# 3R - 001

# Investigation & WorkPlans

DATE:
2006-2007
Phase I

REVISED CONCEPTUAL REMEDIAL ACTION PLAN FORMER AEREX REFINERY BLOOMFIELD, NEW MEXICO KLEINFELDER PROJECT NO. 86181PROP

August 7, 2007

Prepared for: NEW MEXICO OIL CONSERVATION DIVISION

1200 SOUTH SAINT FRANCIS DRIVE SANTA FE, NEW MEXICO 87505

Prepared by: K L E I N F E L D E R

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August 7, 2007

Kleinfelder Project No. 86181 PROP

File No.: ALB07RP001

Mr. Wayne Price New Mexico Oil Conservation Division 1200 South St. Francis Drive Santa Fe. New Mexico 87505

Subject:

**Revised Conceptual Remedial Action Plan** 

Former Aerex Refinery **Bloomfield, New Mexico** 

Dear Mr. Price:

Kleinfelder West, Inc. (Kleinfelder) is pleased to present the Revised Conceptual Remedial Action Plan for the former Aerex Refinery Site in Bloomfield, New Mexico. This proposal modifies our technical approach and revises the costs found in Kleinfelder's Phase I Subsurface Assessment dated April 6, 2006 (Phase I). proposal references data, figures, tables, and appendixes found in the Phase I and should be reviewed with a copy of the Phase I at hand. A schedule of activities has been developed for the site based on the City of Bloomfield's stated intention of building on the property starting at the end of March, 2008.

Should any questions arise concerning this proposal, we would be pleased to discuss them with you.

Respectfully submitted,

KLEINFELDER WEST, INC.

Reviewed by:

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Environmental Department Manager

JDB: FTS: ylw

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# **FIGURES**

Figure 9 – Isopach Map of Clean Overburden Soil (<100 ppmv) Figure 10 – Proposed Schedule of Activities

### **TABLES**

Table 9 - Detailed Cost Breakdown

### 1.0 INTRODUCTION

This proposal updates the scope of work and costs presented in the conceptual remediation action plan, a section of Kleinfelder's Phase I Subsurface Assessment dated April 6, 2006, which was performed on a portion of the former Aerex Refinery (Site) located in Bloomfield, New Mexico. Data, Figures, Tables and Appendixes referenced in this proposal can be found in the Phase I report.

### 2.0 SUMMARY OF SITE ASSESSMENT DATA

### 2.1 Extent of Groundwater Contamination

Results of the groundwater sampling and analysis event revealed the presence of dissolved-phase petroleum-related hydrocarbons in two of the three wells sampled (MW-2 and MW-3K) (Tables 3 through 6, and on Figure 4). The highest concentrations of contaminants were observed in MW-3K. The groundwater sample collected from MW-3K contained total naphthalenes at concentrations exceeding the New Mexico Water Quality Control Commission (NMWQCC) standards.

### 2.2 Extent of Soil Contamination

The site was characterized on a grid pattern of borings. The horizontal extent of actionable contaminated soil is shown on Tables 1, 7, 8, and on Figure 8. Actionable contaminated soil is defined as soils which exhibited total TPH over 100 milligrams per kilogram (mg/kg) or heated headspace readings over 100 parts per million by volume (ppmv). The estimated lateral extent of actionable soil is shown as orthogonal blocks, extending equal distance between the impacted boring and the adjacent clean boring. In cases where adjacent clean borings heated headspace reading were between 50 and 99 ppmv, the blocks were extended three-quarters of the distance between the impacted boring and the adjacent boring. The actionable soil onsite is limited to four areas:

- 1. Within the southern zone of impact, boring D-1 encountered actionable soil from 4 to 6 feet below ground surface (ft bgs). This boring is located approximately 35 ft south of an area which according to the 1961 air photo, apparently contained two, twin 35 ft x10 ft horizontal above ground storage tanks (ASTs).
- 2. The central zone of impact contains the largest lateral extent of actionable soils as encountered in borings F-1, F-2, G-2, G-3, G-4, G-4, G-5, H-1, H-2, H-4 and I-2. These boring encountered actionable soils at depths ranging from the surface to approximately 8 ft bgs (F-2, G-2, G-3) to 10-12 ft bgs. Based on the 1961 air photo, this area formerly contained portions of four ASTs, a building, and what appears to be aboveground piping. Foundations observed during field activities indicated that boring G-2 was near a bulk product loading area. The central portion of the site contains the only area of impact predominantly of gasoline range organics (borings G-2 and H-2).

- 3. Boring I-6 in the northeast zone of impact encountered actionable soil from 4-6 ft bgs. Foundations observed during field activities indicate that boring I-6 was near a bulk product loading area. The 1961 air photo shows a building and pad at that location.
- 4. The northern zone of impact contains the second largest area of actionable soil as encountered in borings K-3, K-4 and K-5. These borings encountered actionable soil at depths ranging from 4-8 ft bgs in K-3 to 2-16 ft bgs in K-4 and K-5. The 1961 air photo shows refining processing equipment and open space in that area.

As can be seen in the north-south cross section (Figure 5), the vertical extent of actionable, contaminated soil, as defined by heated headspace screening levels above 100 ppm, is generally not limited to the soil type or unit. Groundwater at the Site exists at depths ranging from approximately 6 to 9 ft bgs. Of the four identified areas of impacted soil, two areas include a vertical extent of impacted soil that extends between 4.5 to 7.5 ft into the saturated zone. These two areas include portions of the central zone of impact (borings F-1, H-2 and I-2) and the northern zone of impact (borings K-4 and K-5).

The thickness of actionable soil is illustrated on Figure 8, and an estimated volume of in-place actionable soil is calculated for each of the four areas. An estimated 7,600 cubic yards (cyds) of actionable soil is located in place on Site.

