AP - 001

ANNUAL MONITORING REPORT

3/27/2008

AP-001

HUNTSMAN

Enriching lives through innovation

27 March 2008

Mr. Glenn von Gonten
New Mexico Oil Conservation District
Environmental Bureau
1220 So. St. Francis Dr.
Santa Fe, NM 87505

RE: **Submission of the 2007 Annual Groundwater Report for the Former Brickland Refinery Site**
Sunland Park, New Mexico
Huntsman Corporation
Case No. AP-01

Dear Mr. von Gonten:

Enclosed is a copy of the 2007 Annual Groundwater Report for the Former Brickland Refinery Site. As agreed upon on 11 February 2003, the report will be submitted on or before 1 April for the previous year.

Please do not hesitate to contact me at 281-719-3039 any time you have questions or need additional information.

A copy of this report is also being sent to the District 2 office in Artesia.

Sincerely,

Edward L. Gunderson

Ed L. Gunderson
Manager EHS Center of Excellence – Americas
Huntsman International

cc: NMOCD District 2 – Artesia
Lon Tullos – Huntsman

cc w/o enclosures:
Mary Wells/Fred Small - Terracon

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AP-001

2007 ANNUAL GROUNDWATER MONITORING REPORT

FORMER BRICKLAND REFINERY SITE
NMOCD CASE NO. AP-01
SUNLAND PARK, NEW MEXICO

TERRACON PROJECT NO. 68997611
February 11, 2008

Prepared for:

HUNTSMAN INTERNATIONAL, LLC
The Woodlands, Texas

Prepared by:

TERRACON
Las Cruces, New Mexico

Terracon

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APPENDICES

1.0 EXECUTIVE SUMMARY

This 2007 Annual Groundwater Monitoring Report documents the results of two semi-annual groundwater-monitoring operations conducted by Terracon at the former Brickland Refinery site in Sunland Park, New Mexico. The semi-annual groundwater monitoring operations were conducted in June and December 2007. The report contains summaries of the historical groundwater elevations and analytical data for the past five years. The purging and sampling protocol was revised by Huntsman in 2006. Terracon followed the revised protocol for the 2007 monitoring year - see the "Brickland Refinery Monitoring and Sampling Protocol" in Appendix E. In addition, the report includes a summary of the free product recovery system. This monitoring and sampling program was conducted in accordance with the Groundwater Monitoring Plan included in Section 3.5 of the Stage 2 Abatement Plan as approved by Mr. Bill Olson of the New Mexico Oil Conservation Division (NMOCD) in his letter dated December 17, 1998.

Since 2007 is an odd-numbered year, sample collection and testing was conducted only on the five (5) off-site wells (MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S) and the up-stream and down-stream river samples during the June and December monitoring events. Conclusions relevant to groundwater conditions and the remediation performance at the former Brickland Refinery are presented below.

- Based on the laboratory report for the June 2007 monitoring event, benzene and toluene were not detected in samples collected from the five (5) off-site wells (MW-9S, MW-6D, MW-6S, MW-3D, and MW-3S) and the river. Trace amounts of ethylbenzene and xylenes were detected in MW-6S (including the duplicate). See Table 3.

- Based on the laboratory report for the December 2007 monitoring event, benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected in four of the five (5) off-site wells (MW-9S, MW-6D, MW-3D, and MW-3S), the duplicate sample, or the river. A trace concentration of ethylbenzene was detected in sample collected from MW-6S.

- Polynuclear aromatic hydrocarbons (PAH) levels were not detected in the eight samples (including the duplicate) collected from the five off-site monitoring wells and the river during the June 2007 monitoring event (see Table 4).

- Based on the laboratory report of the analyses for priority pollutant metals for the June 2007 monitoring event, concentrations of boron in the groundwater samples collected from the five off-site monitor wells (including the duplicate) exceeded the New Mexico Water Quality Control Commission (NMWQCC) levels. Boron was also detected in the down-stream river sample but was below NMWQCC levels. Boron was not detected in the up-stream river sample. Iron levels exceeded NMWQCC standards in the samples

(including the duplicate) collected from four of the five (5) off-site wells (MW-9S, MW-6S, MW-3D, and MW-3S) and the river. Iron was detected in the sample collected from MW-6D but was below the NMWQCC level. Manganese exceeded NMWQCC standards in the eight samples (including the duplicate) collected from the five off-site monitoring wells and the river. Antimony, arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium and zinc were not detected in the groundwater or the river samples. Minor concentrations of barium and molybdenum were detected in the samples collected from the five off-site wells and the river but the concentrations were below NMWQCC standards. Aluminum was detected in samples collected from MW-6S (including the duplicate) but was below the NMWQCC level. However, aluminum was above NMWQCC standards in the two river samples (see Table 5).

- Free-phase product (sheen) was present in the product recovery/monitoring well, MW-10, during the December 2007 monitoring event. Well points WP-25 and WP-26S had measurable thicknesses of 0.54 foot and 0.48 foot, respectively, during the June 2007 monitoring event, and thicknesses of 0.52 foot and 0.35 foot, respectively for the December event (see Table 6). Free-phase product thickness in well point WP-27S was 0.03 foot during the December 2007 monitoring event (see Table 6).

- Since the installation of the Xitech product recovery system in December 1998, an approximate total of 235 gallons of free-phase product has been extracted from recovery well MW-10. Although a sheen of oil was observed/visible, no product was extracted during the 2007 period. Thus, no free-phase product was removed from the site for disposal during the period.

2.0 INTRODUCTION

2.1 Background

The Brickland Refinery Site is located in Sunland Park, New Mexico and herein known as the site. The site consists of approximately 33 acres situated along the west bank of the Rio Grande (see Figure 1). Huntsman International, LLC. (Huntsman) currently owns the site. From 1933 to 1958, the site was operated as a petroleum refinery and was producing both gasoline and jet fuel. The site was closed and the plant dismantled in 1958. Between 1964 and 1989, the site was leased to various parties to service trucks, conduct automobile salvage operations, graze livestock and store used bricks.

Petroleum hydrocarbons from the operation of the facility have been detected in soil and groundwater at the site. The nature and extent of the petroleum hydrocarbons were initially investigated by Eder and further quantified by GCL and BDM. These investigations provided the basis for the Stage 2 Abatement Plan. The Stage 2 Abatement Plan provides

the methods for abating contamination of groundwater and soil in compliance with New Mexico Water Quality Control Commission regulations on prevention and abatement of water pollution (20NMAC 6.2, Subpart IV), and New Mexico Oil Conservation Division requirements to protect public health and the environment with respect to wastes from the refinement of crude oil (§70-2-12.B (22) NMSA 1978).

Terracon has maintained a stand-alone free-phase product recovery system on the site as part of the Stage 2 Abatement Plan. The system was installed in December 1998 and site visits are now being made approximately every four weeks for maintenance of the system and general observation of the site. The site layout and monitoring well and sampling locations are shown on Figure 2.

2.2 Scope of Services

Terracon performed semi-annual groundwater monitoring at the subject site in June and December 2007. The monitoring program was conducted in accordance with the Groundwater Monitoring Plan and Stage 2 Abatement Plan, approved by Mr. Bill Olsen of the NMOCD in his letter dated December 23, 1998. However, the sampling protocol was modified in 2006 and was first used during the June 2006 monitoring event, which is explained in detail in Appendix E. Tasks were conducted in general accordance with applicable NMOCD, New Mexico Environment Department (NMED) and Environmental Protection Agency (EPA) regulations, procedures and guidelines.

The following items were included in the semi-annual monitoring as required by the Groundwater Monitoring Plan and Stage 2 Abatement Plan and approved by the NMOCD.

- In conjunction with each semi-annual monitoring event, measured depth to groundwater in the ten on-site monitoring wells and eight off-site monitoring wells. The water level is measured but not reported for fourteen well points since the well points are designed only for the purpose of detecting the presence of free-phase product at the measured depths.

- Measured free-phase product thickness, if present, in the eighteen monitoring wells and fourteen well points, and provided a summary of the free-phase recovery system performance.

- Submitted groundwater samples collected from the five (5) off-site monitoring wells (MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S) in June and December 2007. Since 2007 is an odd-numbered year, sample collection and testing was conducted only on the five (5) off-site wells (MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S) during the June and the December monitoring events; as per the NMOCD-approved Groundwater Monitoring Plan.

- Submitted two water samples collected from the Rio Grande during each semi-annual monitoring event for laboratory analytical testing. One sample was collected from the upstream end of the site, north of MW-1, and the other sample was collected from the downstream end of the site, south of MW-9S.

- Analytical testing for the June monitoring event included BTEX, PAH, and twenty priority pollutant metals (using US EPA Test Methods 8021B, 8270C-SIM, 7470, and 6010B, respectively). Samples were analyzed for BTEX only for the December monitoring event.

- Transported the purged water to Huntsman Decanter/Recycle Water Stripper in Odessa, Texas in June 2007 and to Rhino Environmental land-farming disposal site in Anthony, Texas in February 2008 for disposal.

- Prepared the field reports summarizing monthly extraction system O&M site-visits. The extraction system is located in MW-10.

- Prepared this Annual Groundwater Monitoring Report, which includes the following elements required by the NMOCD-approved 1998 Groundwater Monitoring Plan and Stage 2 Abatement Plan of 1998.

  1. A description of the monitoring activities that occurred during the year, with corresponding conclusions and recommendations.

  2. Summary tables of the past and present laboratory analytical results of groundwater and surface water sampling.

  3. Plots of benzene concentrations versus time for the off-site groundwater monitoring wells MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S.

  4. Copies of laboratory analytical reports for the sampling activities conducted at the site during the past year.

  5. Plots of water table elevation versus time for the groundwater monitoring wells.

  6. Groundwater surface contour maps for the two 2007 semi-annual monitoring events based on groundwater elevations obtained from the monitoring wells.

  7. Free-phase hydrocarbon thickness maps for the two 2007 semi-annual monitoring events.

3.0 GROUNDWATER ELEVATION, HYDRAULIC GRADIENT AND FLOW DIRECTION

The hydraulic gradient beneath the former Brickland Refinery in June 2007 was approximately 0.0007 foot/foot and groundwater flow direction was estimated to be approximately S 4° E. Similarly, the hydraulic gradient in December 2007 was calculated to be approximately 0.0007 foot/foot and the flow direction was approximately S 33° E.

Historical groundwater elevations for the monitoring wells are provided in Table 2. Water levels are not listed for the well points because the well points were specifically designed to detect free-phase product at discrete depth and the screened intervals do not correlate with the monitoring well screens. Groundwater elevation contour maps for the June 2007 and December 2007 monitoring events are depicted in Figures 3a and 3b, respectively.

Groundwater levels in the monitoring wells are influenced by the stage of the Rio Grande bordering the site. Due to seasonal fluctuations in the river, water levels in the monitoring wells may vary as much as 2 feet over the course of a year. Groundwater elevations in June 2007 correlate well with the higher levels measured during the summer months of previous years. Similarly, the groundwater elevations in December 2007 correlate well with the lower levels measured during the winter months of previous years. A groundwater elevation versus time graph for the wells is presented in Figure 3c.

Gage heights for the gage station located on the Rio Grande (near the Courchesne Bridge in west El Paso) in close proximity to the site were obtained from the International Boundary and Water Commission (IBWC). A graphical plot of gage heights versus time (1993 to present) demonstrates that during the summer months the Rio Grande is usually at its highest stage, which correlates with the higher groundwater elevations measured during the same periods. The graphical plot of gage heights versus time is presented on Figure 3d.

4.0 FREE-PHASE PRODUCT REMOVAL

4.1 Free-Phase Product Thickness

Free-phase product thickness in each monitoring well and well point was measured, if present, with a KECK oil/water interface meter. The June and December historical product thickness measurements for each monitoring point are listed in Table 6. Free-Phase Hydrocarbon Thickness maps for the June and December 2007 monitoring events are depicted in Figures 4a and 4b, respectively. Both monitor well and well point (WP) measurements are consistent with prior assessments.

4.2 Removal and Disposal of Free-Phase Product and Contaminated Groundwater

As of December 2007, a total of approximately 235 gallons of free-phase product had been removed from recovery well MW-10 (see Figure 6 in Appendix A). Approximately 80 gallons of free-phase product was removed from the site in 2005. There was no product removal from the site in 2006 and 2007.

Approximately 12 gallons of water were purged from the sampled monitoring wells during the June 2007 monitoring event. Approximately 12 gallons were purged from the sampled wells during the December 2007 monitoring event. The purged volume of water collected during the June 2007 monitoring event was transported to Odessa, Texas for disposal at the Huntsman Decanter/Recycle water stripper. The purged volume from the December 2007 monitoring event was transported to Rhino Environmental for disposal at their land-farming disposal site. Copies of the disposal permits are provided in Appendix C.

5.0 SAMPLE COLLECTION AND LABORATORY ANALYTICAL TESTING PROCEDURES

5.1 Fluid Level Measurements

The ten on-site monitoring wells and eight off-site monitoring wells were probed for the presence of free-phase product using a KECK oil/water interface meter. As specified under the Stage 2 Abatement Plan and in accordance with New Mexico Environment Department (NMED) Petroleum Storage Tank Bureau Regulations, if any detectable free-phase product was found in the wells, the thickness was measured and no sample would be collected from that well; however, no free-phase product was detected in the wells to be sampled. The static water surface elevation in each well was measured and recorded for the wells that did not have detectable free-phase product. The static water surface elevations for the two monitoring periods are shown in Table 2.

5.2 Decontamination

The interface probe was decontaminated prior to each use and between each well to prevent the introduction of external contamination or artifacts into a well. A wash-and-double-rinse decontamination procedure was used. The procedure consisted of washing the probe with Liquinox, a mild, non-phosphate detergent, then double-rinsing with water.

5.3 Calibration of the Multi-Probe Water Analyzer

The multi-probe analyzer was calibrated prior to use at the former Brickland refinery site. Each calibration was carried out in accordance with the equipment manufacturer's

procedures and recommendations. Date, time, calibration readings, and the method of calibration were recorded on Calibration Logs presented in Appendix E.

5.4 Well Purging

The monitoring wells listed above were micropurged prior to sampling. Micropurging consisted of removing small volumes of groundwater at very low pumping rates until certain physiochemical field parameters stabilized. Approximately 2 gallons were removed from each well with pumping rates of 0.2 liter per minute. A water quality monitor with a multi-probe flow-through cell was used during purging to measure the temperature, pH, specific conductance, dissolved oxygen, redox potential, and turbidity of the purged groundwater. These field parameters are displayed on a digital readout screen that is attached to the analyzer. Field data of the purging of each well is provided in Appendix C. The well purging procedure is detailed in Appendix E. Since each pump is dedicated to a specific well, no decontamination was required. The purged volume of water from the June 2007 monitoring event was transported to Huntsman, Odessa, Texas for disposal at the Huntsman Decanter/Recycle water stripper. The purged volume from the December 2007 monitoring event was transported to Rhino Environmental for disposal at their land-farming disposal site.

5.5 Field Parameter Measurements

Field parameter measurements were recorded in five-minute increments while each well was purged through the multi-probe flow cell. The groundwater temperature, pH, specific conductance, dissolved oxygen, redox potential, and turbidity was documented on the Sampling Information Form provided in Appendix C. Micropurging of each well was continued until two consecutive readings for three field parameters (**dissolved oxygen**, **redox potential**, and **turbidity**) stabilized within 10% of one another. When stabilization was achieved, well purging was discontinued and the well sampled. The total volume of water purged prior to sample collection was recorded on the Sampling Information Form. The purged water was containerized for disposal. Groundwater odor, color, and other physically apparent characteristics were also documented. Monitor well integrity was also documented (see the Sampling Information Forms provided in Appendix C).

5.6 Collecting Groundwater Samples

Samples were collected and containerized for laboratory analysis in the order of volatilization sensitivity of the analytical parameters, (i.e., first, volatile organics; second, polynuclear aromatic hydrocarbons; and third, metals). All samples were properly labeled with the correct sampling location, date, time, and testing requirements written on self-adhering labels provided by the laboratory. The samples collected were not filtered.

5.6.1 Volatile Organic Compounds

The groundwater samples were analyzed via US EPA Method 8021B for the following volatile organic compounds (VOCs): benzene, ethylbenzene, toluene, and total xylenes (BTEX). The VOC sample containers are 40 ml. glass vials (2 or 3) that contain a pre-measured amount of hydrochloric acid (HCl), prepared by the laboratory. The HCl is a preservative and sample containers for VOCs were not rinsed or allowed to overflow during the collection of samples. Water was collected from the well and slowly poured into the glass vial until a convex meniscus formed above the lip of the bottle. Once capped, the vial was checked for air bubbles (headspace) by turning it upside down, tapping the cap of the inverted bottle, and visually inspecting the bottle contents. No bubbles were observed.

5.6.2 Polynuclear Aromatic Hydrocarbons

Wells sampled in the June 2007 monitoring event were analyzed via US EPA Method 8270C-SIM for the presence of polynuclear aromatic hydrocarbons (PAHs). Sample containers for PAH were amber glass bottles and had no preservative. Samples for PAH were collected from the well by overflowing the sample container with groundwater prior to capping.

5.6.3 Metals

Wells sampled in the June 2007 monitoring event were also analyzed via US EPA Method 6010B for the following list of metals:

Aluminum	Beryllium	Cobalt	Manganese	Selenium
Antimony	Boron	Copper	Mercury	Silver
Arsenic	Cadmium	Iron	Molybdenum	Thallium
Barium	Chromium	Lead	Nickel	Zinc

Sample bottles for these constituents contained a pre-measured amount of nitric acid (HNO_3) prepared in the laboratory. The HNO_3 is a preservative and sample containers for metals were not rinsed before or allowed to overflow during sample collection.

5.7 Surface Water Sampling

Surface water samples from the Rio Grande were collected for chemical analysis from one location up-river and one location down-river from the Brickland facility. The samples were subjected to the same group of analytical testing listed previously for the groundwater samples.

Surface water grab samples were collected by submerging a decontaminated Teflon® dipper into the river. The dipper was decontaminated between sampling sites with Liquinox, a non-phosphate detergent followed by three distilled water rinses. Sampling protocols

outlined in the Monitoring and Sampling Protocol presented in Appendix E was strictly adhered to during the sampling process.

5.8 Field Quality Assurance / Quality Control

The Field Quality Assurance / Quality Control (QA / QC) program includes collection of field blanks, equipment blanks, trip blanks, and duplicate samples. Descriptions of the QA / QC samples are presented below.

5.8.1. Field Blanks

The field blanks were used to determine potential absorption of volatile organics from the air into the water samples. One field blank was collected near the beginning of each sampling day at a pre-determined well or surface water sampling location. The blank was collected by filling one 40 ml. glass vial with de-ionized water. The de-ionized water was supplied by the laboratory performing the analysis. The field blank was analyzed for the same volatile organic compounds (BTEX) as the groundwater and surface water samples.

5.8.2. Equipment Blanks

Equipment blanks were collected during each up-river and down-river monitoring event since the non-dedicated sampling equipment (i.e.- Teflon® dipper) was used to collect samples. To collect an equipment blank, the Teflon dipper was decontaminated with Liquinox, a non-phosphate detergent followed by three distilled water rinses. Immediately following decontamination, the equipment blank was collected by pouring de-ionized water into the Teflon® dipper, and then filling one 40 ml. glass vial with the water from the dipper. The de-ionized water was supplied by the laboratory performing the analysis. The equipment blank was analyzed for the same volatile organic compounds (BTEX) as the surface water samples.

5.8.3. Trip Blanks

The trip blank is used to detect and quantify potential organic chemical artifacts occurring in the groundwater or surface water sample which originate from either the sample containers or the de-ionized water comprising the blank. One bottle set for each ice chest was filled with de-ionized water by the laboratory prior to field mobilization. These bottles were transported to the sampling location and returned to the laboratory in the ice chests used to transport groundwater and surface water samples. The trip blanks were analyzed for the same volatile organic compounds (BTEX) as the groundwater and surface water samples.

5.8.4. Duplicate Samples

One duplicate sample was collected during the June and December monitoring events. The duplicate samples collected during the June and December monitoring events were collected from monitor well MW-6S.

5.9 Sample Shipping and Chain-of-Custody Records

The water samples collected during the June and December monitoring events were placed in ice-filled coolers immediately after collection and shipped to Environmental Science Corporation in Mount Juliet, Tennessee for analysis. In each event, chain-of-custody (C-O-C) forms, documenting sample identification numbers; the required analysis for each sample; collection times; and delivery times to the laboratories, were completed for each set of samples. A summary of the purging, volume purged from each well, and sampling methods is provided in Table 1. The laboratory results of the analyses of the water samples and C-O-C forms are provided in Appendix C.

6.0 GROUNDWATER ANALYTICAL TEST RESULTS

6.1 Benzene, Toluene, Ethlybenzene and Total Xylenes (BTEX)

A historical timeline of reported BTEX concentrations for the five offsite monitoring wells (MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S) and four on-site monitoring wells (MW-4, MW-7, MW14, and MW-15) is summarized in Table 3. This table lists BTEX concentrations for the period from June 2003 to December 2007. BTEX concentrations for monitoring events prior to June 2003 are included in previously submitted reports.

6.1.1 Analyses

Based on the laboratory report for the June 2007 monitoring event, benzene and toluene were not detected in samples collected from the five (5) off-site wells (MW-9S, MW-6D, MW-6S, MW-3D, and MW-3S) and the river. Trace amounts of ethylbenzene (0.008 mg/L) and xylenes (0.0015 mg/L) were detected in MW-6S (and the duplicate, 0.0092 and ND, respectively). The field blank had a benzene concentration of 0.00054 mg/L (detection limit = 0.0005 mg/L).

Based on the laboratory report for the December 2007 monitoring event, benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected in four of the five (5) off-site wells (MW-9S, MW-6D, MW-3D, and MW-3S), the duplicate sample, or the river. Trace concentration of ethylbenzene (0.0022 mg/L) was detected in the sample collected from MW-6S.

Free-phase hydrocarbon maps displaying the hydrocarbon thicknesses for the two 2007 monitoring events are presented in Figure 4a (June 13, 2007) and Figure 4b (December 11, 2007). The relationship between benzene concentrations and static water level for MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S are depicted in Figures 5a through 5e, respectively.

The laboratory reports and Chain-of-Custody (C-O-C) documentation are included in Appendix C.

6.1.2 Comparison to Prior Data

Of the five off-site wells located on the eastern perimeter of the site (MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S), only MW-6S continue to exhibit hydrocarbon concentration above detection levels. However, the hydrocarbon concentration was trace level and was below the MCL for benzene.

6.2 Polynuclear Aromatic Hydrocarbons (PAHs)

Historical analytical results for PAHs for five offsite monitoring wells (MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S) and four on-site monitoring wells (MW-4, MW-7, MW14, and MW-15) being sampled and tested indicate that PAH has not been detected since 1999. Based on the results of the PAH analyses in the June 2007 monitoring event, it appears that groundwater under the site has not been adversely impacted by PAHs. Nor has the surface water in close proximity to the site been impacted by PAHs. As a result, no PAH concentration map was constructed. Historical sample analytical results for PAHs are listed in Table 4. PAH concentrations for monitoring events prior to June 2003 are included in previously submitted reports.

6.3 Priority Pollutant Metals

Historical (2003 through 2007) groundwater and surface water (Rio Grande) sample analytical results for Priority Pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) are presented in Table 5. Seven metals (aluminum, barium, boron, cobalt, iron, manganese, and molybdenum) were added to the list in 2001, since they are regulated metals under NMOCD. The NMWQCC standards are also listed in the tables for comparison.

Constituents with concentrations above the NMWQCC standards in 2007 are highlighted in boldface type. Analytical results for years prior to 2003 are included in previously submitted reports. The results of the analyses for metals for the 2007 semi-annual monitoring event indicate that boron concentrations exceeded NMWQCC standards in the six (6) groundwater samples (including the duplicate). Boron was also detected in the down-stream river sample but was below NMWQCC levels. Boron was not detected in the up-stream river sample. Iron was detected in concentrations exceeding NMWQCC standards in seven samples (including the duplicate) collected from four wells (MW-9S, MW-6S, MW-3D, and MW-3S) and the river. Iron was detected in the sample collected from MW-6D but was below the NMWQCC level. Manganese levels exceeded NMWQCC standards in the eight samples (including the duplicate) collected from the monitoring wells and the river. Barium and molybdenum were detected in trace concentrations in the samples collected from the

five off-site monitoring wells and the river, but were below the NMWQCC levels. Antimony, arsenic, copper, cadmium, chromium, cobalt, lead, mercury, nickel, selenium, silver, thallium and zinc were not detected in the groundwater or the river samples. Aluminum was detected in the samples collected from MW-6S (including the duplicate) but was below the NMWQCC level. The two river samples exhibited aluminum concentrations above NMWQCC standards (see Table 5).

7.0 REMEDIATION SYSTEM PERFORMANCE

A product recovery system was installed at recovery well MW-10 as recommended in the approved Stage 2 Abatement Plan. Installation of the Xitech product recovery system was completed on December 23, 1998. The product recovery system consists of the following components:

1. Xitech Model ADJ 1000 Smart Skimmer with polyethylene tubing.
2. Xitech Model 2500 ES Electronic Timer powered by a 12-volt battery with solar panel.
3. 80-gallon fiberglass-reinforced plastic (FRP) tank for product recovery containment with automatic shutoff sensor.
4. One K-size (220 cubic feet) bottle of nitrogen gas with regulator to supply.
5. The components listed above are mounted on a metal stand.
6. The components listed above are contained within a 300-gallon capacity corrugated galvanized steel stock tank for secondary containment.
7. The Xitech recovery system and monitoring well MW-10 are enclosed within a 10-foot long by 10-foot wide by 8-foot tall chainlink fence. The top foot of the fence has 3 strands of barbed wire. Access is provided through a 5-foot wide locked gate.
8. The components listed above are situated on a 6-inch layer of gravel.

