AP - 010

ANNUAL MONITORING REPORT

YEAR(S): 2002/2003

AP-10

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OIL CONSERVATION DIVISION

ConocoPhillips

Line NM1-1 (AP-10)
Annual Monitoring Report
January 2002 through April 2003

May 29, 2003

Prepared for
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May 29, 2003

Higgins and Associates, LLC

Mr. Bill Olsen
State of New Mexico
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Re: Annual Monitoring, and Remediation Installation and Startup Report
ConocoPhillips NM 1-1 Project
Hobbs, New Mexico

Dear Mr. Olsen:

On behalf of ConocoPhillips, formerly Phillips Pipe Line Company, Higgins and Associates, L.L.C. (Higgins) has prepared the following annual status report as required by New Mexico Oil Conservation Division's (OCD) Discharge Permit GW-349 issued to ConocoPhillips for the referenced site. This report is a summary of the following activities performed in 2002 through April 2003:

- Groundwater Sampling
- Free Product Gauging
- Free Product Recovery
- Remediation System Installation
- Remediation System Startup

Project activities commenced at the site in 1999 following the discovery of a release of crude oil from gathering line NM1-1. Assessment and remediation activities have been conducted at the site to define and address the crude oil impacts with the most recent activities consisting of the installation of a comprehensive soil and groundwater remediation system. The remediation system installation consisted of a product recovery system, a groundwater extraction system, a treatment and re-injection system, and an enhanced-bioremediation system consisting of bio-venting and nutrient injection. A site map illustrating the location of the pipeline release excavation, the location of pipelines, and the location of monitoring and remediation wells is presented as Figure 1 in Appendix A.

Groundwater Monitoring and Sampling Activities

Groundwater monitoring and sampling activities were conducted on May 20, 2002, August 29, 2002, January 14 and 15, 2003, and on April 23, 2003. Accessible monitoring wells, recovery wells, and re-injection wells were gauged for groundwater elevations prior to the sampling events.

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On May 20, 2002 monitoring wells MW-2, MW-10, MW-11, MW-12, and MW-13 were sampled; the remaining monitoring wells contained free product and therefore were not sampled. In June of 2002, monitoring wells MW-2, MW-10, MW-11, and MW-12 were converted to nutrient injection wells and were no longer accessible to collect groundwater samples. Therefore, through discussions with OCD, the sampling schedule was modified to include wells MW-13, SVE-1, and groundwater re-injection wells IW-2 through IW-7 for the remaining quarterly monitoring events. The groundwater samples were transported to Higgins's contract laboratory by standard chain-of-custody procedures for the analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX) by EPA Method 8021B, total volatile petroleum hydrocarbons (TVPH) by EPA Method 8015, total extractable petroleum hydrocarbons (TEPH) by EPA modified Method 8015, and chloride by EPA Method 9251.

Groundwater depths ranged from 30 to 38 feet below top of the well casing (TOC) during the sampling events. In April 2003, a small drop in elevation was noted in the groundwater elevation which may be attributed to initiation of groundwater pumping. Groundwater elevation measurements are summarized in Table 1 in Appendix B. The data obtained from the groundwater gauging events were compared to surveyed TOC elevations in order to evaluate the direction of groundwater flow beneath the site. Maps depicting the direction of groundwater flow have been prepared for each gauging event. As illustrated on Figures 2A, 2B, and 2C and 2D in Appendix A, the predominant groundwater flow direction is to the south-southeast. This flow direction is consistent with historical evaluations of the groundwater flow direction.

Groundwater analytical results from the monitoring events show that the lateral extent of the dissolved phase plume remains defined. Groundwater analytical results for wells MW-2, MW-11, MW-12, MW-13, on May 20, 2002, and wells MW-13, SVE-1, IW-2 through IW-7 in August 2002, January 2003, and April 2003 were below the New Mexico groundwater standards for BTEX. Groundwater analytical results for chloride were also below the New Mexico groundwater standard for chloride of 250 mg/L with the exception of MW-13 on April 21, 2003. MW-13 contained chloride at a concentration of 406 mg/l on this date. Figures illustrating groundwater analytical results for the quarterly sampling events are included as Figures 3A, 3B, 3C and 3D in Appendix A. A table showing the groundwater analytical results is included as Table 2, Appendix B.

Groundwater samples were also collected from sample ports installed in the recovery piping for recovery wells EW-1 and EW-2 on November 15 and 22, 2002, and on April 24, 2003. Benzene was detected in EW-1 at 7,470ug/l on November 15, 2002; 9,340ug/l on November 22, 2002; and 4,410ug/l on April 24, 2003. Benzene levels in EW-2 are also above state limits and have increased from 2,160ug/l in November 2002 to 3,080ug/l in April 2003. The increasing concentrations in this well are attributed to the capture of hydrocarbons through pumping activities.

Free Product Gauging

Free phase petroleum product was measured in MW-1, MW-3, MW-4, MW-5 through MW-8, and SV-2 on November 5, 2002 and April 21, 2003. The pneumatic recovery pumps in the wells were

removed prior to measuring free product, and then re-deployed. Thickness of product ranged from 3.48 feet in SV-2 to 5.58 feet in MW-7 on November 5, 2002, and from 3.56 feet in MW-4 to 5.43 feet in MW-7 on April 21, 2003. Figures illustrating free product thickness are included as Figures 4A and 4B in Appendix A. Field free product measurements are summarized in Table 1 in Appendix B.

Free Product Recovery

A pneumatic product recovery system was installed at the site in February/March 2001. The system consists of Durham Geo F.A.P. Plus pumps installed in wells MW-1, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, and SVE-2. Durham Geo pumps were also installed in recovery wells EW-1 and EW-2 on November 16, 2002. Crude oil is pumped from the wells through petroleum rated hoses contained in PVC piping to a 150 barrel above ground storage tank (AST) located adjacent to the product recovery system compound. From January 2002 to April 11, 2003 the system recovered approximately 317 barrels of crude oil. The recovered crude oil was transported to the Gaines Pump Station where it was added to the main crude oil pipe line. From initial abatement activities and ongoing product removal activities, approximately 517 barrels of crude oil have been recovered up to April 11, 2003.

Remediation System Installation

The following is a summary of the remedial system installation activities completed in 2002/2003 and a description of the system components and their integration in the overall remedial process.

Health and Safety Program

Prior to commencement of work, the Site Specific Health and Safety Plan (HASP) was prepared by Higgins safety staff. The HASP was reviewed and signed by all personnel working at the site. Safety procedures were reviewed during tailgate safety meetings prior to the start of work each day.

Drilling and Completion of Remediation Wells

The remedial system design incorporated several of the existing monitoring wells. This included converting MW-2, MW-8, MW-9, MW-10, MW-11, and MW-12 into nutrient injection wells and MW-7 and MW-8 as biovent wells. However, to obtain the coverage necessary for remediation of the crude oil impacts, the first phase of construction began with the installation of five (5) additional nutrient injection wells, three (3) additional soil vapor extraction (SVE) wells, six (6) groundwater re-injection wells, and two (2) groundwater recovery wells. The wells were installed over the period of May 20 through June 3, 2002 using an air rotary drilling rig. During the drilling activities soil samples were collected at five foot intervals and were logged by a geologist. Representative samples were placed in a sealable plastic bag for screening. After an equilibration period, each soil sample was analyzed with a photoionization detector (PID) calibrated to an isobutylene standard of 100 ppm. Soil samples were not collected for laboratory analysis. The soil lithology consisted of caliche overlying silty pebbly sands with a layer of limestone located at approximately 23 feet below the ground surface (BGS). A map illustrating the locations of all wells is shown as Figure 1 in Appendix A. Drill logs depicting the soil lithology

and well construction details were prepared for each monitoring well and are shown in Appendix C.

The nutrient injection wells NIW-3, NIW-6, NIW-7, NIW-9, and NIW-10 were completed with 2-inch polyvinyl chloride (PVC) pipe, and SVE wells SVE-1, SVE-3, and SVE-5 were completed with 4-inch PVC pipe. All nutrient injection and SVE wells were constructed with 0.020 slot screen from approximately 18 to 38 feet BGS. Sand pack was placed from TD to 2 feet above the screened interval. A 2-foot bentonite seal was placed directly above the sand pack. The wells were grouted from surface to the bentonite seal.

Groundwater re-injection wells IW-2 through IW-7 were completed with 4-inch PVC pipe and 20 feet of stainless 0.035 slot wire-wrap steel screen. The TD of the wells ranged from 40 to 47 feet below ground surface. Sand pack was placed from TD to 2 feet above the screened. A 2-foot bentonite seal was placed directly above the sand pack. The wells were grouted from surface to the bentonite seal.

Groundwater recovery wells EW-1 and EW-2 were completed with 6-inch PVC pipe and 20 feet of wire-wrap stainless 0.035 slot steel screen. TDs of EW-1 and EW-2 were approximately 48 and 51 ft BGS, respectively. A 2-foot bentonite seal was placed directly above the sand pack. The wells were grouted from surface to the bentonite seal.

Groundwater recovery wells EW-1 and EW-2 were developed using a water and vacuum truck on August 26, 2002, and re-developed on December 18, 2002. The procedure used for well development follows:

- A vacuum hose was lowered to the well bottom (top of accumulated sand/silt in well);
- a drop tube was deployed to approximately 6 inches of the bottom of well;
- the mud/silt/debris were purged with five to ten barrels of non-potable clean water;
- the total well casing volume and recharge was evacuated out; and
- the process was repeated until development was completed.

During the well development on August 26, 2002 approximately 90 barrels, approximately 45 barrels per recovery well, of groundwater, was removed from EW-1 and EW-2. After well development, the wells were free of infiltrated sand and silt.

Free product was observed in recovery well EW-1 during installation and the development on August 26, 2002, but was not observed in EW-2. Free product was observed in both EW-1 and EW-2 during re-development on December 18, 2002. After well development, groundwater submersible pumps and free product recovery pneumatic pumps were deployed into the recovery wells. Recovered well development fluids from EW-1 and EW-2 were transported by Key Services Inc. (Key Services) to the Cooper / Mesquite SWD disposal facilities in Monument, New Mexico.

Injection wells IW-2 through IW-6 were developed using a 2-inch Grundfos submersible pump. Each well was developed until all apparent completion fluids were removed from the well. Pump failure occurred during IW-6 development; therefore IW-7 was developed by purging with a bailer.

Trenching and Conduit/Containment Pipe Installation

The second phase of construction consisted of trenching and installation of conduit for the groundwater recovery and re-injection system, and the bio-venting system. Remediation construction began May 29, 2002.

Underground locates were conducted for all areas of excavation locating crude oil pipelines and utility services. Higgins met with pipeline locaters from respective pipeline companies in the areas of construction. During trenching near any high-pressure (HP) pipelines, ConocoPhillips personnel were on site during the excavation work to monitor and aid in locating the HP pipelines. Trenching was performed by hand in the near vicinity of all pipelines. All remediation conduit and containment lines were generally installed 18-inches above or below pipelines. Field as-built trench diagrams were completed for all pipeline crossings.

Trenching, pipe installation, and backfilling activities were conducted from May 30 through June, 2002. Individual piping runs were installed to each of the six biovent wells, the eleven nutrient injection wells, the six groundwater injection wells, and the two groundwater extraction wells. The biovent conduit lines consist of 4-inch PVC pipe, the nutrient injection conduit piping consists of 1-inch high-density polyethylene (HDPE) pipe, and the recovery wells piping consists of 1 ½-inch HDPE pipe. The containment pipe installed for the free product pneumatic recovery lines from EW-1 and EW-2 throughout the collection system is 4-inch PVC pipe. Due to potential bio-fouling associated with the groundwater injection system, twelve (12) 1-inch HDPE conduits were installed from the remediation building to the re-injection well vaults; two injection conduits per well. Approximately 7,979 feet of 1-inch HDPE conduit pipe was installed for the groundwater re-injection system, approximately 3,926 feet of 1-inch HDPE conduit pipe was installed for the nutrient injection system, approximately 1,871 feet of 4-inch PVC conduit pipe was installed for the biovent wells, and approximately 423 feet 4-inch PVC containment pipe was used for free product containment pipe.

Additional trenching in August and September 2002 was conducted for the connection of the 200-amp service to the remediation building, and connecting the free product recovery system manifold located in the product recovery compound located north of the main system compound to the compressor system located in the new compound.

Remediation Building

The remediation building permit application was approved by the General Construction Bureau, Construction Industries Division, State of New Mexico on June 20, 2002. The remediation building is a 24 by 24-foot by 12-foot high pre-engineered metal building (576 square feet) on concrete slab with a metal roof. The location of the building was selected as a central point for remediation component installation, and to maintain a safe distance from any nearby pipelines. Higgins retained Royal Buildings, Inc. (Royal), Hobbs, New Mexico to design and construct the building. A 4-inch concrete slab (rated at 3,000 psi) with wire mesh was poured over the

remediation inlet/outlet piping. There are two separate rooms, a larger room containing most of the remediation equipment which is an explosion-proof (XP) environment with a ventilation system, and a smaller room containing the EPG control panel and compressor which is a non-XP environment. The larger room has a 10-foot overhead door for large equipment deployment, and another 3-foot access door. The non-XP room has a 4-foot access door and is vented for fresh air intake. The building construction was completed in July 2002. The building permit and design drawings stamped by a New Mexico Professional Engineer to code requirements are presented in Appendix E.

EPG Series 1600-2 Controller

The remediation system control panel was manufactured by EPG Companies, Inc. (EPG). The panel controls the groundwater recovery and treatment system, as well as the bio-venting system. The panel is equipped with a Sensaphone Model 1108 which has been programmed to call out to designated Higgins telephone numbers during alarm faults associated with the oil-water separator high level, product storage tank high level, transfer pump high pressure, discharge pump high pressure, building floor high level, high temperature, air stripper high sump, and air stripper low pressure conditions.

Cattle Guards

Cattle guards were constructed in June 2002 and deployed to prevent livestock from damaging the compressed air / nutrient injection wellhead piping, the product recovery system wellhead piping, the SVE wellhead piping, and the GAC piping.

Groundwater Recovery System Installation and Process Equipment Description

The process equipment was installed from August through October, 2002. The main components of the groundwater recovery system include two groundwater extraction pumps, an oil-water separator, a groundwater air stripping unit, bag filters, transfer pumps, granular activated carbon (GAC) units, associated piping, metering, valves, and the EPG control panel.

A ¾-hp submersible pump, and a ½-hp submersible pump were installed in recovery wells EW-1 and EW-2, respectively. Conductivity probes were installed in each recovery well controlling the drawdown. The set of probes in each well consist of a high level probe which turns the pump on, a low level probe which turns the pump off, and a third continuity probe.

Groundwater is pumped from recovery wells EW-1 and EW-2 to the oil-water separator. Flow from each well is metered independently. Flow rates are controlled by ball and check valves. Following the meters, the piping runs are combined into one 2-inch PVC pipe controlled by a gate valve, which then flows directly into the oil-water separator.

The oil-water separator package is an EPG Model OS24-S. The oil-water separator has a coalescing media that is designed to impede the movement of free phase oil. Oil removal in the oil-water separator is accomplished after the oils have accumulated on the water surface via wiers. The oil flows by gravity drainage to a 55-gallon collection drum. Conducting probes installed in recovery wells EW-1 and EW-2 prohibit the submersible pumps from pumping free product, therefore, the oil water separator is present to protect downstream treatment equipment

and is not meant as a primary oil recovery separator. Recovered solids are removed when they slide down the corrugations in the coalescent filter media and fall into a hopper located underneath the coalescent filter media. Flow from the oil-water separator is controlled by probes in a 3-point sensor/sight tube. When activated, the high water sensor starts a transfer pump and the low level probe shuts the pump down. A high high probe is installed as a fail safe and shuts down the recovery pumps if activated to prevent overflow of the oil/water separator. Approximately 300 gallons of groundwater is transferred to the air stripping unit per cycle. The oil-water separator is designed for a capacity of up to 70 gpm.

The EPG skid mounted low-profile air stripper is EPG's Model STAT 80. This package unit has six mass transfer tower trays, a 7.5-hp 460 volt 3 phase XP motor for the stripper blower, a 1/2-hp 460 volt 3 phase XP motor for the inlet transfer pump, a 1/2-hp 460 volt 3 phase XP motor for the discharge transfer pump, a flow meter, associated piping, gauges, and switches. The groundwater air stripping tower is designed for the removal of approximately 99.67% of the total volatile petroleum hydrocarbons (TVPH) compounds dissolved in the groundwater (assuming an inlet concentration of 3 ppm TVPH and a flowrate of 60 gpm). Two bag filter vessel units remove sediment prior to and following the tower; 50 and 25 micron filters are used in the influent and effluent bag vessel filter units, respectively. The tower effluent is metered and pumped to the GAC filter system. In case of tower scaling, an Aquameg chemical injection system was installed on the influent piping.

The GAC system was installed directly adjacent and outside of the remediation building to remove residual dissolved phase hydrocarbons from the effluent water. To protect against cold weather, the GAC piping system is thermo-protected with an electrical heating wire system. Each of the two GAC 5-foot diameter carbon vessels contain 3,000 pounds of activated carbon for a groundwater polishing treatment before re-injection. A sample port was installed in the effluent line for discharge sampling compliance. The flow capacity per vessel is rated up to 135 gpm. The GAC system operating pressure ranges from 10 to 15 psi.

The GAC effluent is piped back into the remediation building where the flow is separated into six 1-inch PVC conduits running to the injection wells. A solenoid valve controls each groundwater re-injection conduit. Each of the six 1-inch PVC conduits is metered independently. Each groundwater re-injection well is equipped with a high water sensor which will shut down flow in a high level alarm condition. Once the water level drops in the well, the receiver sends an analog signal to the control panel, which then causes the solenoid valve for that line to reopen allowing re-injection to commence.

Underground Process Conduit Pressure Testing

All groundwater recovery and effluent injection conduits were tested to demonstrate their integrity prior to system startup. The conduits were tested at 60 psi for a period of one hour.

Labeling

All drums were labeled to identify their contents and emergency notification information.

Bio-venting System Installation and Process Equipment Description

Components of the biovent system were installed in August through October, 2002. The main components of the bio-venting system include nutrient and biovent wells, an air compressor, nitrous oxide storage tanks, a Rotron SVE skid, associated piping, metering, valves, and the EPG control panel.

The treatment system was designed to optimize aerobic and microaerophillic degradation of petroleum hydrocarbon impacts in the unsaturated zone and also to stimulate groundwater bio-activity as well. Currently the system is set to inject compressed air and nitrous oxide for 4 hours, followed by a soil venting period of 4 hours, and lastly followed by an off period of 32 hours. The injection periods are controlled by an Allen-Bradley "Pico" programmer installed in the EPG control panel allowing Higgins to optimize the system to achieve maximum soil gas exchange.

A 20-hp Sullivan-Palatek rotary screw air compressor with a 120-gallon tank was installed in the non-XP room of the remediation building. The air compressor is used for compressed air injection into the eleven nutrient injection wells and to provide an air supply for the free product pneumatic pump recovery system. The compressor package is rated at 75 cfm up to 125 psi, has an auto water drain, a 460 volt 3 phase 20-hp motor equipped with high and low temperature shutdowns, a pressure regulator, particulate filter, and an oil coalescing filter.

Nitrous oxide used for the bio-venting system is stored in two 60-gallon high pressure tanks. The tanks are stored in an area out-of direct sunlight should the 10-foot slide-up door be opened (direct sunlight will cause the tank pressure to increase releasing nitrous oxide through the relief valve). Nitrous oxide flow from the high pressure tanks is regulated and combined with the compressed air flow. The flow of nitrous oxide is controlled by a Cole-Parmer flow controller and a solenoid valve. The flow is first divided into three manifolds controlled by a separate solenoid valve for each manifold. Each manifold was installed with a sampling port to monitor flow, temperature, and nitrous oxide concentration. Flow from the three manifolds is then divided to the eleven nutrient injection conduits. Flow from each of the eleven nutrient injection conduits is controlled by a 1-inch ball valve to allow regulation of the flow across the system.

The biovent system equipment consists of a Rotron EN14 regenerative blower with a 30-hp 460 3-phase XP motor, a vacuum relief valve, a condensate filter separator, a 3-point level sensor, a dilution air valve, a 1-hp 460 volt 3-phase transfer pump, a discharge silencer, an air flow meter, and associated piping and gauges. The transfer pump is activated by the high sensor in the 3-point level sensor. When the high sensor is activated, the pump transfers recovered fluids from the condensate filter separator to the oil-water separator.

The 30-hp Rotron vacuum unit is connected to a manifold with six SVE wells. The SVE manifold was constructed with 4-inch PVC ball valves controlling flow from each respective line. Each SVE conduit is a separate run of 4-inch PVC pipe from the SVE well to the manifold. A sample port was installed in the 4-inch galvanized steel SVE effluent line to monitor concentrations of gases (nitrous oxide, oxygen, carbon dioxide, and carbon monoxide), and to monitor for temperature, flowrate, and volatile organic compounds. A transfer pump on the Rotron SVE skid also pumps recovered fluids from the condensate filter separator to the oil-water separator.

Remediation Startup

Groundwater Recovery System Startup

The groundwater recovery system was placed on line on November 5, 2003. However, following startup, sand infiltration into the recovery wells occurred damaging both submersible pumps. The pumps were pulled on December 27, 2002, repaired, and re-deployed on February 24, 2003. Produced sand has not been observed in quantities that could cause damage since re-deployment on December 27, 2002. The EW-2 pump motor and pump failed again on February 27, 2003 for an unknown reason. A pump service company was retained to install a 1.5-hp submersible pump in EW-2 on April 8, 2003. The pump failed again on April 15, 2002. Pump failure was traced to a faulty Allen-Bradley motor starter in the control panel. The 1.5-hp motor was replaced with a 1-hp motor on the same submersible pump, and the pump was re-deployed on April 17, 2003. The Allen-Bradley motor starter was replaced on April 28, 2003, and EW-2 was placed back on line.

Groundwater production from recovery wells EW-1 and EW-2 is lower than predicted. Previously, Higgins conducted multiple slug tests and geotechnical testing of soil samples to establish design parameters for the system. The lower recovery rates may be attributed to dewatering more permeable channels, the infiltration of free product into the permeable channel pathways, and fine grained soils in the saturated zone which were not evident due to sample quality associated with the air rotary drilling method required at the site. Recovery rates from wells EW-1 and EW-2 have ranged from less than 1 to 5.6 gpm. Monthly and total groundwater recoveries from the extraction wells and groundwater discharge effluent volumes for each re-injection well and are shown in Table 3 in Appendix A.

As previously discussed, suspended solids are removed from the groundwater process stream by the oil-water separator and the bag filter units. Suspended solids from recovery wells EW-1 and EW-2 has been minimal. The oil-water separator was emptied by Higgins on two occasions. During the first cleaning on December 18, 2002, a very small amount of fine solids were observed in the hopper. Sediment was not observed during the second cleaning of the oil-water separator on March 3, 2003. The groundwater air stripping tower bag filters were removed and replaced on November 15, 2002 and April 9, 2003. Petroleum staining was observed on the influent bag filter, and very slight iron staining was observed on the effluent bag filter. Iron or bio-fowling of the air stripper has not been observed since project startup. Therefore iron scaling or bio-fowling chemical treatment has not been initiated.

As required by the OCD groundwater discharge permit, the effluent from the GAC system was sampled weekly for the first month, then monthly during production since startup, for benzene, toluene, ethlybenzene, xylenes (BTEX) and chlorides. Groundwater discharge compliance has been met from startup to the date of this report. BTEX was not observed above the laboratory detection limits from the discharge samples collected. Discharge samples were analyzed for chloride, and all samples were below the New Mexico groundwater standard for chloride of 250 mg/L. To monitor system performance, NM1-1 discharge was analyzed for other system performance analytes as well. Discharge analytical results are shown in Table 4 in Appendix B.

Bio-venting System Startup

Prior to startup, baseline information was obtained from wells IW-2, IW-3, IW-4, IW-5, IW-6, IW-7, MP-1, SV-1, MW-13, SVE-1, SVE-3, and SVE-5. Wellhead gas was monitored for percent carbon dioxide, percent oxygen, and percent carbon monoxide using an Industrial-Scientific Corporation 4-gas meter, model ATX-620. Groundwater parameters collected for baseline information were dissolved oxygen, pH, temperature, major anions and cations, and nutrients. Baseline data is included as Tables 5, 6, and 7 in Appendix B.

Components of the bio-venting system were individually tested from December 2002 through January 2003. The bio-venting system was placed on line on February 24, 2003. Startup procedures were based on pilot tests that Higgins had previously conducted. Pilot test results conducted at NM1-1 indicated that complete soil gas exchange occurred over a period of 2 to 4 hours resulting in twenty-one percent (21%) soil gas oxygen. Over the next 24 hours the oxygen was consumed to levels ranging from 9.3 to 12.9% with elevated levels of carbon dioxide being produced. During on-line pilot testing, the Rotron SVE system operated at approximately 100 inches of water.

Based on pilot test information, the system is programmed to inject compressed air and nitrous oxide for 4 hours, followed by a soil venting period of 4 hours, and lastly followed by an off period of 32 hours. The nitrous oxide injection system was initially tested on December 17, 2002. The injection rate was 44 cfm with a nitrous oxide concentration of approximately 2,400 ppm at the manifold sampling ports. The radius of influence (ROI) with a wellhead nitrous oxide gas concentration of 15 ppm was approximately 225 feet (from nutrient injection well NIW-4 to monitoring well MW-13). During system start up in February 2003, the injection rate was increased to 49 cfm with a nitrous oxide concentration of approximately 3,247 ppm at the manifold sampling ports. The increased injection concentration of nitrous oxide resulted in an increase in nitrous oxide wellhead gas concentrations at multiple monitoring points as shown in Table 8 in Appendix B.

From review of wellhead gas monitoring results, it is evident that soil gas exchange is occurring. During on off period of 32 hours (from February 26 to 27, 2002) oxygen and carbon dioxide levels were observed at 16.5% and a level of 3.58% at monitoring point MP1, respectively. During on off period of two weeks due to a system alarm condition (from March 14 to 28, 2002), oxygen and carbon dioxide levels were observed at 5.5% and a level of 9.52% at monitoring point MP1, respectively. Wellhead gas concentration readings at multiple monitoring points are summarized on Table 8 in Appendix B.

From start up on February 26, 2003 to April 11, 2003 Rotron SVE system measurements have ranged from 90 to 100 inches of water vacuum at the SVE manifold. Wellhead vacuum measurements indicate a ROI of approximately 245 feet (from SVE-5 well to monitoring well MW-13) with a wellhead vacuum of 0.02 inches of water. SVE effluent measurements for the same time period have ranged from air flow rates of 326 to 405 cfm with PID readings ranging from 245 to 1127 ppm, and nitrous oxide concentrations ranging from no detection to 625 ppm. One 55-gallon drum of free product has been recovered from the Rotron SVE condensate separator. On

April 11, 2003 the drum was evacuated and combined with the free product collected from the AST.

Conclusions

Based on the data collected during the reporting period, the following conclusions are evident.

- Groundwater sampling data documents that the crude oil impacts to soil and groundwater remain defined.
- The remedial system outlined in the Stage II abatement plan has been implemented.
- The biovent system is operating within anticipated design parameters.
- The groundwater extraction flow rates are lower than expected, most likely due to fine grained soils within the saturated zone. Additional data will be collected to document that the anticipated capture zone and hydraulic gradients are being established.
- Crude oil recovery operations are continuing at the site. From initial abatement activities to April 11, 2003 approximately 517 barrels of crude oil have been recovered.
- The rate of crude oil recovery is anticipated to increase through the development of increased hydraulic gradients near the pumping wells as a result of improving the recovery system performance by adjusting and optimizing production of the pneumatic recovery pumps.
- The groundwater treatment system is working within design parameters for removal of dissolved phase hydrocarbons prior to re-injection.
- The remedial system will be adjusted as warranted based on performance data collected over the next several months to optimize the remediation of the crude oil constituents.
- Compliance requirements of the ConocoPhillips Discharge Permit GW-349 have been met.

Should you have any questions or comments upon review of this report, please contact Chris Higgins at (303) 708-9846.

Sincerely,
Higgins and Associates, L.L.C.

Nick Fischer
Project Engineer

Chris Higgins
Project Manager

Appendices:

Appendix A: Figures
Figure 1 - Site Diagram
Figure 2A - Groundwater Contour Map for May 2002
Figure 2B - Groundwater Contour Map for August 2002
Figure 2C - Groundwater Contour Map for January 2003
Figure 2D - Groundwater Contour Map for April 2003
Figure 3A - Hydrocarbon Concentration Map for May 2002
Figure 3B - Hydrocarbon Concentration Map for August 2002
Figure 3C - Hydrocarbon Concentration Map January 2003
Figure 3D - Hydrocarbon Concentration Map April 2003
Figure 4A - Product Thickness Map for November 5, 2002
Figure 4B - Product Thickness Map for April 21, 2003

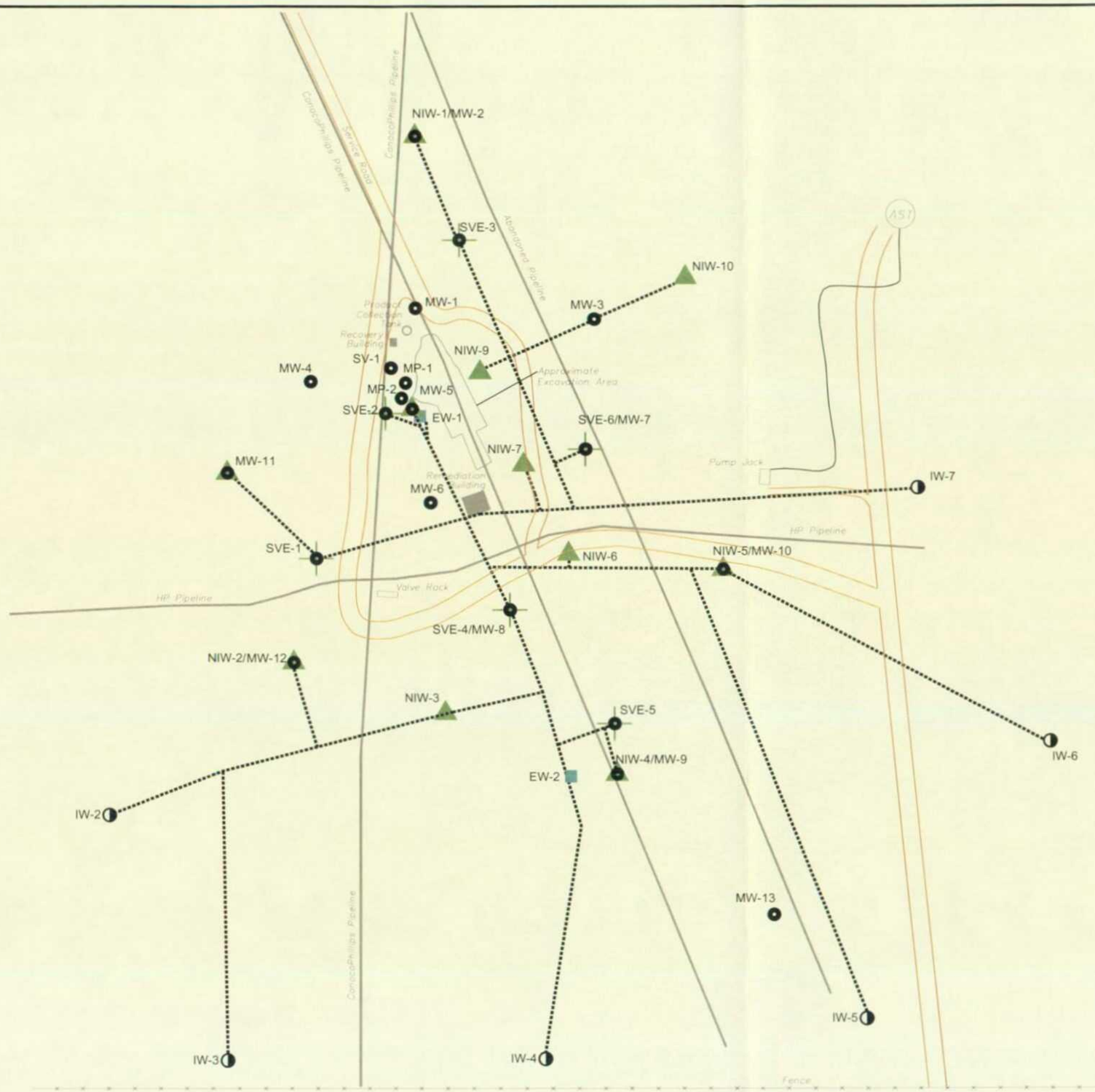
Appendix B: Tables
Table 1 - Field Groundwater and Free Product Level Measurements
Table 2 - Groundwater Analytical Data
Table 3 - Monthly and Total Recovered and Discharged Groundwater
Table 4 - Discharge Analytical Data
Table 5 - Baseline Bio-Assessment Analytical Data
Table 6 - Groundwater Dissolved Oxygen Measurements
Table 7 - Baseline Wellhead Gas Measurements
Table 8 - Bio-Venting Wellhead Gas Measurements

Appendix C: Geologic/Lithologic and Well Completion Logs

Appendix D: Laboratory Data

Appendix E: Building Permit

Appendix A
Figures



LEGEND

- MW-1 — Existing Monitor Well Location & Designation
- NIW-1 — Nutrient Injection Well Location & Designation
- SVE-1 — Soil Vapor Extraction Location & Designation
- Groundwater/Product Extraction Well Location & Designation
- Groundwater Injection Well Location & Designation
- Alignment of Conveyance Piping Corridor

N

0 120 240

Scale (ft)

HIGGINS AND ASSOCIATES, L.L.C.

Project No.:	Date Map Generated:	Date Data Collected:	Figure No.:
571-16	05/28/03	05/07/03	1

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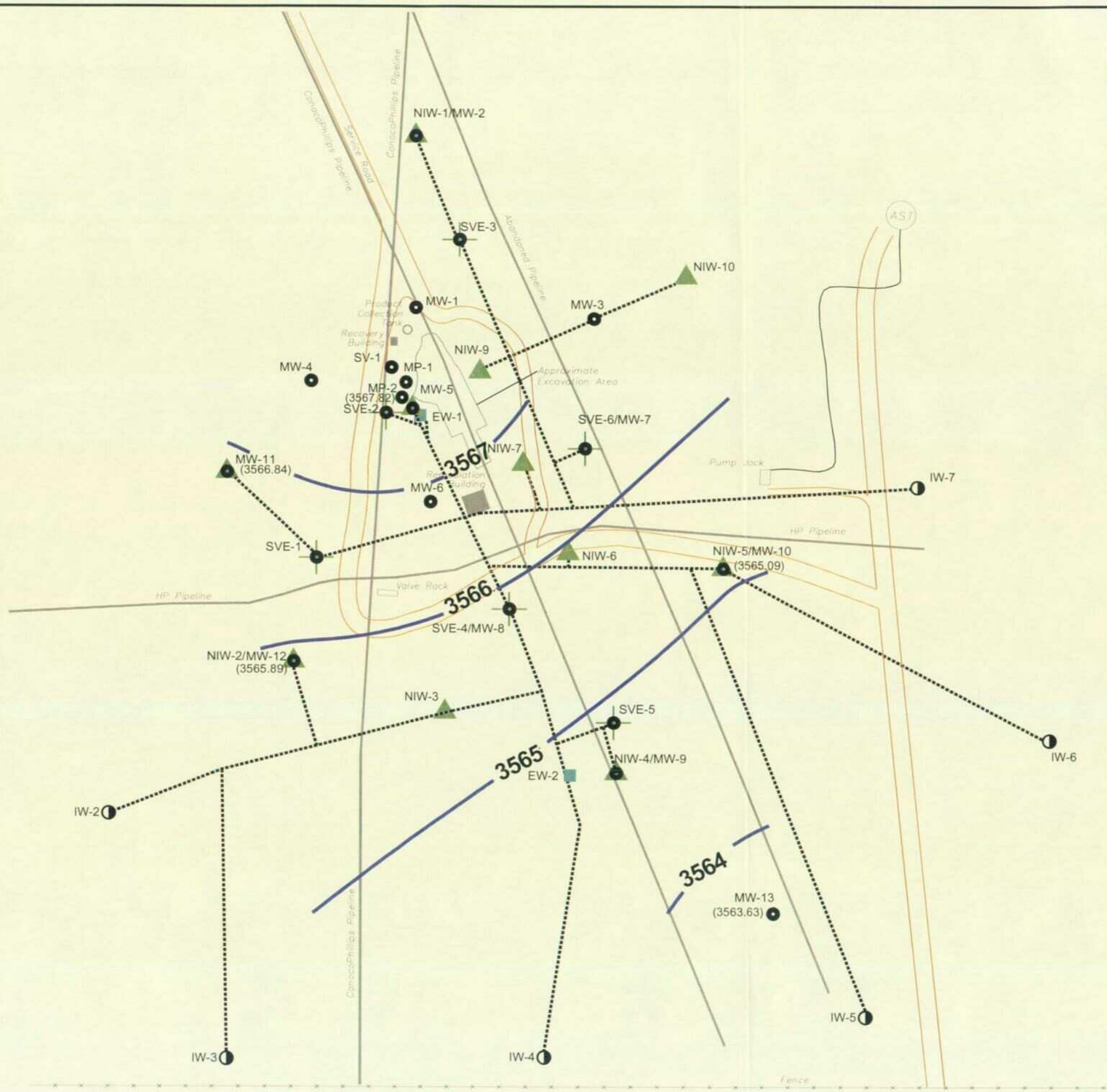
Checked: CH	
Detailed: EC	Client: ConocoPhillips
	Location: Hobbs New Mexico
	ACAD File: 571-16 Hobbs NM1-1.dwg; tab 001



LEGEND

- MW-1 — Existing Monitor Well Location & Designation
- NIW-1 — Nutrient Injection Well Location & Designation
- SVE-1 — Soil Vapor Extraction Location & Designation
- Groundwater/Product Extraction Well Location & Designation
- Groundwater Injection Well Location & Designation
- Alignment of Conveyance Piping Corridor
- 3565 — Groundwater Elevation Contour
- (3564.74) — Groundwater Level

N

0 120 240

Scale (ft)

HIGGINS AND ASSOCIATES, L.L.C.