### 2.3 Extent of Overburden Soils

Figure 9, revised for this proposal, illustrates the thickness of soil above the actionable soil zones. Isopachs illustrate the thickness of clean overburden to be removed prior to revealing and excavating actionable soil. Figure 9 lists an estimated volume of overburden for each block within each zone of impact. Approximately 3,000 cyds of overburden is located on Site. The overburden thickness ranges from 2 ft near I-6 and G-3 to approximately 6 ft by borings G-4. Based on preliminary physical soil characterization, most of the overburden material can be re-used as compacted fill material. Some blending of the overburden material with import fill material may be required.

### 3.0 REVISED CONCEPTUAL REMEDIAL ACTION PLAN

### 3.0 Conceptual Remedial Action Plan

Various remedial action technologies were considered for addressing on-Site soil and groundwater contamination including soil vapor extraction, groundwater pump and treat, air sparge/air venting, in-site chemical reagent application, and excavation with offsite disposal of soil. These remedial methods were evaluated based on the following criteria: 1) the Site-specific applicability of each technology for remediation of impacted soil and groundwater, 2) duration and costs required for system design and permitting,

3) duration and costs required for system installation, 3) costs required for system operation and maintenance, 4) costs associated with long-term system and groundwater monitoring, and 5) time interval required between system implementation and readiness of the site to be available for new construction.

Based on the information obtained during our Phase I Assessment and Kleinfelder's Site-specific evaluation, we have determined that excavation and off-site disposal combined with in-Situ chemical reagent application to be the most time and cost effective remedial approach for the Site. Excavation and off-site disposal combined with in-Situ chemical reagent application of the contaminated source materials is the most advantageous due to the following Site-specific characteristics: 1) the Site is currently undeveloped, allowing for the space required for large equipment and staging of clean and impacted soil; 2) the Site is located relatively close to a facility permitted to accept petroleum impacted soil for land farming; 3) the contaminated areas are situated within easily excavatable soils; 4) the onsite availability of backfill material (Appendix A); 5) the reduced timeframe between remedial implementation and readiness of the site to be available for new construction; 6) chemical agent application can address the impacted. non-readily excavatable soils situated below the water table; 7) chemical agent application can address the impacted groundwater within in the central portion of the Site; and 8) the proposed, combined remedial techniques aggressively target the sources of petroleum impact at the Site.

Kleinfelder proposes to address the remediation of onsite petroleum hydrocarbon impacted soil by three methods: 1) limiting the excavation of impacted soil to the vadose zone and where necessary, slightly below the water table (<2 ft), 2) applying a chemical reagent to open excavations prior to backfilling to remediate residual amounts of remaining impact in the soil and groundwater, and 3) insitu injection of a chemical reagent into the subsurface in areas of impact significantly below the water table (> 2 ft). The chemical reagent will be applied at concentrations necessary to reduce the mass of petroleum hydrocarbons.

### 3.1 Pre-FRP Activities

### Geophysical Survey

Given the foundations and stubbed off steel pipes observed during the site visits, it is likely that subsurface portions of the refining facility were not removed during dismantling of the facility (Appendix A). In order to identify underground items prior to excavation, Kleinfelder proposed to conduct a geophysical survey of the Site. The geophysical survey of the Site will provide valuable shallow subsurface information prior to implementing the contaminant soil removal activities. Should significant burial debris be identified during the geographical survey, removal and disposal of the debris will be factored into the final remediation scope of services.

### Baseline Groundwater Sampling Event

The monitoring of the three existing site monitoring wells will be conducted prior to application to establish background conditions. Geochemical monitoring and sampling will be necessary to gauge the effects of the application of the peroxygen compounds.

### Waste Pre-Characterization

The proposed disposal facility (Envirotech) has requested additional analysis for RCRA 8 metals based on the planned volume of soil to be landfarmed. A soil sampling event using GeoProbe™ is planned to collect 15 samples to be analyzed for total RCRA 8 metals. We have budgeted 5 samples for analysis by TCLP RCRA 8 metals.

### Excavation Pilot Study (Optional)

If recharge to the excavation occurs at a sufficiently slow rate, it may be feasible to excavate the impacted soil at depths > 2 ft below the water table. As an option, Kleinfelder can evaluate whether dewatering of the excavation is a feasible by conducting a 24-hour pilot test. A 15x15x10 ft. test hole in the southern portion of the site will be excavated. A pump will be used to pump water from the excavation into a frac tank. Extracted groundwater will be sampled and tested to determine the necessary disposal options. Groundwater will be disposed of at Envirotech's NMOCD Permitted Landfarm #2 in Hilltop, New Mexico.

# Former Lagoon Assessment Remediation (Optional)

Kleinfelder discussed the lagoon feature shown on the 1961 air photo (Figure 2) with the NMOCD during the field activities of this investigation. The former lagoon is located immediately west of the southwest corner of the Site. The NMOCD expressed interest in characterizing petroleum impact to soil and groundwater associated with this feature. Kleinfelder proposes to obtain access to the property from Clayton Investments, Inc., install 12 soil borings in the vicinity of and down gradient from the former lagoon, install a single groundwater monitoring well in the center of the former lagoon, and collect soil and groundwater samples similarly to section 2.0.

Should remedial action be deemed necessary at the lagoon location, remediation of the former lagoon will be incorporated into the FRP.

### 3.2 Final Remediation Plan

Kleinfelder will prepare and submit to the NMOCD project manager a draft final remediation plan (FRP). Within 10 working days of receiving NMOCD comments, Kleinfelder will submit the final FRP. The design and engineering of the FRP will be conducted under the supervision of a licensed professional engineer registered in New Mexico. The drawings, plans, and diagrams will be signed and sealed by the same professional engineer who supervises the design of the FRP. A final cost estimate will be submitted concurrently with the FRP.

### 3.3 FRP Implementation

### 3.3.1 Pre-Field Activities

### **Public Notice**

Kleinfelder will publish legal notice at least twice in a newspaper of appropriate circulation. The date of the second publication shall be no later than 7 days after submitting the final remediation plan to NMOCD. An Affidavit of Publication shall be submitted to NMOCD no later than 21 days from the date of final remediation plan submittal.

