (May 1, 6, 7, and 8) when 24-hour PM_{10} concentrations exceeded $150 \mu\text{g}/\text{m}^3$, winds were from the west and southwest and on the fifth day (September 27), winds were from the south and southwest. West and southwest winds would place the East site monitoring station upwind of the excavation structure, making it unlikely that site activities were the source of the elevated PM. Appendix F presents site notes from each day that site activities occurred.

On the five days when the average PM_{10} concentration exceeded $150 \mu\text{g}/\text{m}^3$ the site logs were evaluated to determine if either site activities or natural forces could have contributed or caused the elevated levels. On May 1, 2002, the site logs showed no abnormal site activities that appear to have caused the elevated PM levels. The wind speeds during the day time hours (0900 to 1700 hours), however, ranged from 16 to 25 mph and averaged 19 mph. Site notes indicated "dust storm blowing through site" and "lots of dust from off site."

The second day with elevated PM was May 6, 2002. During the morning the ground was wet from rain from the night before. Around noon, the winds started to pick up and afternoon hourly average wind speeds ranged from 17 to 23 mph. The site notes indicated that a dust storm was blowing through the site at 1610 hours. This corresponded with an hourly PM average of $1231 \mu\text{g}/\text{m}^3$. This value was nearly twice the next highest value measured on this day.

May 7, 2002 also had high afternoon winds, with hourly averages ranging from 17 to 25 mph. Site notes indicate that wind blown dust was particularly high on this day and site activities were ceased at 1430 hours. Following the cessation of site activities the PM levels remained high with the highest 1-hour average PM value measured the hour following the cessation of site activities.

The average 24-hour PM_{10} value for May 8, 2002 was only slightly above the NAAQS standard at $151 \mu\text{g}/\text{m}^3$. The afternoon winds had hourly averages ranging from 18 to 25 mph. The site logs indicate that the site was kept well watered during the day but that there were several periods when very heavy dust levels were observed blowing across the site.

The final day with a 24-hour PM concentration in excess of the NAAQS was September 27, 2002. On this day, two 1-hour PM averages exceeded $1000 \mu\text{g}/\text{m}^3$. These values occurred

between 1500 and 1700 hours during 13 to 14 mph winds. The site log notes that during this time the site was well watered but that it was windy. The log also notes that there was a "lot of dust blowing off trucks across site." It is possible that the two hours of elevated PM could be attributed to dust from the trucks. The PM values at the South site were approximately one fourth as high as those measured at the East site.

In summary, it appears that for at least four of the five days with 24-hour average PM concentrations in excess of $150 \mu\text{g}/\text{m}^3$ that high winds at the site resulted in the elevated PM levels and not site activities. During the fifth day, it is possible that site activities may have had an impact on the measured concentrations.

The East site Pollution Rose (Figure 3-6) shows that the highest average PM_{10} concentrations were observed when winds were from the north northwest ($58 \mu\text{g}/\text{m}^3$), even though this wind vector only accounted for 1% of the total winds. The next highest average PM_{10} concentration occurred during south southeast winds ($58 \mu\text{g}/\text{m}^3$). The South site Pollution Rose (Figure 3-7) showed the highest average PM_{10} concentration when winds were from the north northeast ($62 \mu\text{g}/\text{m}^3$). This wind vector, however, only accounted for 2% of the total winds. The next highest concentration ($59 \mu\text{g}/\text{m}^3$) was observed during northeast winds (4% of the total winds).

Tables 3-3 and 3-4 show PM_{10} concentration along with wind conditions (wind speed and direction) for all 1-hour PM_{10} concentrations exceeding $150 \mu\text{g}/\text{m}^3$ for the East and South monitoring sites sorted in decreasing concentration. The East site had 180 1-hour PM_{10} values that exceeded $150 \mu\text{g}/\text{m}^3$, with 155 measured when there were valid meteorological data. Of these values, 78 occurred when winds were from the southwest vectors (south southwest to west southwest).

The South site recorded 53 hours when 1-hour PM_{10} values exceeded $150 \mu\text{g}/\text{m}^3$, with 49 measured when there was valid meteorological data. Of these 49 values, the highest values were observed either during northeast winds (north northeast to east northeast) or south winds (south southeast to south southwest). Seventeen of the 49 values were observed during northeast winds while another 17 values were observed during south winds.

Wind Rose

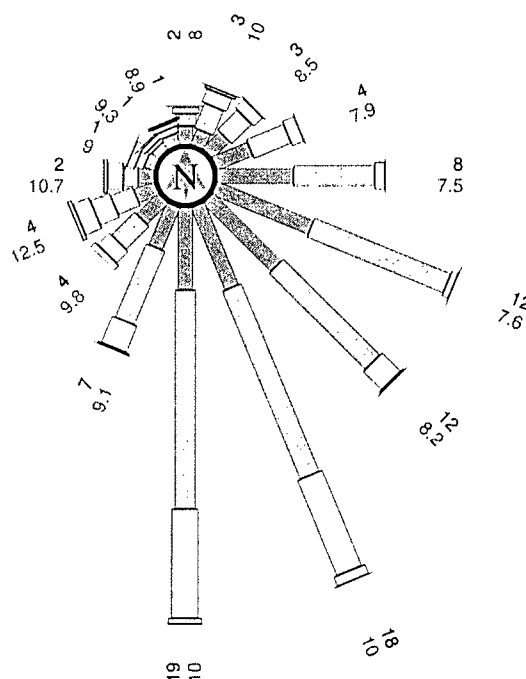
Shell Westgate

April 1, 2002 to October 7, 2002

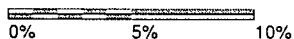
Wind Speed



LE 1
2
7
12
18
24
GT 24
mph



0% Calms



Values shown as: Percent Total Frequency
Average WSA in mph

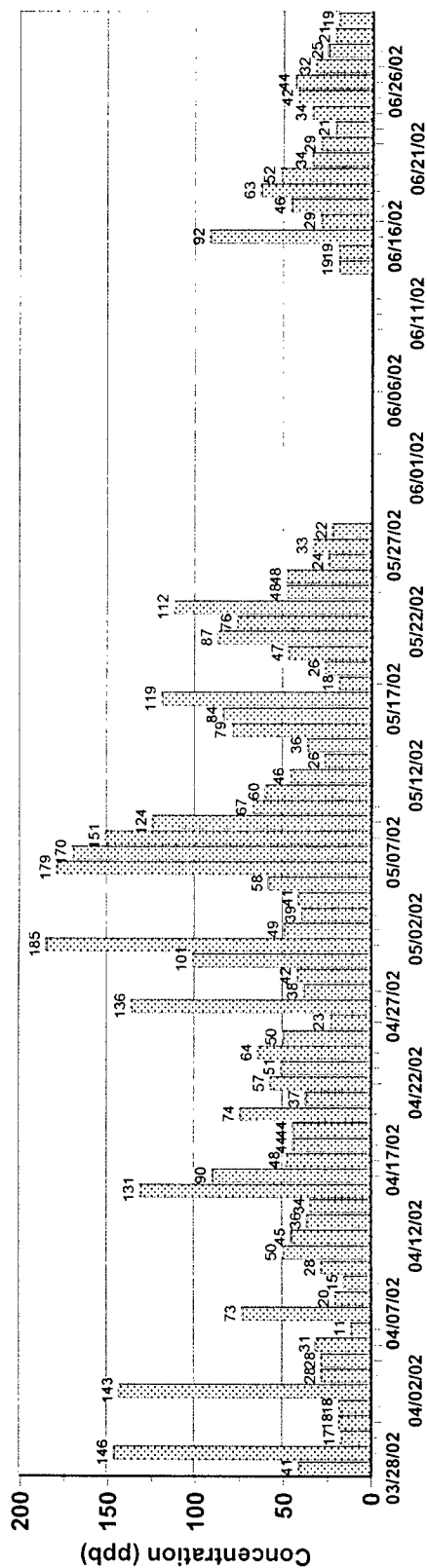
01/14/03 09:53

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Figure 3-1. Wind Rose – April through October 2002

Summary of East Site 24-Hour PM10 Averages

28 March through 30 June 2002



Summary of East Site Maximum One-Hour PM10 Values

28 March through 30 June 2002

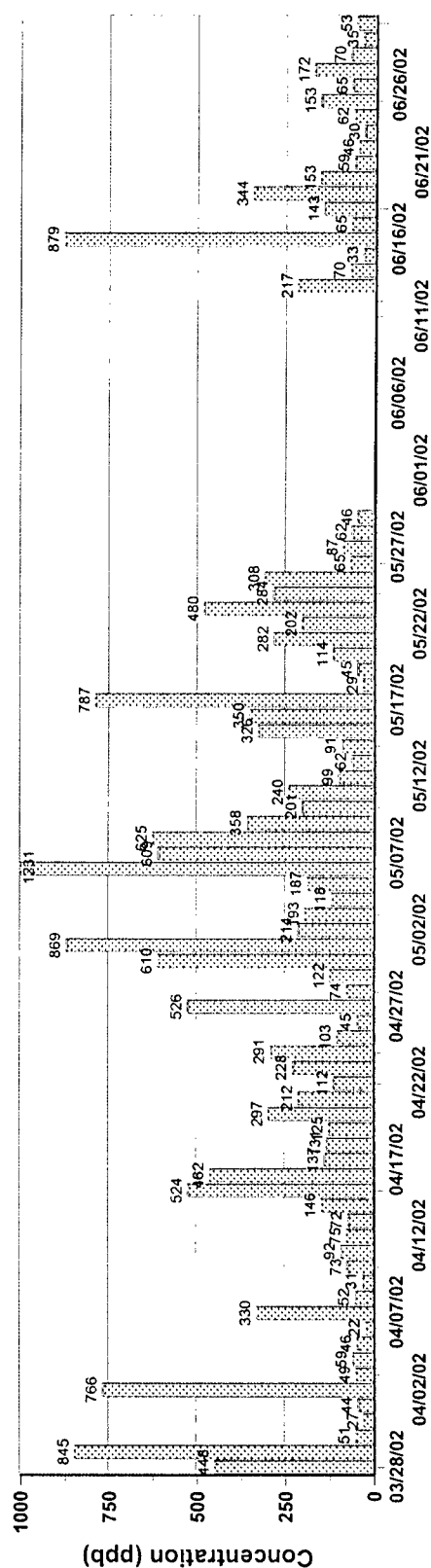
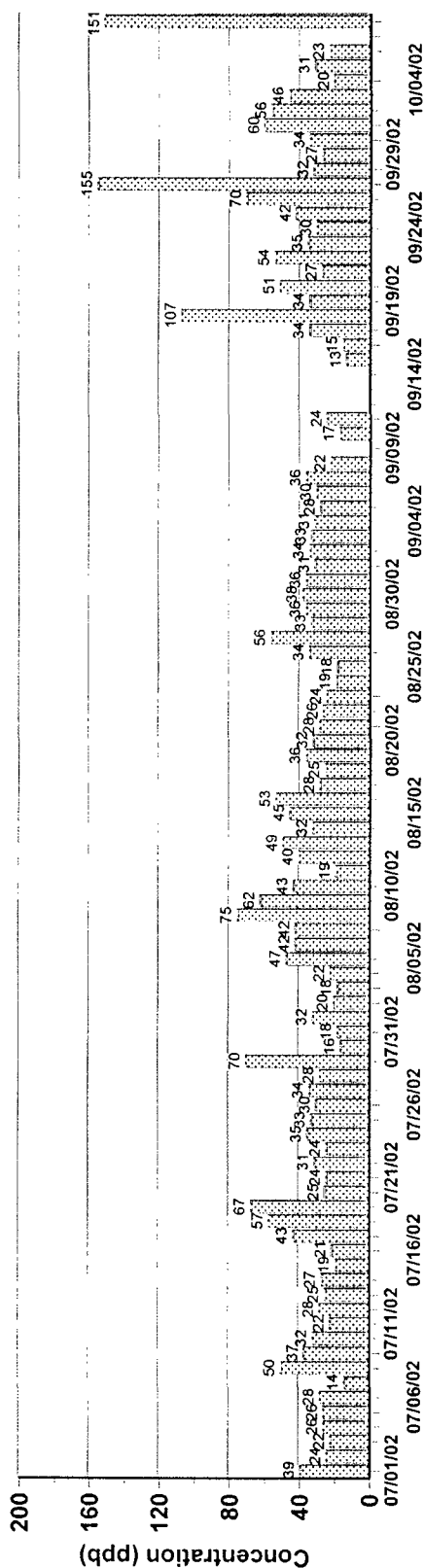


Figure 3-2. Summary of East Site 24-Hour Average and 1-Hour Maximum PM₁₀ Concentrations
28 March – 30 June 2002

Summary of East Site 24-Hour PM10 Averages

1 July through 7 October 2002



Summary of East Site Maximum One-Hour PM10 Values

1 July through 7 October 2002

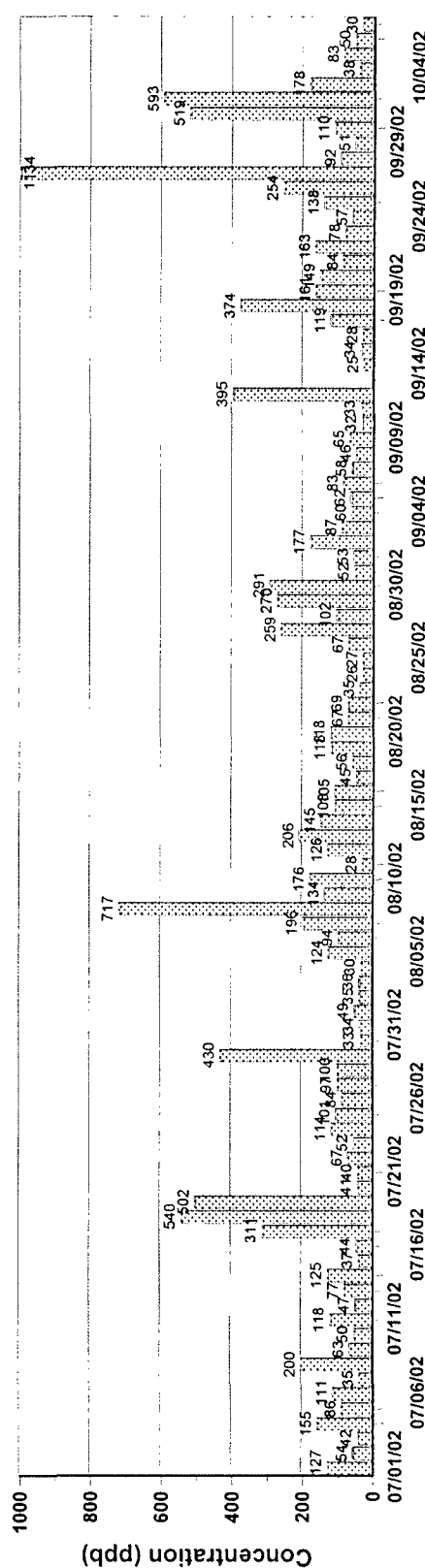
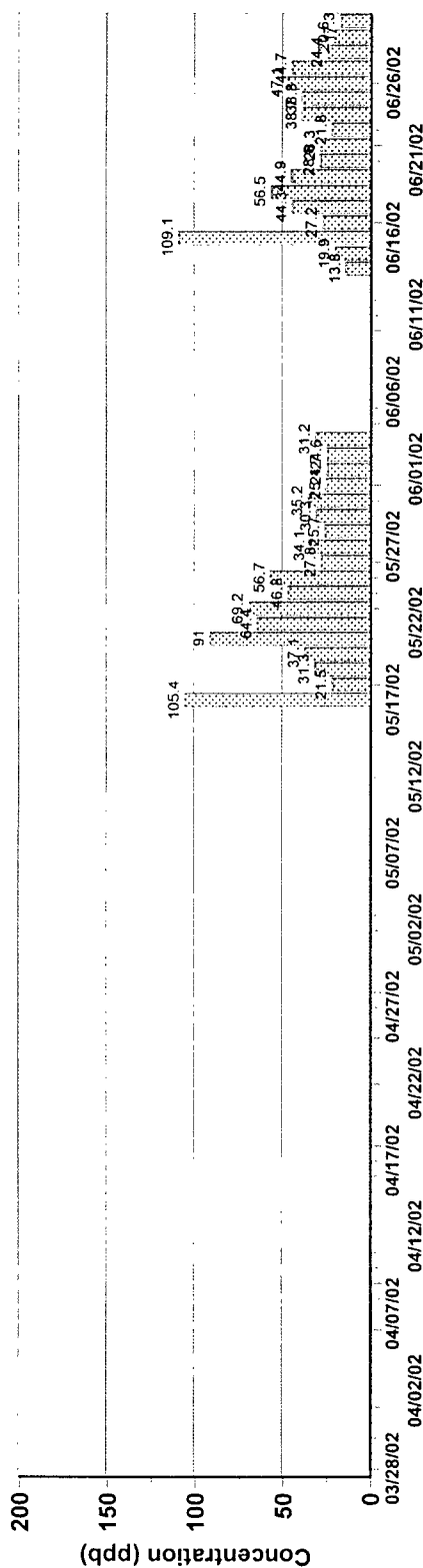


Figure 3-3. Summary of East Site 24-Hour Average and 1-Hour Maximum PM₁₀ Concentrations
1 July – 7 October 2002

Summary of South Site 24-Hour PM10 Averages

28 March through 30 June 2002



Summary of South Site Maximum One-Hour PM10 Values

28 March through 30 June 2002

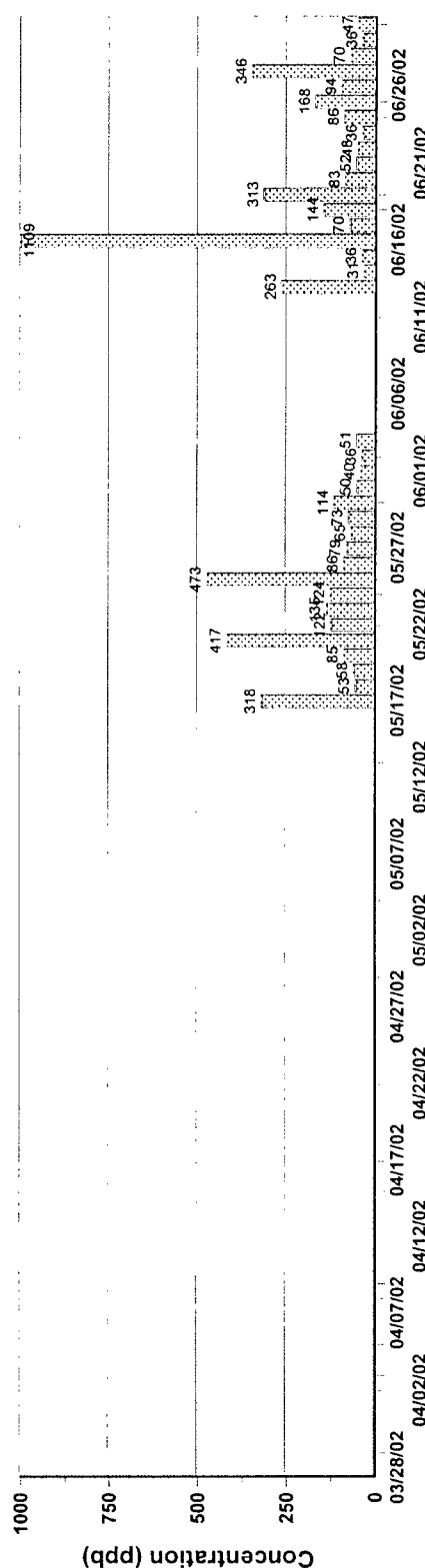
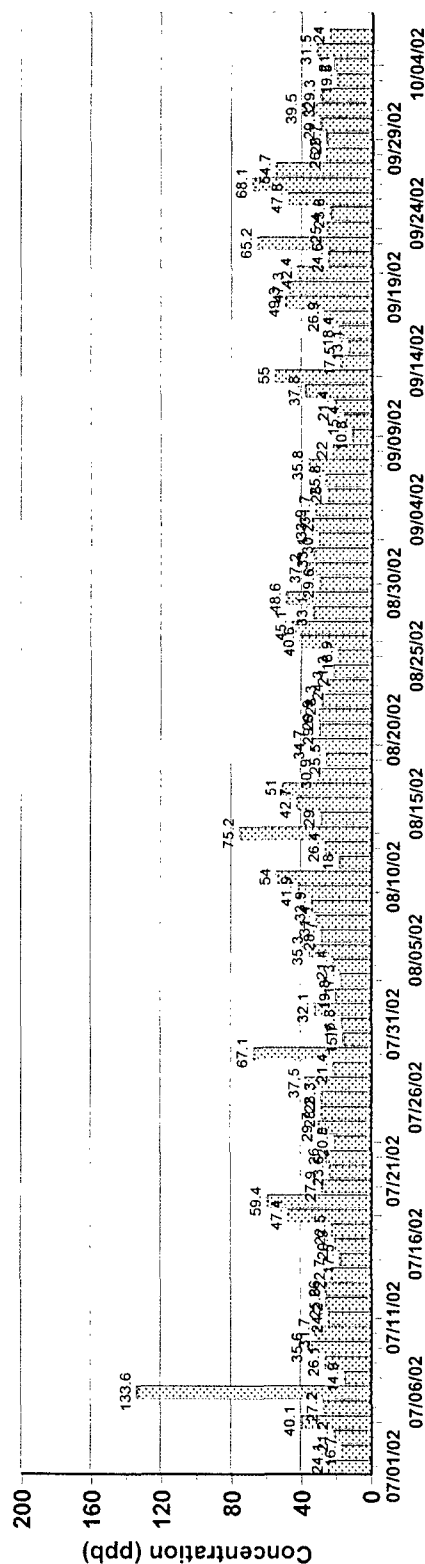


Figure 3-4. Summary of South Site 24-Hour Average and 1-Hour Maximum PM₁₀ Concentrations
28 March – 30 June 2002

Summary of South Site 24-Hour PM10 Averages

1 July through 7 October 2002



Summary of South Site Maximum One-Hour PM10 Values

1 July through 7 October 2002

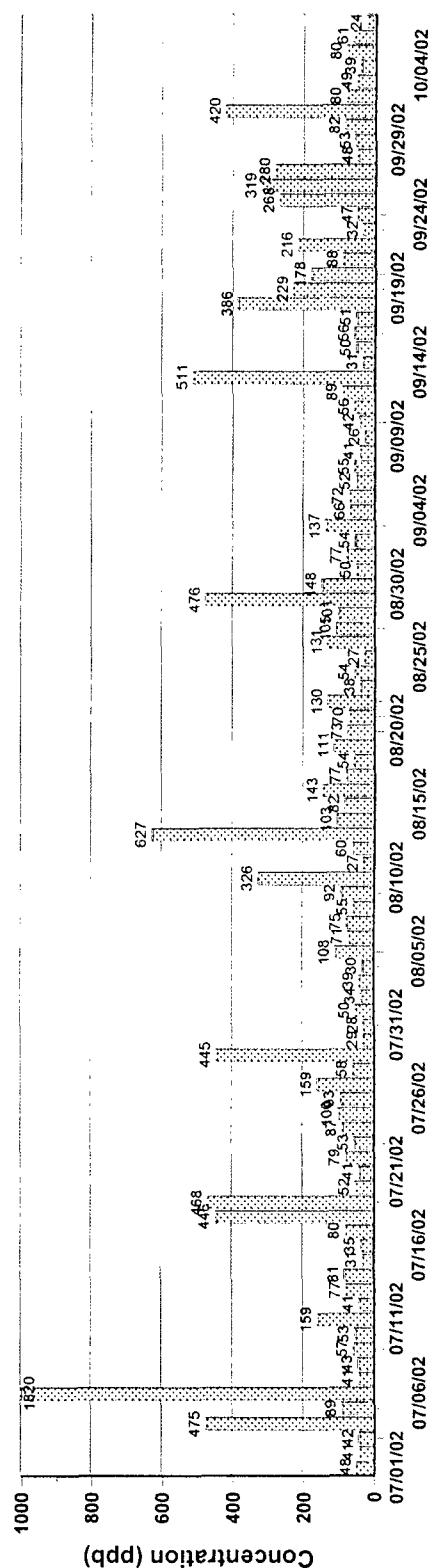


Figure 3-5. Summary of South Site 24-Hour Average and 1-Hour Maximum PM₁₀ Concentrations
1 July – 7 October 2002