Project No.:	Date Map Generated:	Date Data Collected:	Figure No.
571-16	05/28/03	05-20-02	2a

Authored: NF

Checked: CH

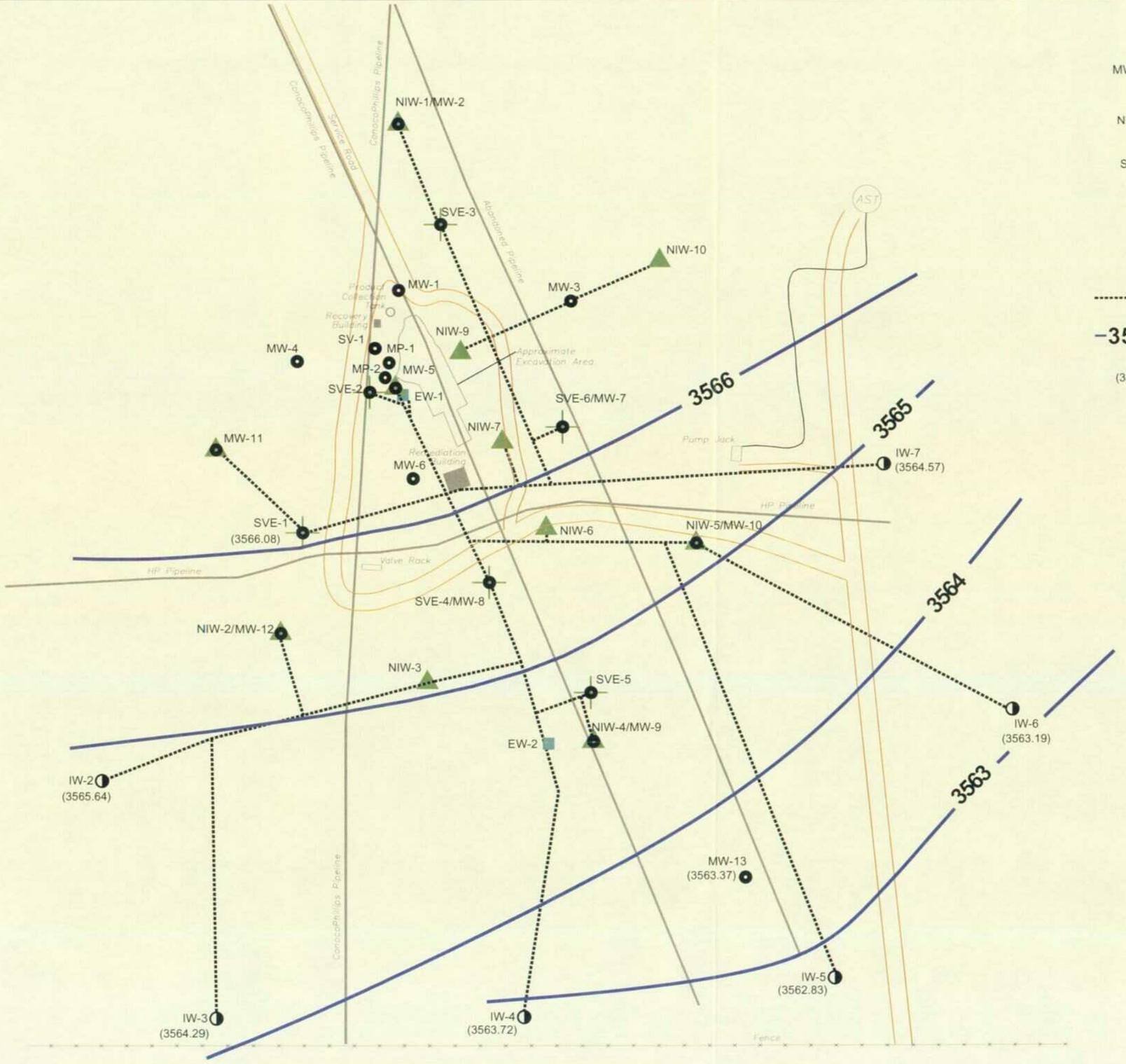
Detailed: EC

Title: GROUNDWATER CONTOUR MAP

Client: ConocoPhillips

Location: Hobbs New Mexico

ACAD File: 571-16 Hobbs NM1-1.dwg; tab 002 05-20-02



LEGEND

- MW-1 — Existing Monitor Well Location & Designation
- NIW-1 — Nutrient Injection Well Location & Designation
- SVE-1 — Soil Vapor Extraction Location & Designation
- Groundwater/Product Extraction Well Location & Designation
- Groundwater Injection Well Location & Designation
- Alignment of Conveyance Piping Corridor
- –3565– Groundwater Elevation Contour
- (3564.74) Groundwater Level

N

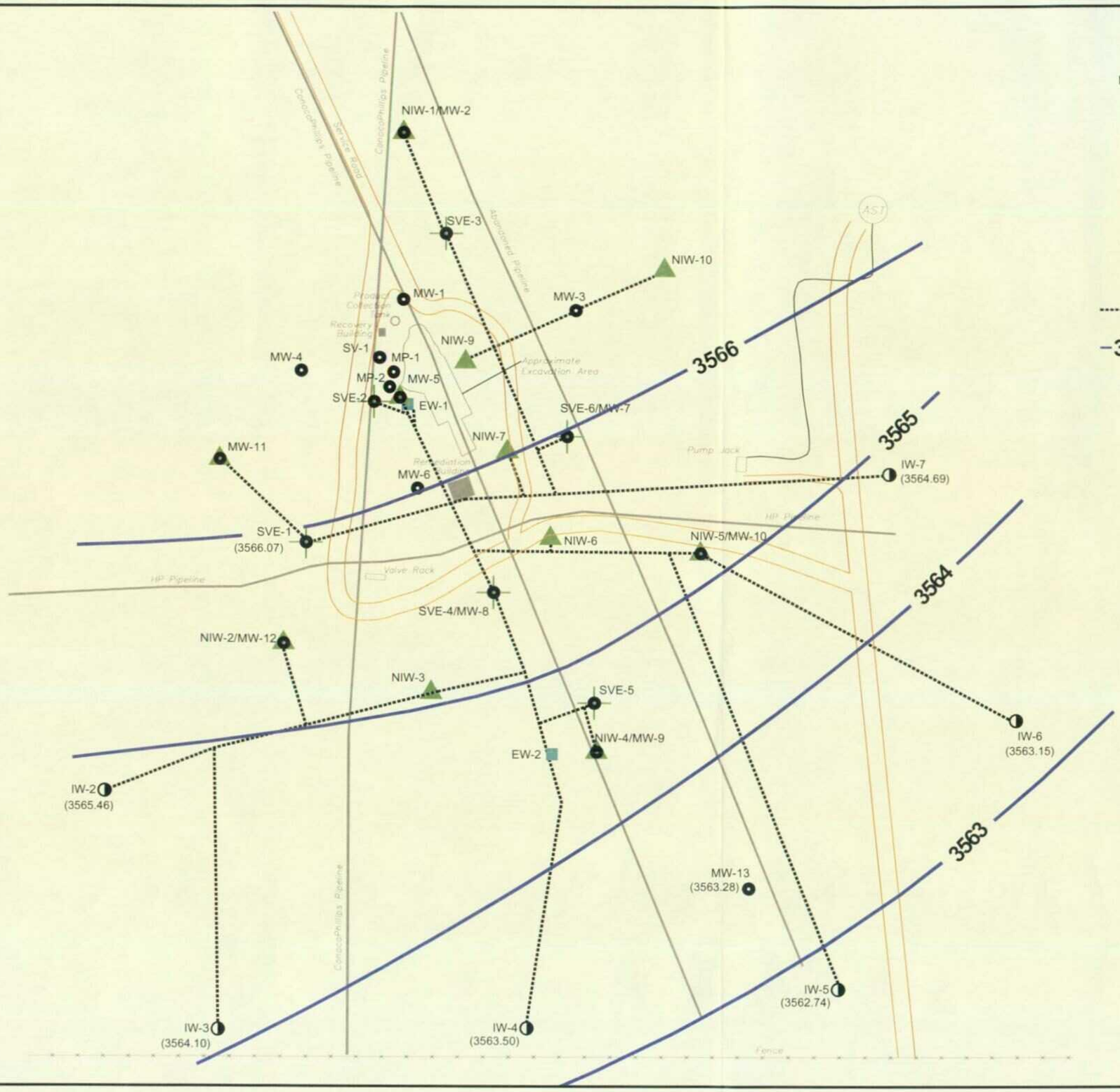
0 120 240

Scale (ft)

HIGGINS AND ASSOCIATES, L.L.C.

Project No.	Date Map Generated:	Date Data Collected:	Figure No.
571-16	05/28/03	08-29-02	2b

Authored	Title:
NF	GROUNDWATER CONTOUR MAP
Checked: CH	
Detailed: EC	Client: ConocoPhillips
	Location: Hobbs New Mexico
	ACAD File: 571-16 Hobbs NM1-1.dwg; tab 002 08-29-03



LEGEND

- MW-1 — Existing Monitor Well Location & Designation
- NIW-1 — Nutrient Injection Well Location & Designation
- SVE-1 — Soil Vapor Extraction Location & Designation
- Groundwater/Product Extraction Well Location & Designation
- Groundwater Injection Well Location & Designation
- Alignment of Conveyance Piping Corridor
- –3565– Groundwater Elevation Contour
- (3564.74) Groundwater Level

N

0 120 240

Scale (ft)

HIGGINS AND ASSOCIATES, L.L.C.

Project No.:	Date Map Generated:	Date Data Collected:	Figure No.
571-16	05/28/03	01-14-03	2c

Authored:	Title:
NF	GROUNDWATER CONTOUR MAP
Checked: CH	
Detailed: EC	Client: ConocoPhillips
	Location: Hobbs New Mexico
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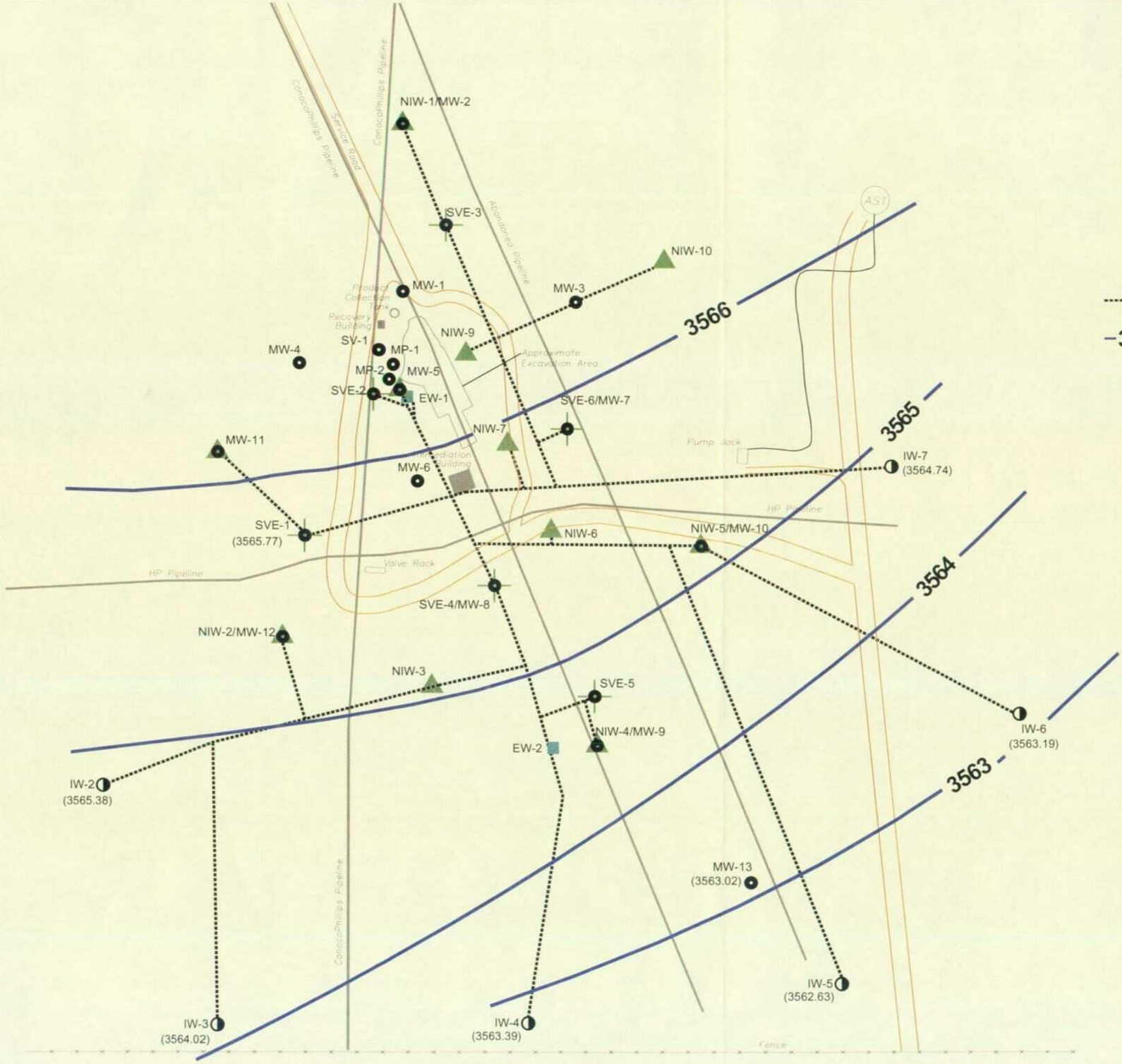


LEGEND

- MW-1 — Existing Monitor Well Location & Designation
- NIW-1 — Nutrient Injection Well Location & Designation
- SVE-1 — Soil Vapor Extraction Location & Designation
- Groundwater/Product Extraction Well Location & Designation
- Groundwater Injection Well Location & Designation
- Alignment of Conveyance Piping Corridor
- −3565− Groundwater Elevation Contour
- (3564.74) Groundwater Level

N

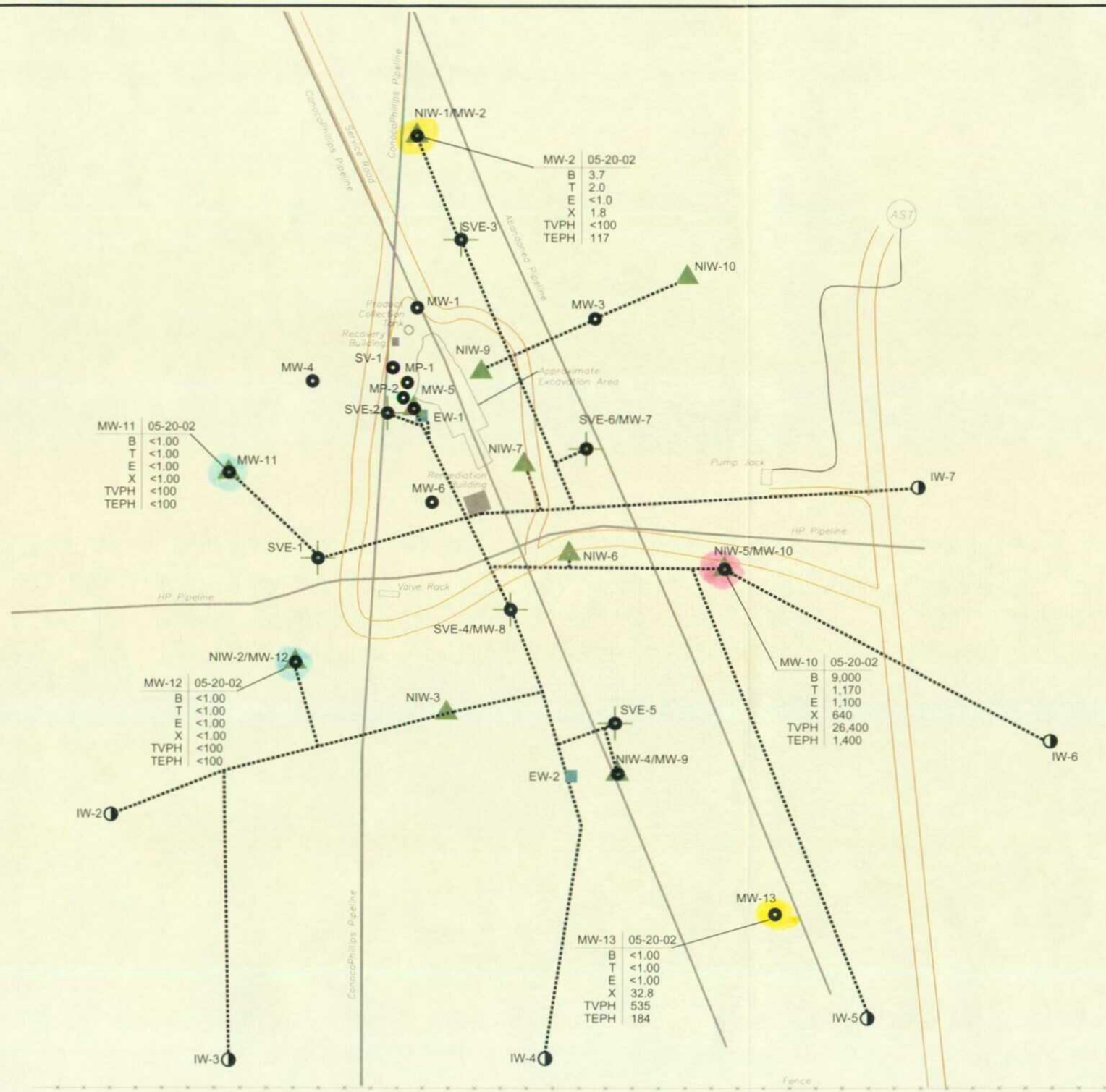
0 120 240

Scale (ft)

HIGGINS AND ASSOCIATES, L.L.C.

Project No.:	Date Map Generated:	Date Data Collected:	Figure No.
571-16	05/28/03	04-23-03	2d

Authored:	Title:
NF	GROUNDWATER CONTOUR MAP
Checked: CH	Client: ConocoPhillips
Detailed: EC	Location: Hobbs New Mexico
	ACAD File: 571-16 Hobbs NM1-1.dwg; tab 002 04-23-03



LEGEND

- MW-1 — Existing Monitor Well Location & Designation
- NIW-1 — Nutrient Injection Well Location & Designation
- SVE-1 — Soil Vapor Extraction Location & Designation
- Groundwater/Product Extraction Well Location & Designation
- Groundwater Injection Well Location & Designation
- Alignment of Conveyance Piping Corridor

CHEMICAL DATA

(all results are reported in µg/L)

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylene
TVPH = Total Volatile Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons
ND = Not Detected

N

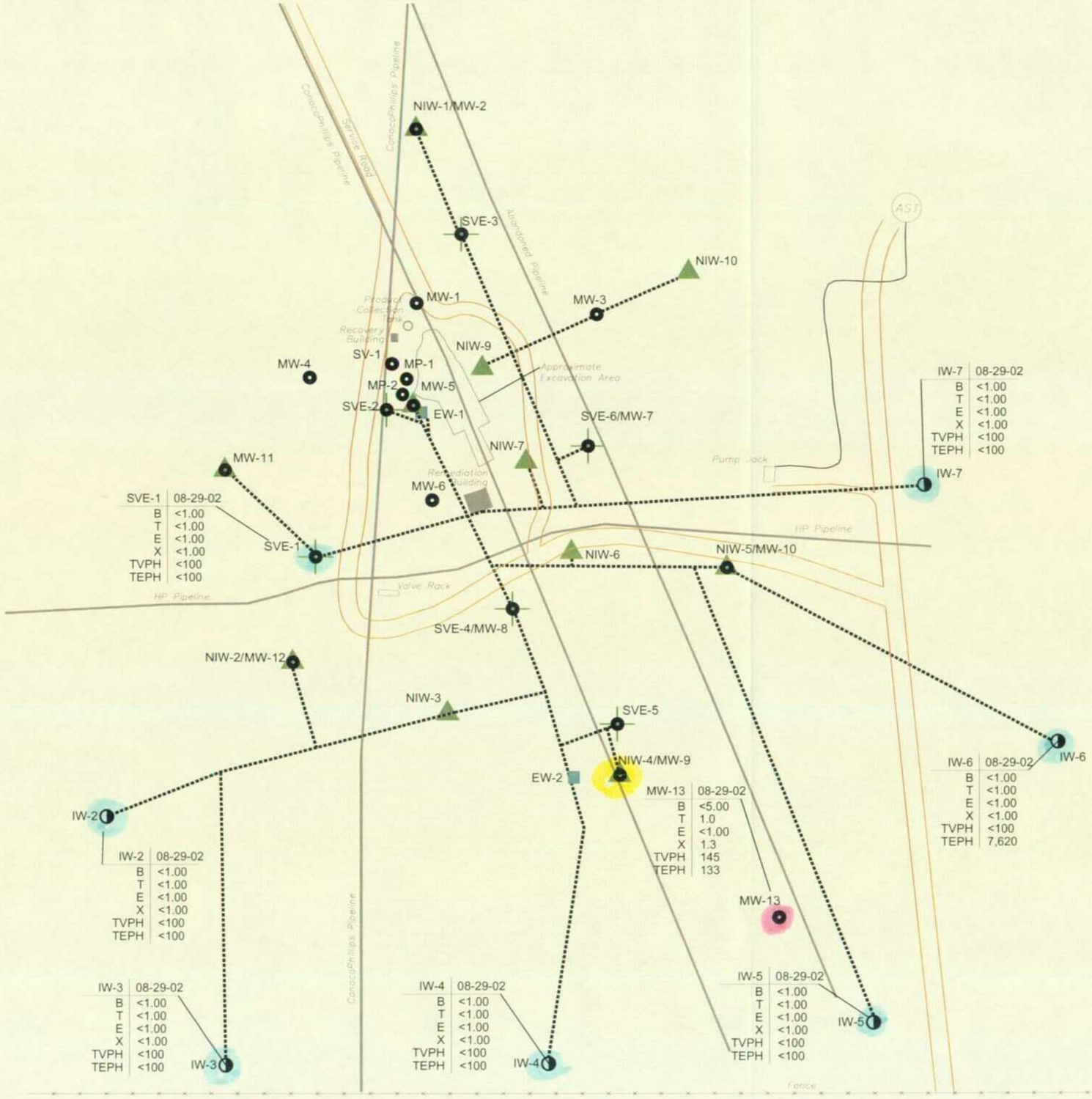
0 120 240

Scale (ft)

HIGGINS AND ASSOCIATES, L.L.C.

Project No.	Date Map Generated:	Date Data Collected:	Figure No.
571-16	05/28/03	05/20/02	3a

Authored:	Title:
NF	HYDROCARBON CONCENTRATION MAP
Checked: CH	
Revised: EC	Client: ConocoPhillips
	Location: Hobbs New Mexico
	ACAD File: 571-16 Hobbs NM1-1.dwg; tab 003 05-20-02



LEGEND

- MW-1 — Existing Monitor Well Location & Designation
- NIW-1 — Nutrient Injection Well Location & Designation
- SVE-1 — Soil Vapor Extraction Location & Designation
- Groundwater/Product Extraction Well Location & Designation
- Groundwater Injection Well Location & Designation
- Alignment of Conveyance Piping Corridor

CHEMICAL DATA

(all results are reported in µg/L)

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylene
TVPH = Total Volatile Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons
ND = Not Detected

N

0 120 240

Scale (ft)

HIGGINS AND ASSOCIATES, L.L.C.

Project No.:	Date Map Generated:	Date Data Collected:	Figure No.
571-16	05/28/03	08/29/02	3b

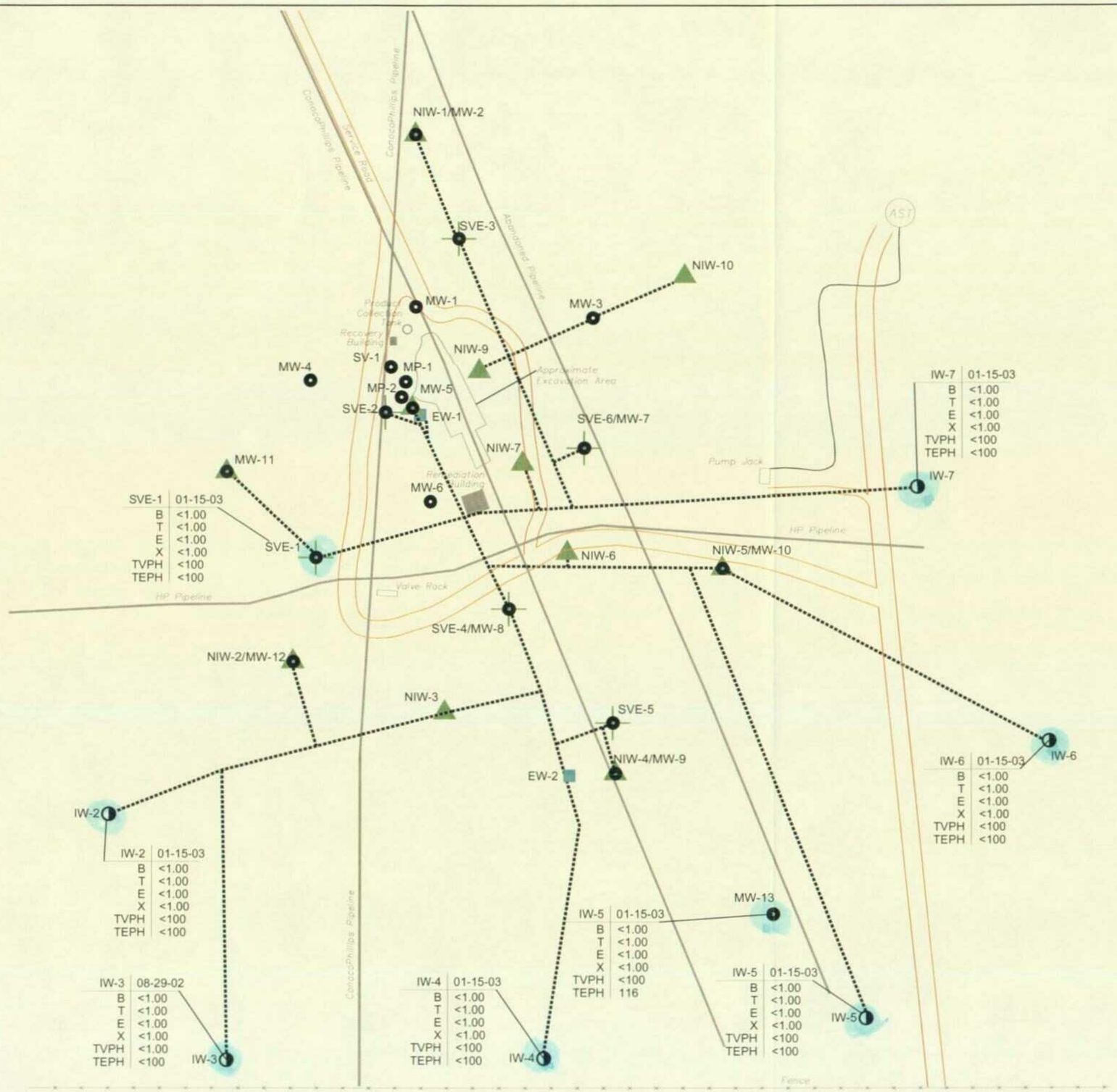
Authored: NF
Checked: CH
Detailed: EC

Title: HYDROCARBON CONCENTRATION MAP

Client: ConocoPhillips

Location: Hobbs New Mexico

ACAD File: 571-16 Hobbs NM1-1.dwg; tab 003 08-29-02



LEGEND

- MW-1 — Existing Monitor Well Location & Designation
- NIW-1 — Nutrient Injection Well Location & Designation
- SVE-1 — Soil Vapor Extraction Location & Designation
- Groundwater/Product Extraction Well Location & Designation
- Groundwater Injection Well Location & Designation
- Alignment of Conveyance Piping Corridor

CHEMICAL DATA

(all results are reported in µg/L)

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylene
TVPH = Total Volatile Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons
ND = Not Detected

N

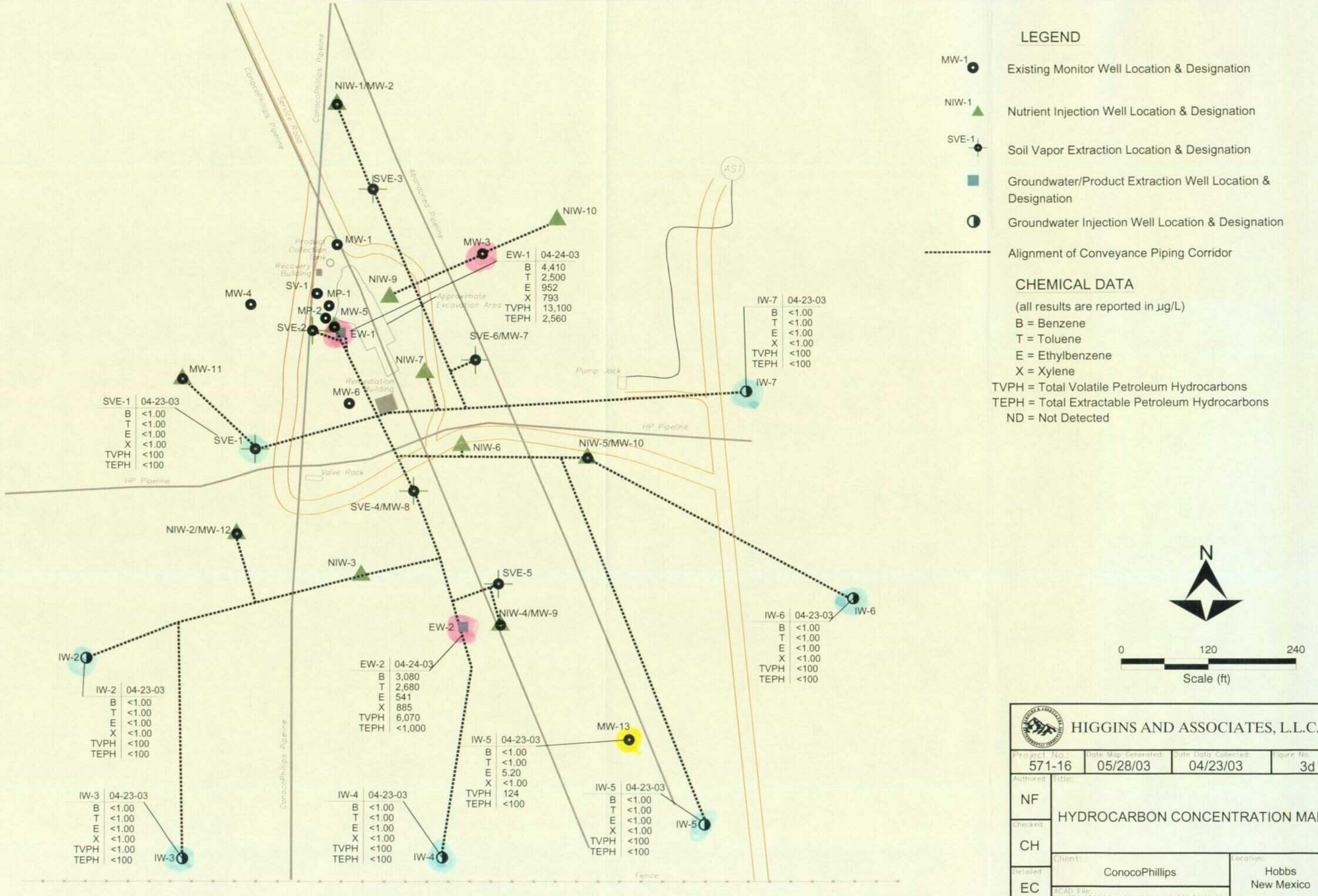
0 120 240

Scale (ft)

HIGGINS AND ASSOCIATES, L.L.C.

Project No.	Date Map Generated:	Date Data Collected:	Figure No.
571-16	05/28/03	01/15/03	3c

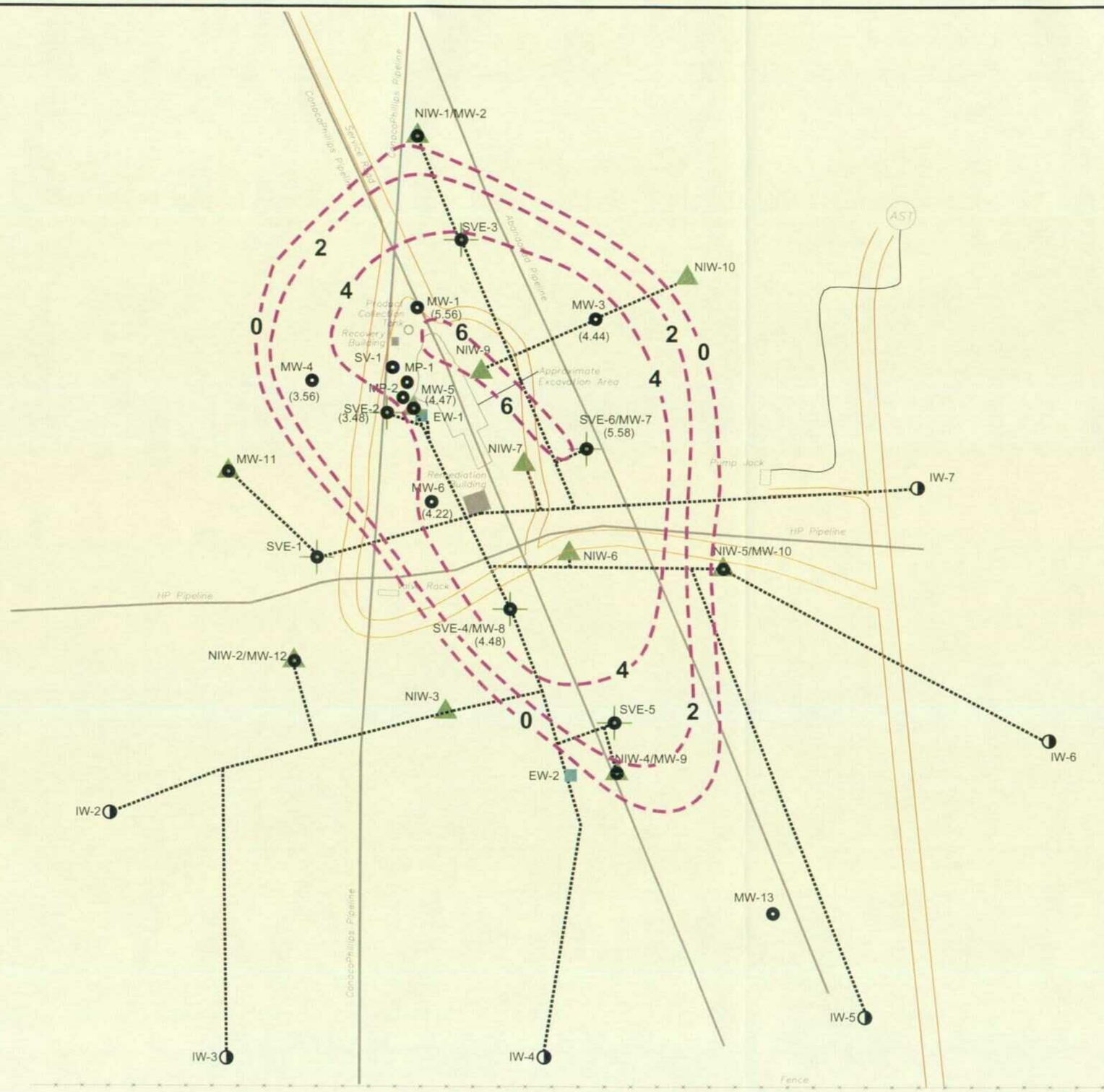
Authored	Title:
NF	HYDROCARBON CONCENTRATION MAP
Checked: CH	Client: ConocoPhillips — Location: Hobbs New Mexico
Detailed: EC	ACAD File: 571-16 Hobbs NM1-1.dwg; tab 003 01-15-03



HIGGINS AND ASSOCIATES, L.L.C.

Project No.	Date Map Generated:	Date Data Collected:	Figure No.
571-16	05/28/03	04/23/03	3d

Authored	Title:
NF	HYDROCARBON CONCENTRATION MAP
Checked: CH	Client: ConocoPhillips
Location: Hobbs New Mexico	
Detailed: EC	ACAD File: 571-16 Hobbs NM1-1.dwg; tab 003 04-23-03



LEGEND

- MW-1 — Existing Monitor Well Location & Designation
- NIW-1 — Nutrient Injection Well Location & Designation
- SVE-1 — Soil Vapor Extraction Location & Designation
- Groundwater/Product Extraction Well Location & Designation
- Groundwater Injection Well Location & Designation
- Alignment of Conveyance Piping Corridor
- LPH Thickness Contour
- (4.32) LPH Thickness in Feet
- (ND) Not Detected

N

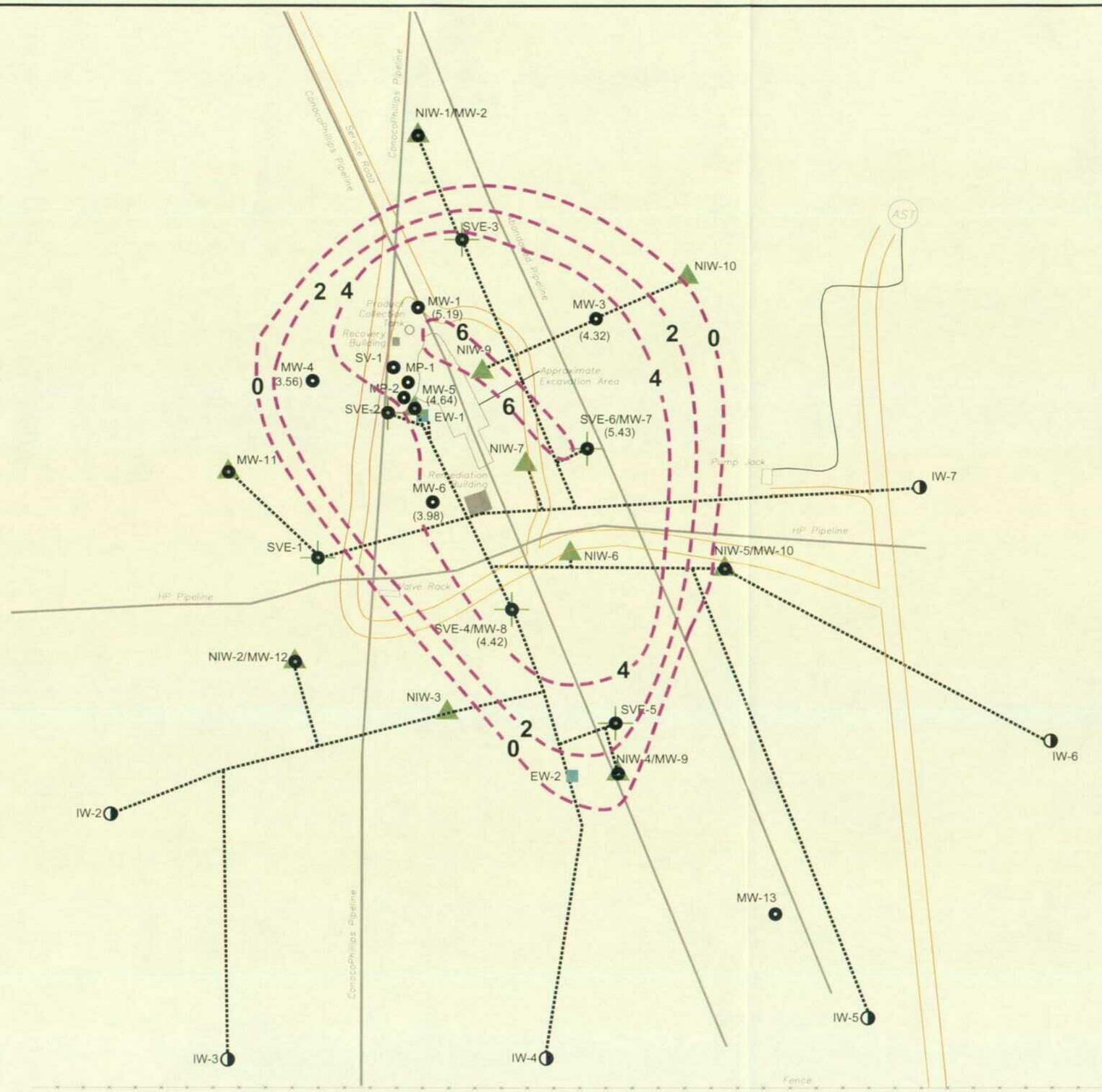
0 120 240

Scale (ft)

HIGGINS AND ASSOCIATES, L.L.C.

Project No.	Date Map Generated:	Date Data Collected:	Figure No.
571-16	05/28/03	11-05-02	4a

Authored:	Title:
NF	APPARENT LIQUID PHASE HYDROCARBON (LPH) THICKNESS MAP
Checked: CH	Client: ConocoPhillips
Detailed: EC	Location: Hobbs New Mexico
	ACAD File: 571-16 Hobbs NM1-1.dwg; tab 004 11-05-02



LEGEND

- MW-1 — Existing Monitor Well Location & Designation
- NIW-1 — Nutrient Injection Well Location & Designation
- SVE-1 — Soil Vapor Extraction Location & Designation
- Groundwater/Product Extraction Well Location & Designation
- Groundwater Injection Well Location & Designation
- Alignment of Conveyance Piping Corridor
- LPH Thickness Contour
- (4.32) — LPH Thickness in Feet
- (ND) — Not Detected

N

0 120 240

Scale (ft)

HIGGINS AND ASSOCIATES, L.L.C.