### Permitting

An Underground Injection Control Permit for the chemical reagent in-Situ injection will be sought from the NMED. Kleinfelder will contact local governments to determine if traffic or construction permits will be required. In addition, dust suppression will be conducted by water spraying during the course of the excavation. Since the planned area of excavation of 0.78 acres is less than the 1.0 acre EPA threshold value, an EPA Storm Water Management Plan (SWMP) is not required; however, Kleinfelder proposes to prepare and implement a SWMP as an optional task in the event that the excavation exceeds the 1.0 acre EPA threshold. A SWMP will also assist in reducing impact to the nearby community caused by site excavation activities and will avoid unnecessary delays and associated costs. At a minimum, a silt fence will be installed along the west side (down slope) of the site abutting Fifth Street.

# Site Preparation

Kleinfelder will contact local utility operators to discuss the necessity of temporally capping or disconnecting utilities adjacent to the proposed excavations. Kleinfelder will conduct a construction Kick-off meeting with stakeholds, including representatives from NMOCD, City of Bloomfield, the excavation subcontractor, the chemical oxidation subcontractor, and utilities operators. Kleinfelder also proposes to assist the NMOCD with a Public Information Session to inform local residents of planned onsite activities.

### On-Site Traffic Control Plan/Site Controls

Personal safety is Kleinfelder's highest priority. An On-Site Traffic Control Plan (TCP) will be implemented to route haul truck and excavation equipment traffic. The TCP will also control access to the site and protect the safety of the public, site occupants, and on-site workers. Security fencing shall be placed around the work area perimeter before excavation begins and remain in place until after site restoration is completed. Site gates will be locked at the end of each work day and remain locked until the next workday begins.

### Competent Person Designation / Health and Safety Plan

A Kleinfelder construction manager, experienced with the excavation of petroleum-contaminated soils, will oversee excavation activities. The construction manager will document material excavated, field screening results, amount of soil removed, and will serve as the OSHA-excavation competent person and on-site health and safety officer. The Site specific Health and Safety Plan will be updated for hazards associated with excavation, backfilling and chemical reagent application.

# 3.3.2 Excavation, Soil Disposal, and Site Restoration *Excavation*

The excavation volumes discussed in section 2.2 are based upon projecting the available data assuming homogeneous conditions. Actual excavated volume will be based upon results of soil screening by the heated headspace method and visual and olfactory observations. Additionally, Kleinfelder has assumed a soil expansion factor of 1.3. The excavation, backfilling and compaction portion of the project is expected to take 18 working days.

Heavy equipment on-site to excavate, load trucks, and provide backfilling will be a track hoe and a front-end loader. During the excavation, the soils will be field screened by Kleinfelder using heated-headspace techniques with a photoionization detector (PID) as described in Appendix D of the Phase I report. The excavation work will proceed until the contamination in the remaining soils has been lowered to less than 100 ppmv as determined by the heated-headspace method, until the property boundaries are encountered (using safe set backs) or until a depth of 2 ft below the water table is reached. For temporary storage, field-screened, contaminated soil will be placed in a secure area of the Site, on 40-milliliter (mL) plastic, and bermed with clean soil. The soils will be covered with plastic sheeting at the end of each day to minimize weather impacts. As a result of the shallow groundwater table, the final 1 to 2 ft of soils to be excavated from F-1, G-2, G-3 and G-4 may be water saturated. Saturated soils will be segregated in a separate lined and bermed stockpile and if possible will be direct loaded into transport trucks with bed liners to prevent water from leaking during transport. Air quality will be monitored for VOCs near the excavation and soil stockpiles. Monitoring activities are described in the HASP. If VOC levels approach a threshold above those specified in the HASP, the fieldwork will cease and the field conditions will be reassessed. Air monitoring will determine if an upgrade in PPE to modified Level D or C is necessary.

Soil-slope stability and excavation entry will be evaluated by the construction manager and options for shoring, use of engineered fill, and sloping will be considered. To avoid conditions subject to 29 CFR 1926 Part P, no unsupported walls in excess of 5 ft deep will be left open overnight.

Conversations with local residents suggests that the potentiometric surface rises approximately 2 ft beginning early May due to irrigation upgradient from the Site and

remains high throughout the growing season. The rise of the water table will decrease the volume of impacted soil onsite suitable for remediation by excavation.

### Soil Removal

When possible, excavated soil will be loaded directly into transport trucks. If necessary, impacted soil will be staged on lined, bermed stockpiles. Trucks leaving the site shall pass over a cobble shakedown zone to minimize soil adhering to the bottom or sides of the truck or between or on the tires.

# Waste Management

Disposed soil will be transported to Envirotech's NMOCD Permitted Landfarm #2 in Hilltop, New Mexico. Waste shall be removed in accordance with NMOCD, NMED, and NMDOT requirements. In consideration to nearby residences, soil hauling will only be conducted between business hours. Soil treatment and disposal will be done in accordance with the landfill permit. Kleinfelder's on-site representative will document soil quantities before leaving the Site.

The loading, excavation, transportation and disposal of impacted soils can be priced on two ways, by volume or weight. The industry standard for the area is by volume. The amount of material in each load is dependant upon how the material is loaded, moisture content and soil density. Volume based loads are determined by visual inspection. Weight based loads can be determined with a scale. It is Kleinfelder's experience that variations in volume loads can be upwards of 10%. Since soil disposal is a significant pay item, we want accuracy in determining the amount of soil removed from the site. Therefore, with NMOCD's approval, Kleinfelder will work with our subcontractor to price the soil removal activities in the FRP on a weight basis.

# Sidewall Stability

Due to the expected nature of the aquifer material (flowing sand), unsupported excavation of more than 1-2 ft beneath the water table may result in slumping/subsidence of the soils near the excavation walls. With the proposed excavation in close proximity to Fifth Street, subsidence of subsurface soils may occur. Should Kleinfelder's geotechnical engineer along with our OSHA-competent person determine that there is insufficient soil cohesion to achieve required depths without sidewall sloping or shoring, the NMOCD project manager will be contacted, advised of the conditions, and provided recommendations to mitigate. Kleinfelder will not implement engineered sidewall stability measures without first receiving approval from the NMOCD project manager.