A schematic drawing and specifications of the installed Xitech product recovery system is provided in Appendix D. The system does not contain any below-grade lines; therefore no pressurized integrity testing is required. Site visits are now conducted at monthly intervals to monitor system performance, adjust pump depth or cycle if deemed appropriate, replace the bottled nitrogen supply when necessary, perform maintenance to system components, and to check for any vandalism.

8.0 CONCLUSIONS

Since 2007 is an odd-numbered year, sample collection and testing was conducted only the five (5) off-site wells (MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S) during the June and December monitoring events. Conclusions relevant to groundwater conditions and the remediation performance at the former Brickland Refinery are presented below.

- Based on the laboratory report for the June 2007 monitoring event, benzene and toluene were not detected in seven of the eight (8) samples collected from the monitor wells and the river. Trace concentrations of ethylbenzene and xylenes were detected in samples collected from MW-6S (including the duplicate). Benzene was also detected in the field blank. See Table 3.

- Based on the laboratory report for the December 2007 monitoring event, ethylbenzene was detected in the sample collected from MW-6S at a concentration of 0.0022 mg/L, which is below the MCL.

- Benzene, toluene, ethylbenzene and total xylenes (BTEX) were not detected in the samples collected from the other four wells (MW-3S, MW-3D, MW-6D, and MW-9S), the duplicate sample or the river during the December 2007 monitoring event.

- Polynuclear aromatic hydrocarbons (PAH) levels were not detected in the eight samples (including the duplicate) collected from the five off-site monitoring wells and the river during the June 2007 monitoring event (see Table 4).

- The results of the analyses for metals for the 2007 semi-annual monitoring event indicate that boron concentrations exceeded NMWQCC standards in the six (6) groundwater samples (including the duplicate). Boron was also detected in the down-stream river samples but was below the NMWQCC standards. Boron was not detected in the up-stream river sample. Iron was detected in concentrations exceeding NMWQCC standards in seven samples (including the duplicate) collected from four wells (MW-9S, MW-6S, MW-3D, and MW-3S) and the river. Iron was detected in the sample collected from MW-6D but was below the NMWQCC level. Manganese levels exceeded NMWQCC standards in the eight samples (including the duplicate) collected from the monitoring wells and the river. Barium and molybdenum were detected in trace concentrations in the samples collected from the five off-site monitoring wells and the river, but were below the NMWQCC levels. Antimony, arsenic, copper, cadmium, chromium, cobalt, lead, mercury, nickel, selenium, silver, thallium and zinc were not detected in the groundwater or the river samples. Aluminum was detected in the samples collected from MW-6S (including the duplicate) but was below the NMWQCC level. The two river samples exhibited aluminum concentrations above NMWQCC standards (see Table 5).

- Free-phase product was not detected in the product recovery/monitoring well, MW-10, during the June 2007 monitoring event. Well points WP-25 and WP-26S had measurable thicknesses of 0.54 foot and 0.48 foot, respectively during the June 2007 monitoring event.

- The product recovery well, MW-10, had a trace when checked during the December 2007 monitoring event. The free-phase product thicknesses in four well points (WP-25, WP-26S, WP-27S, and WP-27D) were 0.52 foot, 0.35 foot, trace, and 0.03 foot, respectively during the December 2007 monitoring event (see Table 6).

- Since the installation of the Xitech product recovery system in December 1998, an approximate total of 235 gallons of free-phase product has been extracted from recovery well MW-10. Although a sheen of oil was observed on the water surface in MW-10 for most of 2007, no free-phase product was extracted from the well during the 2007 period.

9.0 RECOMMENDATIONS

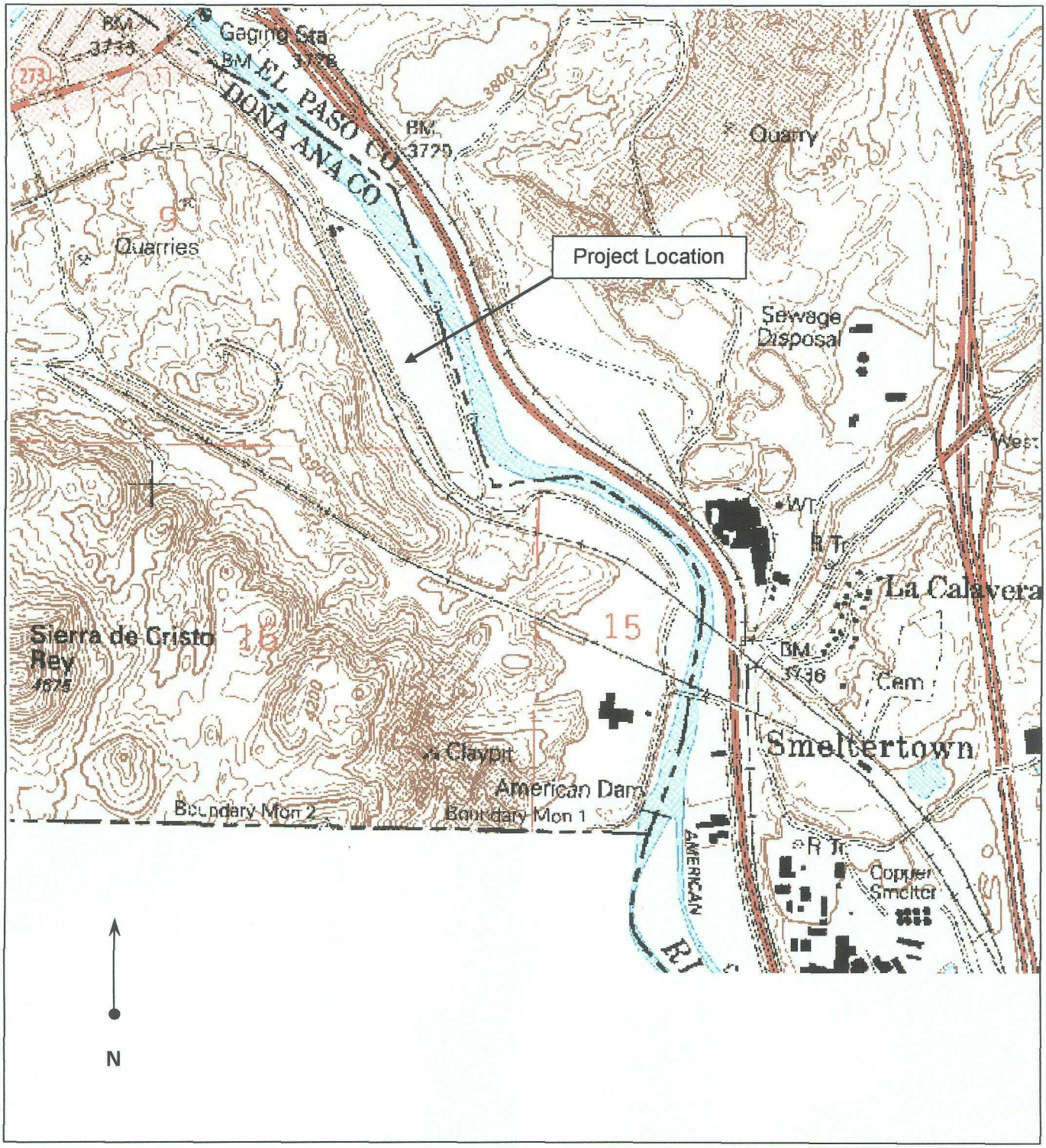
The following recommendations are proposed for the remediation system and monitoring operations at the Brickland Refinery.

- Continue free product recovery operations.

- Continue with the existing sampling and monitoring program on a semi-annual basis. The next monitoring event is scheduled for June 2008. Since free-phase product was detected in MW-10, continue to monitor MW-10.

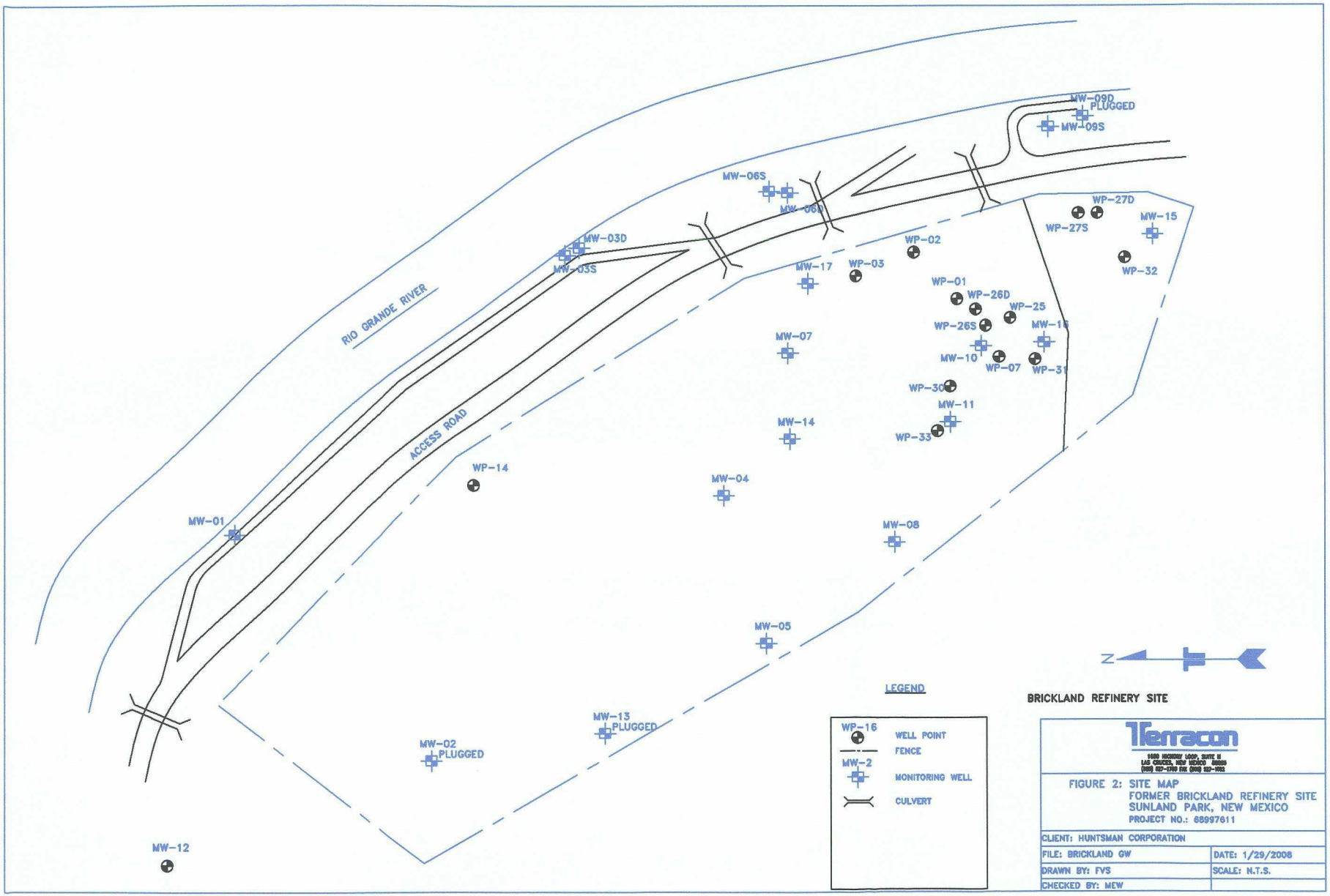
- Since the groundwater does not appear to be adversely impacted by PAH, as evidenced throughout eight years of monitoring, analysis of PAH may be an unnecessary expense.

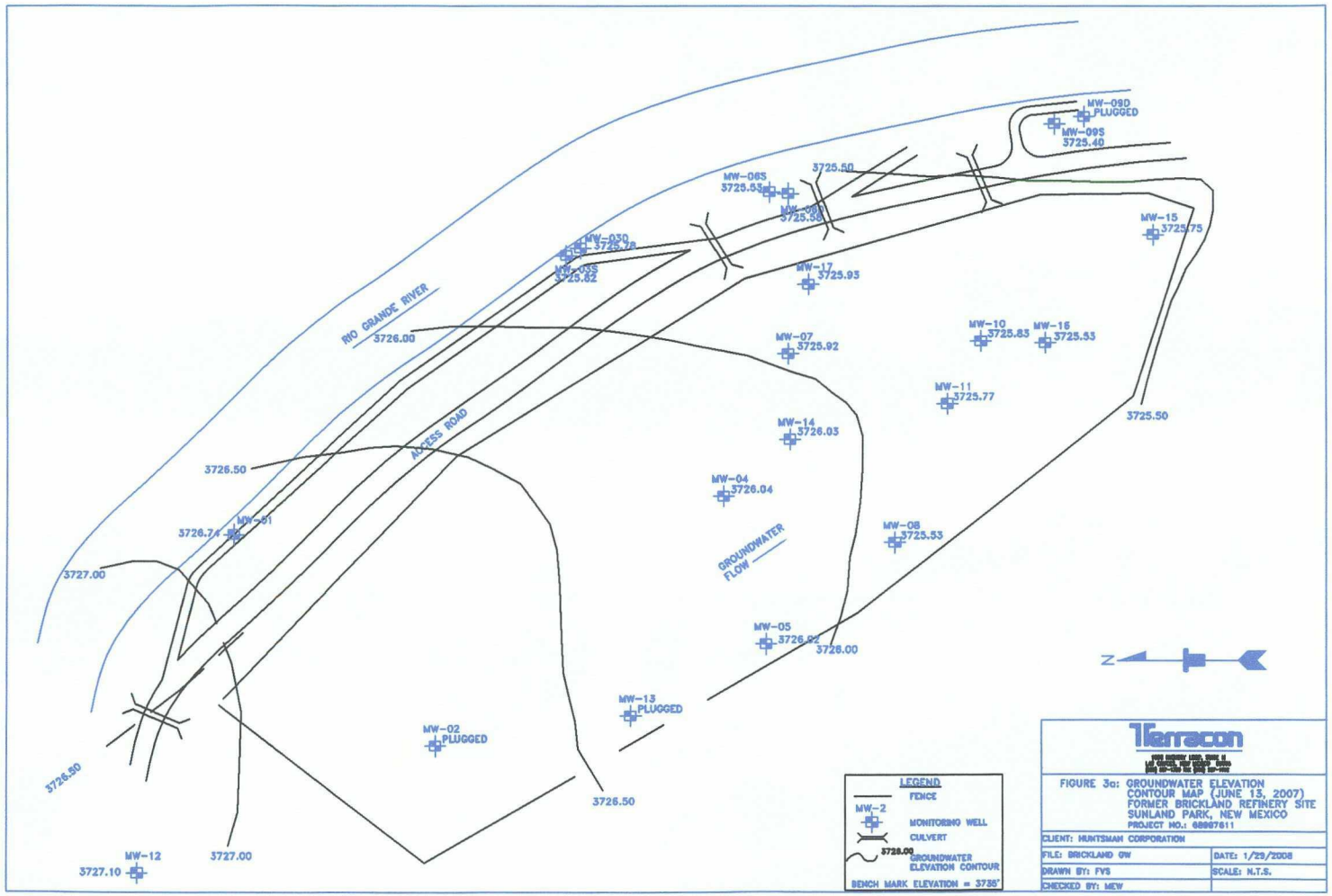
- Well points that are dry or have never contained measurable or trace amounts of free-phase product could be removed from the monitoring plan. These well points include the following: WP-3, WP-30, and WP-31. The other well points should be maintained for semi-annual monitoring.



SOURCE: USGS TOPOGRAPHIC MAP, 7.5-MINUTE SERIES,
"Smeltertown, New Mexico, 1973".

Terracon 1630 Hickory Loop, Suite H Las Cruces, New Mexico 88005 505.527.1700 Fax: 505.527.1092	**SITE LOCATION MAP** Brickland Refinery Site *Sunland Park, New Mexico*	Project No. 68997611 Date: January 16, 2008 Scale: 1 in. = 1000 ft. (approx.) **FIGURE 1**


MW-09D
PLUGGED
MW-09S
MW-06S
MW-06D
WP-27D
WP-27S
MW-15
WP-32
MW-03D
MW-03S
WP-02
WP-03
MW-17
WP-01
WP-26D
WP-25
WP-26S
MW-16
MW-07
MW-10
WP-07
WP-31
WP-30
MW-11
WP-33
MW-14
RIO GRANDE RIVER
ACCESS ROAD
WP-14
MW-04
MW-01
MW-08
MW-05
MW-13
PLUGGED
MW-02
PLUGGED
MW-12
N
LEGEND
WP-16
WELL POINT
FENCE
MW-2
MONITORING WELL
CULVERT
BRICKLAND REFINERY SITE
Terracon
FIGURE 2: SITE MAP
FORMER BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO
PROJECT NO.: 68997611
CLIENT: HUNTSMAN CORPORATION
FILE: BRICKLAND GW
DATE: 1/29/2008
DRAWN BY: FVS
SCALE: N.T.S.
CHECKED BY: MEW


MW-09D
PLUGGED
MW-09S
3725.40
3725.50
MW-06S
3725.53
MW-06D
3725.58
MW-15
3725.75
MW-03D
3725.78
MW-03S
3725.82
MW-17
3725.93
RIO GRANDE RIVER
3726.00
MW-10
3725.83
MW-16
3725.53
MW-07
3725.92
MW-11
3725.77
3725.50
ACCESS ROAD
MW-14
3726.03
3726.50
MW-04
3726.04
MW-01
3726.74
MW-08
3725.53
GROUNDWATER FLOW
3727.00
MW-05
3726.92
3728.00
N
MW-13
PLUGGED
MW-02
PLUGGED
3726.50
3726.50
MW-12
3727.10
3727.00
LEGEND
FENCE
MW-2
MONITORING WELL
CULVERT
3728.00
GROUNDWATER ELEVATION CONTOUR
BENCH MARK ELEVATION = 3735'
Terracon
FIGURE 3a: GROUNDWATER ELEVATION CONTOUR MAP (JUNE 13, 2007)
FORMER BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO
PROJECT NO.: 68967611
CLIENT: HUNTSMAN CORPORATION
FILE: BRICKLAND GW
DATE: 1/29/2008
DRAWN BY: FVS
SCALE: N.T.S.
CHECKED BY: MEW

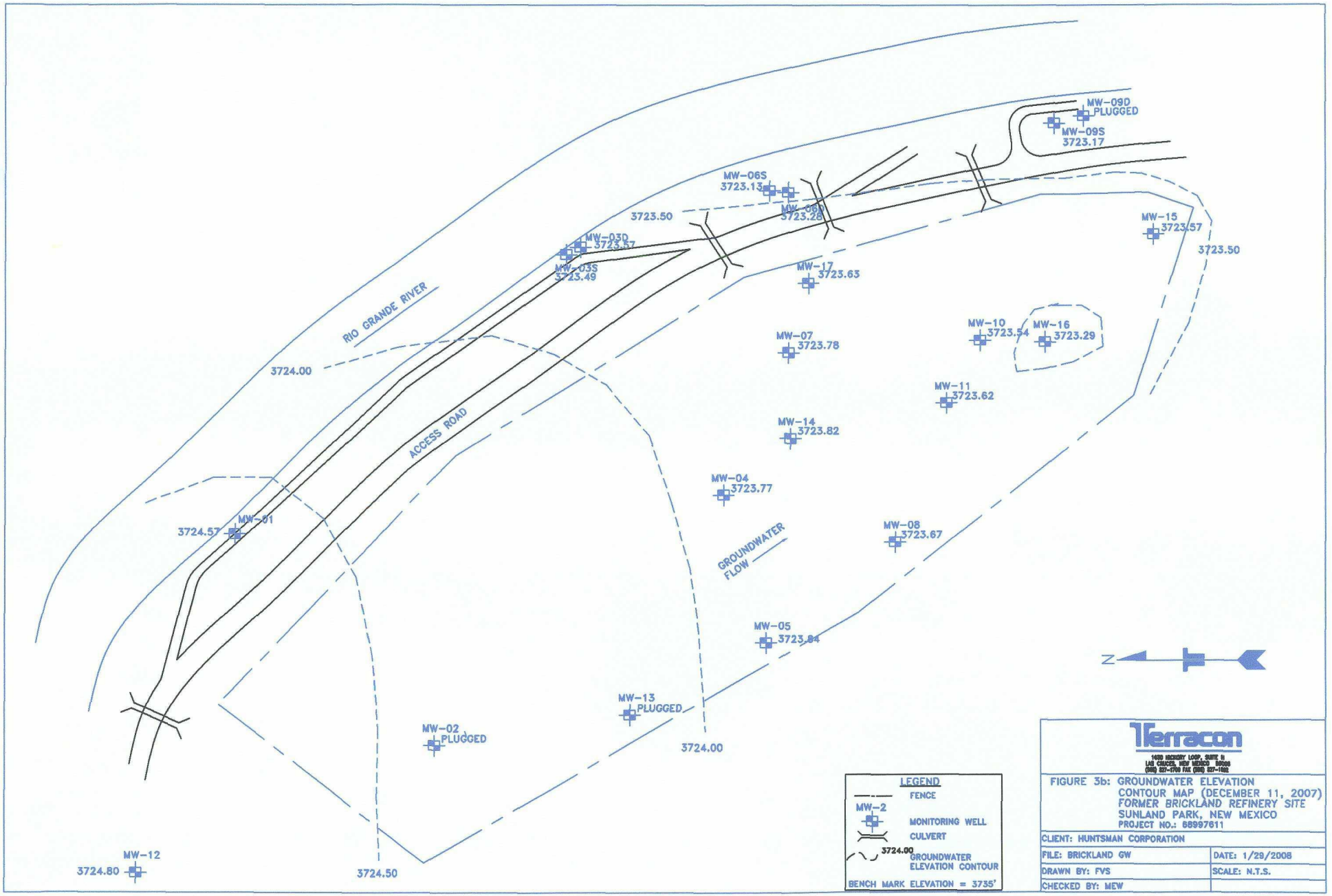

MW-09D
PLUGGED
MW-09S
3723.17
MW-06S
3723.13
MW-06D
3723.28
3723.50
MW-15
3723.57
3723.50
MW-03D
3723.57
MW-03S
3723.49
MW-17
3723.63
RIO GRANDE RIVER
3724.00
MW-10
3723.54
MW-16
3723.29
MW-07
3723.78
MW-11
3723.62
ACCESS ROAD
MW-14
3723.82
MW-04
3723.77
3724.57
MW-01
GROUNDWATER FLOW
MW-08
3723.67
MW-05
3723.84
N
MW-13
PLUGGED
MW-02
PLUGGED
3724.00
MW-12
3724.80
3724.50
LEGEND
FENCE
MW-2
MONITORING WELL
CULVERT
3724.00
GROUNDWATER ELEVATION CONTOUR
BENCH MARK ELEVATION = 3735'
Terracon
1400 HICKORY LOOP, SUITE A
LAS CRUCES, NEW MEXICO 88005
(505) 527-9700 FAX (505) 527-1662
FIGURE 3b: GROUNDWATER ELEVATION CONTOUR MAP (DECEMBER 11, 2007)
FORMER BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO
PROJECT NO.: 88997611
CLIENT: HUNTSMAN CORPORATION
FILE: BRICKLAND GW
DATE: 1/29/2008
DRAWN BY: FVS
SCALE: N.T.S.
CHECKED BY: MEW

Figure 3c. Former Brickland Refinery Site
Groundwater Elevations Versus Time (All wells) June 2003 through December 2007