Project No.:	Date Map Generated:	Date Data Collected:	Figure No:
571-16	05/28/03	04-21-03	4b

Authored: NF

Checked: CH

Detailed: EC

Title: APPARENT LIQUID PHASE HYDROCARBON (LPH) THICKNESS MAP

Client: ConocoPhillips

Location: Hobbs New Mexico

ACAD File: 571-16 Hobbs NM1-1.dwg; tab 004 04-21-03

Appendix B
Tables

Table 1
Water Level Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

(all measurements in feet)

Well	Date	Casing Elevation	Depth to Water	Depth to L.P.H.	L.P.H. Thickness	L.P.H. Thickness X 0.8	Adjusted Depth to Water	Groundwater Elevation
MW-1	02/27/01	3603.30	36.20	30.13	6.07	4.86	31.34	3571.96
	06/25/01	3603.30	35.23	34.92	0.31	0.25	34.98	3568.32
	09/25/01	3603.30	40.28	34.64	5.64	4.51	35.77	3567.53
	12/11/01	3603.30	40.72	34.96	5.76	4.61	36.11	3567.19
	11/05/02	3603.30	41.32	35.76	5.56	4.45	36.87	3566.43
	04/21/03	3603.30	41.52	36.33	5.19	4.15	37.37	3565.93
MW-2	02/27/01	3601.57	32.16		0.00	0.00	32.16	3569.41
	06/25/01	3601.57	32.60		0.00	0.00	32.60	3568.97
	09/25/01	3601.57	33.12		0.00	0.00	33.12	3568.45
	12/11/01	3601.57	33.51		0.00	0.00	33.51	3568.06
	05/20/02	3601.57	33.75		0.00	0.00	33.75	3567.82
MW-3	02/27/01	3602.77	38.93	33.88	5.05	4.04	34.89	3567.88
	06/25/01	3602.77	39.44	35.23	4.21	3.37	36.07	3566.70
	09/25/01	3602.77	40.41	35.79	4.62	3.70	36.71	3566.06
	12/11/01	3602.77	40.83	36.12	4.71	3.77	37.06	3565.71
	11/05/02	3602.77	41.26	36.82	4.44	3.55	37.71	3565.06
	04/21/03	3602.77	41.52	37.14	4.38	3.50	38.02	3564.75
MW-4	02/27/01	3601.70	36.13	32.41	3.72	2.98	33.15	3568.55
	06/25/01	3601.70	36.90	33.17	3.73	2.98	33.92	3567.78
	09/25/01	3601.70	37.38	33.63	3.75	3.00	34.38	3567.32
	12/11/01	3601.70	37.59	34.03	3.56	2.85	34.74	3566.96
	11/05/02	3601.70	38.51	34.82	3.69	2.95	35.56	3566.14
	04/21/03	3601.70	38.78	35.22	3.56	2.85	35.93	3565.77
MW-5	02/27/01	3601.54	37.92	32.36	5.56	4.45	33.47	3568.07
	06/25/01	3601.54	38.21	32.95	5.26	4.21	34.00	3567.54
	09/25/01	3601.54	39.66	34.44	5.22	4.18	35.48	3566.06
	12/11/01	3601.54	38.94	33.84	5.10	4.08	34.86	3566.68
	11/05/02	3601.54	39.18	34.71	4.47	3.58	35.60	3565.94
	04/21/03	3601.54	39.98	35.34	4.64	3.71	36.27	3565.27
MW-6	02/27/01	3599.83	35.80	31.31	4.49	3.59	32.21	3567.62
	06/25/01	3599.83	33.12	33.02	0.10	0.08	33.04	3566.79
	09/25/01	3599.83	37.11	32.83	4.28	3.42	33.69	3566.14
	12/11/01	3599.83	37.34	33.18	4.16	3.33	34.01	3565.82
	11/05/02	3599.83	38.22	34.00	4.22	3.38	34.84	3564.99
	04/21/03	3599.83	38.23	34.30	3.93	3.14	35.09	3564.74
MW-7	02/27/01	3602.11	39.35	33.60	5.75	4.60	34.75	3567.36
	06/25/01	3602.11	40.34	34.69	5.65	4.52	35.82	3566.29
	09/25/01	3602.11	40.83	35.14	5.69	4.55	36.28	3565.83
	12/11/01	3602.11	41.23	35.49	5.74	4.59	36.64	3565.47
	11/05/02	3602.11	42.25	36.67	5.58	4.46	37.79	3564.32
	04/21/03	3602.11	42.41	36.98	5.43	4.34	38.07	3564.04
MW-8	02/27/01	3598.87	34.36	31.17	3.19	2.55	31.81	3567.06
	06/25/01	3598.87	35.59	31.93	3.66	2.93	32.66	3566.21
	09/25/01	3598.87	36.18	32.33	3.85	3.08	33.10	3565.77
	12/11/01	3598.87	36.71	32.63	4.08	3.26	33.45	3565.42
	11/05/02	3598.87	38.34	33.86	4.48	3.58	34.76	3564.11
	04/21/03	3598.87	38.64	34.22	4.42	3.54	35.10	3563.77

Table 1
Water Level Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

(all measurements in feet)

Well	Date	Casing Elevation	Depth to Water	Depth to L.P.H.	L.P.H. Thickness	L.P.H. Thickness X 0.8	Adjusted Depth to Water	Groundwater Elevation
MW-9	02/27/01	3601.05	34.80		0.00	0.00	34.80	3566.25
	06/25/01	3601.05	35.78	35.11	0.67	0.54	35.24	3565.81
	09/25/01	3601.05	37.54	35.19	2.35	1.88	35.66	3565.39
MW-10	02/27/01	3602.96	36.27		0.00	0.00	36.27	3566.69
	06/25/01	3602.96	36.69		0.00	0.00	36.69	3566.27
	09/25/01	3602.96	37.13		0.00	0.00	37.13	3565.83
	12/11/01	3602.96	37.49		0.00	0.00	37.49	3565.47
	05/20/02	3602.96	37.87		0.00	0.00	37.87	3565.09
MW-11	02/27/01	3600.67	32.13		0.00	0.00	32.13	3568.54
	06/25/01	3600.67	32.56		0.00	0.00	32.56	3568.11
	09/25/01	3600.67	32.99		0.00	0.00	32.99	3567.68
	12/11/01	3600.67	33.33		0.00	0.00	33.33	3567.34
	05/20/02	3600.67	33.83		0.00	0.00	33.83	3566.84
MW-12	02/27/01	3599.35	31.82		0.00	0.00	31.82	3567.53
	06/25/01	3599.35	32.23		0.00	0.00	32.23	3567.12
	09/25/01	3599.35	32.63		0.00	0.00	32.63	3566.72
	12/11/01	3599.35	32.94		0.00	0.00	32.94	3566.41
	05/20/02	3599.35	33.46		0.00	0.00	33.46	3565.89
MW-13	02/27/01	3601.67	36.44		0.00	0.00	36.44	3565.23
	06/25/01	3601.67	36.83		0.00	0.00	36.83	3564.84
	09/25/01	3601.67	37.23		0.00	0.00	37.23	3564.44
	12/11/01	3601.67	37.57		0.00	0.00	37.57	3564.10
	05/20/02	3601.67	38.04		0.00	0.00	38.04	3563.63
	08/28/02	3601.67	38.30		0.00	0.00	38.30	3563.37
	08/29/02	3601.67	38.30		0.00	0.00	38.30	3563.37
	11/07/02	3601.67	38.49		0.00	0.00	38.49	3563.18
	11/22/02	3601.67	38.45		0.00	0.00	38.45	3563.22
	11/29/02	3601.67	38.44		0.00	0.00	38.44	3563.23
	12/17/02	3601.67	38.37		0.00	0.00	38.37	3563.30
	12/18/02	3601.67	38.40		0.00	0.00	38.40	3563.27
	01/14/03	3601.67	38.39		0.00	0.00	38.39	3563.28
	02/24/03	3601.67	38.54		0.00	0.00	38.54	3563.13
	02/25/03	3601.67	38.52		0.00	0.00	38.52	3563.15
	03/04/03	3601.67	38.55		0.00	0.00	38.55	3563.12
	03/14/03	3601.67	38.57		0.00	0.00	38.57	3563.10
	04/07/03	3601.67	38.63		0.00	0.00	38.63	3563.04
	04/11/03	3601.67	38.63		0.00	0.00	38.63	3563.04
	04/23/03	3601.67	38.65		0.00	0.00	38.65	3563.02
SVE-1(SV-1)	02/27/01	3602.16	NM					
	06/25/01	3602.16	NM					
	09/25/01	3602.16	NM					
	12/11/01	3602.16	NM					
								0.00
SVE-2(SV-2)	02/27/01	3601.17	37.03	32.06	4.97	3.98	33.05	3568.12
	06/25/01	3601.17	37.28	32.67	4.61	3.69	33.59	3567.58
	09/25/01	3601.17	37.75	33.46	4.29	3.43	34.32	3566.85
	12/11/01	3601.17	37.69	33.74	3.95	3.16	34.53	3566.64
	11/05/02	3601.17	39.06	35.58	3.48	2.78	36.28	3564.89
	04/21/03	3601.17	39.33	35.65	3.68	2.94	36.39	3564.78

Table 1
Water Level Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

(all measurements in feet)

Well	Date	Casing Elevation	Depth to Water	Depth to L.P.H.	L.P.H. Thickness	L.P.H. Thickness X 0.8	Adjusted Depth to Water	Groundwater Elevation
MP-1	02/27/01	3601.87	NM					
	06/25/01	3601.87	NM					
	09/25/01	3601.87	NM					
	12/11/01	3601.87	NM					
MP-2	02/27/01	3601.87	NM					
	06/25/01	3601.87	37.66	33.15	4.51	3.61	34.05	3567.82
	09/25/01	3601.87	NM					
	12/11/01	3601.87	NM					
IW-2	06/05/02	3597.87	32.94		0.00	0.00	32.94	3564.93
	06/07/02	3597.87	32.99		0.00	0.00	32.99	3564.88
	06/08/02	3597.87	32.96		0.00	0.00	32.96	3564.91
	08/28/02	3597.87	32.27		0.00	0.00	32.27	3565.60
	08/29/02	3597.87	32.23		0.00	0.00	32.23	3565.64
	10/25/02	3597.87	32.46		0.00	0.00	32.46	3565.41
	11/06/02	3597.87	32.45		0.00	0.00	32.45	3565.42
	01/14/03	3597.87	32.41		0.00	0.00	32.41	3565.46
	02/26/03	3597.87	32.48		0.00	0.00	32.48	3565.39
	04/23/03	3597.87	32.49		0.00	0.00	32.49	3565.38
IW-3	06/05/02	3597.30	32.85		0.00	0.00	32.85	3564.45
	06/07/02	3597.30	32.89		0.00	0.00	32.89	3564.41
	06/08/02	3597.30	32.88		0.00	0.00	32.88	3564.42
	08/28/02	3597.30	33.02		0.00	0.00	33.02	3564.28
	08/29/02	3597.30	33.01		0.00	0.00	33.01	3564.29
	10/25/02	3597.30	33.20		0.00	0.00	33.20	3564.10
	11/06/02	3597.30	33.23		0.00	0.00	33.23	3564.07
	01/14/03	3597.30	33.20		0.00	0.00	33.20	3564.10
	02/26/03	3597.30	33.28		0.00	0.00	33.28	3564.02
	04/23/03	3597.30	33.28		0.00	0.00	33.28	3564.02
IW-4	06/05/02	3596.13	32.12		0.00	0.00	32.12	3564.01
	06/07/02	3596.13	32.14		0.00	0.00	32.14	3563.99
	06/08/02	3596.13	32.17		0.00	0.00	32.17	3563.96
	08/28/02	3596.13	32.45		0.00	0.00	32.45	3563.68
	08/29/02	3596.13	32.41		0.00	0.00	32.41	3563.72
	10/25/02	3596.13	32.62		0.00	0.00	32.62	3563.51
	11/06/02	3596.13	32.68		0.00	0.00	32.68	3563.45
	01/14/03	3596.13	32.63		0.00	0.00	32.63	3563.50
	02/26/03	3596.13	32.71		0.00	0.00	32.71	3563.42
	04/23/03	3596.13	32.74		0.00	0.00	32.74	3563.39
IW-5	06/05/02	3599.89	36.85		0.00	0.00	36.85	3563.04
	06/07/02	3599.89	36.83		0.00	0.00	36.83	3563.06
	06/08/02	3599.89	36.83		0.00	0.00	36.83	3563.06
	08/28/02	3599.89	37.01		0.00	0.00	37.01	3562.88
	08/29/02	3599.89	37.06		0.00	0.00	37.06	3562.83
	10/25/02	3599.89	37.22		0.00	0.00	37.22	3562.67
	11/06/02	3599.89	37.19		0.00	0.00	37.19	3562.70
	01/14/03	3599.89	37.15		0.00	0.00	37.15	3562.74
	02/26/03	3599.89	37.25		0.00	0.00	37.25	3562.64
	04/23/03	3599.89	37.26		0.00	0.00	37.26	3562.63

Table 1
Water Level Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

(all measurements in feet)

Well	Date	Casing Elevation	Depth to Water	Depth to L.P.H.	L.P.H. Thickness	L.P.H. Thickness X 0.8	Adjusted Depth to Water	Groundwater Elevation
IW-6	06/05/02	3599.71	36.45		0.00	0.00	36.45	3563.26
	06/07/02	3599.71	36.48		0.00	0.00	36.48	3563.23
	06/08/02	3599.71	36.48		0.00	0.00	36.48	3563.23
	08/28/02	3599.71	36.54		0.00	0.00	36.54	3563.17
	08/29/02	3599.71	36.52		0.00	0.00	36.52	3563.19
	10/25/02	3599.71	36.75		0.00	0.00	36.75	3562.96
	11/06/02	3599.71	36.68		0.00	0.00	36.68	3563.03
	01/14/03	3599.71	36.56		0.00	0.00	36.56	3563.15
	02/26/03	3599.71	36.50		0.00	0.00	36.50	3563.21
	04/23/03	3599.71	36.52		0.00	0.00	36.52	3563.19
IW-7	06/05/02	3600.64	35.70		0.00	0.00	35.70	3564.94
	06/07/02	3600.64	35.77		0.00	0.00	35.77	3564.87
	06/08/02	3600.64	35.81		0.00	0.00	35.81	3564.83
	08/28/02	3600.64	36.03		0.00	0.00	36.03	3564.61
	08/29/02	3600.64	36.07		0.00	0.00	36.07	3564.57
	10/25/02	3600.64	36.25		0.00	0.00	36.25	3564.39
	11/06/02	3600.64	35.94		0.00	0.00	35.94	3564.70
	01/14/03	3600.64	35.95		0.00	0.00	35.95	3564.69
	02/26/03	3600.64	35.42		0.00	0.00	35.42	3565.22
	04/23/03	3600.64	35.90		0.00	0.00	35.90	3564.74
SVE-1	08/28/02	3598.68	32.63		0.00	0.00	32.63	3566.05
	08/29/02	3598.68	32.60		0.00	0.00	32.60	3566.08
	10/25/02	3598.68	32.60		0.00	0.00	32.60	3566.08
	11/06/02	3598.68	32.80		0.00	0.00	32.80	3565.88
	11/22/02	3598.68	32.75		0.00	0.00	32.75	3565.93
	11/29/02	3598.68	32.73		0.00	0.00	32.73	3565.95
	12/18/02	3598.68	32.82		0.00	0.00	32.82	3565.86
	01/14/03	3598.68	32.61		0.00	0.00	32.61	3566.07
	02/24/03	3598.68	32.78		0.00	0.00	32.78	3565.90
	02/25/03	3598.68	32.79		0.00	0.00	32.79	3565.89
	02/26/03	3598.68	32.80		0.00	0.00	32.80	3565.88
	02/27/03	3598.68	32.80		0.00	0.00	32.80	3565.88
	02/28/03	3598.68	32.80		0.00	0.00	32.80	3565.88
	03/04/03	3598.68	32.78		0.00	0.00	32.78	3565.90
	03/14/03	3598.68	32.79		0.00	0.00	32.79	3565.89
	04/07/03	3598.68	32.90		0.00	0.00	32.90	3565.78
	04/11/03	3598.68	32.89		0.00	0.00	32.89	3565.79
	04/23/03	3598.68	32.91		0.00	0.00	32.91	3565.77
SVE-5	10/25/03	3600.54	38.82	35.92	2.90	2.32	36.50	3564.04
	11/07/02	3600.54	40.80	35.57	5.23	4.18	36.62	3563.92
	11/22/02	3600.54	dry	dry				
	12/18/02	when pumping from EW-2, SVE-5 may have no detection of water/free product during pumping intervals						
	12/18/02	conducted enhanced free product recovery via vacuum truck						
	02/26/03	3600.54	36.30	30.54	5.76	4.61	31.69	3568.85
	03/13/03	conducted enhanced free product recovery via vacuum truck						
EW-1	06/07/02	3598.57	34.33	30.73	3.60	2.88	31.45	3567.12
	08/26/02	developed well, conducted enhanced free product recovery via vacuum truck						
	11/22/02	3598.57	37.82	30.65	7.17	5.74	32.08	3566.49
	12/18/02	redeveloped well, conducted enhanced free product recovery via vacuum truck						

Table 1
Water Level Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

(all measurements in feet)

Well	Date	Casing Elevation	Depth to Water	Depth to L.P.H.	L.P.H. Thickness	L.P.H. Thickness X 0.8	Adjusted Depth to Water	Groundwater Elevation
EW-2	09/19/02	3597.95	33.60		0.00	0.00	33.60	3564.35
EW-2	10/03/02	3597.95	33.61		0.00	0.00	33.61	3564.34
EW-2	10/23/02	3597.95	33.71		0.00	0.00	33.71	3564.24
EW-2	10/24/02	3597.95	33.73		0.00	0.00	33.73	3564.22
EW-2	10/25/02	3597.95	33.74		0.00	0.00	33.74	3564.21
EW-2	11/15/02	3597.95	33.83		0.00	0.00	33.83	3564.12
EW-2	11/29/02	3597.95	33.83		0.00	0.00	33.83	3564.12
EW-2	12/18/02	3597.95	33.65	33.60	0.05	0.04	33.61	3564.34
EW-2	12/18/02	redeveloped well, conducted enhanced free product recovery via vacuum truck						
EW-2	03/04/03	3597.95	33.65	31.23	2.42	1.94	31.71	3566.24
EW-2	03/13/03	redeveloped well, conducted enhanced free product recovery via vacuum truck						
EW-2	03/13/03	3597.95	33.80	33.59	0.21	0.17	33.63	3564.32
EW-2	04/07/03	3597.95	35.40	33.53	1.87	1.50	33.90	3564.05

L.P.H. = Liquid Phase Hydrocarbon
NM = Not Measured

Table 2
Groundwater Analytical Data
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Well	Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TVPH/TEPH (ug/L)
MW-2	07/16/99	3.6	2.7	1.3	0.5	<2,000
MW-2	10/20/99	4.2	2.5	1.3	1.3	<2,000
MW-2	01/13/00	1.9	0.5	<0.5	<0.5	<2,000
MW-2	04/06/00	4.3	4.1	1.4	<2	<1,000
MW-2	08/01/00	1.7	1.5	0.72	<2	<1000
MW-2	11/15/00	52.0	36.0	7.80	9.4	640/<520
MW-2	03/06/01	7.3	5.0	1.40	2.1	140/<560
MW-2	06/26/01	4.9	3.2	1.00	<2	180/<560
MW-2	09/25/01	18.0	7.4	1.40	2.1	200/<560
MW-2	12/12/01	3.6	2.9	<1.0	1.6	<100/122
MW-2	05/20/02	3.7	2.0	<1.0	1.8	<100/117
MW-3	07/16/99	<0.5	<0.5	<0.5	<0.5	<2,000
MW-3	10/20/99	2.6	1.0	<0.5	<0.5	<2,000
MW-3	01/13/00	20	16	9.2	20	<2,000
MW-3	04/06/00	3,800	3,800	910	1,100	<1,000
MW-4	07/16/99	720	1,100	260	280	3,000
MW-9	07/16/99	<0.5	<0.5	<0.5	<0.5	<2,000
MW-9	10/20/99	2.8	<0.5	<0.5	<0.5	<2,000
MW-9	01/13/00	110	2	20	15	<2,000
MW-9	04/06/00	2,700	870	500	460	370
MW-9	08/01/00	3,400	1,100	520	270	1100
MW-9	11/15/00	4,200	120	460	140	16,000/730
MW-9	03/06/01	4,300	370	920	210	20,000/<560
MW-10	07/16/99	1.8	<0.5	<0.5	<0.5	<2,000
MW-10	10/20/99	3.8	2.3	<0.5	<0.5	<2,000
MW-10	01/13/00	2	1	2.5	2	<2,000
MW-10	04/06/00	2.7	7.2	0.69	<2	<1,000
MW-10	08/01/00	40	1.2	2.7	10	<1000
MW-10	11/15/00	2,000	18.0	310	210	8900/780
MW-10	03/06/01	4,400	7.8	120	190	17,000/570
MW-10	06/26/01	5,600	1,300	670	<40	31,000/2400
MW-10	09/25/01	5,900	1,200	760	570	26,000/<530
MW-10	12/12/01	7,090	1,560	868	655	23,500 /1,350
MW-10	05/20/02	9,000	1,170	1,100	640	26,400 /1,400

Table 2
Groundwater Analytical Data
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Well	Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TVPH/TEPH (ug/L)
MW-11	10/20/99	<0.5	<0.5	1.2	1.3	<2,000
MW-11	01/13/00	<0.5	<0.5	<0.5	<0.5	<2,000
MW-11	04/06/00	<0.5	<0.5	<0.5	<2	<1,000
MW-11	08/01/00	<0.5	<0.5	<0.5	<2	<1000
MW-11	11/15/00	<0.5	<0.5	<0.5	<2	<100/2000
MW-11	03/06/01	0.64	1.1	<0.5	<2	<100/<560
MW-11	06/26/01	<0.5	<0.5	<0.5	<2	<100/<530
MW-11	09/25/01	1.30	<0.5	<0.5	<2	<100/<540
MW-11	12/12/01	<1.00	<1.00	<1.00	<1.00	<100/<100
MW-11	05/20/02	<1.00	<1.00	<1.00	<1.00	<100/<100
MW-12	10/20/99	1.1	<0.5	<0.5	<0.5	<2,000
MW-12	01/13/00	<0.5	<0.5	<0.5	<0.5	<2,000
MW-12	04/06/00	<0.5	<0.5	<0.5	<2	<1,000
MW-12	08/01/00	<0.5	<0.5	<0.5	<2	<1000
MW-12	11/15/00	<0.5	<0.5	<0.5	<2	<100/<560
MW-12	03/06/01	0.85	0.63	<0.5	<2	<100/<560
MW-12	06/26/01	<0.5	<0.5	<0.5	<2	<100/<530
MW-12	09/25/01	2.80	0.53	<0.5	<2	<100/<520
MW-12	12/12/01	<1.00	<1.00	<1.00	<1.00	<100/<100
MW-12	05/20/02	<1.00	<1.00	<1.00	<1.00	<100/<100
MW-13	04/06/00	<0.5	<0.5	<0.5	<2	<1,000
MW-13	08/01/00	<0.5	<0.5	<0.5	<2	<1000
MW-13	11/15/00	<0.5	<0.5	<0.5	<2	<100/570
MW-13	03/06/01	<0.5	1.3	<0.5	<2	<100/<550
MW-13	06/26/01	<0.5	<0.5	<0.5	<2	<100/<500
MW-13	09/25/01	22.0	3.4	2.5	<2	150/<500
MW-13	12/12/01	439	<1.00	<1.00	20.4	1,240/125
MW-13	05/20/02	<1.00	<1.00	<1.00	32.8	535 /184
MW-13	08/29/02	<5.00	1.0	<1.00	1.3	145 /133
MW-13	01/15/03	<1.00	<1.00	<1.00	<1.00	<100/116
MW-13	04/23/03	<1.00	<1.00	5.20	<1.00	124/<100
EW-1	11/15/02	7,460	5,130	1,590	1,590	21,400/NA
EW-1	11/22/02	9,340	6,150	2,270	2,210	15,300/NA
EW-1	04/24/03	4,410	2,500	952	793	13,100/2,560
EW-2	11/15/02	2,160	1,390	307	489	8,880/NA
EW-2	11/22/02	2,110	2,340	881	1,280	11,300/NA
EW-2	04/24/03	3,080	2,680	541	885	6,070/<1,000
IW-2	08/29/02	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-2	01/14/03	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-2	04/23/03	<1.00	<1.00	<1.00	<1.00	<100/<100

Table 2
Groundwater Analytical Data
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Well	Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TVPH/TEPH (ug/L)
IW-3	08/29/02	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-3	01/14/03	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-3	04/23/03	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-4	08/29/02	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-4	01/14/03	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-4	04/23/03	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-5	08/29/02	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-5	01/15/03	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-5	04/23/03	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-6	08/29/02	<1.00	<1.00	<1.00	<1.00	<100/7,620
IW-6	01/15/03	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-6	04/23/03	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-7	08/29/02	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-7	01/15/03	<1.00	<1.00	<1.00	<1.00	<100/<100
IW-7	04/23/03	<1.00	<1.00	<1.00	<1.00	<100/<100
SVE-1	08/29/02	<1.00	<1.00	<1.00	<1.00	<100/<100
SVE-1	01/14/03	<1.00	<1.00	<1.00	<1.00	<100/<100
SVE-1	04/23/03	<1.00	<1.00	<1.00	<1.00	<100/<100

Table 2
Groundwater Analytical Data
ConocoPhillips
Hobbs NM1-1
Hobbs, NM

Well	Date	Chloride (mg/L)	Total Hardness (mg/L)	Iron (ug/L)	Mangnese (ug/L)
MW-2	07/16/99	28			
MW-2	10/20/99	180			
MW-2	01/13/00	200			
MW-2	04/06/00	190			
MW-2	08/01/00	180			
MW-2	11/15/00	170			
MW-2	03/06/01	160			
MW-2	06/26/01	170			
MW-2	09/25/01	150			
MW-2	12/12/01	151			
MW-2	05/20/02	137	590	3,090	98
MW-3	07/16/99	170			
MW-3	10/20/99	120			
MW-3	01/13/00	160			
MW-3	04/06/00	170			
MW-4	07/16/99	190			
MW-9	07/16/99	140			
MW-9	10/20/99	110			
MW-9	01/13/00	130			
MW-9	04/06/00	140			
MW-9	08/01/00	140			
MW-9	11/15/00	140			
MW-9	03/06/01	130			
MW-10	07/16/99	100			
MW-10	10/20/99	120			
MW-10	01/13/00	170			
MW-10	04/06/00	210			
MW-10	08/01/00	160			
MW-10	11/15/00	200			
MW-10	03/06/01	180			
MW-10	06/26/01	170			
MW-10	09/25/01	170			
MW-10	12/12/01	169			
MW-10	05/20/02	164	594	1,870	303
MW-11	10/20/99	120			
MW-11	01/13/00	140			
MW-11	04/06/00	120			
MW-11	08/01/00	110			
MW-11	11/15/00	110			
MW-11	03/06/01	100			
MW-11	06/26/01	110			

Table 2
Groundwater Analytical Data
ConocoPhillips
Hobbs NM1-1
Hobbs, NM

Well	Date	Chloride (mg/L)	Total Hardness (mg/L)	Iron (ug/L)	Mangnese (ug/L)
MW-11	09/25/01	150			
MW-11	12/12/01	100			
MW-11	05/20/02	96	1,280	3,430	51
MW-12	10/20/99	140			
MW-12	01/13/00	140			
MW-12	04/06/00	130			
MW-12	08/01/00	120			
MW-12	11/15/00	120			
MW-12	03/06/01	91			
MW-12	06/26/01	120			
MW-12	09/25/01	110			
MW-12	12/12/01	109			
MW-12	05/20/02	100	845	11,700	106
MW-13	04/06/00	56			
MW-13	08/01/00	71			
MW-13	11/15/00	86			
MW-13	03/06/01	110			
MW-13	06/26/01	120			
MW-13	09/25/01	110			
MW-13	12/12/01	114			
MW-13	05/20/02	111	905	1,200	18
MW-13	08/29/02	106		5,720	
MW-13	01/15/03	113			
MW-13	04/23/03	406		351	
IW-2	08/29/02	86		6,550	
IW-2	01/14/03	132			
IW-2	04/23/03	152		89	
IW-3	08/29/02	82		8,280	
IW-3	01/14/03	94.6			
IW-3	04/23/03	115.0		1,470	
IW-4	08/29/02	99.5		2,450	
IW-4	01/14/03	111			
IW-4	04/23/03	153		221	
IW-5	08/29/02	90		3,330	
IW-5	01/15/03	117			
IW-5	04/23/03	156		2,130	
IW-6	08/29/02	92		7,160	
IW-6	01/15/03	100			
IW-6	04/23/03	132		270	

Table 2
Groundwater Analytical Data
ConocoPhillips
Hobbs NM1-1
Hobbs, NM

Well	Date	Chloride (mg/L)	Total Hardness (mg/L)	Iron (ug/L)	Mangnese (ug/L)
IW-7	08/29/02	161		18,600	
IW-7	01/15/03	142			
IW-7	04/23/03	152		524	
SVE-1	08/29/02	96.5			
SVE-1	01/14/03	122			
SVE-1	04/23/03	123		2,270	

TABLE 3
SUMMARY OF MONTHLY GROUNDWATER RECOVERY AND TREATED GROUNDWATER EFFLUENT INTO EACH INJECTION WELL
CONOCOPHILLIPS HOBBS NM1-1
HOBBS, COLORADO

	Recovery		Groundwater Discharge						
Month	EW-1	EW-2	Tower	IW-2	IW-3	IW-4	IW-5	IW-6	IW-7
	gal/month	gal/month	gal/month	gal/month	gal/month	gal/month	gal/month	gal/month	gal/month
Nov-02	760	30,220	31,000	4,110	20	70	2,100	30	20,660
Dec-02	4,740	7,860	12,600	6,620	0	150	580	380	4,660
Jan-03	0	0	0	0	0	0	0	0	0
Feb-03	7,380	4,520	11,900	6,310	0	610	370	290	4,230
Mar-03	9,600	0	9,600	1,550	350	2,300	1,260	1,350	1,730
Apr-03	13,370	9,960	17,200	630	3,160	6,740	4,100	1,610	630
Total =	35,850	52,560	82,300	19,220	3,530	9,870	8,410	3,660	31,910

TABLE 4
Discharge Analytical Data
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Sample Date: November 15, 2002

Anions	**units**	chloride (mg/l)	nitrate (mg/l)	nitrite (mg/l)	ortho-P (mg/l)	sulfite (mg/l)	sulfate (mg/l)	ammonia-N (mg/l)	bicarbonate as CaCO3 (mg/l)
NM1-1 Discharge		160	.6	(1)	2.5	NM	74	.0	281
molecular wt (MW)	g/g-mole	35	62	46	95	64	80	17	50
valence (Z) = no of equivalents	[absolute value]	1	1	1	1	2	2	1	1
equivalent weight (EW)	MW / Z	35	62	46	95	32	40	17	50
equivalents per liter (eq / l)	(mg / l) / (mg / eq)								
NM1-1 Discharge		0.00452	0	(2)	0.00003	NM	0.0037	5.8824E-08	0.00562

Cations well	**units**	sodium (mg/l)	potassium (mg/l)	calcium (mg/l)	magnesium (mg/l)	iron (mg/l)			
NM1-1 Discharge		199	3	56	20	.0			
molecular wt (MW)	g/g-mole	23	39	40	24	56			% of balance
valence (Z) = no of equivalents	[absolute value]	1	1	2	2	2			127%
equivalent weight (EW)	MW / Z	23	39	20	12	28			
equivalents per liter (eq / l)	(mg / l) / (mg / eq)						sum of cations	sum of anions	+ or - within 5 %
NM1-1 Discharge		0.008652	8.385E-05	0.0056	0.003333	7.1E-08	0.0176694	0.01386583	no

Note:
1) eq / l = conc. x (no. of eq / EW) x (1 g / 1000 mg)
2) nitrite included in nitrate quantity

TABLE 4
Discharge Analytical Data
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Date	**Benzene** (mg/L)	**Toluene** (mg/L)	**Ethyl-Benzene** (mg/L)	**Xylenes** (mg/L)	**TVPH** (mg/L)	**TEPH** (mg/L)
11/8/2002	<0.002	<0.002	<0.002	<0.006	<2.0	<2.0
11/15/2002	<0.002	<0.002	<0.002	<0.006	<0.1	NA
11/22/2002	<0.002	<0.002	<0.002	<0.006	<0.1	NA
11/29/2002	<0.001	<0.002	<0.002	<0.002	NA	NA
12/9/2002	<0.002	<0.002	<0.002	<0.006	NA	NA
12/19/2002	<0.002	<0.002	<0.002	<0.006	NA	NA
2/24/2003	<0.002	<0.002	<0.002	<0.006	<0.1	NA
3/3/2003	<0.002	<0.002	<0.002	<0.006	<0.1	NA
4/7/2003	<0.002	<0.002	<0.002	<0.006	NA	NA
4/24/2003	<0.002	<0.002	<0.002	<0.006	<1.0	<1.0

TABLE 4
Discharge Analytical Data
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Date	**Chloride** (mg/L)	**TDS** (mg/L)	**TSS** (mg/L)	**pH** (SU)	**Iron** (mg/L)
11/8/2002	120	540	8	7 to 8 *(1)	
11/15/2002	160			8.28 *(2)	
11/22/2002	172	629	20	7 to 8 *(1)	<0.01
11/29/2002	NA			7 to 8 *(1)	
12/19/2002	152			7 to 8 *(1)	
12/27/2002	156			7 to 8 *(1)	
2/24/2003	172			7 to 8 *(1)	
3/3/2003	156			7 to 8 *(1)	
4/7/2003	160			7 to 8 *(1)	
4/24/2003	NA	655	34	7.94 *(2)	<0.01

Note:
1) Measured with field pH paper.
2) Measured in Cardinal Laboratory, Hobbs, New Mexico.