# Confirmatory Soil Sampling

To document that available impacted soil mass has been removed, confirmatory soil samples will be collected from the sidewalls of the excavations at a frequency of one every 20 ft. Additionally, a bottom samples will be collected every 400 ft<sup>2</sup>. Soil samples will be collected using the excavator bucket or hand auger as discussed in Appendix D

of the Phase I report. Soil samples will be collected and analyzed as discussed in Section 2.2. Kleinfelder will use the services of Hall Environmental Analytical Laboratory in Albuquerque, NM in order to receive results within 24 hours. Excavations will not be completely backfill until clean confirmatory sampling has been received from the laboratory.

### Excavation Backfill/Compaction

Pit-run gravel will be used in excavations that extend below the water table where necessary. Excavations will be backfilled with the overburden material present onsite with additional soil imported to the site. Specific compaction requirements will be presented in the FRP and based on site specific requirements provided by the NMOCD; our cost estimates assumes heavy equipment wheel rolled compaction without geotechnical testing.

### Site Restoration

Kleinfelder proposes to remove foundation and subsurface materials remaining onsite from the operations of the refinery as identified during the geophysical survey and soil removal excavation. Following the backfilling and compaction of the excavation zones, the site will be restored to approximately the original grade and drainage pattern.

# Site Constructability

If directed by NMOCD, Kleinfelder will work with the City of Bloomfield and their design team on how the site will be left following construction, including final site elevations, grading, and compaction. Site disposition will be detailed in the FRP.

# 3.3.3 Chemical Reagent Application Chemical Reagent Application to Excavation

The chemical reagent chosen for the in-Situ application and overspray to the excavations is an aqueous suspension of solid peroxygen compounds. This reagent was chosen over potassium permanganate. Both chemicals have the ability to consume petroleum constituents, but the peroxygen compounds also have the ability to consume benzene, the primary carcinogen in petroleum products. Although benzene has not been detected at the Site at significant levels, use of a reagent capable of destroying benzene present is a conservative choice for the benefit of the future users of the Site. Subcontractor supplied information concerning the specific peroxygen compounds are included as Appendix I. Applying peroxygen compounds to excavations prior to backfilling will destroy residual amounts of remaining impact in the soil and groundwater.

# Chemical Reagent In-Situ Application

Insitu injection of peroxygen compounds will destroy petroleum compounds areas of soil impact below the water table. The insitu chemical injection will be conducted using a

direct push rig. A boring will be advanced to the impacted soil at which point the peroxygen solution will be injected via high-pressure hose. The addition of peroxygen compounds causes a significant increase of secondary aerobic biological activity due to the increase of dissolved oxygen following the primary chemical degradation of petroleum hydrocarbons.

### Chemical Reagent In-Situ Application - Second Event

Based on subcontractor experience at similar sites, a second mobilization for insitu chemical injection may be required to address hydrocarbon sources not consumed during the initial application. While Kleinfelder has proposed an aggressive Insitu chemical reagent application, unidentified contamination may be present beneath the site. Therefore, Kleinfelder has included a second insitu chemical reagent application event for planning and costing purposes. The timing of the second event is discussed below.

# 3.3.4 Groundwater Monitoring *Monitoring Well Installation*

After completion of excavation and backfilling activities, eight shallow, additional groundwater monitoring wells will be necessary to delineate groundwater in the interior of the Site and along the western boundary for petroleum hydrocarbon impact. A monitoring well will be installed down gradient from each of the identified areas of soil impact. The down gradient distance between the sources and monitoring wells will be calculated from site specific hydrogeologic data in order to intercept groundwater flowing through the source area.

Additionally, if directed by NMOCD, Kleinfelder will work with the City of Bloomfield and their design team on the location of site monitoring wells to minimize impact to future site use. Locations will be coordinated such that monitoring wells will not be located within the boundaries of future building footprints or other planned site improvements.

# **Groundwater Monitoring**

Geochemical monitoring and sampling will be necessary to gauge the effects of the application of the peroxygen compounds. The monitoring should be conducted at one week, one month and two months following application. Recommended geochemical parameters are included in Appendix I. Due to construction activities, Kleinfelder does not anticipate the opportunity of installing groundwater monitoring wells immediately following application and therefore the one week following application will not be conducted.

If a second insitu chemical application be required, a second round of monitoring should be conducted at one week, one month and two months following application. Kleinfelder proposes to continue quarterly groundwater monitoring at the site for a period of two years following remediation to assess whether petroleum concentrations in groundwater exceed NMWQCC standards.

### 3.4 Reporting

### As-Built Report and Drawings

Kleinfelder will submit an As-Built Report following completion of the excavation, backfilling, and chemical injections. This report will be a comprehensive description of activities conducted at the Site under the FRP.

Modifications to or variances from the drawings and specifications included in the final remediation plan will be discussed. Significant modifications or variances will not be made without receiving prior written approval from NMOCD. A New Mexico Professional Engineer shall sign and seal all drawings, plans, and diagrams submitted with this report.

# Initial Insitu Chemical Reagent Application Efficacy Groundwater Monitoring Report

Kleinfelder will prepare a groundwater monitoring report to document groundwater conditions onsite following the initial insitu chemical reagent application. This report will compare current (one and two months post application) and historical groundwater analytical laboratory results to NMWQCC standards and included a discussion of data (spatial and temporal trends of potentiometric surface and contaminant concentrations) and conclusions addressing plume stability, threat to receptors, delineation, qualitative natural attenuation trends, and recommendations. The primary purpose of this report will be to evaluate the necessity of a second insitu chemical reagent application event.

# <u>Second Insitu Chemical Reagent Application Efficacy Groundwater Monitoring Report</u>

Kleinfelder will prepare a groundwater monitoring report to document groundwater conditions onsite following the second insitu chemical reagent application. This report will compare current (one week, one and two months post second application) and historical groundwater analytical laboratory results to NMWQCC standards and included a discussion of data (spatial and temporal trends of potentiometric surface and contaminant concentrations) and conclusions addressing plume stability, threat to receptors, delineation, qualitative natural attenuation trends, and recommendations.