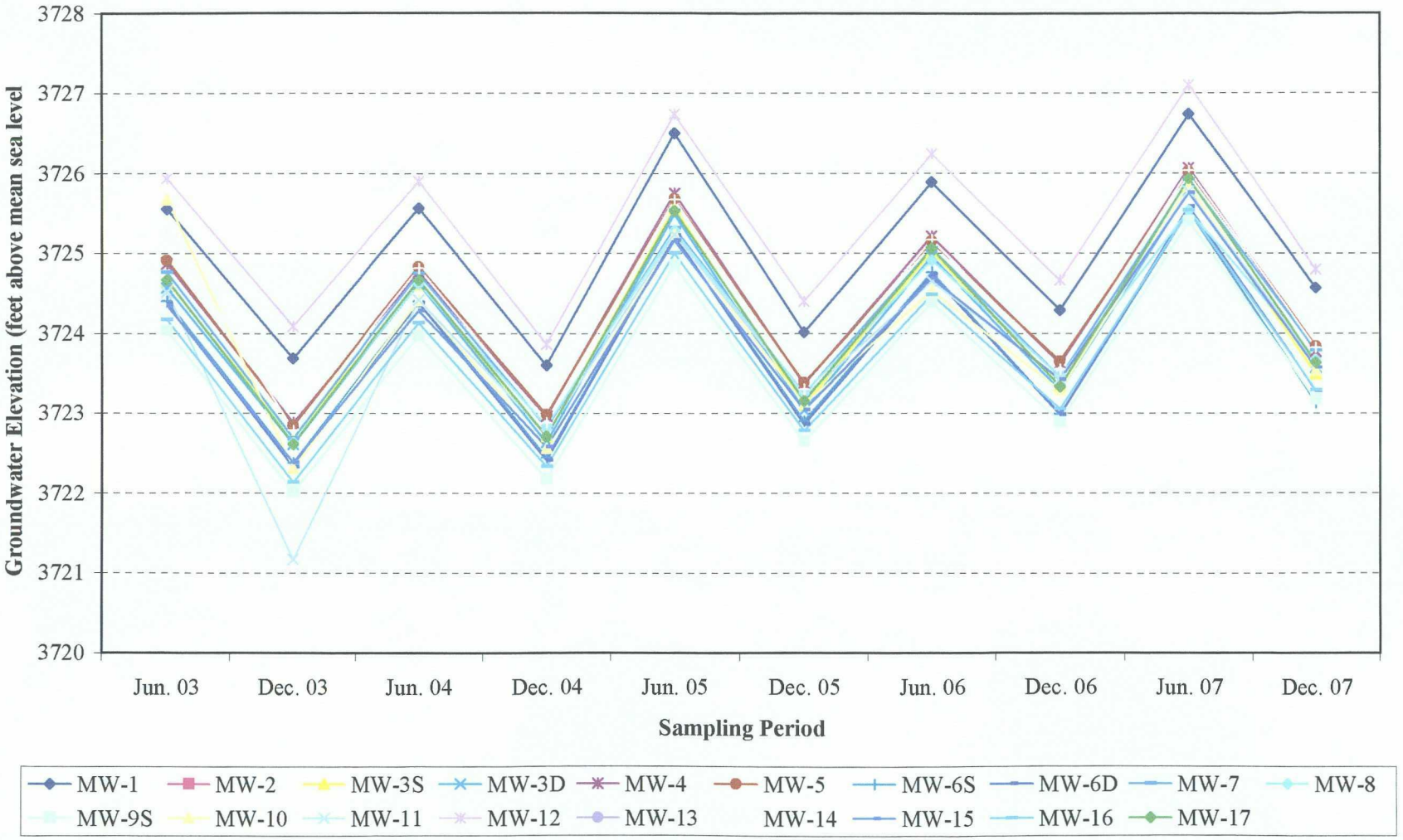
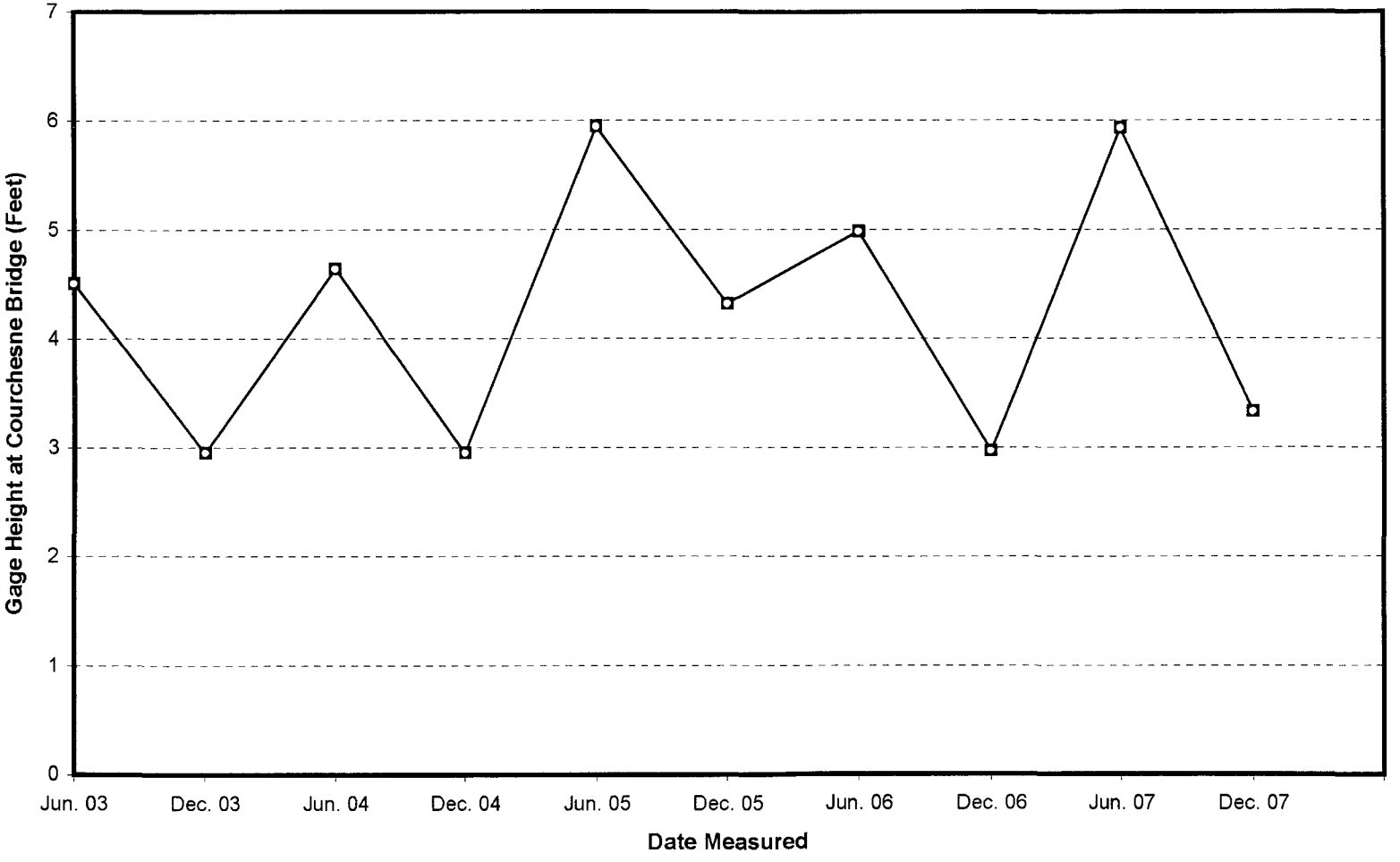
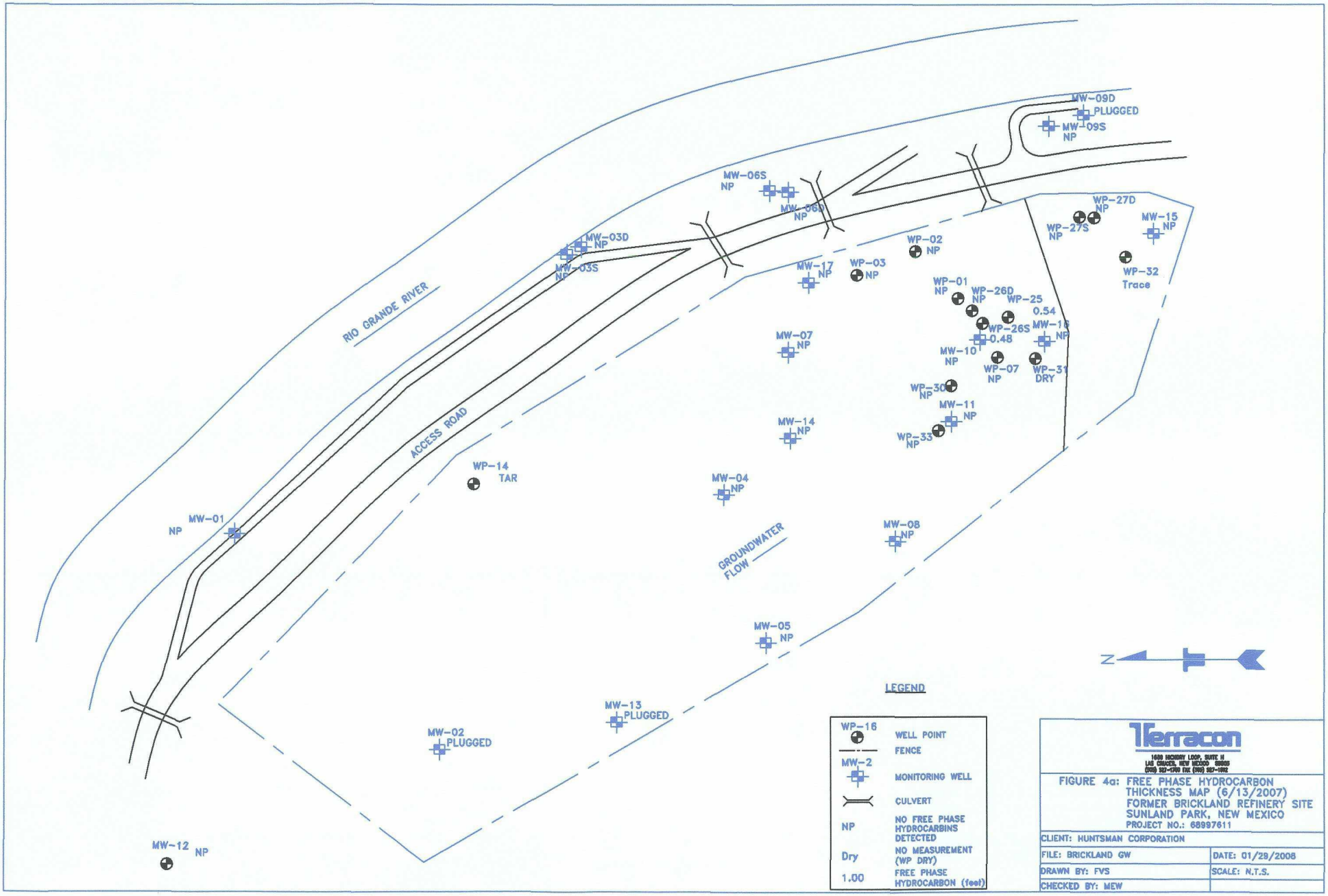


Figure 3d
Former Brickland Refinery Site
Rio Grande Stage Versus Time June 2003 through December 2007




MW-09D
PLUGGED
MW-09S
NP
MW-06S
NP
MW-06D
NP
WP-27D
NP
WP-27S
NP
MW-15
NP
MW-03D
NP
MW-03S
NP
WP-02
NP
WP-32
Trace
MW-17
NP
WP-03
NP
WP-01
NP
WP-26D
NP
WP-25
0.54
WP-26S
0.48
MW-16
NP
MW-07
NP
MW-10
NP
WP-07
NP
WP-31
DRY
WP-30
NP
MW-11
NP
WP-33
NP
MW-14
NP
RIO GRANDE RIVER
ACCESS ROAD
WP-14
TAR
MW-04
NP
MW-01
NP
MW-08
NP
GROUNDWATER
FLOW
MW-05
NP
MW-13
PLUGGED
MW-02
PLUGGED
MW-12
NP
N
LEGEND
WP-16
WELL POINT
FENCE
MW-2
MONITORING WELL
CULVERT
NP
NO FREE PHASE HYDROCARBINS DETECTED
Dry
NO MEASUREMENT (WP DRY)
1.00
FREE PHASE HYDROCARBON (feet)
Terracon
1400 HICKORY LOOP, SUITE H
LAS CRUCES, NEW MEXICO 88005
(505) 522-1700 FAX (505) 527-1002
FIGURE 4a: FREE PHASE HYDROCARBON THICKNESS MAP (6/13/2007)
FORMER BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO
PROJECT NO.: 68997611
CLIENT: HUNTSMAN CORPORATION
FILE: BRICKLAND GW
DATE: 01/29/2008
DRAWN BY: FVS
SCALE: N.T.S.
CHECKED BY: MEW

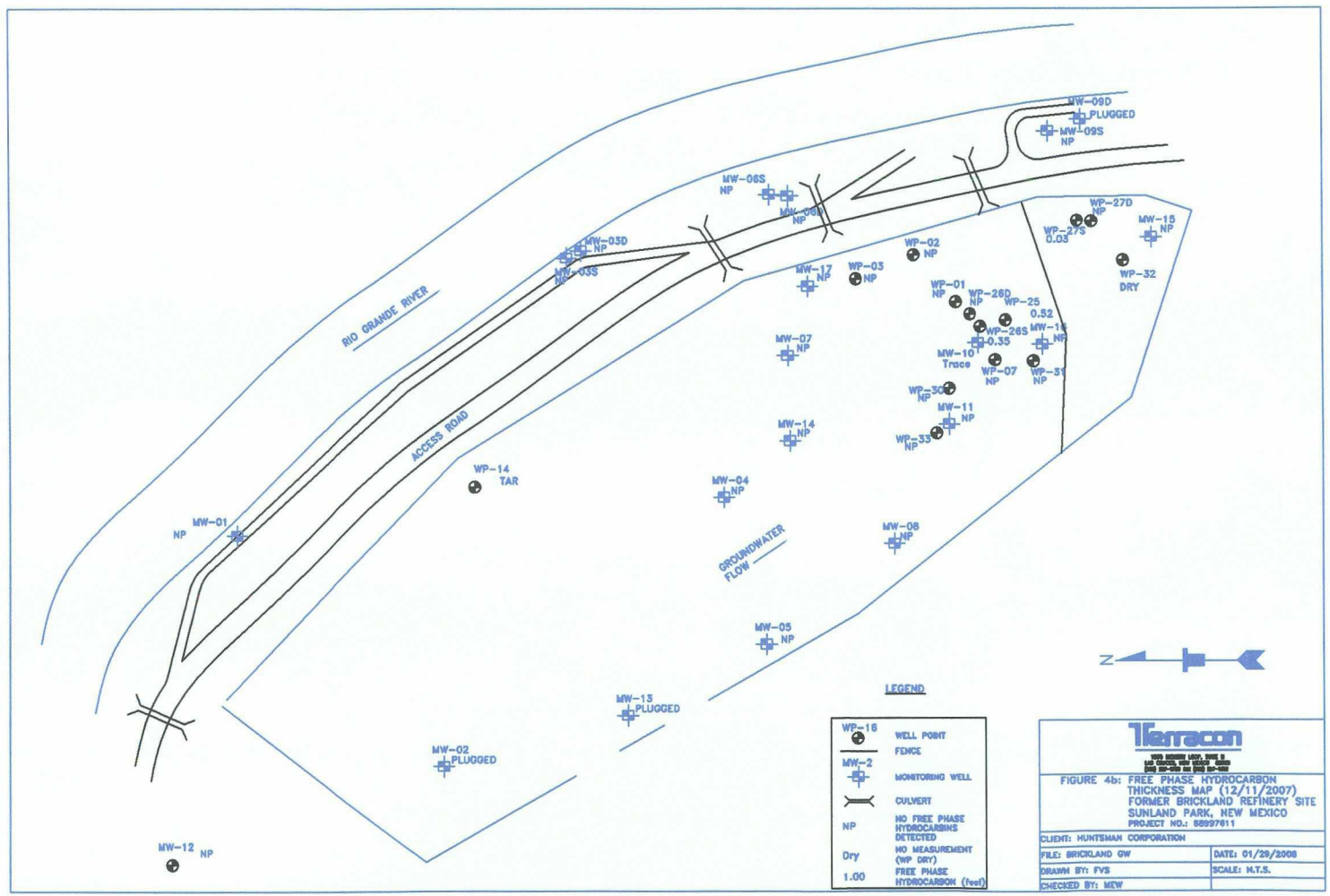

RIO GRANDE RIVER
ACCESS ROAD
GROUNDWATER FLOW
MW-09D PLUGGED
MW-09S NP
MW-06S NP
MW-06D NP
MW-03D NP
MW-03S NP
WP-27D NP
WP-27S 0.03
MW-15 NP
WP-32 DRY
WP-02 NP
MW-17 NP
WP-03 NP
WP-01 NP
WP-26D NP
WP-25 0.52
WP-26S 0.35
MW-16 NP
MW-07 NP
MW-10 Trace
WP-07 NP
WP-31 NP
WP-30 NP
MW-11 NP
MW-14 NP
WP-33 NP
WP-14 TAR
MW-04 NP
MW-01 NP
MW-08 NP
MW-05 NP
MW-13 PLUGGED
MW-02 PLUGGED
MW-12 NP
N
LEGEND
WP-16 WELL POINT
FENCE
MW-2 MONITORING WELL
CULVERT
NP NO FREE PHASE HYDROCARBONS DETECTED
Dry NO MEASUREMENT (WP DRY)
1.00 FREE PHASE HYDROCARBON (feet)
Terracon
FIGURE 4b: FREE PHASE HYDROCARBON THICKNESS MAP (12/11/2007)
FORMER BRICKLAND REFINERY SITE
SUNLAND PARK, NEW MEXICO
PROJECT NO.: 68997611
CLIENT: HUNTSMAN CORPORATION
FILE: BRICKLAND GW
DATE: 01/29/2008
DRAWN BY: FVS
SCALE: N.T.S.
CHECKED BY: MEW

Figure 5 – Free Product Recovery

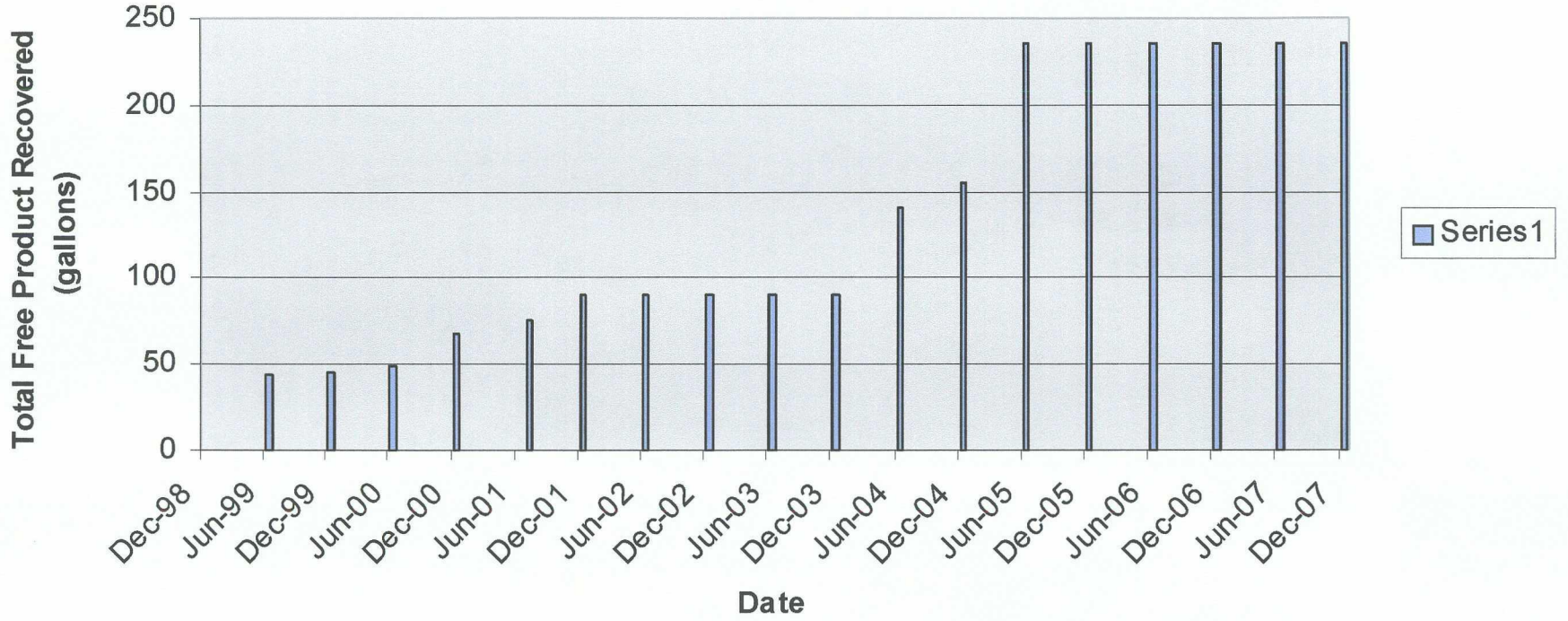


Table 1
Brickland Refinery
Well Sampling and Purging Methods

Well No.	2007 Sample Date	Purge Method	Sampling Method	Purge Volume	Laboratory Analytes
MW-3S	6/13/07	Micropurge	Micropurge Bladder Pump	Approximately 2 gallons	BTEX, Semi-Vols, and Metals
	12/17/07	Micropurge	Micropurge Bladder Pump	Approximately 2 gallons	BTEX only
MW-3D	6/13/07	Micropurge	Micropurge Bladder Pump	Approximately 2 gallons	BTEX, Semi-Vols, and Metals
	12/17/07	Micropurge	Micropurge Bladder Pump	Approximately 2 gallons	BTEX only
MW-4	6/13/07	NS	NS	NS	NS
	12/17/07	NS	NS	NS	NS
MW-6S	6/13/07	Micropurge	Micropurge Bladder Pump	Approximately 2 gallons	BTEX, Semi-Vols, and Metals
	12/17/07	Micropurge	Micropurge Bladder Pump	Approximately 2 gallons	BTEX only
MW-6D	6/13/07	Micropurge	Micropurge Bladder Pump	Approximately 2 gallons	BTEX, Semi-Vols, and Metals
	12/17/07	Micropurge	Micropurge Bladder Pump	Approximately 2 gallons	BTEX only
MW-7	6/13/07	NS	NS	NS	NS
	12/17/07	NS	NS	NS	NS
MW-9S	6/13/07	Micropurge	Micropurge Bladder Pump	Approximately 2 gallons	BTEX, Semi-Vols, and Metals
	12/17/07	Micropurge	Micropurge Bladder Pump	Approximately 2 gallons	BTEX only
MW-14	6/13/07	NS	NS	NS	NS
	12/17/07	NS	NS	NS	NS
MW-15	6/13/07	NS	NS	NS	NS
	12/17/07	NS	NS	NS	NS
River Upstream	6/13/07	NA	Teflon Dipper	NA	BTEX, Semi-Vols, and Metals
	12/17/07	NA	Teflon Dipper	NA	BTEX only
River Downstream	6/13/07	NA	Teflon Dipper	NA	BTEX, Semi-Vols, and Metals
	12/17/07	NA	Teflon Dipper	NA	BTEX only
Total volume purged during semi-annual monitoring event in June 2007:					12 gallons
Total volume purged during annual monitoring event in December 2007:					12 gallons

Well No.	2007 Sample Date	Purge Method	Sampling Method	Purge Volume	Laboratory Analytes
Total volume purged during semi-annual and annual monitoring events:					24 gallons

NS Not sampled during an odd-numbered year.
NA Not applicable

Table 2
Brickland Refinery
Monitoring Well Groundwater Elevations (feet above mean sea level)

Well ID	6/18/03	12/16/03	6/16/04	12/16/04	6/15/05	12/14/05	6/13/06	12/14/06	6/13/07	12/11/07
MW-1	3725.55	3723.69	3725.56	3723.60	3726.5	3724.01	3725.89	3724.29	3726.74	3724.57
MW-2	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99
MW-3S	3724.65	3722.69	3724.61	3722.71	3725.56	3723.10	3725.02	3723.34	3725.82	3723.49
MW-3D	3724.57	3722.61	3724.62	3722.64	3725.49	3723.04	3724.96	3723 29	3725.78	3723.57
MW-4	3724.87	3722.88	3724.76	3722.96	3725.75	3723.37	3725.21	3723.62	3726.06	3723.77
MW-5	3724.91	3722.85	3724.83	3722.98	3725.68	3723.38	3725.15	3723.65	3726.02	3723.84
MW-6S	3724.40	3722.38	3724.40	3722.45	3725.21	3722.90	3724.76	3722.99	3725.53	3723.13
MW-6D	3724.36	3722.33	3724.38	3722.41	3725.22	3722.86	3724.74	3722.98	3725.58	3723.28
MW-7	3724.76	3722.69	3724.75	3722.82	3725.53	3723.24	3725.06	3723.45	3725.92	3723.78
MW-8	3724.67	3722.63	3724.62	3722.84	3725.28	3723.25	3724.91	3723.46	3725.53	3723.67
MW-9S	3724.04	3722.02	3723.97	3722.18	3724.85	3722.65	3724.39	3722.89	3725.40	3723.17
MW-9D	Dry	Dry	Dry	Dry	Dry	Plugged 7/05	Plugged 7/05	Plugged 7/05	Plugged 7/05	Plugged 7/05
MW-10	3725.67	3722.31	3724.41	3722.56	3725.24	3723.11	3724.53	3723.29	3725.83	3723.54
MW-11	3724.51	3721.17	3724.42	3722.74	3725.24	3723.21	3724.65	3723.43	3725.77	3723.62
MW-12	3725.93	3724.09	3725.90	3723.86	3726.74	3724.40	3726.24	3724.66	3727.10	3724.80

Table 2 (Continued)
Brickland Refinery
Monitoring Well Groundwater Elevations (feet above mean sea level)

Well ID	6/18/03	12/16/03	6/16/04	12/16/04	6/15/05	12/14/05	6/13/06	12/14/06	6/13/07	12/11/07
MW-13	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99	Plugged 6/99
MW-14	3725.30	3722.79	3724.81	3722.88	3725.67	3723.30	3725.17	3723.55	3726.03	3723.82
MW-15	3724.35	3722.38	3724.28	3722.58	3725.16	3723.04	3724.69	3723.42	3725.75	3723.57
MW-16	3724.17	3722.14	3724.13	3722.34	3725.00	3722.78	3724.48	3723.05	3725.53	3723.29
MW-17	3724.67	3722.61	3724.67	3722.71	3725.53	3723.15	3725.06	3723.33	3725.93	3723.63

Notes:

Plugged 6/99 = Monitoring well abandoned (in accordance with NMED regulations) prior to soil cap installation in June 1999
Plugged 7/05 = Monitoring well abandoned (in accordance with NMED regulations) prior to soil cap installation in July 2005