Pollution Rose

East Site

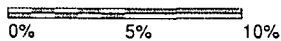
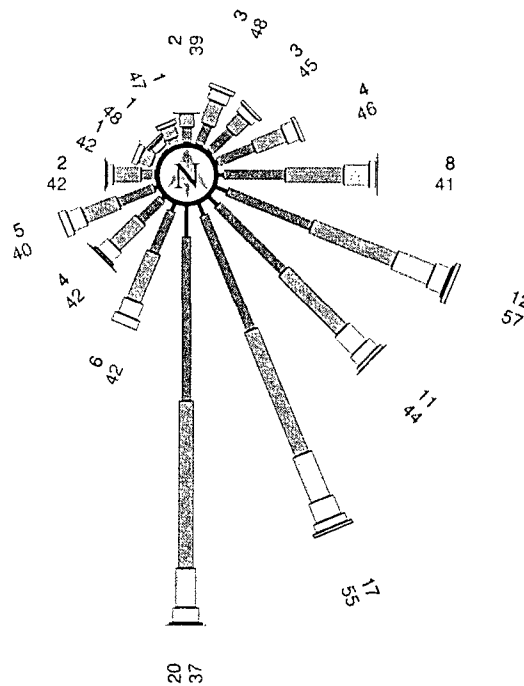
March 28, 2002 to October 7, 2002

TEOM PM10



LE 10
25
50
100
250
500
GT 500

ug/m3



Values shown as:

0% Calms
Percent Total Frequency
Average APM10 in ug/m3

01/14/03 09:54

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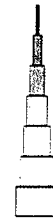
Figure 3-6. East Site Pollution Rose, March through October 2002

Pollution Rose

South Site

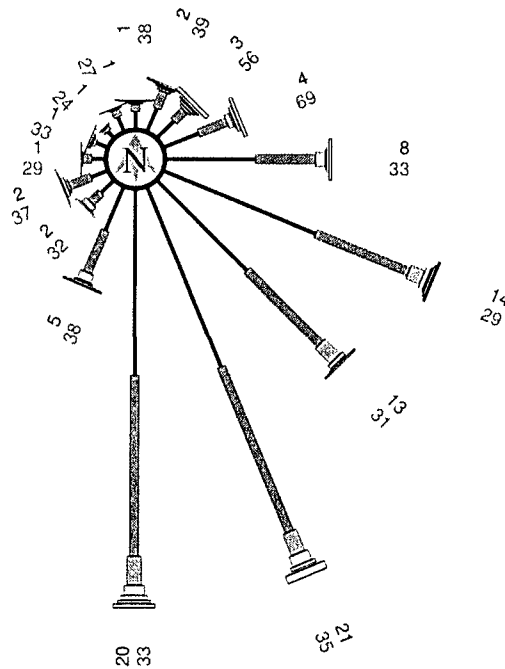
May 16, 2002 to October 7, 2002

TEOM PM10



LE 25
50
75
100
125
150
GT 150

ug/m3



0% 5% 10%

Values shown as: Percent Total Frequency
Average APM10 in ug/m3

0% Calms

01/14/03 10:01

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Figure 3-7. South Site Pollution Rose, May through October 2002

Table 3-1. Summary of Continuous PM₁₀ Data, Shell Westgate Site

Date	Day of the Week	East Site		South Site	
		24-Hour Average (µg/m ³)	Maximum 1-hour Value (µg/m ³)	24-Hour Average (µg/m ³)	Maximum 1-hour Value (µg/m ³)
03/28/02	Th	41	448	N/A	N/A
03/29/02	F	146	845	N/A	N/A
03/30/02	Sa	17	51	N/A	N/A
03/31/02	Su	18	27	N/A	N/A
04/01/02	M	18	44	N/A	N/A
04/02/02	Tu	143	766	N/A	N/A
04/03/02	W	28	49	N/A	N/A
04/04/02	Th	28	59	N/A	N/A
04/05/02	F	31	46	N/A	N/A
04/06/02	Sa	11	22	N/A	N/A
04/07/02	Su	73	330	N/A	N/A
04/08/02	M	20	52	N/A	N/A
04/09/02	Tu	15	31	N/A	N/A
04/10/02	W	28	73	N/A	N/A
04/11/02	Th	50	92	N/A	N/A
04/12/02	F	45	75	N/A	N/A
04/13/02	Sa	36	72	N/A	N/A
04/14/02	Su	34	146	N/A	N/A
04/15/02	M	131	524	N/A	N/A
04/16/02	Tu	90	462	N/A	N/A
04/17/02	W	48	137	N/A	N/A
04/18/02	Th	44	131	N/A	N/A
04/19/02	F	44	125	N/A	N/A
04/20/02	Sa	74	297	N/A	N/A
04/21/02	Su	37	212	N/A	N/A
04/22/02	M	57	112	N/A	N/A
04/23/02	Tu	51	228	N/A	N/A
04/24/02	W	64	291	N/A	N/A
04/25/02	Th	50	103	N/A	N/A
04/26/02	F	23	45	N/A	N/A
04/27/02	Sa	136	526	N/A	N/A
04/28/02	Su	38	74	N/A	N/A
04/29/02	M	42	122	N/A	N/A
04/30/02	Tu	101	610	N/A	N/A
05/01/02	W	185	869	N/A	N/A
05/02/02	Th	49	214	N/A	N/A
05/03/02	F	39	193	N/A	N/A
05/04/02	Sa	41	118	N/A	N/A
05/05/02	Su	58	187	N/A	N/A
05/06/02	M	179	1231	N/A	N/A
05/07/02	Tu	170	609	N/A	N/A
05/08/02	W	151	625	N/A	N/A
05/09/02	Th	124	358	N/A	N/A
05/10/02	F	67	201	N/A	N/A
05/11/02	Sa	60	240	N/A	N/A

Table 3-1. Continued

Date	Day of the Week	East Site		South Site	
		24-Hour Average ($\mu\text{g}/\text{m}^3$)	Maximum 1-hour Value ($\mu\text{g}/\text{m}^3$)	24-Hour Average ($\mu\text{g}/\text{m}^3$)	Maximum 1-hour Value ($\mu\text{g}/\text{m}^3$)
05/12/02	Su	46	99	N/A	N/A
05/13/02	M	26	62	N/A	N/A
05/14/02	Tu	36	91	N/A	N/A
05/15/02	W	79	326	N/A	N/A
05/16/02	Th	84	350	N/A	N/A
05/17/02	F	119	787	105.4	318
05/18/02	Sa	18	29	21.5	53
05/19/02	Su	26	45	31.3	58
05/20/02	M	47	114	37.1	85
05/21/02	Tu	87	282	91.0	417
05/22/02	W	76	202	64.4	122
05/23/02	Th	112	480	69.2	135
05/24/02	F	48	284	46.8	124
05/25/02	Sa	48	308	56.7	473
05/26/02	Su	24	65	27.8	86
05/27/02	M	33	87	34.1	79
05/28/02	Tu	22	62	25.7	65
05/29/02	W	N/A	46	30.3	73
05/30/02	Th	N/A	N/A	35.2	114
05/31/02	F	N/A	N/A	25.1	50
06/01/02	Sa	N/A	N/A	24.7	40
06/02/02	Su	N/A	N/A	24.6	36
06/03/02	M	N/A	N/A	31.2	51
06/04/02	Tu	N/A	N/A	N/A	N/A
06/05/02	W	N/A	N/A	N/A	N/A
06/06/02	Th	N/A	N/A	N/A	N/A
06/07/02	F	N/A	N/A	N/A	N/A
06/08/02	Sa	N/A	N/A	N/A	N/A
06/09/02	Su	N/A	N/A	N/A	N/A
06/10/02	M	N/A	N/A	N/A	N/A
06/11/02	Tu	N/A	N/A	N/A	N/A
06/12/02	W	N/A	N/A	N/A	N/A
06/13/02	Th	N/A	217	N/A	263
06/14/02	F	19	70	13.8	31
06/15/02	Sa	19	33	19.9	36
06/16/02	Su	92	879	109.1	1109
06/17/02	M	29	65	27.2	70
06/18/02	Tu	46	143	44.3	144
06/19/02	W	63	344	56.5	313
06/20/02	Th	52	153	44.9	83
06/21/02	F	34	59	28.8	52
06/22/02	Sa	29	46	28.3	48
06/23/02	Su	21	30	21.8	36
06/24/02	M	34	62	38.7	86
06/25/02	Tu	42	153	38.8	168
06/26/02	W	44	65	47.1	94

Table 3-1. Continued

Date	Day of the Week	East Site		South Site	
		24-Hour Average ($\mu\text{g}/\text{m}^3$)	Maximum 1-hour Value ($\mu\text{g}/\text{m}^3$)	24-Hour Average ($\mu\text{g}/\text{m}^3$)	Maximum 1-hour Value ($\mu\text{g}/\text{m}^3$)
06/27/02	Th	32	172	44.7	346
06/28/02	F	25	70	24.4	70
06/29/02	Sa	21	35	20.6	36
06/30/02	Su	19	53	17.3	47
07/01/02	M	39	127	24.1	48
07/02/02	Tu	24	54	16.7	41
07/03/02	W	22	42	21.2	42
07/04/02	Th	26	155	40.1	475
07/05/02	F	26	86	27.2	89
07/06/02	Sa	28	111	133.6	1820
07/07/02	Su	14	35	14.9	41
07/08/02	M	50	200	26.1	43
07/09/02	Tu	37	63	35.6	57
07/10/02	W	32	50	31.7	53
07/11/02	Th	22	118	24.2	159
07/12/02	F	28	47	25.6	41
07/13/02	Sa	25	77	26.0	77
07/14/02	Su	27	125	22.7	81
07/15/02	M	19	37	17.5	31
07/16/02	Tu	21	44	20.9	35
07/17/02	W	43	311	22.5	80
07/18/02	Th	57	540	47.4	446
07/19/02	F	67	502	59.4	468
07/20/02	Sa	25	41	27.9	52
07/21/02	Su	24	40	23.6	41
07/22/02	M	31	67	26.0	79
07/23/02	Tu	24	52	20.8	53
07/24/02	W	35	114	29.7	87
07/25/02	Th	33	101	28.2	100
07/26/02	F	30	84	28.3	93
07/27/02	Sa	34	97	37.5	159
07/28/02	Su	28	100	21.4	58
07/29/02	M	70	430	67.1	445
07/30/02	Tu	16	33	15.7	29
07/31/02	W	18	34	16.8	28
08/01/02	Th	32	49	32.1	50
08/02/02	F	20	35	19.8	34
08/03/02	Sa	18	36	17.3	39
08/04/02	Su	22	30	21.4	30
08/05/02	M	47	124	35.3	108
08/06/02	Tu	42	94	28.7	71
08/07/02	W	42	196	31.4	75
08/08/02	Th	75	717	33.9	55
08/09/02	F	62	134	41.9	92
08/10/02	Sa	43	176	54.0	326
08/11/02	Su	19	28	18.0	27

Table 3-1. Continued

Date	Day of the Week	East Site		South Site	
		24-Hour Average ($\mu\text{g}/\text{m}^3$)	Maximum 1-hour Value ($\mu\text{g}/\text{m}^3$)	24-Hour Average ($\mu\text{g}/\text{m}^3$)	Maximum 1-hour Value ($\mu\text{g}/\text{m}^3$)
08/12/02	M	40	126	26.4	60
08/13/02	Tu	49	206	75.2	627
08/14/02	W	32	145	29.0	103
08/15/02	Th	45	108	42.7	82
08/16/02	F	53	105	51.0	143
08/17/02	Sa	28	45	30.9	77
08/18/02	Su	25	56	25.5	54
08/19/02	M	36	118	34.7	111
08/20/02	Tu	32	118	29.6	73
08/21/02	W	28	67	29.9	70
08/22/02	Th	26	69	28.3	130
08/23/02	F	24	35	24.3	38
08/24/02	Sa	19	26	21.3	54
08/25/02	Su	18	27	18.9	27
08/26/02	M	34	67	40.6	131
08/27/02	Tu	56	259	45.1	105
08/28/02	W	33	102	33.1	101
08/29/02	Th	36	270	48.6	476
08/30/02	F	38	291	29.6	148
08/31/02	Sa	36	52	37.2	50
09/01/02	Su	31	53	33.1	77
09/02/02	M	34	177	30.2	54
09/03/02	Tu	33	87	33.9	137
09/04/02	W	31	60	31.7	66
09/05/02	Th	28	62	25.0	72
09/06/02	F	30	83	25.8	52
09/07/02	Sa	36	58	35.8	55
09/08/02	Su	22	46	22.0	41
09/09/02	M	N/A	65	10.8	26
09/10/02	Tu	17	32	15.4	42
09/11/02	W	24	33	21.4	56
09/12/02	Th	N/A	395	37.8	89
09/13/02	F	N/A	N/A	55.0	511
09/14/02	Sa	N/A	25	17.5	31
09/15/02	Su	13	34	13.1	50
09/16/02	M	15	28	18.4	56
09/17/02	Tu	34	119	26.9	51
09/18/02	W	107	374	49.3	386
09/19/02	Th	34	161	47.3	229
09/20/02	F	51	149	42.4	178
09/21/02	Sa	27	84	24.6	88
09/22/02	Su	54	163	65.2	216
09/23/02	M	35	78	25.4	32
09/24/02	Tu	30	57	23.6	47
09/25/02	W	42	138	47.8	268
09/26/02	Th	70	254	68.1	319

Table 3-1. Continued

Date	Day of the Week	East Site		South Site	
		24-Hour Average ($\mu\text{g}/\text{m}^3$)	Maximum 1-hour Value ($\mu\text{g}/\text{m}^3$)	24-Hour Average ($\mu\text{g}/\text{m}^3$)	Maximum 1-hour Value ($\mu\text{g}/\text{m}^3$)
09/27/02	F	155	1134	54.7	280
09/28/02	Sa	32	92	26.2	48
09/29/02	Su	27	51	25.7	53
09/30/02	M	34	110	29.3	82
10/01/02	Tu	60	519	39.5	420
10/02/02	W	56	593	29.3	80
10/03/02	Th	46	178	19.5	49
10/04/02	F	20	38	21.0	39
10/05/02	Sa	31	83	31.5	80
10/06/02	Su	23	50	24.0	61
10/07/02	M	N/A	30	N/A	24

N/A = Value not available or station not collecting valid data during period

Table 3-2. Summary of Highest 1-Hour PM₁₀ Concentrations – East Site

Date	Time	Concentration ($\mu\text{g}/\text{m}^3$)	Wind Speed (mph)	Wind Direction (deg)
05/06/02	17:00	1231	22.1	251
09/27/02	16:00	1134	13.0	195
09/27/02	15:00	1015	14.3	192
06/16/02	2:00	879	14.8	60
05/01/02	12:00	869	23.3	260
03/29/02	15:00	845	N/A ¹	N/A ¹
05/17/02	17:00	787	14.4	62
05/06/02	13:00	780	17.9	238
04/02/02	9:00	766	N/A ¹	N/A ¹
08/08/02	15:00	717	8.7	174
05/08/02	16:00	625	24.7	246
04/30/02	14:00	610	19.8	250
05/07/02	15:00	609	23.2	230
05/06/02	14:00	603	16.8	246
10/02/02	21:00	593	6.4	159
05/07/02	11:00	580	20.2	244
07/18/02	18:00	540	19.0	200
05/01/02	15:00	532	22.0	261
04/27/02	5:00	526	17.2	268
05/01/02	14:00	525	25.3	266
04/15/02	12:00	524	14.8	224
10/01/02	19:00	519	10.8	138
04/02/02	10:00	518	N/A ¹	N/A ¹
05/07/02	12:00	504	22.4	240
06/16/02	1:00	503	17.7	57
07/19/02	18:00	502	9.0	150
05/07/02	16:00	495	25.3	229
03/29/02	14:00	490	N/A ¹	N/A ¹
05/23/02	14:00	480	15.7	240
05/08/02	17:00	477	24.1	252
04/16/02	9:00	462	23.3	256
05/07/02	14:00	456	20.3	227
03/28/02	17:00	448	N/A ¹	N/A ¹
07/29/02	13:00	430	N/A ¹	N/A ¹
04/15/02	16:00	424	20.8	225
05/08/02	15:00	410	21.1	244
09/12/02	9:00	395	11.0	181
05/08/02	14:00	392	21.4	246
03/29/02	18:00	375	N/A ¹	N/A ¹
09/18/02	14:00	374	18.1	240
04/15/02	14:00	372	16.7	222
04/27/02	6:00	369	12.9	262
09/27/02	17:00	368	11.5	187
05/09/02	4:00	358	8.9	20
05/16/02	14:00	350	12.6	253
04/02/02	11:00	347	N/A ¹	N/A ¹
06/19/02	20:00	344	20.1	148
09/18/02	19:00	338	17.2	344

Table 3-2. Continued

Date	Time	Concentration ($\mu\text{g}/\text{m}^3$)	Wind Speed (mph)	Wind Direction (deg)
04/07/02	15:00	330	N/A ¹	N/A ¹
04/02/02	12:00	329	N/A ¹	N/A ¹
05/15/02	16:00	326	12.9	177
04/15/02	11:00	320	17.6	211
03/29/02	13:00	318	N/A ¹	N/A ¹
09/12/02	10:00	312	11.3	178
07/17/02	11:00	311	9.1	143
05/08/02	18:00	309	20.8	249
05/25/02	0:00	308	12.3	37
09/18/02	12:00	307	20.1	243
04/07/02	12:00	303	N/A ¹	N/A ¹
09/27/02	14:00	302	14.3	193
05/23/02	12:00	298	15.2	253
04/20/02	13:00	297	21.8	209
05/08/02	13:00	294	18.7	246
04/24/02	19:00	291	14.5	83
08/30/02	20:00	291	9.5	210
05/24/02	14:00	284	12.7	244
05/21/02	17:00	282	23.3	148
04/02/02	8:00	277	N/A ¹	N/A ¹
04/27/02	12:00	272	25.5	251
08/29/02	3:00	270	13.0	29
04/30/02	16:00	270	18.2	233
05/07/02	13:00	264	20.0	229
09/12/02	8:00	264	3.6	179
05/06/02	12:00	262	18.8	252
09/18/02	16:00	262	21.0	228
04/07/02	16:00	261	N/A ¹	N/A ¹
05/09/02	5:00	259	10.7	39
08/27/02	21:00	259	8.9	162
09/26/02	17:00	254	8.9	194
05/15/02	17:00	249	10.7	170
05/06/02	18:00	247	18.2	259
04/15/02	23:00	247	13.2	189
04/16/02	14:00	241	16.8	235
05/11/02	19:00	240	12.7	181
05/21/02	18:00	238	23.0	147
04/16/02	10:00	237	23.2	249
03/29/02	16:00	237	N/A ¹	N/A ¹
04/02/02	13:00	237	N/A ¹	N/A ¹
04/15/02	17:00	234	17.8	220
06/16/02	3:00	233	12.5	55
05/01/02	16:00	233	20.9	255
05/09/02	3:00	233	7.3	35
04/27/02	13:00	233	23.4	249
04/20/02	14:00	229	22.5	222
05/06/02	15:00	228	17.5	235
04/23/02	16:00	228	11.9	255

Table 3-2. Continued

Date	Time	Concentration ($\mu\text{g}/\text{m}^3$)	Wind Speed (mph)	Wind Direction (deg)
05/07/02	18:00	226	15.9	241
04/20/02	15:00	226	21.2	239
05/01/02	17:00	224	16.2	254
09/18/02	13:00	222	19.7	243
04/30/02	12:00	222	19.5	253
03/29/02	17:00	219	N/A ¹	N/A ¹
05/16/02	15:00	217	14.0	255
06/13/02	18:00	217	15.3	93
09/18/02	17:00	217	21.9	231
09/12/02	12:00	217	9.3	180
05/17/02	10:00	214	15.6	37
05/02/02	5:00	214	14.5	26
04/21/02	0:00	212	10.2	300
03/29/02	19:00	210	N/A ¹	N/A ¹
09/18/02	15:00	210	19.5	228
05/01/02	13:00	209	23.4	261
05/07/02	17:00	208	20.6	236
05/08/02	12:00	208	19.1	262
04/27/02	15:00	207	20.3	243
03/29/02	20:00	207	N/A ¹	N/A ¹
04/20/02	23:00	206	4.7	202
05/06/02	16:00	206	22.6	243
08/13/02	0:00	206	15.4	175
03/29/02	12:00	205	N/A ¹	N/A ¹
06/13/02	19:00	205	14.3	89
04/27/02	7:00	202	15.9	259
05/16/02	11:00	202	9.7	276
05/22/02	15:00	202	16.2	216
05/10/02	20:00	201	16.2	154
09/26/02	15:00	200	7.2	197
07/08/02	15:00	200	8.8	139
05/15/02	20:00	200	17.0	166
04/15/02	15:00	199	19.1	227
05/21/02	16:00	199	21.3	148
08/07/02	13:00	196	8.5	140
05/23/02	15:00	196	13.5	241
04/24/02	20:00	195	15.4	86
04/07/02	17:00	194	N/A ¹	N/A ¹
05/03/02	19:00	193	5.4	178
04/27/02	10:00	189	21.2	250
04/27/02	4:00	187	15.7	259
05/01/02	10:00	187	19.9	253
05/05/02	17:00	187	8.5	145
05/09/02	6:00	186	10.7	44
05/17/02	14:00	186	13.9	48
05/23/02	18:00	185	16.7	219
09/26/02	12:00	180	7.3	199
07/08/02	16:00	180	9.4	136

Table 3-2. Continued

Date	Time	Concentration ($\mu\text{g}/\text{m}^3$)	Wind Speed (mph)	Wind Direction (deg)
10/03/02	15:00	178	14.6	245
09/18/02	18:00	177	20.4	260
09/02/02	0:00	177	5.5	163
05/02/02	6:00	176	13.1	25
08/10/02	22:00	176	7.6	86
09/12/02	14:00	176	8.3	181
05/22/02	17:00	175	16.8	181
05/23/02	13:00	173	16.6	242
06/27/02	0:00	172	8.7	29
09/12/02	11:00	170	9.3	173
04/07/02	13:00	170	N/A ¹	N/A ¹
09/26/02	8:00	168	8.4	202
09/27/02	12:00	166	13.0	177
04/24/02	21:00	165	15.3	88
05/01/02	22:00	165	9.6	248
05/21/02	15:00	165	20.7	149
04/16/02	12:00	163	20.3	247
05/09/02	7:00	163	12.5	47
09/22/02	5:00	163	16.4	30
05/01/02	11:00	163	24.4	255
05/16/02	17:00	162	15.6	259
07/29/02	14:00	162	N/A ¹	N/A ¹
05/21/02	14:00	162	19.8	150
05/15/02	14:00	162	10.9	180
05/21/02	19:00	161	22.2	150
09/19/02	16:00	161	12.0	356
05/17/02	12:00	161	15.3	40
05/09/02	20:00	160	11.2	106
04/02/02	14:00	157	N/A ¹	N/A ¹
07/04/02	0:00	155	7.6	291
07/29/02	15:00	155	N/A ¹	N/A ¹
04/15/02	18:00	154	17.0	209
06/25/02	22:00	153	8.7	114
06/20/02	16:00	153	17.9	141
10/03/02	18:00	152	14.8	274
05/01/02	21:00	151	8.3	249

¹ Value not available. Meteorological monitoring site not operational until April 9, 2002.