### 3.5 Cost Estimate Table

To assist the NMOCD with a budget estimate for the proposed activities, Kleinfelder presents the following:

Development and Implementation of Final Remedial Action Plan

SUMMARY OF ESTIMATED TIME AND MATERIAL COSTS		ESTIMATED		WITH
TASK		COST		NMGRT
TASK 1: FINAL REMEDIATION WORK PLAN AND PROJECT PREPARATION	\$	33,012.84	S	35,274.22
TASK 2: PERMITTING, PUBLIC NOTICE	\$	14,006.00	S	14,965.41
TASK 3: GROUNDWATER MONITORING EVENT	\$	4,876.90	\$	5,210.97
TASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT	\$	711,574.74	S	760,317.61
TASK 5: CHEM-OX IN-SITU APPLICATION AND OVERSIGHT	\$	328,417.60	S	350,914.21
TASK 6: MONITORING WELL INSTALLATION (8 wells)	\$	16,054.52	\$	17,154.25
TASK 7: REMEDIATION REPORTING - AS-BUILD REPORT AND DRAWINGS	\$	15,510.00	S	16,572.44
TASK 8: POST CHEM-OX GROUNDWATER MONITORING (for 2 events)	\$	19,119.40	S	20,429.08
TASK 9: POST CHEM-OX CONFIRMATORY SOIL SAMPLING	\$	9,037.22	\$	9,656.27
** TASK 10: INSITU CHEMICAL REAGENT APPLICATION EFFICACY REPORTING	\$	7,507.50	S	8,021.76
TOTAL FRP. Implementation and Reporting	3 \$	1,159,116.72	\$	1,238,516.21

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SUMMARY OF ESTIMATED TIME AND MATERIAL COSTS	ESTIMATED		WITH
TASK	COST	L	NMGRT
OPTIONS - PREPARATION			
OPTION 1: EXCAVATION PILOT TEST	18,606.24	\$	19,880.77
OPTION 2: STORM WATER MANAGEMENT PLAN	4,493.50	\$	4,801.30
OPTION 3: LAGOON CHARACTERIZATION	13,969.57	\$	14,926.49
SUBTOTAL Options 1-3	37,069.31	\$	39,608.56
OPTIONS - SECOND CHEM-OX APPLICATION (IF NECESSARY)		ı	į
OPTION 4: CHEM-OX IN-SITU APPLICATION AND OVERSIGHT - 2ND EVENT	134,027.64	\$	143,208.53
OPTION 5: POST CHEM-OX GROUNDWATER MONITORING, for 3 EVENTS	28,679.10	\$	30,643.62
OPTION 6: INSITU CHEMICAL REAGENT APPLICATION EFFICACY REPORTING	6,360.00	\$	6,795.66
SUBTOTAL Options 4-6	169,066.74	\$	180,647.81
OPTIONS - COMPLIANCE GROUNDWATER MONITORING		\$	-
OPTION 7: QUARTERLY GROUNDWATER MONITORING, for 7 EVENTS	35,395.50	s	37,820.09
OPTION 8: QUARTERLY GROUNDWATER MONITORING, for 7 REPORTS	29,337.00	\$	31,346.58
SUBTOTAL Options 7-8	64,732.50	\$	69,166.68
TOTAL OPTIONAL TASKS	\$ 270,868.55	\$	289,423.05

- Defined as Optional Tasks in the April 06 cost estimate
- .. Additional Task to support decision making for a second injection event

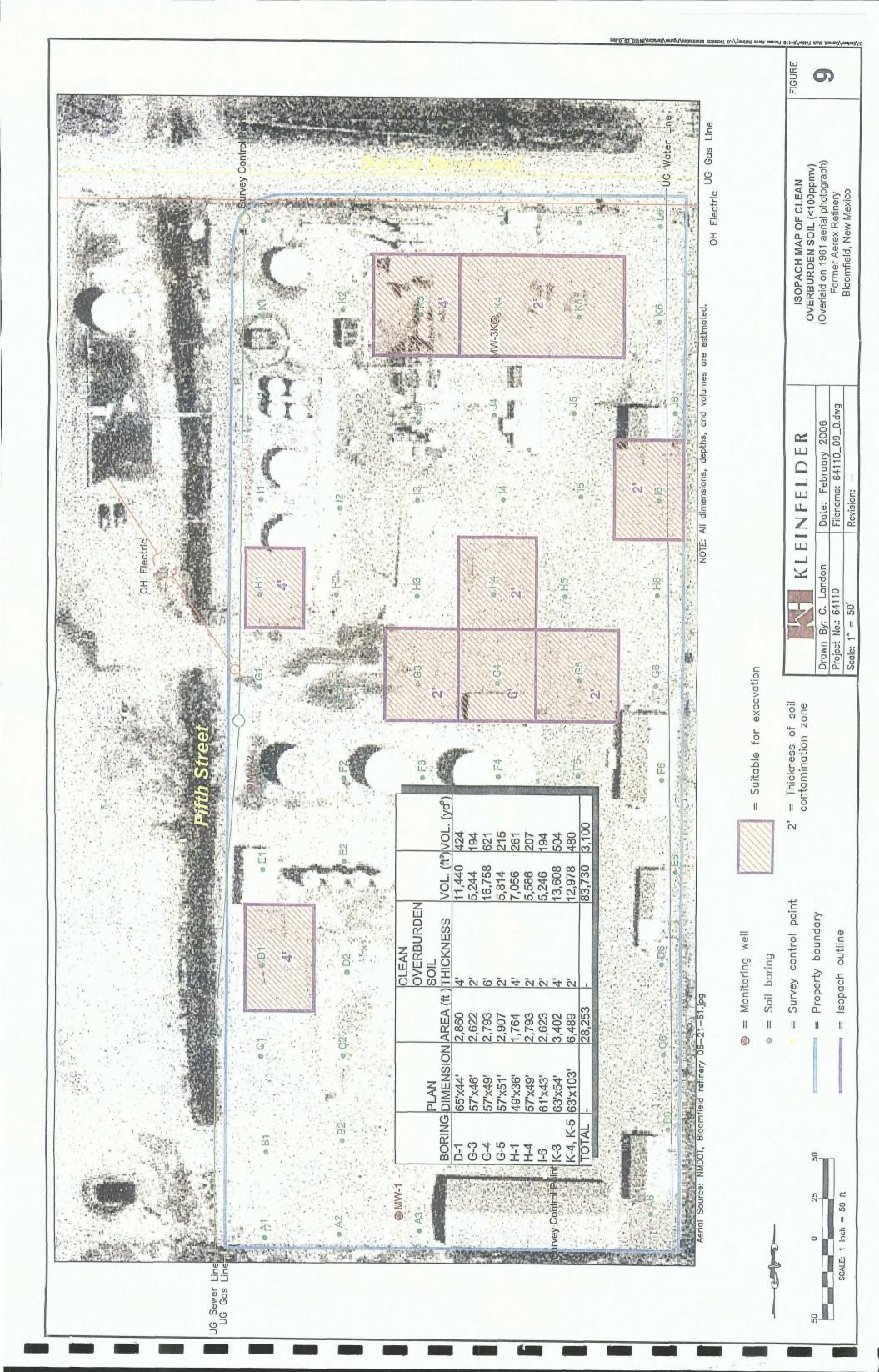
A detailed cost breakdown is also included as Table 9.