Table 3
Brickland Refinery
BTEX Concentrations (µg/L) in Monitoring Wells and River Surface Water Samples
June 2003 through December 2007

MW-3S										
Parameter	6/19/03	12/17/03	6/16/04	12/16/04	6/15/05	12/16/05	6/15/06	12/14/06	6/14/07	12/17/07
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-3D										
Parameter	6/19/03	12/17/03	6/16/04	12/16/04	6/15/05	12/16/05	6/15/06	12/14/06	6/14/07	12/17/07
Benzene	ND	ND,ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND,ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND,ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND,ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-4										
Parameter	6/28/02	12/6/02	6/19/03	12/17/03	6/16/04	12/16/04	6/14/06	12/14/06	6/14/07	12/17/07
Benzene	100, 87	NS	**NS	**NS	45	NS	ND	NS	NS	NS
Toluene	ND, ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS
Ethyl Benzene	ND, ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS
Xylenes	ND, ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS

MW-6S										
Parameter	6/19/03	12/17/03	6/16/04	12/16/04	6/15/05	12/16/05	6/15/06	12/14/06	6/14/07	12/17/07
Benzene	ND	ND	ND,ND	ND,ND	0.80	ND	ND,ND	11, 6.1	ND,ND	ND,ND
Toluene	ND	ND	ND,ND	ND,ND	ND	ND	ND,ND	ND,ND	ND,ND	ND,ND
Ethyl Benzene	ND	ND	ND,ND	ND,ND	ND	ND	ND,ND	7.3, ND	8.0, 9.2	2.2,ND
Xylenes	8.7	ND	ND,ND	ND,ND	0.86	ND	NDND	1.6,ND	1.5,ND	ND,ND

Table 3 (Continued)
Brickland Refinery
BTEX Concentrations (µg/L) in Monitoring Wells and River Surface Water Samples
June 2003 through December 2007

MW-6D										
Parameter	6/19/03	12/17/03	6/16/04	12/16/04	6/15/05	12/16/05	6/15/06	12/14/06	6/14/07	12/17/07
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-7										
Parameter	6/28/02	12/6/02	6/19/03	12/17/03	6/16/04	12/16/04	6/14/06	12/14/06	6/14/07	12/17/07
Benzene	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS
Toluene	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS
Ethyl Benzene	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS
Xylenes	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS

MW-9S										
Parameter	6/19/03	12/17/03	6/16/04	12/16/04	6/15/05	12/16/05	6/15/06	12/14/06	6/14/07	12/17/07
Benzene	ND,ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND,ND	ND	ND	ND	0.60	ND	ND	ND	ND	ND
Ethyl Benzene	ND,ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND,ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND

MW-14										
Parameter	6/28/02	12/6/02	6/19/03	12/17/03	6/16/04	12/16/04	6/14/06	12/14/06	6/14/07	12/17/07
Benzene	11	NS	**NS	**NS	230	NS	ND	NS	NS	NS
Toluene	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS
Ethyl Benzene	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS
Xylenes	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS

Table 3 (Continued)
Brickland Refinery
BTEX Concentrations (µg/L) in Monitoring Wells and River Surface Water Samples
June 2003 through December 2007

MW-15										
Parameter	6/28/02	12/6/02	6/19/03	12/17/03	6/16/04	12/16/04	6/14/06	12/14/06	6/14/07	12/17/07
Benzene	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS
Toluene	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS
Ethyl Benzene	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS
Xylenes	ND	NS	**NS	**NS	ND	NS	ND	NS	NS	NS

River Upstream										
Parameter	6/19/03	12/17/03	6/17/04	12/16/04	6/15/05	12/16/05	6/14/06	12/14/06	6/14/07	12/17/07
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

River-Downstream										
Parameter	6/19/03	12/17/03	6/17/04	12/16/04	6/15/05	12/16/05	6/14/06	12/14/06	6/14/07	12/17/07
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Parameter	Detection Limits	Notes:	
Benzene	1.0 µg/L	ND = Not detected NS = Not sampled µg/L = Micrograms per liter **NS = Not sampled during odd-numbered years	* Detection limits for the same analyte may vary due to sample dilution
Toluene	1.0 µg/L		
Ethyl Benzene	1.0 µg/L		
Xylenes	1.0 µg/L		

Table 4
Brickland Refinery
Total PAH Concentrations for Samples from the River and Monitoring Wells

Well ID	6/19/03	6/16/04	6/15/05	6/14/06	6/14/07
MW-3S	ND	ND	ND	ND	ND
MW-3D	ND	ND	ND	ND	ND
MW-4	*NS	ND	*NS	ND	NS
MW-6S	ND	ND,ND	ND	ND,ND	ND,ND
MW-6D	ND	ND	ND	ND	ND
MW-7	*NS	ND	*NS	ND	NS
MW-9S	ND,ND	ND	ND	ND	ND
MW-14	*NS	ND	*NS	ND	NS
MW-15	*NS	ND	*NS	ND	NS
River-Upstream	ND	ND	ND	ND	ND
River-Down	ND	ND	ND	ND	ND

Notes:

All Results in Micrograms per Liter (µg/L)
ND indicates constituent was not detected
NS indicates well was not sampled. *NS Not sampled in odd-numbered years

Table 5
Brickland Refinery
Metal Analytical Results for Monitoring Wells and the River Water Samples

MW-3S							
Parameter	NMWQCC Std.	Reference	6/19/03	6/16/04	6/15/05	6/15/06	6/14/07
Aluminum	5	C	ND	0.130	ND	ND	ND
Antimony	NA	NA	ND	ND	ND	ND	ND
Arsenic	0.1	A	ND	ND	ND	ND	ND
Barium	1.0	A	0.083	0.085	0.075	ND	0.046
Beryllium	NA	NA	ND	ND	ND	ND	ND
Boron	0.8	C	**0.940**	**1.000**	**0.89**	**0.973**	**1.1**
Cadmium	0.0100	A	ND	ND	ND	ND	ND
Chromium	0.050	A	ND	ND	ND	ND	ND
Cobalt	0.050	Cobalt	ND	ND	ND	ND	ND
Copper	1.0	B	ND	0.013	ND	ND	ND
Iron	1.0	B	**1.700**	**3.900**	**1.8**	**1.25**	**1.3**
Lead	0.05	A	ND	ND	ND	ND	ND
Manganese	0.20	B	**1.700**	**1.800**	**1.6**	**1.64**	**1.4**
Mercury	0.0020	A	ND	ND	ND	ND	NS
Molybdenum	1.0000	C	ND	ND	ND	ND	0.032
Nickel	0.2	C	ND	ND	ND	ND	ND
Selenium	0.05	A	ND	ND	ND	ND	ND
Silver	0.05	A	ND	ND	ND	ND	ND
Thallium	NA	NA	ND	ND	ND	ND	ND
Zinc	10.0	B	ND	ND	ND	ND	ND

MW-3D							
Parameter	NMWQCC Std.	Reference	6/19/03	6/16/04	6/15/05	6/14/06	6/14/07
Aluminum	5	C	ND	0.070	ND	ND	ND
Antimony	NA	NA	ND	ND	ND	ND	ND
Arsenic	0.1	A	ND	ND	ND	ND	ND
Barium	1.0	A	0.063	0.071	0.062	ND	0.062
Beryllium	NA	NA	ND	ND	ND	ND	ND
Boron	0.8	C	**1.500**	**1.800**	**1.2**	**1.43**	**1.6**
Cadmium	0.0100	A	ND	ND	ND	ND	ND
Chromium	0.050	A	ND	ND	ND	ND	ND
Cobalt	0.050	Cobalt	ND	ND	ND	ND	ND
Copper	1.0	B	ND	ND	ND	ND	ND
Iron	1.0	B	**2.100**	**2.300**	**2.3**	**1.92**	**2.2**
Lead	0.05	A	ND	ND	ND	ND	ND
Manganese	0.20	B	**3.300**	**3.700**	**3.3**	**3.05**	**3.4**
Mercury	0.0020	A	ND	ND	ND	ND	NS
Molybdenum	1.0000	C	ND	ND	ND	ND	0.011
Nickel	0.2	C	ND	ND	ND	ND	ND
Selenium	0.05	A	ND	ND	ND	ND	ND
Silver	0.05	A	ND	ND	ND	ND	ND
Thallium	NA	NA	ND	ND	ND	ND	ND
Zinc	10.0	B	ND	ND	ND	ND	ND

Table 5 (Continued)
Brickland Refinery
Metal Analytical Results for Monitoring Wells and the River Water Samples

MW-4							
Parameter	NMWQCC Std.	Reference	6/28/02	6/19/03	6/16/04	6/14/06	6/14/07
Aluminum	5	C	0.36.0.23	*NS	0.12	ND	NS
Antimony	NA	NA	ND,ND	*NS	ND	ND	NS
Arsenic	0.1	A	0.007,ND	*NS	ND	ND	NS
Barium	1.0	A	0.083, 0.059	*NS	0.087	ND	NS
Beryllium	NA	NA	0.005, 0.005	*NS	ND	ND	NS
Boron	0.8	C	**1.400,1.400**	*NS	**1.3**	**1.24**	NS
Cadmium	0.0100	A	ND,ND	*NS	ND	ND	NS
Chromium	0.050	A	0.014,ND	*NS	ND	ND	NS
Cobalt	0.050	Cobalt	0.014,ND	*NS	ND	ND	NS
Copper	1.0	B	0.021,ND	*NS	ND	ND	NS
Iron	1.0	B	***2.900,3.100***	*NS	***3.70***	**2.26**	NS
Lead	0.05	A	ND,ND	*NS	ND	ND	NS
Manganese	0.20	B	**5.800,5.800**	*NS	**5.5**	**4.36**	NS
Mercury	0.0020	A	NS	*NS	ND	ND	NS
Molybdenum	1.0000	C	ND,ND	*NS	ND	ND	NS
Nickel	0.2	C	ND,ND	*NS	ND	ND	NS
Selenium	0.05	A	0.032, 0.032	*NS	ND	ND	NS
Silver	0.05	A	0.036, ND	*NS	ND	ND	NS
Thallium	NA	NA	ND,ND	*NS	ND	ND	NS
Zinc	10.0	B	ND,ND	*NS	ND	ND	NS

MW-6S							
Parameter	NMWQCC Std.	Reference	6/19/03	6/17/04	06/15/05	6/14/06	6/14/07
Aluminum	5	C	ND	0.14,0.11	0.098	ND,ND	0.13,0.13
Antimony	NA	NA	ND	ND,ND	ND	ND,ND	ND,ND
Arsenic	0.1	A	ND	ND,ND	ND	ND,ND	0.039, 0.030
Barium	1.0	A	0.780	0.65,0.60	0.72	ND,ND	0.11,0.10
Beryllium	NA	NA	ND	ND,ND	ND	ND,ND	ND,ND
Boron	0.8	C	**1.300**	**1.10,1.10**	**1.1**	**1.97,1.98**	**3.3,3.1**
Cadmium	0.0100	A	ND	ND,ND	ND	ND,ND	ND,ND
Chromium	0.050	A	ND	ND,ND	ND	ND,ND	ND,ND
Cobalt	0.050	Cobalt	ND	ND,ND	ND	ND,ND	ND,ND
Copper	1.0	B	ND	0.057,0.014	0.016	ND,ND	0.097, 0.088
Iron	1.0	B	**2.100**	**7.70,3.80**	**4.7**	**8.42,8.64**	**12.0,12.0**
Lead	0.05	A	ND	ND,ND	ND	ND,ND	ND,ND
Manganese	0.20	B	**3.400**	**1.40,1.50**	**1.6**	**0.999,1.03**	**0.92,0.88**
Mercury	0.0020	A	ND	ND,ND	ND	ND,ND	NS,NS
Molybdenum	1.0000	C	ND	ND,ND	ND	ND,ND	0.041, 0.038
Nickel	0.2	C	ND	ND,ND	ND	ND,ND	ND,ND
Selenium	0.05	A	ND	ND,ND	ND	ND,ND	ND,ND
Silver	0.05	A	ND	ND,ND	ND	ND,ND	ND,ND
Thallium	NA	NA	ND	ND,ND	ND	ND,ND	ND,ND
Zinc	10.0	B	ND	ND,ND	ND	ND,ND	ND,ND

Table 5 (Continued)
Brickland Refinery
Metal Analytical Results for Monitoring Wells and the River Water Samples

MW-6D							
Parameter	NMWQCC Std.	Reference	6/19/03	6/17/04	6/15/05	6/15/06	6/14/07
Aluminum	5	C	ND	ND	ND	ND	ND
Antimony	NA	NA	ND	ND	ND	ND	ND
Arsenic	0.1	A	ND	ND	ND	ND	ND
Barium	1.0	A	0.053	0.052	0.055	ND	0.049
Beryllium	NA	NA	ND	ND	ND	ND	ND
Boron	0.8	C	**1.400**	**1.500**	**1.1**	**1.28**	**1.4**
Cadmium	0.0100	A	ND	ND	ND	ND	ND
Chromium	0.050	A	ND	ND	ND	ND	ND
Cobalt	0.050	Cobalt	ND	ND	ND	ND	ND
Copper	1.0	B	ND	ND	ND	ND	ND
Iron	1.0	B	0.900	0.910	**1.2**	ND	0.89
Lead	0.05	A	ND	ND	ND	ND	ND
Manganese	0.20	B	**5.300**	**5.500**	**6.1**	**4.98**	**6.1**
Mercury	0.0020	A	ND	ND	ND	ND	NS
Molybdenum	1.0000	C	ND	ND	ND	ND	0.0073
Nickel	0.2	C	ND	ND	ND	ND	ND
Selenium	0.05	A	ND	ND	ND	ND	ND
Silver	0.05	A	ND	ND	ND	ND	ND
Thallium	NA	NA	ND	ND	ND	ND	ND
Zinc	10.0	B	ND	ND	ND	ND	ND

MW-7							
Parameter	NMWQCC Std.	Reference	6/28/02	6/19/03	6/16/04	6/14/06	6/14/07
Aluminum	5	C	0.200	*NS	0.66	ND	NS
Antimony	NA	NA	ND	*NS	ND	ND	NS
Arsenic	0.1	A	0.047	*NS	ND	ND	NS
Barium	1.0	A	0.210	*NS	0.24	ND	NS
Beryllium	NA	NA	ND	*NS	ND	0.003	NS
Boron	0.8	C	**0.750**	*NS	**0.920**	ND	NS
Cadmium	0.0100	A	ND	*NS	ND	ND	NS
Chromium	0.050	A	ND	*NS	ND	ND	NS
Cobalt	0.050	Cobalt	ND	*NS	ND	ND	NS
Copper	1.0	B	ND	*NS	0.31	ND	NS
Iron	1.0	B	**2.700**	*NS	**4.90**	**2.93**	NS
Lead	0.05	A	ND	*NS	**0.190**	ND	NS
Manganese	0.20	B	**1.400**	*NS	**2.00**	**0.910**	NS
Mercury	0.0020	A	NS	*NS	0.00045	ND	NS
Molybdenum	1.0000	C	0.011	*NS	0.017	ND	NS
Nickel	0.2	C	ND	*NS	ND	ND	NS
Selenium	0.05	A	**0.090**	*NS	ND	ND	NS
Silver	0.05	A	ND	*NS	ND	ND	NS
Thallium	NA	NA	ND	*NS	ND	ND	NS
Zinc	10.0	B	ND	*NS	0.110	ND	NS

Table 5 (Continued)
Brickland Refinery
Metal Analytical Results for Monitoring Wells and the River Water Samples

MW-9S							
Parameter	NMWQCC Std.	Reference	6/19/03	6/16/04	6/15/05	6/15/06	6/14/07
Aluminum	5	C	ND	0.061	0.43	ND	ND
Antimony	NA	NA	ND	ND	ND	ND	ND
Arsenic	0.1	A	ND	ND	ND	ND	ND
Barium	1.0	A	0.130	0.13	0.13	ND	0.059
Beryllium	NA	NA	ND	ND	ND	ND	ND
Boron	0.8	C	**1.100**	**1.100**	**1.0**	**0.954**	**1.50**
Cadmium	0.0100	A	ND	ND	ND	ND	ND
Chromium	0.050	A	ND	ND	ND	ND	ND
Cobalt	0.050	Cobalt	ND	ND	ND	ND	ND
Copper	1.0	B	ND	ND	ND	ND	ND
Iron	1.0	B	**6.400**	**8.00**	**9.8**	**6.13**	**4.20**
Lead	0.05	A	ND	ND	ND	ND	ND
Manganese	0.20	B	**2.400**	**3.00**	**2.7**	**2.38**	**1.90**
Mercury	0.0020	A	ND	ND	ND	ND	NS
Molybdenum	1.0000	C	ND	ND	ND	ND	0.010
Nickel	0.2	C	ND	ND	ND	ND	ND
Selenium	0.05	A	ND	ND	ND	ND	ND
Silver	0.05	A	ND	ND	ND	ND	ND
Thallium	NA	NA	ND	ND	ND	ND	ND
Zinc	10.0	B	ND	ND	ND	ND	ND

MW-14							
Parameter	NMWQCC Std.	Reference	6/28/02	6/19/03	6/16/04	6/14/06	6/14/07
Aluminum	5	C	0.200	*NS	0.056	ND	NS
Antimony	NA	NA	ND	*NS	ND	ND	NS
Arsenic	0.1	A	0.010	*NS	ND	ND	NS
Barium	1.0	A	0.110	*NS	0.14	ND	NS
Beryllium	NA	NA	ND	*NS	ND	0.003	NS
Boron	0.8	C	**1.700**	*NS	**1.80**	**1.39**	NS
Cadmium	0.0100	A	ND	*NS	ND	ND	NS
Chromium	0.050	A	ND	*NS	ND	ND	NS
Cobalt	0.050	Cobalt	ND	*NS	ND	ND	NS
Copper	1.0	B	ND	*NS	ND	ND	NS
Iron	1.0	B	**7.300**	*NS	**8.30**	**5.24**	NS
Lead	0.05	A	ND	*NS	ND	ND	NS
Manganese	0.20	B	**7.200**	*NS	**7.10**	**5.32**	NS
Mercury	0.0020	A	NS	*NS	ND	ND	NS
Molybdenum	1.0000	C	ND	*NS	0.011	ND	NS
Nickel	0.2	C	ND	*NS	ND	ND	NS
Selenium	0.05	A	0.041	*NS	ND	ND	NS
Silver	0.05	A	ND	*NS	ND	ND	NS
Thallium	NA	NA	ND	*NS	0.17	ND	NS
Zinc	10.0	B	ND	*NS	ND	ND	NS

Table 5 (Continued)
Brickland Refinery
Metal Analytical Results for Monitoring Wells and the River Water Samples

MW-15							
Parameter	NMWQCC Std.	Reference	6/28/02	6/19/03	6/16/04	6/14/06	6/14/07
Aluminum	5	C	0.24	*NS	ND	ND	NS
Antimony	NA	NA	ND	*NS	ND	ND	NS
Arsenic	0.1	A	0.014	*NS	ND	ND	NS
Barium	1.0	A	0.170	*NS	0.14	ND	NS
Beryllium	NA	NA	0.006	*NS	ND	0.003	NS
Boron	0.8	C	**1.500**	*NS	**1.500**	**1.40**	NS
Cadmium	0.0100	A	ND	*NS	ND	ND	NS
Chromium	0.050	A	ND	*NS	ND	ND	NS
Cobalt	0.050	Cobalt	ND	*NS	ND	ND	NS
Copper	1.0	B	ND	*NS	ND	ND	NS
Iron	1.0	B	**2.000**	*NS	**2.300**	**3.67**	NS
Lead	0.05	A	ND	*NS	ND	ND	NS
Manganese	0.20	B	**2.300**	*NS	**2.300**	**3.01**	NS
Mercury	0.0020	A	NS	*NS	ND	ND	NS
Molybdenum	1.0000	C	ND	*NS	ND	ND	NS
Nickel	0.2	C	ND	*NS	ND	ND	NS
Selenium	0.05	A	0.038	*NS	ND	ND	NS
Silver	0.05	A	ND	*NS	ND	ND	NS
Thallium	NA	NA	ND	*NS	ND	ND	NS
Zinc	10.0	B	ND	*NS	ND	ND	NS

River-Upstream							
Parameter	NMWQCC Std.	Reference	6/19/03	6/17/04	6/15/05	6/14/06	6/14/07
Aluminum	5	C	3.2	**5.20**	**8.8**	**5.14**	**16.0**
Antimony	NA	NA	ND	ND	ND	ND	ND
Arsenic	0.1	A	ND	ND	ND	ND	ND
Barium	1.0	A	0.110	0.14	0.14	ND	0.24
Beryllium	NA	NA	ND	ND	ND	0.003	ND
Boron	0.8	C	0.200	0.220	0.16	ND	ND
Cadmium	0.0100	A	ND	ND	ND	ND	ND
Chromium	0.050	A	ND	ND	ND	ND	ND
Cobalt	0.050	Cobalt	ND	ND	ND	ND	ND
Copper	1.0	B	ND	ND	0.0072	ND	ND
Iron	1.0	B	**2.100**	**3.500**	**5.7**	**2.85**	**9.3**
Lead	0.05	A	ND	ND	ND	ND	0.0071
Manganese	0.20	B	**0.180**	**0.240**	**0.20**	ND	**0.30**
Mercury	0.0020	A	ND	ND	ND	ND	NS
Molybdenum	1.0000	C	0.012	ND	ND	ND	0.0082
Nickel	0.2	C	ND	ND	ND	ND	ND
Selenium	0.05	A	ND	ND	ND	ND	ND
Silver	0.05	A	ND	ND	ND	ND	ND
Thallium	NA	NA	ND	ND	ND	ND	ND
Zinc	10.0	B	ND	ND	ND	ND	0.036

Table 5 (Continued)
Brickland Refinery
Metal Analytical Results for Monitoring Wells and the River Water Samples

			River-Downstream				
Parameter	NMWQCC Std.	Reference	6/19/03	6/17/04	6/15/05	6/14/06	6/14/07
Aluminum	5	C	3.000	**5.50**	**8.7**	**5.65**	**16.0**
Antimony	NA	NA	ND	ND	ND	ND	ND
Arsenic	0.1	A	ND	ND	ND	ND	ND
Barium	1.0	A	0.110	0.14	0.14	ND	0.24
Beryllium	NA	NA	ND	ND	ND	0.003	ND
Boron	0.8	C	0.210	0.220	0.16	ND	0.20
Cadmium	0.0100	A	ND	ND	ND	ND	ND
Chromium	0.050	A	ND	ND	ND	ND	ND
Cobalt	0.050	Cobalt	ND	ND	ND	ND	ND
Copper	1.0	B	ND	ND	0.0070	ND	ND
Iron	1.0	B	**2.100**	**3.600**	**5.8**	**3.06**	**9.0**
Lead	0.05	A	ND	ND	ND	ND	0.0057
Manganese	0.20	B	**0.200**	**0.240**	**0.20**	ND	**0.30**
Mercury	0.0020	A	ND	ND	ND	ND	NS
Molybdenum	1.0000	C	0.010	ND	ND	ND	0.0084
Nickel	0.2	C	ND	ND	ND	ND	ND
Selenium	0.05	A	ND	ND	ND	ND	ND
Silver	0.05	A	ND	ND	ND	ND	ND
Thallium	NA	NA	ND	ND	ND	ND	ND
Zinc	10.0	B	ND	ND	ND	ND	0.038

Notes:

mg/L = Milligrams per liter

Concentrations listed in **boldface** type during the current year indicate levels exceed New Mexico Water Quality Control Commission (NMWQCC) standards
NS (*NS) indicates sample was not collected/analyzed for this constituent (not collected in odd-numbered years).

ND indicates concentration was below laboratory detection limits.

NA indicates no NMWQCC standard established.

A indicates standard is from NMWQCC Regulatory Standards Section 3103A - Human Health Standard

B indicates standard is from NMWQCC Regulatory Standards Section 3103B - Domestic Water Supply

C indicates standard is from NMWQCC Regulatory Standards Section 3103C - Irrigation Use

ND,ND or 0.13,0.13 are the laboratory results for the primary and duplicate (QA/QC) samples, respectively.

Table 6
Brickland Refinery
Free-Phase Hydrocarbon Thickness Measurements (Feet)

Well ID	Jun. 03	Dec. 03	Jun. 04	Dec. 04	Jun 05	Dec 05	Jun 06	Dec 06	Jun 07	Dec 07
MW-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-2	A	A	A	A	A	A	A	A	A	A
MW-3S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-3D	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-6S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-6D	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-9S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-10	0.00	0.13	0.08	0.05	0.1	0.00	Trace	Trace	0.00	Trace
MW-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-13	A	A	A	A	A	A	A	A	A	A
MW-14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WP-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WP-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WP-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WP-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WP-14	Tar	Tar	Tar	Tar	Tar	Tar	Tar	Tar	Tar	Tar
WP-25	Dry	Dry	Dry	Dry	Dry	Dry	0.70	0.52	0.54	0.52
WP-26S	0.35	0.60	0.63	0.66	0.66	0.52	0.58	0.47	0.48	0.35
WP-26D	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WP-27S	0.01	0.00	0.00	0.00	0.00	0.00	Trace	0.02	0.00	Trace
WP-27D	0.12	0.26	0.06	0.11	0.00	0.04	0.00	0.04	0.00	0.03
WP-30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WP-31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Dry	0.00
WP-32	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Trace	Dry
WP-33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes:

A = Plugged and Abandoned
Dry = Monitoring point was dry
Tar = Thickness measurement not obtainable because of presence of thick tar-like substance in well point.