Table 5
Baseline Bio-Assessment Analytical Data
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Sample Date: March 3, 2003

Anions well	**units**	chloride (mg/l)	nitrate (mg/l)	nitrite (mg/l)	ortho-P (mg/l)	sulfite (mg/l)	sulfate (mg/l)	ammonia-N (mg/l)	bicarbonate as CaCO3 (mg/l)	HCO3 (mg/l)	
EW-1		160	1.09	included	0.52	NM	102	NM	325	397	
MW-13		138	1.60	in	0.50	NM	69.2	NM	325	397	
SVE-1		124	2.50	nitrate	0.47	NM	60.2	NM	223	272	
molecular wt (MW)	g/g-mole	35	62	46	95	64	80	17	50	61	
valence (Z) = no of equivalents	[absolute value]	1	1	1	1	2	2	1	1	1	
equivalent weight (EW)	MW / Z	35	62	46	95	32	40	17	50	61	
equvalents per liter (eq / l)	(mg / l) / (mg / eq)										sum of anions
EW-1		.0045	.0000	.0000	.0000	.0000	.0051	.0000	.0065	.0065	.0161
MW-13		.0039	.0000	.0000	.0000	.0000	.0035	.0000	.0065	.0065	.0139
SVE-1		.0035	.0000	.0000	.0000	.0000	.0030	.0000	.0045	.0045	.0110

Cations well	**units**	sodium (mg/l)	potassium (mg/l)	calcium (mg/l)	magnesium (mg/l)	iron (II) (mg/l)	iron (III) (mg/l)				
EW-1		165	1.73	84	21	0.30	0.27				
MW-13		125	3.46	105	12	0.40	5.67				
SVE-1		69	2.41	90	20	0.23	0.66				
molecular wt (MW)	g/g-mole	23	39	40	24	56	56				
valence (Z) = no of equivalents	[absolute value]	1	1	2	2	2	3				
equivalent weight (EW)	MW / Z	23	39	20	12	28	19				
										comments	
equvalents per liter (eq / l)	(mg / l) / (mg / eq)							sum of cations	sum of anions	plus or minus within 5 %	% of balance
EW-1		.0072	.0000	.0084	.0035	.0000	.0000	.0191	.0161	no	119%
MW-13		.0054	.0001	.0105	.0020	.0000	.0009	.0180	.0139	no	130%
SVE-1		.0030	.0001	.0090	.0033	.0000	.0001	.0154	.0110	no	140%

Note: eq / l = conc. x (no. of eq / EW) x (1 g / 1000 mg)

TABLE 6
ConocoPhillips
Dissolved Oxygen Measurements
Hobbs NM1-1
Hobbs, New Mexico

WELL NAME	DATE	DO (mg/L)	TEMPERATURE (C)
IW-2	10/25/02	4.78	17.1
IW-2	11/7/02	5.71	17.4
IW-2	2/26/03	5.16	11.6
IW-3	10/25/02	4.23	17.4
IW-3	11/7/02	4.86	18.1
IW-3	2/26/03	3.80	18.6
IW-4	10/25/02	4.93	17.0
IW-4	11/7/02	5.23	16.5
IW-4	2/26/03	2.79	17.4
IW-5	10/25/02	4.56	17.2
IW-5	11/6/02	4.98	16.7
IW-5	12/27/02	4.32	18.1
IW-5	2/26/03	4.01	17.4
IW-6	10/25/02	0.84	17.1
IW-6	11/6/02	2.23	16.6
IW-6	12/27/02	2.76	17.2
IW-6	2/26/03	0.79	17.1
IW-7	10/25/02	3.16	17.5
IW-7	11/6/02	4.54	17.2
IW-7	12/27/02	4.09	17.1
IW-7	2/26/03	5.60	11.3
MP-1	12/17/02	NM	NM
SV-1	12/17/02	NM	NM
MW-13	10/25/02	2.45	16.5
MW-13	11/7/02	1.44	18.4
MW-13	12/17/02	NM	NM
SVE-1	10/25/02	4.02	17.5
SVE-1	11/7/02	4.91	17.9
SVE-1	12/17/02	NM	NM
SVE-3	12/17/02	NM	NM
SVE-5	11/7/02	NM	NM
SVE-5	12/17/02	NM	NM

TABLE 7
Baseline Wellhead Gas Measurements
ConocPhillips
Hobbs NM1-1
Hobbs, New Mexico

WELL NAME	DATE	OXYGEN (%)	CO2 (%)	CO (ppm)
IW-2	11/7/02	20.80	0.50	0
IW-3	11/7/02	20.30	0.51	0
IW-4	11/7/02	20.80	0.11	0
IW-5	11/6/02	20.20	0.20	0
IW-6	11/6/02	20.90	0.26	4
IW-7	11/6/02	20.30	0.09	2
MP-1	12/17/02	6.50	6.61	0
SV-1	12/17/02	7.30	6.28	0
MW-13	11/7/02	20.60	0.36	0
MW-13	12/17/02	20.20	0.70	0
SVE-1	11/7/02	20.50	0.33	0
SVE-1	12/17/02	19.50	0.84	0
SVE-3	12/17/02	19.10	0.94	0
SVE-5	11/7/02	20.70	0.20	0
SVE-5	12/17/02	7.72	7.71	0

Table 8
Bio-Venting Wellhead Gas Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Monitoring Point	Date	Time	Delta T (hrs)	Wellhead Pressure/Vacuum (inches of water)	CO_2 4-gas meter (%)	CO 4-gas meter (ppm)	O_2 4-gas meter (%)	LEL 4-gas meter (ppm)	N_2O Meter (ppm)
MP1	26-Feb	9:00 AM	0.0	air and nitrous oxide injection system online for 4 hours					
MP1	26-Feb	9:30 AM	0.5	0.20	8.95	0	5.6	2	NM
MP1	26-Feb	11:00 AM	2.0	0.22	7.55	2	7.3	25	1,190
MP1	26-Feb	12:00 PM	3.0	0.25	5.60	2	8.5	27	1,330
MP1	26-Feb	1:00 PM	4.0	air and nitrous oxide injection system oflline and SVE system online for 4 hours					
MP1	26-Feb	1:30 PM	4.5	1.3 vacuum					
MP1	26-Feb	2:30 PM	5.5	1.2 vacuum					
MP1	26-Feb	5:00 PM	8.0	air and nitrous oxide injection system oflline and SVE system offline for 36 hours					
MP1	26-Feb	5:30 PM	8.5	0.00	0.12	0	21.1	0	0
MP1	27-Feb	1:30 PM	28.5	0.00	3.72	0	16.5	0	210
MP1	27-Feb	3:30 PM	30.5	0.00	3.58	0	16.5	0	275
MP1	28-Feb	8:00 AM	47.0	0.00	2.79	0	17.9	0	165
MP1	28-Feb	9:00 AM	0.0	(re-start sequence) air and nitrous oxide injection system online for 4 hours					
MP1	28-Feb	10:00 AM	1.0	0.26	NM	NM	NM	NM	1,090
MP1	28-Feb	11:00 AM	2.0	0.36	NM	NM	NM	NM	1,390
MP1	28-Feb	1:00 PM	4.0	air and nitrous oxide injection system oflline and SVE system online for 4 hours					
MP1	28-Feb	2:30 PM		system running - left site					
MP1	28-Feb	5:00 PM	8.0	programmed for air / nitrous oxide injection system oflline and SVE system offline for 36 hrs					
MP1	2-Mar	5:00 AM	44.0	programmed for air / nitrous oxide injection system online for 4 hours					
MP1	2-Mar	9:00 AM	48.0	programmed for air / nitrous oxide injection system oflline and SVE system online for 4 hours					
MP1	2-Mar	1:00 PM	52.0	programmed for air / nitrous oxide injection system oflline and SVE system offline for 36 hrs					
MP1	3-Mar	5:00 PM		(re-start sequence) air and nitrous oxide injection system online for 4 hours					
MP1	4-Mar	1:00 PM		1:00 pm to 3:00 pm, work on system, replace fuses for air stripper and separator pump					
MP1	4-Mar	3:00 PM		(re-start sequence) air and nitrous oxide injection system online for 4 hours					

Table 8
Bio-Venting Wellhead Gas Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Monitoring Point	Date	Time	Delta T (hrs)	Wellhead Pressure/Vacuum (inches of water)	CO_2 4-gas meter (%)	CO 4-gas meter (ppm)	O_2 4-gas meter (%)	LEL 4-gas meter (ppm)	N_2O Meter (ppm)
MP1	4-Mar	4:00 PM		0.32	NM	NM	NM	NM	1,460
MP1	14-Mar	2:00 PM		0.32	NM	NM	NM	NM	1,325
				system down for 2 to 3 days (Mar 25 to 28)					
MP1	28-Mar	4:50 PM		NA	9.52	1	5.5	1	0
MP1	28-Mar	5:00 PM	0.0	(re-start sequence) air and nitrous oxide injection system online for 4 hours with new tank					
MP1	29-Mar	7:00 AM		NM	0.16	0	20.9	0	1,550
MP1	29-Mar	7:30 AM		(re-start sequence) air / nitrous oxide injection system online for 4 hours with higher NO_2 rate					
MP1	29-Mar	2:00 PM		(re-start sequence) air / nitrous oxide injection system online for 4 hours with higher NO_2 rate					
MP1	7-Apr	11:15 AM		0.00	1.21	0	18.0	5	NM
MP1	7-Apr	2:30 PM		(re-start sequence) air / nitrous oxide injection system online for 4 hrs (N_20 cylinder depleted)					
MP1	7-Apr	3:00 PM		0.20	1.25	0	18.2	6	6,020
MP1	7-Apr	4:00 PM		0.21	1.05	1	18.7	5	6,310
MP1	8-Apr	10:15 AM		0.22	1.02	1	18.0	5	3,590
MP1	8-Apr	11:45 AM		(re-start sequence) air / nitrous oxide injection system online for 4 hrs (N_20 cylinder depleted)					
MP1	8-Apr	3:00 PM		2.1 vacuum	NM	NM	NM	NM	NM
MP1	8-Apr	4:00 PM		2.3 vacuum	NM	NM	NM	NM	NM
MP1	9-Apr	8:45 AM		(re-start sequence) air / nitrous oxide injection system online for 4 hrs (N_20 cylinder depleted)					
MP1	9-Apr	8:45 AM		0.20	1.16	1	18.6	5	1,430
MP1	9-Apr	8:45 AM		0.19	1.08	1	19.3	2	1,360
MP1	9-Apr	1:00 PM		2.2 vacuum	NM	NM	NM	NM	NM
MP1	9-Apr	2:00 PM		2.2 vacuum	NM	NM	NM	NM	NM
MP1	10-Apr	9:00 AM		NA	0.45	1	19.3	0	315
MP1	11-Apr	9:00 AM		NA	0.78	1	18.9	0	285

Table 8
Bio-Venting Wellhead Gas Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Monitoring Point	Date	Time	Delta T (hrs)	Wellhead Pressure/Vacuum (inches of water)	CO_2 4-gas meter (%)	CO 4-gas meter (ppm)	O_2 4-gas meter (%)	LEL 4-gas meter (ppm)	N_2O Meter (ppm)
MP1	18-Apr	1:00 PM		NA	NM	NM	NM	NM	115
MP1	24-Apr	5:00 PM		NA	NM	NM	NM	NM	95
SV1	26-Feb	9:30 AM	0.5	0.02	8.42	0	6.6	1	NM
SV1	26-Feb	11:00 AM	2.0	0.08	7.44	1	6.0	2	365
SV1	26-Feb	12:00 PM	3.0	0.10	6.37	2	7.2	9	470
SV1	26-Feb	1:30 PM	4.5	0.70 vacuum					
SV1	26-Feb	2:30 PM	5.5	0.48 vacuum					
SV1	26-Feb	5:30 PM	8.5	0.00	0.00	0	21.1	0	0
SV1	27-Feb	1:30 PM	28.5	0.00	4.79	0	13.9	0	280
SV1	27-Feb	3:30 PM	30.5	0.00	4.54	0	14.1	0	275
SV1	28-Feb	8:00 AM	47.0	0.00	1.78	0	18.7	0	105
SV1	28-Feb	9:00 AM		air and nitrous oxide injection system online					
SV1	28-Feb	10:00 AM	1.0	0.11	NM	NM	NM	NM	560
SV1	28-Feb	11:00 AM	2.0	0.16	NM	NM	NM	NM	890
SV1	28-Feb	1:00 PM	4.0	air and nitrous oxide injection system oflline and SVE system online					
SV1	28-Feb	2:30 PM	8.0	system running - left site					
SV1	4-Mar	4:00 PM		NM	NM	NM	NM	NM	45
SV1	14-Mar	2:00 PM		NM	NM	NM	NM	NM	15
				system down for 2 to 3 days (Mar 25 to 28)					
SV1	28-Mar	4:00 PM		NA	7.92	0	7.2	1	0
SV1	9-Apr	1:00 PM		0.47	NM	NM	NM	NM	NM
SV1	9-Apr	2:00 PM		0.52	NM	NM	NM	NM	NM

Table 8
Bio-Venting Wellhead Gas Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Monitoring Point	Date	Time	Delta T (hrs)	Wellhead Pressure/Vacuum (inches of water)	CO_2 4-gas meter (%)	CO 4-gas meter (ppm)	O_2 4-gas meter (%)	LEL 4-gas meter (ppm)	N_2O Meter (ppm)
SV1	10-Apr	9:00 AM		NA	0.89	0	19.3	1	155
SV1	11-Apr	9:00 AM		NA	1.44	0	18.9	1	160
SV1	18-Apr	1:00 PM		NA	NM	NM	NM	NM	90
SVE3	26-Feb	9:30 AM	0.5	0.00	0.07	0	21.0	0	NM
SVE3	26-Feb	11:00 AM	2.0	0.01	0.15	0	20.5	0	0
SVE3	26-Feb	12:00 PM	3.0	0.01	0.16	0	20.3	0	0
SVE3	26-Feb	5:30 PM	8.5	0.00	0.00	0	21.1	0	0
SVE3	27-Feb	1:30 PM	28.5	0.00	0.00	0	21.1	0	0
SVE3	27-Feb	3:30 PM	30.5	0.00	0.00	0	21.1	0	0
SVE3	28-Feb	8:00 AM	47.0	0.00	0.03	0	20.9	0	0
SVE3	28-Feb	9:00 AM		air and nitrous oxide injection system online					
SVE3	28-Feb	10:00 AM	1.0	0.01	NM	NM	NM	NM	0
SVE3	28-Feb	11:00 AM	2.0	0.02	NM	NM	NM	NM	0
				system down for 2 to 3 days (Mar 25 to 28)					
SVE3	10-Apr	9:00 AM		NA	0.08	0	20.9	0	5
SVE3	11-Apr	9:00 AM		NA	0.10	0	21.1	0	0
SVE3	18-Apr	1:30 PM		NA	NM	NM	NM	NM	0
SVE5	26-Feb	9:30 AM	0.5	0.03	1.37	0	20.0	2	NM
SVE5	26-Feb	11:00 AM	2.0	0.05	0.87	0	19.7	3	85
SVE5	26-Feb	12:00 PM	3.0	0.06	0.79	1	20.3	5	230
SVE5	26-Feb	5:30 PM	8.5	0.00	0.00	0	21.1	0	0
SVE5	27-Feb	1:30 PM	28.5	0.00	0.33	0	21.1	0	20

Table 8
Bio-Venting Wellhead Gas Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Monitoring Point	Date	Time	Delta T (hrs)	Wellhead Pressure/Vacuum (inches of water)	CO_2 4-gas meter (%)	CO 4-gas meter (ppm)	O_2 4-gas meter (%)	LEL 4-gas meter (ppm)	N_2O Meter (ppm)
SVE5	27-Feb	3:30 PM	30.5	0.00	1.34	0	18.9	0	10
SVE5	28-Feb	8:00 AM	47.0	0.00	0.05	0	21.1	0	0
SVE5	28-Feb	9:00 AM		air and nitrous oxide injection system online					
SVE5	28-Feb	10:00 AM	1.0	0.02	NM	NM	NM	NM	25
SVE5	28-Feb	11:00 AM	2.0	0.04	NM	NM	NM	NM	130
				system down for 2 to 3 days (Mar 25 to 28)					
SVE5	28-Mar	4:00 PM		NA	6.50	2	13.0	4	10
SVE5	10-Apr	9:00 AM		NA	3.82	1	15.9	3	285
SVE5	11-Apr	9:00 AM		NA	4.80	2	14.9	5	135
SVE5	18-Apr	1:30 PM		NA	NM	NM	NM	NM	10
SVE1	26-Feb	9:30 AM	0.5	0.00	NM	0	21.0	0	NM
SVE1	26-Feb	11:00 AM	2.0	0.01	0.00	0	20.5	0	0
SVE1	26-Feb	12:00 PM	3.0	0.02	0.00	0	21.0	0	0
SVE1	26-Feb	5:30 PM	8.5	0.00	0.00	0	21.1	0	0
SVE1	27-Feb	1:30 PM	28.5	0.00	0.35	0	20.5	0	20
SVE1	27-Feb	3:30 PM	30.5	0.00	0.62	0	20.1	0	10
SVE1	28-Feb	8:00 AM	47.0	0.00	0.17	0	20.9	0	0
SVE1	28-Feb	9:00 AM		air and nitrous oxide injection system online					
SVE1	28-Feb	10:00 AM	1.0	0.01	NM	NM	NM	NM	0
SVE1	28-Feb	11:00 AM	2.0	0.02	NM	NM	NM	NM	0
SVE1	13-Mar	4:00 PM		NM	NM	NM	NM	NM	25
SVE1	14-Mar	2:00 PM		NM	NM	NM	NM	NM	15
				system down for 2 to 3 days (Mar 25 to 28)					

Table 8
Bio-Venting Wellhead Gas Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Monitoring Point	Date	Time	Delta T (hrs)	Wellhead Pressure/Vacuum (inches of water)	CO_2 4-gas meter (%)	CO 4-gas meter (ppm)	O_2 4-gas meter (%)	LEL 4-gas meter (ppm)	N_2O Meter (ppm)
SVE1	10-Apr	9:00 AM		NA	0.45	0	20.4	0	185
SVE1	11-Apr	9:00 AM		NA	0.34	0	20.8	0	135
SVE1	18-Apr	1:30 PM		NA	NM	NM	NM	NM	15
MW-13	26-Feb	9:30 AM	0.5	0.02	0.03	0	21.0	0	0
MW-13	26-Feb	11:00 AM	2.0	0.09	0.48	0	20.4	0	5
MW-13	26-Feb	12:00 PM	3.0	0.10	0.44	0	20.5	0	15
MW-13	26-Feb	1:30 PM	4.5	0.01 vacuum					
MW-13	26-Feb	2:30 PM	5.5	0.02 vacuum					
MW-13	27-Feb	1:30 PM	28.5	0.00	0.36	0	20.7	0	0
MW-13	27-Feb	3:30 PM	30.5	0.00	0.42	0	20.7	0	0
MW-13	27-Feb	8:00 AM	47.0	0.00	0.05	0	21.1	0	0
MW-13	28-Feb	9:00 AM		air and nitrous oxide injection system online					
MW-13	28-Feb	10:00 AM	1.0	0.02	NM	NM	NM	NM	0
MW-13	28-Feb	11:00 AM	2.0	0.03	NM	NM	NM	NM	0
MW-13	4-Mar	4:00 PM		0.09	NM	NM	NM	NM	20
MW-13	13-Mar	4:00 PM		NM	NM	NM	NM	NM	85
MW-13	14-Mar	2:00 PM		NM	NM	NM	NM	NM	80
				system down for 2 to 3 days (Mar 25 to 28)					
MW-13	28-Mar	4:00 PM		NA	0	0	21.1	0	0
MW-13	29-Mar	8:00 AM		NM	0	0	21.1	0	0
MW-13	7-Apr	11:15 AM		0.00	1.21	0	18.0	5	NM
MW-13	7-Apr	2:30 PM		(re-start sequence) air / nitrous oxide injection system online for 4 hrs (N_20 cylinder depleted)					
MW-13	7-Apr	3:00 PM		0.02	0.32	0	20.5	0	30

Table 8
Bio-Venting Wellhead Gas Measurements
ConocoPhillips
Hobbs NM1-1
Hobbs, New Mexico

Monitoring Point	Date	Time	Delta T (hrs)	Wellhead Pressure/Vacuum (inches of water)	CO_2 4-gas meter (%)	CO 4-gas meter (ppm)	O_2 4-gas meter (%)	LEL 4-gas meter (ppm)	N_2O Meter (ppm)
MW-13	7-Apr	4:00 PM		0.02	0.33	0	20.5	0	25
MW-13	8-Apr	12:00 PM		0.02	0.30	0	20.5	0	15
MW-13	8-Apr	3:00 PM		0.02 vacuum	NM	NM	NM	NM	NM
MW-13	8-Apr	4:00 PM		0.02 vacuum	NM	NM	NM	NM	NM
MW-13	9-Apr	8:45 AM		(re-start sequence) air / nitrous oxide injection system online for 4 hrs (N_20 cylinder depleted)					
MW-13	9-Apr	8:45 AM		0.20	0.24	1	20.9	0	20
MW-13	9-Apr	8:45 AM		0.19	0.30	1	20.8	0	15
MW-13	9-Apr	1:00 PM		0.01 vacuum	NM	NM	NM	NM	NM
MW-13	9-Apr	2:00 PM		0.02 vacuum	NM	NM	NM	NM	NM
MW-13	10-Apr	9:00 AM		NA	0.20	1	20.9	0	15
MW-13	11-Apr	9:00 AM		NA	0.42	1	20.7	0	10
MW-13	18-Apr	1:00 PM		NA	NM	NM	NM	NM	5

Appendix C
Geologic/Lithologic and Well Completion Logs

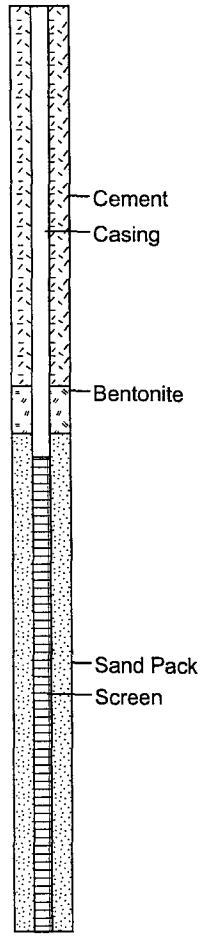
Phillips Pipe Line
NM1-1
Hobbs, New Mexico

DRILLING LOG NIW-3

Date Started	: 5/20/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/20/02	Northing Coord.	:
Hole Diameter	: 5.125 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: C. Higgins

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0		SM		SAND and Caliche, Grey, Dense, dry.	1	Grab	0.5	
5				Pebbly SAND and Caliche, Grey/White, Well Sorted, Dense, dry.	2	Grab	2	
10				Pebbly SAND and Caliche, Grey/White, Well Sorted, Dense, dry.	3	Grab	1	
15				Pebbly SAND and Caliche, Tan/White, Moderately Sorted, Fine Grained, Medium Dense, dry, Limestone in Cuttings.	4	Grab	7.6	
20				SAND, Light Brown, Well Sorted, Fine Grained, Subrounded, Loose, Damp, Hard Drilling.	5	Grab	1	
25				Silty Pebbly SAND, M. Brown, Well Sorted, Fine Grained, Subrounded, Medium Dense, Moist.	6	Grab	1	
30				Silty Pebbly SAND, M. Brown, Moderately Sorted, Medium to Coarse Grained, Subrounded, Medium Dense, Wet.	7	Grab	0	
35				Silty Pebbly SAND, Same as Above.	8	Grab	0	
40								
45								
50								
55								

Well: NIW-3
Elev.:



05-29-2003

Phillips Pipe Line
NM1-1
Hobbs, New Mexico

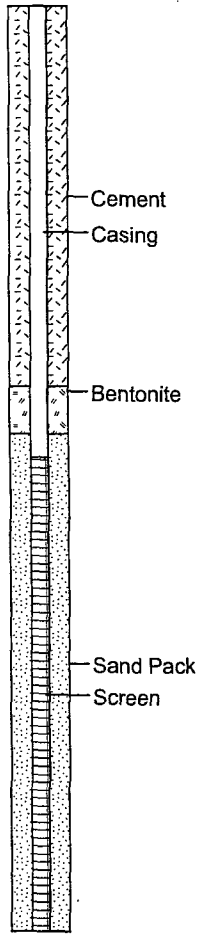
DRILLING LOG NIW-6

(Page 1 of 1)

Date Started	: 5/20/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/20/02	Northing Coord.	:
Hole Diameter	: 5.125 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: C. Higgins

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0		SM		SAND and Caliche, Grey, Dense, dry, Limestone in Cuttings	1	Grab	0	
5				Pebbly SAND and Caliche, Grey/White, Well Sorted, Fine Grained, Very Dense, Limestone in Cuttings.	2	Grab	0.4	
10				Pebbly SAND and Caliche, Grey/White/Tan, Well Sorted, Fine Grained, Medium Dense.	3	Grab	9.1	
15				Pebbly SAND and Caliche, Tan/White, Moderately Sorted, Fine Grained, Medium Dense, Limestone in Cuttings.	4	Grab	1	
20				SAND and Caliche, Tan/White, Dense, dry, Limestone in Cuttings.	5	Grab	1.5	
25				Pebbly SAND, White/ Light Grey, Well Sorted, Fine Grained, Subrounded, Loose, Damp.	6	Grab	841	
30				Silty Pebbly SAND, Brown, Well Sorted, Fine to Medium Grained, Subrounded, Loose, Moist.	7	Grab	831	
35				Silty Pebbly SAND, Brown, Well Sorted, Medium to Coarse Grained, Medium Dense, Moist.	8	Grab	116	
40								
45								
50								
55								

Well: NIW-6
Elev.:



05-29-2003

Phillips Pipe Line
NM1-1
Hobbs, New Mexico

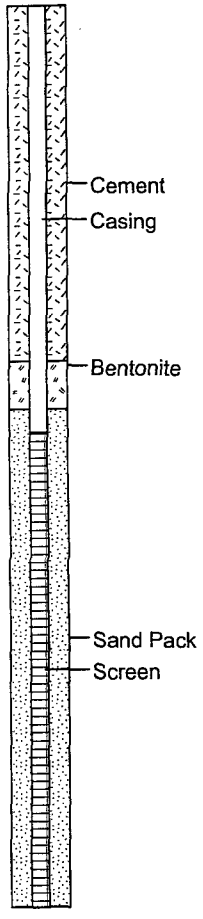
DRILLING LOG NIW-7

(Page 1 of 1)

Date Started	: 5/20/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/20/02	Northing Coord.	:
Hole Diameter	: 5.125 inches	Easting Coord.	:
Drilling Method	: *Air Rotary*	Survey By	:
Sampling Method	: Grab	Logged By	: C. Higgins

Well: NIW-7
Elev.:

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0				ded, ediumaliche, White, Fine Grained, dry.	1	Grab	15	
5				SAND and Caliche, White, Fine Grained, dry.	2	Grab	2.8	
10				Pebbly SAND and Caliche, White/Tan, Well Sorted, Fine Grained, Loose, Dry, Limestone in Cuttings.	3	Grab	6.6	
15				Pebbly SAND and Caliche, Tan/Light Brown, Well Sorted, Fine Grained, Subrounded, Loose, Damp, Limestone in Cuttings.	4	Grab	7.9	
20		SM		*Silty Pebbly SAND, Tan/Light Brown, Well Sorted,* Fine Grained, Subrounded, Loose, Moist.	5	Grab	2.6	
25				Silty Pebbly SAND, Light/Medium Brown, Well Sorted, Fine to Medium Grained, Subrounded, Medium Dense, Moist.	6	Grab	758	
30				Silty SAND, Medium Brown, Well Sorted, Fine to Medium Grained, Subrounded, Loose, Wet.	7	Grab	1310	
35				Pebbly SAND, Medium Brown, Moderately Sorted, *Medium to Coarse Grained, Medium Dense, Wet.*	8	Grab	775	
40								
45								
50								
55								



05-29-2003

Phillips Pipe Line
NM1-1
Hobbs, New Mexico

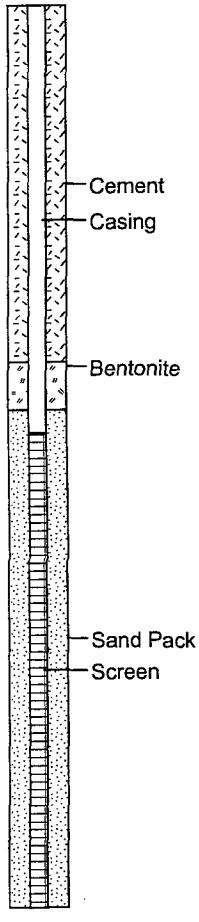
DRILLING LOG NIW-9

(Page 1 of 1)

Date Started	: 5/20/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/20/02	Northing Coord.	:
Hole Diameter	: 5.125 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: C. Higgins

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0		SM		SAND and Caliche, White/Tan, Fine Grained, dry.	1	Grab	0	
5				SAND and Caliche, White/Tan, Fine Grained, dry.	2	Grab	1	
10				SAND and Caliche, White/Tan, Fine Grained, Subangular, Loose to Medium Dense, Dry, Limestone in Cuttings.	3	Grab	0.5	
15				SAND and Caliche, White/Tan, Fine Grained, Subangular, Loose to Medium Dense, Dry, Limestone in Cuttings.	4	Grab	2.7	
20				*Silty SAND, Tan/Light Brown, Fine Grained,* Subrounded, Loose, Dry, Limestone in Cuttings.	5	Grab	3.6	
25				Pebbly SAND, Light Brown, Fine Grained, Subrounded, Loose, Dry.	6	Grab	795	
30				Pebbly SAND, Well Sorted, Fine to Medium Grained, Subrounded, Loose, Moist.	7	Grab	1034	
35				Pebbly SAND, Medium Brown, Moderately Sorted, *Medium to Coarse Grained, Subrounded, Medium* Dense, Moist.	8	Grab		
40								
45								
50								
55								

Well: NIW-9
Elev.:



05-29-2003

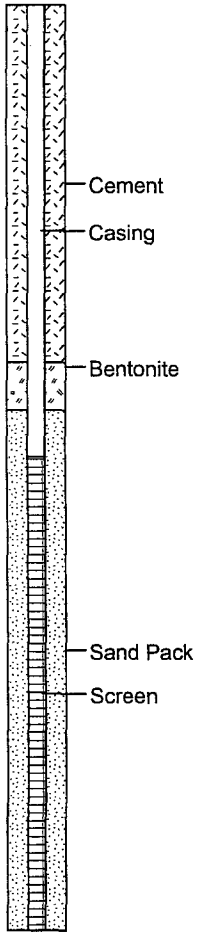
Phillips Pipe Line
NM1-1
Hobbs, New Mexico

DRILLING LOG NIW-10

Date Started	: 5/20/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/20/02	Northing Coord.	:
Hole Diameter	: *5.125 inches*	*Easting Coord.*	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: C. Higgins

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0		SM		SAND and Caliche, Brown, Dense, dry.	1	Grab	0	
5				SAND and Caliche, Light Grey/White, Fine Grained, Dense, dry.	2	Grab	0	
10				SAND and Caliche, White/Tan, Well Sorted, Medium Dense, Dry.	3	Grab	5.1	
15				SAND and Caliche, White/Tan, Well Sorted, Medium Dense, Dry, Limestone in Cuttings (At About 20ft).	4	Grab	0	
20				SAND and Caliche, White/Tan, Well Sorted, Medium Dense, Dry, Limestone in Cuttings (At About 20ft).	5	Grab		
25				Limestone to 28ft, Brown, Dense, Dry.	6	Grab	0	
30				Pebbly SAND, Brown, Well Sorted, Fine Grained, Subrounded, Loose, Moist.	7	Grab	0	
35				Silty Pebbly SAND, Brown, Moderately Sorted, Medium to Coarse Grained, Subrounded, Medium Dense.	8	Grab	0	
40								
45								
50								
55								

Well: NIW-10
Elev.:



05-29-2003

HIGGINS & ASSOCIATES ENVIRONMENTAL CONSULTANTS

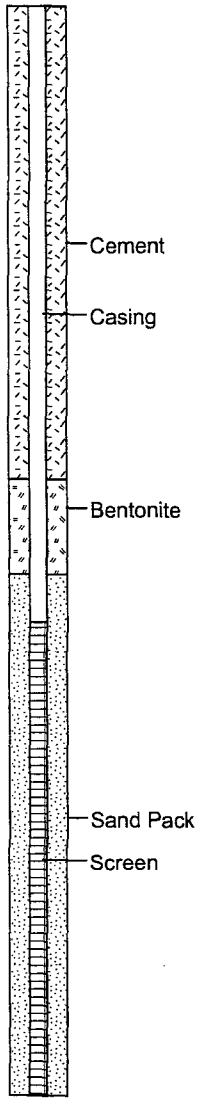
Phillips Pipe Line
NM1-1
Hobbs, New Mexico

DRILLING LOG EW-1

Date Started	: 5/30/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/30/02	Northing Coord.	:
Hole Diameter	: 12 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: Z. Ceplecha

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0				SAND and caliche/limestone layer, tan/ light red, moderately sorted, fine grained, subangular, loose, dry/damp.	1	Grab	7.5	
5				Silty Pebbly SAND, as above, damp.	2	Grab	7.8	
10				Silty Pebbly SAND, tan, as above.	3	Grab	12.9	
15				Silty Pebbly SAND, tan, as above. Limestone layer at about 20'.	4	Grab	8.3	
20				Silty Pebbly SAND, tan, as above.	5	Grab	18.3	
25		SM		Silty SAND, dark tan, as above, moist.	6	Grab	1614	
30				Silty Pebbly SAND, brown, as above, moist to wet.	7	Grab	1798	
35				Pebbly SAND, as above, wet to saturated on bottom.	8	Grab	911	
40				Pebbly SAND, as above.	9	Grab	69.6	
45				Silty SAND with some clay, brown, fine grained, subrounded, loose, slightly plastic to non plastic, saturated.	10	Grab	117	
50								
55								

Well: EW-1
Elev.:



05-29-2003

Phillips Pipe Line
NM1-1
Hobbs, New Mexico

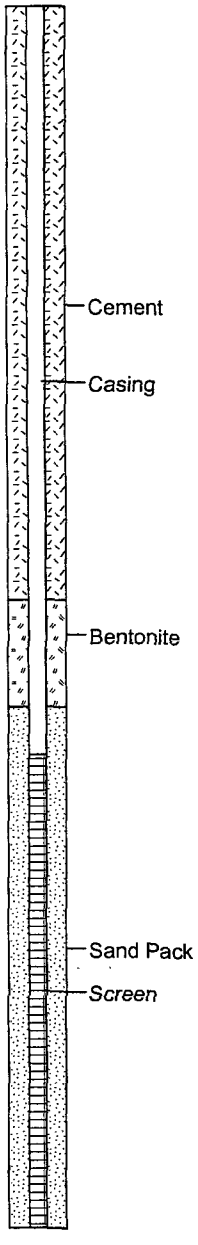
DRILLING LOG EW-2

(Page 1 of 1)

Date Started	: 5/30/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/30/02	Northing Coord.	:
Hole Diameter	: 12 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: Z. Ceplecha

Well: EW-2
Elev.:

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0				SAND and caliche/limestone layer, white, dry.	1	Grab	3.7	
5				Silty Pebbly SAND, white/tan, well sorted, fine grained, subangular, loose, dry.	2	Grab	4.3	
10				Silty Pebbly SAND, tan, as above, damp.	3	Grab	3.2	
15				Silty Pebbly SAND, tan, as above. Limestone layer at about 20'.	4	Grab	1.3	
20				Silty Pebbly SAND, tan, as above.	5	Grab	4.2	
25		SM		Silty SAND, tan, as above, moist to wet.	6	Grab	8.7	
30				Silty Pebbly SAND, brown, as above, moist to wet.	7	Grab	389	
35				Silty Pebbly SAND, brown, -as above, wet.	8	Grab	129	
40				Silty Pebbly SAND, brown, well to moderately sorted, fine to medium grained, subangular, loose, saturated. Contains a limestone layer.	9	Grab	15.6	
45				Silty SAND, brown, well sorted, medium grained, subrounded, loose, saturated.	10	Grab	4.4	
50								
55								



05-29-2003

Phillips Pipe Line
NM1-1
Hobbs, New Mexico

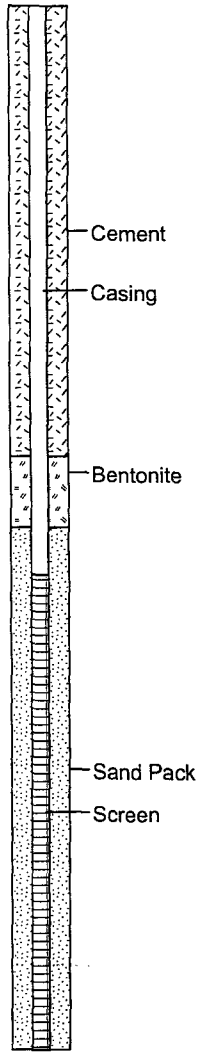
DRILLING LOG IW-2

(Page 1 of 1)

Date Started	: 6/3/02	Drilling Company	: Scarborough Drilling
Date Completed	: 6/3/02	Northing Coord.	:
Hole Diameter	: 8 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: Z. Ceplecha

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0		SM		Silty SAND, light tan, moderatley sorted, fine grained, subangular, loose, dry.	1	Grab	1.4	
5				Silty SAND, as above.	2	Grab	1.9	
10				Silty SAND, as above.	3	Grab	2.7	
15				Silty SAND, as above. Silty SAND, as above, dry to damp.	4	Grab	1.8	
20					5	Grab	3.6	
25				Silty SAND, fine to medium grained, as above, damp.	6	Grab	12.6	
30				Silty SAND, tan, as above.	7	Grab	9.7	
35				Silty SAND, tan, as above, damp.	8	Grab	10.4	
40								
45				Silty SAND, as above, damp.	9	Grab	12.4	
50								
55								

Well: IW-2
Elev.:



05-29-2003

Phillips Pipe Line
NM1-1
Hobbs, New Mexico

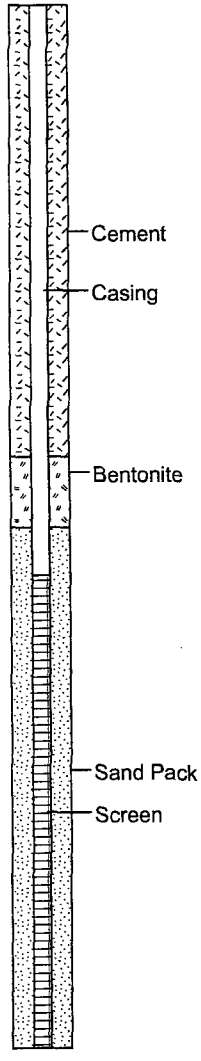
DRILLING LOG IW-3

(Page 1 of 1)

Date Started	: 6/4/02	Drilling Company	: Scarborough Drilling
Date Completed	: 6/4/02	Northing Coord.	:
Hole Diameter	: 8 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: Z. Ceplecha

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0		SM		Silty SAND, light tan, moderately sorted, fine grained, subangular, loose, dry.	1	Grab	1.8	
5				Silty SAND, as above.	2	Grab	2.4	
10				Silty SAND, as above.	3	Grab	3.8	
15				Silty SAND, as above.	4	Grab	7.5	
20				Silty SAND, as above, damp.	5	Grab	3.6	
25				Silty SAND, tan, fine to medium grained, as above, damp.	6	Grab	2.4	
30				Silty SAND, tan, as above.	7	Grab	11.7	
35				Silty SAND, tan, as above, damp.	8	Grab	8.7	
40				Silty SAND, as above, damp.	9	Grab	10.4	
45								
50								
55								

Well: IW-3
Elev.:



05-29-2003

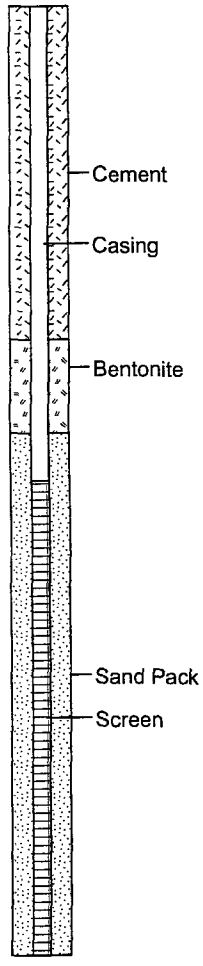
Phillips Pipe Line
NM1-1
Hobbs, New Mexico

DRILLING LOG IW-4

Date Started	: 5/31/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/31/02	Northing Coord.	:
Hole Diameter	: 8 inches	*Easting Coord.*	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: Z. Ceplecha

Well: IW-4
Elev.:

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0				Silty Pebbly SAND with Caliche, white/light tan, moderatley sorted, fine grained, subangular, loose, dry.	1	Grab	5.2	
5				Silty Pebbly SAND, tan, as above.	2	Grab	5.2	
10				Silty SAND, as above, dry to damp.	3	Grab	18.8	
15				Silty SAND, medium grained, as above, damp. Contains some limestone.	4	Grab	12.7	
20		SM		Silty SAND, as above, damp.	5	Grab	116	
25				Silty SAND, fine to medium grained, as above, damp.	6	Grab	110	
30				Silty SAND, tan, as above.	7	Grab	115	
35				Silty SAND, tan, as above, damp.	8	Grab	97	
40								
45								
50								
55								



05-29-2003

HIGGINS & ASSOCIATES ENVIRONMENTAL CONSULTANTS

Phillips Pipe Line
NM1-1
Hobbs, New Mexico

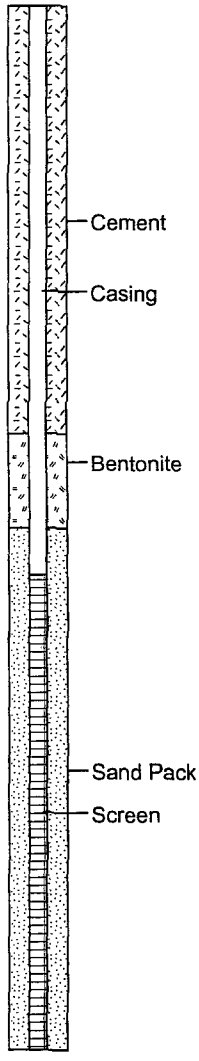
DRILLING LOG IW-5

(Page 1 of 1)

Date Started	: 5/31/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/31/02	Northing Coord.	:
Hole Diameter	: 8 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: Z. Ceplecha

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0		SM		Silty Pebbly SAND with Caliche, tan, moderately sorted, fine grained, subangular, loose, dry.	1	Grab	6.3	
5				Silty Pebbly SAND, white/tan, well sorted, as above.	2	Grab	7.9	
10				Silty Pebbly SAND, as above.	3	Grab	5.0	
15				Silty Pebbly SAND, as above, dry to damp.	4	Grab	6.8	
20				Silty Pebbly SAND, as above, damp. Limestone layer around 25'.	5	Grab	5.0	
25				Silty Pebbly SAND, tan, fine to medium grained, as above, damp.	6	Grab	4.9	
30				Silty Pebbly SAND, tan, as above, moist to wet.	7	Grab	5.7	
35				Silty Pebbly SAND, dark tan, fine to medium grained, as above, wet.	8	Grab	12.9	
40				Silty Pebbly SAND, brown, subrounded to subangular, as above, wet.	9	Grab	5.8	
45								
50								
55								

Well: IW-5
Elev.:



05-29-2003

Phillips Pipe Line
NM1-1
Hobbs, New Mexico

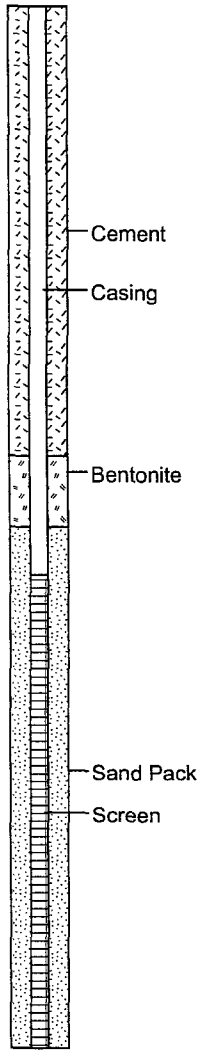
DRILLING LOG IW-6

(Page 1 of 1)

Date Started	: 6/3/02	Drilling Company	: Scarborough Drilling
Date Completed	: 6/3/02	Northing Coord.	:
Hole Diameter	: 8 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: N. Fischer

Well: IW-6
Elev.:

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0		SM		Silty SAND, light tan, moderately sorted, fine grained, subangular, loose, dry.	1	Grab	1.7	
5				Silty SAND, white/tan, well sorted, as above.	2	Grab	2.3	
10				Silty SAND, as above.	3	Grab	4.6	
15				Silty SAND, as above.	4	Grab	3.6	
20				Silty SAND, as above.	5	Grab	5.1	
25				Silty SAND, tan, as above, damp.	6	Grab	3.5	
30				Silty SAND, as above.	7	Grab	5.1	
35				Silty SAND, tan, fine to medium grained, as above.	8	Grab	7.2	
40				Silty SAND, as above.	9	Grab	5.8	
45								
50								
55								