Table 3-3. Summary of Highest 1-Hour PM₁₀ Concentrations – South Site

Date	Time	Concentration ($\mu\text{g}/\text{m}^3$)	Wind Speed (mph)	Wind Direction (deg)
07/06/02	15:00	1820	9.2	59
06/16/02	2:00	1109	14.8	60
08/13/02	12:00	627	13.8	23
06/16/02	1:00	624	17.7	57
09/13/02	18:00	511	10.1	338
08/29/02	3:00	476	13.0	29
07/04/02	22:00	475	12.3	6
05/25/02	0:00	473	12.3	37
07/19/02	18:00	468	9.0	150
07/18/02	18:00	446	19.0	200
07/29/02	13:00	445	N/A	N/A
10/01/02	19:00	420	10.8	138
05/21/02	18:00	417	23.0	147
09/18/02	19:00	386	17.2	344
06/27/02	0:00	346	8.7	29
08/10/02	11:00	326	14.5	49
09/26/02	15:00	319	7.2	197
05/17/02	17:00	318	14.4	62
06/19/02	20:00	313	20.1	148
05/21/02	17:00	280	23.3	148
09/27/02	16:00	280	13.0	195
06/16/02	3:00	273	12.5	55
09/25/02	14:00	268	5.0	156
05/21/02	19:00	267	22.2	150
06/13/02	18:00	263	15.3	93
09/27/02	15:00	260	14.3	192
05/17/02	10:00	250	15.6	37
09/13/02	0:00	239	9.0	345
08/13/02	13:00	232	11.9	24
09/19/02	10:00	229	17.3	347
09/22/02	5:00	216	16.4	30
06/13/02	19:00	214	14.3	89
07/06/02	16:00	195	6.5	107
05/21/02	20:00	193	20.6	150
09/25/02	15:00	190	6.1	129
09/26/02	14:00	187	8.3	190
05/16/02	19:00	180	8.1	248
05/17/02	7:00	180	16.3	31
09/20/02	11:00	178	14.1	249
06/25/02	22:00	168	8.7	114
08/10/02	22:00	165	7.6	86
09/19/02	22:00	164	3.4	263
05/17/02	14:00	164	13.9	48
09/22/02	4:00	162	17.1	26
07/18/02	19:00	161	11.6	212
07/11/02	19:00	159	7.9	40
07/29/02	15:00	159	N/A	N/A

Date	Time	Concentration ($\mu\text{g}/\text{m}^3$)	Wind Speed (mph)	Wind Direction (deg)
07/27/02	18:00	159	N/A	N/A
07/29/02	14:00	157	N/A	N/A
05/21/02	16:00	155	21.3	148
07/19/02	11:00	155	9.0	190
09/26/02	8:00	153	8.4	202
09/26/02	12:00	152	7.3	199

N/A = Meteorological data not available during the period.

Appendix A

Summary of One-Hour Meteorological Data

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/09/02	10:00	100	5.9	24
04/09/02	11:00	117	7.1	24
04/09/02	12:00	121	8.3	22
04/09/02	13:00	139	8.6	21
04/09/02	14:00	135	8.7	19
04/09/02	15:00	145	10.1	15
04/09/02	16:00	133	10.6	16
04/09/02	17:00	128	10.3	15
04/09/02	18:00	123	10.6	14
04/09/02	19:00	122	9.3	14
04/09/02	20:00	128	9.7	13
04/09/02	21:00	128	9.3	13
04/09/02	22:00	127	9.2	14
04/09/02	23:00	129	9.6	12
04/10/02	0:00	145	9.0	10
04/10/02	1:00	151	8.6	8
04/10/02	2:00	150	9.0	8
04/10/02	3:00	147	7.9	8
04/10/02	4:00	144	8.4	9
04/10/02	5:00	149	8.3	8
04/10/02	6:00	151	7.8	8
04/10/02	7:00	169	7.8	9
04/10/02	8:00	181	14.5	9
04/10/02	9:00	178	12.4	9
04/10/02	10:00	179	11.6	12
04/10/02	11:00	180	10.9	13
04/10/02	12:00	172	12.0	13
04/10/02	13:00	186	13.9	13
04/10/02	14:00	185	13.9	15
04/10/02	15:00	179	14.6	14
04/10/02	16:00	174	14.3	11
04/10/02	17:00	172	14.7	10
04/10/02	18:00	162	13.6	9
04/10/02	19:00	148	10.3	9
04/10/02	20:00	148	13.6	9
04/10/02	21:00	155	14.7	9
04/10/02	22:00	160	15.8	9
04/10/02	23:00	165	15.0	9
04/11/02	0:00	168	16.6	8
04/11/02	1:00	173	16.4	8
04/11/02	2:00	175	15.7	8
04/11/02	3:00	178	13.7	7
04/11/02	4:00	186	10.8	8
04/11/02	5:00	198	10.0	7
04/11/02	6:00	217	8.6	6
04/11/02	7:00	222	9.5	7
04/11/02	8:00	235	9.7	8
04/11/02	9:00	260	10.9	10
04/11/02	10:00	308	15.9	11
04/11/02	11:00	307	15.8	10
04/11/02	12:00	291	14.9	12

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/11/02	13:00	297	15.0	14
04/11/02	14:00	295	14.6	13
04/11/02	15:00	281	14.0	15
04/11/02	16:00	281	9.0	18
04/11/02	17:00	306	6.9	18
04/11/02	18:00	310	4.3	11
04/11/02	19:00	10	3.5	5
04/11/02	20:00	80	3.9	6
04/11/02	21:00	90	3.8	5
04/11/02	22:00	26	3.9	23
04/11/02	23:00	35	4.1	8
04/12/02	0:00	85	4.4	14
04/12/02	1:00	114	2.6	14
04/12/02	2:00	47	2.9	21
04/12/02	3:00	357	3.5	16
04/12/02	4:00	342	4.2	5
04/12/02	5:00	354	7.1	9
04/12/02	6:00	5	5.8	15
04/12/02	7:00	41	3.6	23
04/12/02	8:00	21	5.8	11
04/12/02	9:00	31	10.1	15
04/12/02	10:00	42	9.6	18
04/12/02	11:00	40	11.2	17
04/12/02	12:00	48	11.3	18
04/12/02	13:00	50	10.4	18
04/12/02	14:00	59	9.3	20
04/12/02	15:00	91	10.2	21
04/12/02	16:00	89	9.7	20
04/12/02	17:00	97	10.7	14
04/12/02	18:00	92	10.9	12
04/12/02	19:00	90	10.6	13
04/12/02	20:00	89	11.8	13
04/12/02	21:00	91	12.3	13
04/12/02	22:00	90	10.7	13
04/12/02	23:00	88	10.0	13
04/13/02	0:00	97	9.0	13
04/13/02	1:00	96	6.2	14
04/13/02	2:00	97	6.8	14
04/13/02	3:00	84	4.8	12
04/13/02	4:00	89	5.3	10
04/13/02	5:00	60	3.0	14
04/13/02	6:00	38	2.1	19
04/13/02	7:00	338	4.9	12
04/13/02	8:00	5	9.9	11
04/13/02	9:00	14	8.6	14
04/13/02	10:00	8	7.8	15
04/13/02	11:00	357	12.7	13
04/13/02	12:00	18	9.2	22
04/13/02	13:00	20	8.2	16
04/13/02	14:00	38	8.4	18
04/13/02	15:00	23	5.7	31

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/13/02	16:00	14	6.6	29
04/13/02	17:00	83	5.6	34
04/13/02	18:00	99	14.0	13
04/13/02	19:00	104	10.3	13
04/13/02	20:00	79	9.0	14
04/13/02	21:00	79	8.2	15
04/13/02	22:00	81	5.9	14
04/13/02	23:00	47	5.5	14
04/14/02	0:00	26	3.2	17
04/14/02	1:00	29	3.1	11
04/14/02	2:00	64	5.0	13
04/14/02	3:00	70	3.4	21
04/14/02	4:00	99	2.9	25
04/14/02	5:00	127	4.4	20
04/14/02	6:00	187	5.6	12
04/14/02	7:00	169	4.4	13
04/14/02	8:00	184	4.2	15
04/14/02	9:00	181	3.7	30
04/14/02	10:00	209	5.0	24
04/14/02	11:00	200	6.4	27
04/14/02	12:00	228	8.7	18
04/14/02	13:00	258	7.4	27
04/14/02	14:00	216	8.1	24
04/14/02	15:00	170	9.0	21
04/14/02	16:00	178	9.3	21
04/14/02	17:00	177	9.2	13
04/14/02	18:00	172	9.1	10
04/14/02	19:00	157	8.0	8
04/14/02	20:00	159	9.7	9
04/14/02	21:00	160	12.9	9
04/14/02	22:00	163	13.6	9
04/14/02	23:00	164	13.7	9
04/15/02	0:00	172	12.6	8
04/15/02	1:00	173	10.4	7
04/15/02	2:00	169	11.8	8
04/15/02	3:00	177	8.7	6
04/15/02	4:00	173	8.5	6
04/15/02	5:00	195	7.6	6
04/15/02	6:00	205	7.5	6
04/15/02	7:00	207	8.5	7
04/15/02	8:00	217	9.1	8
04/15/02	9:00	208	11.2	10
04/15/02	10:00	208	16.2	11
04/15/02	11:00	211	17.6	11
04/15/02	12:00	224	14.8	13
04/15/02	13:00	203	16.4	14
04/15/02	14:00	222	16.7	13
04/15/02	15:00	227	19.1	10
04/15/02	16:00	225	20.8	10
04/15/02	17:00	220	17.8	9
04/15/02	18:00	209	17.0	7

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/15/02	19:00	182	12.8	9
04/15/02	20:00	172	15.3	8
04/15/02	21:00	187	17.4	9
04/15/02	22:00	181	11.8	16
04/15/02	23:00	189	13.2	8
04/16/02	0:00	174	12.4	8
04/16/02	1:00	181	11.2	8
04/16/02	2:00	212	16.9	10
04/16/02	3:00	219	10.0	6
04/16/02	4:00	228	8.5	8
04/16/02	5:00	243	8.6	7
04/16/02	6:00	229	9.5	6
04/16/02	7:00	236	10.8	7
04/16/02	8:00	259	20.1	8
04/16/02	9:00	256	23.3	9
04/16/02	10:00	249	23.2	9
04/16/02	11:00	254	23.2	9
04/16/02	12:00	247	20.3	11
04/16/02	13:00	244	18.5	13
04/16/02	14:00	235	16.8	12
04/16/02	15:00	232	16.5	13
04/16/02	16:00	237	16.1	11
04/16/02	17:00	233	16.9	17
04/16/02	18:00	228	15.0	9
04/16/02	19:00	228	9.9	6
04/16/02	20:00	230	9.6	5
04/16/02	21:00	230	6.8	5
04/16/02	22:00	259	5.4	8
04/16/02	23:00	328	4.3	13
04/17/02	0:00	305	3.5	15
04/17/02	1:00	204	2.8	12
04/17/02	2:00	186	5.1	4
04/17/02	3:00	186	4.7	6
04/17/02	4:00	157	6.0	5
04/17/02	5:00	245	5.6	8
04/17/02	6:00	236	5.9	5
04/17/02	7:00	222	3.3	11
04/17/02	8:00	183	8.0	10
04/17/02	9:00	237	4.9	21
04/17/02	10:00	248	4.4	34
04/17/02	11:00	198	5.0	41
04/17/02	12:00	191	6.9	26
04/17/02	13:00	178	10.2	19
04/17/02	14:00	208	13.4	13
04/17/02	15:00	196	13.9	13
04/17/02	16:00	210	16.9	9
04/17/02	17:00	191	14.7	11
04/17/02	18:00	207	12.3	8
04/17/02	19:00	224	7.9	5
04/17/02	20:00	190	9.2	9
04/17/02	21:00	179	7.1	12

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/17/02	22:00	171	9.8	9
04/17/02	23:00	235	7.5	15
04/18/02	0:00	235	5.3	4
04/18/02	1:00	250	5.1	6
04/18/02	2:00	225	6.4	6
04/18/02	3:00	209	6.0	7
04/18/02	4:00	227	5.1	5
04/18/02	5:00	171	7.2	8
04/18/02	6:00	165	6.7	7
04/18/02	7:00	190	6.3	8
04/18/02	8:00	210	6.4	12
04/18/02	9:00	229	6.8	13
04/18/02	10:00	252	11.7	11
04/18/02	11:00	238	11.6	13
04/18/02	12:00	241	9.7	16
04/18/02	13:00	208	10.0	14
04/18/02	14:00	211	10.6	14
04/18/02	15:00	211	9.7	12
04/18/02	16:00	214	11.1	13
04/18/02	17:00	214	10.1	9
04/18/02	18:00	221	6.0	7
04/18/02	19:00	223	5.3	6
04/18/02	20:00	229	6.6	10
04/18/02	21:00	144	7.1	12
04/18/02	22:00	158	12.0	10
04/18/02	23:00	174	15.7	8
04/19/02	0:00	174	13.6	8
04/19/02	1:00	177	11.8	8
04/19/02	2:00	171	10.2	8
04/19/02	3:00	170	9.1	8
04/19/02	4:00	168	11.9	9
04/19/02	5:00	179	9.1	8
04/19/02	6:00	181	8.9	8
04/19/02	7:00	183	8.4	8
04/19/02	8:00	186	12.5	10
04/19/02	9:00	212	11.6	12
04/19/02	10:00	237	9.3	14
04/19/02	11:00	241	9.9	12
04/19/02	12:00	216	8.2	18
04/19/02	13:00	203	10.3	14
04/19/02	14:00	202	10.7	22
04/19/02	15:00	189	12.3	16
04/19/02	16:00	174	12.9	14
04/19/02	17:00	180	12.2	11
04/19/02	18:00	171	9.9	10
04/19/02	19:00	134	13.9	13
04/19/02	20:00	127	12.5	13
04/19/02	21:00	129	12.2	13
04/19/02	22:00	132	10.8	12
04/19/02	23:00	134	8.8	12
04/20/02	0:00	140	8.9	11

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/20/02	1:00	138	8.0	11
04/20/02	2:00	131	7.8	12
04/20/02	3:00	114	7.1	13
04/20/02	4:00	110	6.0	13
04/20/02	5:00	122	4.8	13
04/20/02	6:00	163	8.5	9
04/20/02	7:00	173	10.2	8
04/20/02	8:00	183	11.4	8
04/20/02	9:00	182	10.9	10
04/20/02	10:00	197	10.3	13
04/20/02	11:00	204	10.9	17
04/20/02	12:00	213	18.4	11
04/20/02	13:00	209	21.8	11
04/20/02	14:00	222	22.5	10
04/20/02	15:00	239	21.2	9
04/20/02	16:00	257	19.3	11
04/20/02	17:00	261	16.5	8
04/20/02	18:00	266	12.9	8
04/20/02	19:00	256	9.8	8
04/20/02	20:00	253	10.3	9
04/20/02	21:00	212	7.6	10
04/20/02	22:00	224	6.6	7
04/20/02	23:00	202	4.7	23
04/21/02	0:00	300	10.2	17
04/21/02	1:00	308	16.1	8
04/21/02	2:00	334	13.3	11
04/21/02	3:00	340	11.3	11
04/21/02	4:00	0	7.1	11
04/21/02	5:00	21	4.3	10
04/21/02	6:00	13	3.7	11
04/21/02	7:00	0	5.7	10
04/21/02	8:00	2	8.8	12
04/21/02	9:00	12	9.9	14
04/21/02	10:00	25	10.3	18
04/21/02	11:00	10	8.3	22
04/21/02	12:00	52	4.9	44
04/21/02	13:00	67	4.1	44
04/21/02	14:00	339	4.3	50
04/21/02	15:00	230	5.7	41
04/21/02	16:00	241	6.7	23
04/21/02	17:00	201	5.7	20
04/21/02	18:00	169	7.6	13
04/21/02	19:00	149	8.4	10
04/21/02	20:00	138	7.3	11
04/21/02	21:00	141	8.8	11
04/21/02	22:00	150	10.0	9
04/21/02	23:00	156	8.8	9
04/22/02	0:00	150	10.8	9
04/22/02	1:00	153	8.3	9
04/22/02	2:00	155	8.7	9
04/22/02	3:00	163	5.8	5

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/22/02	4:00	153	5.7	8
04/22/02	5:00	147	6.8	9
04/22/02	6:00	139	6.9	11
04/22/02	7:00	132	7.9	12
04/22/02	8:00	141	9.0	12
04/22/02	9:00	152	9.3	11
04/22/02	10:00	178	11.3	11
04/22/02	11:00	190	11.8	16
04/22/02	12:00	190	11.3	17
04/22/02	13:00	180	10.7	15
04/22/02	14:00	198	10.8	17
04/22/02	15:00	180	12.0	16
04/22/02	16:00	178	12.3	12
04/22/02	17:00	182	12.2	12
04/22/02	18:00	172	11.2	10
04/22/02	19:00	171	8.3	7
04/22/02	20:00	158	10.2	9
04/22/02	21:00	163	12.9	9
04/22/02	22:00	165	11.5	9
04/22/02	23:00	179	10.4	8
04/23/02	0:00	185	9.0	9
04/23/02	1:00	193	8.7	8
04/23/02	2:00	197	6.8	7
04/23/02	3:00	188	6.2	7
04/23/02	4:00	198	7.0	8
04/23/02	5:00	209	7.3	7
04/23/02	6:00	201	7.0	8
04/23/02	7:00	215	6.9	8
04/23/02	8:00	263	11.9	8
04/23/02	9:00	280	16.9	8
04/23/02	10:00	289	14.6	11
04/23/02	11:00	298	12.8	13
04/23/02	12:00	311	11.3	13
04/23/02	13:00	301	10.9	16
04/23/02	14:00	273	13.8	11
04/23/02	15:00	253	14.7	11
04/23/02	16:00	255	11.9	11
04/23/02	17:00	235	12.4	10
04/23/02	18:00	245	7.1	7
04/23/02	19:00	224	5.9	3
04/23/02	20:00	219	6.1	6
04/23/02	21:00	184	7.6	10
04/23/02	22:00	181	9.5	10
04/23/02	23:00	191	8.0	8
04/24/02	0:00	199	7.0	6
04/24/02	1:00	201	7.6	7
04/24/02	2:00	206	8.5	6
04/24/02	3:00	222	7.9	6
04/24/02	4:00	248	6.0	13
04/24/02	5:00	243	6.3	5
04/24/02	6:00	282	6.4	5

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/24/02	7:00	330	6.3	11
04/24/02	8:00	343	8.2	12
04/24/02	9:00	337	14.5	13
04/24/02	10:00	345	13.9	14
04/24/02	11:00	4	11.1	15
04/24/02	12:00	25	6.5	34
04/24/02	13:00	35	5.7	42
04/24/02	14:00	26	5.8	28
04/24/02	15:00	191	4.0	46
04/24/02	16:00	37	4.6	28
04/24/02	17:00	85	8.5	18
04/24/02	18:00	80	15.7	15
04/24/02	19:00	83	14.5	13
04/24/02	20:00	86	15.4	13
04/24/02	21:00	88	15.3	13
04/24/02	22:00	79	14.2	14
04/24/02	23:00	82	13.9	14
04/25/02	0:00	84	14.9	14
04/25/02	1:00	78	12.0	16
04/25/02	2:00	70	13.3	16
04/25/02	3:00	61	13.4	15
04/25/02	4:00	64	14.8	16
04/25/02	5:00	65	14.2	16
04/25/02	6:00	63	12.4	16
04/25/02	7:00	66	13.1	17
04/25/02	8:00	70	12.2	16
04/25/02	9:00	70	11.8	17
04/25/02	10:00	63	11.5	16
04/25/02	11:00	64	11.0	17
04/25/02	12:00	64	8.2	16
04/25/02	13:00	41	6.7	16
04/25/02	14:00	66	8.2	21
04/25/02	15:00	68	7.3	16
04/25/02	16:00	68	7.4	16
04/25/02	17:00	73	8.7	16
04/25/02	18:00	87	6.4	17
04/25/02	19:00	79	5.1	15
04/25/02	20:00	49	3.1	19
04/25/02	21:00	81	3.3	22
04/25/02	22:00	100	5.6	13
04/25/02	23:00	122	4.7	13
04/26/02	0:00	103	2.8	18
04/26/02	1:00	145	4.2	14
04/26/02	2:00	106	2.9	16
04/26/02	3:00	137	3.1	17
04/26/02	4:00	98	2.1	20
04/26/02	5:00	101	2.3	16
04/26/02	6:00	74	3.0	16
04/26/02	7:00	106	3.3	17
04/26/02	8:00	125	4.6	15
04/26/02	9:00	136	5.5	17

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/26/02	10:00	141	6.3	15
04/26/02	11:00	148	7.5	13
04/26/02	12:00	153	8.7	12
04/26/02	13:00	152	9.3	11
04/26/02	14:00	147	11.0	12
04/26/02	15:00	145	11.0	12
04/26/02	16:00	145	12.7	12
04/26/02	17:00	136	13.4	12
04/26/02	18:00	148	14.4	11
04/26/02	19:00	142	11.4	12
04/26/02	20:00	141	13.3	11
04/26/02	21:00	142	14.8	11
04/26/02	22:00	128	11.0	12
04/26/02	23:00	128	10.4	14
04/27/02	0:00	161	6.9	12
04/27/02	1:00	187	9.1	14
04/27/02	2:00	217	9.5	13
04/27/02	3:00	248	12.3	7
04/27/02	4:00	259	15.7	8
04/27/02	5:00	268	17.2	7
04/27/02	6:00	262	12.9	7
04/27/02	7:00	259	15.9	8
04/27/02	8:00	262	19.2	8
04/27/02	9:00	259	22.1	8
04/27/02	10:00	250	21.2	10
04/27/02	11:00	256	25.0	9
04/27/02	12:00	251	25.5	9
04/27/02	13:00	249	23.4	10
04/27/02	14:00	251	22.5	9
04/27/02	15:00	243	20.3	10
04/27/02	16:00	229	18.9	10
04/27/02	17:00	236	16.6	9
04/27/02	18:00	253	16.9	7
04/27/02	19:00	234	11.2	7
04/27/02	20:00	210	8.8	8
04/27/02	21:00	186	5.1	13
04/27/02	22:00	224	7.6	4
04/27/02	23:00	244	9.6	6
04/28/02	0:00	272	9.9	6
04/28/02	1:00	271	10.6	10
04/28/02	2:00	229	8.0	6
04/28/02	3:00	252	7.1	4
04/28/02	4:00	276	8.2	5
04/28/02	5:00	291	8.1	8
04/28/02	6:00	330	3.6	11
04/28/02	7:00	279	3.9	8
04/28/02	8:00	348	5.7	21
04/28/02	9:00	359	6.0	14
04/28/02	10:00	2	4.0	27
04/28/02	11:00	214	6.2	44
04/28/02	12:00	214	9.4	25

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/28/02	13:00	248	10.2	21
04/28/02	14:00	254	10.7	18
04/28/02	15:00	235	10.5	17
04/28/02	16:00	241	9.4	17
04/28/02	17:00	211	8.0	13
04/28/02	18:00	173	6.5	9
04/28/02	19:00	144	3.6	7
04/28/02	20:00	136	4.1	5
04/28/02	21:00	127	5.3	9
04/28/02	22:00	159	6.3	6
04/28/02	23:00	206	6.7	5
04/29/02	0:00	204	5.9	4
04/29/02	1:00	245	4.3	4
04/29/02	2:00	279	5.2	3
04/29/02	3:00	269	6.0	3
04/29/02	4:00	276	5.8	5
04/29/02	5:00	208	7.0	8
04/29/02	6:00	228	5.8	9
04/29/02	7:00	246	5.2	8
04/29/02	8:00	284	3.6	12
04/29/02	9:00	318	5.3	10
04/29/02	10:00	282	9.7	14
04/29/02	11:00	274	8.9	15
04/29/02	12:00	273	8.2	20
04/29/02	13:00	270	7.9	21
04/29/02	14:00	228	6.5	24
04/29/02	15:00	335	4.0	22
04/29/02	16:00	237	5.4	44
04/29/02	17:00	215	8.1	15
04/29/02	18:00	246	4.6	17
04/29/02	19:00	215	6.1	9
04/29/02	20:00	186	4.6	5
04/29/02	21:00	181	3.2	3
04/29/02	22:00	145	4.8	21
04/29/02	23:00	130	7.9	13
04/30/02	0:00	122	7.4	15
04/30/02	1:00	143	4.2	36
04/30/02	2:00	174	4.1	14
04/30/02	3:00	282	4.3	10
04/30/02	4:00	292	4.9	5
04/30/02	5:00	253	5.1	9
04/30/02	6:00	230	5.0	6
04/30/02	7:00	251	4.6	7
04/30/02	8:00	268	8.4	8
04/30/02	9:00	264	10.2	11
04/30/02	10:00	266	15.9	10
04/30/02	11:00	260	17.2	10
04/30/02	12:00	253	19.5	10
04/30/02	13:00	256	21.5	9
04/30/02	14:00	250	19.8	9
04/30/02	15:00	244	20.3	10