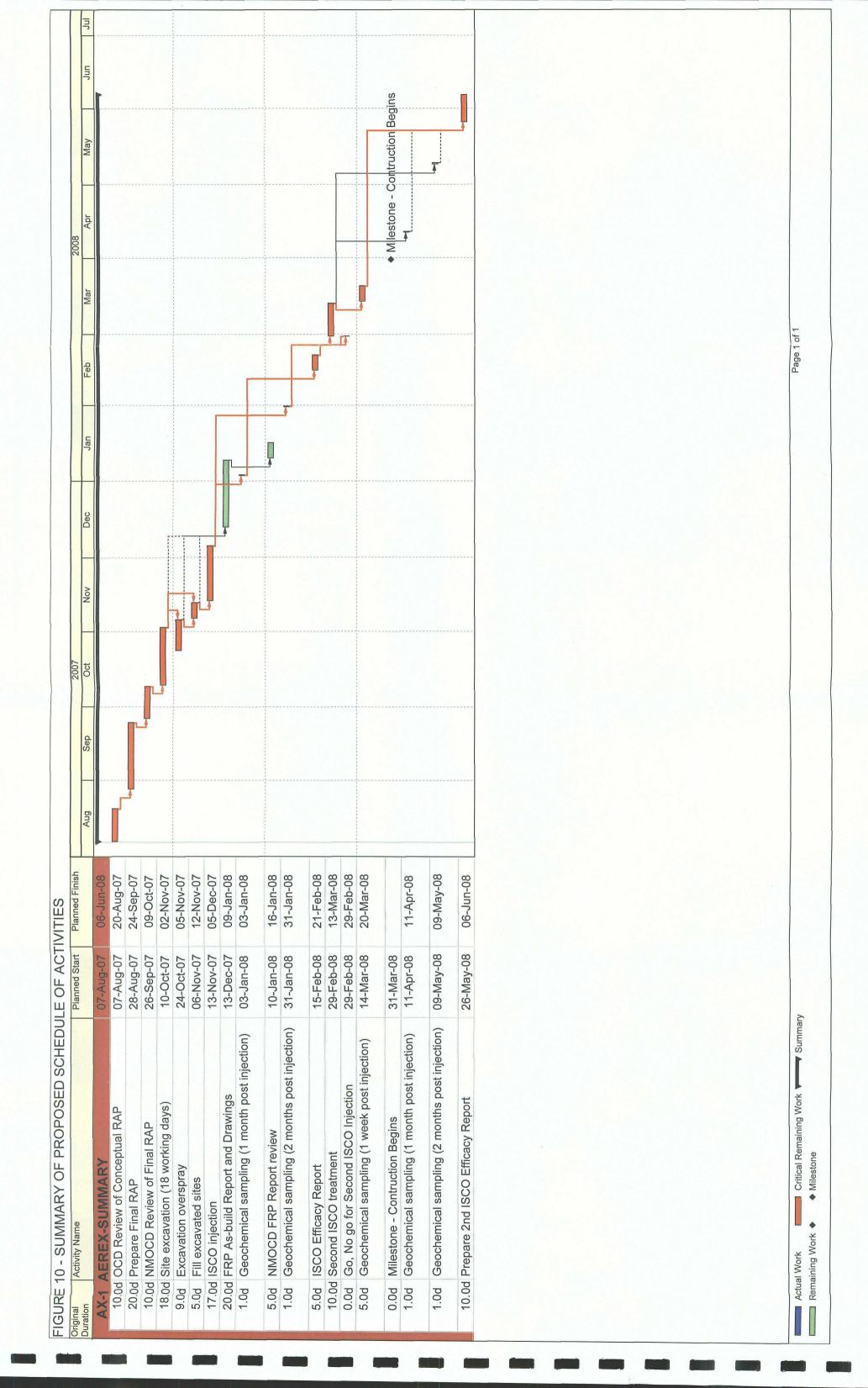
### 3.6 Schedule

To assist the NMOCD's planning of proposed activities, Kleinfelder presents Figure 10 – Proposed Schedule of Activities. Due to the potential of inclement weather and the reduction in productivity it causes, Kleinfelder suggests the OCD take steps necessary to ensure excavation and insitu chemical reagent application field activities be conducted by mid October, 2007.