05-29-2003

Phillips Pipe Line
NM1-1
Hobbs, New Mexico

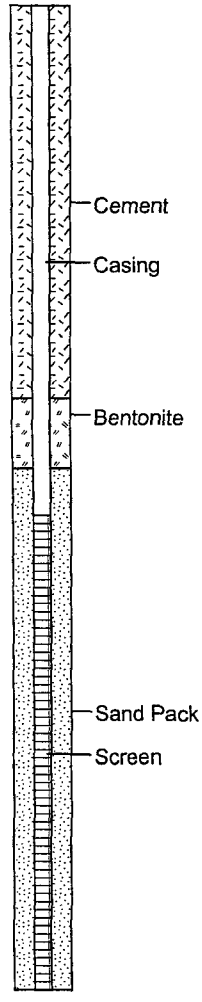
DRILLING LOG IW-7

(Page 1 of 1)

Date Started	: 6/3/02	Drilling Company	: Scarborough Drilling
Date Completed	: 6/3/02	Northing Coord.	:
Hole Diameter	: 8 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: N. Fischer

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0		SM		Silty SAND, tan, moderately sorted, fine grained, subangular, loose, dry.	1	Grab	2.4	
5				Silty SAND, light tan, as above.	2	Grab	3.7	
10				Silty SAND, as above.	3	Grab	5.7	
15				Silty SAND, as above, damp.	4	Grab	2.8	
20				Silty SAND, as above.	5	Grab	3.9	
25				Silty SAND, as above, damp.	6	Grab	2.9	
30				Silty SAND, fine to medium grained, as above.	7	Grab	2.3	
35				Silty SAND, as above.	8	Grab	3.7	
40				Silty SAND, as above.	9	Grab	3.4	
45								
50								
55								

Well: IW-7
Elev.:



05-29-2003

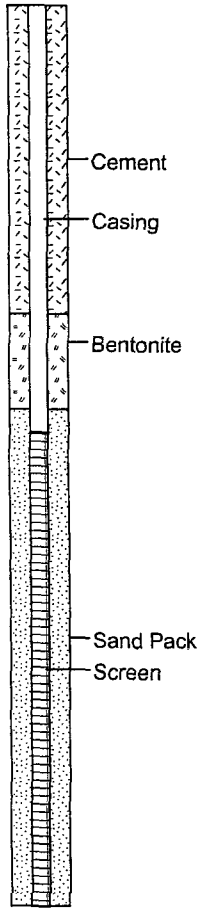
Phillips Pipe Line
NM1-1
Hobbs, New Mexico

DRILLING LOG SVE-1

Date Started	: 5/29/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/29/02	Northing Coord.	:
Hole Diameter	: 5.125 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: Z. Ceplecha

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0		SM		Silty SAND, Brown, moderatley sorted, fine grained, subangular, loose, dry.	1	Grab	4.5	
5				Silty Pebbly SAND, white, moderatley sorted, fine grained, subangular, loose, dry.	2	Grab	12.4	
10				Silty Pebbly SAND, tan/white, well sorted, very fine to fine grained, subangular, loose, dry.	3	Grab	9.0	
15				Silty SAND, tan, well sorted, fine grained, subrounded, loose, damp.	4	Grab	8.4	
20				Silty SAND, tan, well sorted, very fine to fine grained, subrounded, loose, damp.	5	Grab	9.9	
25				Silty Pebbly SAND, tan, moderatley sorted, fine grained, subangular, loose, moist.	6	Grab	9.6	
30				Silty Pebbly SAND, as above, brown, medium to coarse grained, wet.	7	Grab	9.4	
35				Silty Pebbly SAND, as above, brown, well to moderately sorted, medium grained, wet.	8	Grab	6.5	
40								
45								
50								
55								

Well: SVE-1
Elev.:



05-29-2003

HIGGINS & ASSOCIATES ENVIRONMENTAL CONSULTANTS

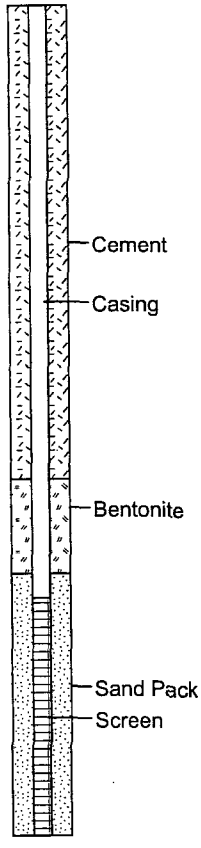
Phillips Pipe Line
NM1-1
Hobbs, New Mexico

DRILLING LOG SVE-3

Date Started	: 5/29/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/29/02	Northing Coord.	:
Hole Diameter	: 5.125 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: Z. Ceplecha

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0				SAND and caliche/limestone layer, white, well sorted, fine grained, subangular, loose, dry.	1	Grab	5.8	
5				Silty Pebbly SAND, tan, well sorted, fine grained, subangular, loose, damp.	2	Grab	16.9	
10				Silty Pebbly SAND, as above.	3	Grab	15.1	
15		SM		Silty SAND, tan, well sorted, fine grained, subrounded, loose, damp.	4	Grab	10.2	
20				Silty Pebbly SAND, tan, moderately sorted, fine grained, subangular, damp. Caliche/limestone layer from 22' to 25'.	5	Grab	6.6	
25				Silty Pebbly SAND, tan, well sorted, fine grained, subrounded, loose, moist to wet.	6	Grab	702	
30				Silty Pebbly SAND, as above, brown, medium grained, subangular.	7	Grab	463	
35				Silty Pebbly SAND, as above, brown, moderately sorted, medium to coarse grained, wet.	8	Grab	94.9	
40								
45								
50								
55								

Well: SVE-3
Elev.:



05-29-2003

Phillips Pipe Line
NM1-1
Hobbs, New Mexico

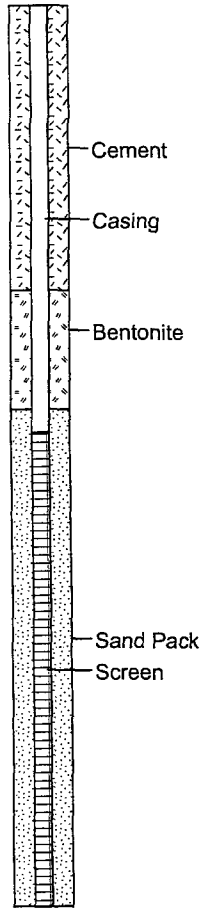
DRILLING LOG SVE-5

(Page 1 of 1)

Date Started	: 5/29/02	Drilling Company	: Scarborough Drilling
Date Completed	: 5/29/02	Northing Coord.	:
Hole Diameter	: 8 inches	Easting Coord.	:
Drilling Method	: Air Rotary	Survey By	:
Sampling Method	: Grab	Logged By	: Z. Ceplecha

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	DESCRIPTION	Samples	Blow Count	PID (ppm)	Sample ID #
0				SAND and caliche/limestone layer, grey/white/light brown, dense, dry.	1	Grab	9.8	
5				Silty SAND, tan, well sorted, very fine grained, subangular, loose, dry.	2	Grab	6.8	
10				Silty SAND, as above.	3	Grab	8.3	
15		SM		Silty Pebbly SAND, light grey/tan, moderatley sorted, very fine to fine grained, subangular, loose, dry.	4	Grab	10.1	
20				SAND, light grey, moderatley sorted, fine grained, subangular, loose, damp. Caliche/Limestone in cuttings.	5	Grab	11.2	
25				Silty SAND, tan, well sorted, fine grained, subrounded, loose, moist.	6	Grab	518	
30				Pebbly SAND, as above, fine to medium grained, moist to wet.	7	Grab	588	
35				Pebbly SAND, as above.	8	Grab	1786	
40								
45								
50								
55								

Well: SVE-5
Elev.:



05-29-2003

Appendix D
Laboratory Data

TestAmerica
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6/ 1/02

HIGGINS AND ASSOCIATES 9898

8200 SOUTH AKRON ST, STE 120
ENGLEWOOD, CO 80112

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project MW11 HOBBS. The Laboratory Project number is 286264.
An executed copy of the chain of custody and the sample receipt form are also included as an addendum to this report.

Sample Identification	Lab Number	Collection Date
MW-11	02-A86368	5/20/02
MW-12	02-A86369	5/20/02
MW-2	02-A86370	5/20/02
MW-13	02-A86371	5/20/02
MW-10	02-A86372	5/20/02

These results relate only to the items tested.
This report shall not be reproduced except in full and with permission of the laboratory.

Report Approved By: _____ Report Date: 6/ 1/02

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director
Jennifer P. Flynn, Technical Services
Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

TestAmerica
INCORPORATED

ANALYTICAL REPORT

HIGGINS AND ASSOCIATES 9898

8200 SOUTH AKRON ST, STE 120
ENGLEWOOD, CO 80112

Project: MW11
Project Name: HOBBS
Sampler: ZUCHARO L.

Lab Number: 02-A86368
Sample ID: MW-11
Sample Type: Water
Site ID:

Date Collected: 5/20/02
Time Collected: 8:33
Date Received: 5/25/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	6/ 1/02	2:33	D.Yeager	8021B	7105
Ethylbenzene	ND	ug/L	1.0	1.0	6/ 1/02	2:33	D.Yeager	8021B	7105
Toluene	ND	ug/L	1.0	1.0	6/ 1/02	2:33	D.Yeager	8021B	7105
Xylenes (Total)	ND	ug/L	1.0	1.0	6/ 1/02	2:33	D.Yeager	8021B	7105
TPH (Gasoline Range)	ND	ug/L	100.	1.0	6/ 1/02	2:33	D.Yeager	8015B	7105
TPH (Diesel Range)	ND	ug/L	100.	1.0	5/29/02	21:48	D.Haywood	8015B/3510	7341
METALS									
Iron	3430	ug/L	50.0	1.0	5/30/02	9:02	Rob Hunt	6010B	5229
Manganese	51.0	ug/L	15.0	1.0	5/30/02	9:02	Rob Hunt	6010B	5229
MISCELLANEOUS CHEMISTRY									
Hardness	1280	mg/L	5.00	1.0	6/ 1/02	0:10	D. Hessin	130.1	5824
Chloride	96.2	mg/L	20.0	20.0	5/28/02	22:02	A.Bamarni	9251	5998

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	5/27/02		M. Cauthen	3510

Sample report continued . . .

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 02-A86368
Sample ID: MW-11
Project: MW11

Surrogate	% Recovery	Target Range
surr-o-Terphenyl	90.	50. - 150.
BTEX/GRO Surr., a,a,a-TFT	100.	67. - 135.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
INCORPORATED

ANALYTICAL REPORT

HIGGINS AND ASSOCIATES 9898

8200 SOUTH AKRON ST, STE 120
ENGLEWOOD, CO 80112

Project: MW11
Project Name: HOBBS
Sampler: ZUCHARO L.

Lab Number: 02-A86369
Sample ID: MW-12
Sample Type: Water
Site ID:

Date Collected: 5/20/02
Time Collected: 9:02
Date Received: 5/25/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	6/ 1/02	3:55	D.Yeager	8021B	7105
Ethylbenzene	ND	ug/L	1.0	1.0	6/ 1/02	3:55	D.Yeager	8021B	7105
Toluene	ND	ug/L	1.0	1.0	6/ 1/02	3:55	D.Yeager	8021B	7105
Xylenes (Total)	ND	ug/L	1.0	1.0	6/ 1/02	3:55	D.Yeager	8021B	7105
TPH (Gasoline Range)	ND	ug/L	100.	1.0	6/ 1/02	3:55	D.Yeager	8015B	7105
TPH (Diesel Range)	ND	ug/L	100.	1.0	5/29/02	22:07	D.Haywood	8015B/3510	7341
METALS									
Iron	11700	ug/L	50.0	1.0	5/30/02	9:02	Rob Hunt	6010B	5229
Manganese	106.	ug/L	15.0	1.0	5/30/02	9:02	Rob Hunt	6010B	5229
MISCELLANEOUS CHEMISTRY									
Hardness	845.	mg/L	5.00	1.0	6/ 1/02	0:10	D. Hessin	130.1	5824
Chloride	100.	mg/L	20.0	20.0	5/28/02	22:02	A.Bamarni	9251	5998

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	5/27/02		M. Cauthen	3510

Sample report continued . . .

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 02-A86369
Sample ID: MW-12
Project: MW11

Surrogate	% Recovery	Target Range
surr-o-Terphenyl	76.	50. - 150.
BTEX/GRO Surr., a,a,a-TFT	97.	67. - 135.

LABORATORY COMMENTS:

ND - Not detected at the report limit.

B - Analyte was detected in the method blank.

J - Estimated Value below Report Limit.

- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
INCORPORATED

ANALYTICAL REPORT

HIGGINS AND ASSOCIATES 9898

8200 SOUTH AKRON ST, STE 120
ENGLEWOOD, CO 80112

Project: MW11
Project Name: HOBBS
Sampler: ZUCHARO L.

Lab Number: 02-A86370
Sample ID: MW-2
Sample Type: Water
Site ID:

Date Collected: 5/20/02
Time Collected: 9:25
Date Received: 5/25/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	3.7	ug/L	1.0	1.0	6/ 1/02	4:22	D.Yeager	8021B	7105
Ethylbenzene	ND	ug/L	1.0	1.0	6/ 1/02	4:22	D.Yeager	8021B	7105
Toluene	2.0	ug/L	1.0	1.0	6/ 1/02	4:22	D.Yeager	8021B	7105
Xylenes (Total)	1.8	ug/L	1.0	1.0	6/ 1/02	4:22	D.Yeager	8021B	7105
TPH (Gasoline Range)	ND	ug/L	100.	1.0	6/ 1/02	4:22	D.Yeager	8015B	7105
TPH (Diesel Range)	117.	ug/L	100.	1.0	5/29/02	22:45	D.Haywood	8015B/3510	7341
METALS									
Iron	3090	ug/L	50.0	1.0	5/30/02	9:02	Rob Hunt	6010B	5229
Manganese	98.0	ug/L	15.0	1.0	5/30/02	9:02	Rob Hunt	6010B	5229
MISCELLANEOUS CHEMISTRY									
Hardness	590.	mg/L	5.00	1.0	6/ 1/02	0:10	D. Hessin	130.1	5824
Chloride	137.	mg/L	20.0	20.0	5/28/02	22:02	A.Bamarni	9251	5998

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	5/27/02		M. Cauthen	3510

Sample report continued . . .

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 02-A86370
Sample ID: MW-2
Project: MW11

Surrogate	% Recovery	Target Range
surr-o-Terphenyl	80.	50. - 150.
BTEX/GRO Surr., a,a,a-TFT	103.	67. - 135.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
INCORPORATED

ANALYTICAL REPORT

HIGGINS AND ASSOCIATES 9898

8200 SOUTH AKRON ST, STE 120
ENGLEWOOD, CO 80112

Project: MW11
Project Name: HOBBS
Sampler: ZUCHARO L.

Lab Number: 02-A86371
Sample ID: MW-13
Sample Type: Water
Site ID:

Date Collected: 5/20/02
Time Collected: 9:43
Date Received: 5/25/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	6/ 1/02	4:49	D.Yeager	8021B	7105
Ethylbenzene	ND	ug/L	1.0	1.0	6/ 1/02	4:49	D.Yeager	8021B	7105
Toluene	ND	ug/L	1.0	1.0	6/ 1/02	4:49	D.Yeager	8021B	7105
Xylenes (Total)	32.8	ug/L	1.0	1.0	6/ 1/02	4:49	D.Yeager	8021B	7105
TPH (Gasoline Range)	535.	ug/L	100.	1.0	6/ 1/02	4:49	D.Yeager	8015B	7105
TPH (Diesel Range)	184.	ug/L	100.	1.0	5/29/02	23:05	D.Haywood	8015B/3510	7341
METALS									
Iron	1200	ug/L	50.0	1.0	5/30/02	9:02	Rob Hunt	6010B	5229
Manganese	18.0	ug/L	15.0	1.0	5/30/02	9:02	Rob Hunt	6010B	5229
MISCELLANEOUS CHEMISTRY									
Hardness	905.	mg/L	5.00	1.0	6/ 1/02	0:10	D. Hessin	130.1	5824
Chloride	111.	mg/L	20.0	20.0	5/28/02	22:02	A.Bamarni	9251	5998

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	5/27/02		M. Cauthen	3510

Sample report continued . . .

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 02-A86371
Sample ID: MW-13
Project: MW11

Surrogate	% Recovery	Target Range
surr-o-Terphenyl	92.	50. - 150.
BTEX/GRO Surr., a,a,a-TFT	82.	67. - 135.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
INCORPORATED

ANALYTICAL REPORT

HIGGINS AND ASSOCIATES 9898

8200 SOUTH AKRON ST, STE 120
ENGLEWOOD, CO 80112

Project: MW11
Project Name: HOBBS
Sampler: ZUCHARO L.

Lab Number: 02-A86372
Sample ID: MW-10
Sample Type: Water
Site ID:

Date Collected: 5/20/02
Time Collected: 10:14
Date Received: 5/25/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	9000	ug/L	50.0	50.0	6/ 1/02	13:13	D.Yeager	8021B	9405
Ethylbenzene	1100	ug/L	50.0	50.0	6/ 1/02	13:13	D.Yeager	8021B	9405
Toluene	1170	ug/L	50.0	50.0	6/ 1/02	13:13	D.Yeager	8021B	9405
Xylenes (Total)	640.	ug/L	50.0	50.0	6/ 1/02	13:13	D.Yeager	8021B	9405
TPH (Gasoline Range)	26400	ug/L	5000	50.0	6/ 1/02	13:13	D.Yeager	8015B	9405
TPH (Diesel Range)	1400	ug/L	100.	1.0	5/29/02	23:24	D.Haywood	8015B/3510	7341
METALS									
Iron	1870	ug/L	50.0	1.0	5/30/02	9:02	Rob Hunt	6010B	5229
Manganese	303.	ug/L	15.0	1.0	5/30/02	9:02	Rob Hunt	6010B	5229
MISCELLANEOUS CHEMISTRY									
Hardness	594.	mg/L	5.00	1.0	6/ 1/02	0:10	D. Hessin	130.1	5824
Chloride	164.	mg/L	20.0	20.0	5/28/02	22:02	A.Bamarni	9251	5998

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	5/27/02		M. Cauthen	3510

Sample report continued . . .

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 02-A86372
Sample ID: MW-10
Project: MW11

Surrogate	% Recovery	Target Range
surr-o-Terphenyl	88.	50. - 150.
BTEX/GRO Surr., a,a,a-TFT	81.	67. - 135.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

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PROJECT QUALITY CONTROL DATA
Project Number: MW11
Page: 1

Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
UST ANALYSIS								
Benzene	mg/l	< 0.0006	0.0479	0.0500	96	82. - 125.	7105	BLANK
Benzene	mg/l	< 0.0006	0.0485	0.0500	97	82. - 125.	9405	BLANK
Toluene	mg/l	< 0.0006	0.0489	0.0500	98	77. - 121.	7105	BLANK
Toluene	mg/l	< 0.0006	0.0494	0.0500	99	77. - 121.	9405	BLANK
Ethylbenzene	mg/l	< 0.0007	0.0485	0.0500	97	76. - 128.	7105	BLANK
Ethylbenzene	mg/l	< 0.0007	0.0488	0.0500	98	76. - 128.	9405	BLANK
Xylenes (Total)	mg/l	< 0.0006	0.0945	0.100	94	79. - 125.	7105	BLANK
Xylenes (Total)	mg/l	< 0.0006	0.0952	0.100	95	79. - 125.	9405	BLANK
TPH (Gasoline Range)	mg/l	0.116	0.950	1.00	83	72. - 126.	7105	BLANK
TPH (Gasoline Range)	mg/l	0.109	0.950	1.00	84	72. - 126.	9405	BLANK
TPH (Diesel Range)	mg/l	< 0.100	0.932	1.00	93	41. - 121.	7341	BLANK
BTEX/GRO Surr., a,a,a-TFT	% Recovery				97	67. - 135.	7105	
BTEX/GRO Surr., a,a,a-TFT	% Recovery				98	67. - 135.	9405	

Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
METALS								
Iron	mg/l	5.54	6.64	1.00	110	80 - 120	5229	Duplicate
Manganese	mg/l	1.39	1.92	0.500	106	80 - 120	5229	Duplicate

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	0.0479	0.0487	1.66	13.	7105

Project QC continued . . .

PROJECT QUALITY CONTROL DATA
Project Number: MW11
Page: 2

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
Benzene	mg/l	0.0485	0.0485	0.00	13.	9405
Toluene	mg/l	0.0489	0.0496	1.42	13.	7105
Toluene	mg/l	0.0494	0.0493	0.20	13.	9405
Ethylbenzene	mg/l	0.0485	0.0492	1.43	13.	7105
Ethylbenzene	mg/l	0.0488	0.0489	0.20	13.	9405
Xylenes (Total)	mg/l	0.0945	0.0959	1.47	13.	7105
Xylenes (Total)	mg/l	0.0952	0.0954	0.21	13.	9405
TPH (Gasoline Range)	mg/l	0.950	0.864	9.48	20.	7105
TPH (Gasoline Range)	mg/l	0.950	0.864	9.48	20.	9405
TPH (Diesel Range)	mg/l	0.932	0.946	1.49	46.	7341
BTEX/GRO Surr., a,a,a-TFT	% Recovery		99.			7105
BTEX/GRO Surr., a,a,a-TFT	% Recovery		99.			9405

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
METALS						
Iron	mg/l	6.64	6.48	2.44	20	5229
Manganese	mg/l	1.92	1.88	2.11	20	5229

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	0.100	0.0955	96	82 - 122	7105
Benzene	mg/l	0.100	0.0914	91	82 - 122	9405
Toluene	mg/l	0.100	0.0963	96	77 - 119	7105
Toluene	mg/l	0.100	0.0918	92	77 - 119	9405
Ethylbenzene	mg/l	0.100	0.0948	95	76 - 125	7105

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number: MW11
Page: 3

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
Ethylbenzene	mg/l	0.100	0.0907	91	76 - 125	9405
Xylenes (Total)	mg/l	0.200	0.183	92	73 - 123	7105
Xylenes (Total)	mg/l	0.200	0.176	88	73 - 123	9405
TPH (Gasoline Range)	mg/l	1.00	0.950	95	75 - 126	7105
TPH (Gasoline Range)	mg/l	1.00	0.950	95	75 - 126	9405
TPH (Diesel Range)	mg/l	1.00	0.944	94	46 - 118	7341
BTEX/GRO Surr., a,a,a-TFT	% Recovery			94	67 - 135	7105
BTEX/GRO Surr., a,a,a-TFT	% Recovery			95	67 - 135	9405

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
METALS						
Iron	mg/l	1.00	1.00	100	80 - 120	5229
Manganese	mg/l	0.500	0.510	102	80 - 120	5229

Continuing Calibration Verification

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
METALS						

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
MISC PARAMETERS						
Chloride	mg/l	10.0	9.60	96	90 - 110	5998

Project QC continued . . .

PROJECT QUALITY CONTROL DATA
Project Number: MW11
Page: 4

Duplicates

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch	Sample Dup'd
Chloride	mg/l	3980	3940	1.01	15.	5998	02-A86685

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
Benzene	< 0.0006	mg/l	7105	5/31/02	17:25
Benzene	< 0.0006	mg/l	9405	6/ 1/02	3:27
Toluene	< 0.0006	mg/l	7105	5/31/02	17:25
Toluene	< 0.0006	mg/l	9405	6/ 1/02	3:27
Ethylbenzene	< 0.0007	mg/l	7105	5/31/02	17:25
Ethylbenzene	< 0.0007	mg/l	9405	6/ 1/02	3:27
Xylenes (Total)	< 0.0006	mg/l	7105	5/31/02	17:25
Xylenes (Total)	< 0.0006	mg/l	9405	6/ 1/02	3:27
TPH (Gasoline Range)	0.116	mg/l	7105	5/31/02	17:25
TPH (Gasoline Range)	0.109	mg/l	9405	6/ 1/02	3:27
TPH (Diesel Range)	< 0.100	mg/l	7341	5/29/02	19:32

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
BTEX/GRO Surr., a,a,a-TFT	98.	% Recovery	7105	5/31/02	17:25
BTEX/GRO Surr., a,a,a-TFT	97.	% Recovery	9405	6/ 1/02	3:27

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number: MW11
Page: 5

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Analysis Date	Analysis Time

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
METALS					
Iron	< 0.0288	mg/l	5229	5/30/02	9:02
Manganese	< 0.0003	mg/l	5229	5/30/02	9:02

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
MISC PARAMETERS					
Chloride	< 1.00	mg/l	5998	5/28/02	22:02

- Value outside Laboratory historical or method prescribed QC limits.

End of Report for Project 286264

TestAmerica INCORPORATED

Nashville Division
2960 Foster Creighton
Nashville, TN 37204

Phone: 615-726-0177
Fax: 615-726-3404

2862647

9898

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring _____

Client Name: Higgins & Assoc. Client #: ~~10588~~ (PA)
Address: 8000 S. Akron St Suite 120
City/State/Zip Code: Centennial CO 80112
Project Manager: Chris Higgins
Telephone Number: 303-708-9846 Fax: 303-708-9848
Sampler Name: (Print Name) Zachary Copeland
Sampler Signature:

Project Name: Hobbs
Project #: NM11
Site/Location ID: PPL NM11 State: NM
Report To: Chris Higgins
Invoice To:
Quote #: PO#:

TAT: X Standard; ___ Rush (surcharges may apply)
Date Needed:
Fax Results: (Y) N

SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix: SL - Sludge, DW - Drinking Water, GW - Groundwater, S - Soil/Solid, WW - Wastewater, Specify Other	Preservation & # of Containers: HNO_3	HCl	NaOH	H_2SO_4	Methanol	None	Other (Specify)	Analyze For: BTEX	TVPH	TEPH	Chloride	Total Hardness	Fe	Mn				REMARKS
MW-11	5/20/02	8:33			GW	1	4				1		X	X	X	X	X	X	X				862368
MW-12		9:02											X	X	X	X	X	X	X				69
MW-2		9:25											X	X	X	X	X	X	X				70
MW-13		9:43											X	X	X	X	X	X	X				71
MW-10		10:14											X	X	X	X	X	X	X				862372

QC Deliverables: ___ None; ___ Level 2 (Batch QC); ___ Level 3; ___ Level 4; Other: _____

Special Instructions:

	Date	Time		Date	Time
Relinquished By:	5/24/02	1200	Received By:		
Relinquished By:			Received By:	5/24/02	1200
Relinquished By:			Received By:	5/25/02	9:10

LABORATORY COMMENTS:
Init Lab Temp:
Rec Lab Temp:
Custody Seals: Y N N/A
Bottles Supplied by Test America: Y N
Method of Shipment:

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9/ 5/02

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project PHILLIPS PIPELINE HOBBS. The Laboratory Project number is 299305. An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report.

Sample Identification	Lab Number	Collection Date
MW#13	02-A143240	8/29/02
SVE#1	02-A143241	8/29/02
IW-2	02-A143242	8/29/02
IW-3	02-A143243	8/29/02
IW-4	02-A143244	8/29/02
IW-5	02-A143245	8/29/02
IW-6	02-A143246	8/29/02
IW-7	02-A143247	8/29/02

Report Approved By: Roxanne L Connor Report Date: 9/ 5/02

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PHILLIPS PIPELINE HOBBS
Sampler: NICK FISCHER

Lab Number: 02-A143240
Sample ID: MW#13
Sample Type: Water
Site ID:

Date Collected: 8/29/02
Time Collected:
Date Received: 8/30/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	5.0	1.0	9/ 4/02	6:39	D.Yeager	8021B	1309
Ethylbenzene	ND	ug/L	1.0	1.0	9/ 4/02	6:39	D.Yeager	8021B	1309
Toluene	1.0	ug/L	1.0	1.0	9/ 4/02	6:39	D.Yeager	8021B	1309
Xylenes (Total)	1.3	ug/L	1.0	1.0	9/ 4/02	6:39	D.Yeager	8021B	1309
TPH (Gasoline Range)	145.	ug/L	100.	1.0	9/ 4/02	6:39	D.Yeager	8015B	1309
TPH (Diesel Range)	133.	ug/L	100.	1.0	9/ 4/02	23:26	D.Haywood	8015B/3510	4472
METALS									
Iron	5720	ug/L	50.0	1.0	9/ 4/02	11:55	G.McCord	6010B	3120
MISCELLANEOUS CHEMISTRY									
Chloride	106.	mg/L	5.00	5.0	9/ 4/02	17:10	A.Bamarni	325.2	3265

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	9/ 3/02		M. Lax	3510

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 02-A143240
Sample ID: MW#13
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	94.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	91.	69. - 132.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
E - Estimated Value above the calibration limit of the instrument.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PHILLIPS PIPELINE HOBBS
Sampler: NICK FISCHER

Lab Number: 02-A143241
Sample ID: SVE#1
Sample Type: Water
Site ID:

Date Collected: 8/29/02
Time Collected:
Date Received: 8/30/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	5.0	1.0	9/ 4/02	7:11	D.Yeager	8021B	1309
Ethylbenzene	ND	ug/L	1.0	1.0	9/ 4/02	7:11	D.Yeager	8021B	1309
Toluene	ND	ug/L	1.0	1.0	9/ 4/02	7:11	D.Yeager	8021B	1309
Xylenes (Total)	ND	ug/L	1.0	1.0	9/ 4/02	7:11	D.Yeager	8021B	1309
TPH (Gasoline Range)	ND	ug/L	100.	1.0	9/ 4/02	7:11	D.Yeager	8015B	1309
TPH (Diesel Range)	ND	ug/L	100.	1.0	9/ 4/02	23:47	D.Haywood	8015B/3510	4472
MISCELLANEOUS CHEMISTRY									
Chloride	96.5	mg/L	5.00	5.0	9/ 4/02	17:10	A.Bamarni	325.2	3265

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	9/ 3/02		M. Lax	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	84.	41. - 155.

Sample report continued . . .

TestAmerica
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ANALYTICAL REPORT

Laboratory Number: 02-A143241
Sample ID: SVE#1
Project:

Surrogate	% Recovery	Target Range
BTEX/GRO Surr., a,a,a-TFT	99.	69. - 132.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
E - Estimated Value above the calibration limit of the instrument.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PHILLIPS PIPELINE HOBBS
Sampler: NICK FISCHER

Lab Number: 02-A143242
Sample ID: IW-2
Sample Type: Water
Site ID:

Date Collected: 8/29/02
Time Collected:
Date Received: 8/30/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	5.0	1.0	9/ 4/02	7:43	D.Yeager	8021B	1309
Ethylbenzene	ND	ug/L	1.0	1.0	9/ 4/02	7:43	D.Yeager	8021B	1309
Toluene	ND	ug/L	1.0	1.0	9/ 4/02	7:43	D.Yeager	8021B	1309
Xylenes (Total)	ND	ug/L	1.0	1.0	9/ 4/02	7:43	D.Yeager	8021B	1309
TPH (Gasoline Range)	ND	ug/L	100.	1.0	9/ 4/02	7:43	D.Yeager	8015B	1309
TPH (Diesel Range)	ND	ug/L	100.	1.0	9/ 5/02	0:07	D.Haywood	8015B/3510	4472
METALS									
Iron	6550	ug/L	50.0	1.0	9/ 3/02	17:34	G.McCord	6010B	1397
MISCELLANEOUS CHEMISTRY									
Chloride	86.0	mg/L	5.00	5.0	9/ 4/02	17:11	A.Bamarni	325.2	3265

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	9/ 3/02		M. Lax	3510

Sample report continued . . .

TestAmerica
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ANALYTICAL REPORT

Laboratory Number: 02-A143242
Sample ID: IW-2
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	83.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	104.	69. - 132.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
E - Estimated Value above the calibration limit of the instrument.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PHILLIPS PIPELINE HOBBS
Sampler: NICK FISCHER

Lab Number: 02-A143243
Sample ID: IW-3
Sample Type: Water
Site ID:

Date Collected: 8/29/02
Time Collected:
Date Received: 8/30/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	5.0	1.0	9/ 4/02	8:15	D.Yeager	8021B	1309
Ethylbenzene	ND	ug/L	1.0	1.0	9/ 4/02	8:15	D.Yeager	8021B	1309
Toluene	ND	ug/L	1.0	1.0	9/ 4/02	8:15	D.Yeager	8021B	1309
Xylenes (Total)	ND	ug/L	1.0	1.0	9/ 4/02	8:15	D.Yeager	8021B	1309
TPH (Gasoline Range)	ND	ug/L	100.	1.0	9/ 4/02	8:15	D.Yeager	8015B	1309
TPH (Diesel Range)	ND	ug/L	100.	1.0	9/ 5/02	0:28	D.Haywood	8015B/3510	4472
METALS									
Iron	8280	ug/L	50.0	1.0	9/ 3/02	17:34	G.McCord	6010B	1397
MISCELLANEOUS CHEMISTRY									
Chloride	82.0	mg/L	5.00	5.0	9/ 4/02	17:11	A.Bamarni	325.2	3265

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	9/ 3/02		M. Lax	3510

Sample report continued . . .

TestAmerica
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ANALYTICAL REPORT

Laboratory Number: 02-A143243
Sample ID: IW-3
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	86.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	103.	69. - 132.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
E - Estimated Value above the calibration limit of the instrument.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PHILLIPS PIPELINE HOBBS
Sampler: NICK FISCHER

Lab Number: 02-A143244
Sample ID: IW-4
Sample Type: Water
Site ID:

Date Collected: 8/29/02
Time Collected:
Date Received: 8/30/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	5.0	1.0	9/ 4/02	8:47	D.Yeager	8021B	1309
Ethylbenzene	ND	ug/L	1.0	1.0	9/ 4/02	8:47	D.Yeager	8021B	1309
Toluene	ND	ug/L	1.0	1.0	9/ 4/02	8:47	D.Yeager	8021B	1309
Xylenes (Total)	ND	ug/L	1.0	1.0	9/ 4/02	8:47	D.Yeager	8021B	1309
TPH (Gasoline Range)	ND	ug/L	100.	1.0	9/ 4/02	8:47	D.Yeager	8015B	1309
TPH (Diesel Range)	ND	ug/L	100.	1.0	9/ 5/02	0:49	D.Haywood	8015B/3510	4472
METALS									
Iron	2450	ug/L	50.0	1.0	9/ 3/02	17:34	G.McCord	6010B	1397
MISCELLANEOUS CHEMISTRY									
Chloride	99.5	mg/L	5.00	5.0	9/ 4/02	17:12	A.Bamarni	325.2	3265

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	9/ 3/02		M. Lax	3510

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 02-A143244
Sample ID: IW-4
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	89.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	101.	69. - 132.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
E - Estimated Value above the calibration limit of the instrument.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
INCORPORATED

ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PHILLIPS PIPELINE HOBBS
Sampler: NICK FISCHER

Lab Number: 02-A143245
Sample ID: IW-5
Sample Type: Water
Site ID:

Date Collected: 8/29/02
Time Collected:
Date Received: 8/30/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	5.0	1.0	9/ 4/02	9:19	D.Yeager	8021B	1309
Ethylbenzene	ND	ug/L	1.0	1.0	9/ 4/02	9:19	D.Yeager	8021B	1309
Toluene	ND	ug/L	1.0	1.0	9/ 4/02	9:19	D.Yeager	8021B	1309
Xylenes (Total)	ND	ug/L	1.0	1.0	9/ 4/02	9:19	D.Yeager	8021B	1309
TPH (Gasoline Range)	ND	ug/L	100.	1.0	9/ 4/02	9:19	D.Yeager	8015B	1309
TPH (Diesel Range)	ND	ug/L	100.	1.0	9/ 5/02	1:10	D.Haywood	8015B/3510	4472
METALS									
Iron	3330	ug/L	50.0	1.0	9/ 3/02	17:34	G.McCord	6010B	1397
MISCELLANEOUS CHEMISTRY									
Chloride	90.0	mg/L	5.00	5.0	9/ 4/02	17:12	A.Bamarni	325.2	3265

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	9/ 3/02		M. Lax	3510

Sample report continued . . .

TestAmerica
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ANALYTICAL REPORT

Laboratory Number: 02-A143245
Sample ID: IW-5
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	89.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	103.	69. - 132.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
E - Estimated Value above the calibration limit of the instrument.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PHILLIPS PIPELINE HOBBS
Sampler: NICK FISCHER

Lab Number: 02-A143246
Sample ID: IW-6
Sample Type: Water
Site ID:

Date Collected: 8/29/02
Time Collected:
Date Received: 8/30/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	5.0	1.0	9/ 4/02	9:51	D.Yeager	8021B	1309
Ethylbenzene	ND	ug/L	1.0	1.0	9/ 4/02	9:51	D.Yeager	8021B	1309
Toluene	ND	ug/L	1.0	1.0	9/ 4/02	9:51	D.Yeager	8021B	1309
Xylenes (Total)	ND	ug/L	1.0	1.0	9/ 4/02	9:51	D.Yeager	8021B	1309
TPH (Gasoline Range)	ND	ug/L	100.	1.0	9/ 4/02	9:51	D.Yeager	8015B	1309
TPH (Diesel Range)	7620	ug/L	500.	5.0	9/ 5/02	11:39	D.Haywood	8015B/3510	4472
METALS									
Iron	7160	ug/L	50.0	1.0	9/ 3/02	17:34	G.McCord	6010B	1397
MISCELLANEOUS CHEMISTRY									
Chloride	92.0	mg/L	5.00	5.0	9/ 4/02	17:13	A.Bamarni	325.2	3265

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	9/ 3/02		M. Lax	3510

Sample report continued . . .

TestAmerica
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ANALYTICAL REPORT

Laboratory Number: 02-A143246
Sample ID: IW-6
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	75.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	104.	69. - 132.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
E - Estimated Value above the calibration limit of the instrument.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PHILLIPS PIPELINE HOBBS
Sampler: NICK FISCHER

Lab Number: 02-A143247
Sample ID: IW-7
Sample Type: Water
Site ID:

Date Collected: 8/29/02
Time Collected:
Date Received: 8/30/02
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	5.0	1.0	9/ 4/02	11:27	D.Yeager	8021B	1309
Ethylbenzene	ND	ug/L	1.0	1.0	9/ 4/02	11:27	D.Yeager	8021B	1309
Toluene	ND	ug/L	1.0	1.0	9/ 4/02	11:27	D.Yeager	8021B	1309
Xylenes (Total)	ND	ug/L	1.0	1.0	9/ 4/02	11:27	D.Yeager	8021B	1309
TPH (Gasoline Range)	ND	ug/L	100.	1.0	9/ 4/02	11:27	D.Yeager	8015B	1309
TPH (Diesel Range)	ND	ug/L	100.	1.0	9/ 5/02	2:13	D.Haywood	8015B/3510	4472
METALS									
Iron	18600	ug/L	50.0	1.0	9/ 3/02	17:34	G.McCord	6010B	1397
MISCELLANEOUS CHEMISTRY									
Chloride	161.	mg/L	10.0	10.0	9/ 4/02	17:13	A.Bamarni	325.2	3265

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	9/ 3/02		M. Lax	3510

Sample report continued . . .