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
04/30/02	16:00	233	18.2	10
04/30/02	17:00	235	14.6	11
04/30/02	18:00	222	11.7	10
04/30/02	19:00	254	11.0	7
04/30/02	20:00	244	9.3	6
04/30/02	21:00	228	8.6	5
04/30/02	22:00	222	8.3	5
04/30/02	23:00	223	8.2	4
05/01/02	0:00	237	6.8	3
05/01/02	1:00	242	6.7	5
05/01/02	2:00	234	7.3	4
05/01/02	3:00	264	7.9	5
05/01/02	4:00	254	6.8	6
05/01/02	5:00	242	7.5	6
05/01/02	6:00	257	8.3	6
05/01/02	7:00	257	12.7	8
05/01/02	8:00	265	15.1	9
05/01/02	9:00	269	18.2	10
05/01/02	10:00	253	19.9	11
05/01/02	11:00	255	24.4	10
05/01/02	12:00	260	23.3	10
05/01/02	13:00	261	23.4	9
05/01/02	14:00	266	25.3	9
05/01/02	15:00	261	22.0	8
05/01/02	16:00	255	20.9	10
05/01/02	17:00	254	16.2	8
05/01/02	18:00	247	8.8	7
05/01/02	19:00	265	9.5	7
05/01/02	20:00	244	7.0	12
05/01/02	21:00	249	8.3	15
05/01/02	22:00	248	9.6	9
05/01/02	23:00	251	8.9	7
05/02/02	0:00	237	7.1	8
05/02/02	1:00	234	4.1	15
05/02/02	2:00	239	7.1	18
05/02/02	3:00	264	6.7	12
05/02/02	4:00	6	8.8	15
05/02/02	5:00	26	14.5	14
05/02/02	6:00	25	13.1	13
05/02/02	7:00	27	12.1	13
05/02/02	8:00	25	12.9	14
05/02/02	9:00	31	11.2	15
05/02/02	10:00	33	9.7	16
05/02/02	11:00	35	8.9	17
05/02/02	12:00	55	9.3	18
05/02/02	13:00	74	8.3	19
05/02/02	14:00	90	8.9	18
05/02/02	15:00	96	10.5	18
05/02/02	16:00	103	10.1	16
05/02/02	17:00	97	9.9	15
05/02/02	18:00	97	9.2	14

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/02/02	19:00	108	8.9	15
05/02/02	20:00	105	6.0	15
05/02/02	21:00	105	5.8	15
05/02/02	22:00	120	4.2	18
05/02/02	23:00	112	4.1	18
05/03/02	0:00	110	3.5	13
05/03/02	1:00	31	2.7	18
05/03/02	2:00	58	2.0	17
05/03/02	3:00	222	5.0	11
05/03/02	4:00	275	2.7	24
05/03/02	5:00	228	2.9	11
05/03/02	6:00	213	4.9	7
05/03/02	7:00	279	7.5	10
05/03/02	8:00	309	15.7	8
05/03/02	9:00	315	13.8	11
05/03/02	10:00	298	12.0	16
05/03/02	11:00	302	10.5	15
05/03/02	12:00	296	10.0	20
05/03/02	13:00	289	9.9	19
05/03/02	14:00	289	12.0	16
05/03/02	15:00	262	10.2	13
05/03/02	16:00	243	8.9	12
05/03/02	17:00	236	8.7	13
05/03/02	18:00	216	7.5	10
05/03/02	19:00	178	5.4	5
05/03/02	20:00	141	5.5	9
05/03/02	21:00	134	6.0	8
05/03/02	22:00	152	7.3	8
05/03/02	23:00	175	7.7	6
05/04/02	0:00	193	5.1	5
05/04/02	1:00	180	7.2	7
05/04/02	2:00	186	9.0	7
05/04/02	3:00	198	6.6	6
05/04/02	4:00	236	4.3	5
05/04/02	5:00	250	3.7	5
05/04/02	6:00	194	4.0	4
05/04/02	7:00	210	5.0	7
05/04/02	8:00	200	10.7	10
05/04/02	9:00	192	13.1	10
05/04/02	10:00	192	10.6	16
05/04/02	11:00	198	8.3	25
05/04/02	12:00	175	8.9	19
05/04/02	13:00	182	7.7	31
05/04/02	14:00	185	8.5	21
05/04/02	15:00	189	6.6	27
05/04/02	16:00	159	4.3	28
05/04/02	17:00	144	3.5	22
05/04/02	18:00	281	4.1	17
05/04/02	19:00	42	3.3	12
05/04/02	20:00	46	4.3	8
05/04/02	21:00	43	4.7	9

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/04/02	22:00	102	7.0	13
05/04/02	23:00	178	9.7	8
05/05/02	0:00	170	8.6	9
05/05/02	1:00	121	7.4	14
05/05/02	2:00	110	9.7	15
05/05/02	3:00	108	7.9	14
05/05/02	4:00	110	7.9	14
05/05/02	5:00	97	5.6	15
05/05/02	6:00	103	5.8	13
05/05/02	7:00	123	8.2	14
05/05/02	8:00	138	10.2	13
05/05/02	9:00	146	10.4	13
05/05/02	10:00	152	11.4	12
05/05/02	11:00	160	11.0	14
05/05/02	12:00	180	10.3	19
05/05/02	13:00	187	11.2	16
05/05/02	14:00	185	10.9	20
05/05/02	15:00	167	11.8	14
05/05/02	16:00	191	11.9	31
05/05/02	17:00	145	8.5	12
05/05/02	18:00	154	12.0	10
05/05/02	19:00	161	12.1	9
05/05/02	20:00	170	10.3	9
05/05/02	21:00	183	6.7	8
05/05/02	22:00	173	10.6	9
05/05/02	23:00	173	11.8	8
05/06/02	0:00	183	18.3	9
05/06/02	1:00	183	11.1	9
05/06/02	2:00	195	9.8	9
05/06/02	3:00	212	7.9	7
05/06/02	4:00	230	6.3	6
05/06/02	5:00	234	6.9	6
05/06/02	6:00	226	5.6	7
05/06/02	7:00	221	6.7	9
05/06/02	8:00	249	8.8	9
05/06/02	9:00	257	11.8	8
05/06/02	10:00	259	12.9	10
05/06/02	11:00	259	15.4	11
05/06/02	12:00	252	18.8	11
05/06/02	13:00	238	17.9	11
05/06/02	14:00	246	16.8	13
05/06/02	15:00	235	17.5	12
05/06/02	16:00	243	22.6	11
05/06/02	17:00	251	22.1	9
05/06/02	18:00	259	18.2	8
05/06/02	19:00	274	10.5	6
05/06/02	20:00	189	10.6	16
05/06/02	21:00	181	12.4	8
05/06/02	22:00	180	9.6	9
05/06/02	23:00	180	5.2	7
05/07/02	0:00	192	5.6	4

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/07/02	1:00	196	5.6	4
05/07/02	2:00	200	5.6	7
05/07/02	3:00	208	3.5	6
05/07/02	4:00	201	4.8	8
05/07/02	5:00	198	5.4	4
05/07/02	6:00	184	5.8	6
05/07/02	7:00	197	6.7	10
05/07/02	8:00	218	9.2	10
05/07/02	9:00	252	11.3	10
05/07/02	10:00	253	17.4	9
05/07/02	11:00	244	20.2	10
05/07/02	12:00	240	22.4	11
05/07/02	13:00	229	20.0	12
05/07/02	14:00	227	20.3	11
05/07/02	15:00	230	23.2	12
05/07/02	16:00	229	25.3	10
05/07/02	17:00	236	20.6	9
05/07/02	18:00	241	15.9	9
05/07/02	19:00	249	9.1	7
05/07/02	20:00	275	8.6	6
05/07/02	21:00	255	6.1	9
05/07/02	22:00	170	6.4	19
05/07/02	23:00	176	7.3	7
05/08/02	0:00	176	6.6	8
05/08/02	1:00	190	4.2	12
05/08/02	2:00	209	4.4	13
05/08/02	3:00	208	5.9	5
05/08/02	4:00	233	6.3	4
05/08/02	5:00	258	7.6	6
05/08/02	6:00	264	7.8	5
05/08/02	7:00	255	6.2	7
05/08/02	8:00	242	9.4	8
05/08/02	9:00	261	14.6	11
05/08/02	10:00	273	18.0	10
05/08/02	11:00	267	17.9	12
05/08/02	12:00	262	19.1	11
05/08/02	13:00	246	18.7	13
05/08/02	14:00	246	21.4	12
05/08/02	15:00	244	21.1	11
05/08/02	16:00	246	24.7	10
05/08/02	17:00	252	24.1	9
05/08/02	18:00	249	20.8	8
05/08/02	19:00	240	14.6	8
05/08/02	20:00	224	9.3	6
05/08/02	21:00	224	7.8	5
05/08/02	22:00	227	7.7	5
05/08/02	23:00	219	6.7	4
05/09/02	0:00	220	6.0	3
05/09/02	1:00	226	6.0	3
05/09/02	2:00	357	8.5	18
05/09/02	3:00	35	7.3	15

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/09/02	4:00	20	8.9	13
05/09/02	5:00	39	10.7	16
05/09/02	6:00	44	10.7	17
05/09/02	7:00	47	12.5	18
05/09/02	8:00	51	15.1	18
05/09/02	9:00	51	14.5	17
05/09/02	10:00	50	12.6	19
05/09/02	11:00	56	11.6	21
05/09/02	12:00	64	10.5	20
05/09/02	13:00	66	9.2	24
05/09/02	14:00	72	9.0	22
05/09/02	15:00	85	8.2	22
05/09/02	16:00	101	8.5	19
05/09/02	17:00	108	9.7	16
05/09/02	18:00	105	10.2	15
05/09/02	19:00	109	10.5	14
05/09/02	20:00	106	11.2	14
05/09/02	21:00	99	10.5	14
05/09/02	22:00	96	9.8	13
05/09/02	23:00	99	8.5	13
05/10/02	0:00	103	11.1	13
05/10/02	1:00	104	11.5	13
05/10/02	2:00	110	11.0	14
05/10/02	3:00	108	9.4	14
05/10/02	4:00	100	7.2	15
05/10/02	5:00	103	6.1	14
05/10/02	6:00	97	7.9	14
05/10/02	7:00	104	10.0	15
05/10/02	8:00	113	11.1	14
05/10/02	9:00	134	11.7	12
05/10/02	10:00	142	11.8	13
05/10/02	11:00	150	13.0	13
05/10/02	12:00	155	14.1	13
05/10/02	13:00	161	13.8	15
05/10/02	14:00	159	13.6	13
05/10/02	15:00	159	14.3	14
05/10/02	16:00	158	14.7	13
05/10/02	17:00	146	14.3	13
05/10/02	18:00	150	17.6	11
05/10/02	19:00	150	18.9	11
05/10/02	20:00	154	16.2	11
05/10/02	21:00	166	17.5	10
05/10/02	22:00	164	16.5	9
05/10/02	23:00	164	17.8	9
05/11/02	0:00	164	18.2	10
05/11/02	1:00	172	18.5	9
05/11/02	2:00	177	20.0	9
05/11/02	3:00	177	19.3	9
05/11/02	4:00	177	18.9	9
05/11/02	5:00	178	17.6	9
05/11/02	6:00	181	16.9	10

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/11/02	7:00	186	16.5	10
05/11/02	8:00	189	16.6	10
05/11/02	9:00	190	16.8	10
05/11/02	10:00	197	16.3	11
05/11/02	11:00	199	16.2	11
05/11/02	12:00	212	15.4	13
05/11/02	13:00	213	16.0	12
05/11/02	14:00	218	19.3	12
05/11/02	15:00	216	19.0	11
05/11/02	16:00	223	16.5	13
05/11/02	17:00	214	14.7	9
05/11/02	18:00	185	11.4	10
05/11/02	19:00	181	12.7	10
05/11/02	20:00	196	9.4	9
05/11/02	21:00	190	12.1	9
05/11/02	22:00	178	12.7	9
05/11/02	23:00	169	13.6	9
05/12/02	0:00	165	13.4	9
05/12/02	1:00	177	11.9	9
05/12/02	2:00	188	10.7	10
05/12/02	3:00	194	9.2	9
05/12/02	4:00	187	7.3	7
05/12/02	5:00	194	6.8	8
05/12/02	6:00	198	7.3	8
05/12/02	7:00	340	11.8	25
05/12/02	8:00	16	14.4	13
05/12/02	9:00	18	15.1	14
05/12/02	10:00	16	14.4	14
05/12/02	11:00	16	12.5	15
05/12/02	12:00	14	10.9	18
05/12/02	13:00	5	9.5	18
05/12/02	14:00	8	9.6	20
05/12/02	15:00	16	8.6	20
05/12/02	16:00	22	9.3	22
05/12/02	17:00	53	8.9	22
05/12/02	18:00	61	8.9	18
05/12/02	19:00	69	9.5	15
05/12/02	20:00	60	9.9	15
05/12/02	21:00	57	14.2	16
05/12/02	22:00	58	13.7	15
05/12/02	23:00	63	14.6	16
05/13/02	0:00	58	13.5	15
05/13/02	1:00	50	10.9	17
05/13/02	2:00	39	10.8	16
05/13/02	3:00	27	8.6	14
05/13/02	4:00	36	5.8	15
05/13/02	5:00	14	6.5	12
05/13/02	6:00	340	4.2	13
05/13/02	7:00	19	5.4	18
05/13/02	8:00	47	8.3	20
05/13/02	9:00	55	9.9	20

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/13/02	10:00	67	10.7	21
05/13/02	11:00	68	11.0	21
05/13/02	12:00	80	9.3	24
05/13/02	13:00	87	8.5	28
05/13/02	14:00	90	7.7	26
05/13/02	15:00	105	7.6	24
05/13/02	16:00	120	6.8	25
05/13/02	17:00	87	8.7	19
05/13/02	18:00	99	9.5	14
05/13/02	19:00	118	7.5	15
05/13/02	20:00	123	7.6	14
05/13/02	21:00	121	7.9	15
05/13/02	22:00	119	7.5	15
05/13/02	23:00	114	6.5	15
05/14/02	0:00	115	6.5	15
05/14/02	1:00	119	7.3	15
05/14/02	2:00	117	7.4	16
05/14/02	3:00	113	8.2	15
05/14/02	4:00	114	8.2	14
05/14/02	5:00	119	7.2	15
05/14/02	6:00	127	8.8	13
05/14/02	7:00	127	9.2	14
05/14/02	8:00	132	11.1	13
05/14/02	9:00	137	13.1	14
05/14/02	10:00	148	14.2	13
05/14/02	11:00	149	13.2	15
05/14/02	12:00	158	15.0	15
05/14/02	13:00	153	14.3	14
05/14/02	14:00	155	16.2	14
05/14/02	15:00	152	15.5	14
05/14/02	16:00	156	16.7	12
05/14/02	17:00	159	16.8	12
05/14/02	18:00	159	16.7	11
05/14/02	19:00	159	15.9	10
05/14/02	20:00	158	14.7	10
05/14/02	21:00	156	14.2	10
05/14/02	22:00	157	15.0	10
05/14/02	23:00	158	15.6	9
05/15/02	0:00	159	14.9	9
05/15/02	1:00	164	13.2	8
05/15/02	2:00	168	11.8	8
05/15/02	3:00	171	11.9	8
05/15/02	4:00	184	10.2	8
05/15/02	5:00	175	6.5	8
05/15/02	6:00	109	4.8	17
05/15/02	7:00	159	7.7	12
05/15/02	8:00	153	7.6	12
05/15/02	9:00	90	4.9	27
05/15/02	10:00	73	4.5	36
05/15/02	11:00	125	5.6	30
05/15/02	12:00	178	6.9	25

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/15/02	13:00	180	8.9	22
05/15/02	14:00	180	10.9	21
05/15/02	15:00	182	12.3	17
05/15/02	16:00	177	12.9	15
05/15/02	17:00	170	10.7	16
05/15/02	18:00	176	15.0	10
05/15/02	19:00	168	17.3	10
05/15/02	20:00	166	17.0	9
05/15/02	21:00	167	16.4	9
05/15/02	22:00	168	11.4	10
05/15/02	23:00	171	13.4	9
05/16/02	0:00	176	12.6	9
05/16/02	1:00	175	11.9	9
05/16/02	2:00	183	9.8	8
05/16/02	3:00	188	9.0	8
05/16/02	4:00	190	9.8	9
05/16/02	5:00	195	10.7	9
05/16/02	6:00	202	9.7	8
05/16/02	7:00	209	9.9	8
05/16/02	8:00	223	10.3	8
05/16/02	9:00	250	11.0	11
05/16/02	10:00	277	10.7	14
05/16/02	11:00	276	9.7	21
05/16/02	12:00	232	7.3	29
05/16/02	13:00	251	12.8	18
05/16/02	14:00	253	12.6	18
05/16/02	15:00	255	14.0	12
05/16/02	16:00	237	8.4	15
05/16/02	17:00	259	15.6	9
05/16/02	18:00	255	11.1	9
05/16/02	19:00	248	8.1	6
05/16/02	20:00	247	6.3	5
05/16/02	21:00	255	7.2	6
05/16/02	22:00	250	6.6	6
05/16/02	23:00	269	9.5	7
05/17/02	0:00	263	7.8	7
05/17/02	1:00	241	7.3	10
05/17/02	2:00	194	9.2	9
05/17/02	3:00	290	7.5	16
05/17/02	4:00	11	11.1	12
05/17/02	5:00	20	14.4	13
05/17/02	6:00	21	16.4	13
05/17/02	7:00	31	16.3	15
05/17/02	8:00	29	15.9	16
05/17/02	9:00	30	14.9	16
05/17/02	10:00	37	15.6	17
05/17/02	11:00	36	15.6	18
05/17/02	12:00	40	15.3	18
05/17/02	13:00	46	13.9	19
05/17/02	14:00	48	13.9	20
05/17/02	15:00	57	13.9	18

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/17/02	16:00	60	13.7	18
05/17/02	17:00	62	14.4	17
05/17/02	18:00	68	13.1	17
05/17/02	19:00	72	12.6	15
05/17/02	20:00	79	10.0	15
05/17/02	21:00	77	10.7	15
05/17/02	22:00	67	8.3	16
05/17/02	23:00	59	6.4	15
05/18/02	0:00	80	6.6	14
05/18/02	1:00	71	6.2	15
05/18/02	2:00	83	6.1	15
05/18/02	3:00	86	6.2	14
05/18/02	4:00	87	7.2	14
05/18/02	5:00	84	7.9	15
05/18/02	6:00	84	6.7	16
05/18/02	7:00	92	9.2	15
05/18/02	8:00	108	9.4	17
05/18/02	9:00	113	8.6	19
05/18/02	10:00	118	8.9	21
05/18/02	11:00	134	8.0	23
05/18/02	12:00	131	6.9	28
05/18/02	13:00	123	7.8	27
05/18/02	14:00	127	8.2	27
05/18/02	15:00	144	8.4	21
05/18/02	16:00	138	10.0	18
05/18/02	17:00	141	9.7	17
05/18/02	18:00	142	11.0	14
05/18/02	19:00	138	9.8	12
05/18/02	20:00	138	8.0	12
05/18/02	21:00	126	7.9	13
05/18/02	22:00	116	8.7	14
05/18/02	23:00	113	9.4	14
05/19/02	0:00	121	9.0	14
05/19/02	1:00	118	8.6	15
05/19/02	2:00	111	8.4	14
05/19/02	3:00	106	9.0	13
05/19/02	4:00	102	9.1	13
05/19/02	5:00	100	8.9	13
05/19/02	6:00	95	8.2	13
05/19/02	7:00	117	10.3	13
05/19/02	8:00	140	13.3	12
05/19/02	9:00	150	14.0	13
05/19/02	10:00	151	14.3	13
05/19/02	11:00	154	13.6	15
05/19/02	12:00	157	13.1	15
05/19/02	13:00	146	13.4	16
05/19/02	14:00	146	14.1	15
05/19/02	15:00	144	15.1	15
05/19/02	16:00	138	14.7	16
05/19/02	17:00	144	14.8	13
05/19/02	18:00	147	14.4	12

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/19/02	19:00	146	11.9	11
05/19/02	20:00	149	11.1	10
05/19/02	21:00	152	11.3	10
05/19/02	22:00	159	10.6	9
05/19/02	23:00	171	8.9	8
05/20/02	0:00	141	9.3	11
05/20/02	1:00	146	10.1	10
05/20/02	2:00	154	10.0	9
05/20/02	3:00	151	8.1	10
05/20/02	4:00	162	7.8	10
05/20/02	5:00	159	7.7	9
05/20/02	6:00	121	3.9	14
05/20/02	7:00	104	5.3	16
05/20/02	8:00	144	8.4	15
05/20/02	9:00	148	9.0	15
05/20/02	10:00	148	9.1	13
05/20/02	11:00	150	7.7	19
05/20/02	12:00	160	7.5	20
05/20/02	13:00	149	10.8	18
05/20/02	14:00	151	11.8	16
05/20/02	15:00	150	12.4	17
05/20/02	16:00	150	14.7	14
05/20/02	17:00	140	15.1	14
05/20/02	18:00	141	15.8	12
05/20/02	19:00	147	14.9	10
05/20/02	20:00	153	15.3	10
05/20/02	21:00	154	17.1	9
05/20/02	22:00	150	13.4	10
05/20/02	23:00	147	12.3	10
05/21/02	0:00	149	10.9	10
05/21/02	1:00	150	10.4	9
05/21/02	2:00	148	9.6	9
05/21/02	3:00	145	8.7	10
05/21/02	4:00	137	6.9	12
05/21/02	5:00	129	6.8	12
05/21/02	6:00	123	6.7	14
05/21/02	7:00	133	9.8	13
05/21/02	8:00	151	14.9	10
05/21/02	9:00	157	15.5	12
05/21/02	10:00	151	15.5	12
05/21/02	11:00	153	16.3	12
05/21/02	12:00	153	16.8	12
05/21/02	13:00	154	18.0	12
05/21/02	14:00	150	19.8	12
05/21/02	15:00	149	20.7	12
05/21/02	16:00	148	21.3	11
05/21/02	17:00	148	23.3	11
05/21/02	18:00	147	23.0	11
05/21/02	19:00	150	22.2	10
05/21/02	20:00	150	20.6	10
05/21/02	21:00	152	19.8	10

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/21/02	22:00	154	17.9	10
05/21/02	23:00	159	18.3	10
05/22/02	0:00	164	16.3	9
05/22/02	1:00	167	16.5	10
05/22/02	2:00	171	17.2	9
05/22/02	3:00	172	15.6	9
05/22/02	4:00	171	14.3	8
05/22/02	5:00	170	14.7	9
05/22/02	6:00	178	14.8	9
05/22/02	7:00	181	18.2	9
05/22/02	8:00	182	17.6	9
05/22/02	9:00	184	17.4	11
05/22/02	10:00	186	16.0	12
05/22/02	11:00	189	15.3	14
05/22/02	12:00	202	16.3	16
05/22/02	13:00	203	17.0	13
05/22/02	14:00	198	17.1	14
05/22/02	15:00	216	16.2	14
05/22/02	16:00	191	15.9	15
05/22/02	17:00	181	16.8	12
05/22/02	18:00	160	18.7	11
05/22/02	19:00	162	16.8	10
05/22/02	20:00	163	16.9	10
05/22/02	21:00	160	18.2	9
05/22/02	22:00	160	18.5	9
05/22/02	23:00	158	16.0	10
05/23/02	0:00	163	13.6	10
05/23/02	1:00	176	10.8	10
05/23/02	2:00	163	12.4	8
05/23/02	3:00	165	12.1	9
05/23/02	4:00	168	8.7	8
05/23/02	5:00	167	8.7	8
05/23/02	6:00	175	8.1	9
05/23/02	7:00	191	9.7	9
05/23/02	8:00	201	10.2	9
05/23/02	9:00	229	12.7	9
05/23/02	10:00	249	16.8	10
05/23/02	11:00	264	14.8	11
05/23/02	12:00	253	15.2	15
05/23/02	13:00	242	16.6	14
05/23/02	14:00	240	15.7	14
05/23/02	15:00	241	13.5	13
05/23/02	16:00	215	15.2	15
05/23/02	17:00	214	17.9	11
05/23/02	18:00	219	16.7	10
05/23/02	19:00	220	11.4	7
05/23/02	20:00	190	9.3	9
05/23/02	21:00	169	14.7	9
05/23/02	22:00	171	16.6	9
05/23/02	23:00	178	15.3	9
05/24/02	0:00	180	10.7	9