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Est. 1970

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H

Las Cruces, NM 88005

Report Summary

Tuesday June 26, 2007

Report Number: L298256
Samples Received: 06/16/07
Client Project: 68997611

Description: Huntsman Brickland

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Terrie Fudge

Terrie Fudge, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

11 Samples Reported: 06/26/07 09:26 Revised: 06/26/07 13:33

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REPORT OF ANALYSIS

June 26, 2007

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

ESC Sample # : L298256-01

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Site ID :

Sample ID : MW-9S 4.61 FT

Project # : 68997611

Collected By : Fred Small
Collection Date : 06/14/07 10:09

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum	BDL	0.10	mg/l	6010B	06/20/07	1
Antimony	BDL	0.010	mg/l	6010B	06/20/07	1
Arsenic	BDL	0.020	mg/l	6010B	06/20/07	1
Barium	0.059	0.0050	mg/l	6010B	06/20/07	1
Beryllium	BDL	0.0020	mg/l	6010B	06/20/07	1
Boron	1.5	0.20	mg/l	6010B	06/20/07	1
Cadmium	BDL	0.0050	mg/l	6010B	06/20/07	1
Calcium	220	0.50	mg/l	6010B	06/20/07	1
Chromium	BDL	0.010	mg/l	6010B	06/20/07	1
Cobalt	BDL	0.010	mg/l	6010B	06/20/07	1
Copper	BDL	0.020	mg/l	6010B	06/20/07	1
Iron	4.2	0.10	mg/l	6010B	06/20/07	1
Lead	BDL	0.0050	mg/l	6010B	06/20/07	1
Magnesium	76.	0.10	mg/l	6010B	06/20/07	1
Manganese	1.9	0.010	mg/l	6010B	06/20/07	1
Molybdenum	0.010	0.0050	mg/l	6010B	06/20/07	1
Nickel	BDL	0.020	mg/l	6010B	06/20/07	1
Potassium	15.	0.50	mg/l	6010B	06/20/07	1
Selenium	BDL	0.020	mg/l	6010B	06/20/07	1
Silver	BDL	0.010	mg/l	6010B	06/20/07	1
Sodium	2600	2.5	mg/l	6010B	06/20/07	5
Strontium	4.8	0.010	mg/l	6010B	06/20/07	1
Thallium	BDL	0.020	mg/l	6010B	06/20/07	1
Tin	BDL	0.10	mg/l	6010B	06/20/07	5
Titanium	BDL	0.010	mg/l	6010B	06/20/07	1
Vanadium	BDL	0.010	mg/l	6010B	06/20/07	1
Zinc	BDL	0.030	mg/l	6010B	06/20/07	1
Benzene	BDL	0.00050	mg/l	8021B	06/22/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/22/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	06/22/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/22/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	80.1		% Rec.	8021B	06/22/07	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-01

Site ID :

Project # : 68997611

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : MW-9S 4.61 FT

Collected By : Fred Small
Collection Date : 06/14/07 10:09

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluorene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Naphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Phenanthrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Surrogate Recovery						
Nitrobenzene-d5	78.9		% Rec.	8270C-SIM	06/21/07	1
2-Fluorobiphenyl	77.6		% Rec.	8270C-SIM	06/21/07	1
p-Terphenyl-d14	98.1		% Rec.	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 06/26/07 09:26 Revised: 06/26/07 13:34

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-02

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Site ID :

Sample ID : MW-6D 5.04 FT

Project # : 68997611

Collected By : Fred Small
Collection Date : 06/14/07 11:12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum	BDL	0.10	mg/l	6010B	06/20/07	1
Antimony	BDL	0.010	mg/l	6010B	06/20/07	1
Arsenic	BDL	0.020	mg/l	6010B	06/20/07	1
Barium	0.049	0.0050	mg/l	6010B	06/20/07	1
Beryllium	BDL	0.0020	mg/l	6010B	06/20/07	1
Boron	1.4	0.20	mg/l	6010B	06/20/07	1
Cadmium	BDL	0.0050	mg/l	6010B	06/20/07	1
Calcium	630	0.50	mg/l	6010B	06/20/07	1
Chromium	BDL	0.010	mg/l	6010B	06/20/07	1
Cobalt	BDL	0.010	mg/l	6010B	06/20/07	1
Copper	BDL	0.020	mg/l	6010B	06/20/07	1
Iron	0.89	0.10	mg/l	6010B	06/20/07	1
Lead	BDL	0.0050	mg/l	6010B	06/20/07	1
Magnesium	260	0.10	mg/l	6010B	06/20/07	1
Manganese	6.1	0.010	mg/l	6010B	06/20/07	1
Molybdenum	0.0073	0.0050	mg/l	6010B	06/20/07	1
Nickel	BDL	0.020	mg/l	6010B	06/20/07	1
Potassium	28.	0.50	mg/l	6010B	06/20/07	1
Selenium	BDL	0.020	mg/l	6010B	06/20/07	1
Silver	BDL	0.010	mg/l	6010B	06/20/07	1
Sodium	3700	2.5	mg/l	6010B	06/20/07	5
Strontium	9.4	0.050	mg/l	6010B	06/20/07	5
Thallium	BDL	0.020	mg/l	6010B	06/20/07	1
Tin	BDL	0.10	mg/l	6010B	06/20/07	5
Titanium	BDL	0.010	mg/l	6010B	06/20/07	1
Vanadium	BDL	0.010	mg/l	6010B	06/20/07	1
Zinc	BDL	0.030	mg/l	6010B	06/20/07	1
Benzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/21/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/21/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021B	06/21/07	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-02

Site ID :

Project # : 68997611

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : MW-6D 5.04 FT

Collected By : Fred Small
Collection Date : 06/14/07 11:12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluorene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Naphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Phenanthrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Surrogate Recovery						
Nitrobenzene-d5	103.		% Rec.	8270C-SIM	06/21/07	1
2-Fluorobiphenyl	94.4		% Rec.	8270C-SIM	06/21/07	1
p-Terphenyl-d14	121.		% Rec.	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 06/26/07 09:26 Revised: 06/26/07 13:34

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-03

Site ID :

Project # : 68997611

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : MW-6S 5-12 FT

Collected By : Fred Small
Collection Date : 06/14/07 11:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum	0.13	0.10	mg/l	6010B	06/20/07	1
Antimony	BDL	0.010	mg/l	6010B	06/20/07	1
Arsenic	0.039	0.020	mg/l	6010B	06/20/07	1
Barium	0.11	0.0050	mg/l	6010B	06/20/07	1
Beryllium	BDL	0.0020	mg/l	6010B	06/20/07	1
Boron	3.3	0.20	mg/l	6010B	06/20/07	1
Cadmium	BDL	0.0050	mg/l	6010B	06/20/07	1
Calcium	140	0.50	mg/l	6010B	06/20/07	1
Chromium	BDL	0.010	mg/l	6010B	06/20/07	1
Cobalt	BDL	0.010	mg/l	6010B	06/20/07	1
Copper	0.097	0.020	mg/l	6010B	06/20/07	1
Iron	12.	0.10	mg/l	6010B	06/20/07	1
Lead	BDL	0.0050	mg/l	6010B	06/20/07	1
Magnesium	130	0.10	mg/l	6010B	06/20/07	1
Manganese	0.92	0.010	mg/l	6010B	06/20/07	1
Molybdenum	0.041	0.0050	mg/l	6010B	06/20/07	1
Nickel	BDL	0.020	mg/l	6010B	06/20/07	1
Potassium	24.	0.50	mg/l	6010B	06/20/07	1
Selenium	BDL	0.020	mg/l	6010B	06/20/07	1
Silver	BDL	0.010	mg/l	6010B	06/20/07	1
Sodium	3400	2.5	mg/l	6010B	06/20/07	5
Strontium	3.6	0.010	mg/l	6010B	06/20/07	1
Thallium	BDL	0.020	mg/l	6010B	06/20/07	1
Tin	BDL	0.10	mg/l	6010B	06/20/07	5
Titanium	0.033	0.010	mg/l	6010B	06/20/07	1
Vanadium	0.038	0.010	mg/l	6010B	06/20/07	1
Zinc	BDL	0.030	mg/l	6010B	06/20/07	1
Benzene	BDL	0.00050	mg/l	8021B	06/22/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/22/07	1
Ethylbenzene	0.0080	0.00050	mg/l	8021B	06/22/07	1
Total Xylene	0.0015	0.0015	mg/l	8021B	06/22/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	112.		% Rec.	8021B	06/22/07	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop .Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-03

Site ID :

Project # : 68997611

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : MW-6S 5-12 FT

Collected By : Fred Small
Collection Date : 06/14/07 11:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluorene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Naphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Phenanthrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Surrogate Recovery						
Nitrobenzene-d5	90.4		% Rec.	8270C-SIM	06/21/07	1
2-Fluorobiphenyl	48.9		% Rec.	8270C-SIM	06/21/07	1
p-Terphenyl-d14	57.9		% Rec.	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 06/26/07 09:26 Revised: 06/26/07 13:34

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REPORT OF ANALYSIS

June 26, 2007

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

ESC Sample # : L298256-04

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Site ID :

Sample ID : MW-3D 4-22 FT

Project # : 68997611

Collected By : Fred Small
Collection Date : 06/14/07 12:57

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum	BDL	0.10	mg/l	6010B	06/20/07	1
Antimony	BDL	0.010	mg/l	6010B	06/20/07	1
Arsenic	BDL	0.020	mg/l	6010B	06/20/07	1
Barium	0.062	0.0050	mg/l	6010B	06/20/07	1
Beryllium	BDL	0.0020	mg/l	6010B	06/20/07	1
Boron	1.6	0.20	mg/l	6010B	06/20/07	1
Cadmium	BDL	0.0050	mg/l	6010B	06/20/07	1
Calcium	480	0.50	mg/l	6010B	06/20/07	1
Chromium	BDL	0.010	mg/l	6010B	06/20/07	1
Cobalt	BDL	0.010	mg/l	6010B	06/20/07	1
Copper	BDL	0.020	mg/l	6010B	06/20/07	1
Iron	2.2	0.10	mg/l	6010B	06/20/07	1
Lead	BDL	0.0050	mg/l	6010B	06/20/07	1
Magnesium	250	0.10	mg/l	6010B	06/20/07	1
Manganese	3.4	0.010	mg/l	6010B	06/20/07	1
Molybdenum	0.011	0.0050	mg/l	6010B	06/20/07	1
Nickel	BDL	0.020	mg/l	6010B	06/20/07	1
Potassium	25.	0.50	mg/l	6010B	06/20/07	1
Selenium	BDL	0.020	mg/l	6010B	06/20/07	1
Silver	BDL	0.010	mg/l	6010B	06/20/07	1
Sodium	3500	2.5	mg/l	6010B	06/20/07	5
Strontium	12.	0.050	mg/l	6010B	06/20/07	5
Thallium	BDL	0.020	mg/l	6010B	06/20/07	1
Tin	BDL	0.10	mg/l	6010B	06/20/07	5
Titanium	BDL	0.010	mg/l	6010B	06/20/07	1
Vanadium	BDL	0.010	mg/l	6010B	06/20/07	1
Zinc	BDL	0.030	mg/l	6010B	06/20/07	1
Benzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/21/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/21/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021B	06/21/07	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Est. 1970

REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : MW-3D 4-22 FT

Collected By : Fred Small
Collection Date : 06/14/07 12:57

ESC Sample # : L298256-04

Site ID :

Project # : 68997611

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluorene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Naphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Phenanthrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Surrogate Recovery						
Nitrobenzene-d5	86.7		% Rec.	8270C-SIM	06/21/07	1
2-Fluorobiphenyl	79.3		% Rec.	8270C-SIM	06/21/07	1
p-Terphenyl-d14	111.		% Rec.	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 06/26/07 09:26 Revised: 06/26/07 13:34

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-05

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Site ID :

Sample ID : MW-3S 4-18 FT

Project # : 68997611

Collected By : Fred Small
Collection Date : 06/14/07 13:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum	BDL	0.10	mg/l	6010B	06/20/07	1
Antimony	BDL	0.010	mg/l	6010B	06/20/07	1
Arsenic	BDL	0.020	mg/l	6010B	06/20/07	1
Barium	0.046	0.0050	mg/l	6010B	06/20/07	1
Beryllium	BDL	0.0020	mg/l	6010B	06/20/07	1
Boron	1.1	0.20	mg/l	6010B	06/20/07	1
Cadmium	BDL	0.0050	mg/l	6010B	06/20/07	1
Calcium	250	0.50	mg/l	6010B	06/20/07	1
Chromium	BDL	0.010	mg/l	6010B	06/20/07	1
Cobalt	BDL	0.010	mg/l	6010B	06/20/07	1
Copper	BDL	0.020	mg/l	6010B	06/20/07	1
Iron	1.3	0.10	mg/l	6010B	06/20/07	1
Lead	BDL	0.0050	mg/l	6010B	06/20/07	1
Magnesium	140	0.10	mg/l	6010B	06/20/07	1
Manganese	1.4	0.010	mg/l	6010B	06/20/07	1
Molybdenum	0.032	0.0050	mg/l	6010B	06/20/07	1
Nickel	BDL	0.020	mg/l	6010B	06/20/07	1
Potassium	23.	0.50	mg/l	6010B	06/20/07	1
Selenium	BDL	0.020	mg/l	6010B	06/20/07	1
Silver	BDL	0.010	mg/l	6010B	06/20/07	1
Sodium	2400	2.5	mg/l	6010B	06/20/07	5
Strontium	4.9	0.010	mg/l	6010B	06/20/07	1
Thallium	BDL	0.020	mg/l	6010B	06/20/07	1
Tin	BDL	0.10	mg/l	6010B	06/20/07	5
Titanium	BDL	0.010	mg/l	6010B	06/20/07	1
Vanadium	BDL	0.010	mg/l	6010B	06/20/07	1
Zinc	BDL	0.030	mg/l	6010B	06/20/07	1
Benzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/21/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/21/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021B	06/21/07	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Acenaphthene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Acenaphthylene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : MW-3S 4-18 FT

Collected By : Fred Small
Collection Date : 06/14/07 13:45

ESC Sample # : L298256-05

Site ID :

Project # : 68997611

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Fluorene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Naphthalene	BDL	0.00025	mg/l	8270C-SIM	06/25/07	1
Phenanthrene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
Pyrene	BDL	0.000050	mg/l	8270C-SIM	06/25/07	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/25/07	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/25/07	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/25/07	1
Surrogate Recovery						
Nitrobenzene-d5	92.7		% Rec.	8270C-SIM	06/25/07	1
2-Fluorobiphenyl	91.4		% Rec.	8270C-SIM	06/25/07	1
p-Terphenyl-d14	114.		% Rec.	8270C-SIM	06/25/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 06/26/07 09:26 Revised: 06/26/07 13:34

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-06

Site ID :

Project # : 68997611

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : UP RIVER

Collected By : Fred Small
Collection Date : 06/14/07 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum	16.	0.10	mg/l	6010B	06/20/07	1
Antimony	BDL	0.010	mg/l	6010B	06/20/07	1
Arsenic	BDL	0.020	mg/l	6010B	06/20/07	1
Barium	0.24	0.0050	mg/l	6010B	06/20/07	1
Beryllium	BDL	0.0020	mg/l	6010B	06/20/07	1
Boron	BDL	0.20	mg/l	6010B	06/20/07	1
Cadmium	BDL	0.0050	mg/l	6010B	06/20/07	1
Calcium	91.	0.50	mg/l	6010B	06/20/07	1
Chromium	BDL	0.010	mg/l	6010B	06/20/07	1
Cobalt	BDL	0.010	mg/l	6010B	06/20/07	1
Copper	BDL	0.020	mg/l	6010B	06/20/07	1
Iron	9.3	0.10	mg/l	6010B	06/20/07	1
Lead	0.0071	0.0050	mg/l	6010B	06/20/07	1
Magnesium	18.	0.10	mg/l	6010B	06/20/07	1
Manganese	0.30	0.010	mg/l	6010B	06/20/07	1
Molybdenum	0.0082	0.0050	mg/l	6010B	06/20/07	1
Nickel	BDL	0.020	mg/l	6010B	06/20/07	1
Potassium	12.	0.50	mg/l	6010B	06/20/07	1
Selenium	BDL	0.020	mg/l	6010B	06/20/07	1
Silver	BDL	0.010	mg/l	6010B	06/20/07	1
Sodium	95.	0.50	mg/l	6010B	06/20/07	1
Strontium	0.88	0.010	mg/l	6010B	06/20/07	1
Thallium	BDL	0.020	mg/l	6010B	06/20/07	1
Tin	BDL	0.020	mg/l	6010B	06/20/07	1
Titanium	0.40	0.010	mg/l	6010B	06/20/07	1
Vanadium	0.027	0.010	mg/l	6010B	06/20/07	1
Zinc	0.036	0.030	mg/l	6010B	06/20/07	1
Benzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/21/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/21/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021B	06/21/07	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

June 26, 2007

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

ESC Sample # : L298256-06

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Site ID :

Sample ID : UP RIVER

Project # : 68997611

Collected By :
Collection Date : 06/14/07 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluorene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Naphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Phenanthrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Surrogate Recovery						
Nitrobenzene-d5	81.8		% Rec.	8270C-SIM	06/21/07	1
2-Fluorobiphenyl	79.6		% Rec.	8270C-SIM	06/21/07	1
p-Terphenyl-d14	119.		% Rec.	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 06/26/07 09:26 Revised: 06/26/07 13:34

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-07

Site ID :

Project # : 68997611

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : DOWN RIVER

Collected By : Fred Small
Collection Date : 06/14/07 16:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum	16.	0.10	mg/l	6010B	06/20/07	1
Antimony	BDL	0.010	mg/l	6010B	06/20/07	1
Arsenic	BDL	0.020	mg/l	6010B	06/20/07	1
Barium	0.24	0.0050	mg/l	6010B	06/20/07	1
Beryllium	BDL	0.0020	mg/l	6010B	06/20/07	1
Boron	0.20	0.20	mg/l	6010B	06/20/07	1
Cadmium	BDL	0.0050	mg/l	6010B	06/20/07	1
Calcium	90.	0.50	mg/l	6010B	06/20/07	1
Chromium	BDL	0.010	mg/l	6010B	06/20/07	1
Cobalt	BDL	0.010	mg/l	6010B	06/20/07	1
Copper	BDL	0.020	mg/l	6010B	06/20/07	1
Iron	9.0	0.10	mg/l	6010B	06/20/07	1
Lead	0.0057	0.0050	mg/l	6010B	06/20/07	1
Magnesium	18.	0.10	mg/l	6010B	06/20/07	1
Manganese	0.30	0.010	mg/l	6010B	06/20/07	1
Molybdenum	0.0084	0.0050	mg/l	6010B	06/20/07	1
Nickel	BDL	0.020	mg/l	6010B	06/20/07	1
Potassium	11.	0.50	mg/l	6010B	06/20/07	1
Selenium	BDL	0.020	mg/l	6010B	06/20/07	1
Silver	BDL	0.010	mg/l	6010B	06/20/07	1
Sodium	95.	0.50	mg/l	6010B	06/20/07	1
Strontium	0.86	0.010	mg/l	6010B	06/20/07	1
Thallium	BDL	0.020	mg/l	6010B	06/20/07	1
Tin	BDL	0.020	mg/l	6010B	06/20/07	1
Titanium	0.38	0.010	mg/l	6010B	06/20/07	1
Vanadium	0.026	0.010	mg/l	6010B	06/20/07	1
Zinc	0.038	0.030	mg/l	6010B	06/20/07	1
Benzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/21/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/21/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021B	06/21/07	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Est. 1970

REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-07

Site ID :

Project # : 68997611

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : DOWN RIVER

Collected By :
Collection Date : 06/14/07 16:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluorene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Naphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Phenanthrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Surrogate Recovery						
Nitrobenzene-d5	59.4		% Rec.	8270C-SIM	06/21/07	1
2-Fluorobiphenyl	56.6		% Rec.	8270C-SIM	06/21/07	1
p-Terphenyl-d14	79.2		% Rec.	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 06/26/07 09:26 Revised: 06/26/07 13:34

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-08

Site ID :

Project # : 68997611

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : DUPLICATE

Collected By :
Collection Date : 06/14/07 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum	0.13	0.10	mg/l	6010B	06/20/07	1
Antimony	BDL	0.010	mg/l	6010B	06/20/07	1
Arsenic	0.030	0.020	mg/l	6010B	06/20/07	1
Barium	0.10	0.0050	mg/l	6010B	06/20/07	1
Beryllium	BDL	0.0020	mg/l	6010B	06/20/07	1
Boron	3.1	0.20	mg/l	6010B	06/20/07	1
Cadmium	BDL	0.0050	mg/l	6010B	06/20/07	1
Calcium	150	0.50	mg/l	6010B	06/20/07	1
Chromium	BDL	0.010	mg/l	6010B	06/20/07	1
Cobalt	BDL	0.010	mg/l	6010B	06/20/07	1
Copper	0.088	0.020	mg/l	6010B	06/20/07	1
Iron	12.	0.10	mg/l	6010B	06/20/07	1
Lead	BDL	0.0050	mg/l	6010B	06/20/07	1
Magnesium	130	0.10	mg/l	6010B	06/20/07	1
Manganese	0.88	0.010	mg/l	6010B	06/20/07	1
Molybdenum	0.038	0.0050	mg/l	6010B	06/20/07	1
Nickel	BDL	0.020	mg/l	6010B	06/20/07	1
Potassium	24.	0.50	mg/l	6010B	06/20/07	1
Selenium	BDL	0.020	mg/l	6010B	06/20/07	1
Silver	BDL	0.010	mg/l	6010B	06/20/07	1
Sodium	3300	2.5	mg/l	6010B	06/20/07	5
Strontium	3.5	0.010	mg/l	6010B	06/20/07	1
Thallium	BDL	0.020	mg/l	6010B	06/20/07	1
Tin	BDL	0.10	mg/l	6010B	06/20/07	5
Titanium	0.031	0.010	mg/l	6010B	06/20/07	1
Vanadium	0.035	0.010	mg/l	6010B	06/20/07	1
Zinc	BDL	0.030	mg/l	6010B	06/20/07	1
Benzene	BDL	0.00050	mg/l	8021B	06/22/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/22/07	1
Ethylbenzene	0.0092	0.00050	mg/l	8021B	06/22/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/22/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	112.		% Rec.	8021B	06/22/07	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Acenaphthylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-08

Site ID :

Project # : 68997611

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : DUPLICATE

Collected By : Fred Small
Collection Date : 06/14/07 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluoranthene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Fluorene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Naphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Phenanthrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
Pyrene	BDL	0.000050	mg/l	8270C-SIM	06/21/07	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270C-SIM	06/21/07	1
Surrogate Recovery						
Nitrobenzene-d5	127.		% Rec.	8270C-SIM	06/21/07	1
2-Fluorobiphenyl	67.6		% Rec.	8270C-SIM	06/21/07	1
p-Terphenyl-d14	74.3		% Rec.	8270C-SIM	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 06/26/07 09:26 Revised: 06/26/07 13:34

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-09

Site ID :

Project # : 68997611

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Sample ID : FIELD BLANK

Collected By : Fred Small
Collection Date : 06/14/07 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.00054	0.00050	mg/l	8021B	06/21/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/21/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/21/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021B	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-10

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Site ID :

Sample ID : EQUIP BLK

Project # : 68997611

Collected By : Fred Small
Collection Date : 06/14/07 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/21/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/21/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021B	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 06/26/07 09:26 Revised: 06/26/07 13:35

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REPORT OF ANALYSIS

Ms. Mary E. Wells
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

June 26, 2007

ESC Sample # : L298256-11

Date Received : June 16, 2007
Description : Huntsman Brickland Refinery

Site ID :

Sample ID : TRIP BLANK

Project # : 68997611

Collected By : Fred Small
Collection Date : 06/14/07 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Toluene	BDL	0.0050	mg/l	8021B	06/21/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	06/21/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/21/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021B	06/21/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 06/26/07 09:26 Revised: 06/26/07 13:35

Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L298256-01	Anthracene	J3
	Benzo(a)anthracene	J4
	Pyrene	J4
	Tin	O
L298256-02	Anthracene	J3
	Benzo(a)anthracene	J4
	Pyrene	J4
	Tin	O
L298256-03	Anthracene	J3
	Benzo(a)anthracene	J4
	Pyrene	J4
	2-Fluorobiphenyl	J2
	Tin	O
L298256-04	Anthracene	J3
	Benzo(a)anthracene	J4
	Pyrene	J4
	Tin	O
L298256-05	Pyrene	J4
	Tin	O
L298256-06	Anthracene	J3
	Benzo(a)anthracene	J4
	Pyrene	J4
L298256-07	Anthracene	J3
	Benzo(a)anthracene	J4
	Pyrene	J4
L298256-08	Anthracene	J3
	Benzo(a)anthracene	J4
	Pyrene	J4
	Nitrobenzene-d5	J1
	Tin	O

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

	Control Limits				(AQ)	(SS)
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane	68-128	64-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8	76-115	69-118
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene	79-127	61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
06/26/07 at 13:35:02