TestAmerica
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ANALYTICAL REPORT

Laboratory Number: 02-A143247
Sample ID: IW-7
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	84.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	103.	69. - 132.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
B - Analyte was detected in the method blank.
J - Estimated Value below Report Limit.
E - Estimated Value above the calibration limit of the instrument.
- Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

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PROJECT QUALITY CONTROL DATA
Project Number:

Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
UST ANALYSIS								
Benzene	mg/l	< 0.0005	0.0463	0.0500	93	74. - 129.	1309	blank
Toluene	mg/l	< 0.0006	0.0471	0.0500	94	74. - 128.	1309	blank
Ethylbenzene	mg/l	< 0.0006	0.0463	0.0500	93	75. - 128.	1309	blank
Xylenes (Total)	mg/l	< 0.0010	0.0939	0.100	94	72. - 126.	1309	blank
TPH (Gasoline Range)	mg/l	< 0.0740	0.930	1.00	93	59. - 128.	1309	blank
TPH (Diesel Range)	mg/l	< 0.100	0.603	1.00	60	23. - 120.	4472	BLANK
BTEX/GRO Surr., a,a,a-TFT	% Recovery				99	69. - 132.	1309	

Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
METALS								
Iron	mg/l	3.35	4.27	1.00	92	80 - 120	1397	Duplicate

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	0.0463	0.0456	1.52	15.	1309
Toluene	mg/l	0.0471	0.0464	1.50	15.	1309
Ethylbenzene	mg/l	0.0463	0.0455	1.74	15.	1309
Xylenes (Total)	mg/l	0.0939	0.0924	1.61	19.	1309
TPH (Gasoline Range)	mg/l	0.930	0.862	7.59	22.	1309
TPH (Diesel Range)	mg/l	0.603	0.592	1.84	49.	4472
BTEX/GRO Surr., a,a,a-TFT	% Recovery		98.			1309

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number:

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
METALS						
Iron	mg/l	4.27	4.26	0.23	20	1397
Iron	mg/l	6.41	6.32	1.41	20	3120

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	0.100	0.0892	89	74 - 124	1309
Toluene	mg/l	0.100	0.0900	90	74 - 121	1309
Ethylbenzene	mg/l	0.100	0.0884	88	75 - 123	1309
Xylenes (Total)	mg/l	0.200	0.179	90	72 - 120	1309
TPH (Gasoline Range)	mg/l	1.00	0.930	93	61 - 139	1309
TPH (Diesel Range)	mg/l	1.00	0.698	70	28 - 115	4472
BTEX/GRO Surr., a,a,a-TFT	% Recovery			99	69 - 132	1309

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
METALS						
Iron	mg/l	1.00	1.03	103	80 - 120	1397
Iron	mg/l	1.00	1.08	108	80 - 120	3120

Project QC continued . . .

PROJECT QUALITY CONTROL DATA
Project Number:
Page: 3

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch

Continuing Calibration Verification

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch

METALS

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
MISC PARAMETERS						
Chloride	mg/l	10.0	9.81	98	90 - 110	3265

Duplicates

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch	Sample Dup'd
Chloride	mg/l	161.	161.	0.00	15.	3265	02-A143247

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
Benzene	< 0.0005	mg/l	1309	9/ 4/02	6:07
Toluene	< 0.0006	mg/l	1309	9/ 4/02	6:07
Ethylbenzene	< 0.0006	mg/l	1309	9/ 4/02	6:07
Xylenes (Total)	< 0.0010	mg/l	1309	9/ 4/02	6:07
TPH (Gasoline Range)	< 0.0740	mg/l	1309	9/ 4/02	6:07
TPH (Diesel Range)	< 0.100	mg/l	4472	9/ 4/02	22:03

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number:

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
TPH Hi Surr., o-Terphenyl	84.	% Recovery	4472	9/ 4/02	22:03
BTEX/GRO Surr., a,a,a-TFT	100.	% Recovery	1309	9/ 4/02	6:07

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
METALS					
Iron	< 0.0170	mg/l	1397	9/ 3/02	17:34
Iron	< 0.0170	mg/l	3120	9/ 4/02	11:55

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
MISC PARAMETERS					
Chloride	< 1.00	mg/l	3265	9/ 4/02	16:49

End of Report for Project 299305

TestAmerica
INCORPORATED

1/20/03

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project PPL HOBBS NM1-1. The Laboratory Project number is 316570.
An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report.

Sample Identification	Lab Number	Collection Date
SVE-1	03-A5437	1/14/03
IW-2	03-A5438	1/14/03
IW-3	03-A5439	1/14/03
IW-4	03-A5440	1/14/03

Report Approved By: Roxanne L Connor Report Date: 1/20/03

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Lab Number: 03-A5437
Sample ID: SVE-1
Sample Type: Water
Site ID:

Date Collected: 1/14/03
Time Collected: 9:00
Date Received: 1/15/03
Time Received: 9:00
Page: 1

Project:
Project Name: PPL HOBBS NM1-1
Sampler: NICK FISCHER

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	1/18/03	17:19	F.Gundi	8021B	9123
Ethylbenzene	ND	ug/L	1.0	1.0	1/18/03	17:19	F.Gundi	8021B	9123
Toluene	ND	ug/L	1.0	1.0	1/18/03	17:19	F.Gundi	8021B	9123
Xylenes (Total)	ND	ug/L	1.0	1.0	1/18/03	17:19	F.Gundi	8021B	9123
TPH (Gasoline Range)	ND	ug/L	100.	1.0	1/18/03	17:19	F.Gundi	8015B	9123
TPH (Diesel Range)	ND	ug/L	100.	1.0	1/17/03	0:19	D.Haywood	8015B/3510	7329
MISCELLANEOUS CHEMISTRY									
Chloride	122.	mg/L	20.0	20.0	1/17/03	17:08	S. Duncan	325.2	6411

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	1/16/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	62.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	106.	69. - 132.

Sample report continued . . .

TestAmerica
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ANALYTICAL REPORT

Laboratory Number: 03-A5437
Sample ID: SVE-1
Project:

LABORATORY COMMENTS:

ND = Not detected at the report limit.

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

= Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PPL HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A5438
Sample ID: IW-2
Sample Type: Water
Site ID:

Date Collected: 1/14/03
Time Collected: 12:30
Date Received: 1/15/03
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	1/18/03	12:54	D.Ramey	8021B	6529
Ethylbenzene	ND	ug/L	1.0	1.0	1/18/03	12:54	D.Ramey	8021B	6529
Toluene	ND	ug/L	1.0	1.0	1/18/03	12:54	D.Ramey	8021B	6529
Xylenes (Total)	ND	ug/L	1.0	1.0	1/18/03	12:54	D.Ramey	8021B	6529
TPH (Gasoline Range)	ND	ug/L	100.	1.0	1/18/03	12:54	D.Ramey	8015B	6529
TPH (Diesel Range)	ND	ug/L	100.	1.0	1/16/03	19:49	D.Haywood	8015B/3510	7329
MISCELLANEOUS CHEMISTRY									
Chloride	132.	mg/L	20.0	20.0	1/17/03	17:06	S. Duncan	325.2	6411

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	1/16/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	71.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	103.	69. - 132.

Sample report continued . . .

TestAmerica
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ANALYTICAL REPORT

Laboratory Number: 03-A5438
Sample ID: IW-2
Project:

LABORATORY COMMENTS:

ND = Not detected at the report limit.

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

= Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

TestAmerica
INCORPORATED

ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PPL HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A5439
Sample ID: IW-3
Sample Type: Water
Site ID:

Date Collected: 1/14/03
Time Collected: 15:00
Date Received: 1/15/03
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	1/18/03	9:14	D.Ramey	8021B	6529
Ethylbenzene	ND	ug/L	1.0	1.0	1/18/03	9:14	D.Ramey	8021B	6529
Toluene	ND	ug/L	1.0	1.0	1/18/03	9:14	D.Ramey	8021B	6529
Xylenes (Total)	ND	ug/L	1.0	1.0	1/18/03	9:14	D.Ramey	8021B	6529
TPH (Gasoline Range)	ND	ug/L	100.	1.0	1/18/03	9:14	D.Ramey	8015B	6529
TPH (Diesel Range)	123.	ug/L	100.	1.0	1/16/03	20:09	D.Haywood	8015B/3510	7329
MISCELLANEOUS CHEMISTRY									
Chloride	94.6	mg/L	20.0	20.0	1/17/03	17:07	S. Duncan	325.2	6411

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	1/16/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	67.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	103.	69. - 132.

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A5439
Sample ID: IW-3
Project:

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PPL HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A5440
Sample ID: IW-4
Sample Type: Water
Site ID:

Date Collected: 1/14/03
Time Collected: 15:50
Date Received: 1/15/03
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	1/18/03	9:45	D.Ramey	8021B	6529
Ethylbenzene	ND	ug/L	1.0	1.0	1/18/03	9:45	D.Ramey	8021B	6529
Toluene	ND	ug/L	1.0	1.0	1/18/03	9:45	D.Ramey	8021B	6529
Xylenes (Total)	ND	ug/L	1.0	1.0	1/18/03	9:45	D.Ramey	8021B	6529
TPH (Gasoline Range)	ND	ug/L	100.	1.0	1/18/03	9:45	D.Ramey	8015B	6529
TPH (Diesel Range)	ND	ug/L	100.	1.0	1/16/03	20:28	D.Haywood	8015B/3510	7329
MISCELLANEOUS CHEMISTRY									
Chloride	111.	mg/L	20.0	20.0	1/17/03	17:07	S. Duncan	325.2	6411

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	1/16/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	91.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	103.	69. - 132.

Sample report continued . . .

TestAmerica
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ANALYTICAL REPORT

Laboratory Number: 03-A5440
Sample ID: IW-4
Project:

LABORATORY COMMENTS:

ND = Not detected at the report limit.

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

= Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: PPL HOBBS NM1-1
Page: 1
Laboratory Receipt Date: 1/15/03

Matrix Spike Recovery

Note: If Blank is referenced as the sample spiked, insufficient volume was received for MS/MSD analysis for that method and the method requirements for MS/MSD analysis could not be met.

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
UST ANALYSIS								
Benzene	mg/l	< 0.0005	0.0418	0.0500	84	74. - 129.	6529	BLANK
Benzene	mg/l	< 0.0010	0.0534	0.0500	107	74. - 129.	9123	03-A5437
Toluene	mg/l	< 0.0006	0.0418	0.0500	84	74. - 128.	6529	BLANK
Toluene	mg/l	< 0.0010	0.0499	0.0500	100	74. - 128.	9123	03-A5437
Ethylbenzene	mg/l	< 0.0006	0.0414	0.0500	83	75. - 128.	6529	BLANK
Ethylbenzene	mg/l	< 0.0010	0.0490	0.0500	98	75. - 128.	9123	03-A5437
Xylenes (Total)	mg/l	< 0.0010	0.0845	0.100	84	72. - 126.	6529	BLANK
Xylenes (Total)	mg/l	< 0.0010	0.0974	0.100	97	72. - 126.	9123	03-A5437
TPH (Gasoline Range)	mg/l	< 0.0740	0.979	1.00	98	59. - 128.	6529	BLANK
TPH (Gasoline Range)	mg/l	< 0.100	1.04	1.00	104	59. - 128.	9123	03-A5437
TPH (Diesel Range)	mg/l	< 0.100	0.859	1.00	86	23. - 120.	7329	blank
BTEX/GRO Surr., a,a,a-TFT	% Recovery				99	69 - 132	6529	
BTEX/GRO Surr., a,a,a-TFT	% Recovery				108	69 - 132	9123	

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	0.0418	0.0437	4.44	15.	6529
Benzene	mg/l	0.0534	0.0523	2.08	15.	9123
Toluene	mg/l	0.0418	0.0437	4.44	15.	6529
Toluene	mg/l	0.0499	0.0440	12.57	15.	9123
Ethylbenzene	mg/l	0.0414	0.0432	4.26	15.	6529
Ethylbenzene	mg/l	0.0490	0.0345	34.73#	15.	9123
Xylenes (Total)	mg/l	0.0845	0.0883	4.40	19.	6529
Xylenes (Total)	mg/l	0.0974	0.0924	5.27	19.	9123

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: PPL HOBBS NM1-1
Page: 2
Laboratory Receipt Date: 1/15/03

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
TPH (Gasoline Range)	mg/l	0.979	0.959	2.06	22.	6529
TPH (Gasoline Range)	mg/l	1.04	0.937	10.42	22.	9123
TPH (Diesel Range)	mg/l	0.859	0.722	17.33	20.	7329
BTEX/GRO Surr., a,a,a-TFT	% Recovery		98.			6529
BTEX/GRO Surr., a,a,a-TFT	% Recovery		107.			9123

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	0.100	0.0831	83	74 - 124	6529
Benzene	mg/l	0.100	0.102	102	74 - 124	9123
Toluene	mg/l	0.100	0.0815	82	74 - 121	6529
Toluene	mg/l	0.100	0.0975	98	74 - 121	9123
Ethylbenzene	mg/l	0.100	0.0813	81	75 - 123	6529
Ethylbenzene	mg/l	0.100	0.0989	99	75 - 123	9123
Xylenes (Total)	mg/l	0.200	0.163	82	72 - 120	6529
Xylenes (Total)	mg/l	0.200	0.197	98	72 - 120	9123
TPH (Gasoline Range)	mg/l	1.00	0.979	98	61 - 139	6529
TPH (Gasoline Range)	mg/l	1.00	1.04	104	61 - 139	9123
TPH (Diesel Range)	mg/l	1.00	0.904	90	42 - 115	7329
BTEX/GRO Surr., a,a,a-TFT	% Recovery			91	69 - 132	6529
BTEX/GRO Surr., a,a,a-TFT	% Recovery			109	69 - 132	9123

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: PPL HOBBS NM1-1
Page: 3
Laboratory Receipt Date: 1/15/03

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
MISC PARAMETERS						
Chloride	mg/l	10.0	9.26	93	90 - 110	6411

Duplicates

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch	Sample Dup'd
Chloride	mg/l	338.	392.	14.79	15.	6411	03-A5305

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
Benzene	< 0.0005	mg/l	6529	1/18/03	2:57
Benzene	< 0.0005	mg/l	9123	1/18/03	16:47
Toluene	< 0.0006	mg/l	6529	1/18/03	2:57
Toluene	< 0.0006	mg/l	9123	1/18/03	16:47
Ethylbenzene	< 0.0006	mg/l	6529	1/18/03	2:57
Ethylbenzene	< 0.0006	mg/l	9123	1/18/03	16:47
Xylenes (Total)	< 0.0010	mg/l	6529	1/18/03	2:57
Xylenes (Total)	< 0.0010	mg/l	9123	1/18/03	16:47
TPH (Gasoline Range)	< 0.0740	mg/l	6529	1/18/03	2:57
TPH (Gasoline Range)	< 0.0740	mg/l	9123	1/18/03	16:47
TPH (Diesel Range)	< 0.100	mg/l	7329	1/16/03	18:32

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: PPL HOBBS NM1-1
Page: 4
Laboratory Receipt Date: 1/15/03

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
BTEX/GRO Surr., a,a,a-TFT	104.	% Recovery	6529	1/18/03	2:57
BTEX/GRO Surr., a,a,a-TFT	107.	% Recovery	9123	1/18/03	16:47

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
MISC PARAMETERS					
Chloride	< 1.00	mg/l	6411	1/17/03	16:14

End of Report for Project 316570

TestAmerica

2960 Foster Creighton Drive • Nashville, TN 37204
[800] 765-0980 • [615] 726-0177 • Fax [615] 726-3404

316570 #10588

8B-043031

Company: Higgins & Associates — Client Number:
Address: 8200 S. Akron, Suite 120
City: Englewood — St: CO — Zip: 80112
Sampler Sign/Print: Nick Fischer
Project Name: PPL Hobbs MW1-1 — /Proj. #:
Facility Location (City, St): Hobbs, New Mexico
Project Manager: Chris Higgins
PO Number: — /Fac./Site I.D.:
Phone Number: 303-708-9846 — Fax Number: 303-708-9848

B.C. # (Lab Use Only)

Field Sample ID	SAI Lab# (Lab Use Only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO3	H2SO4	NaOH	ICE	UNPRESERVED	OTHER (SPECIFY)	Sampling: DATE	TIME
SVE-1	5437															1/14	9:00 am
IW-2	5438															1/14	12:30 pm
IW-3	5439															1/14	3:00 pm
IW-4	5440															1/14	3:50 pm

ANALYSIS REQUEST

Type G= Grab C= Composite D= Discrete	#
BTEX ☐ MTBE ☐ IPE	6
GRO ☐ (TPH Low) ☐ DRO ☐ (TPH EPA) ☐	6
OA-1 ☐ MASS VPH ☐ Other ☐	6
OA-2 ☐ MASS EPH ☐ TPH High ☐ Other ☐	6
TPH 418.1 ☐ TX 1005 ☐ Other ☐	
Oil and Grease 413.1 ☐ 1664 ☐ 9070/1 ☐ Other ☐	
EDB 504.1 ☐ 601 ☐ 8021 ☐ Other ☐	
Purgeable Halocarbons 601 ☐ 8021 ☐	
Purgeable Aromatics 602 ☐ 8021 ☐	
Lead 6010 ☐ 200.7 ☐ Other ☐	
PAH (GC, GC/MS) 610 ☐ 625 ☐ 8100 ☐ 8270 ☐	
PAH (HPLC) 610 ☐ 8310 ☐	
Metals PP ☐ RCRA ☐ TAL ☐	
VOA 624 ☐ 8260 ☐	
Extractables 625 ☐ 8270 ☐	
PCB's 8081 ☐ 8082 ☐	
Pesticides, Organochlorine 608 ☐ 8081 ☐	
Pesticides, Organophosphorus 614 ☐ 8141 ☐	
Herbicides 2,4-D, 2,4,5-TP ☐ Full List ☐	
TCLP Metals ☐ Lead ☐ VOA ☐ SVOA ☐ P/H ☐ Full ☐	
Reactivity ☐ Corrosivity ☐ Ignitability ☐	
Flash Point: Closed Cup ☐ Open Cup ☐	
TDC 415.1 ☐ 9060 ☐ Other ☐	
Chlorides	X X X X

TAT
Standard ☒
3-Day ☐
2-Day ☐
Next Day ☐
Other: ____

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS

REMARKS: BTEX TVPH & TEPH by same EPA method as used previously

SAI PROJECT or QUOTE NUMBER (to insure correct Analysis and Billing)

Temperature Received: ____
Airbill Number: ____

CUSTODY RECORD

	Date	Time		Date	Time
Relinquished by Sampler: Nick Fischer	1/14	4:25pm	Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by: Laboratory	1.15.03	0900

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1/23/03

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project PPL HOBBS NM1-1. The Laboratory Project number is 316748.
An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report.

Sample Identification	Lab Number	Collection Date
IW-5	03-A6302	1/15/03
IW-6	03-A6303	1/15/03
IW-7	03-A6304	1/15/03
MW-13	03-A6305	1/15/03

Report Approved By: Roxanne L Connor Report Date: 1/23/03

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PPL HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A6302
Sample ID: IW-5
Sample Type: Water
Site ID:

Date Collected: 1/15/03
Time Collected: 8:00
Date Received: 1/16/03
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	1/19/03	1:45	D.Ramey	8021B	7256
Ethylbenzene	ND	ug/L	1.0	1.0	1/19/03	1:45	D.Ramey	8021B	7256
Toluene	ND	ug/L	1.0	1.0	1/19/03	1:45	D.Ramey	8021B	7256
Xylenes (Total)	ND	ug/L	1.0	1.0	1/19/03	1:45	D.Ramey	8021B	7256
TPH (Gasoline Range)	ND	ug/L	100.	1.0	1/19/03	1:45	D.Ramey	8015B	7256
TPH (Diesel Range)	ND	ug/L	100.	1.0	1/20/03	4:42	D.Haywood	8015B/3510	8552
MISCELLANEOUS CHEMISTRY									
Chloride	117.	mg/L	20.0	20.0	1/18/03	17:09	S. Duncan	325.2	7444

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	1/18/03		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	84.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	104.	69. - 132.

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A6302
Sample ID: IW-5
Project:

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PPL HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A6303
Sample ID: IW-6
Sample Type: Water
Site ID:

Date Collected: 1/15/03
Time Collected: 12:00
Date Received: 1/16/03
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	1/19/03	2:19	D.Ramey	8021B	7256
Ethylbenzene	ND	ug/L	1.0	1.0	1/19/03	2:19	D.Ramey	8021B	7256
Toluene	ND	ug/L	1.0	1.0	1/19/03	2:19	D.Ramey	8021B	7256
Xylenes (Total)	ND	ug/L	1.0	1.0	1/19/03	2:19	D.Ramey	8021B	7256
TPH (Gasoline Range)	ND	ug/L	100.	1.0	1/19/03	2:19	D.Ramey	8015B	7256
TPH (Diesel Range)	ND	ug/L	100.	1.0	1/20/03	5:02	D.Haywood	8015B/3510	8552
MISCELLANEOUS CHEMISTRY									
Chloride	100.	mg/L	20.0	20.0	1/18/03	17:10	S. Duncan	325.2	7444

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	1/18/03		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	84.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	103.	69. - 132.

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A6303
Sample ID: IW-6
Project:

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Lab Number: 03-A6304
Sample ID: IW-7
Sample Type: Water
Site ID:

Date Collected: 1/15/03
Time Collected: 13:05
Date Received: 1/16/03
Time Received: 9:00
Page: 1

Project:
Project Name: PPL HOBBS NM1-1
Sampler: NICK FISCHER

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	1/19/03	2:53	D.Ramey	8021B	7256
Ethylbenzene	ND	ug/L	1.0	1.0	1/19/03	2:53	D.Ramey	8021B	7256
Toluene	ND	ug/L	1.0	1.0	1/19/03	2:53	D.Ramey	8021B	7256
Xylenes (Total)	ND	ug/L	1.0	1.0	1/19/03	2:53	D.Ramey	8021B	7256
TPH (Gasoline Range)	ND	ug/L	100.	1.0	1/19/03	2:53	D.Ramey	8015B	7256
TPH (Diesel Range)	ND	ug/L	100.	1.0	1/20/03	5:22	D.Haywood	8015B/3510	8552
MISCELLANEOUS CHEMISTRY									
Chloride	142.	mg/L	20.0	20.0	1/23/03	10:55	S. Duncan	325.2	1028

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	1/18/03		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	88.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	103.	69. - 132.

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A6304
Sample ID: IW-7
Project:

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
Chloride analyzed from a HNO3 preserved container, client notified.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: PPL HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A6305
Sample ID: MW-13
Sample Type: Water
Site ID:

Date Collected: 1/15/03
Time Collected: 14:10
Date Received: 1/16/03
Time Received: 9:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.0	1.0	1/19/03	3:26	D.Ramey	8021B	7256
Ethylbenzene	ND	ug/L	1.0	1.0	1/19/03	3:26	D.Ramey	8021B	7256
Toluene	ND	ug/L	1.0	1.0	1/19/03	3:26	D.Ramey	8021B	7256
Xylenes (Total)	ND	ug/L	1.0	1.0	1/19/03	3:26	D.Ramey	8021B	7256
TPH (Gasoline Range)	ND	ug/L	100.	1.0	1/19/03	3:26	D.Ramey	8015B	7256
TPH (Diesel Range)	116.	ug/L	100.	1.0	1/20/03	5:42	D.Haywood	8015B/3510	8552
MISCELLANEOUS CHEMISTRY									
Chloride	113.	mg/L	20.0	20.0	1/18/03	17:10	S. Duncan	325.2	7444

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	1/18/03		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	84.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	94.	69. - 132.

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A6305
Sample ID: MW-13
Project:

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: PPL HOBBS NM1-1
Page: 1
Laboratory Receipt Date: 1/16/03

Matrix Spike Recovery

Note: If Blank is referenced as the sample spiked, insufficient volume was received for MS/MSD analysis for that method and the method requirements for MS/MSD analysis could not be met.

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
UST ANALYSIS								
Benzene	mg/l	< 0.0010	0.0481	0.0500	96	74. - 129.	7256	03-A6302
Toluene	mg/l	< 0.0010	0.0475	0.0500	95	74. - 128.	7256	03-A6302
Ethylbenzene	mg/l	< 0.0010	0.0468	0.0500	94	75. - 128.	7256	03-A6302
Xylenes (Total)	mg/l	< 0.0010	0.0944	0.100	94	72. - 126.	7256	03-A6302
TPH (Gasoline Range)	mg/l	< 0.100	0.991	1.00	99	59. - 128.	7256	03-A6302
TPH (Diesel Range)	mg/l	< 0.100	0.980	1.00	98	23. - 120.	8552	BLANK
BTEX/GRO Surr., a,a,a-TFT	% Recovery				97	69 - 132	7256	

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	0.0481	0.0490	1.85	15.	7256
Toluene	mg/l	0.0475	0.0485	2.08	15.	7256
Ethylbenzene	mg/l	0.0468	0.0478	2.11	15.	7256
Xylenes (Total)	mg/l	0.0944	0.0966	2.30	19.	7256
TPH (Gasoline Range)	mg/l	0.991	0.908	8.74	22.	7256
TPH (Diesel Range)	mg/l	0.980	1.02	4.00	20.	8552
BTEX/GRO Surr., a,a,a-TFT	% Recovery		97.			7256

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
UST PARAMETERS						

Project QC continued . . .

TestAmerica
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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: PPL HOBBS NM1-1
Page: 2
Laboratory Receipt Date: 1/16/03

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
Benzene	mg/l	0.100	0.0810	81	74 - 124	7256
Toluene	mg/l	0.100	0.0793	79	74 - 121	7256
Ethylbenzene	mg/l	0.100	0.0792	79	75 - 123	7256
Xylenes (Total)	mg/l	0.200	0.160	80	72 - 120	7256
TPH (Gasoline Range)	mg/l	1.00	0.908	91	61 - 139	7256
TPH (Diesel Range)	mg/l	1.00	0.938	94	42 - 115	8552
BTEX/GRO Surr., a,a,a-TFT	% Recovery			92	69 - 132	7256

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
MISC PARAMETERS						
Chloride	mg/l	10.0	9.73	97	90 - 110	7444
Chloride	mg/l	10.0	9.49	95	90 - 110	1028

Duplicates

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch	Sample Dup'd
Chloride	mg/l	104.	140.	29.51 #	15.	7444	03-A6087
Chloride	mg/l	8.94	9.19	2.76	15.	1028	03-A9075

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
Benzene	< 0.0005	mg/l	7256	1/19/03	1:11
Toluene	< 0.0006	mg/l	7256	1/19/03	1:11

Project QC continued . . .

TestAmerica
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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: PPL HOBBS NM1-1
Page: 3
Laboratory Receipt Date: 1/16/03

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Analysis Date	Analysis Time
Ethylbenzene	< 0.0006	mg/l	7256	1/19/03	1:11
Xylenes (Total)	< 0.0010	mg/l	7256	1/19/03	1:11
TPH (Gasoline Range)	< 0.0740	mg/l	7256	1/19/03	1:11
TPH (Diesel Range)	< 0.100	mg/l	8552	1/20/03	3:03

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
TPH Hi Surr., o-Terphenyl	87.	% Recovery	8552	1/20/03	3:03
BTEX/GRO Surr., a,a,a-TFT	104.	% Recovery	7256	1/19/03	1:11

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
MISC PARAMETERS					
Chloride	< 1.00	mg/l	7444	1/18/03	16:20
Chloride	< 1.00	mg/l	1028	1/23/03	10:37

End of Report for Project 316748

316748

TestAmerica INCORPORATED

Nashville Division
2960 Foster Creighton
Nashville, TN 37204

Phone: 615-726-0177
Fax: 615-726-3404

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring _____

Client Name: Higgins & Associates Client #: 10584
Address: 8200 S. Akron Suite 120 Project Name: PPL Hobbs MW-1
City/State/Zip Code: Englewood, CO 80112 Project #:
Project Manager: Chris Higgins Site/Location ID: State:
Telephone Number: 303 708-9946 Fax: 705-9848 Report To: Chris Higgins
Sampler Name: (Print Name) Nick Fischer Invoice To: Patty Jensen
Sampler Signature: Quote #: PO#:

TAT / Standard / Rush (surcharges may apply) / Date Needed: std / Fax Results: Y N	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix: DW - Drinking Water, GW - Groundwater, WW - Wastewater, S - Soil/Solid, SL - Sludge, Specify Other	Preservation & # of Containers: HNO3	HCl	NaOH	H2SO4	Methanol	None	Other (Specify)	Analyze For: BTEX	TVPH	TEPH	Chlorides	QC Deliverables: ___ None, ___ Level 2 (Batch QC), ___ Level 3, ___ Level 4, Other: _____	REMARKS
SAMPLE ID																		
MW-5	1/15	8:00	6		GW		1						X	X	X	X		6302
MW-6	1/15	12:00	6		GW		1						X	X	X	X		103
MW-7	1/15	1:05	6		GW		1						X	X	X	X		104
MW-13	1/15	2:10	6		GW		-						X	X	X	X		6305

Special Instructions:

2.0

Relinquished By: Nick Fischer	Date: 1/15	Time: 3:15	Received By: [illegible]	Date: 1/16/03	Time: 9:00	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	

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5/ 1/03

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project identified below:

Project Name: HOBBS NM1-1
Project Number: .
Laboratory Project Number: 329426.

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report. If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980.

Sample Identification	Lab Number	Collection Date
IW-2	03-A64535	4/23/03
IW-3	03-A64536	4/23/03
IW-4	03-A64537	4/23/03
IW-5	03-A64538	4/23/03
IW-6	03-A64539	4/23/03
IW-7	03-A64540	4/23/03
MW#13	03-A64541	4/23/03
SVE-1	03-A64542	4/23/03

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Sample Identification	Lab Number	Collection Date

These results relate only to the items tested.
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Report Approved By: _____ Report Date: 5/ 1/03

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director
Roxanne L. Connor, Technical Services
Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A64535
Sample ID: IW-2
Sample Type: Water
Site ID:

Date Collected: 4/23/03
Time Collected:
Date Received: 4/25/03
Time Received: 8:05
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.00	1.0	4/27/03	18:36	F.Gundi	8021B	445
Ethylbenzene	ND	ug/L	1.0	1.0	4/27/03	18:36	F.Gundi	8021B	445
Toluene	ND	ug/L	1.0	1.0	4/27/03	18:36	F.Gundi	8021B	445
Xylenes (Total)	ND	ug/L	1.0	1.0	4/27/03	18:36	F.Gundi	8021B	445
TPH (Gasoline Range)	ND	ug/L	100.	1.0	4/27/03	18:36	F.Gundi	8015B	445
METALS									
Iron	89.0	ug/L	50.0	1.0	4/28/03	9:45	G.McCord	6010B	53
MISCELLANEOUS CHEMISTRY									
Chloride	152.	mg/L	10.0	10.0	4/26/03	22:12	W. Choate	9251	9804

Surrogate	% Recovery	Target Range
BTEX/GRO Surr., a,a,a-TFT	89.	69. - 132.

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A64535
Sample ID: IW-2
Project:

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
DRO liters not preserved.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A64536
Sample ID: IW-3
Sample Type: Water
Site ID:

Date Collected: 4/23/03
Time Collected:
Date Received: 4/25/03
Time Received: 8:05
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.00	1.0	4/27/03	19:07	F.Gundi	8021B	445
Ethylbenzene	ND	ug/L	1.0	1.0	4/27/03	19:07	F.Gundi	8021B	445
Toluene	ND	ug/L	1.0	1.0	4/27/03	19:07	F.Gundi	8021B	445
Xylenes (Total)	ND	ug/L	1.0	1.0	4/27/03	19:07	F.Gundi	8021B	445
TPH (Gasoline Range)	ND	ug/L	100.	1.0	4/27/03	19:07	F.Gundi	8015B	445
TPH (Diesel Range)	ND	ug/L	100.	1.0	5/ 1/03	5:40	J.Saiyasak	8015B/3510	3440
METALS									
Iron	1470	ug/L	50.0	1.0	4/28/03	9:45	G.McCord	6010B	53
MISCELLANEOUS CHEMISTRY									
Chloride	115.	mg/L	10.0	10.0	4/26/03	22:13	W. Choate	9251	9804

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	4/30/02		M. Cauthen	3510

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A64536
Sample ID: IW-3
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	114.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	89.	69. - 132.

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
DRO liters not preserved.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A64537
Sample ID: IW-4
Sample Type: Water
Site ID:

Date Collected: 4/23/03
Time Collected:
Date Received: 4/25/03
Time Received: 8:05
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.00	1.0	4/27/03	19:38	F.Gundi	8021B	445
Ethylbenzene	ND	ug/L	1.0	1.0	4/27/03	19:38	F.Gundi	8021B	445
Toluene	ND	ug/L	1.0	1.0	4/27/03	19:38	F.Gundi	8021B	445
Xylenes (Total)	ND	ug/L	1.0	1.0	4/27/03	19:38	F.Gundi	8021B	445
TPH (Gasoline Range)	ND	ug/L	100.	1.0	4/27/03	19:38	F.Gundi	8015B	445
TPH (Diesel Range)	ND	ug/L	100.	1.0	5/ 1/03	5:59	J.Saiyasak	8015B/3510	3440
METALS									
Iron	221.	ug/L	50.0	1.0	4/28/03	9:45	G.McCord	6010B	53
MISCELLANEOUS CHEMISTRY									
Chloride	153.	mg/L	10.0	10.0	4/26/03	22:13	W. Choate	9251	9804

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	4/30/02		M. Cauthen	3510

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A64537
Sample ID: IW-4
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	106.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	90.	69. - 132.

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
DRO liters not preserved.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A64538
Sample ID: IW-5
Sample Type: Water
Site ID:

Date Collected: 4/23/03
Time Collected:
Date Received: 4/25/03
Time Received: 8:05
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.00	1.0	4/27/03	21:12	F.Gundi	8021B	445
Ethylbenzene	ND	ug/L	1.0	1.0	4/27/03	21:12	F.Gundi	8021B	445
Toluene	ND	ug/L	1.0	1.0	4/27/03	21:12	F.Gundi	8021B	445
Xylenes (Total)	ND	ug/L	1.0	1.0	4/27/03	21:12	F.Gundi	8021B	445
TPH (Gasoline Range)	ND	ug/L	100.	1.0	4/27/03	21:12	F.Gundi	8015B	445
TPH (Diesel Range)	ND	ug/L	100.	1.0	5/ 1/03	6:38	J.Saiyasak	8015B/3510	3440
METALS									
Iron	2130	ug/L	50.0	1.0	4/28/03	9:45	G.McCord	6010B	53
MISCELLANEOUS CHEMISTRY									
Chloride	156.	mg/L	10.0	10.0	4/26/03	22:14	W. Choate	9251	9804

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	4/30/02		M. Cauthen	3510

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A64538
Sample ID: IW-5
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	105.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	92.	69. - 132.

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
DRO liters not preserved.

End of Sample Report.

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CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A64539
Sample ID: IW-6
Sample Type: Water
Site ID:

Date Collected: 4/23/03
Time Collected:
Date Received: 4/25/03
Time Received: 8:05
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.00	1.0	4/27/03	21:43	F.Gundi	8021B	445
Ethylbenzene	ND	ug/L	1.0	1.0	4/27/03	21:43	F.Gundi	8021B	445
Toluene	ND	ug/L	1.0	1.0	4/27/03	21:43	F.Gundi	8021B	445
Xylenes (Total)	ND	ug/L	1.0	1.0	4/27/03	21:43	F.Gundi	8021B	445
TPH (Gasoline Range)	ND	ug/L	100.	1.0	4/27/03	21:43	F.Gundi	8015B	445
TPH (Diesel Range)	ND	ug/L	100.	1.0	5/ 1/03	6:58	J.Saiyasak	8015B/3510	3440
METALS									
Iron	270.	ug/L	50.0	1.0	4/28/03	9:45	G.McCord	6010B	53
MISCELLANEOUS CHEMISTRY									
Chloride	132.	mg/L	10.0	10.0	4/26/03	22:14	W. Choate	9251	9804

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	4/30/02		M. Cauthen	3510

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A64539
Sample ID: IW-6
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	101.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	91.	69. - 132.

LABORATORY COMMENTS:

ND = Not detected at the report limit.
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J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
DRO liters not preserved.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A64540
Sample ID: IW-7
Sample Type: Water
Site ID:

Date Collected: 4/23/03
Time Collected:
Date Received: 4/25/03
Time Received: 8:05
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.00	1.0	4/27/03	22:14	F.Gundi	8021B	445
Ethylbenzene	ND	ug/L	1.0	1.0	4/27/03	22:14	F.Gundi	8021B	445
Toluene	ND	ug/L	1.0	1.0	4/27/03	22:14	F.Gundi	8021B	445
Xylenes (Total)	ND	ug/L	1.0	1.0	4/27/03	22:14	F.Gundi	8021B	445
TPH (Gasoline Range)	ND	ug/L	100.	1.0	4/27/03	22:14	F.Gundi	8015B	445
TPH (Diesel Range)	ND	ug/L	100.	1.0	5/ 1/03	7:18	J.Saiyasak	8015B/3510	3440
METALS									
Iron	524.	ug/L	50.0	1.0	4/28/03	9:45	G.McCord	6010B	53
MISCELLANEOUS CHEMISTRY									
Chloride	152.	mg/L	10.0	10.0	4/26/03	22:16	W. Choate	9251	9804

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	4/30/02		M. Cauthen	3510

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A64540
Sample ID: IW-7
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	110.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	89.	69. - 132.

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
DRO liters not preserved.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A64541
Sample ID: MW#13
Sample Type: Water
Site ID:

Date Collected: 4/23/03
Time Collected:
Date Received: 4/25/03
Time Received: 8:05
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.00	1.0	4/27/03	22:45	F.Gundi	8021B	445
Ethylbenzene	5.2	ug/L	1.0	1.0	4/27/03	22:45	F.Gundi	8021B	445
Toluene	ND	ug/L	1.0	1.0	4/27/03	22:45	F.Gundi	8021B	445
Xylenes (Total)	ND	ug/L	1.0	1.0	4/27/03	22:45	F.Gundi	8021B	445
TPH (Gasoline Range)	124.	ug/L	100.	1.0	4/27/03	22:45	F.Gundi	8015B	445
TPH (Diesel Range)	ND	ug/L	100.	1.0	5/ 1/03	7:37	J.Saiyasak	8015B/3510	3440
METALS									
Iron	351.	ug/L	50.0	1.0	4/28/03	9:45	G.McCord	6010B	53
MISCELLANEOUS CHEMISTRY									
Chloride	406.	mg/L	20.0	20.0	4/26/03	23:02	W. Choate	9251	9804

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	4/30/02		M. Cauthen	3510

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A64541
Sample ID: MW#13
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	106.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	89.	69. - 132.

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
DRO liters not preserved.

End of Sample Report.

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ANALYTICAL REPORT

HIGGINS & ASSOCIATES, LLC/UST 10588
CHRIS HIGGINS
8200 S. AKRON, STE 120
ENGLEWOOD, CO 80112

Project:
Project Name: HOBBS NM1-1
Sampler: NICK FISCHER

Lab Number: 03-A64542
Sample ID: SVE-1
Sample Type: Water
Site ID:

Date Collected: 4/23/03
Time Collected:
Date Received: 4/25/03
Time Received: 8:05
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	1.00	1.0	4/27/03	23:16	F.Gundi	8021B	445
Ethylbenzene	ND	ug/L	1.0	1.0	4/27/03	23:16	F.Gundi	8021B	445
Toluene	ND	ug/L	1.0	1.0	4/27/03	23:16	F.Gundi	8021B	445
Xylenes (Total)	ND	ug/L	1.0	1.0	4/27/03	23:16	F.Gundi	8021B	445
TPH (Gasoline Range)	ND	ug/L	100.	1.0	4/27/03	23:16	F.Gundi	8015B	445
TPH (Diesel Range)	ND	ug/L	100.	1.0	5/ 1/03	7:57	J.Saiyasak	8015B/3510	3440
METALS									
Iron	2270	ug/L	50.0	1.0	4/28/03	9:45	G.McCord	6010B	53
MISCELLANEOUS CHEMISTRY									
Chloride	123.	mg/L	10.0	10.0	4/26/03	22:17	W. Choate	9251	9804

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	4/30/02		M. Cauthen	3510

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 03-A64542
Sample ID: SVE-1
Project:

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	119.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	88.	69. - 132.

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
DRO liters not preserved.

End of Sample Report.

TestAmerica
ANALYTICAL TESTING CORPORATION

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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: HOBBS NM1-1
Page: 1
Laboratory Receipt Date: 4/26/03

Matrix Spike Recovery

Note: If Blank is referenced as the sample spiked, insufficient volume was received for the defined analytical batch for MS/MSD analysis on an true sample matrix. Laboratory reagent water was used for QC purposes.