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/24/02	1:00	178	11.7	8
05/24/02	2:00	178	10.1	8
05/24/02	3:00	176	9.4	7
05/24/02	4:00	184	9.9	8
05/24/02	5:00	188	7.1	7
05/24/02	6:00	202	7.8	8
05/24/02	7:00	211	10.3	8
05/24/02	8:00	250	9.6	10
05/24/02	9:00	307	9.0	18
05/24/02	10:00	314	8.8	20
05/24/02	11:00	300	10.0	16
05/24/02	12:00	282	9.6	22
05/24/02	13:00	247	11.2	23
05/24/02	14:00	244	12.7	16
05/24/02	15:00	235	10.6	21
05/24/02	16:00	223	13.6	16
05/24/02	17:00	221	9.7	22
05/24/02	18:00	225	13.8	13
05/24/02	19:00	223	10.8	9
05/24/02	20:00	235	6.9	7
05/24/02	21:00	241	7.2	5
05/24/02	22:00	253	6.7	13
05/24/02	23:00	41	14.9	17
05/25/02	0:00	37	12.3	16
05/25/02	1:00	30	8.7	14
05/25/02	2:00	28	8.3	14
05/25/02	3:00	18	9.9	13
05/25/02	4:00	17	12.2	12
05/25/02	5:00	20	11.1	13
05/25/02	6:00	19	11.9	13
05/25/02	7:00	21	11.5	13
05/25/02	8:00	17	11.1	13
05/25/02	9:00	21	10.6	14
05/25/02	10:00	50	8.0	20
05/25/02	11:00	62	6.8	24
05/25/02	12:00	81	5.5	47
05/25/02	13:00	108	5.7	37
05/25/02	14:00	114	5.4	39
05/25/02	15:00	122	8.3	19
05/25/02	16:00	133	9.0	22
05/25/02	17:00	139	8.8	19
05/25/02	18:00	134	9.2	15
05/25/02	19:00	137	8.5	12
05/25/02	20:00	132	8.2	11
05/25/02	21:00	142	10.4	11
05/25/02	22:00	157	11.7	10
05/25/02	23:00	134	6.3	11
05/26/02	0:00	110	5.0	13
05/26/02	1:00	104	7.6	13
05/26/02	2:00	120	7.3	13
05/26/02	3:00	136	5.7	11

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/26/02	4:00	118	4.3	12
05/26/02	5:00	97	5.7	12
05/26/02	6:00	117	7.1	14
05/26/02	7:00	132	7.9	13
05/26/02	8:00	157	10.2	13
05/26/02	9:00	153	10.7	13
05/26/02	10:00	153	10.2	16
05/26/02	11:00	149	10.9	17
05/26/02	12:00	180	11.2	18
05/26/02	13:00	196	13.7	17
05/26/02	14:00	194	12.1	15
05/26/02	15:00	185	9.9	21
05/26/02	16:00	177	10.9	15
05/26/02	17:00	139	13.7	15
05/26/02	18:00	135	10.7	13
05/26/02	19:00	151	10.2	10
05/26/02	20:00	179	14.0	9
05/26/02	21:00	194	10.2	8
05/26/02	22:00	205	7.5	8
05/26/02	23:00	195	7.0	7
05/27/02	0:00	159	6.6	11
05/27/02	1:00	133	6.9	13
05/27/02	2:00	122	6.2	14
05/27/02	3:00	122	6.6	14
05/27/02	4:00	135	6.9	12
05/27/02	5:00	138	7.6	12
05/27/02	6:00	136	7.6	12
05/27/02	7:00	140	8.9	11
05/27/02	8:00	178	9.0	10
05/27/02	9:00	221	7.9	14
05/27/02	10:00	248	7.4	21
05/27/02	11:00	288	5.1	34
05/27/02	12:00	241	6.0	36
05/27/02	13:00	229	8.0	35
05/27/02	14:00	248	16.2	15
05/27/02	15:00	256	16.5	13
05/27/02	16:00	228	13.9	15
05/27/02	17:00	252	14.0	12
05/27/02	18:00	269	13.5	10
05/27/02	19:00	284	6.3	10
05/27/02	20:00	248	8.2	7
05/27/02	21:00	343	7.8	22
05/27/02	22:00	106	12.6	15
05/27/02	23:00	133	8.3	13
05/28/02	0:00	124	7.8	14
05/28/02	1:00	132	6.3	13
05/28/02	2:00	126	4.5	13
05/28/02	3:00	63	4.0	17
05/28/02	4:00	28	5.3	12
05/28/02	5:00	16	5.1	10
05/28/02	6:00	57	7.8	14

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/28/02	7:00	66	8.5	15
05/28/02	8:00	78	7.9	15
05/28/02	9:00	65	5.2	25
05/28/02	10:00	49	3.5	41
05/28/02	11:00	40	4.5	39
05/28/02	12:00	54	4.1	53
05/28/02	13:00	63	4.2	45
05/28/02	14:00	135	5.7	30
05/28/02	15:00	53	4.4	35
05/28/02	16:00	66	4.0	36
05/28/02	17:00	168	2.7	21
05/28/02	18:00	99	3.9	21
05/28/02	19:00	116	4.5	13
05/28/02	20:00	108	7.0	17
05/28/02	21:00	46	7.7	16
05/28/02	22:00	138	7.7	11
05/28/02	23:00	146	7.9	10
05/29/02	0:00	153	8.5	9
05/29/02	1:00	169	7.0	8
05/29/02	2:00	230	3.9	7
05/29/02	3:00	343	3.5	10
05/29/02	4:00	2	4.6	7
05/29/02	5:00	345	4.3	7
05/29/02	6:00	350	3.9	10
05/29/02	7:00	330	2.7	21
05/29/02	8:00	266	2.9	33
05/29/02	9:00	261	3.3	36
05/29/02	10:00	228	4.2	41
05/29/02	11:00	176	4.8	44
05/29/02	12:00	228	5.3	38
05/29/02	13:00	146	6.0	41
05/29/02	14:00	189	7.2	33
05/29/02	15:00	205	6.3	33
05/29/02	16:00	246	7.1	37
05/29/02	17:00	80	11.6	27
05/29/02	18:00	110	12.3	15
05/29/02	19:00	133	13.4	13
05/29/02	20:00	151	13.0	10
05/29/02	21:00	162	9.9	9
05/29/02	22:00	178	7.3	8
05/29/02	23:00	184	6.1	4
05/30/02	0:00	210	5.4	3
05/30/02	1:00	210	6.4	3
05/30/02	2:00	186	4.8	3
05/30/02	3:00	110	2.8	12
05/30/02	4:00	82	3.5	7
05/30/02	5:00	109	4.5	10
05/30/02	6:00	75	5.2	14
05/30/02	7:00	75	5.0	14
05/30/02	8:00	63	6.2	17
05/30/02	9:00	76	10.5	17

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
05/30/02	10:00	108	8.6	19
05/30/02	11:00	120	5.7	31
05/30/02	12:00	92	6.2	29
05/30/02	13:00	74	6.3	31
05/30/02	14:00	52	7.7	27
05/30/02	15:00	38	9.8	23
05/30/02	16:00	39	9.4	22
05/30/02	17:00	58	7.6	24
05/30/02	18:00	65	7.9	18
05/30/02	19:00	84	6.4	14
05/30/02	20:00	117	6.4	13
05/30/02	21:00	120	5.9	12
05/30/02	22:00	115	7.9	12
05/30/02	23:00	108	8.9	14
05/31/02	0:00	103	8.6	12
05/31/02	1:00	100	6.7	14
05/31/02	2:00	104	6.2	13
05/31/02	3:00	97	4.4	15
05/31/02	4:00	81	4.0	12
05/31/02	5:00	92	5.2	13
05/31/02	6:00	103	5.5	15
05/31/02	7:00	138	6.9	14
05/31/02	8:00	152	8.0	12
05/31/02	9:00	141	8.3	14
05/31/02	10:00	129	8.2	18
05/31/02	11:00	150	6.4	35
05/31/02	12:00	139	5.2	47
05/31/02	13:00	132	5.4	39
05/31/02	14:00	129	6.8	30
05/31/02	15:00	90	7.3	26
05/31/02	16:00	91	6.6	33
05/31/02	17:00	94	7.4	21
05/31/02	18:00	106	7.5	19
05/31/02	19:00	115	8.0	14
05/31/02	20:00	114	8.0	14
05/31/02	21:00	128	8.2	12
05/31/02	22:00	129	10.0	12
05/31/02	23:00	128	10.2	12
06/01/02	0:00	132	10.1	12
06/01/02	1:00	152	8.3	9
06/01/02	2:00	161	8.0	8
06/01/02	3:00	162	7.6	9
06/01/02	4:00	132	3.7	15
06/01/02	5:00	106	2.5	9
06/01/02	6:00	132	4.5	12
06/01/02	7:00	164	8.7	11
06/01/02	8:00	174	11.4	12
06/01/02	9:00	174	9.9	13
06/01/02	10:00	159	8.3	19
06/01/02	11:00	133	7.1	26
06/01/02	12:00	124	8.6	20

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/01/02	13:00	121	8.8	23
06/01/02	14:00	124	9.6	22
06/01/02	15:00	135	10.4	18
06/01/02	16:00	143	11.0	17
06/01/02	17:00	144	12.4	14
06/01/02	18:00	147	12.8	12
06/01/02	19:00	152	11.6	10
06/01/02	20:00	152	9.4	9
06/01/02	21:00	148	10.0	9
06/01/02	22:00	155	10.4	9
06/01/02	23:00	162	8.2	9
06/02/02	0:00	176	10.6	8
06/02/02	1:00	177	8.9	7
06/02/02	2:00	171	12.0	8
06/02/02	3:00	180	9.2	9
06/02/02	4:00	175	7.9	7
06/02/02	5:00	160	7.6	9
06/02/02	6:00	156	8.0	9
06/02/02	7:00	155	12.6	10
06/02/02	8:00	154	16.2	10
06/02/02	9:00	149	15.1	11
06/02/02	10:00	151	14.8	12
06/02/02	11:00	159	14.0	13
06/02/02	12:00	160	13.2	14
06/02/02	13:00	157	12.7	14
06/02/02	14:00	162	12.8	16
06/02/02	15:00	171	12.3	16
06/02/02	16:00	165	12.1	16
06/02/02	17:00	164	13.7	13
06/02/02	18:00	151	14.8	12
06/02/02	19:00	149	14.1	10
06/02/02	20:00	147	12.9	10
06/02/02	21:00	156	11.3	10
06/02/02	22:00	146	9.0	11
06/02/02	23:00	159	14.5	9
06/03/02	0:00	166	14.3	9
06/03/02	1:00	168	13.2	9
06/03/02	2:00	164	11.6	9
06/03/02	3:00	161	11.3	9
06/03/02	4:00	164	9.4	9
06/03/02	5:00	169	7.4	8
06/03/02	6:00	100	3.1	19
06/03/02	7:00	78	3.4	28
06/03/02	8:00	124	4.7	23
06/03/02	9:00	121	5.6	25
06/03/02	10:00	134	4.7	24
06/03/02	11:00	123	5.0	26
06/03/02	12:00	40	3.9	45
06/03/02	13:00	55	6.2	26
06/03/02	14:00	81	8.4	17
06/03/02	15:00	102	11.4	15

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/03/02	16:00	116	7.9	16
06/03/02	17:00	125	9.1	14
06/03/02	18:00	110	8.3	13
06/03/02	19:00	105	8.6	13
06/03/02	20:00	109	8.3	13
06/03/02	21:00	120	7.2	14
06/03/02	22:00	157	12.4	10
06/03/02	23:00	169	14.0	9
06/04/02	0:00	175	12.8	9
06/04/02	1:00	171	13.6	9
06/04/02	2:00	164	15.0	10
06/04/02	3:00	177	12.3	10
06/04/02	4:00	180	9.9	10
06/04/02	5:00	177	7.0	10
06/04/02	6:00	182	5.6	9
06/04/02	7:00	160	6.0	11
06/04/02	8:00	158	7.3	13
06/04/02	9:00	192	5.2	37
06/04/02	10:00	189	4.6	34
06/04/02	11:00	252	8.0	38
06/04/02	12:00	239	8.2	23
06/04/02	13:00	227	10.7	24
06/04/02	14:00	206	9.7	22
06/04/02	15:00	213	13.2	16
06/04/02	16:00	221	17.0	12
06/04/02	17:00	237	17.5	11
06/04/02	18:00	254	15.7	10
06/04/02	19:00	278	11.7	8
06/04/02	20:00	256	10.1	13
06/04/02	21:00	19	12.6	38
06/04/02	22:00	23	20.1	14
06/04/02	23:00	30	17.4	15
06/05/02	0:00	43	15.0	17
06/05/02	1:00	35	12.7	15
06/05/02	2:00	39	9.0	16
06/05/02	3:00	21	7.3	15
06/05/02	4:00	12	7.9	11
06/05/02	5:00	10	8.7	11
06/05/02	6:00	13	11.4	12
06/05/02	7:00	19	10.9	14
06/05/02	8:00	20	10.8	14
06/05/02	9:00	26	10.4	16
06/05/02	10:00	28	10.4	16
06/05/02	11:00	31	9.9	19
06/05/02	12:00	45	8.1	20
06/05/02	13:00	46	9.2	18
06/05/02	14:00	48	9.0	22
06/05/02	15:00	75	7.9	26
06/05/02	16:00	79	7.4	25
06/05/02	17:00	83	8.3	20
06/05/02	18:00	99	8.5	16

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/05/02	19:00	98	7.8	16
06/05/02	20:00	97	5.8	15
06/05/02	21:00	102	6.0	16
06/05/02	22:00	111	6.3	16
06/05/02	23:00	94	6.0	15
06/06/02	0:00	97	6.0	14
06/06/02	1:00	133	4.7	16
06/06/02	2:00	155	4.2	9
06/06/02	3:00	164	2.9	8
06/06/02	4:00	117	3.1	16
06/06/02	5:00	116	5.8	17
06/06/02	6:00	121	5.8	18
06/06/02	7:00	122	5.4	19
06/06/02	8:00	122	4.5	22
06/06/02	9:00	136	4.8	26
06/06/02	10:00	149	5.4	36
06/06/02	11:00	161	6.1	30
06/06/02	12:00	174	7.1	30
06/06/02	13:00	119	6.6	42
06/06/02	14:00	100	6.7	22
06/06/02	15:00	122	6.5	26
06/06/02	16:00	160	7.4	26
06/06/02	17:00	146	9.7	15
06/06/02	18:00	163	10.5	11
06/06/02	19:00	160	9.6	10
06/06/02	20:00	161	9.0	9
06/06/02	21:00	171	10.6	9
06/06/02	22:00	172	9.2	9
06/06/02	23:00	181	6.6	7
06/07/02	0:00	189	5.4	6
06/07/02	1:00	194	4.0	6
06/07/02	2:00	270	4.0	6
06/07/02	3:00	190	6.8	7
06/07/02	4:00	191	5.8	9
06/07/02	5:00	189	6.6	9
06/07/02	6:00	176	7.0	8
06/07/02	7:00	181	8.7	11
06/07/02	8:00	183	10.4	14
06/07/02	9:00	188	11.0	15
06/07/02	10:00	196	10.6	17
06/07/02	11:00	170	9.6	18
06/07/02	12:00	173	9.8	25
06/07/02	13:00	170	8.7	28
06/07/02	14:00	166	10.1	21
06/07/02	15:00	168	9.4	20
06/07/02	16:00	143	10.6	16
06/07/02	17:00	167	10.1	14
06/07/02	18:00	151	13.0	12
06/07/02	19:00	166	15.7	10
06/07/02	20:00	163	14.1	10
06/07/02	21:00	149	14.4	10

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/07/02	22:00	157	12.7	10
06/07/02	23:00	165	13.6	9
06/08/02	0:00	174	14.2	10
06/08/02	1:00	170	11.8	9
06/08/02	2:00	170	12.8	9
06/08/02	3:00	169	12.1	10
06/08/02	4:00	167	11.0	9
06/08/02	5:00	165	9.3	8
06/08/02	6:00	163	9.0	9
06/08/02	7:00	170	11.5	10
06/08/02	8:00	169	12.0	10
06/08/02	9:00	160	12.5	12
06/08/02	10:00	172	12.5	14
06/08/02	11:00	179	11.7	15
06/08/02	12:00	164	10.9	19
06/08/02	13:00	169	12.8	15
06/08/02	14:00	164	12.6	15
06/08/02	15:00	177	13.2	14
06/08/02	16:00	125	13.0	18
06/08/02	17:00	97	8.1	15
06/08/02	18:00	110	10.3	16
06/08/02	19:00	113	11.0	15
06/08/02	20:00	113	11.3	15
06/08/02	21:00	127	9.1	16
06/08/02	22:00	135	9.3	14
06/08/02	23:00	146	12.1	11
06/09/02	0:00	149	12.0	9
06/09/02	1:00	144	10.5	11
06/09/02	2:00	149	10.2	10
06/09/02	3:00	145	8.5	11
06/09/02	4:00	132	6.3	15
06/09/02	5:00	151	7.8	10
06/09/02	6:00	160	9.7	10
06/09/02	7:00	169	14.6	10
06/09/02	8:00	169	15.4	11
06/09/02	9:00	167	14.9	11
06/09/02	10:00	175	14.5	13
06/09/02	11:00	180	13.2	14
06/09/02	12:00	182	12.5	17
06/09/02	13:00	188	11.4	17
06/09/02	14:00	179	12.7	18
06/09/02	15:00	180	11.8	15
06/09/02	16:00	222	16.5	25
06/09/02	17:00	126	14.7	14
06/09/02	18:00	131	11.6	17
06/09/02	19:00	132	10.9	16
06/09/02	20:00	142	11.9	12
06/09/02	21:00	149	12.0	11
06/09/02	22:00	149	10.9	10
06/09/02	23:00	148	11.2	10
06/10/02	0:00	148	8.4	10

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/10/02	1:00	161	10.3	9
06/10/02	2:00	173	10.7	9
06/10/02	3:00	166	10.7	9
06/10/02	4:00	184	10.7	8
06/10/02	5:00	183	9.0	8
06/10/02	6:00	201	7.5	8
06/10/02	7:00	194	12.5	9
06/10/02	8:00	206	16.0	9
06/10/02	9:00	209	17.0	9
06/10/02	10:00	206	14.7	12
06/10/02	11:00	214	10.9	15
06/10/02	12:00	192	12.7	16
06/10/02	13:00	180	13.2	15
06/10/02	14:00	174	13.4	16
06/10/02	15:00	166	16.4	14
06/10/02	16:00	174	14.9	13
06/10/02	17:00	167	15.7	12
06/10/02	18:00	159	14.8	11
06/10/02	19:00	148	12.9	10
06/10/02	20:00	152	16.2	10
06/10/02	21:00	158	16.5	9
06/10/02	22:00	159	15.8	9
06/10/02	23:00	161	13.9	9
06/11/02	0:00	164	13.8	9
06/11/02	1:00	161	13.7	9
06/11/02	2:00	167	12.4	9
06/11/02	3:00	178	9.2	8
06/11/02	4:00	173	8.9	8
06/11/02	5:00	169	8.8	9
06/11/02	6:00	165	9.2	10
06/11/02	7:00	172	13.9	9
06/11/02	8:00	185	12.8	10
06/11/02	9:00	189	11.5	13
06/11/02	10:00	210	10.6	14
06/11/02	11:00	209	7.3	24
06/11/02	12:00	192	6.2	30
06/11/02	13:00	149	6.6	26
06/11/02	14:00	154	8.2	22
06/11/02	15:00	148	10.4	15
06/11/02	16:00	139	8.5	20
06/11/02	17:00	149	9.0	15
06/11/02	18:00	158	11.7	11
06/11/02	19:00	151	11.8	11
06/11/02	20:00	163	15.7	9
06/11/02	21:00	167	17.1	10
06/11/02	22:00	159	14.5	10
06/11/02	23:00	151	11.7	11
06/12/02	0:00	159	11.9	10
06/12/02	1:00	159	11.5	9
06/12/02	2:00	166	10.6	9
06/12/02	3:00	163	9.1	9

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/12/02	4:00	176	8.8	8
06/12/02	5:00	180	8.2	8
06/12/02	6:00	178	8.0	9
06/12/02	7:00	173	10.7	10
06/12/02	8:00	169	11.4	11
06/12/02	9:00	180	11.8	12
06/12/02	10:00	183	10.4	16
06/12/02	11:00	175	10.0	16
06/12/02	12:00	174	8.6	22
06/12/02	13:00	169	10.0	21
06/12/02	14:00	153	10.5	17
06/12/02	15:00	157	12.7	13
06/12/02	16:00	158	12.2	14
06/12/02	17:00	170	11.0	12
06/12/02	18:00	160	12.3	10
06/12/02	19:00	146	7.9	12
06/12/02	20:00	138	9.0	14
06/12/02	21:00	150	11.7	10
06/12/02	22:00	155	11.5	10
06/12/02	23:00	162	16.0	10
06/13/02	0:00	160	13.5	10
06/13/02	1:00	160	11.1	10
06/13/02	2:00	153	10.4	9
06/13/02	3:00	158	12.9	9
06/13/02	4:00	174	13.9	9
06/13/02	5:00	188	11.6	9
06/13/02	6:00	179	12.2	9
06/13/02	7:00	189	12.9	10
06/13/02	8:00	189	10.9	11
06/13/02	9:00	203	9.6	14
06/13/02	10:00	206	7.0	25
06/13/02	11:00	71	6.4	35
06/13/02	12:00	88	9.8	21
06/13/02	13:00	91	7.5	30
06/13/02	14:00	78	9.0	26
06/13/02	15:00	77	9.6	17
06/13/02	16:00	109	6.5	22
06/13/02	17:00	89	15.7	14
06/13/02	18:00	93	15.3	13
06/13/02	19:00	89	14.3	14
06/13/02	20:00	92	13.4	14
06/13/02	21:00	112	10.4	15
06/13/02	22:00	98	7.9	15
06/13/02	23:00	85	12.3	14
06/14/02	0:00	78	12.4	16
06/14/02	1:00	81	13.8	15
06/14/02	2:00	74	13.7	15
06/14/02	3:00	51	11.5	16
06/14/02	4:00	30	10.4	14
06/14/02	5:00	0	9.6	14
06/14/02	6:00	12	9.3	13

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/14/02	7:00	83	13.0	12
06/14/02	8:00	131	16.4	19
06/14/02	9:00	18	6.1	25
06/14/02	10:00	52	10.5	19
06/14/02	11:00	64	9.8	19
06/14/02	12:00	100	9.5	18
06/14/02	13:00	117	7.9	23
06/14/02	14:00	131	8.5	20
06/14/02	15:00	134	7.9	20
06/14/02	16:00	134	7.2	21
06/14/02	17:00	124	7.2	21
06/14/02	18:00	139	7.9	16
06/14/02	19:00	137	6.4	16
06/14/02	20:00	114	6.6	15
06/14/02	21:00	108	7.3	15
06/14/02	22:00	110	5.7	15
06/14/02	23:00	110	8.5	16
06/15/02	0:00	102	8.8	14
06/15/02	1:00	112	7.4	15
06/15/02	2:00	105	6.5	16
06/15/02	3:00	95	6.7	15
06/15/02	4:00	90	6.9	14
06/15/02	5:00	26	4.6	15
06/15/02	6:00	319	7.9	19
06/15/02	7:00	154	14.0	12
06/15/02	8:00	171	9.5	11
06/15/02	9:00	186	11.5	10
06/15/02	10:00	200	14.9	10
06/15/02	11:00	195	15.5	11
06/15/02	12:00	193	14.0	13
06/15/02	13:00	191	14.5	12
06/15/02	14:00	185	15.1	13
06/15/02	15:00	198	14.2	13
06/15/02	16:00	193	13.1	12
06/15/02	17:00	176	11.6	11
06/15/02	18:00	166	10.7	9
06/15/02	19:00	161	7.7	9
06/15/02	20:00	177	7.7	7
06/15/02	21:00	171	7.3	6
06/15/02	22:00	177	7.4	6
06/15/02	23:00	216	6.7	5
06/16/02	0:00	347	9.5	19
06/16/02	1:00	57	17.7	16
06/16/02	2:00	60	14.8	16
06/16/02	3:00	55	12.5	15
06/16/02	4:00	45	8.1	15
06/16/02	5:00	19	8.0	13
06/16/02	6:00	12	8.8	12
06/16/02	7:00	7	12.3	12
06/16/02	8:00	17	12.2	14
06/16/02	9:00	35	9.9	17