TSR Signing Reports: 064
R5 - Desired TAT

Sample: L298256-01 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Sample: L298256-02 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Sample: L298256-03 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Sample: L298256-04 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Sample: L298256-05 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Sample: L298256-06 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Sample: L298256-07 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Sample: L298256-08 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Sample: L298256-09 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Sample: L298256-10 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Sample: L298256-11 Account: TERRLCNM Received: 06/16/07 09:00 Due Date: 06/22/07 00:00 RPT Date: 06/26/07 09:26

Terracon - Las Cruces

1630 Hickory Loop Ste H
Las Cruces,NM 88005

Alternate billing information:

Chain of Custody
Page ___ of ___

Prepared by:
ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (800) 767-5859
FAX (615) 758-5859

Report to: **Ms. Mary E. Wells**
Email: **mewells@terracon.com**

Project Description: **Huntsman Brickland**
City/State Collected: SUNLAND PARK NEW MEXICO

Phone: **(505) 527-1700**
FAX:
Client Project #: **68997611**
Lab Project #: **TERRLCNM-68997611**

Collected by (print): FRED SMALL
Site/Facility ID#:
P.O.#:

Collected by (signature): [signature]
Immediately Packed on Ice N___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed
Email? __No X Yes
FAX? __No __Yes

Acctnum: **TERRLCNM** (lab use only)
Template/Prelogin: **T43796 P212677**
Cooler #: 6778
Shipped Via: **FedEX Ground**

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	BTEX 40mlAmb-HCl	Metals 500mlHDPE-HNO3	SV8270PAHSIM 1L-Amb NoPres	Remarks/Contaminant	Sample # (lab only)
MW-9S	GRAB	GW	4.61	6-14-07	10:09	5	X	X	X		179725-01
MW-6D	"	GW	5.04	"	11:12	5	X	X	X		-02
MW-6S	"	GW	5.12	"	11:50	5	X	X	X		-03
MW-3D	"	GW	4.22	"	12:57	5	X	X	X		-04
MW-3S	"	GW	4.18	"	13:45	5	X	X	X		-05
UP-RIVER	"	GW	NA	"	15:45	5	X	X	X		-06
DOWN-RIVER	"	GW	NA	"	16:05	5	X	X	X		-07
DUPLICATE	"	GW	NA	"	—	5	X	X	X		-08
FIELD BLANK, EQUIP. BLK, TRIP	"		NA	"	—	5	X				-09/-10/-11

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other________

pH ________ Temp ________
Flow ________ Other ________

Remarks:

8058 8078 2494 8602 4078 2509 8053 8078 2488

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ ____	Condition: (lab use only)
[signature]	6-15-07				OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1° Bottles Received: 42+3TB	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 6-16-07 Time: 0930	pH Checked: <2 NCF:

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Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H

Las Cruces, NM 88005

Report Summary

Friday December 28, 2007

Report Number: L324669
Samples Received: 12/19/07
Client Project: 68997611

Description: Huntsman Semi-Annual GW Sampling

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Terrie Fudge
Terrie Fudge, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

10 Samples Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

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REPORT OF ANALYSIS

Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

December 28, 2007

ESC Sample # : L324669-01

Site ID :

Project # : 68997611

Date Received : December 19, 2007
Description : Huntsman Semi-Annual GW Sampling

Sample ID : MW-3S

Collected By : FVS / CGM
Collection Date : 12/17/07 14:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	12/23/07	1
Toluene	BDL	0.0050	mg/l	8021B	12/23/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	12/23/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	12/23/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021B	12/23/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

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REPORT OF ANALYSIS

Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

December 28, 2007

ESC Sample # : L324669-02

Site ID :

Project # : 68997611

Date Received : December 19, 2007
Description : Huntsman Semi-Annual GW Sampling

Sample ID : MW-3D

Collected By : FVS / CGM
Collection Date : 12/17/07 13:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	12/23/07	1
Toluene	BDL	0.0050	mg/l	8021B	12/23/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	12/23/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	12/23/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	99.8		% Rec.	8021B	12/23/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

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REPORT OF ANALYSIS

Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

December 28, 2007

ESC Sample # : L324669-03

Site ID :

Project # : 68997611

Date Received : December 19, 2007
Description : Huntsman Semi-Annual GW Sampling

Sample ID : MW-6D

Collected By : FVS / CGM
Collection Date : 12/17/07 11:09

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	12/23/07	1
Toluene	BDL	0.0050	mg/l	8021B	12/23/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	12/23/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	12/23/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	98.8		% Rec.	8021B	12/23/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

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REPORT OF ANALYSIS

Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

December 28, 2007

ESC Sample # : L324669-04

Site ID :

Project # : 68997611

Date Received : December 19, 2007
Description : Huntsman Semi-Annual GW Sampling

Sample ID : MW-6S

Collected By : FVS / CGM
Collection Date : 12/17/07 11:41

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	12/26/07	1
Toluene	BDL	0.0050	mg/l	8021B	12/26/07	1
Ethylbenzene	0.0022	0.00050	mg/l	8021B	12/26/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	12/26/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	95.2		% Rec.	8021B	12/26/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

December 28, 2007

ESC Sample # : L324669-05

Site ID :

Project # : 68997611

Date Received : December 19, 2007
Description : Huntsman Semi-Annual GW Sampling

Sample ID : MW-9S

Collected By : FVS / CGM
Collection Date : 12/17/07 09:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	12/24/07	1
Toluene	BDL	0.0050	mg/l	8021B	12/24/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	12/24/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	12/24/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021B	12/24/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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.
Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

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REPORT OF ANALYSIS

Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

December 28, 2007

ESC Sample # : L324669-06

Site ID :

Project # : 68997611

Date Received : December 19, 2007
Description : Huntsman Semi-Annual GW Sampling

Sample ID : UR

Collected By : FVS / CGM
Collection Date : 12/17/07 14:52

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	12/24/07	1
Toluene	BDL	0.0050	mg/l	8021B	12/24/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	12/24/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	12/24/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021B	12/24/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

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REPORT OF ANALYSIS

Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

December 28, 2007

ESC Sample # : L324669-07

Site ID :

Project # : 68997611

Date Received : December 19, 2007
Description : Huntsman Semi-Annual GW Sampling

Sample ID : LR

Collected By : FVS / CGM
Collection Date : 12/17/07 14:57

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	12/24/07	1
Toluene	BDL	0.0050	mg/l	8021B	12/24/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	12/24/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	12/24/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021B	12/24/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

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Est. 1970

REPORT OF ANALYSIS

Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

December 28, 2007

ESC Sample # : L324669-08

Site ID :

Project # : 68997611

Date Received : December 19, 2007
Description : Huntsman Semi-Annual GW Sampling

Sample ID : DUPLICATE

Collected By : FVS / CGM
Collection Date : 12/17/07 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	12/27/07	1
Toluene	BDL	0.0050	mg/l	8021B	12/27/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	12/27/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	12/27/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021B	12/27/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

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REPORT OF ANALYSIS

Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

December 28, 2007

ESC Sample # : L324669-09

Site ID :

Project # : 68997611

Date Received : December 19, 2007
Description : Huntsman Semi-Annual GW Sampling

Sample ID : EQUIPMENT BLANK

Collected By : FVS / CGM
Collection Date : 12/17/07 14:59

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	12/24/07	1
Toluene	BDL	0.0050	mg/l	8021B	12/24/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	12/24/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	12/24/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021B	12/24/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

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Est. 1970

REPORT OF ANALYSIS

Fred Small
Terracon - Las Cruces
1630 Hickory Loop Ste H
Las Cruces, NM 88005

December 28, 2007

ESC Sample # : L324669-10

Site ID :

Project # : 68997611

Date Received : December 19, 2007
Description : Huntsman Semi-Annual GW Sampling

Sample ID : TRIP BLANK

Collected By : FVS / CGM
Collection Date : 12/17/07 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	12/24/07	1
Toluene	BDL	0.0050	mg/l	8021B	12/24/07	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	12/24/07	1
Total Xylene	BDL	0.0015	mg/l	8021B	12/24/07	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021B	12/24/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/28/07 13:24 Printed: 12/28/07 15:27

Summary of Remarks For Samples Printed
12/28/07 at 15:27:48

TSR Signing Reports: 064
R5 - Desired TAT

Sample: L324669-01 Account: TERRLCNM Received: 12/19/07 09:00 Due Date: 12/27/07 00:00 RPT Date: 12/28/07 13:24

Sample: L324669-02 Account: TERRLCNM Received: 12/19/07 09:00 Due Date: 12/27/07 00:00 RPT Date: 12/28/07 13:24

Sample: L324669-03 Account: TERRLCNM Received: 12/19/07 09:00 Due Date: 12/27/07 00:00 RPT Date: 12/28/07 13:24

Sample: L324669-04 Account: TERRLCNM Received: 12/19/07 09:00 Due Date: 12/27/07 00:00 RPT Date: 12/28/07 13:24

Sample: L324669-05 Account: TERRLCNM Received: 12/19/07 09:00 Due Date: 12/27/07 00:00 RPT Date: 12/28/07 13:24

Sample: L324669-06 Account: TERRLCNM Received: 12/19/07 09:00 Due Date: 12/27/07 00:00 RPT Date: 12/28/07 13:24

Sample: L324669-07 Account: TERRLCNM Received: 12/19/07 09:00 Due Date: 12/27/07 00:00 RPT Date: 12/28/07 13:24

Sample: L324669-08 Account: TERRLCNM Received: 12/19/07 09:00 Due Date: 12/27/07 00:00 RPT Date: 12/28/07 13:24

Sample: L324669-09 Account: TERRLCNM Received: 12/19/07 09:00 Due Date: 12/27/07 00:00 RPT Date: 12/28/07 13:24

Sample: L324669-10 Account: TERRLCNM Received: 12/19/07 09:00 Due Date: 12/27/07 00:00 RPT Date: 12/28/07 13:24

Chain of Custody Page 1 of 1

Terracon Inc.
1630 Hickory Loop; Ste H
Las Cruces, NM 88005

Alternate billing information:

Report to: Fred V. Small

Email to: fvsmall @terracon.com

Project Description: Huntsman semi Annual sampling

City/State Collected: Sunland Park, NM

Phone: 505-527-1700
FAX: 575-527-1092

Client Project #: 68997611

ESC Key:

Collected by: FVS/CGM

Site/Facility ID#:

P.O.#:

Collected by (signature): [signature]

Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day.......200%
___ Next Day.......100%
___ Two Day........50%

Date Results Needed:
Email? __No__Yes
FAX? __No__Yes

Analysis/Container/Preservative: BTEX; Metals 500ml HDPE/HNO3

Prepared by:
ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode TERRLCNM (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	BTEX	Metals 500ml HDPE/HNO3					Remarks/Contaminant	Sample # (lab only)
MW-3S	Grab	GW		12/17/02	2:20pm	2	X							L324669-01
MW-3D	Grab	GW		↓	1:45pm	↓	X							-02
MW-6D	Grab	GW			11:09		X							-03
MW-6S	Grab	GW			11:41		X							-04
MW-9S	Grab	GW			9:30		X							-05
UR	Grab	OT			2:52		X							-06
LR	Grab	OT			2:57		X							-07
Duplicate	Grab	GW			—		X							-08
Equipment Blank	Grab	OT			2:59		X							-09
Trip Blank							X X							-10

*Matrix SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other River

pH ______ Temp ______

Remarks: 7824 9420

Flow ______ Other ______

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
[signature]	12/18/02	12PM			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.5°C / Bottles Received: 19Y	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 12/19 / Time: 9:00	pH Checked: / NCF: ✓

Terri

ENVIRONMENTAL SCIENCE CORP.

SAMPLE NON-CONFORMANCE FORM

Sample No. : L324669-JE

Date: 12-19-07

Evaluated by: Jason

Client: TERRLCNM

Non-Conformance (check applicable items)

____	Chain of Custody is missing	✓	Login Clarification Needed
____	Improper container type	____	Improper preservation
____	Chain of custody is incomplete	____	Container lid not in tact
____	Parameter(s) past holding time	____	Improper temperature
____	Broken container(s) **see below**	____	Broken container: sufficient sample volume remains for analysis requested

____ Insufficient packing material around container

____ Insufficient packing material inside cooler

____ Improper handling by carrier (FedEx / UPS / Courier)

____ Sample was frozen

Comments: What ~~Metals~~? Metals marked for Trip Blank. No Metals container received.

Login Instructions: **TSR Initials:** JL

Client informed by (call) / email / fax / voice mail date: 12/20/07 time: ____

Client contact: only run BTEX on Trip Blank

HUNTSMAN GROUNDWATER SAMPLING EVENT

CALIBRATION OF HYDROLAB QUANTA® MULTI-PROBE

DATE: 6/1/07

Dissolved Oxygen: 100% saturation @ 690 barometric pressure.

pH: 7.0 standard calibration.
(Thermal Scientific catalog # RC1551-1)

4.0 standard calibration.
(Thermal Scientific catalog # RC1501-1)

Conductivity: 10 mS standard calibration @ 25°C.
(Thermal Scientific catalog # C5738-4)

5.23 mS slope reading on 5 mS standard @ 25°C.

Turbidity: 0.0 N.T.U. calibration standard.
(Hach/Hydrolab catalog # 26597-49)

10.0 N.T.U. slope calibration on 10 N.T.U. Formazin standard.
(Hach/Hydrolab catalog # 26599-49)

Redox Potential: Zobell's Solution ORP standard = 433 m.V. @ 23 °C.
(Hach/Hydrolab catalog # 013860)

Calibrations performed by: [signature]

DAILY LOG	DATE	6	14	07
	NO.			
	SHEET	1	OF	1

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Brickland Site Sampling Event | PROJECT NO.: June '07

FIELD ACTIVITY SUBJECT: June Monitor Well & River Samples

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0900 - Start purging MW-9S. Took field parameters.
1009 - Sample MW-9S.
1030 - Start purging MW-6D. Took field parameters.
1112 - Sample MW-6D.
1127 - Start purging MW-6S. Took field parameters.
1150 - Sample MW-6S. Caught duplicate set of samples at MW-6S.
1225 - Start purging MW-3D. Took field parameters.
1257 - Sample MW-3D.
1313 - Start purging MW-3S. Took field parameters.
1345 - Sample MW-3S.
1538 - Caught field blank at up-river sampling site.
1540 - Caught equipment blank on dipper at up-river sampling site.
1544 - Took field parameters at up-river sampling site.
1545 - Sample up-river of Rio Grande.
1604 - Took field parameters at down-river sampling site.
1605 - Sample down-river of Rio Grande.

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: fair	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Glen Rhodes / Fred Small

SIGNATURE: Glen Rhodes DATE: 6-14-07

327A-7-88

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION
Well number MW-9S Date 6 / 14 / 07 Time 0851
Air Temperature 78 (°F) Weather Conditions fair
Sampling performed by GR + F.S. Company Haley & Aldrich / Iemeon

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING
Depth to Static Water Level 4.61 (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING
Air / Immiscible Fluid Interface Level _____ (ft)
Immiscible Fluid / Water Interface Level _____ (ft)
Water / Immiscible Fluid Interface Level _____ (ft)

WELL PURGING
Well Depth Below Top of Casing 15.50 (ft) Casing Diameter 4 (inches)
Feet of Water in Casing 10.89 (feet) Volume of Water in Casing 7.19 (gal)
Purging Start Time 0900 Purging Stop Time 1005
Pumping Rate .2 (liters per min) Pump type: (Bladder Pump) / (None)
Volume of Water Removed 3 (gallons) (Submersible) / (Canister)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time(min.)	Temp.(°C)	pH	Cond.(mS/cm)	D.O.(%)	Redox(mV)	Turb.(NTU)
5	20.98	7.26	13.26	4.2	82	121
10	21.57	7.27	13.23	2.6	76	46.3
15	21.54	7.27	13.18	2.0	77	25.1
20	21.54	7.27	13.12	1.6	75	19.1
25	21.56	7.27	13.07	1.4	71	13.0
30	21.54	7.27	13.01	1.2	66	10.3
35	21.58	7.27	12.97	1.1	63	9.1
40	21.60	7.27	12.92	1.0	56	7.7
45	21.61	7.27	12.87	.9	52	7.4
50	21.64	7.27	12.85	.9	48	6.3
55	21.66	7.27	12.79	.8	45	5.0
60	21.67	7.27	12.81	.8	41	4.9
65	21.70	7.28	12.77	.8	39	4.7

Well Integrity: (good) / needs attention

COMMENTS:
clear w/ slight amber tint.

1009

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION
Well number MW-6D Date 6 / 14 / 07 Time 1025
Air Temperature 82 (°F) Weather Conditions fair
Sampling performed by gr & F.S. Company Huntsman / Tenneco

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING
Depth to Static Water Level 5.04 (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING
Air / Immiscible Fluid Interface Level _____ (ft)
Immiscible Fluid / Water Interface Level _____ (ft)
Water / Immiscible Fluid Interface Level _____ (ft)

WELL PURGING
Well Depth Below Top of Casing 38.00 (ft) Casing Diameter 4 (inches)
Feet of Water in Casing 32.96 (feet) Volume of Water in Casing 21.75 (gal)
Purging Start Time 1030 Purging Stop Time 1110
Pumping Rate .2 (liters per min) Pump type: (Bladder Pump) / (None)
Volume of Water Removed 2 (gallons) (Submersible) / (Canister)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time(min.)	Temp.(°C)	pH	Cond.(mS/cm)	D.O.(%)	Redox(mV)	Turb.(NTU)
5	21.92	7.12	21.3	4.5	108	12.1
10	22.15	7.14	21.3	3.6	108	3.7
15	22.08	7.15	21.3	2.7	111	1.1
20	22.16	7.16	21.2	2.3	112	.7
25	22.15	7.16	21.2	1.8	112	.4
30	22.18	7.16	21.2	1.6	110	.2
35	22.18	7.16	21.1	1.4	108	.3
40	22.14	7.17	21.1	1.3	106	.4

Well Integrity: (good) / needs attention

COMMENTS: 1112

Clear

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION

Well number MW-6S Date 6 / 14 / 07 Time 1124
Air Temperature 85 (°F) Weather Conditions [illegible]
Sampling performed by [illegible] F.S. Company [illegible]

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING

Depth to Static Water Level 5.12 (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING

Air / Immiscible Fluid Interface Level ________ (ft)
Immiscible Fluid / Water Interface Level ________ (ft)
Water / Immiscible Fluid Interface Level ________ (ft)

WELL PURGING

Well Depth Below Top of Casing 17.00 (ft) Casing Diameter 4 (inches)
Feet of Water in Casing 11.88 (feet) Volume of Water in Casing 7.84 (gal)
Purging Start Time 1127 Purging Stop Time 1147
Pumping Rate .2 (liters per min) Pump type: (Bladder Pump) / (None) (Submersible) / (Canister)
Volume of Water Removed 1 (gallons)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time(min.)	Temp.(°C)	pH	Cond.(mS/cm)	D.O.(%)	Redox(mV)	Turb.(NTU)
5	21.95	7.06	16.6	1.0	68	3.9
10	21.96	7.06	16.5	.6	67	3.7
15	21.88	7.06	16.5	.3	63	4.1
20	21.88	7.06	16.4	.2	60	4.1

Well Integrity: (good / needs attention)

COMMENTS: Catch duplicate samples.

1150

amber - colored purge. Slight hydrocarbon odor.

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION

Well number MW-3D Date 6 / 14 / 07 Time 1220

Air Temperature 87 (°F) Weather Conditions fair

Sampling performed by ga + F.S. Company Huntsman / Terracon

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING

Depth to Static Water Level 4.22 (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING

Air / Immiscible Fluid Interface Level ________ (ft)

Immiscible Fluid / Water Interface Level ________ (ft)

Water / Immiscible Fluid Interface Level ________ (ft)

WELL PURGING

Well Depth Below Top of Casing 37.50 (ft) Casing Diameter 4 (inches)

Feet of Water in Casing 33.28 (feet) Volume of Water in Casing 21.96 (gal)

Purging Start Time 1225 Purging Stop Time 1255

Pumping Rate .2 (liters per min) Pump type: (Bladder Pump) / (None) (Submersible) / (Canister)

Volume of Water Removed 2 (gallons)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time (min.)	Temp. (°C)	pH	Cond. (mS/cm)	D.O. (%)	Redox (mV)	Turb. (NTU)
5	21.50	7.00	20.2	7.6	144	7.5
10	21.34	7.02	20.1	5.6	145	9.7
15	21.35	7.03	20.1	4.9	145	8.8
20	21.40	7.04	20.2	2.9	143	8.3
25	21.82	7.04	20.2	1.8	142	8.3
30	22.00	7.05	20.2	1.9	140	8.0

Well Integrity: (good) / needs attention)

COMMENTS:

Clear. 1257

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION
Well number MW-3S Date 6/14/07 Time 1310
Air Temperature 87 (°F) Weather Conditions Sun
Sampling performed by Gr + F.S. Company Haley & Aldrich

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING
Depth to Static Water Level 4.18 (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING
Air / Immiscible Fluid Interface Level _____ (ft)
Immiscible Fluid / Water Interface Level _____ (ft)
Water / Immiscible Fluid Interface Level _____ (ft)

WELL PURGING
Well Depth Below Top of Casing 16.50 (ft) Casing Diameter 4 (inches)
Feet of Water in Casing 12.32 (feet) Volume of Water in Casing 8.13 (gal)
Purging Start Time 1313 Purging Stop Time 1343
Pumping Rate .2 (liters per min) Pump type: (Bladder Pump) / (None)
Volume of Water Removed 2 (gallons) (Submersible) / (Canister)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time (min.)	Temp. (°C)	pH	Cond. (mS/cm)	D.O. (%)	Redox (mV)	Turb. (NTU)
5	23.40	7.15	12.95	6.4	144	12.1
10	23.37	7.16	12.91	4.5	143	9.8
15	23.70	7.16	12.90	3.8	143	11.6
20	23.49	7.16	12.87	3.4	142	11.3
25	23.50	7.16	12.85	3.0	139	10.7
30	23.61	7.16	12.87	2.8	138	10.3

Well Integrity: (good) / needs attention)

COMMENTS:

Clear. 1345

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION
Well number UP-RIVER Date 6/14/07 Time 1538
Air Temperature 92 (°F) Weather Conditions fair
Sampling performed by gr & F.S. Company Huntsman Texaco

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING
Depth to Static Water Level _____ (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING
Air / Immiscible Fluid Interface Level _____ (ft)
Immiscible Fluid / Water Interface Level _____ (ft)
Water / Immiscible Fluid Interface Level _____ (ft)

WELL PURGING
Well Depth Below Top of Casing _____ (ft) Casing Diameter _____ (inches)
Feet of Water in Casing _____ (feet) Volume of Water in Casing _____ (gal)
Purging Start Time _____ Purging Stop Time _____
Pumping Rate _____ (liters per min) Pump type: (Bladder Pump) / (None)
Volume of Water Removed _____ (gallons) (Submersible) / (Canister)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time(min.)	Temp.(°C)	pH	Cond.(mS/cm)	D.O.(%)	Redox(mV)	Turb.(NTU)
1544	28.37	7.66	0.911	79.4	205	308

Well Integrity: (good / needs attention)

COMMENTS: Caught field blank at 1538.
Caught equipment blank on dipper at 1540.

1545

River is full, muddy & turbid.

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION
Well number DOWN-RIVER Date 6/14/07 Time 1558
Air Temperature 93 (°F) Weather Conditions Sun
Sampling performed by GR & F.S. Company Shannon Pearson

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING
Depth to Static Water Level _____ (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING
Air / Immiscible Fluid Interface Level _____ (ft)
Immiscible Fluid / Water Interface Level _____ (ft)
Water / Immiscible Fluid Interface Level _____ (ft)

WELL PURGING
Well Depth Below Top of Casing _____ (ft) Casing Diameter _____ (inches)
Feet of Water in Casing _____ (feet) Volume of Water in Casing _____ (gal)
Purging Start Time _____ Purging Stop Time _____
Pumping Rate _____ (liters per min) Pump type: (Bladder Pump) / (None)
Volume of Water Removed _____ (gallons) (Submersible) / (Canister)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time(min.)	Temp.(°C)	pH	Cond.(mS/cm)	D.O.(%)	Redox(mV)	Turb.(NTU)
1604	27.89	7.95	0.912	77.2	204	310

Well Integrity: (good / needs attention)

COMMENTS: 1605

River is full + muddy.

DAILY LOG				
	DATE	6	15	07
	NO.			
	SHEET	1	OF	1

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Brickland Site Groundwater Sampling | PROJECT NO.: June '07

FIELD ACTIVITY SUBJECT: Purgewater Processing

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- There was approximately 12 gallons of purgewater generated from five monitor wells during micropurging and sampling during the June '07 event. The purgewater was transported to Huntsman's Odessa, Tx. facility. The groundwater was pumped through a steam stripper for processing to remove any organic contituents before re-use as cooling tower make-up.

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: fair	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Glen Rhodes

SIGNATURE: Glen Rhodes DATE: 6-15-07

327A-7-86

TERRACON GROUNDWATER SAMPLING EVENT

CALIBRATION OF HYDROLAB QUANTA® MULTI-PROBE

DATE: 12-17-07

Dissolved Oxygen: 100% saturation @ 690 barometric pressure.

pH: 7.0 standard calibration.
(Thermal Scientific catalog #RC1551-1)

4.0 standard calibration.
(Thermal Scientific catalog #RC1501-1)

Conductivity: 10 mS standard calibration @ 25°C.
(Thermal Scientific catalog #C5738-4)

5.11 mS slope reading on 5 mS standard @ 25 °C.