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
UST ANALYSIS								
Benzene	mg/l	1.31	2.57	1.00	126	74. - 129.	445	03-A63382
Ethylbenzene	mg/l	0.0700	1.17	1.00	110	75. - 128.	445	03-A63382
Xylenes (Total)	mg/l	1.07	3.22	2.00	108	72. - 126.	445	03-A63382
TPH (Diesel Range)	mg/l	< 0.100	0.624	1.00	62	23. - 120.	3440	blank
BTEX/GRO Surr., a,a,a-TFT	% Recovery				99	69 - 132	445	

Matrix Spike Recovery

Note: If Blank is referenced as the sample spiked, insufficient volume was received for the defined analytical batch for MS/MSD analysis on an true sample matrix. Laboratory reagent water was used for QC purposes.

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
METALS								
Iron	mg/l	0.358	1.32	1.00	96	80 - 120	53	Duplicate

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	2.57	2.64	2.69	15.	445
Ethylbenzene	mg/l	1.17	1.19	1.69	15.	445
Xylenes (Total)	mg/l	3.22	3.29	2.15	19.	445
TPH (Gasoline Range)	mg/l	18.6	19.5	4.72	22.	445
TPH (Diesel Range)	mg/l	0.624	0.515	19.14	20.	3440
BTEX/GRO Surr., a,a,a-TFT	% Recovery		99.			445

Project QC continued . . .

TestAmerica
ANALYTICAL TESTING CORPORATION

2960 Foster Creighton Drive • Nashville, Tennessee 37204
800-765-0980 • 615-726-3404 Fax

PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: HOBBS NM1-1
Page: 2
Laboratory Receipt Date: 4/26/03

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
METALS						
Iron	mg/l	1.32	1.32	0.00	20	53

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	0.100	0.101	101	74 - 124	445
Toluene	mg/l	0.100	0.0949	95	74 - 121	445
Ethylbenzene	mg/l	0.100	0.0943	94	75 - 123	445
Xylenes (Total)	mg/l	0.200	0.186	93	72 - 120	445
TPH (Gasoline Range)	mg/l	1.00	0.928	93	61 - 139	445
TPH (Diesel Range)	mg/l	1.00	0.560	56	42 - 115	3440
BTEX/GRO Surr., a,a,a-TFT	% Recovery			97	69 - 132	445

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
METALS						
Iron	mg/l	1.00	1.05	105	80 - 120	53

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: HOBBS NM1-1
Page: 3
Laboratory Receipt Date: 4/26/03

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch

Continuing Calibration Verification

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch

METALS

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch

MISC PARAMETERS

Chloride	mg/l	10.0	9.50	95	90 - 110	9804

Duplicates

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch	Sample Dup'd
Chloride	mg/l	123.	122.	0.82	15.	9804	03-A64542

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
Benzene	< 0.00060	mg/l	445	4/27/03	15:29
Toluene	< 0.0006	mg/l	445	4/27/03	15:29
Ethylbenzene	< 0.0006	mg/l	445	4/27/03	15:29
Xylenes (Total)	< 0.0010	mg/l	445	4/27/03	15:29

Project QC continued . . .

TestAmerica
ANALYTICAL TESTING CORPORATION

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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: HOBBS NM1-1
Page: 4
Laboratory Receipt Date: 4/26/03

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Analysis Date	Analysis Time
TPH (Gasoline Range)	< 0.0740	mg/l	445	4/27/03	15:29
TPH (Diesel Range)	< 0.100	mg/l	3440	5/ 1/03	4:21

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
TPH Hi Surr., o-Terphenyl	107.	% Recovery	3440	5/ 1/03	4:21
BTEX/GRO Surr., a,a,a-TFT	93.	% Recovery	445	4/27/03	15:29

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
METALS					
Iron	< 0.0170	mg/l	53	4/28/03	9:45

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
MISC PARAMETERS					
Chloride	< 1.00	mg/l	9804	4/26/03	22:11

Project QC continued . . .

TestAmerica
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PROJECT QUALITY CONTROL DATA
Project Number:
Project Name: HOBBS NM1-1
Page: 5
Laboratory Receipt Date: 4/26/03

End of Report for Project 329426

FedEx# 1499-6491-6

329426

TestAmerica INCORPORATED

Nashville Division
2960 Foster Creighton
Nashville, TN 37204

Phone: 615-726-0177
Fax: 615-726-3404

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring: _____

Client Name: Higgins & Associates Client #: 9898
Address: 8200 S Akron Suite 117
City/State/Zip Code: Centennial, CO 80112
Project Manager: Chris Higgins
Telephone Number: 303-708-9848 Fax: 9848
Sampler Name: (Print Name) Nick Fischer
Sampler Signature: Nick Fischer

Project Name: Hobbs NM1-1
Project #:
Site/Location ID: Hobbs, NM State: NM
Report To: Chris Higgins
Invoice To: Patty Jensen
Quote #: PO#:

TAT: X Standard; ___ Rush (surcharges may apply)
Date Needed: STD
Fax Results: (Y) N

SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix: SL - Sludge, DW - Drinking Water, GW - Groundwater, S - Soil/Solid, WW - Wastewater, Specify Other	Preservation & # of Containers: HNO3	HCl	NaOH	H2SO4	Methanol	None	Other (Specify)	Analyze For: BTEX	TVPH	TEPH	Chloride	Iron	QC Deliverables
IW-2	4/23		G		GW								X	X	X	X	X	64535
IW-3	4/23		G										X	X	X	X	X	36
IW-4	4/23		G										X	X	X	X	X	37
IW-5	4/23		G										X	X	X	X	X	38
IW-6	4/23		G										X	X	X	X	X	39
IW-7	4/23		G										X	X	X	X	X	40
MW#13	4/23		G										X	X	X	X	X	41
SVE-1	4/23		G		↓								X	X	X	X	X	64542

QC Deliverables: ___ None; ___ Level 2 (Batch QC); ___ Level 3; ___ Level 4; Other: _____

REMARKS

Special Instructions:

LABORATORY COMMENTS:
Init Lab Temp:
Rec Lab Temp:
Custody Seals: Y N N/A
Bottles Supplied by Test America: Y N
Method of Shipment:

Relinquished By: Nick Fischer	Date: 4/24	Time: 4:00	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 4/25/03	Time: 08:05

APR-24-2003 12:40 FROM:
TO:8-15053933065
P.001/001

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON STE 120
ENGLEWOOD, CO 80112
FAX TO: (303) 708-9848

Receiving Date: 11/08/02
Reporting Date: 11/15/02
Project Owner: PHILLIPS PIPELINE
Project Name: PPL NM1-1
Project Location: HOBBS, NM

Sampling Date: 11/08/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER SAMPLE ID	Cl^- (mg/L)	TDS (mg/L)	TSS (mg/L)
ANALYSIS DATE	11/13/02	11/13/02	11/15/02
H7188-1 NM1-1 DISCHARGE	120	540	8
Quality Control	990	NR	NR
True Value QC	1000	NR	NR
% Recovery	99.0	NR	NR
Relative Percent Difference	1.0	8.8	NR

METHODS: EPA 600/4-79-020	4500-Cl^-*	160.1	160.2

*Standard Methods

Amy Hill
Chemist

11-15-02
Date

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ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 120
ENGLEWOOD CO 80112
FAX TO: (303) 708-9848

Receiving Date: 11/08/02
Reporting Date: 11/14/02
Project Owner: PHILLIPS PIPELINE
Project Name: PPL NMI-1
Project Location: HOBBS, NM

Sampling Date: 11/08/02
Sample Type:GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO. SAMPLE ID	GRO (C_6-C_{10}) (mg/L)	DRO (>C_{10}-C_{28}) (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:	11/13/02	11/13/02	11/13/02	11/13/02	11/13/02	11/13/02
H7188-1 NMI-1 DISCHARGE	<2.0	<2.0	<0.002	<0.002	<0.002	<0.006
Quality Control	13.4	13.5	0.108	0.102	0.102	0.300
True Value QC	15.0	15.0	0.100	0.100	0.100	0.300
% Recovery	89.5	89.8	108	102	102	100
Relative Percent Difference	9.1	5.2	1.4	7.4	8.2	9.5

METHODS: TPH GRO & DRO - EPA SW-846 8015 M; BTEX - SW-846 8260.

Burgess J. A. Cooke. Ph. D.

11/14/02
Date

H7188B.XLS

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101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

		BILL TO	
Company Name:	Higgins & Associates	P.O. #:	
Project Manager:	Chris Higgins	Company:	Higgins & Associates
Address:	8200 S. Akron Suite 120	Attn:	Patty Jensen
City:	Englewood State: CO Zip: 80112	Address:	same
Phone #:	303-708-9846 Fax #: 303-708-9848	City:	
Project #:	Project Owner: Phillips Pipeline	State:	Zip:
Project Name:	PPL NM1-1	Phone #:	
Project Location:	Hobbs, New Mexico	Fax #:	
Sampler Name:	Nick Fischer		

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST							
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX, TVPH	TEPH	Chlorides	TSS	TDS			
H7188-1	NM1-1 Discharg	G	6	X									Nov 8	12:30	X	X	X	X	X			
	Hold until Monday Phone call																					

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Nick Fischer	Date: Nov 8 Time: 12:40	Received By:	Phone Result: ☐ Yes ☐ No
Relinquished By:	Date: Time:	Received By: (Lab Staff) Burgess Cooke	Fax Result: ☐ Yes ☐ No
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition: Temp, °C: Cool; Intact? ☒ Yes ☐ No	Checked By: (Initials)

REMARKS: Hold 'till Mon, 11/11/2

† Cardinal cannot accept verbal changes. Please fax written changes to (915) 673-7020.

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ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: NEIL FISCHER
8200 AKRON, SUITE 120
ENGLEWOOD, CO 80117
FAX TO: (303) 708-9848

Receiving Date: 11/15/02
Reporting Date: 11/18/02
Project Number: PHILLIPS
Project Name: HOBBS NMI-1
Project Location: HOBBS, NM

Sampling Date: 11/15/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO.	SAMPLE ID	TVPH (C_4-C_{13}) (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		11/15/02	11/15/02	11/15/02	11/15/02	11/15/02
H7214-1	NM-1 DISCHARGE	<0.10	<0.002	<0.002	<0.002	<0.006
H7214-2	NMI-1 EW-1	21.4	7.46	5.13	1.59	1.59
H7214-3	NMI-1 EW-2	8.88	2.16	1.39	0.307	0.489
H7214-4	NMI-1 AFTER TOWER	13.9	0.016	0.155	0.380	0.540
Quality Control		NR	0.108	0.099	0.100	0.288
True Value QC		NR	0.100	0.100	0.100	0.300
% Recovery		NR	108	99.3	100	96.1
Relative Percent Difference		NR	8.6	5.7	5.2	2.7

METHODS: BTEX -EPA SW-846 8260; TVPH - EPA SW-846 8015M

Burgess J. A. Cooke, Ph. D.

11/18/02
Date

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ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: NEIL FISCHER
8200 S. AKRON, SUITE 120
ENGLEWOOD, CO 80112
FAX TO: (303) 708-9848

Receiving Date: 11/15/02
Reporting Date: 11/20/02
Project Owner: PHILLIPS
Project Name: HOBBS NM1-1
Project Location: HOBBS, NM

Sampling Date: 11/15/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (mS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:		11/20/02	11/19/02	11/19/02	11/19/02	11/19/02	11/19/02
H7214-1	NM1-1 DISCHARGE	199	56	20	3.27	537	281
Quality Control		NR	43	48	4.62	1322	NR
True Value QC		NR	50	50	5.00	1413	NR
% Recovery		NR	86.0	96.0	92.4	93.6	NR
Relative Percent Difference		NR	0	0	9.0	0.7	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		11/18/02	11/19/02	11/19/02	11/19/02	11/19/02	11/20/02
H7214-1	NM1-1 DISCHARGE	160	74	150	37	8.28	594
Quality Control		970	49.87	NR	991	7.03	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		97.0	99.7	NR	99.1	101	NR
Relative Percent Difference		2.0	1.3	NR	0	0.4	
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Amy Hill
Chemist

11-20-02
Date

H7214

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: NEIL FISCHER
8200 S. AKRON, SUITE 120
ENGLEWOOD, CO 80112
FAX TO: (303) 708-9848

Receiving Date: 11/15/02
Reporting Date: 11/20/02
Project Owner: PHILLIPS
Project Name: HOBBS NM1-1
Project Location: HOBBS, NM

Sampling Date: 11/15/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER SAMPLE ID	NO_3/NO_2-N (mg/L)	NH_3 (mg/L)	PO_4 (mg/L)
ANALYSIS DATE	11/15/02	11/19/02	11/19/02
H7214-1 NM1-1 DISCHARGE	0.64	<0.1	2.47
Quality Control	2.83	2.36	0.51
True Value QC	3.00	2.50	0.50
% Recovery	94.2	94.5	101
Relative Percent Difference	1.0	8.0	0
METHODS: EPA 600/4-79-020	353.3	350.3	4500-P E*

*Standard Methods

Amy Hill
Chemist

11-20-02
Date

H7214a

CARDINAL LABORATORIES, INC.

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101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Higgins & Associates	BILL TO	
Project Manager:	Project Manager	P.O. #:	
Address:	8200 S Akron, Suite 120	Company:	Higgins & Associates
City:	Englewood State: CO Zip: 80112	Attn:	Patty Jensen
Phone #:	(303) 708-9046 Fax #: (303) 708-9048	Address:	
Project #:	Project Owner: Phillips	City:	
Project Name:	Hobbs NM1-1	State: Zip:	
Project Location:	Hobbs, New Mexico	Phone #:	
Sampler Name:	Neil Fischer	Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	BTEX / TPH	Nitrates / Nitrites	Sulfate / Sulfite	Iron	Chloride	Alkalinity	NH3	Mg, Na, Ca, K, PO3
H7214-1	NM1-1 Discharge		4	X									11/15	2:30	X	X	X	X	X	X	X	†
-2	EW-1		2	X										2:00	X							
-3	EW-2		2	X										2:05	X							
-4	After Tower		2	X										2:10	X							

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Neil Fischer	Date: 11/15 Time: 2:50	Received By:	Phone Result: ☐ Yes ☐ No
Relinquished By:	Date: Time:	Received By: (Lab Staff) Benjamin Cole	Fax Result: ☐ Yes ☐ No
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Temp, °C: Cool; Intact? ☑ Yes ☐ No	Checked By: (Initials)	REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to (915) 673-7020.

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ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON STE 120
ENGLEWOOD, CO 80112
FAX TO: (303) 708-9848

Receiving Date: 11/22/02
Reporting Date: 11/27/02
Project Owner: PHILLIPS PIPELINE
Project Name: NM1-1
Project Location: HOBBS, NM

Analysis Date: 11/27/02
Sampling Date: 11/22/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Fe (ppm)
H7247-1	NM1-1 DISCHARGE	<0.01
Quality Control		1.010
True Value QC		1.000
% Recovery		101
Relative Percent Difference		1.0

METHOD: EPA 600/4-79-020, 236.1

Amy Hill
Chemist

11-27-02
Date

H7247a

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON STE 120
ENGLEWOOD, CO 80112
FAX TO: (303) 708-9848

Receiving Date: 11/22/02
Reporting Date: 11/26/02
Project Owner: PHILLIPS PIPELINE
Project Name: NM1-1
Project Location: HOBBS, NM

Sampling Date: 11/22/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER SAMPLE ID	Cl^- (mg/L)	TDS (mg/L)	TSS (mg/L)
ANALYSIS DATE	11/25/02	11/26/02	11/26/02
H7247-1 NM1-1 DISCHARGE	172	629	20
Quality Control	950	NR	NR
True Value QC	1000	NR	NR
% Recovery	95.0	NR	NR
Relative Percent Difference	2.0	8.8	NR

METHODS: EPA 600/4-79-020	4500-Cl^-*	160.1	160.2

*Standard Methods

Amy Hill
Chemist

11-26-02
Date

H7247

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PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS. NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: NEIL FISCHER
8200 AKRON, SUITE 120
ENGLEWOOD, CO 80112
FAX TO: (303) 708-9848

Receiving Date: 11/22/02
Reporting Date: 11/27/02
Project Number: PHILLIPS PL
Project Name: NMI-1
Project Location: HOBBS, NM

Sampling Date: 11/22/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO.	SAMPLE ID	TVPH (C_4-C_{13}) (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		11/22/02	11/22/02	11/22/02	11/22/02	11/22/02
H7247-1	NM-1 DISCHARGE	<0.100	<0.002	<0.002	<0.002	<0.006
H7247-2	NMI-1 EW-1	15.3	9.34	6.15	2.27	2.21
H7247-3	NMI-1 EW-2	11.3	2.11	2.34	0.881	1.28
H7247-4	NMI-1 AFTER TOWER	0.601	0.010	0.007	<0.002	<0.006
Quality Control		NR	0.104	0.099	0.100	0.291
True Value QC		NR	0.100	0.100	0.100	0.300
% Recovery		NR	104	98.9	100	97.1
Relative Percent Difference		NR	4.1	7.1	7.8	7.6

METHODS: BTEX -EPA SW-846 8260; TVPH - EPA SW-846 8015M

Burgess J. A. Cooke, Ph. D.

11/27/02
Date

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Higgins & Associates	BILL TO	
Project Manager:	Chris Higgins	P.O. #:	
Address:	8200 S Akron, Suite 120	Company:	Higgins
City:	Centennial State: CO Zip: 80112	Attn:	Patty Jensen
Phone #:	303-708-9846 Fax #: 303-708-9848	Address:	
Project #:	Project Owner: Phillips PC	City:	same
Project Name:	NM1-1	State: Zip:	
Project Location:	Hobbs, New Mexico	Phone #:	/
Sampler Name:	Neil Fischer	Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX / TU PH	Iron	Chlorides	TSS	TDS
H17247-1	NM1-1 Discharge		4	X									11/22	4:35	X	X	X	X	X
-2	EW-1		2										11/22	4:30	X				
-3	EW-2		2										11/22	4:32	X				
-4	After Tower		2										11/22	4:37	X				

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Neil Fischer	Date: 11/22 Time: 4:47	Received By:	
Relinquished By:	Date: Time:	Received By: (Lab Staff) Burgess A. Cooley	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (Initials)	

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
Fax results to
Nick Fischer
Higgins & Associates
(505) 995-0031

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

Evergreen Analytical Laboratory

December 09, 2002

Chris Higgins
Higgins & Associates
8200 S Akron Street Suite 120
Englewood, CO 80112

Lab Work Order: 02-7493
Client Project: Hobbs PPL NMI-1

Dear Chris Higgins:

Enclosed are the analytical results and invoice for the samples shown in the Laboratory Work Order Summary.

The enclosed data for testing performed at Evergreen Analytical Laboratory (EAL) have been reviewed for quality assurance. A case narrative is included to describe any anomalies associated with the samples or data.

EAL will dispose of all samples one month from the date of this letter. If you want samples returned, please advise us by mail or fax as soon as possible.

A copy of this project report and supporting data will be retained for a period of five years unless we are otherwise advised by you. A document retrieval charge will apply.

Thank you for using the services of Evergreen Analytical. If you have any questions concerning the analytical data, please contact me. Please direct other questions to Client Services.

Sincerely,

Carl Smits

Carl Smits
Technical Director of Chemical Analysis

This report contains a total of 8 pages including the cover letter.

02

Evergreen Analytical, Inc.

02-7493

WORK ORDER Summary

12/3/2002 5:22:15 PM

Report To: Chris Higgins
Higgins & Associates
8200 S Akron Street Suite 120
Englewood, CO 80112-

Phone: (303) 708-9846
Fax: (303) 708-9848
E-mail:

Client Project ID: Hobbs PPL NMI-1

QC Level: LEVEL I

Comments: Fax copy to Nick Fischer @ 505-985-0031

Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Storage	Test Code	Test Name	Hold	MS	Date Due	Hold Time
02-7493-01A	NMI-1 Discharge	Water	11/29/2002	12/3/2002	3	8021_W *	8021: BTEX	☐	☐	12/6/2002	12/6/2002

Definitions: * - Test Code has a Select List

MD

CHAIN OF CUSTODY RECORD / ANALYTICAL SERVICES AGREEMENT **

Evergreen Analytical Laboratory Inc.

4036 Youngfield St.
Wheat Ridge, Colorado 80033
(303) 425-6021
FAX (303) 425-6854
(800) 845-7400
e-mail info@evergreenanalytical.com

Report Results by: STD (Date)*
Standard 2 working weeks ☐
UST Analyses per Fee Schedule ☐
* Rush: ☐ less than 24 hrs, 150% ☐ 1 - 2 work days, 100%
☐ 3 - 5 work days, 50% ☐ 6 - 9 work days, 25%
*Rush analysis subject to surcharge noted

CLIENT INFORMATION

CLIENT Higginst Associates
ADDRESS 8200 S Alton Way
CITY Englewood STATE CO ZIP 80112
PHONE# 303-708-9846 FAX # 303-708-9848
REPORT TO (Mr/Ms) Chris Higgins
INVOICE TO Patty Jensen
PROJECT I.D. Hobbs PPL NM1-1
P.O. # _____ EAL. QUOTE # _____
Sampler: Nick Fischer (sign)

NOTE: Identify Known Hazards Below

Please **PRINT** all information:

SAMPLE IDENTIFICATION	DATE SAMPLED	TIME	No. of Containers	MATRIX: 1)Drinking Water or 2)Discharge Water or 3) Ground Water (circle one)	MATRIX: Soil / Solid / Air / Gas	MATRIX: Oil / Sludge / Multi-phase	TCLP VOA/BNA/Pest/Herb/Metals (circle)	VOA 8260/624 (circle)	BNA 8270/625 (circle)	Pesticides 8081/8141/608 (circle)	Pest/PCBs 8081/8082/608 (circle)	PCB Screen 8082 mod.	Herbicides 8151	BTEX 8021/602 (circle)/MTBE (circle)	TVPH 8015mod. (Gasoline)	TEPH 8015mod. (Diesel)	Total Metals-DW / NPDES / SW846 (circle & list metals below)	Dissolved Metals - DW / SW846 (circle & list metals below)	Oil & Grease 413.1	TRPH 418.1	For Laboratory use only
NM1-1 Discharge	11/29		2											X							01
Sample Fraction														A							Loc 3
Does this anaylsis involve property transfer? ☐Yes or ☐No																					Container 40V

Instructions: Fax copy to Nick Fischer 505-985-0031

** **Important Note:** By relinquishing samples client agrees to the terms and conditions on the reverse side hereof

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Nick Fischer	12/3 2:18 PM	Mat Appel	12/3/ 2:1				

Evergreen Analytical, Inc. **Date:** *10-Dec-02*

CLIENT: Higgins & Associates
Project: Hobbs PPL NMI-1
Lab Order: 02-7493

CASE NARRATIVE

SAMPLE RECEIVING

Samples were received in good condition within method specified holding times.
Samples were hand delivered to the laboratory by the client.
VOC samples were not marked as being preserved on bottle labels.
The temperature of the sample(s) upon arrival was 4° C.
Samples for volatile organic compounds (VOCs) were received with no headspace present.
The address of sample collection was not provided by the client. NJO

CLIENT SERVICES

There are no anomalies to report. JB

GAS CHROMATOGRAPHY

Method 8021_W: Surrogate recovery for the LCS is 2% above the QC limit. Surrogate recovery for the Method Blank and sample are within QC limits. The sample is non-detect for the target analytes. There are no anomalies to report. CLC/JM

Evergreen Analytical, Inc.

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID: NMI-1 Discharge
Client Project ID: Hobbs PPL NMI-1
Date Collected: 11/29/02
Date Received: 12/3/02

Lab Work Order 02-7493
Lab Sample ID: 02-7493-01A
Sample Matrix: *Water*

Method: SW8021B — AROMATIC VOLATILE ORGANICS

Date Prepared: 12/5/02
Date Analyzed: 12/5/02
Lab File ID: TVB21205\014R0101.D
Method Blank: MB2120502
Dilution Factor: 1

Analytes	CAS Number	Result		LQL	Units
Benzene	71-43-2	U		1.0	µg/L
Toluene	108-88-3	U		2.0	µg/L
Ethylbenzene	100-41-4	U		2.0	µg/L
m,p-Xylene	1330-20-7	U		2.0	µg/L
o-Xylene	95-47-6	U		2.0	µg/L
Surr: 1,2,4-Trichlorobenzene (S)	120-82-1	149	**QC Limits:**	58-153	%REC

CLC

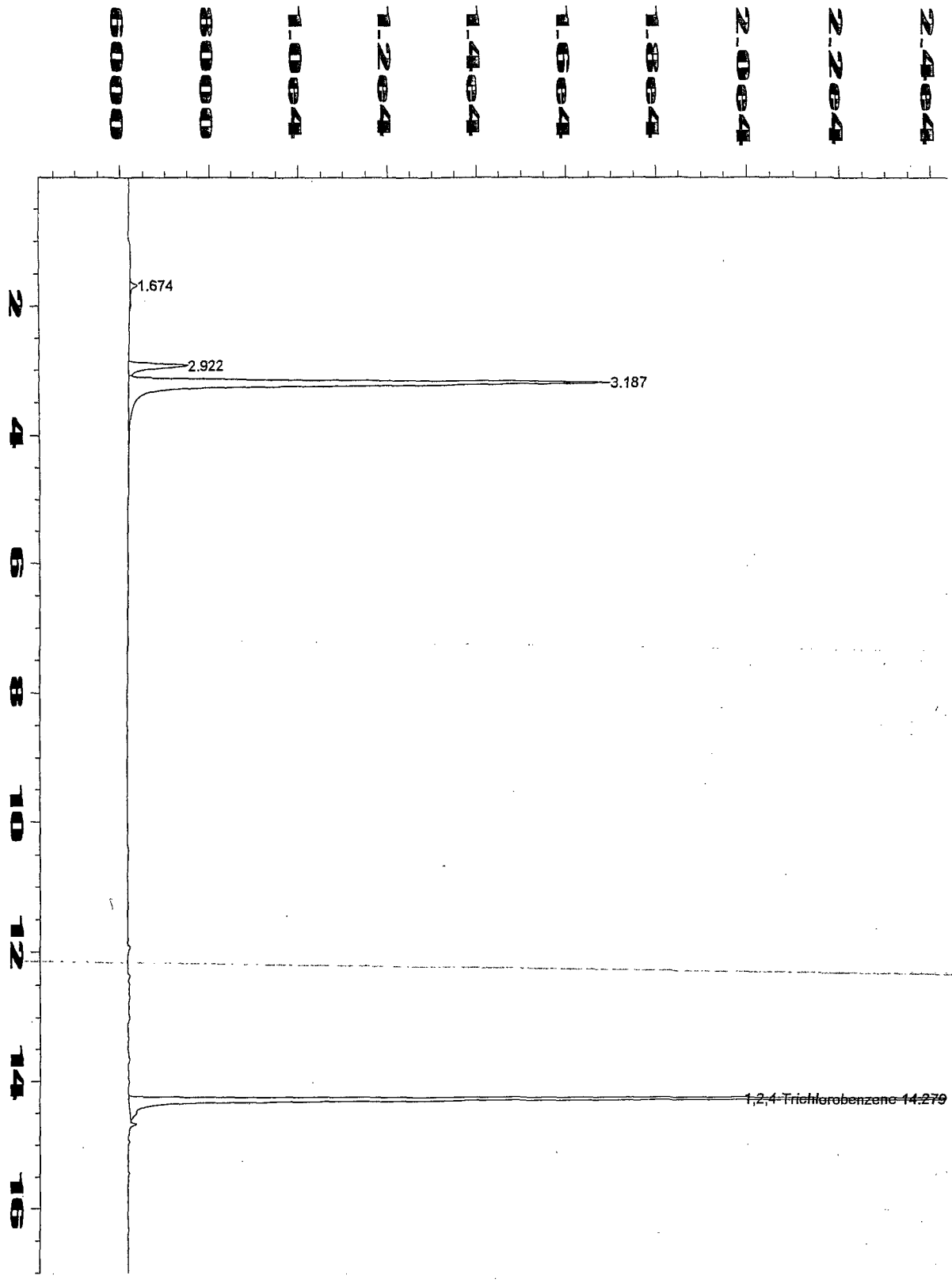
Analyst

Approved

Notes: Total Xylenes consist of three isomers, two of which co-elute. The Xylene RL is for a single peak. Confirmation analysis was not performed.

Qualifiers:
B - Analyte detected in the associated Method Blank
E - Extrapolated value. Value exceeds calibration range
H - Sample exceeded analytical holding time
J - Indicates an estimated value when the compound is detected, but is below the LQL
S - Spike Recovery outside accepted limits
U - Compound analyzed for but not detected
X - See case narrative
* -Value exceeded the Maximum Contamination Level (MCL)

Definitions: LQL - Lower Quantitation Limit
Surr - Surrogate



Data File Name	: C:\HPCHEM\2\DATA\TVB21205\014R0101.D		
Operator	: Chris Crone	Page Number	: 1
Instrument	: TVHBTEX2	Vial Number	: 14
Sample Name	: 02-7493-01A	Injection Number	: 1
Bar Time Bar Code:		Sequence Line	: 1
Acquired on	: 05 Dec 02 07:16 PM	Instrument Method:	TW21107.MTH
Report Created on:	05 Dec 02 07:33 PM	Analysis Method	: BW21204.MTH
Last Recalib on	: 05 DEC 02 10:10 AM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:
Sample Info	: SAMP TVH_W 8021_W DF=1		

07

Evergreen Analytical, Inc.

Date: *06-Dec-02*

CLIENT: Higgins & Associates
Work Order: 02-7493
Project: Hobbs PPL NMI-1

ANALYTICAL QC SUMMARY REPORT

BatchID: R1761

Sample ID: **MB2120502** SampType: **MBLK** TestCode: **8021_W** Run ID: **TVHBTEX2_021205A** Prep Date: **12/5/02** Units: **µg/L**
Batch ID: **R1761** TestNo: **SW8021B** FileID: **TVB21205\001R0101.D** Analysis Date: **12/5/02** SeqNo: **33576**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	U	1.0									
Toluene	U	2.0									
Ethylbenzene	U	2.0									
m,p-Xylene	U	2.0									
o-Xylene	U	2.0									
Surr: 1,2,4-Trichlorobenzene (S)	143.2	0	100	0	143	58	153	0	0		

Sample ID: **LCS2120502** SampType: **LCS** TestCode: **8021_W** Run ID: **TVHBTEX2_021205A** Prep Date: **12/5/02** Units: **µg/L**
Batch ID: **R1761** TestNo: **SW8021B** FileID: **TVB21205\002R0101.D** Analysis Date: **12/5/02** SeqNo: **33577**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	28.05	1.0	27.2	0	103	70	130	0	0		
Toluene	161.4	2.0	164	0	98.4	70	130	0	0		
Ethylbenzene	40.55	2.0	39.2	0	103	70	130	0	0		
m,p-Xylene	138.4	2.0	136.8	0	101	70	130	0	0		
o-Xylene	57.44	2.0	54.8	0	105	70	130	0	0		
Surr: 1,2,4-Trichlorobenzene (S)	155.2	0	100	0	155	58	153	0	0		S (22 HIGH)

Sample ID: **02-7519-01AMS** SampType: **MS** TestCode: **8021_W** Run ID: **TVHBTEX2_021205A** Prep Date: **12/5/02** Units: **µg/L**
Batch ID: **R1761** TestNo: **SW8021B** FileID: **TVB21205\004R0101.D** Analysis Date: **12/5/02** SeqNo: **33579**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	161	5.0	136	25.44	99.7	55	144	0	0		
Toluene	1233	10	820	458.3	94.5	62	130	0	0		
Ethylbenzene	481.4	10	196	280.4	103	60	135	0	0		
m,p-Xylene	2379	10	684	1677	103	54	130	0	0		E
o-Xylene	946.5	10	274	670.9	101	58	130	0	0		
Surr: 1,2,4-Trichlorobenzene (S)	899.7	0	500	0	180	58	153	0	0		S (HIGH) *

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
H - Sample exceeded analytical holding time

Print Date: 12/6/02

* CO-ELUTION

08

CLIENT: Higgins & Associates
Work Order: 02-7493
Project: Hobbs PPL NMI-1

ANALYTICAL QC SUMMARY REPORT

BatchID: R1761

Sample ID: **02-7519-01AMSD** SampType: **MSD** TestCode: **8021_W** Run ID: **TVHBTEX2_021205A** Prep Date: **12/5/02** Units: **µg/L**
Batch ID: **R1761** TestNo: **SW8021B** FileID: **TVB21205\005R0101.D** Analysis Date: **12/5/02** SeqNo: **33580**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	158.4	5.0	136	25.44	97.7	55	144	161	1.68	30		
Toluene	1219	10	820	458.3	92.8	62	130	1233	1.12	30		
Ethylbenzene	476.2	10	196	280.4	99.9	60	135	481.4	1.07	39		
m,p-Xylene	2371	10	684	1677	102	54	130	2379	0.300	30	E	
o-Xylene	943.6	10	274	670.9	99.6	58	130	946.5	0.298	30		
Surr: 1,2,4-Trichlorobenzene (S)	902.5	0	500	0	181	58	153	0	0	30	S	*

* HIGH DUE TO CO-ELUTING HYDROCARBONS

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
H - Sample exceeded analytical holding time

Print Date: 12/6/02

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 120
ENGLEWOOD, CO 80110
FAX TO: (303) 708-9848

Receiving Date: 12/09/02
Reporting Date: 12/10/02
Project Number: NMI-1
Project Name: PPL NMI-1
Project Location: HOBBS, NM

Sampling Date: 12/09/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		12/10/02	12/10/02	12/10/02	12/10/02
H7294-1	NMI-1 DISCHARGE	<0.002	<0.002	<0.002	<0.006
Quality Control		0.100	0.100	0.098	0.283
True Value QC		0.100	0.100	0.100	0.300
% Recovery		99.9	99.8	97.6	94.3
Relative Percent Difference		4.5	3.1	6.4	4.8

METHOD: EPA SW-846 8260

Burgess J.A. Cooke
Chemist

12/10/02
Date

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

Company Name: Higgins & Associates
Project Manager: Chris Higgins
Address: 8200 S Akron, Suite 120
City: Englewood State: CO Zip: 80110
Phone #: 303-708-9848 Fax #: 303-708-9848
Project #: NMI-1 Project Owner: Phillips PL
Project Name: PPL NMI-1
Project Location: Hobbs, New Mexico
Sampler Name: Nick Fischer

BILL TO
P.O. #:
Company: Higgins
Attn: Patty Jensen
Address:
City:
State: Zip:
Phone #:
Fax #:

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: CRUDE OIL	MATRIX: SLUDGE	MATRIX: OTHER :	PRESERV: ACID/BASE:	PRESERV: ICE / COOL	PRESERV: OTHER :	SAMPLING: DATE	SAMPLING: TIME	ANALYSIS REQUEST: BTEX
H7294-1	NMI-1 Discharge		2	X									12/9/02		X

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Nick Fischer Date: 12/9/02 Time:
Received By:

Relinquished By: Date: 12/9/02 Time: 4:59 AM
Received By: (Lab Staff) [signature]

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool ☑ Yes ☑ No; Intact ☑ Yes ☐ No
CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS: Fax results to Nick Fischer 505-995-0031

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS. NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 120
ENGLEWOOD, CO 80112
FAX TO:

Receiving Date: 12/19/02
Reporting Date: 12/20/02
Project Number: NOT GIVEN
Project Name: PPL NMI-1
Project Location: HOBBS, NM

Sampling Date: 12/18/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO. SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE	12/19/02	12/19/02	12/19/02	12/19/02
H7339-1 NMI-1 DISCHARGE	<0.002	<0.002	<0.002	<0.006
Quality Control	0.102	0.098	0.099	0.288
True Value QC	0.100	0.100	0.100	0.300
% Recovery	102	97.7	98.5	96.1
Relative Percent Difference	3.3	1.7	2.9	2.8

METHOD: EPA SW-846 8260

Chemist

12/20/02
Date

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

		BILL TO	
Company Name:	Higgins & Associates	P.O. #:	
Project Manager:	Chris Higgins	Company:	Higgins
Address:	8200 S Akron, Suite 120	Attn:	Patty Jensen
City:	Englewood State: CO Zip: 80112	Address:	same
Phone #:	303-708-9846 Fax #:	City:	
Project #:	Project Owner:	State: Zip:	
Project Name:	PPL NMI-1	Phone #:	
Project Location:	Hobbs	Fax #:	
Sampler Name:	Nick Fischer		

FOR LAB USE ONLY				MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX
H73347	NMI-1 Discharge		2	X									12/10	4:30	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Nick Fischer	Date: 12/10 Time: 4:40	Received By: 12/11/02	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By: (Lab Staff)	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (Initials)	REMARKS: Fax Results to Nick Fischer 505-985-0031

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 120
ENGLEWOOD, CO 80112
FAX TO: (303) 708-9848

Receiving Date: 12/27/02
Reporting Date: 12/27/02
Project Number: NOT GIVEN
Project Name: PPL NM1-1
Project Location: HOBBS, NM

Analysis Date: 12/27/02
Sampling Date: 12/19/02 & 12/27/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)
H7355-1	NM1-1 DISCHARGE	152
H7355-2	NM1-1 DISCHARGE	156
Quality Control		1000
True Value QC		1000
% Recovery		100
Relative Percent Difference		3.0

METHOD: Standard Methods	4500-Cl^-B

Amy Hill
Chemist

12-27-02
Date

H7355

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020

101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Company Name:	Higgins & Associates	**BILL TO**	
Project Manager:	Chris Higgins	P.O. #:	
Address:	8200 S. Akron Suite 120	Company:	Higgins
City:	Englewood State: CO Zip: 80112	Attn:	Patty Jensen
Phone #:	303-708-9846 Fax #: 303-708-9848	Address:	
Project #:	Project Owner:	City:	
Project Name:	PPL NM1-1	State:	Zip:
Project Location:	140665	Phone #:	
Sampler Name:	Nick Fischer	Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		Chlorides
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	
H7355-1	NM1-1 Discharge	G	1	X									12/19		+
-2	NM1-1 Discharge	G	1	X									12/27		+

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Nick Fischer	Date: 12/27 Time: 2:15pm	Received By:	
Relinquished By:	Date: Time:	Received By: (Lab Staff) Burleson Eaton	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (Initials)	

Phone Result:	☐ Yes	☐ No	Add'l Phone #:
Fax Result:	☐ Yes	☐ No	Add'l Fax #:

REMARKS:

Fax results to Nick Fischer

505-985-0031

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 AKRON, SUITE 230
ENGLEWOOD, CO 80112
FAX TO: (303) 708-9848 &
(505) 985-0031

Receiving Date: 02/24/03
Reporting Date: 02/26/02
Project Number: PPL
Project Name: NMI-1 HOBBS
Project Location: HOBBS, NM

Sampling Date: 02/24/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NO. SAMPLE ID	TVPH (C_4-C_{13}) (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:	02/25/03	02/25/03	02/25/03	02/25/03	02/25/03
H7490-1 NMI-1 DISCHARGE	<0.100	<0.002	<0.002	<0.002	<0.006
Quality Control	NR	0.099	0.095	0.098	0.284
True Value QC	NR	*0.100*	*0.100*	*0.100*	*0.300*
% Recovery	NR	99.1	95.3	98.4	94.8
Relative Percent Difference	NR	5.5	1.6	4.9	5.5

METHODS: BTEX -EPA SW-846 8260; TVPH - EPA SW-846 8015M

Burgess J. A. Cooke, Ph. D.