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/16/02	10:00	44	9.0	21
06/16/02	11:00	54	7.1	24
06/16/02	12:00	89	6.0	35
06/16/02	13:00	102	4.9	38
06/16/02	14:00	106	4.7	38
06/16/02	15:00	120	5.5	27
06/16/02	16:00	110	6.5	23
06/16/02	17:00	113	7.7	24
06/16/02	18:00	130	8.0	18
06/16/02	19:00	142	8.8	14
06/16/02	20:00	125	8.1	16
06/16/02	21:00	110	10.8	15
06/16/02	22:00	108	11.2	14
06/16/02	23:00	88	12.4	14
06/17/02	0:00	116	11.7	16
06/17/02	1:00	141	12.0	13
06/17/02	2:00	153	10.5	10
06/17/02	3:00	119	6.2	17
06/17/02	4:00	84	6.4	14
06/17/02	5:00	89	5.5	14
06/17/02	6:00	104	7.3	14
06/17/02	7:00	118	9.3	16
06/17/02	8:00	146	10.7	14
06/17/02	9:00	158	12.2	13
06/17/02	10:00	175	11.0	14
06/17/02	11:00	170	10.3	16
06/17/02	12:00	168	9.9	15
06/17/02	13:00	171	11.2	16
06/17/02	14:00	163	11.5	17
06/17/02	15:00	167	11.7	18
06/17/02	16:00	155	11.8	16
06/17/02	17:00	156	10.0	15
06/17/02	18:00	152	9.5	14
06/17/02	19:00	143	8.3	12
06/17/02	20:00	133	7.1	16
06/17/02	21:00	128	9.5	17
06/17/02	22:00	129	9.5	18
06/17/02	23:00	130	9.3	18
06/18/02	0:00	128	8.7	17
06/18/02	1:00	114	8.4	16
06/18/02	2:00	106	10.1	14
06/18/02	3:00	123	8.8	17
06/18/02	4:00	162	12.3	10
06/18/02	5:00	166	14.4	10
06/18/02	6:00	173	14.3	9
06/18/02	7:00	169	13.4	10
06/18/02	8:00	182	15.4	10
06/18/02	9:00	184	13.5	11
06/18/02	10:00	179	12.6	11
06/18/02	11:00	169	12.9	13
06/18/02	12:00	174	12.7	14

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/18/02	13:00	172	13.6	13
06/18/02	14:00	168	14.2	14
06/18/02	15:00	167	13.5	15
06/18/02	16:00	163	12.9	14
06/18/02	17:00	159	13.1	12
06/18/02	18:00	144	13.6	15
06/18/02	19:00	144	15.4	13
06/18/02	20:00	148	15.1	11
06/18/02	21:00	153	14.9	10
06/18/02	22:00	157	15.4	11
06/18/02	23:00	162	15.1	10
06/19/02	0:00	162	13.8	9
06/19/02	1:00	159	12.8	10
06/19/02	2:00	157	13.9	10
06/19/02	3:00	156	13.5	10
06/19/02	4:00	157	14.9	10
06/19/02	5:00	161	13.1	10
06/19/02	6:00	155	12.9	10
06/19/02	7:00	160	15.7	11
06/19/02	8:00	167	17.9	10
06/19/02	9:00	170	16.1	11
06/19/02	10:00	173	14.6	12
06/19/02	11:00	174	13.5	13
06/19/02	12:00	174	12.5	17
06/19/02	13:00	164	11.9	15
06/19/02	14:00	165	12.6	15
06/19/02	15:00	161	13.0	13
06/19/02	16:00	158	13.8	13
06/19/02	17:00	152	14.2	12
06/19/02	18:00	151	14.3	10
06/19/02	19:00	173	21.7	10
06/19/02	20:00	148	20.1	13
06/19/02	21:00	143	17.8	13
06/19/02	22:00	150	16.8	12
06/19/02	23:00	155	16.9	10
06/20/02	0:00	160	15.9	10
06/20/02	1:00	156	14.5	10
06/20/02	2:00	152	12.0	10
06/20/02	3:00	151	9.3	12
06/20/02	4:00	150	8.3	13
06/20/02	5:00	144	9.7	16
06/20/02	6:00	140	7.9	16
06/20/02	7:00	154	13.2	11
06/20/02	8:00	144	12.1	15
06/20/02	9:00	146	13.9	15
06/20/02	10:00	142	13.5	16
06/20/02	11:00	142	13.1	17
06/20/02	12:00	134	13.0	18
06/20/02	13:00	132	14.0	18
06/20/02	14:00	134	15.2	19
06/20/02	15:00	136	17.1	17

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/20/02	16:00	141	17.9	16
06/20/02	17:00	139	17.4	15
06/20/02	18:00	142	15.5	14
06/20/02	19:00	135	11.0	16
06/20/02	20:00	129	8.0	18
06/20/02	21:00	103	3.2	16
06/20/02	22:00	83	4.2	9
06/20/02	23:00	81	5.0	16
06/21/02	0:00	105	7.4	15
06/21/02	1:00	127	6.8	15
06/21/02	2:00	136	5.7	13
06/21/02	3:00	125	2.3	14
06/21/02	4:00	127	5.3	14
06/21/02	5:00	156	6.8	9
06/21/02	6:00	147	6.2	9
06/21/02	7:00	159	9.9	12
06/21/02	8:00	162	11.7	11
06/21/02	9:00	158	12.0	12
06/21/02	10:00	162	11.8	17
06/21/02	11:00	162	11.2	18
06/21/02	12:00	155	13.7	15
06/21/02	13:00	148	12.3	16
06/21/02	14:00	156	13.2	14
06/21/02	15:00	157	12.5	15
06/21/02	16:00	155	12.4	14
06/21/02	17:00	148	12.4	15
06/21/02	18:00	153	13.4	13
06/21/02	19:00	154	11.5	10
06/21/02	20:00	155	9.2	9
06/21/02	21:00	160	9.6	9
06/21/02	22:00	160	9.2	9
06/21/02	23:00	161	9.0	9
06/22/02	0:00	160	9.8	9
06/22/02	1:00	162	9.6	9
06/22/02	2:00	155	7.9	9
06/22/02	3:00	129	5.1	15
06/22/02	4:00	115	6.3	15
06/22/02	5:00	100	6.7	13
06/22/02	6:00	115	6.9	17
06/22/02	7:00	142	8.9	15
06/22/02	8:00	153	11.9	12
06/22/02	9:00	160	14.3	12
06/22/02	10:00	159	13.0	13
06/22/02	11:00	147	13.0	14
06/22/02	12:00	152	14.5	16
06/22/02	13:00	151	13.9	17
06/22/02	14:00	151	13.0	15
06/22/02	15:00	151	11.7	15
06/22/02	16:00	151	11.9	17
06/22/02	17:00	146	11.8	17
06/22/02	18:00	143	11.3	15

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/22/02	19:00	148	10.2	10
06/22/02	20:00	148	9.3	10
06/22/02	21:00	147	10.3	10
06/22/02	22:00	152	9.1	9
06/22/02	23:00	160	8.0	9
06/23/02	0:00	147	8.4	11
06/23/02	1:00	159	7.4	9
06/23/02	2:00	155	6.2	9
06/23/02	3:00	154	6.2	8
06/23/02	4:00	153	8.0	9
06/23/02	5:00	162	7.4	9
06/23/02	6:00	180	4.8	10
06/23/02	7:00	160	9.9	11
06/23/02	8:00	170	14.9	11
06/23/02	9:00	174	14.6	11
06/23/02	10:00	176	13.0	12
06/23/02	11:00	165	12.7	14
06/23/02	12:00	166	12.8	15
06/23/02	13:00	157	12.1	15
06/23/02	14:00	170	11.9	19
06/23/02	15:00	164	11.2	16
06/23/02	16:00	173	11.2	13
06/23/02	17:00	181	9.6	14
06/23/02	18:00	168	9.1	11
06/23/02	19:00	163	7.7	9
06/23/02	20:00	150	7.6	9
06/23/02	21:00	155	9.2	9
06/23/02	22:00	166	9.0	9
06/23/02	23:00	166	9.2	10
06/24/02	0:00	170	10.4	9
06/24/02	1:00	176	9.1	8
06/24/02	2:00	181	7.7	8
06/24/02	3:00	179	7.9	7
06/24/02	4:00	180	9.9	8
06/24/02	5:00	180	9.0	7
06/24/02	6:00	179	7.6	7
06/24/02	7:00	191	11.6	10
06/24/02	8:00	185	13.5	10
06/24/02	9:00	187	13.9	10
06/24/02	10:00	197	13.9	11
06/24/02	11:00	194	12.9	12
06/24/02	12:00	191	13.2	13
06/24/02	13:00	184	13.6	14
06/24/02	14:00	167	12.6	14
06/24/02	15:00	173	12.0	14
06/24/02	16:00	185	12.8	14
06/24/02	17:00	170	11.6	14
06/24/02	18:00	169	12.4	11
06/24/02	19:00	161	11.8	9
06/24/02	20:00	151	8.7	9
06/24/02	21:00	157	6.5	9

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/24/02	22:00	167	7.4	8
06/24/02	23:00	175	7.1	8
06/25/02	0:00	168	8.7	8
06/25/02	1:00	177	6.6	5
06/25/02	2:00	184	5.3	6
06/25/02	3:00	187	4.6	5
06/25/02	4:00	184	6.0	6
06/25/02	5:00	93	4.6	10
06/25/02	6:00	100	4.6	12
06/25/02	7:00	120	5.8	15
06/25/02	8:00	116	6.4	17
06/25/02	9:00	150	9.2	12
06/25/02	10:00	159	10.0	12
06/25/02	11:00	162	10.2	14
06/25/02	12:00	159	10.1	17
06/25/02	13:00	155	9.7	19
06/25/02	14:00	142	9.5	18
06/25/02	15:00	136	7.8	21
06/25/02	16:00	142	7.2	28
06/25/02	17:00	106	10.2	19
06/25/02	18:00	112	9.1	17
06/25/02	19:00	114	8.3	16
06/25/02	20:00	110	10.6	15
06/25/02	21:00	110	10.7	14
06/25/02	22:00	114	8.7	16
06/25/02	23:00	123	6.9	17
06/26/02	0:00	127	6.9	17
06/26/02	1:00	139	8.2	13
06/26/02	2:00	149	6.3	10
06/26/02	3:00	185	4.5	5
06/26/02	4:00	246	4.3	12
06/26/02	5:00	63	7.2	12
06/26/02	6:00	89	6.1	13
06/26/02	7:00	106	4.8	17
06/26/02	8:00	165	6.8	12
06/26/02	9:00	177	5.8	15
06/26/02	10:00	164	5.4	22
06/26/02	11:00	165	7.5	18
06/26/02	12:00	182	7.4	19
06/26/02	13:00	136	5.5	33
06/26/02	14:00	82	5.1	38
06/26/02	15:00	159	5.5	60
06/26/02	16:00	102	5.5	28
06/26/02	17:00	141	5.2	34
06/26/02	18:00	164	4.8	18
06/26/02	19:00	137	4.8	12
06/26/02	20:00	100	10.7	14
06/26/02	21:00	58	7.8	17
06/26/02	22:00	13	9.9	15
06/26/02	23:00	4	13.7	14
06/27/02	0:00	29	8.7	19

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/27/02	1:00	101	12.3	21
06/27/02	2:00	79	7.0	17
06/27/02	3:00	118	8.1	19
06/27/02	4:00	101	7.3	16
06/27/02	5:00	109	8.1	16
06/27/02	6:00	147	5.8	15
06/27/02	7:00	261	3.2	25
06/27/02	8:00	268	5.4	11
06/27/02	9:00	266	4.7	20
06/27/02	10:00	283	5.3	20
06/27/02	11:00	315	3.7	47
06/27/02	12:00	52	5.5	38
06/27/02	13:00	82	7.3	25
06/27/02	14:00	87	8.8	24
06/27/02	15:00	113	8.1	22
06/27/02	16:00	103	8.9	19
06/27/02	17:00	108	8.7	18
06/27/02	18:00	110	8.0	18
06/27/02	19:00	113	8.4	16
06/27/02	20:00	116	7.9	17
06/27/02	21:00	110	7.9	15
06/27/02	22:00	119	6.1	16
06/27/02	23:00	133	5.6	14
06/28/02	0:00	248	5.1	20
06/28/02	1:00	322	15.5	11
06/28/02	2:00	346	8.5	15
06/28/02	3:00	108	5.5	19
06/28/02	4:00	21	3.9	28
06/28/02	5:00	330	2.9	16
06/28/02	6:00	265	2.2	31
06/28/02	7:00	47	2.6	26
06/28/02	8:00	94	4.9	23
06/28/02	9:00	119	4.3	33
06/28/02	10:00	148	4.5	40
06/28/02	11:00	136	5.1	50
06/28/02	12:00	162	5.3	48
06/28/02	13:00	165	6.1	41
06/28/02	14:00	97	6.0	41
06/28/02	15:00	129	6.6	36
06/28/02	16:00	99	8.1	24
06/28/02	17:00	91	8.4	22
06/28/02	18:00	98	10.4	16
06/28/02	19:00	111	9.1	16
06/28/02	20:00	112	8.0	15
06/28/02	21:00	105	8.5	14
06/28/02	22:00	109	9.1	14
06/28/02	23:00	110	8.3	16
06/29/02	0:00	114	6.9	16
06/29/02	1:00	156	7.6	11
06/29/02	2:00	166	5.7	9
06/29/02	3:00	164	7.0	9

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
06/29/02	4:00	160	5.9	9
06/29/02	5:00	149	5.5	10
06/29/02	6:00	163	5.2	10
06/29/02	7:00	160	7.1	11
06/29/02	8:00	174	6.5	16
06/29/02	9:00	176	5.4	20
06/29/02	10:00	159	5.7	20
06/29/02	11:00	147	6.5	31
06/29/02	12:00	136	6.2	41
06/29/02	13:00	128	7.4	37
06/29/02	14:00	130	7.0	38
06/29/02	15:00	107	8.7	27
06/29/02	16:00	124	8.4	22
06/29/02	17:00	144	8.3	19
06/29/02	18:00	118	8.4	19
06/29/02	19:00	112	8.5	16
06/29/02	20:00	115	9.1	16
06/29/02	21:00	119	7.6	17
06/29/02	22:00	134	7.4	15
06/29/02	23:00	146	10.6	11
06/30/02	0:00	159	9.4	10
06/30/02	1:00	159	8.5	9
06/30/02	2:00	161	10.4	10
06/30/02	3:00	169	8.8	9
06/30/02	4:00	157	7.0	9
06/30/02	5:00	141	6.8	12
06/30/02	6:00	141	6.5	14
06/30/02	7:00	144	7.9	13
06/30/02	8:00	162	9.8	11
06/30/02	9:00	162	10.7	12
06/30/02	10:00	151	10.5	15
06/30/02	11:00	147	10.1	15
06/30/02	12:00	144	9.1	21
06/30/02	13:00	126	7.8	28
06/30/02	14:00	128	6.9	35
06/30/02	15:00	160	8.3	23
06/30/02	16:00	106	8.2	22
06/30/02	17:00	95	8.0	20
06/30/02	18:00	92	8.9	16
06/30/02	19:00	107	10.2	15
06/30/02	20:00	105	9.9	14
06/30/02	21:00	105	10.5	14
06/30/02	22:00	106	10.4	14
06/30/02	23:00	108	9.1	15
07/01/02	0:00	112	7.7	16
07/01/02	1:00	133	7.8	16
07/01/02	2:00	166	11.4	9
07/01/02	3:00	168	10.3	10
07/01/02	4:00	165	7.2	10
07/01/02	5:00	168	7.2	9
07/01/02	6:00	153	10.0	9

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/01/02	7:00	156	12.0	10
07/01/02	8:00	152	12.1	12
07/01/02	9:00	145	10.1	16
07/01/02	10:00	143	11.2	14
07/01/02	11:00	150	11.2	15
07/01/02	12:00	148	11.1	17
07/01/02	13:00	142	11.5	17
07/01/02	14:00	149	12.3	16
07/01/02	15:00	159	12.8	12
07/01/02	16:00	156	11.3	15
07/01/02	17:00	141	8.6	19
07/01/02	18:00	141	8.7	15
07/01/02	19:00	134	8.6	16
07/01/02	20:00	124	8.3	18
07/01/02	21:00	132	9.2	16
07/01/02	22:00	143	12.2	12
07/01/02	23:00	150	12.8	10
07/02/02	0:00	146	12.0	12
07/02/02	1:00	151	12.3	10
07/02/02	2:00	161	9.3	11
07/02/02	3:00	151	7.1	10
07/02/02	4:00	144	7.1	11
07/02/02	5:00	127	6.1	17
07/02/02	6:00	121	6.1	17
07/02/02	7:00	132	7.1	17
07/02/02	8:00	138	7.6	18
07/02/02	9:00	140	7.5	17
07/02/02	10:00	136	9.6	20
07/02/02	11:00	112	11.0	20
07/02/02	12:00	115	11.1	20
07/02/02	13:00	113	10.8	19
07/02/02	14:00	132	9.5	20
07/02/02	15:00	128	8.2	23
07/02/02	16:00	118	6.8	28
07/02/02	17:00	119	8.5	21
07/02/02	18:00	95	8.7	17
07/02/02	19:00	95	8.9	14
07/02/02	20:00	107	8.5	15
07/02/02	21:00	104	9.9	14
07/02/02	22:00	104	10.1	14
07/02/02	23:00	111	10.2	16
07/03/02	0:00	120	9.6	17
07/03/02	1:00	132	7.1	17
07/03/02	2:00	132	6.0	15
07/03/02	3:00	114	5.0	17
07/03/02	4:00	92	3.7	14
07/03/02	5:00	92	5.2	12
07/03/02	6:00	92	7.7	13
07/03/02	7:00	110	6.9	15
07/03/02	8:00	106	6.7	17
07/03/02	9:00	95	5.4	23

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/03/02	10:00	69	6.3	26
07/03/02	11:00	83	5.7	28
07/03/02	12:00	76	7.2	25
07/03/02	13:00	85	6.7	31
07/03/02	14:00	101	8.5	24
07/03/02	15:00	89	11.7	18
07/03/02	16:00	94	10.4	19
07/03/02	17:00	89	9.7	18
07/03/02	18:00	95	9.9	16
07/03/02	19:00	96	7.8	14
07/03/02	20:00	108	9.4	14
07/03/02	21:00	104	7.8	16
07/03/02	22:00	135	6.6	16
07/03/02	23:00	233	11.3	19
07/04/02	0:00	291	7.6	18
07/04/02	1:00	254	3.8	15
07/04/02	2:00	171	4.1	11
07/04/02	3:00	109	2.4	22
07/04/02	4:00	261	2.2	31
07/04/02	5:00	57	3.3	18
07/04/02	6:00	87	3.9	19
07/04/02	7:00	95	5.4	21
07/04/02	8:00	97	7.2	17
07/04/02	9:00	99	7.6	18
07/04/02	10:00	89	6.1	28
07/04/02	11:00	99	5.2	36
07/04/02	12:00	93	4.7	41
07/04/02	13:00	150	4.3	41
07/04/02	14:00	105	4.5	29
07/04/02	15:00	97	5.0	28
07/04/02	16:00	67	4.8	47
07/04/02	17:00	147	5.0	24
07/04/02	18:00	114	4.9	24
07/04/02	19:00	107	5.7	15
07/04/02	20:00	111	10.1	15
07/04/02	21:00	69	13.2	15
07/04/02	22:00	6	12.3	16
07/04/02	23:00	242	6.4	19
07/05/02	0:00	87	10.1	12
07/05/02	1:00	118	9.6	19
07/05/02	2:00	8	4.0	25
07/05/02	3:00	7	1.5	16
07/05/02	4:00	208	3.4	10
07/05/02	5:00	200	4.3	9
07/05/02	6:00	204	2.4	14
07/05/02	7:00	331	7.8	12
07/05/02	8:00	357	6.5	14
07/05/02	9:00	14	3.9	39
07/05/02	10:00	111	4.6	27
07/05/02	11:00	118	5.4	26
07/05/02	12:00	142	6.7	21

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/05/02	13:00	146	8.6	22
07/05/02	14:00	160	8.2	21
07/05/02	15:00	163	6.6	27
07/05/02	16:00	158	8.2	19
07/05/02	17:00	150	7.7	18
07/05/02	18:00	128	7.8	18
07/05/02	19:00	105	8.1	14
07/05/02	20:00	111	6.9	14
07/05/02	21:00	117	8.5	15
07/05/02	22:00	102	10.6	14
07/05/02	23:00	98	8.9	14
07/06/02	0:00	42	8.0	19
07/06/02	1:00	68	8.4	14
07/06/02	2:00	70	7.7	14
07/06/02	3:00	79	5.4	14
07/06/02	4:00	106	5.3	15
07/06/02	5:00	139	6.7	12
07/06/02	6:00	150	8.2	9
07/06/02	7:00	157	9.3	11
07/06/02	8:00	168	11.5	10
07/06/02	9:00	176	8.8	12
07/06/02	10:00	155	7.0	19
07/06/02	11:00	133	6.3	24
07/06/02	12:00	143	8.4	23
07/06/02	13:00	49	13.2	18
07/06/02	14:00	18	18.0	15
07/06/02	15:00	59	9.2	33
07/06/02	16:00	107	6.5	21
07/06/02	17:00	101	8.4	15
07/06/02	18:00	63	6.7	19
07/06/02	19:00	68	8.5	16
07/06/02	20:00	120	8.5	18
07/06/02	21:00	122	7.0	19
07/06/02	22:00	100	4.7	16
07/06/02	23:00	64	5.5	15
07/07/02	0:00	13	3.5	12
07/07/02	1:00	16	3.3	13
07/07/02	2:00	50	2.6	20
07/07/02	3:00	349	2.8	13
07/07/02	4:00	24	3.6	11
07/07/02	5:00	37	4.4	13
07/07/02	6:00	67	4.0	16
07/07/02	7:00	45	3.6	15
07/07/02	8:00	46	5.6	17
07/07/02	9:00	46	5.8	20
07/07/02	10:00	66	5.0	29
07/07/02	11:00	96	3.3	51
07/07/02	12:00	220	4.4	37
07/07/02	13:00	187	5.2	29
07/07/02	14:00	207	6.7	25
07/07/02	15:00	136	4.9	38

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/07/02	16:00	106	3.6	31
07/07/02	17:00	269	12.1	23
07/07/02	18:00	337	3.3	38
07/07/02	19:00	333	2.2	17
07/07/02	20:00	112	6.5	15
07/07/02	21:00	92	5.1	14
07/07/02	22:00	89	8.0	13
07/07/02	23:00	101	7.8	13
07/08/02	0:00	114	7.7	15
07/08/02	1:00	112	6.5	15
07/08/02	2:00	114	7.0	18
07/08/02	3:00	113	6.8	17
07/08/02	4:00	116	8.7	18
07/08/02	5:00	99	5.1	15
07/08/02	6:00	87	3.8	14
07/08/02	7:00	112	5.4	18
07/08/02	8:00	130	6.8	18
07/08/02	9:00	151	9.0	13
07/08/02	10:00	147	8.5	15
07/08/02	11:00	147	8.2	18
07/08/02	12:00	151	8.4	17
07/08/02	13:00	138	8.7	20
07/08/02	14:00	140	9.1	19
07/08/02	15:00	139	8.8	22
07/08/02	16:00	136	9.4	18
07/08/02	17:00	130	9.4	19
07/08/02	18:00	126	11.0	17
07/08/02	19:00	126	9.0	18
07/08/02	20:00	126	6.5	19
07/08/02	21:00	135	6.4	15
07/08/02	22:00	125	5.4	15
07/08/02	23:00	124	6.0	17
07/09/02	0:00	135	6.8	16
07/09/02	1:00	156	7.2	9
07/09/02	2:00	163	5.4	8
07/09/02	3:00	163	4.9	6
07/09/02	4:00	176	4.7	4
07/09/02	5:00	211	2.5	6
07/09/02	6:00	308	1.9	8
07/09/02	7:00	214	2.9	13
07/09/02	8:00	207	6.7	11
07/09/02	9:00	199	7.4	13
07/09/02	10:00	193	7.3	17
07/09/02	11:00	178	9.0	17
07/09/02	12:00	185	8.2	20
07/09/02	13:00	181	6.9	28
07/09/02	14:00	176	7.8	23
07/09/02	15:00	162	7.1	26
07/09/02	16:00	156	8.3	18
07/09/02	17:00	143	8.4	18
07/09/02	18:00	137	7.2	17