Turbidity: 0.0 N.T.U. calibration standard.
(Hach/Hydrolab catalog # 26597-49)

10.0 N.T.U. slope calibration on 10 N.T.U. Formazin standard.
(Hach/Hydrolab catalog # 26599.49)

Redox Potential: Zobell's Solution ORP standard= 450 m.V. @ 15 °C.
(Hach/Hydrolab catalog # 013860)

Calibrations performed by: Fred Small

DAILY LOG	DATE	12	17	07
	NO.			
	SHEET	1	OF	1

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Former Brickland Refinery Site Sampling | PROJECT NO.: 68997611

FIELD ACTIVITY SUBJECT: December 2007 Monitoring well & River Sampling

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

09:53 Begin purging monitoring well MW-95. Read and record field parameters
10:28 Stop purging
10:30 collect sample
10:42 Begin purging MW-60. Record field parameters
11:07 Stop
11:09 collect sample from MW-60
11:14 Beging purging MW-65 Record field parameters
11:39 End purging
11:41 collect sample from MW-65. collect another sample (duplicate) from MW-65
13:18 Begin purging MW-30 Record field parameters
13:43 Stop purging
13:45 collect sample from MW-30
13:48 Begin purging MW-35. Read & Record field parameters
14:18 Stop purging
14:20 Collect sample from MW-35
~~14:50 Decon Teflon Dipper with de-ionized water and collect equipment blank sample - CGM~~
14:52 collect upstream river sample
14:53 Decon Teflon dipper
14:57 collect downstream river sample
14:59 Decon Teflon Dipper with Alconox, double rinsed with dionized water, then we collect equipment blank sample

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Sunny ≈ 45°F	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Fred V Small / Carina G. Munoz

SIGNATURE [signature] DATE: 12/17/07

327A-7-85

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION
Well number MW-9S Date 12/17/07 Time 0945
Air Temperature 57 (°F) Weather Conditions Chilly
Sampling performed by TM/CGM Company Terracon

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING
Depth to Static Water Level 6.84 (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING
Air / Immiscible Fluid Interface Level _____ (ft)
Immiscible Fluid / Water Interface Level _____ (ft)
Water / Immiscible Fluid Interface Level _____ (ft)

WELL PURGING
Well Depth Below Top of Casing 15.50 (ft) Casing Diameter 4 (inches)
Feet of Water in Casing _____ (feet) Volume of Water in Casing _____ (gal)
Purging Start Time 0953 Purging Stop Time 10:20AM
Pumping Rate .2 (liters per min) Pump type: (Bladder Pump) / (None)
Volume of Water Removed 2 (gallons) (Submersible) / (Canister)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time(min.)	Temp.(°C)	pH	Cond.(mS/cm)	D.O.(%)	Redox(mV)	Turb.(NTU)
5	20.50	6.81	13.85	8.0	334	28.3
10	20.58	6.83	13.55	4.6	305	21.4
15	20.06	6.85	13.22	4.3	289	48.1
20	20.17	6.86	13.16	4.8	282	30.5
25	20.38	6.86	13.06	3.7	276	25.4
30	20.40	6.87	12.93	2.9	269	23.7
35	20.42	6.88	12.82	2.7	261	21.4
40						

Well Integrity: (good) / needs attention

COMMENTS: 10:30 sample time

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION
Well number 6D Date 12/17/07 Time 10:38
Air Temperature 57 (°F) Weather Conditions CHILLY 57°F
Sampling performed by FIS/CGM Company Terracon

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING
Depth to Static Water Level 7.34 (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING
Air / Immiscible Fluid Interface Level _____ (ft)
Immiscible Fluid / Water Interface Level _____ (ft)
Water / Immiscible Fluid Interface Level _____ (ft)

WELL PURGING
Well Depth Below Top of Casing 38' (ft) Casing Diameter 4 (inches)
Feet of Water in Casing _____ (feet) Volume of Water in Casing _____ (gal)
Purging Start Time 10:42 Purging Stop Time 11:07
Pumping Rate 0.2 (liters per min) Pump type: (Bladder Pump) / (None)
Volume of Water Removed 2 (gallons) (Submersible) / (Canister)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time(min.)	Temp.(°C)	pH	Cond.(mS/cm)	D.O.(%)	Redox(mV)	Turb.(NTU)
5	20.67	6.07	20.6	15.6	258	3.5
10	20.78	7.09	20.5	9.6	247	2.1
15	20.84	7.10	20.5	7.1	241	1.9
20	20.60	7.10	20.5	6.2	235	1.7
25	20.58	7.10	20.5	5.7	231	1.8

Well Integrity: ((good) / needs attention)

COMMENTS: Sample time 11:09

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION
Well number 6S Date 12 / 17 / 07 Time 11:16
Air Temperature 54 (°F) Weather Conditions chilly 57°F
Sampling performed by FVS / CAM Company Terracon

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING
Depth to Static Water Level 7.52 (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING
Air / Immiscible Fluid Interface Level _____ (ft)
Immiscible Fluid / Water Interface Level _____ (ft)
Water / Immiscible Fluid Interface Level _____ (ft)

WELL PURGING
Well Depth Below Top of Casing 17.0 (ft) Casing Diameter 4 (inches)
Feet of Water in Casing 1 (feet) Volume of Water in Casing _____ (gal)
Purging Start Time 11:14 Purging Stop Time 11:39
Pumping Rate 0.2 (liters per min) Pump type: (Bladder Pump) / (None)
Volume of Water Removed 2 (gallons) (Submersible) / (Canister)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time (min.)	Temp. (°C)	pH	Cond. (mS/cm)	D.O. (%)	Redox (mV)	Turb. (NTU)
5	20.99	7.10	13.47	5.8	233	4.4
10	21.05	7.09	13.46	2.8	229	3.6
15	21.03	7.09	13.47	2.0	225	3.4
20	20.98	7.09	13.47	1.7	222	3.4
25	21.00	7.08	13.47	1.6	218	3.2

Well Integrity: ((good) / needs attention)

COMMENTS: sample time 11:41
Duplicate sample

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION
Well number 30 Date 12 / 17 /07 Time
Air Temperature 58 (°F) Weather Conditions Sunnd I chilly
Sampling performed by FVS / CGM Company Terracon

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING
Depth to Static Water Level 6.43 (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING
Air / Immiscible Fluid Interface Level _____ (ft)
Immiscible Fluid / Water Interface Level _____ (ft)
Water / Immiscible Fluid Interface Level _____ (ft)

WELL PURGING
Well Depth Below Top of Casing 37.50 (ft) Casing Diameter 4 (inches)
Feet of Water in Casing _____ (feet) Volume of Water in Casing _____ (gal)
Purging Start Time 1:18 PM Purging Stop Time 1:45
Pumping Rate 0.2 (liters per min) Pump type: (Bladder Pump) / (None)
Volume of Water Removed 2 (gallons) (Submersible) / (Canister)

PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time(min.)	Temp.(°C)	pH	Cond.(mS/cm)	D.O.(%)	Redox(mV)	Turb.(NTU)
5	19.56	6.99	19.0	10.4	227	9.2
10	19.35	6.99	19.0	8.9	226	8.4
15	19.65	6.99	19.0	7.5	222	6.9
20	19.45	6.99	19.1	5.6	218	6.4
25	19.70	6.99	19.0	5.6	216	6.8

Well Integrity: (good) / needs attention

COMMENTS: sample taken @ 1:45 PM

GROUNDWATER SAMPLING INFORMATION FORM

GENERAL INFORMATION
Well number 35 Date 12/17/07 Time
Air Temperature 57 (°F) Weather Conditions Chilly
Sampling performed by FVS/RGM Company TT

STATIC WATER LEVEL (SWL) MEASUREMENTS BELOW TOP OF CASING
Depth to Static Water Level 6.5 (ft)

IMMISCIBLE FLUID (IF) INTERFACE MEASUREMENTS BELOW TOP OF CASING
Air / Immiscible Fluid Interface Level (ft)
Immiscible Fluid / Water Interface Level (ft)
Water / Immiscible Fluid Interface Level (ft)

WELL PURGING
Well Depth Below Top of Casing 16.50 (ft) Casing Diameter 4 (inches)
Feet of Water in Casing (feet) Volume of Water in Casing (gal)
Purging Start Time 1.48 Purging Stop Time 2.18
Pumping Rate 0.2 (liters per min) Pump type: (~~Bladder~~ Pump) / (None)
Volume of Water Removed 2 (gallons) (Submersible) / (Canister)

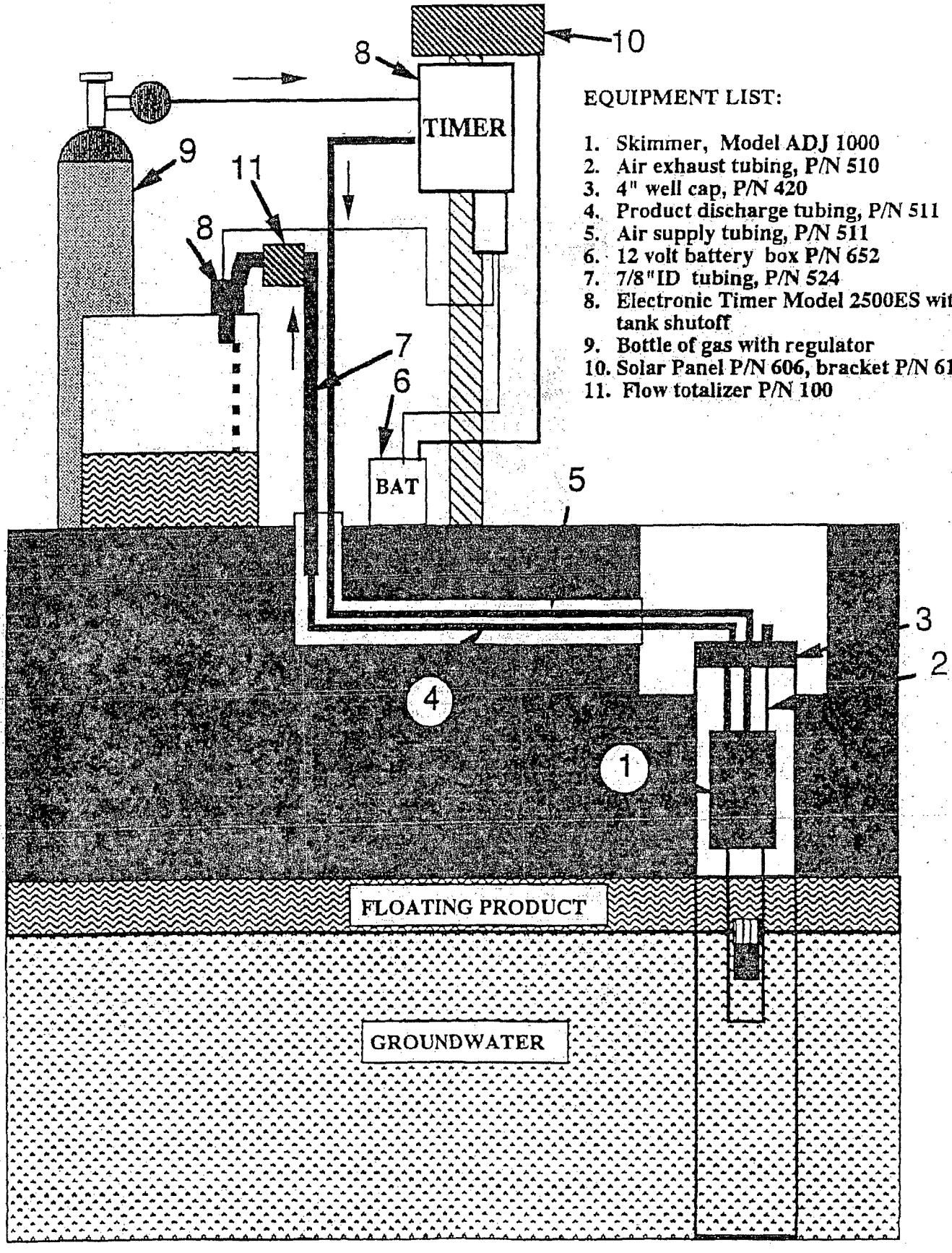
PRESAMPLING FIELD MEASUREMENTS (Field Parameters)

Time(min.)	Temp.(°C)	pH	Cond.(mS/cm)	D.O.(%)	Redox(mV)	Turb.(NTU)
5	19.71	7.10	11.75	9.3	224	7.3
10	19.63	7.22	10.96	21.7	224	5.6
15	19.37	7.20	11.06	19.9	224	5.7
20	19.64	7.18	11.13	17.8	223	5.4
25	19.76	7.17	11.17	16.0	221	5.3
30	19.83	7.16	11.26	14.6	218	5.0
35						

Well Integrity: (good / needs attention)

COMMENTS: sample taken @ 2.20

XITECH LNAPL RECOVERY SYSTEM
Without the use of AC Power



EQUIPMENT LIST:

1. Skimmer, Model ADJ 1000
2. Air exhaust tubing, P/N 510
3. 4" well cap, P/N 420
4. Product discharge tubing, P/N 511
5. Air supply tubing, P/N 511
6. 12 volt battery box P/N 652
7. 7/8"ID tubing, P/N 524
8. Electronic Timer Model 2500ES with tank shutoff
9. Bottle of gas with regulator
10. Solar Panel P/N 606, bracket P/N 613
11. Flow totalizer P/N 100

2500ES Electronic Timer with Tank Shut-off

Without the use of AC power

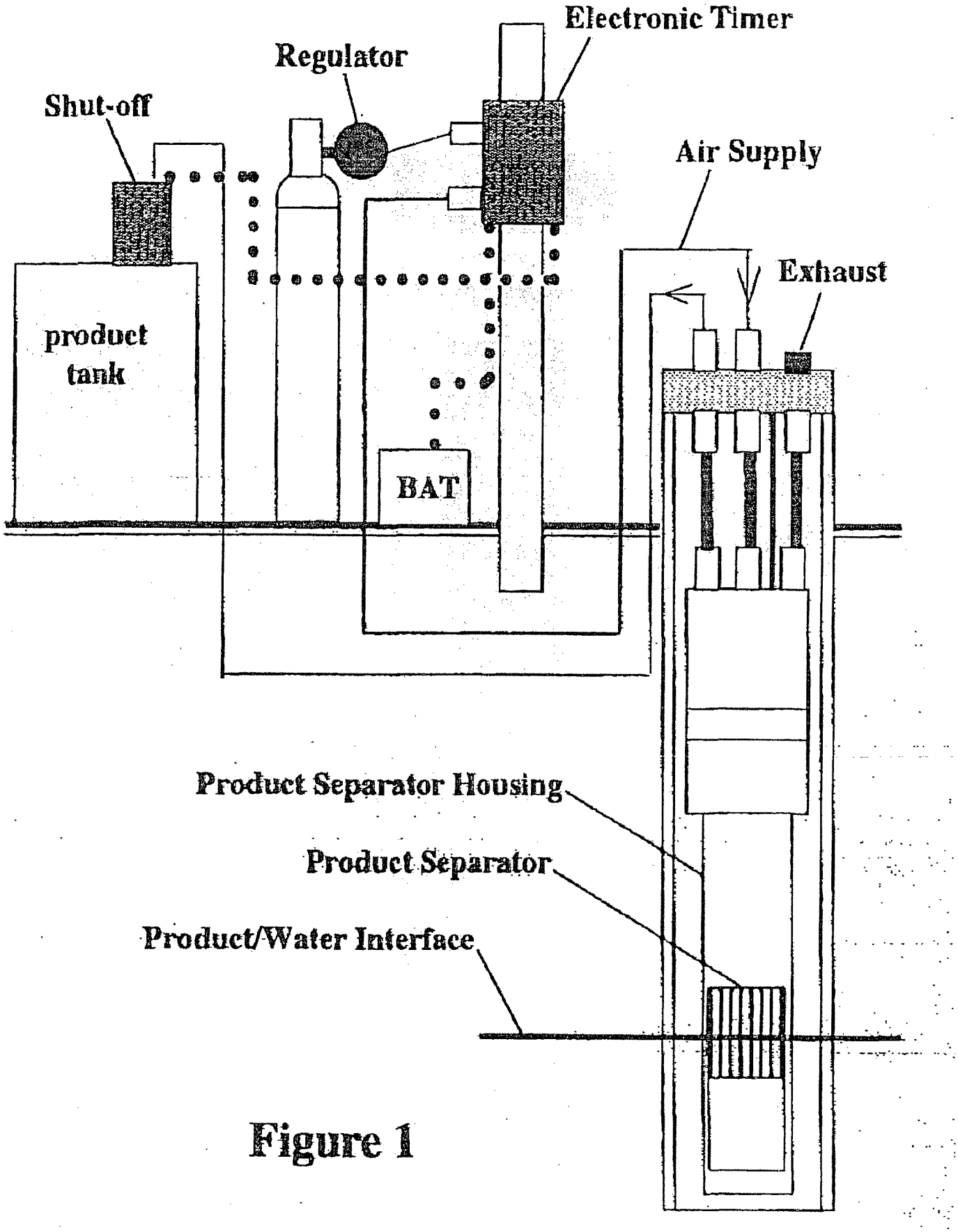


Figure 1

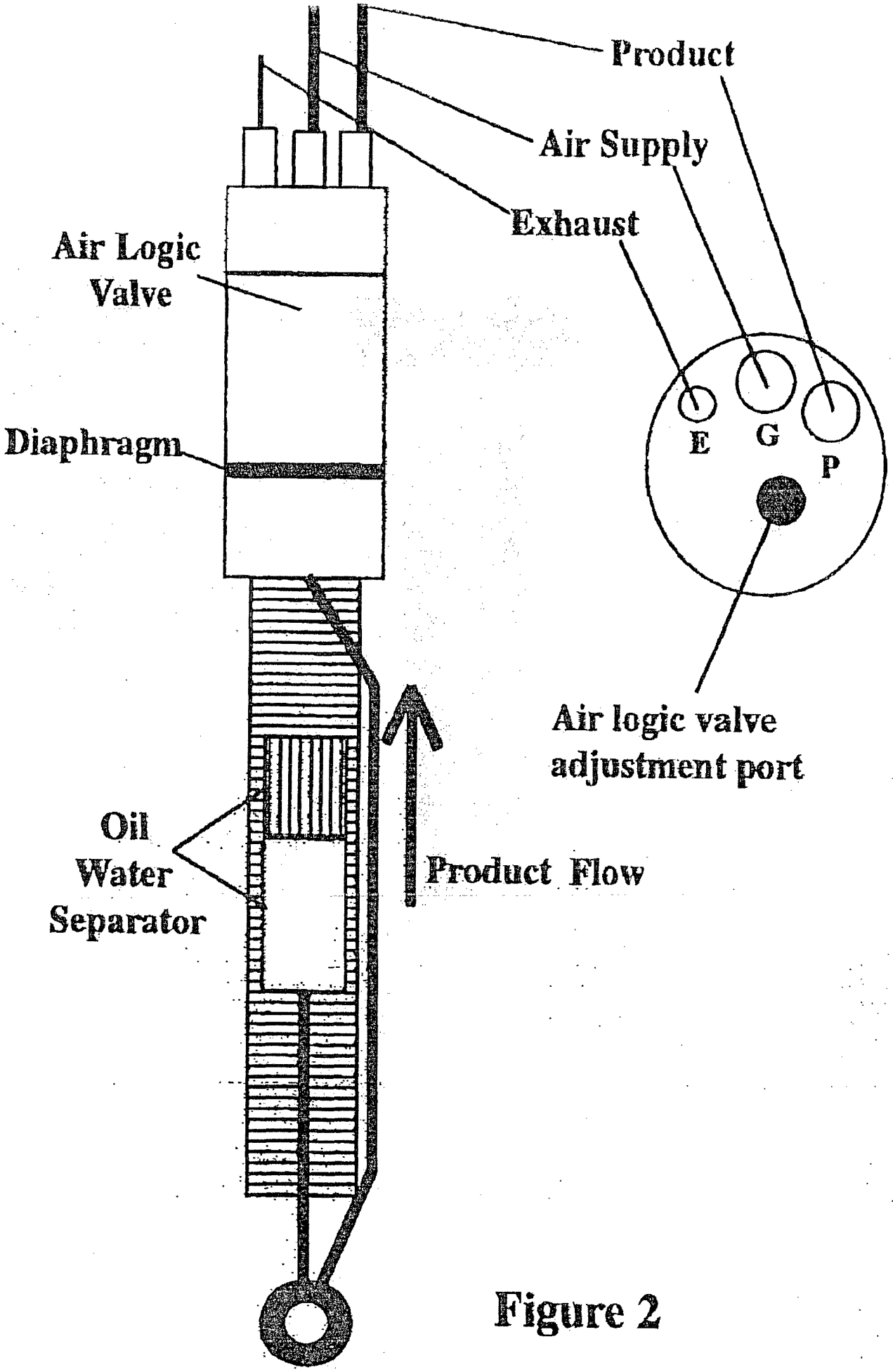

Product
Air Supply
Exhaust
Air Logic Valve
Diaphragm
E
G
P
Air logic valve adjustment port
Oil Water Separator
Product Flow

Figure 2

2500ES Electronic Timer

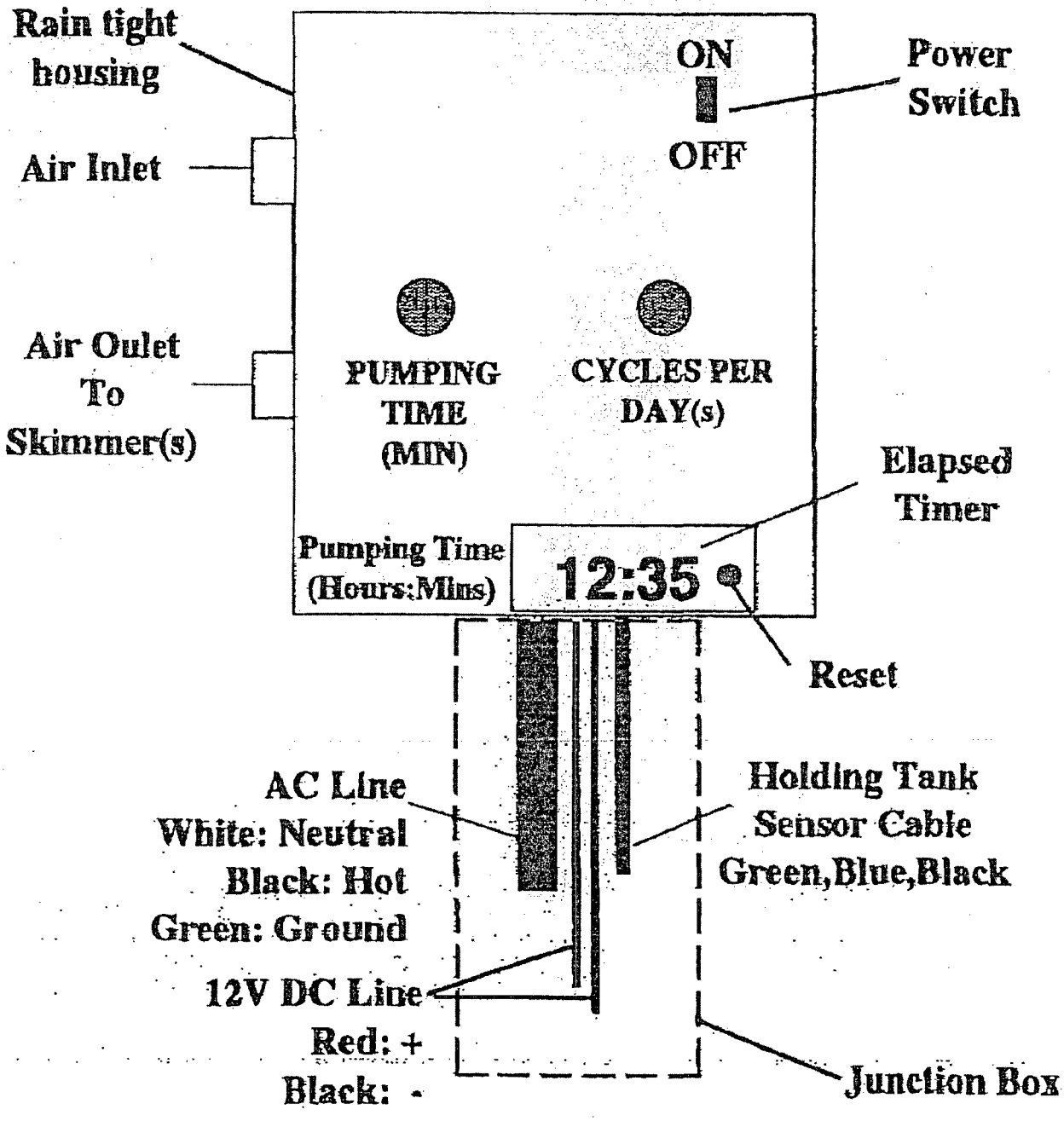
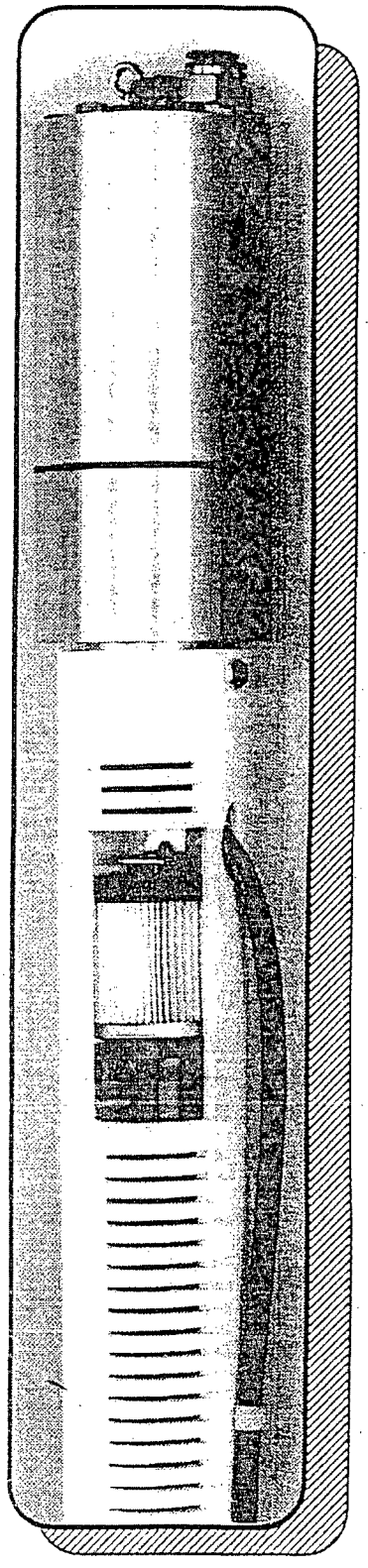


Figure 3

4" LNAPL Recovery Skimmer

The ADJ1000 Skimmer removes product ONLY down to a sheen, operates on bottled gas, is intrinsically safe, and can be installed in less than 1 hour. The ADJ1000 requires no above ground controls to operate, Requires a 4" well diameter, has 30 inches of float travel, uses a dual entry hydrophobic filter, pumps over 25 GPH, and consumes less than .5 CFM of air. The Optional Xitech Programmable Site Managers provide intermittent pumping control for the ADJ1000 Skimmer, continuous electronic monitoring of the high level tank shutoff sensor, displays total run time of system, and operate on a 12DC/120AC/220AC power sources.