2/26/03
Date

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS. NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 230
ENGLEWOOD, CO 80112
FAX TO: (303) 708-9848
& (505) 985-0031

Receiving Date: 02/24/03
Reporting Date: 02/26/03
Project Number: HOBBS NM1-1
Project Name: NMI-1 HOBBS
Project Location: HOBBS, NM

Analysis Date: 02/25/03
Sampling Date: 02/24/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)
H7490-1	NMI-1 DISCHARGE	172
Quality Control		1000
True Value QC		1000
% Recovery		100
Relative Percent Difference		3.0

METHOD: Standard Methods	4500-ClˉB

Amy Hill
Chemist

2-26-03
Date

H7490

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

		BILL TO	
Company Name:	Higgins & Associates	P.O. #:	
Project Manager:	Chris Higgins	Company:	Higgins
Address:	8200 S Akron Suite 230	Attn:	Patty Jensen
City:	Centennial State: CO Zip: 80112	Address:	same
Phone #:	303-709-9846 Fax #: 9848	City:	
Project #:	Hobbs NM1-1 Project Owner: PPL	State:	Zip:
Project Name:	NM1-1 Hobbs	Phone #:	
Project Location:	Hobbs	Fax #:	
Sampler Name:	Nick Fischer		

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX /TDH	Chlorides
H7490-1	NM1-1 Discharge	X		X									2/24	3:20	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Nick Fischer	Date: 2/24 Time: 3:30	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: 2/24 Time:	Received By: (Lab Staff) Amy Hill	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No	CHECKED BY: (Initials)

REMARKS: Fax results to Nick Fischer 505-985-0031

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 117
CENTENNIAL, CO 80112
FAX TO: (303) 708-9848 &
(505) 985-0031

Receiving Date: 03/03/03
Reporting Date: 03/0/4/03
Project Number: PPL
Project Name: PPL NMI-1
Project Location: NMI-1HOBBS, NM

Sampling Date: 03/03/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO. SAMPLE ID	TVPH (C_4-C_{13}) (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:	03/03/03	03/03/03	03/03/03	03/03/03	03/03/03
H7508-1 NMI-1 DISCHARGE	<0.100	<0.002	<0.002	<0.002	<0.006
Quality Control	NR	0.105	0.101	0.106	0.308
True Value QC	NR	0.100	0.100	0.100	0.300
% Recovery	NR	105	101	106	103.0
Relative Percent Difference	NR	5.9	6.0	7.2	7.8

METHODS: BTEX -EPA SW-846 8260; TVPH - EPA SW-846 8015M

Burgess A. Cooke, Ph. D.

3/4/03
Date

ARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 117
CENTENNIAL, CO 80112
FAX TO: (303) 708-9848
& (505) 985-0031

Receiving Date: 03/03/03
Reporting Date: 03/04/03
Project Number: NOT GIVEN
Project Name: PPL NMI-1
Project Location: NMI-1, HOBBS, NM

Analysis Date: 03/04/03
Sampling Date: 03/03/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)
H7508-1	NMI-1 DISCHARGE	156
Quality Control		1000
True Value QC		1000
% Recovery		100
Relative Percent Difference		3.0

METHOD: Standard Methods	4500-ClˉB

Amy Hill
Chemist

3-4-03
Date

h7508

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page 1 of 1

Company Name:	Higgins & Associates
Project Manager:	Chris Higgins
Address:	8200 S. Akron, Suite 117
City:	Centennial State: CO Zip: 80112
Phone #:	303-708-9846 Fax #: -9848
Project #:	Project Owner: PPL
Project Name:	PPL NM1-1
Project Location:	NM1-1, Hobbs, NM
Sampler Name:	Nick Fischer

BILL TO

P.O. #:	
Company:	Higgins
Attn:	Patty Jensen
Address:	same
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX / TDPH	chlorides
H18081	NM1-1 Discharge	G		X									3/3	4:20	X	X

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Sampler Relinquished: Nick Fischer	Date: 3/3/03 Time: 4:30	Received By:	
Relinquished By:	Date: Time:	Received By: (Lab Staff)	

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool ☐Yes ☐No Intact ☐Yes ☐No

CHECKED BY: (Initials)

Phone Result:	☐ Yes	☐ No	Add'l Phone #:
Fax Result:	☐ Yes	☐ No	Add'l Fax #:

REMARKS:

Please fax results to Nick Fischer

505-985-0031

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 117
CENTENNIAL, CO 80112
FAX TO:

Receiving Date: 04/07/03
Reporting Date: 04/08/03
Project Owner: PPL
Project Name: PPL HOBBS NMI-1
Project Location: HOBBS, NM

Sampling Date: 04/07/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH/BC

LAB NO.	SAMPLE ID	Cl⁻ (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		04/07/02	04/07/02	04/07/02	04/07/02	04/07/02
H7578-1	NMI-1 DISCHARGE	160	<0.002	<0.002	<0.002	<0.006
Quality Control		1000	0.095	0.095	0.098	0.283
True Value QC		1000	0.100	0.100	0.100	0.300
% Recovery		100	94.9	94.8	97.8	95
Relative Percent Difference		4.0	0.3	3.6	5.1	3.5

METHODS: Cl⁻ - Std. Methods 4500-Cl⁻B; BTEX - EPA SW-846-8020

Burgess J. A. Cooke, Ph. D.

4/8/03
Date

H7578.XLS

CARDINAL LABORATORIES, INC.

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(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Higgins & Associates	BILL TO	
Project Manager:	Chris Higgins	P.O. #:	
Address:	8200 S. Akron Suite 117	Company:	
City:	Centennial State: CO Zip: 80112	Attn:	
Phone #:	303-708-9846 Fax #: 9848	Address:	
Project #:	Project Owner: PDL	City:	
Project Name:	PDL Hobbs NM1-1	State: Zip:	
Project Location:	Hobbs, New Mexico	Phone #:	
Sampler Name:	Nick Fischer	Fax #:	

ANALYSIS REQUEST: BTEX; Chlorides

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	BTEX	Chlorides
H17576-1	NM1-1 Discharge	1		X									4/7	1:45	X	X

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Nick Fischer	Date: 4/7 Time: 2:00 PM	Received By:	
Relinquished By:	Date: Time:	Received By: (Lab Staff) Burgess H Cook	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No	CHECKED BY: (Initials)	

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:

REMARKS:
Fax results to
Nick Fischer, Higgins & Associates
505-995-0031

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 117
CENTENNIAL, CO 80112
FAX TO: (303) 708-9848

Receiving Date: 04/24/03
Reporting Date: 04/25/03
Project Number: NMI-1
Project Name: PPL HOBBS, NMI-1
Project Location: HOBBS, NM

Sampling Date: 04/24/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		04/24/03	04/24/03	04/24/03	04/24/03
H7615-1	NMI-1 DISCHARGE	<0.002	<0.002	<0.002	<0.006
H7615-2	AFTER TOWER	<0.002	<0.002	<0.002	<0.006
H7615-3	EW-1	4.41	2.50	0.952	0.793
H7615-4	EW-2	3.08	2.68	0.541	0.885
Quality Control		0.104	0.105	0.107	0.304
True Value QC		0.100	0.100	0.100	0.300
% Recovery		104	105	107	101.0
Relative Percent Difference		3.2	4.8	3.2	14.1

METHOD: EPA SW-846 8260

Chemist

4/25/03
Date

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 117
CENTENNIAL, CO 80112
FAX TO: (303) 708-9848

Receiving Date: 04/24/03
Reporting Date: 04/25/03
Project Number: NMI-1
Project Name: PPL HOBBS, NMI-1
Project Location: HOBBS, NM

Sampling Date: 04/24/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/L)	DRO (>C_{10}-C_{28}) (mg/L)
ANALYSIS DATE:		04/24/03	04/24/03
H7615-1	NMI-1 DISCHARGE	<1.0	<1.0
H7615-2	AFTER TOWER	<1.0	<1.0
H7615-3	EW-1	13.1	2.56
H7615-4	EW-2	6.07	<1.0
Quality Control		27.3	30.4
True Value QC		30.0	30.0
% Recovery		91.1	101
Relative Percent Difference		6.5	9.2

METHOD: SW-846 8015 M
NOTE: GRO & DRO are taken to be equivalent to TVPH & TEPH respectively.

Chemist

4/25/03
Date

H7615A.XLS

ARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, STE 117
CENTENNIAL, CO 80112
FAX TO: (303) 708-9848

Receiving Date: 04/24/03
Reporting Date: 04/28/03
Project Number: NMI-1
Project Name: PPL HOBBS NMI-1
Project Location: HOBBS, NM

Sampling Date: 04/24/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Fe (mg/L)	pH (s.u.)	TDS (mg/L)	TSS (mg/L)
ANALYSIS DATE		04/25/03	04/25/03	04/24/03	04/25/03
H7615-1	NMI-1 DISCHARGE	<0.01	7.94	655	34
H7615-2	AFTER TOWER	0.107	8.11	703	9
H7615-3	EW-1	0.064	7.37	667	3
H7615-4	EW-2	0.128	7.41	706	3
Quality Control		5.157	6.98	NR	NR
True Value QC		5.000	7.00	NR	NR
% Recovery		103	99.7	NR	NR
Relative Percent Difference		0.3	0.1	12.4	NR
METHODS: EPA 600/4-79-020		236.1	150.1	160.1	160.2

Amy Hill
Chemist

4/28/03
Date

H7615

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

		BILL TO	
Company Name:	Higgins & Associates	P.O. #:	
Project Manager:	Chris Higgins	Company:	Higgins
Address:	8200 S. Akron Suite 117	Attn:	Patty Jensen
City:	Centennial State: CO Zip: 80112	Address:	same
Phone #:	303-708-9846 Fax #: 9848	City:	
Project #:	NM1-1 Project Owner: PPL	State:	Zip:
Project Name:	PPL 140665 NM1-1	Phone #:	
Project Location:	Hobbs New Mexico	Fax #:	
Sampler Name:	Nick Fischer		

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST									
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX	TUPH	TEPH	Ph	Iron	TDS	TSS			
H7665-1	NM1-1 Discharge	X		X									4/24	10:30	X	X	X	X	X	X	X			
-2	After Tower	X		X									4/24	10:28	X	X	X	X	X	X	X			
-3	EW-1	X		X									4/24	10:25	X	X	X	X	X	X	X			
-4	EW-2	X		X									4/24	10:20	X	X	X	X	X	X	X			

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Nick Fischer	Date: 4/24 Time: 10:50	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By: (Lab Staff) Burgess J. Cook	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)	REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 117
CENTENNIAL, CO 80112
FAX TO: (303) 708-9848
& (505) 985-0031

Receiving Date: 03/04/03
Reporting Date: 03/06/03
Project Owner: PPL
Project Name: PPL-NMI-1
Project Location: HOBBS, NM

Sampling Date: 03/04/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u m/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:		03/05/03	03/05/03	03/05/03	03/05/03	03/05/03	03/05/03
H7511-1	EW-1	165	84	21	1.73	1214	325
H7511-2	MW-13	125	105	12	3.46	1109	325
H7511-3	SVE 1	69	90	20	2.41	1152	223
Quality Control		NR	43	55	4.67	1322	NR
True Value QC		NR	50	50	5.00	1413	NR
% Recovery		NR	86.0	110	93.4	93.6	NR
Relative Percent Difference		NR	0	0	1.0	0.7	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

		Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		03/05/03	03/05/03	03/05/03	03/05/03	03/05/03	03/06/03
H7511-1	EW-1	160	102	0	397	7.58	704
H7511-2	MW-13	136	69.2	0	397	7.17	674
H7511-3	SVE 1	124	60.2	0	272	7.03	694
Quality Control		1080	50.20	NR	1098	7.01	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		108	100	NR	110	100	NR
Relative Percent Difference		8.0	0.7	NR	3.0	0	0.4
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Amy Hill
Chemist

3-6-03
Date

H7512

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 117
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& (505) 985-0031

Receiving Date: 03/04/03
Reporting Date: 03/06/03
Project Owner: PPL
Project Name: PPL-NMI-1
Project Location: HOBBS, NM

Sampling Date: 03/04/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	TOTAL Fe(II) (mg/L)	Fe(III) (mg/L)
ANALYSIS DATE:		03/06/03	03/05/03
H7511-1	EW-1	0.30	0.272
H7511-2	MW-13	0.40	5.67
H7511-3	SVE 1	0.23	0.661
Quality Control		3.07	NR
True Value QC		3.00	NR
% Recovery		103	NR
Relative Percent Difference		3.0	NR

METHODS: HACH 8146, EPA 600/4-79-020 236.1
Note: Fe(III) was calculated by subtracting Fe(II) from the total Fe.

Amy Hill
Chemist

3-6-03
Date

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HIGGINS & ASSOCIATES
ATTN: CHRIS HIGGINS
8200 S. AKRON, SUITE 117
CENTENNIAL, CO 80112
FAX TO: (303) 708-9848
& (505) 985-0031

Receiving Date: 03/04/03
Reporting Date: 03/06/03
Project Owner: PPL
Project Name: PPL-NMI-1
Project Location: HOBBS, NM

Sampling Date: 03/04/03
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	NO_3/NO_2-N (mg/L)	PO_4 (mg/L)
ANALYSIS DATE		03/05/03	03/05/03
H7511-1	EW-1	1.09	0.52
H7511-2	MW-13	1.60	0.50
H7511-3	SVE 1	2.50	0.47
Quality Control		2.83	0.51
True Value QC		*3.00*	*0.50*
% Recovery		94.2	101
Relative Percent Difference		1.0	0

METHODS:	EPA 600/4-79-020,	352.1	SM 4500-P E

Amy Hill
Chemist

3-6-03
Date

H7511a

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

Company Name:	Higgins & Associates	BILL TO	
Project Manager:	Chris Higgins	P.O. #:	
Address:	8200 S. Akron Suite 117	Company:	Higgins
City:	Centennial State: CO Zip: 80112	Attn:	Patty Jensen
Phone #:	303-708-9846 Fax #: 9848	Address:	
Project #:	Project Owner: PPL	City:	same
Project Name:	PPL - NM1-1	State:	Zip:
Project Location:	Hobbs, New Mexico	Phone #:	
Sampler Name:	Nick Fischer	Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: Major Cations (Mg, Ca, Na, K)	Major Anions (Cl, SO4, NO3, NO2)	Alkalinity	Fe, Fe#	Orthophosphate - Nick Phoned 3/5/03 11:00 a.m.
HM511-1	EW-1			X									3/4	11:00	X	X	X	X	X
	MW 13												↓		✓	✓	✓	✓	✓
	SVE1														✓	✓	✓	✓	✓

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Nick Fischer	Date: 3/4/03 Time: 11:40am	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By: (Lab Staff) Burgess A. Cooke	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (Initials)	REMARKS: Fax Results to Nick Fischer 505-985-0031

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

Appendix E
Building Permit

Multi-Purpose State Building Application

State of New Mexico — Regulation and Licensing Department — Construction Industries Division

Albuquerque Office:	1650 University Blvd., NE	Suite 201	Albuquerque, New Mexico 87102	(505) 841-8020	FAX (505) 765-5670
Las Cruces Office:	505 S. Main St., Ste. 150	P.O. Box 939	Las Cruces, New Mexico 88004-0939	(505) 524-6320	FAX (505) 524-6319
Santa Fe Office:	725 St. Michael's Drive	P.O. Box 25101	Santa Fe, New Mexico 87504	(505) 827-7043	FAX (505) 827-7147

(Please check the appropriate type for which you are applying)

☒ State Building Permit ☐ Electrical Review ☐ Mechanical / Plumbing Review ☐ Preliminary Review ☐ Pre-Bid Review

DATE ISSUED: JUN 20 2002	PROCESSED BY: R.K.H	PERMIT NUMBER: 227934

TYPE of CONSTRUCTION I II III IV (V) FR 1hr. HT (N) FEE PAID (0 / N) TRACKING NUMBER 57908

OCCUPANCY GROUP A B E F H I M R S (U) FEE DUE $ 0 MAIL (A / R) 6-19-02 WALK-IN (A / R) __/__

DIVISION (1) 1.1 2 2.1 3 4 5 6 7 #65.00 CHECK # 31981 CASH RECEIPT # 34901

PLEASE PROVIDE THE FOLLOWING INFORMATION *(Refer to the BUILDING PERMIT GUIDE or call for additional information)*:

Property Owner/Homeowner Name				
Phillips Petroleum Co./Phillips Pipeline NM1-1				
Address-No. & Street/PO Box/Rural Route	**City**	**State**	**Zip Code**	**Phone Number**
317 N. Leech	Hobbs, NM	88240		(505) 393-2013
Contractor Company Name				**NM State License Number**
Royal Buildings, Inc.				25651
Address-No. & Street/PO Box/Rural Route	**City**	**State**	**Zip Code**	**Phone Number**
P.O. Box 2248	Hobbs, NM	88240		(505) 393-0646
Architect/Engineer's Name				**NM State License Number**
Lyndon Donahey				12666
Address-No. & Street/PO Box/Rural Route	**City**	**State**	**Zip Code**	**Phone Number**
P.O. Box 60335	Odessa, TX	79711		(915) 366-6923

Specific Use of Building *(Residence, Office, etc.)*	County This Project is Located In	Project Address-*No. & Street/PO Box/Rural Route*				
Storage	Lea	field located-site map attached				
Nearest City/Town/Village to Project	**Subdivision Name**	**Lot No.**	**Block No.**	**Township**	**Range**	**Section**
Hobbs						

Provide Written Directions to the Project Site:

site location map attached

Description of Work: X New Construction ___Addition ___Alternative Methods & Materials * ___Foundation Only ___Renew Permit #_____ **
___Alteration/Repair ___Demolition ___Masonry X Metal / Steel ___Wood ___Adobe ___Rammed Earth ___Baled Straw ___Other_____

*CERTIFICATION FOR ALTERNATIVE METHODS AND MATERIALS form required. **Please call to determine your correct valuation and fee amounts.

TOTAL SQ. FT. 576 sq. ft.	**VALUATION $ 24,400.00	**FEE $ 65.00

PLEASE READ AND SIGN THE FOLLOWING:

I hereby acknowledge by my signature below that I have read this application and state that the above is correct. I agree to comply with the requirements of the NEW MEXICO BUILDING CODE. I waive my right to require any inspector to possess a search warrant before they enter the premises to inspect the building covered by this permit. However, I waive this right only on the following conditions: The inspector must be approved by the Construction Industries Division and this inspection must be made at reasonable times for the purpose of determining whether the work or building or structure on the premises complies with the NEW MEXICO BUILDING CODE. I understand that the issuance of this permit shall not prevent the Construction Industries Division from requiring compliance with the provisions of the NEW MEXICO BUILDING CODE.

X _____ Date 02/17/02

Contractor's Signature only or Homeowner's Signature above if this is a Homeowner Permit. The Homeowner must also read, sign and notarize the following:

AFFIDAVIT FOR HOMEOWNER CONSTRUCTION PERMIT: – *Please print Homeowner name, read, sign and notarize this Affidavit:*

I, _____, certify that I intend to build or make installations, alterations or repairs in or to a single-family dwelling owned and occupied or to be occupied by me. I understand I must do all the work myself or with the aid of others who are paid wages and who receive no other form of compensation. If I hire anyone on a payroll, I will furnish my state and federal tax withholding numbers to the Construction Industries Division and will make my payroll records available for inspection by the Division. I understand I cannot perform any electrical, mechanical, or plumbing work under this permit. *If I hire a licensed contractor to do any portion of this project, the contractor will apply for his own permit for his portion of the work.* I understand I am required to substantiate my construction knowledge to the satisfaction of the Division and complete the Homeowner's Responsibility Form for a Homeowner Construction Permit.

HOMEOWNER SIGNATURE: X _____

Sworn to before me this _____ day of _____, 20____.

_____

My Commission Expires: _____

ZONING APPROVAL BY: _____
(If Applicable- call the Construction Industries Division to verify)

PERMIT APPROVED BY: R.K.H 6/20/02

PRE-BID OR PRILIMINARY APPROVAL BY: _____ __/__/__

UPC APPROVAL BY: _____ __/__/__

NEC APPROVAL BY: _____ __/__/__

POST IN A CONSPICUOUS PLACE

N O T I C E

BUILDING PERMIT NO. 227934

Has Been Issued For This Construction By The

STATE OF NEW MEXICO
REGULATION AND LICENSING DEPARTMENT
CONSTRUCTION INDUSTRIES DIVISION
GENERAL CONSTRUCTION BUREAU
725 ST. MICHAEL'S DRIVE - P.O. BOX 25101
SANTA FE, NEW MEXICO 87504

BUILDING ADDRESS

HOBBS	LEA COUNTY

DIRECTIONS: S. BELT BY PASS AND GRIME ST. 1/2 MILES WEST TO N. ON SERVICE RD. APPROX. 685 FEET.

OWNER: PHILLIPS PETROLEUM CO. PHONE: 393-2013
ADDRESS: 317 N. LEECH OCCUPANCY: U-1
HOBBS NM 88240 TYPE CONSTR.: V-N

CONTRACTOR: ROYAL BUILDINGS, INC. LICENSE #: 25651
ADDRESS: PO BOX 2248
HOBBS NM 88241

ARCHITECT/ENGINEER: LYNDON DONAHEY
INSPECTOR: SKIP CONNOLLY PHONE: 392-5817
PERMIT ISSUE DATE: 06/20/2002 SQUARE FOOTAGE: 576
DESCRIPTION OF WORK: NEW CONSTRUCTION VALUATION: 24,400.00

This is a General Construction Permit and does not cover electrical or mechanical permit requirements for the State of New Mexico.

Record of Inspections

GENERAL BUILDING		ELECTRICAL		MECHANICAL	
DATE	PURPOSE	DATE	PURPOSE	DATE	PURPOSE
21	FOOTINGS				

NOTICE: IT IS THE RESPONSIBILITY OF THE PERMIT HOLDER TO CALL FOR THE REQUIRED INSPECTIONS 48 HOURS IN ADVANCE, BETWEEN 8:00 AM-9:00 AM, MON.-FRI.

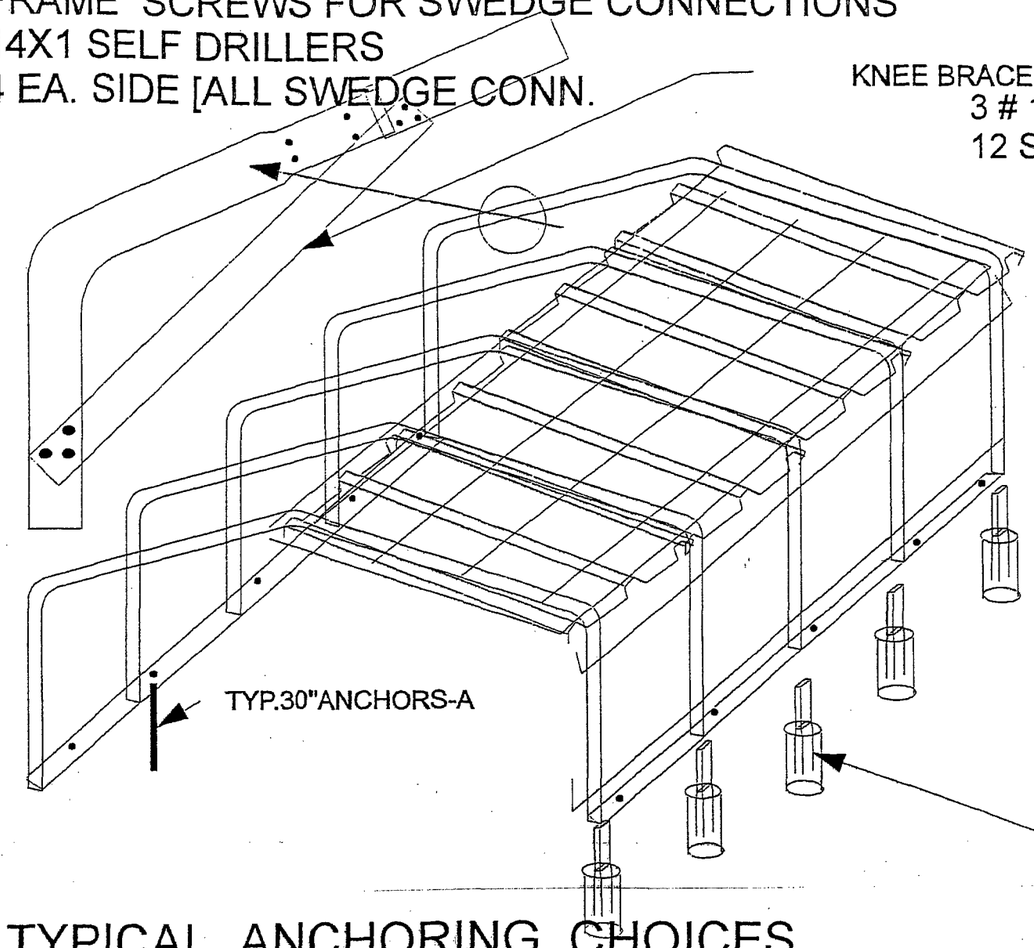
PORTABLE-CARPORT MOD 835CPH

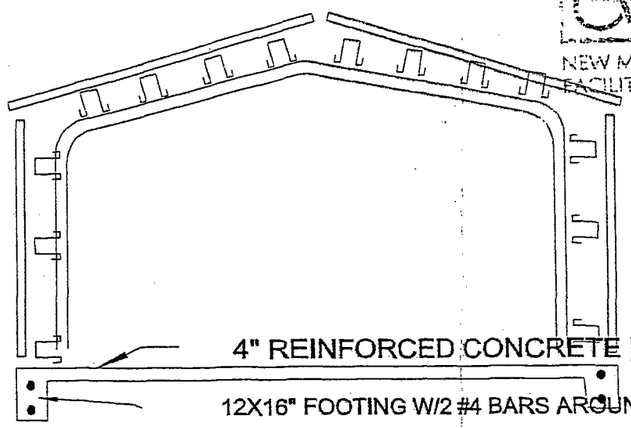
FRAME SCREWS FOR SWEDGE CONNECTIONS
14X1 SELF DRILLERS
4 EA. SIDE [ALL SWEDGE CONN.

KNEE BRACE REQUIRED ABOVE 12' HIGH AND 30' WIDTH [ALL RAFTERS]
3 # 14 SELF DRILLERS TOTAL
12 SCREWS PER SECTION

ROOF SCREWS
12X3/4"WITH WASHERS
LAPS & TEKS

PHYSICALLY HANDICAPPED
NEW MEXICO UNIFORM BUILDING CODE REQUIRES FACILITIES FOR THE PHYSICALLY HANDICAPPED.





LYNDON DONAHEY NEW MEXICO 12668 REGISTERED PROFESSIONAL ENGINEER

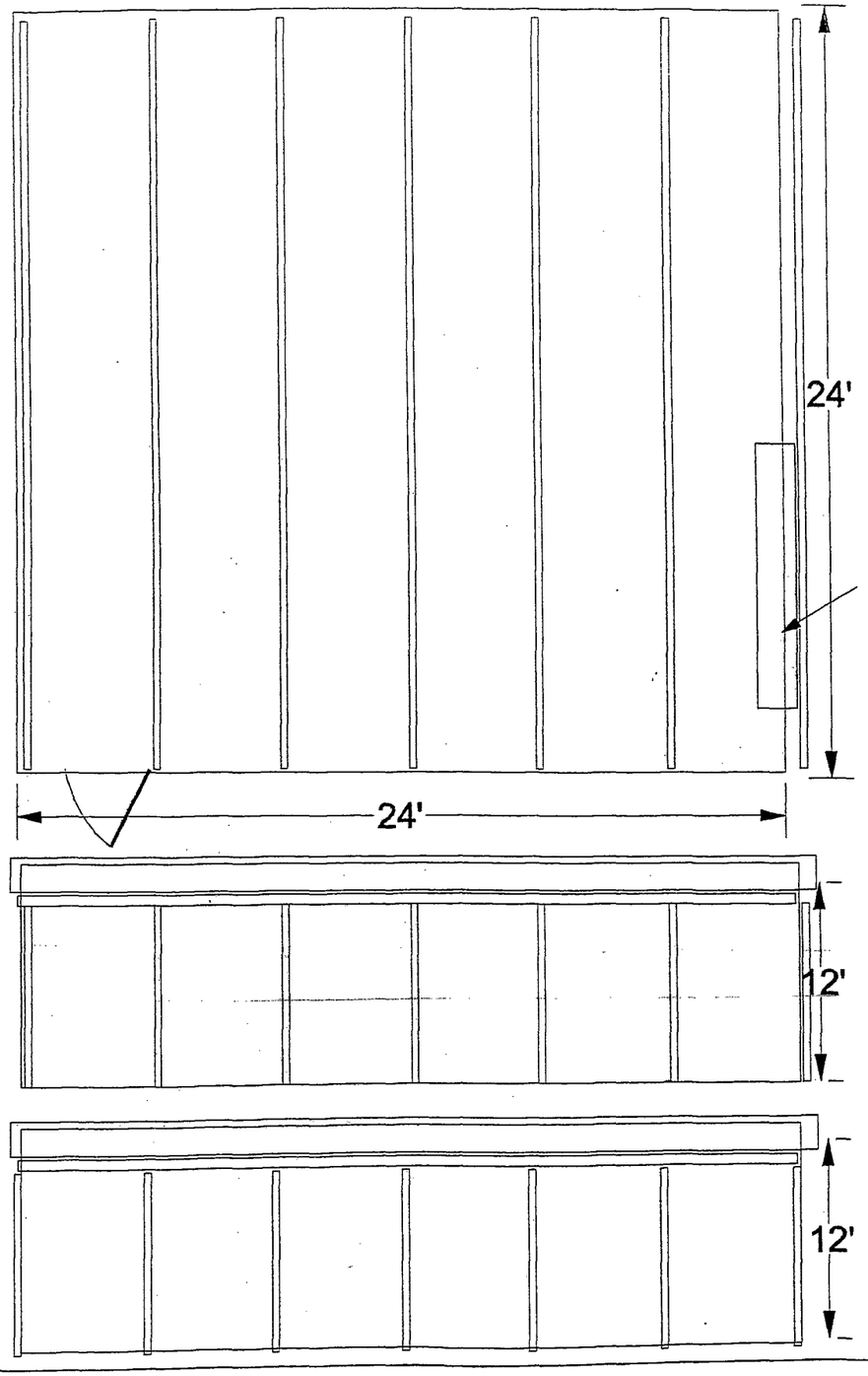
TYPICAL ANCHORING CHOICES

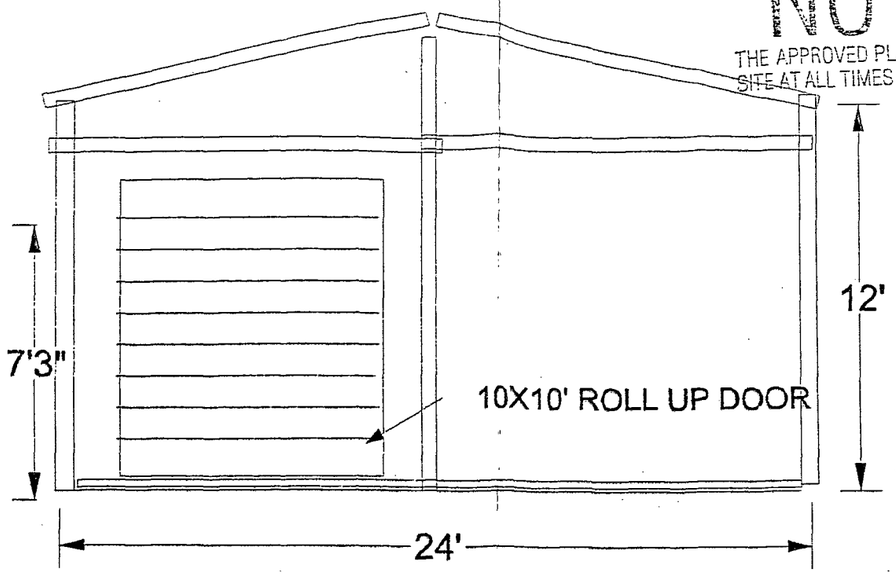
A-30"#5 BAR EVERY 5' APART
ASSUMING SOIL CONDITIONS OF 2500 PSF
B-1/2"ANCHORS DRILLED IN CONCRETE[3000 PSI]
5' MAX SPACING FOR INSTALLATION ON EXISTING SLABS
C- 2"X3"TUBING SWEDGED TO FIT INTERIOR
OF COLUMNS INSTALLED IN CONCRETE USED IN LIEU OF BASE TUBE
30/25 LIVE AND WIND LOAD

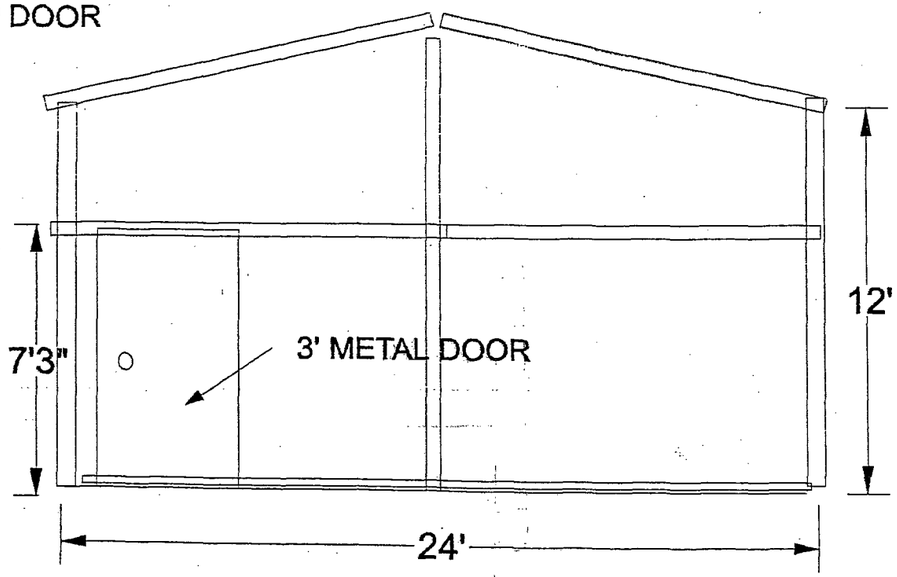
NOTE -- MAX. WIDTH THIS DESIGN IS 35' WIDE.
NOTE -- MAX SIDEWALL HT.14 'HATS FOR KNEE BRACING REQUIRED ABOVE 12' HIGH AND 30' WIDE

ROYAL BUILDINGS INC
1206 W.COUNTY ROAD PO BOX 2248 HOBBS NM 88240 505 393 0646 FAX 505 393 8019

STANDARD	15-04-01
WIDTH 8'0"-35'3"	
LENGTH VARIES IN 4'-5' INCREMENTS	







NOTICE

THE APPROVED PLAN MUST BE AT THE JOI
SITE AT ALL TIMES DURING CONSTRUCTION

NOTICE

Issuance of this Building Permit and the Certificate of Occupancy at Final Inspection DOES NOT certify compliance with the requirements of any other regulatory agency that has separate enforcement jurisdiction on this project. Contact the State Fire Marshall, the Department of Health, the Environment Department, and any other such regulatory agency that may have code enforcement jurisdiction on the project to ensure

JUN
Received
Construction
Industries
Division

ROYAL BUILDINGS ,INC.

1206 W. CO. ROAD PO BOX 2248 HOBBS NM 88240 505 393 5702 FAX 505 397 1092

24X24X12-1X12"SLOPE	06/14/02

PHYSICALLY HANDICAPPED

NEW MEXICO UNIFORM BUILDING CODE REQUIRES FACILITIES FOR THE PHYSICALLY HANDICAPPED.

ELEVATIONS AND FLOOR PLAN

PORTABLE-CARPORT MOD 835CPH

FRAME SCREWS FOR SWEDGE CONNECTIONS
14X1 SELF DRILLERS
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KNEE BRACE REQUIRED ABOVE 12' HIGH AND 30' WIDTH [ALL RAFTERS]
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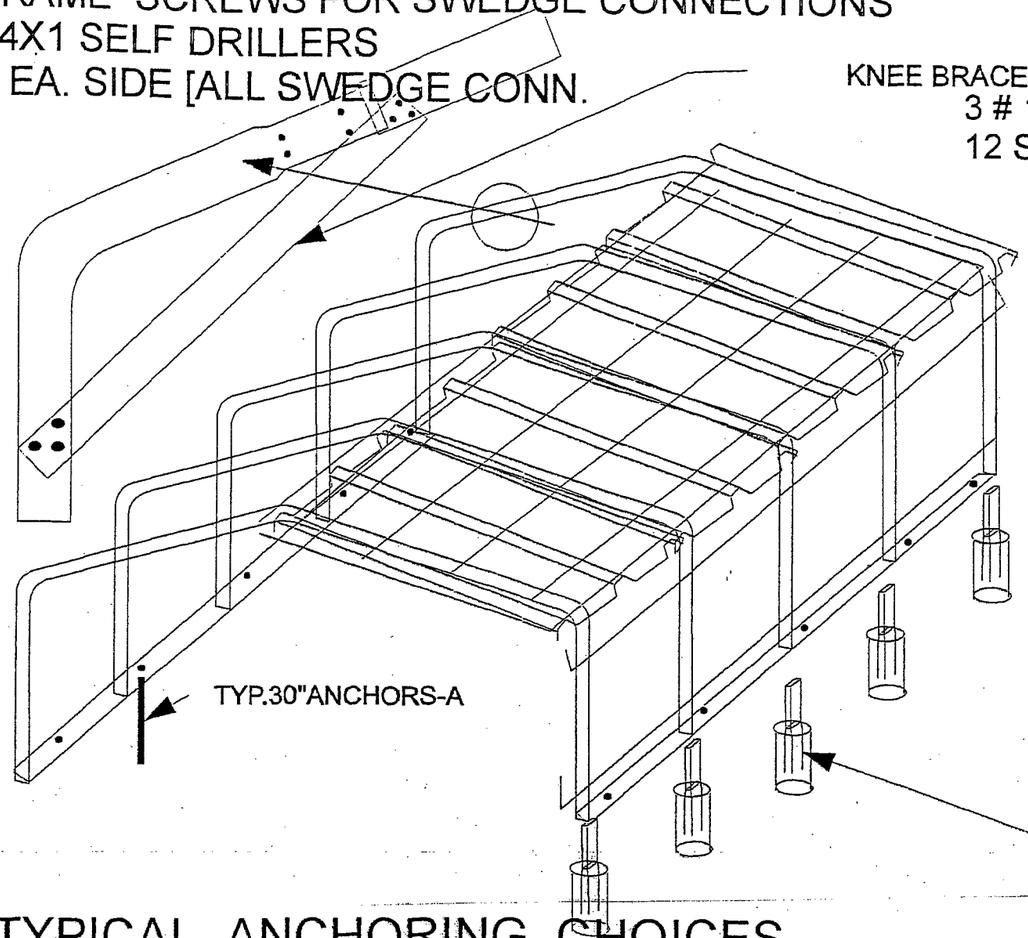

ROOF SCREWS
12X3/4"WITH WASHERS
LAPS & TEKS

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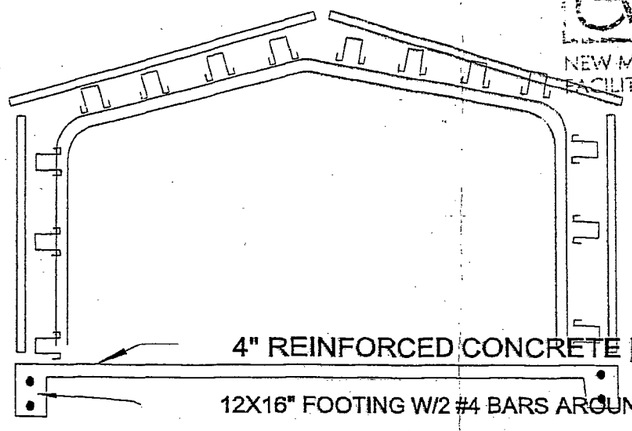
NEW MEXICO UNIFORM BUILDING CODE REQUIRE FACILITIES FOR THE PHYSICALLY HANDICAPPED.



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5' MAX SPACING FOR INSTALLATION ON EXISTING SLABS
C- 2"X3"TUBING SWEDGED TO FIT INTERIOR
OF COLUMNS INSTALLED IN CONCRETE USED IN LIEU OF BASE TUBE
30/25 LIVE AND WIND LOAD

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ROYAL BUILDINGS INC
1206 W.COUNTY ROAD PO BOX 2248 HOBBS NM 88240 505 393 0646 FAX 505 393 8019

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WIDTH 8'0"-35'3"	
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