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/09/02	19:00	129	7.4	17
07/09/02	20:00	118	6.1	16
07/09/02	21:00	108	6.8	13
07/09/02	22:00	113	6.9	15
07/09/02	23:00	127	6.9	16
07/10/02	0:00	139	7.8	12
07/10/02	1:00	140	6.7	12
07/10/02	2:00	143	6.2	10
07/10/02	3:00	146	6.3	10
07/10/02	4:00	152	6.2	9
07/10/02	5:00	163	6.3	9
07/10/02	6:00	175	7.2	8
07/10/02	7:00	172	7.8	10
07/10/02	8:00	183	8.9	11
07/10/02	9:00	183	8.9	12
07/10/02	10:00	182	7.2	21
07/10/02	11:00	163	5.5	30
07/10/02	12:00	135	5.7	44
07/10/02	13:00	108	7.0	28
07/10/02	14:00	111	6.7	29
07/10/02	15:00	111	7.4	34
07/10/02	16:00	108	7.4	21
07/10/02	17:00	118	7.6	19
07/10/02	18:00	115	7.4	19
07/10/02	19:00	119	7.0	18
07/10/02	20:00	123	5.4	17
07/10/02	21:00	122	4.8	16
07/10/02	22:00	116	5.6	16
07/10/02	23:00	126	6.0	18
07/11/02	0:00	143	8.4	12
07/11/02	1:00	161	8.0	9
07/11/02	2:00	177	6.9	7
07/11/02	3:00	181	5.7	6
07/11/02	4:00	181	6.7	7
07/11/02	5:00	193	6.4	8
07/11/02	6:00	220	4.6	8
07/11/02	7:00	208	7.5	9
07/11/02	8:00	195	6.7	13
07/11/02	9:00	205	5.3	20
07/11/02	10:00	228	3.5	43
07/11/02	11:00	172	4.2	36
07/11/02	12:00	119	6.9	32
07/11/02	13:00	104	7.8	27
07/11/02	14:00	103	8.2	27
07/11/02	15:00	122	8.4	21
07/11/02	16:00	129	7.4	25
07/11/02	17:00	118	7.3	19
07/11/02	18:00	21	11.8	14
07/11/02	19:00	40	7.9	16
07/11/02	20:00	62	6.4	17
07/11/02	21:00	102	3.2	16

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/11/02	22:00	100	5.6	17
07/11/02	23:00	75	3.8	30
07/12/02	0:00	48	3.4	14
07/12/02	1:00	200	3.6	31
07/12/02	2:00	212	5.0	4
07/12/02	3:00	252	4.0	4
07/12/02	4:00	274	3.8	4
07/12/02	5:00	302	3.6	5
07/12/02	6:00	340	2.5	9
07/12/02	7:00	329	1.8	20
07/12/02	8:00	153	3.1	34
07/12/02	9:00	160	4.4	26
07/12/02	10:00	182	5.4	31
07/12/02	11:00	160	4.9	35
07/12/02	12:00	133	5.2	36
07/12/02	13:00	160	6.0	31
07/12/02	14:00	125	4.7	55
07/12/02	15:00	120	5.3	41
07/12/02	16:00	152	6.3	27
07/12/02	17:00	178	6.5	26
07/12/02	18:00	141	7.4	18
07/12/02	19:00	168	10.5	10
07/12/02	20:00	179	8.4	8
07/12/02	21:00	187	9.7	9
07/12/02	22:00	192	7.3	8
07/12/02	23:00	196	7.4	8
07/13/02	0:00	196	7.6	8
07/13/02	1:00	200	7.3	8
07/13/02	2:00	227	5.7	6
07/13/02	3:00	261	4.6	6
07/13/02	4:00	259	4.9	4
07/13/02	5:00	279	3.7	4
07/13/02	6:00	314	3.8	11
07/13/02	7:00	78	3.0	21
07/13/02	8:00	169	2.5	38
07/13/02	9:00	186	5.7	18
07/13/02	10:00	192	7.1	29
07/13/02	11:00	192	4.4	44
07/13/02	12:00	206	4.7	44
07/13/02	13:00	215	5.6	43
07/13/02	14:00	108	5.1	36
07/13/02	15:00	111	5.3	42
07/13/02	16:00	92	6.5	28
07/13/02	17:00	69	7.1	18
07/13/02	18:00	106	7.5	18
07/13/02	19:00	95	8.6	14
07/13/02	20:00	90	7.9	14
07/13/02	21:00	95	9.1	14
07/13/02	22:00	99	11.0	14
07/13/02	23:00	103	9.8	14
07/14/02	0:00	100	7.0	14

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/14/02	1:00	101	6.2	14
07/14/02	2:00	96	6.5	13
07/14/02	3:00	94	7.1	13
07/14/02	4:00	91	5.8	13
07/14/02	5:00	91	5.8	13
07/14/02	6:00	90	5.2	15
07/14/02	7:00	113	5.8	15
07/14/02	8:00	152	8.9	12
07/14/02	9:00	153	7.8	15
07/14/02	10:00	135	7.2	21
07/14/02	11:00	132	7.7	21
07/14/02	12:00	131	7.9	24
07/14/02	13:00	138	8.1	23
07/14/02	14:00	124	7.6	36
07/14/02	15:00	145	9.5	20
07/14/02	16:00	145	9.3	17
07/14/02	17:00	142	8.9	17
07/14/02	18:00	117	8.3	18
07/14/02	19:00	106	8.8	14
07/14/02	20:00	104	7.9	13
07/14/02	21:00	99	8.2	14
07/14/02	22:00	128	11.6	13
07/14/02	23:00	151	11.8	10
07/15/02	0:00	158	11.7	10
07/15/02	1:00	160	9.4	10
07/15/02	2:00	159	9.3	10
07/15/02	3:00	163	6.9	10
07/15/02	4:00	169	4.4	10
07/15/02	5:00	140	3.5	13
07/15/02	6:00	116	4.1	16
07/15/02	7:00	118	4.0	18
07/15/02	8:00	121	5.1	18
07/15/02	9:00	126	5.2	22
07/15/02	10:00	149	6.9	18
07/15/02	11:00	138	7.5	21
07/15/02	12:00	133	8.9	23
07/15/02	13:00	134	9.1	23
07/15/02	14:00	118	8.9	21
07/15/02	15:00	120	8.5	25
07/15/02	16:00	103	9.2	22
07/15/02	17:00	107	9.0	17
07/15/02	18:00	117	10.3	17
07/15/02	19:00	126	8.7	18
07/15/02	20:00	119	6.7	17
07/15/02	21:00	119	7.5	17
07/15/02	22:00	121	7.2	17
07/15/02	23:00	132	8.8	17
07/16/02	0:00	138	8.6	14
07/16/02	1:00	141	7.5	12
07/16/02	2:00	144	6.2	12
07/16/02	3:00	167	5.0	8

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/16/02	4:00	169	5.2	6
07/16/02	5:00	161	4.5	9
07/16/02	6:00	160	5.5	9
07/16/02	7:00	173	5.7	12
07/16/02	8:00	191	6.4	15
07/16/02	9:00	161	5.7	20
07/16/02	10:00	130	6.3	25
07/16/02	11:00	127	6.6	31
07/16/02	12:00	116	6.0	32
07/16/02	13:00	108	7.3	27
07/16/02	14:00	108	8.7	26
07/16/02	15:00	98	9.8	20
07/16/02	16:00	98	9.3	25
07/16/02	17:00	122	8.2	22
07/16/02	18:00	121	8.2	19
07/16/02	19:00	127	7.2	16
07/16/02	20:00	117	6.2	17
07/16/02	21:00	116	6.9	16
07/16/02	22:00	125	7.3	18
07/16/02	23:00	117	6.7	17
07/17/02	0:00	100	5.8	13
07/17/02	1:00	107	5.6	14
07/17/02	2:00	139	6.6	13
07/17/02	3:00	167	7.0	8
07/17/02	4:00	166	6.4	8
07/17/02	5:00	160	7.0	9
07/17/02	6:00	170	7.6	8
07/17/02	7:00	175	10.8	9
07/17/02	8:00	171	11.4	11
07/17/02	9:00	165	11.0	12
07/17/02	10:00	153	9.3	18
07/17/02	11:00	143	9.1	19
07/17/02	12:00	149	9.1	26
07/17/02	13:00	151	9.3	17
07/17/02	14:00	122	9.1	22
07/17/02	15:00	150	7.6	22
07/17/02	16:00	126	7.4	24
07/17/02	17:00	123	6.7	19
07/17/02	18:00	129	8.1	17
07/17/02	19:00	109	5.5	17
07/17/02	20:00	97	4.9	13
07/17/02	21:00	148	12.4	14
07/17/02	22:00	169	14.5	9
07/17/02	23:00	165	10.8	10
07/18/02	0:00	168	10.8	10
07/18/02	1:00	164	10.4	10
07/18/02	2:00	164	10.0	9
07/18/02	3:00	162	9.5	10
07/18/02	4:00	165	8.8	9
07/18/02	5:00	160	7.8	9
07/18/02	6:00	154	6.2	10

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/18/02	7:00	158	8.5	11
07/18/02	8:00	156	8.4	11
07/18/02	9:00	161	8.2	16
07/18/02	10:00	188	7.5	16
07/18/02	11:00	204	7.6	27
07/18/02	12:00	156	4.6	36
07/18/02	13:00	166	4.6	44
07/18/02	14:00	128	8.2	24
07/18/02	15:00	112	8.5	20
07/18/02	16:00	131	6.8	18
07/18/02	17:00	168	13.3	14
07/18/02	18:00	200	19.0	9
07/18/02	19:00	212	11.6	9
07/18/02	20:00	214	6.2	10
07/18/02	21:00	191	6.5	8
07/18/02	22:00	173	6.5	9
07/18/02	23:00	176	2.8	25
07/19/02	0:00	199	4.6	4
07/19/02	1:00	185	5.2	6
07/19/02	2:00	164	4.6	9
07/19/02	3:00	151	6.6	9
07/19/02	4:00	134	6.1	14
07/19/02	5:00	104	4.6	14
07/19/02	6:00	143	5.8	12
07/19/02	7:00	166	9.6	11
07/19/02	8:00	180	12.6	11
07/19/02	9:00	179	10.2	15
07/19/02	10:00	197	8.6	17
07/19/02	11:00	190	9.0	24
07/19/02	12:00	190	10.1	19
07/19/02	13:00	182	12.2	17
07/19/02	14:00	186	11.6	22
07/19/02	15:00	183	10.8	18
07/19/02	16:00	172	12.3	17
07/19/02	17:00	155	17.9	13
07/19/02	18:00	150	9.0	10
07/19/02	19:00	161	9.0	11
07/19/02	20:00	188	10.7	10
07/19/02	21:00	188	9.8	9
07/19/02	22:00	185	7.2	9
07/19/02	23:00	184	6.9	9
07/20/02	0:00	169	5.4	8
07/20/02	1:00	168	5.0	7
07/20/02	2:00	175	5.3	7
07/20/02	3:00	163	8.4	9
07/20/02	4:00	163	9.7	9
07/20/02	5:00	159	8.7	9
07/20/02	6:00	174	7.9	11
07/20/02	7:00	180	10.6	10
07/20/02	8:00	189	11.7	12
07/20/02	9:00	174	10.9	14

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/20/02	10:00	182	11.9	15
07/20/02	11:00	186	12.2	15
07/20/02	12:00	190	12.4	16
07/20/02	13:00	184	12.2	15
07/20/02	14:00	178	13.9	15
07/20/02	15:00	179	14.0	14
07/20/02	16:00	179	15.4	13
07/20/02	17:00	176	14.8	12
07/20/02	18:00	189	14.4	11
07/20/02	19:00	189	10.8	9
07/20/02	20:00	182	8.6	9
07/20/02	21:00	171	8.9	9
07/20/02	22:00	170	9.3	9
07/20/02	23:00	172	12.2	9
07/21/02	0:00	175	11.8	9
07/21/02	1:00	171	10.6	9
07/21/02	2:00	171	10.9	9
07/21/02	3:00	170	11.3	9
07/21/02	4:00	168	10.2	9
07/21/02	5:00	171	10.0	9
07/21/02	6:00	175	10.6	9
07/21/02	7:00	178	13.7	10
07/21/02	8:00	183	11.9	11
07/21/02	9:00	181	11.6	15
07/21/02	10:00	183	11.6	14
07/21/02	11:00	186	10.9	17
07/21/02	12:00	185	10.1	19
07/21/02	13:00	179	10.3	21
07/21/02	14:00	165	11.2	15
07/21/02	15:00	177	11.8	17
07/21/02	16:00	174	12.1	15
07/21/02	17:00	177	11.3	13
07/21/02	18:00	179	11.3	13
07/21/02	19:00	176	9.7	9
07/21/02	20:00	167	7.2	9
07/21/02	21:00	165	8.5	9
07/21/02	22:00	165	9.9	10
07/21/02	23:00	166	11.8	10
07/22/02	0:00	174	12.8	9
07/22/02	1:00	176	11.9	9
07/22/02	2:00	167	9.1	9
07/22/02	3:00	165	9.1	10
07/22/02	4:00	160	9.1	9
07/22/02	5:00	157	7.7	9
07/22/02	6:00	148	6.6	10
07/22/02	7:00	153	9.8	11
07/22/02	8:00	173	9.8	12
07/22/02	9:00			
07/22/02	10:00			
07/22/02	11:00			
07/22/02	12:00			

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/22/02	13:00			
07/22/02	14:00			
07/22/02	15:00			
07/22/02	16:00			
07/22/02	17:00			
07/22/02	18:00			
07/22/02	19:00			
07/22/02	20:00			
07/22/02	21:00			
07/22/02	22:00			
07/22/02	23:00			
07/23/02	0:00			
07/23/02	1:00			
07/23/02	2:00			
07/23/02	3:00			
07/23/02	4:00			
07/23/02	5:00			
07/23/02	6:00			
07/23/02	7:00			
07/23/02	8:00			
07/23/02	9:00			
07/23/02	10:00			
07/23/02	11:00			
07/23/02	12:00			
07/23/02	13:00			
07/23/02	14:00			
07/23/02	15:00			
07/23/02	16:00			
07/23/02	17:00			
07/23/02	18:00			
07/23/02	19:00			
07/23/02	20:00			
07/23/02	21:00			
07/23/02	22:00			
07/23/02	23:00			
07/24/02	0:00			
07/24/02	1:00			
07/24/02	2:00			
07/24/02	3:00			
07/24/02	4:00			
07/24/02	5:00			
07/24/02	6:00			
07/24/02	7:00			
07/24/02	8:00			
07/24/02	9:00			
07/24/02	10:00			
07/24/02	11:00			
07/24/02	12:00			
07/24/02	13:00			
07/24/02	14:00			
07/24/02	15:00			

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/24/02	16:00			
07/24/02	17:00			
07/24/02	18:00			
07/24/02	19:00			
07/24/02	20:00			
07/24/02	21:00			
07/24/02	22:00			
07/24/02	23:00			
07/25/02	0:00			
07/25/02	1:00			
07/25/02	2:00			
07/25/02	3:00			
07/25/02	4:00			
07/25/02	5:00			
07/25/02	6:00			
07/25/02	7:00			
07/25/02	8:00			
07/25/02	9:00			
07/25/02	10:00			
07/25/02	11:00			
07/25/02	12:00			
07/25/02	13:00			
07/25/02	14:00			
07/25/02	15:00			
07/25/02	16:00			
07/25/02	17:00			
07/25/02	18:00			
07/25/02	19:00			
07/25/02	20:00			
07/25/02	21:00			
07/25/02	22:00			
07/25/02	23:00			
07/26/02	0:00			
07/26/02	1:00			
07/26/02	2:00			
07/26/02	3:00			
07/26/02	4:00			
07/26/02	5:00			
07/26/02	6:00			
07/26/02	7:00			
07/26/02	8:00			
07/26/02	9:00			
07/26/02	10:00			
07/26/02	11:00			
07/26/02	12:00			
07/26/02	13:00			
07/26/02	14:00			
07/26/02	15:00			
07/26/02	16:00			
07/26/02	17:00			
07/26/02	18:00			

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/26/02	19:00			
07/26/02	20:00			
07/26/02	21:00			
07/26/02	22:00			
07/26/02	23:00			
07/27/02	0:00			
07/27/02	1:00			
07/27/02	2:00			
07/27/02	3:00			
07/27/02	4:00			
07/27/02	5:00			
07/27/02	6:00			
07/27/02	7:00			
07/27/02	8:00			
07/27/02	9:00			
07/27/02	10:00			
07/27/02	11:00			
07/27/02	12:00			
07/27/02	13:00			
07/27/02	14:00			
07/27/02	15:00			
07/27/02	16:00			
07/27/02	17:00			
07/27/02	18:00			
07/27/02	19:00			
07/27/02	20:00			
07/27/02	21:00			
07/27/02	22:00			
07/27/02	23:00			
07/28/02	0:00			
07/28/02	1:00			
07/28/02	2:00			
07/28/02	3:00			
07/28/02	4:00			
07/28/02	5:00			
07/28/02	6:00			
07/28/02	7:00			
07/28/02	8:00			
07/28/02	9:00			
07/28/02	10:00			
07/28/02	11:00			
07/28/02	12:00			
07/28/02	13:00			
07/28/02	14:00			
07/28/02	15:00			
07/28/02	16:00			
07/28/02	17:00			
07/28/02	18:00			
07/28/02	19:00			
07/28/02	20:00			
07/28/02	21:00			

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/28/02	22:00			
07/28/02	23:00			
07/29/02	0:00			
07/29/02	1:00			
07/29/02	2:00			
07/29/02	3:00			
07/29/02	4:00			
07/29/02	5:00			
07/29/02	6:00			
07/29/02	7:00			
07/29/02	8:00			
07/29/02	9:00			
07/29/02	10:00			
07/29/02	11:00			
07/29/02	12:00			
07/29/02	13:00			
07/29/02	14:00			
07/29/02	15:00			
07/29/02	16:00			
07/29/02	17:00			
07/29/02	18:00			
07/29/02	19:00			
07/29/02	20:00			
07/29/02	21:00			
07/29/02	22:00			
07/29/02	23:00			
07/30/02	0:00			
07/30/02	1:00			
07/30/02	2:00			
07/30/02	3:00			
07/30/02	4:00			
07/30/02	5:00			
07/30/02	6:00			
07/30/02	7:00			
07/30/02	8:00			
07/30/02	9:00			
07/30/02	10:00			
07/30/02	11:00			
07/30/02	12:00			
07/30/02	13:00			
07/30/02	14:00			
07/30/02	15:00			
07/30/02	16:00			
07/30/02	17:00			
07/30/02	18:00			
07/30/02	19:00			
07/30/02	20:00			
07/30/02	21:00			
07/30/02	22:00			
07/30/02	23:00			
07/31/02	0:00			

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
07/31/02	1:00			
07/31/02	2:00			
07/31/02	3:00			
07/31/02	4:00			
07/31/02	5:00			
07/31/02	6:00			
07/31/02	7:00			
07/31/02	8:00			
07/31/02	9:00			
07/31/02	10:00			
07/31/02	11:00			
07/31/02	12:00			
07/31/02	13:00			
07/31/02	14:00			
07/31/02	15:00			
07/31/02	16:00			
07/31/02	17:00			
07/31/02	18:00			
07/31/02	19:00			
07/31/02	20:00			
07/31/02	21:00			
07/31/02	22:00			
07/31/02	23:00			
08/01/02	0:00	176	15.0	9
08/01/02	1:00	177	14.1	9
08/01/02	2:00	181	11.9	9
08/01/02	3:00	180	11.0	9
08/01/02	4:00	179	9.6	9
08/01/02	5:00	179	8.8	7
08/01/02	6:00	181	7.4	8
08/01/02	7:00	179	11.2	10
08/01/02	8:00	178	11.1	11
08/01/02	9:00	178	10.9	12
08/01/02	10:00	176	9.8	15
08/01/02	11:00	166	8.6	18
08/01/02	12:00	160	6.7	34
08/01/02	13:00	116	7.4	30
08/01/02	14:00	101	8.5	35
08/01/02	15:00	100	9.2	23
08/01/02	16:00	130	9.5	22
08/01/02	17:00	152	9.9	20
08/01/02	18:00	158	10.1	17
08/01/02	19:00	153	9.5	11
08/01/02	20:00	145	10.0	15
08/01/02	21:00	137	10.3	17
08/01/02	22:00	135	15.2	13
08/01/02	23:00	155	6.1	24
08/02/02	0:00	186	10.1	16
08/02/02	1:00	175	15.1	11
08/02/02	2:00	135	8.2	17
08/02/02	3:00	197	6.1	18

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/02/02	4:00	29	2.4	15
08/02/02	5:00	351	3.6	12
08/02/02	6:00	9	6.0	12
08/02/02	7:00	17	6.8	14
08/02/02	8:00	30	4.3	28
08/02/02	9:00	285	10.9	11
08/02/02	10:00	332	7.9	12
08/02/02	11:00	1	5.7	15
08/02/02	12:00	355	4.5	19
08/02/02	13:00	304	5.2	25
08/02/02	14:00	355	4.2	36
08/02/02	15:00	109	8.1	21
08/02/02	16:00	132	8.6	18
08/02/02	17:00	150	7.3	19
08/02/02	18:00	122	6.7	19
08/02/02	19:00	169	5.7	11
08/02/02	20:00	207	3.6	7
08/02/02	21:00	258	2.6	9
08/02/02	22:00	256	2.5	6
08/02/02	23:00	222	4.2	3
08/03/02	0:00	192	4.0	4
08/03/02	1:00	183	4.6	5
08/03/02	2:00	176	5.2	6
08/03/02	3:00	186	3.9	5
08/03/02	4:00	174	6.2	7
08/03/02	5:00	175	5.8	7
08/03/02	6:00	184	4.1	10
08/03/02	7:00	174	5.9	11
08/03/02	8:00	173	10.2	11
08/03/02	9:00	177	10.0	12
08/03/02	10:00	183	7.6	13
08/03/02	11:00	173	7.0	21
08/03/02	12:00	173	8.9	18
08/03/02	13:00	169	9.1	18
08/03/02	14:00	179	10.0	18
08/03/02	15:00	176	9.0	24
08/03/02	16:00	185	10.7	19
08/03/02	17:00	157	8.3	20
08/03/02	18:00	143	9.1	15
08/03/02	19:00	160	6.9	9
08/03/02	20:00	154	5.1	8
08/03/02	21:00	139	5.4	12
08/03/02	22:00	154	7.3	10
08/03/02	23:00	167	9.0	9
08/04/02	0:00	169	8.9	10
08/04/02	1:00	189	6.0	6
08/04/02	2:00	179	5.9	5
08/04/02	3:00	216	3.5	6
08/04/02	4:00	164	3.2	10
08/04/02	5:00	172	4.7	6
08/04/02	6:00	167	5.7	7