Specifications

Pumping range from 5-25 GPH
Skimmer float travel: 30 inches
Operating pressure range: 35-125 PSIG
Maximum operating well depth: 200 feet
Max air requirements: .5 CFM@125 PSIG
Air quality requirements: 5-10 Microns
Size: 3-1/2" DIA. X 48" L
Weight: 11 LBS
Materials : PVC, SST, Viton, Buna, Al
Order No. **ADJ1000**

U.S. Patent# 5,326,458

HUNTSMAN

DISPOSAL PERMIT

PERMIT NO. 19864

MO. DAY YR.	PLANT	REQUESTED BY	JOB ORDER NO.	TWC WASTE CODE
6/15/07	ERA	G. Rhodes	28328070	RTP

AMOUNT	UNITS	DRUM NUMBERS ASSIGNED			DISPOSAL SITE
12	D, P, C, Bx	Bulk	.7560 TO	—	DC

WASTE DESCRIPTION Ground Water Purge from Brickland Facility

COMMENTS

ISSUED BY: JK

P-50-0005 (2-05)

RETURN DISPOSAL PERMIT (AND WEIGHT TICKET) TO FIELD SERVICES.

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A
Manifest Doc. No.:
2. Page 1 of

GENERATOR

3. Generator's Name and Mailing Address
HUNTSMAN
8600 GOSLING ROAD, THE WOODLANDS, TEXAS 77381

4. Generator's Phone (281) 719-3007

5. Transporter 1 Company Name: TERRACON
6. US EPA ID Number: N/A
A. Transporter's Phone: 575-397-1700

7. Transporter 2 Company Name
8. US EPA ID Number
B. Transporter's Phone

9. Designated Facility Name and Site Address
RHINO ENVIRONMENTAL
1.7 NORTH OF NEWMAN
OTERO COUNTY, NM DP 1051
10. US EPA ID Number: NA
C. Facility's Phone

11. Waste Shipping Name and Description	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
a. HYDROCARBON CONTAMINATED WATER	1	30C DRUM	12	GAL
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
NON-HAZARDOUS

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
NOT FOR DRINKING OR ANY FORM OF USE.
PREVENT CONTACT WITH POTABLE WATER.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: FRED V. SMALL AGENT FOR HUNTSMAN
Signature: Fred Small
Month: 2 Day: 18 Year: 08

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: FRED V. SMALL
Signature: Fred Small
Month: 2 Day: 18 Year: 08

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name
Signature
Month: . Day: . Year: .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Danny Heuer
Signature: Danny Heuer
Month: 2 Day: 18 Year: 08

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

TRANSPORTER #1

12-BLS-C5 Rev. 12/98

HUNTSMAN	Environmental Field Services ***Brickland Refinery Monitoring & Sampling Protocol***	Procedure #ECD.094 Rev.#: 1 Supercedes: NEW Date: 5/25/06 Page 1 of 11

Approval	Signature	Date
Prepared By:	Glen Rhodes	5/25/06
Approved By:	Robert E. Schuler	6/9/06

SCOPE

This procedure applies to Environmental personnel who are involved with monitoring and sampling of the Brickland Site in Sunland Park, New Mexico. Semi-annual sampling events are held for the groundwater monitor wells and the surface water sites of the Rio Grande River adjacent to the facility.

The Brickland Site is an abandoned refinery that was once owned and operated by the El Paso Gas Company. When operations ceased in 1958, the refinery piping and equipment were removed. Through acquisition, Huntsman Polymers Corporation has assumed the environmental liability of the site. A groundwater monitoring and sampling program is in effect under the direction of the New Mexico Oil & Conservation Division (NMOCD). There are 17 monitor wells and 14 well points scattered throughout the facility.

REQUIREMENTS

Semi-annual sampling events are held each June and December at Brickland. Measurement and documentation of monitor well fluid levels is a requirement during each event. Fluid levels are also measured at the 14 well points for the purpose of detecting and reporting hydrocarbon thicknesses.

Also during these sampling events, groundwater and surface water must be collected at respective well and river locations. A breakdown of the sampling protocol can be found in the Stage 2 Abatement Plan for the Former Brickland Refinery Site. Huntsman Environmental has chosen to install dedicated bladder pumps and micropurge specific wells for sample collection. The water samples will be shipped on ice to the analytical laboratory of choice.

A collection of groundwater equipment at Huntsman's Odessa Facility is required to be transported to Brickland to

do the sampling. The list includes, but is not limited to, the following:

Bladder pumps, air compressor, multi-probe analyzer, oil / water interface meter, Teflon® dipper, ice chests, sample bottles, plastic bags, containers for distilled water and purgewater, buckets, brushes, detergents, solvents, latex / nitrile gloves, gasoline can, and a tool box with hand tools.

Note: A PROPERTY REMOVAL PASS with the required signatures is needed to take the groundwater sampling equipment through the West Guard Gate.

ENVIRONMENTAL

Fluid levels are to be documented at the monitor wells and well points every June and December. Specific monitor wells and two locations along the Rio Grande River are sampled during the same two events. The groundwater and the river water shall be shipped to a certified laboratory for analysis. All of the data generated from the June and December sampling events is submitted to the NMOCD in the Annual Groundwater Report for the Former Brickland Refinery Site. The Annual Report is due to the agency on or before April 1st of each year.

SAFETY

A chain-link fence encompasses Brickland. There are three access gates to the site with Huntsman padlocks to keep the site secure. The Environmental Department has the key to these locks. The same key also fits the Masterlocks® to each of the 17 monitor wells. NO TRESSPASSING signs are posted throughout the exterior of the fenceline in English and Spanish. Each sign lists Huntsman Polymer's address and phone number in case of emergency. The area is heavily monitored by the U.S. Border Patrol.

Personnel who conduct monitoring and sampling activities at the site can be exposed to heat stress, especially during the June sampling event. Light colors and long-sleeved shirts, long pants, and a wide-brimmed hat are recommended clothing. Plenty of drinking water and sunscreen provide further protection from the hot temperatures. Latex or nitrile

gloves shall be worn in order to minimize any exposure to contaminants during sampling.

QUALITY

Sample containers and coolers will be provided by a certified laboratory. Some of the bottles contain an acid preservative and will be marked accordingly. Latex / nitrile gloves shall be changed out after each well or river site has been sampled. Doing so will minimize the possibility of cross contamination of the water samples.

Once a batch of samples is collected at a well or river site, they will immediately be placed on ice in a cooler. The samples will remain under ice until they reach their final destination at the laboratory. For quality assurance, the samples must arrive at the laboratory at 4°C or less accompanied by Chain-Of-Custody documentation.

RELEVANT DOCUMENTS

1) U.S. Environmental Protection Agency, Test Methods for Evaluating Solid Waste: Physical / Chemical Methods, EPA-SW-846, November 1986.

2) Huntsman Polymers Corporation, Stage 2 Abatement Plan, Former Brickland Refinery Site, August 1998.

3) Rexene Corporation, Micropurge Sampling Results at the Rexene Corporation Odessa Complex, April 1995.

4) Annual Groundwater Monitoring Report, Former Brickland Refinery Site, February 2006.

ATTACHMENTS

- Property Removal Pass
- Field Activity Daily Log
- Groundwater Sampling Information Form
- Semi Annual Fluid Levels Data Sheet
- Multi-probe Analyzer Calibration Log
- Chain-Of-Custody

PROCEDURE

This document provides sampling and analysis procedures to be used in the compliance monitoring program for Huntsman's Brickland Facility in Sunland Park, New Mexico. The following is a list of the monitor wells and well points that are subject to the program:

MW-1	MW-6S	MW-11	WP-01	WP-25	WP-30
MW-3S	MW-6D	MW-12	WP-02	WP-26S	WP-31
MW-3D	MW-7	MW-14	WP-03	WP-26D	WP-32
MW-4	MW-8	MW-15	WP-07	WP-27S	WP-33
MW-5	MW-9S	MW-16	WP-14	WP-27D	
	MW-10	MW-17			

This monitor well sampling procedure will also serve as the guideline for surface water sampling at the Rio Grande River locations adjacent to the Brickland facility.

This document contains procedures for:

- Measuring water / hydrocarbon levels in monitor wells and well points,
- Collecting groundwater samples from monitoring wells for field and laboratory measurement,
- Collecting surface water samples from the Rio Grande River,
- Field Quality Assurance / Quality Control
- Preservation and handling of groundwater / surface water samples collected for analysis, and
- Method of sample documentation including Chain-Of-Custody protocol.

This procedure has been developed in accordance with the U.S. EPA Groundwater Monitoring Technical Enforcement Guidance Document, the Stage 2 Abatement Plan for the Brickland Facility, methodologies developed during previous sampling events conducted at Huntsman's Odessa and Brickland sites, and as practical, Test Methods for Evaluating Solid Waste, EPA SW-836. Any deviations from this specific procedure and the purpose of the deviation will be clearly documented in the field and reported. All sampling activities and data collected during each sampling event will be recorded on a Field Activity Daily Log and a Sampling Information Form (found in the Field Services notebook labeled Brickland Facility Sampling).

COLLECTING FLUID LEVEL DATA

FLUID LEVEL MEASUREMENTS

An interface probe will be used to measure the depth to groundwater and determine the presence and measure the thickness of any immiscible layer in the wells. The probe will be slowly lowered into the well to carefully measure the top and bottom of the floating immiscible layer, if present. The probe provides a distinct signal to indicate the type of material encountered (typically a continuous tone when submerged in hydrocarbon versus a non-continuous, beeping tone when submerged in water). All depth to fluid readings will be measured and recorded to the nearest 0.01 foot. After recording this data, the interface probe will be lowered further in the well to determine whether a heavier than water immiscible layer is present. All fluid level data will be recorded on a Fluid Level Data Sheet (in the Brickland Sampling notebook).

DECONTAMINATION

The interface probe must be decontaminated prior to each use and between each well to prevent the addition of external contamination or artifacts into a well. The decontamination will consist of rinsing the probe with a mild, non-phosphate detergent and distilled water. A hexane or acetone rinse may be necessary when hydrocarbons are encountered.

GROUNDWATER SAMPLING PROTOCOL

There are nine monitor wells specified in the Stage 2 Abatement Plan that require sample collection. Each of the nine wells are currently equipped with dedicated gas-driven bladder pumps capable of continuous operation at a pumping rate of 0.2 to 0.3 liters per minute (l/m). This minimal pumping rate is known as the micropurge method (Huntsman has chosen to implement this EPA preferred method). The nine wells equipped with bladder pumps are:

MW-3S	MW-6S	MW-9S
MW-3D	MW-6D	MW-14
MW-4	MW-7	MW-15

During even-numbered years, all nine wells are to be sampled for BTEX, PAH, and Metals in the month of June. During odd-numbered years, only MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S require sampling for BTEX, PAH, and Metals in June. The same five wells are sampled for only BTEX in December of each year.

CALIBRATION OF THE MULTI-PROBE WATER ANALYZER

The multi-probe analyzer will be calibrated one time at Huntsman Polymers Corp. before deployment to Brickland. All calibrations will be carried out in accordance with the equipment manufacturer's procedures and recommendations. Date, time, calibration readings, and the method of calibration will be recorded on a Calibration Log and filed at Environmental Field Services.

WELL PURGING

All monitoring wells listed above will be micropurged prior to sampling. Micropurging will consist of removing small volumes of groundwater at very low pumping rates until certain physiochemical field parameters have stabilized. A water analyzer with a flow cell will be used to measure the temperature, pH, specific conductance, dissolved oxygen, redox potential, and turbidity of the purged groundwater. These field parameters are displayed on a digital readout screen that is attached to the analyzer.

To begin micropurging a well, apply drive gas (i.e.- compressed air) to the bladder pump and establish a flow of groundwater from the discharge tubing at a rate of 0.2- 0.3 l/m. The cycle timers and / or regulator on the air compressor will need to be adjusted in order attain the desired flow of groundwater (a graduated flask may be used to measure the purge volume for one minute). When the desired micropurge flow is achieved, attach the discharge tubing of pump to the flow cell and catch the water that exits the flow cell in a 5-gallon container. **Note: At each monitor well, a section of new, latex tubing will be used to couple the pump discharge line to the multi-probe flow cell. Doing so eliminates**

the possibility of cross contamination during multiple well sampling events. The latex tubing shall be properly disposed of after each monitor well is sampled.

FIELD PARAMETER MEASUREMENTS

Field parameter measurements will be recorded in five-minute increments while the well purges through the multi-probe flow cell. Document the groundwater temperature, pH, specific conductance, dissolved oxygen, redox potential, and turbidity on a Sampling Information Form. Micropurging of each well will continue until two consecutive readings for three field parameters (**dissolved oxygen**, **redox potential**, and **turbidity**) have stabilized within 10% of one another. When stabilization is reached, well purging will be discontinued and sampling will begin. Record total volume of water purged prior to sample collection on the Sampling Information Form. The purgewater shall be containerized for disposal (most monitor wells micropurge $\leq$ 2 gallons). Groundwater odor, color, and other physically apparent characteristics will also be documented. Monitor well integrity will be documented.

COLLECTING GROUNDWATER SAMPLES

Samples will be collected and containerized for laboratory analysis in the order of volatilization sensitivity of the analytical parameters, (i.e., first, volatile organics; second, polynuclear aromatic hydrocarbons; and third, metals). All samples will be properly labeled with the correct sampling location, date, time, and testing requirements written on self-adhering labels provided by the laboratory. All samples shall be collected non-filtered.

Volatile Organic Compounds

The groundwater samples will be analyzed for the following volatile organic compounds (VOCs): benzene, ethylbenzene, toluene, and total xylenes (BTEX). VOC sample containers are 40 ml. glass vials (2 or 3) that contain a pre-measured amount of hydrochloric acid (HCl), prepared by the laboratory. The HCl is a preservative and sample containers for VOCs must not be rinsed or overflowed during the collection of samples. Water will be collected from the well slowly poured into the glass vial until a convex meniscus forms above the lip of the bottle. Once capped, the vial will be checked for air bubbles (headspace) by turning it upside down, tapping the cap of the inverted bottle, and visually inspecting the bottle contents. If any bubbles are observed, the vial will be uncapped, sample added, and rechecked using the same procedure until no bubbles are present.

Polynuclear Aromatic Hydrocarbons

Wells sampled in the month of June will be analyzed for the presence of polynuclear aromatic hydrocarbons (PAHs). Sample containers for PAH will be amber glass bottles and have no preservative. Samples for PAH are collected from the well by overflowing the sample container with groundwater prior to capping.

Metals

Wells sampled in the month of June will be analyzed for the following list of metals:

Aluminum	Beryllium	Cobalt	Manganese	Selenium
Antimony	Boron	Copper	Mercury	Silver
Arsenic	Cadmium	Iron	Molybdenum	Thallium
Barium	Chromium	Lead	Nickel	Zinc

Sample bottles for these constituents will contain a pre-measured amount of nitric acid (HNO_3) that is prepared in the laboratory. The HNO_3 is a preservative and sample containers for metals must not be rinsed or overflowed during sample collection.

SURFACE WATER SAMPLING

Surface water from the Rio Grande River will be collected for chemical analysis from one location up-river and one location down-river from the Brickland facility. The samples will undergo the same group of analytical testing listed previously for the groundwater.

The **UP-RIVER** location is upstream of the Brickland site and will be used to establish background levels representative of urban runoff.

The **DOWN-RIVER** location is downstream of the Brickland site and its analytical values will be used to compare potential impact from the former Brickland Refinery.

COLLECTING SURFACE WATER SAMPLES

Grab samples will be collected from the Rio Grande River by submerging a decontaminated Teflon® dipper into the water. The dipper will be thoroughly decontaminated between sampling sites with a non-phosphate detergent followed by three distilled water rinses.

During collection of the samples, the sampling team will follow the basic guidelines listed below:

- Clean latex / nitrile gloves will be worn during the sample collection and new, clean gloves will be donned at each sample location.
- To avoid turbidity while collecting the sample, the mouth of the dipper will be placed facing downstream.
- The dipper will be placed in the river below the water surface, but at a depth practical to minimize contamination from disturbed bottom sediments.

All sample containers will be supplied by the laboratory. Samples will always be collected in the order of the most volatile compounds to the least volatile compounds as follows:

1) Pre-sampling field parameters.
2) Volatile Organic Compounds.
3) Polynuclear Aromatic Compounds.
4) Metals.

FIELD PARAMETER MEASUREMENTS

One set of surface water field parameter measurements will be recorded at each sample location prior to filling the sample containers. Water for measurement will be collected either in a glass beaker or a plastic container triple-rinsed with distilled water. The temperature, pH, specific conductance, dissolved oxygen, redox potential, and turbidity will then be measured and recorded on a Sampling Information Form. Sample odor, color, and other physically apparent characteristics of the river water will also be

documented. The field parameter readings for surface water will be measured with the same multi-probe water analyzer that is used during the groundwater sampling. The field parameter sample will be properly disposed of after measurements are collected.

FIELD QUALITY ASSURANCE / QUALITY CONTROL

The Field Quality Assurance / Quality Control (QA / QC) program includes collection of field blanks, equipment blanks, trip blanks, and duplicate samples. Descriptions of the QA / QC samples are presented below.

FIELD BLANKS

The field blank will be used to determine potential absorption of volatile organics from the air into a water sample. One field blank will be collected near the beginning of each sampling day at a pre-determined well or surface water sampling location. The blank will be collected by filling one 40 ml. glass vial with de-ionized water. The de-ionized water will be supplied by the laboratory performing the analysis. The field blank will be analyzed for the same volatile organic compounds (BTEX) as the groundwater and surface water samples. The concentration of any artifact found in the field blank will be noted and compared to the groundwater and surface water sample results.

EQUIPMENT BLANKS

Equipment blanks will be collected during each sampling event if non-dedicated sampling equipment is used (i.e.- Teflon® dipper). The equipment blank will be used to identify organic artifacts originating from the sampling equipment. The monitor wells are equipped with dedicated bladder pumps, and special precautions have been taken to eliminate cross contamination between wells. With these quality checks in place, the need for equipment blanks for groundwater sampling is not required.

To collect an equipment blank, the sampling equipment will be decontaminated with a non-phosphate detergent followed by three distilled water rinses. Immediately following decontamination, the equipment blank will be collected by pouring de-ionized water into the Teflon® dipper, and then filling one 40 ml. glass vial with the water from the dipper. The de-ionized water will be supplied by the laboratory performing the analysis. The equipment blank will be analyzed for the same volatile organic compounds (BTEX) as the surface water samples. The concentration levels of any artifact found in any equipment blank will be noted and compared to the surface water sample results.

TRIP BLANKS

The trip blank will be used to detect and quantify potential organic chemical artifacts occurring in the groundwater or surface water sample which originate from either the sample containers or the de-ionized water comprising the blank. One bottle set for each ice chest will be filled with de-ionized water by the laboratory prior to field mobilization. These bottles will be transported to the sampling location and returned to the laboratory in the ice chests used to transport groundwater and surface water samples. The trip blank will be analyzed for the same volatile organic compounds (BTEX) as the groundwater and surface water samples. The concentration levels of any artifact found in the trip blank will be noted and compared to the groundwater and surface water sample results.

DUPLICATE SAMPLES

One duplicate sample will be collected during each groundwater sampling event. The duplicate will be collected at any monitor well sampling location determined by the sampling personnel. To collect the duplicate, two complete sets of sample bottles will be filled with groundwater from the well. One set will be labeled as the "sample" (normal labeling protocol will be followed), and the other set will be labeled "duplicate" with no well sampling location identification on the label. The location of the duplicate sample will be entered into the Field Activities Daily Log. This duplicate will be analyzed using the same methods as all of the rest of the samples collected during the event. Results of the analysis from this duplicate will be used as a check for repeatability in the analytical procedures.

SAMPLE CONTAINERS, PRESERVATION, AND HANDLING

SAMPLE CONTAINERS

Ice chests used to transport samples for laboratory analysis will be provided by the laboratory performing the analysis. The sample bottles should be prepared by the laboratory according to EPA specifications for environmental sampling as described in Test Methods for Evaluating Solid Waste, EPA SW-846. The bottles will not be opened until immediately before samples are to be collected.

SAMPLE PRESERVATION AND HANDLING

Sample preservation is intended to (1) retard biological action, (2) retard hydrolysis, and (3) reduce absorption effects. Preservation methods include pH control, refrigeration, and protection from light. Chemical preservatives will be added to certain sample containers by the laboratory performing the analysis. Each analytical parameter has specific preservation requirements for the groundwater and surface water:

ANALYTICAL TEST	SAMPLE CONTAINER	PRESERVATION
Volatile Organic Compounds	40 ml. VOA glass septum vials	4°C, HCl to pH < 2
Polynuclear Aromatic Hydrocarbons	1000 ml. amber glass bottle	4°C
Metals	500 ml. plastic or glass bottle	4°C, HNO_3 to pH < 2

Samples will be preserved in the field by placing the samples in an insulated ice chest containing ice immediately after sample collection. Upon receipt of the samples, the authorized laboratory personnel will store and / or prepare the samples for analysis, taking into consideration sample holding times for the analytical parameter of interest.

SAMPLE SHIPPING

Samples will be placed in sealable polyethylene bags then placed into the ice chest and packed with ice. Packing material will be used as necessary to prevent breakage of bottles. Coolers containing samples shall be labeled for shipment to transfer to the appropriate laboratory and should be dispatched at the end of each work day. Samples may be held by the field technician for one night prior to shipment. A separate Chain-Of-Custody (COC) record shall be prepared for and included in each laboratory cooler. Any special conditions or requirements shall be noted on the COC (the COC is provided by the laboratory).

Each cooler / package of samples will be custody-sealed with "tamper tape" (provided by the laboratory) as appropriate for shipment. If the cooler / package is to be transferred to a shipper, the custody seal shall be placed over filament tape wrapped around the lid of the package. In this way, access to the contents can only be gained by cutting the filament tape and breaking the seal. The drain hole on the cooler will be taped over to prevent leakage during transport.

CHAIN-OF-CUSTODY RECORDS

Evidence of collection, shipment, laboratory receipt, and laboratory custody until completion of analysis will be documented via a Chain-of-Custody record by the signature of the individuals collecting, shipping, and receiving each sample. **The COC record must be signed and dated** by the sampling team.

COC records must be used by all personnel to record collection and shipment of all samples. A qualified laboratory will not accept samples collected for analysis without a correctly prepared COC record. The COC procedure will be as follows:

- The COC record for all samples and blanks shall be initiated in the field by the person collecting the sample or blank. The names of all members of the sampling team will be listed on the COC.
- Each sample will be assigned a unique identification number that is entered on the COC record.
- A completed COC record will accompany each set of samples shipped to the laboratory.
- Each time responsibility for custody of the samples changes, the receiving and relinquishing custodians will sign the record and denote the date and time.
- If the samples are shipped to the laboratory by commercial carrier, the COC record will be sealed in a watertight container, placed in the shipping container, and the shipping container sealed prior to giving it to the carrier. The carrier waybill will serve as an extension of the COC record between the final field custodian and receipt in the laboratory.
- Upon receipt in the laboratory, a designated individual will open the shipping containers, compare the contents with the COC record, and sign and date the COC. Any discrepancies will be noted on the COC record.
- If discrepancies occur, the samples in question will be segregated from normal sample storage and the field personnel notified for clarification.
- The COC record is completed after sample disposal. Samples not consumed during analysis will be kept for six months or as otherwise established by the laboratory.
- The COC record, including waybills, if any, will be maintained as part of the project records.

	Signature	Date
Originator:	Glen Rhodes	5/25/06
Reviewer:	Roger Martin	5/31/06