To meet the target completion date of March 31, 2008, Kleinfelder respectfully requests NMOCD issue a purchase order for the pre-remediation work, Task 1: Final Remediation Work Plan and Project Preparation; Task 2: Permitting, Public Notice, and Task 3: Groundwater Monitoring – Baseline Geochemical Monitoring. The prompt completion of Tasks 1 through 3 will 1) allow for an improved cost estimate for the major field work; and 2) allow for the completion of major remediation work (Tasks 4 through 10) in time for a second insitu chemical application if necessary. NMOCD should prepare for issuing the PO for Tasks 4 through 10 upon approval of the FRP

# **FIGURES**





# **TABLES**

Detailed Cost	9 Bre	akdown		è-unique de la companya de la compan		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
FORMER AREX REFINE			VM	£			
PROJECT:	FOR	MER AREX R	EFINERY, BL	OOMFIEL	D, NI	М	
PROJECT NO: SITE ADDRESS:	Fifth	Street and B	lanco Bouley	ard Bloom	nfield	d NM	
CLIENT:		Mexico Oil C			IIIICI	u, 14141	
TASK 1: FINAL REMEDIATION WORK PLAN AND PROJECT PREPARATION			2 70 100	8 % - C. S			
			<u> </u>	á			
PROFESSIONAL SERVICES  LABOR CATEGORY		UNIT	NUMBE UNITS I		ľ	TOTAL	WITH NMGRT
	\$	125.00	Hour	1 UNITS	\$	5,000.00	NWGRI
Principal Senior Scientist	\$	104.50	Hour	40	\$	4,180.00	
Project Scientist II	\$	90.00	Hour	60	\$	5,400.00	
Project Scientist I	\$	78.00	Hour	34	\$	2,652.00	
Oraftsperson	\$	60.00	Hour	30	\$	1,800.00	
Administrator	\$	50.00 35.00	Hour Hour	30 30	\$ \$	1,500.00 1,050.00	
Clerk Per Diem	\$ \$	91.00	Per Day	2	\$	182.00	
Photoionization Detector	\$	75.00	Per Day	2	\$	150.00	
√ehicle	\$	65.00	Per Day	6	\$	390.00	
Miscellaneous Field Equipment	\$	75.00	Per Day	3	\$	225.00	
Mileage	\$	0.65	Per Mile	700	\$	455.00	
Geophysical Survey Services	\$ \$	4,617.13 4,500.00	Lump Sum Lump Sum	1.1 1.1	\$ \$	5,078.84 4,950.00	
Geophysical Survey Services Subtotal	9	7,500.00	Lump Sum	1.1	\$	33,012.84	\$ 35,274.2
TASK 2: PERMITTING, PUBLIC NOTICE	J. E. S.			**************************************	JI		,=, 7,2
	5.5	<u> </u>		<u> </u>			
PROFESSIONAL SERVICES		UNIT RATE	NUMBE	R OF UNITS		TOTAL COST	WITH NMGRT
LABOR CATEGORY	\$	125.00	UNITS Hour	15	\$	1,875.00	INNORI
Principal Senior Scientist	\$	125.00	Hour	25	\$	2,612.50	
Project Scientist I	s	78.00	Hour	30	š	2,340.00	
Draftsperson	<b>\$</b>	60.00	Hour	30	\$	1,800.00	
Administrator	\$	50.00	Hour	20	\$	1,000.00	:
Per Diem	\$	91.00	Per Day	6	\$	546.00	
Mileage	\$	0.65 65.00	Per Mile Per Dav	1050 6	\$ \$	682.50 390.00	
/ehicle Miscellaneous Field Equipment	\$	75.00	Per Day	2	\$	150.00	
EPA 6010 Metals (Soil)	\$	99.00	Per Sample	15	\$	1,485.00	
EPA 6010 Metals (Soil) TCLP	\$	165.00	Per Sample	5	\$	825.00	
Public Notification	\$	300.00	Lump Sum	1	\$_	300.00	
Subtotal TASK 3: GROUNDWATER MONITORING EVENT		100000000000000000000000000000000000000			\$	14,006.00	\$ 14,965.
Pre Chem Ox Application - 3 samples collected	3	114.6	in the		,		1
PROFESSIONAL SERVICES			4.0		*	× 1.	
Y ADOD CATEGODY		UNIT	NUMBE	R OF	·	TOTAL	WITH
LABOR CATEGORY		UNIT RATE	UNITS	UNITS		COST	WITH NMGRT
Senior Scientist	\$	UNIT RATE 104.50	UNITS Hour	UNITS 8	\$	COST 836.00	
Senior Scientist Staff Scientist	\$	UNIT RATE 104.50 66.00	UNITS Hour Hour	8 20	\$	836.00 1,320.00	
Senior Scientist Staff Scientist Per Diem	\$ \$ \$	UNIT RATE 104.50 66.00 91.00	UNITS Hour Hour Per Day	8 20 2	\$ \$	836.00 1,320.00 182.00	
Senior Scientist Staff Scientist	\$	UNIT RATE 104.50 66.00	UNITS Hour Hour	8 20	\$	836.00 1,320.00	
Senior Scientist Staff Scientist Per Diem Mileage	\$ \$ \$ \$ \$ \$	UNIT RATE 104.50 66.00 91.00 0.65 65.00 50.00	Hour Hour Hour Per Day Per Mile	8 20 2 350 3 2	\$ \$ \$ \$ \$ \$ \$	836.00 1,320.00 182.00 227.50 195.00 100.00	
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe	\$ \$ \$ \$ \$ \$ \$ \$	UNIT RATE 104.50 66.00 91.00 0.65 65.00 50.00 65.00	Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Day Per Day	8 20 2 350 3 2 2	\$ \$ \$ \$ \$ \$	836.00 1,320.00 182.00 227.50 195.00 100.00 130.00	
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope	\$ \$ \$ \$ \$ \$ \$ \$	UNIT RATE 104.50 66.00 91.00 0.65 65.00 50.00 65.00 15.00	Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Day Per Well	8 20 2 350 3 2 2 3	\$ \$ \$ \$ \$ \$ \$	836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00	
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water)	\$ \$ \$ \$ \$ \$ \$ \$ \$	UNIT RATE 104.50 66.00 91.00 0.65 65.00 50.00 65.00 15.00 33.00	Hour Hour Per Day Per Day Per Day Per Day Per Day Per Well Per Sample	8 20 2 350 3 2 2 2 3 3	* * * * * * * *	836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00	
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	UNIT	Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Day Per Well Per Sample Per Sample	8 20 2 350 3 2 2 2 3 3 3	* * * * * * * * * *	836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40	
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water)	\$ \$ \$ \$ \$ \$ \$ \$ \$	UNIT RATE 104.50 66.00 91.00 0.65 65.00 50.00 65.00 15.00 33.00	Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Day Per Well Per Sample Per Sample	8 20 2 350 3 2 2 2 3 3	* * * * * * * *	836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00	
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6010 Metals (Water) Subtotal	****	UNIT RATE 104.50 66.00 91.00 0.65 65.00 50.00 65.00 15.00 33.00 382.80 99.00	Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Well Per Sample Per Sample Per Sample	8 20 2 350 3 2 2 2 3 3 3	***	836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40 297.00	