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/04/02	7:00	158	8.7	10
08/04/02	8:00	167	11.8	11
08/04/02	9:00	176	10.1	12
08/04/02	10:00	172	8.1	14
08/04/02	11:00	146	8.7	20
08/04/02	12:00	145	8.9	21
08/04/02	13:00	137	8.7	20
08/04/02	14:00	123	8.2	27
08/04/02	15:00	130	8.4	22
08/04/02	16:00	137	9.3	16
08/04/02	17:00	114	8.7	24
08/04/02	18:00	100	9.5	16
08/04/02	19:00	99	7.8	15
08/04/02	20:00	96	6.6	14
08/04/02	21:00	99	7.8	14
08/04/02	22:00	115	6.9	15
08/04/02	23:00	147	7.7	11
08/05/02	0:00	152	7.8	10
08/05/02	1:00	151	7.3	10
08/05/02	2:00	153	5.1	9
08/05/02	3:00	151	5.9	9
08/05/02	4:00	149	7.2	9
08/05/02	5:00	150	7.0	9
08/05/02	6:00	152	7.4	10
08/05/02	7:00	164	8.2	10
08/05/02	8:00	176	10.3	11
08/05/02	9:00	169	8.1	13
08/05/02	10:00	165	8.1	20
08/05/02	11:00	150	8.7	21
08/05/02	12:00	134	9.0	21
08/05/02	13:00	119	8.5	24
08/05/02	14:00	123	9.3	26
08/05/02	15:00	128	8.7	24
08/05/02	16:00	104	10.3	18
08/05/02	17:00	115	9.3	18
08/05/02	18:00	112	9.0	17
08/05/02	19:00	99	7.7	15
08/05/02	20:00	102	6.5	14
08/05/02	21:00	149	11.2	10
08/05/02	22:00	143	6.8	12
08/05/02	23:00	182	7.2	10
08/06/02	0:00	214	6.2	8
08/06/02	1:00	184	4.4	8
08/06/02	2:00	105	2.7	12
08/06/02	3:00	96	2.9	9
08/06/02	4:00	71	3.5	8
08/06/02	5:00	68	3.0	10
08/06/02	6:00	68	1.7	22
08/06/02	7:00	53	2.9	11
08/06/02	8:00	136	5.8	17
08/06/02	9:00	157	5.6	23

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/06/02	10:00	142	5.7	30
08/06/02	11:00	119	7.4	28
08/06/02	12:00	119	7.5	30
08/06/02	13:00	120	7.5	29
08/06/02	14:00	131	7.8	27
08/06/02	15:00	120	7.6	26
08/06/02	16:00	117	8.2	23
08/06/02	17:00	120	7.9	21
08/06/02	18:00	141	9.0	22
08/06/02	19:00	134	7.0	21
08/06/02	20:00	115	6.5	20
08/06/02	21:00	135	6.0	23
08/06/02	22:00	157	4.2	19
08/06/02	23:00	176	4.0	14
08/07/02	0:00	159	2.4	11
08/07/02	1:00	140	1.5	18
08/07/02	2:00	104	2.3	16
08/07/02	3:00	69	3.3	12
08/07/02	4:00	68	3.5	11
08/07/02	5:00	85	3.3	13
08/07/02	6:00	89	4.2	13
08/07/02	7:00	95	5.0	14
08/07/02	8:00	104	4.6	16
08/07/02	9:00	125	4.8	23
08/07/02	10:00	160	5.3	29
08/07/02	11:00	173	5.9	37
08/07/02	12:00	168	9.2	24
08/07/02	13:00	140	8.5	21
08/07/02	14:00	158	9.3	22
08/07/02	15:00	92	6.9	15
08/07/02	16:00	45	5.5	20
08/07/02	17:00	86	5.3	16
08/07/02	18:00	72	4.0	16
08/07/02	19:00	53	2.5	13
08/07/02	20:00	64	2.7	10
08/07/02	21:00	53	3.6	11
08/07/02	22:00	65	4.2	13
08/07/02	23:00	73	3.9	11
08/08/02	0:00	86	3.8	10
08/08/02	1:00	72	4.5	12
08/08/02	2:00	72	4.6	12
08/08/02	3:00	73	4.3	13
08/08/02	4:00	68	3.9	11
08/08/02	5:00	33	3.1	10
08/08/02	6:00	38	2.7	23
08/08/02	7:00	8	2.7	16
08/08/02	8:00	97	3.0	26
08/08/02	9:00	155	3.8	35
08/08/02	10:00	191	6.7	18
08/08/02	11:00	218	5.8	20
08/08/02	12:00	158	5.8	24

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/08/02	13:00	166	8.0	24
08/08/02	14:00	162	9.2	31
08/08/02	15:00	174	8.7	23
08/08/02	16:00	166	6.8	32
08/08/02	17:00	182	5.1	24
08/08/02	18:00	157	4.7	26
08/08/02	19:00	158	4.3	15
08/08/02	20:00	172	2.2	7
08/08/02	21:00	164	2.6	7
08/08/02	22:00	78	2.0	10
08/08/02	23:00	52	3.6	9
08/09/02	0:00	114	6.2	15
08/09/02	1:00	106	5.7	14
08/09/02	2:00	155	6.8	21
08/09/02	3:00	167	6.7	9
08/09/02	4:00	163	5.2	16
08/09/02	5:00	167	6.5	10
08/09/02	6:00	163	5.9	14
08/09/02	7:00	178	6.4	11
08/09/02	8:00	188	8.3	11
08/09/02	9:00	192	8.2	13
08/09/02	10:00	191	8.7	13
08/09/02	11:00	179	7.0	23
08/09/02	12:00	179	8.2	24
08/09/02	13:00	161	7.4	28
08/09/02	14:00	160	7.7	29
08/09/02	15:00	160	8.5	23
08/09/02	16:00	154	8.0	29
08/09/02	17:00	142	8.4	23
08/09/02	18:00	122	7.9	20
08/09/02	19:00	112	6.6	17
08/09/02	20:00	113	6.0	16
08/09/02	21:00	115	7.6	16
08/09/02	22:00	136	7.6	26
08/09/02	23:00	140	6.2	29
08/10/02	0:00	165	11.7	15
08/10/02	1:00	169	13.7	10
08/10/02	2:00	175	9.9	9
08/10/02	3:00	181	7.6	8
08/10/02	4:00	172	8.5	8
08/10/02	5:00	176	8.0	10
08/10/02	6:00	177	7.4	9
08/10/02	7:00	174	9.2	9
08/10/02	8:00	169	12.0	13
08/10/02	9:00	86	11.0	19
08/10/02	10:00	42	15.1	18
08/10/02	11:00	49	14.5	18
08/10/02	12:00	62	10.6	18
08/10/02	13:00	138	7.3	23
08/10/02	14:00	121	7.1	26
08/10/02	15:00	123	5.3	33

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/10/02	16:00	102	5.9	26
08/10/02	17:00	97	6.9	24
08/10/02	18:00	84	6.1	15
08/10/02	19:00	65	4.7	14
08/10/02	20:00	57	4.1	13
08/10/02	21:00	77	7.0	12
08/10/02	22:00	86	7.6	13
08/10/02	23:00	109	7.2	16
08/11/02	0:00	175	7.9	13
08/11/02	1:00	182	6.4	7
08/11/02	2:00	188	7.1	8
08/11/02	3:00	180	6.0	7
08/11/02	4:00	179	5.3	5
08/11/02	5:00	169	5.6	6
08/11/02	6:00	172	6.6	9
08/11/02	7:00	173	9.9	10
08/11/02	8:00	179	10.5	10
08/11/02	9:00	182	10.0	13
08/11/02	10:00	170	9.1	21
08/11/02	11:00	161	8.2	25
08/11/02	12:00	160	9.3	29
08/11/02	13:00	158	10.0	25
08/11/02	14:00	155	9.7	26
08/11/02	15:00	168	10.0	23
08/11/02	16:00	173	11.3	21
08/11/02	17:00	173	11.6	17
08/11/02	18:00	167	10.3	18
08/11/02	19:00	168	10.2	12
08/11/02	20:00	170	9.0	8
08/11/02	21:00	171	11.5	9
08/11/02	22:00	180	10.9	9
08/11/02	23:00	182	12.4	9
08/12/02	0:00	187	11.8	9
08/12/02	1:00	188	10.6	9
08/12/02	2:00	182	10.8	8
08/12/02	3:00	185	10.5	8
08/12/02	4:00	178	10.3	9
08/12/02	5:00	179	9.9	8
08/12/02	6:00	176	8.4	8
08/12/02	7:00	180	12.5	9
08/12/02	8:00	188	11.6	10
08/12/02	9:00	188	10.8	11
08/12/02	10:00	194	10.4	14
08/12/02	11:00	192	10.2	14
08/12/02	12:00	189	10.4	17
08/12/02	13:00	173	9.7	20
08/12/02	14:00	176	10.7	19
08/12/02	15:00	184	10.5	20
08/12/02	16:00	186	11.5	14
08/12/02	17:00	180	12.6	11
08/12/02	18:00	175	13.2	10

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/12/02	19:00	169	12.3	10
08/12/02	20:00	167	10.4	11
08/12/02	21:00	167	11.4	11
08/12/02	22:00	170	14.2	9
08/12/02	23:00	175	17.2	9
08/13/02	0:00	175	15.4	9
08/13/02	1:00	176	14.1	9
08/13/02	2:00	178	12.3	9
08/13/02	3:00	181	11.4	8
08/13/02	4:00	174	10.0	9
08/13/02	5:00	184	10.3	8
08/13/02	6:00	182	10.1	9
08/13/02	7:00	174	12.6	9
08/13/02	8:00	176	8.7	41
08/13/02	9:00	338	4.1	42
08/13/02	10:00	20	7.4	31
08/13/02	11:00	16	12.8	18
08/13/02	12:00	23	13.8	17
08/13/02	13:00	24	11.9	18
08/13/02	14:00	22	10.4	19
08/13/02	15:00	21	9.5	17
08/13/02	16:00	18	9.1	18
08/13/02	17:00	12	10.3	16
08/13/02	18:00	17	11.2	14
08/13/02	19:00	19	10.9	14
08/13/02	20:00	46	9.5	16
08/13/02	21:00	73	12.1	15
08/13/02	22:00	59	10.6	16
08/13/02	23:00	45	8.6	17
08/14/02	0:00	57	8.0	16
08/14/02	1:00	70	8.2	16
08/14/02	2:00	55	6.5	17
08/14/02	3:00	67	6.8	15
08/14/02	4:00	57	6.6	15
08/14/02	5:00	54	5.3	17
08/14/02	6:00	64	6.9	15
08/14/02	7:00	72	8.3	14
08/14/02	8:00	84	8.0	13
08/14/02	9:00	101	6.5	18
08/14/02	10:00	129	7.5	26
08/14/02	11:00	157	8.5	27
08/14/02	12:00	168	8.7	24
08/14/02	13:00	175	9.6	23
08/14/02	14:00	172	9.8	21
08/14/02	15:00	193	9.5	20
08/14/02	16:00	181	10.3	20
08/14/02	17:00	177	10.6	17
08/14/02	18:00	161	9.9	23
08/14/02	19:00	152	7.3	26
08/14/02	20:00	137	5.9	30
08/14/02	21:00	132	6.6	26

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/14/02	22:00	125	8.7	19
08/14/02	23:00	138	6.7	26
08/15/02	0:00	171	13.0	10
08/15/02	1:00	175	12.9	9
08/15/02	2:00	174	12.6	9
08/15/02	3:00	177	13.1	9
08/15/02	4:00	178	12.5	9
08/15/02	5:00	179	11.9	9
08/15/02	6:00	179	11.9	9
08/15/02	7:00	183	13.0	9
08/15/02	8:00	193	12.8	10
08/15/02	9:00	190	10.1	11
08/15/02	10:00	213	8.9	16
08/15/02	11:00	232	8.5	21
08/15/02	12:00	208	7.7	22
08/15/02	13:00	186	5.4	32
08/15/02	14:00	177	6.6	45
08/15/02	15:00	197	6.5	28
08/15/02	16:00	206	5.5	28
08/15/02	17:00	171	10.5	22
08/15/02	18:00	158	11.0	24
08/15/02	19:00	156	12.9	21
08/15/02	20:00	161	15.8	19
08/15/02	21:00	161	14.3	20
08/15/02	22:00	163	16.2	16
08/15/02	23:00	165	15.0	15
08/16/02	0:00	169	16.1	11
08/16/02	1:00	169	12.5	10
08/16/02	2:00	154	7.9	26
08/16/02	3:00	142	6.9	30
08/16/02	4:00	156	10.4	25
08/16/02	5:00	158	11.8	24
08/16/02	6:00	159	11.2	22
08/16/02	7:00	161	13.0	20
08/16/02	8:00	172	17.3	10
08/16/02	9:00	177	15.7	10
08/16/02	10:00	183	13.5	11
08/16/02	11:00	186	11.8	15
08/16/02	12:00	190	11.0	16
08/16/02	13:00	197	10.1	17
08/16/02	14:00	181	10.5	19
08/16/02	15:00	175	11.6	17
08/16/02	16:00	181	10.4	17
08/16/02	17:00	170	10.6	19
08/16/02	18:00	171	14.2	13
08/16/02	19:00	173	17.3	10
08/16/02	20:00	174	16.7	9
08/16/02	21:00	176	16.3	9
08/16/02	22:00	172	14.8	9
08/16/02	23:00	174	14.5	9
08/17/02	0:00	174	15.8	9

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/17/02	1:00	177	13.9	9
08/17/02	2:00	176	12.4	9
08/17/02	3:00	178	11.2	9
08/17/02	4:00	174	10.3	9
08/17/02	5:00	174	9.4	8
08/17/02	6:00	172	9.4	8
08/17/02	7:00	173	13.1	9
08/17/02	8:00	182	12.9	10
08/17/02	9:00	183	11.9	11
08/17/02	10:00	187	11.0	13
08/17/02	11:00	190	9.0	17
08/17/02	12:00	185	5.9	37
08/17/02	13:00	118	5.1	45
08/17/02	14:00	140	5.1	34
08/17/02	15:00	137	6.0	35
08/17/02	16:00	115	6.2	24
08/17/02	17:00	88	8.5	17
08/17/02	18:00	119	8.4	21
08/17/02	19:00	121	8.0	16
08/17/02	20:00	124	7.9	19
08/17/02	21:00	168	13.1	14
08/17/02	22:00	172	13.5	9
08/17/02	23:00	175	12.9	9
08/18/02	0:00	174	13.0	9
08/18/02	1:00	172	10.6	9
08/18/02	2:00	170	8.9	9
08/18/02	3:00	166	9.7	11
08/18/02	4:00	171	7.3	10
08/18/02	5:00	150	4.6	24
08/18/02	6:00	148	5.5	28
08/18/02	7:00	167	10.2	13
08/18/02	8:00	177	13.4	9
08/18/02	9:00	181	12.7	11
08/18/02	10:00	182	10.6	12
08/18/02	11:00	176	10.9	17
08/18/02	12:00	185	8.9	20
08/18/02	13:00	184	9.5	17
08/18/02	14:00	187	9.0	25
08/18/02	15:00	182	11.2	19
08/18/02	16:00	183	12.3	15
08/18/02	17:00	176	14.3	13
08/18/02	18:00	180	14.3	9
08/18/02	19:00	177	15.3	9
08/18/02	20:00	184	13.4	9
08/18/02	21:00	177	9.3	8
08/18/02	22:00	174	8.8	8
08/18/02	23:00	169	9.7	9
08/19/02	0:00	187	8.9	9
08/19/02	1:00	190	9.7	9
08/19/02	2:00	197	9.9	9
08/19/02	3:00	201	8.7	9

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/19/02	4:00	194	12.6	9
08/19/02	5:00	192	12.3	9
08/19/02	6:00	191	9.4	10
08/19/02	7:00	181	10.2	9
08/19/02	8:00	180	11.6	9
08/19/02	9:00	187	11.6	10
08/19/02	10:00	196	8.3	18
08/19/02	11:00	187	8.3	17
08/19/02	12:00	185	10.4	16
08/19/02	13:00	175	11.0	21
08/19/02	14:00	179	12.7	16
08/19/02	15:00	147	11.1	26
08/19/02	16:00	164	12.0	20
08/19/02	17:00	161	12.2	21
08/19/02	18:00	166	11.4	17
08/19/02	19:00	162	14.5	20
08/19/02	20:00	152	9.8	29
08/19/02	21:00	174	10.6	17
08/19/02	22:00	256	6.1	11
08/19/02	23:00	32	4.5	11
08/20/02	0:00	50	5.6	15
08/20/02	1:00	53	4.5	13
08/20/02	2:00	49	6.8	13
08/20/02	3:00	103	8.4	15
08/20/02	4:00	121	6.0	20
08/20/02	5:00	154	3.0	24
08/20/02	6:00	164	6.0	17
08/20/02	7:00	171	6.8	11
08/20/02	8:00	173	12.4	9
08/20/02	9:00	180	12.8	9
08/20/02	10:00	189	13.0	12
08/20/02	11:00	200	12.9	13
08/20/02	12:00	206	11.1	14
08/20/02	13:00	191	11.6	13
08/20/02	14:00	197	10.1	17
08/20/02	15:00	198	8.4	18
08/20/02	16:00	178	8.4	17
08/20/02	17:00	218	6.4	13
08/20/02	18:00	204	4.7	9
08/20/02	19:00	180	12.8	9
08/20/02	20:00	184	12.0	9
08/20/02	21:00	171	15.7	10
08/20/02	22:00	191	13.5	9
08/20/02	23:00	194	11.5	8
08/21/02	0:00	175	10.0	9
08/21/02	1:00	160	9.2	15
08/21/02	2:00	155	8.4	22
08/21/02	3:00	191	8.8	8
08/21/02	4:00	205	8.0	8
08/21/02	5:00	191	5.9	9
08/21/02	6:00	194	7.5	7

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/21/02	7:00	191	9.4	9
08/21/02	8:00	190	10.4	10
08/21/02	9:00	194	10.9	10
08/21/02	10:00	195	10.8	9
08/21/02	11:00	195	10.3	10
08/21/02	12:00	192	10.3	13
08/21/02	13:00	202	9.9	12
08/21/02	14:00	195	10.0	12
08/21/02	15:00	188	10.1	13
08/21/02	16:00	190	7.9	17
08/21/02	17:00	204	7.6	17
08/21/02	18:00	142	8.4	16
08/21/02	19:00	122	11.3	18
08/21/02	20:00	120	11.8	16
08/21/02	21:00	128	10.0	21
08/21/02	22:00	129	9.7	21
08/21/02	23:00	140	8.6	28
08/22/02	0:00	154	8.4	26
08/22/02	1:00	163	8.4	16
08/22/02	2:00	158	6.0	22
08/22/02	3:00	155	4.7	23
08/22/02	4:00	160	6.3	18
08/22/02	5:00	167	7.6	12
08/22/02	6:00	180	6.3	7
08/22/02	7:00	183	8.2	9
08/22/02	8:00	186	12.8	10
08/22/02	9:00	188	10.8	10
08/22/02	10:00	196	8.9	15
08/22/02	11:00	198	6.9	25
08/22/02	12:00	178	4.7	45
08/22/02	13:00	87	4.1	42
08/22/02	14:00	111	6.0	33
08/22/02	15:00	128	6.7	29
08/22/02	16:00	13	9.7	19
08/22/02	17:00	49	8.4	15
08/22/02	18:00	114	14.3	17
08/22/02	19:00	117	9.2	20
08/22/02	20:00	121	7.3	16
08/22/02	21:00	162	9.5	21
08/22/02	22:00	176	9.2	8
08/22/02	23:00	185	6.9	8
08/23/02	0:00	188	8.2	8
08/23/02	1:00	185	11.6	9
08/23/02	2:00	186	7.6	8
08/23/02	3:00	196	7.8	8
08/23/02	4:00	183	6.9	7
08/23/02	5:00	190	6.2	7
08/23/02	6:00	168	7.1	12
08/23/02	7:00	181	11.0	9
08/23/02	8:00	183	11.4	9
08/23/02	9:00	172	9.8	14

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/23/02	10:00	166	9.4	17
08/23/02	11:00	143	8.9	23
08/23/02	12:00	141	8.7	27
08/23/02	13:00	144	9.7	24
08/23/02	14:00	134	9.6	24
08/23/02	15:00	131	10.3	24
08/23/02	16:00	139	8.4	28
08/23/02	17:00	111	10.4	19
08/23/02	18:00	107	8.3	16
08/23/02	19:00	118	7.2	15
08/23/02	20:00	131	5.5	24
08/23/02	21:00	141	5.1	25
08/23/02	22:00	165	8.9	15
08/23/02	23:00	177	10.3	9
08/24/02	0:00	179	10.9	9
08/24/02	1:00	187	11.0	9
08/24/02	2:00	183	11.5	9
08/24/02	3:00	182	10.3	9
08/24/02	4:00	182	9.5	8
08/24/02	5:00	174	7.8	8
08/24/02	6:00	180	7.1	7
08/24/02	7:00	182	10.6	9
08/24/02	8:00	182	13.8	9
08/24/02	9:00	178	10.1	11
08/24/02	10:00	172	10.5	17
08/24/02	11:00	160	9.1	25
08/24/02	12:00	167	7.4	28
08/24/02	13:00	199	6.8	29
08/24/02	14:00	184	5.6	42
08/24/02	15:00	150	5.3	43
08/24/02	16:00	118	6.5	32
08/24/02	17:00	98	7.9	18
08/24/02	18:00	110	9.6	16
08/24/02	19:00	115	8.2	16
08/24/02	20:00	138	6.1	26
08/24/02	21:00	158	8.0	22
08/24/02	22:00	158	7.8	22
08/24/02	23:00	172	12.5	9
08/25/02	0:00	179	10.2	8
08/25/02	1:00	182	9.6	8
08/25/02	2:00	187	11.0	8
08/25/02	3:00	190	10.0	8
08/25/02	4:00	179	7.8	9
08/25/02	5:00	179	8.4	8
08/25/02	6:00	178	7.6	8
08/25/02	7:00	184	8.8	10
08/25/02	8:00	180	13.2	9
08/25/02	9:00	174	12.1	11
08/25/02	10:00	172	10.8	16
08/25/02	11:00	167	9.1	24
08/25/02	12:00	157	7.7	26

Summary of Shell Westgate Meteorological Data

Date	Time	Wind Direction (deg)	Wind Speed (mph)	Wind Standard Deviation (deg)
08/25/02	13:00	186	6.7	35
08/25/02	14:00	138	6.4	38
08/25/02	15:00	146	7.6	26
08/25/02	16:00	141	6.7	31
08/25/02	17:00	137	7.9	28
08/25/02	18:00	128	7.4	23
08/25/02	19:00	108	6.1	15
08/25/02	20:00	130	5.2	24
08/25/02	21:00	142	6.6	23
08/25/02	22:00	159	7.4	20
08/25/02	23:00	170	9.1	8
08/26/02	0:00	182	8.9	8
08/26/02	1:00	193	7.4	7
08/26/02	2:00	197	7.1	7
08/26/02	3:00	204	5.8	14
08/26/02	4:00	201	5.8	9
08/26/02	5:00	169	5.0	19
08/26/02	6:00	185	5.5	12
08/26/02	7:00	168	6.7	17
08/26/02	8:00	191	9.9	11
08/26/02	9:00	201	12.5	11
08/26/02	10:00	199	11.8	12
08/26/02	11:00	193	11.6	14
08/26/02	12:00	194	11.3	17
08/26/02	13:00	184	13.2	14
08/26/02	14:00	187	13.0	19
08/26/02	15:00	198	12.3	16
08/26/02	16:00	174	12.6	17
08/26/02	17:00	181	12.9	13
08/26/02	18:00	178	13.0	10
08/26/02	19:00	165	11.1	12
08/26/02	20:00	167	11.1	10
08/26/02	21:00	168	13.0	9
08/26/02	22:00	174	13.1	9
08/26/02	23:00	178	11.8	8
08/27/02	0:00	180	12.1	9
08/27/02	1:00	179	13.3	9
08/27/02	2:00	182	11.8	9
08/27/02	3:00	184	11.7	9
08/27/02	4:00	180	11.1	8
08/27/02	5:00	179	9.7	9
08/27/02	6:00	190	9.4	9
08/27/02	7:00	193	11.8	9
08/27/02	8:00	196	12.4	10
08/27/02	9:00	216	14.8	11
08/27/02	10:00	230	15.2	12
08/27/02	11:00	254	12.1	15
08/27/02	12:00	278	5.9	35
08/27/02	13:00	12	4.2	54
08/27/02	14:00	305	5.2	39
08/27/02	15:00	295	6.8	31