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6010 Metals (Water) Subtotal	****	UNIT .RATE	Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Well Per Sample Per Sample Per Sample Per Sample	8 20 2 350 3 2 2 2 3 3 3 3 3 3 3 3 3	***	COST 836.00 1,320.00 182.00 227.50 195.00 100.00 45.00 99.00 1,148.40 297.00	NMGRT
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6010 Metals (Water) Subtotal TASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT	****	UNIT RATE 104.50 66.00 91.00 0.65 65.00 50.00 15.00 33.00 382.80 99.00	UNITS Hour Hour Per Day Per Mile Per Day Per Day Per Well Per Sample Per Sample Per Sample	8 20 2 350 3 2 2 2 3 3 3 3 3 3 3 3 3	***	836.00 1,320.00 182.00 227.50 195.00 100.00 45.00 99.00 1,148.40 297.00 4,876.90	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6010 Metals (Water) Subtotal TASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT	****	UNIT .RATE	Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Well Per Sample Per Sample Per Sample Per Sample	8 20 2 350 3 2 2 2 3 3 3 3 3 3 3 3 3	***	COST 836.00 1,320.00 182.00 227.50 195.00 100.00 45.00 99.00 1,148.40 297.00	NMGRT
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EEPA 8010 PAH (Water) EPA 6010 Metals (Water) Subtotal FASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	UNIT RATE 104.50 66.00 91.00 0.65 65.00 65.00 15.00 33.00 382.80 99.00 99.00	UNITS Hour Hour Per Day Per Mile Per Day Per Day Per Well Per Sample Per Sample Per Sample UNITS Hour	8 20 2 350 3 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	\$	COST  836.00 1,320.00 182.00 227.50 195.00 100.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 80218TEX (water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6010 Metals (Water) Subtotal  FASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT  PROFESSIONAL SERVICES LABOR CATEGORY  Principal Senior Scientist	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	UNIT RATE  104.50 66.00 91.00 0.65 65.00 50.00 65.00 33.00 382.80 99.00 99.00 UNIT RATE  125.00 104.50	UNITS Hour Hour Per Day Per Mile Per Day Per Day Per Well Per Sample Per Sample Per Sample UNITS Hour Hour	8 20 2 350 3 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	*****	COST  836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40 297.00 297.00 4.876.90  TOTAL COST 4,500.00 11,077.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6010 Metals (Water) Subtotal FASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist Project Scientist II - Excavation	\$	UNIT RATE  104.50 66.00 91.00 0.65 65.00 50.00 33.00 382.80 99.00 99.00  UNIT RATE  125.00 104.50 90.00	Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Well Per Sample Per Sample Per Sample UNITS Hour Hour	8 20 2 350 3 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	****	COST  836.00 1,320.00 182.00 227.50 195.00 100.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00 11,077.00 3,600.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Wileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6310 PAH (Water) Subtotal FASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist Project Scientist II - Excavation (Two people)	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	UNIT RATE  104.50 66.00 91.00 0.65 65.00 50.00 15.00 33.00 382.80 99.00 99.00  UNIT RATE  125.00 104.50 90.00 78.00	UNITS Hour Hour Per Day Per Mile Per Day Per Day Per Well Per Sample Per Sample Per Sample Volume Per Sample Per Sample Per Sample Hour Hour Hour	8 20 2 350 3 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4	*****	COST  836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00 11,077.00 3,600.00 38,688.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 8010 Metals (Water) Subtotal FASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist Project Scientist I - Excavation Project Scientist I - Excavation (Two people) Per Diem	\$	UNIT RATE  104.50 66.00 91.00 0.65 65.00 65.00 33.00 382.80 99.00  UNIT RATE  125.00 104.50 90.00 78.00 91.00	UNITS Hour Hour Per Day Per Mile Per Day Per Day Per Well Per Sample Per Sample Per Sample UNITS Hour Hour Hour Per Day	R OF UNITS	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	COST  836.00 1,320.00 182.00 227.50 195.00 100.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00 11,077.00 38,688.00 3,731.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 80218TEX (water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6010 Metals (Water) Subtotal FASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist II - Excavation Project Scientist II - Excavation (Two people) Per Diem Mileage	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	UNIT RATE  104.50 66.00 91.00 0.65 65.00 50.00 15.00 33.00 382.80 99.00 99.00  UNIT RATE  125.00 104.50 90.00 78.00	UNITS Hour Hour Per Day Per Mile Per Day Per Day Per Well Per Sample Per Sample Per Sample Volume Per Sample Per Sample Per Sample Hour Hour Hour	8 20 2 350 3 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4	*****	COST  836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00 11,077.00 3,600.00 38,688.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6010 Metals (Water) Subtotal TASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES	*********	UNIT RATE  104.50 66.00 91.00 0.65 65.00 15.00 33.00 382.80 99.00 99.00  UNIT RATE  125.00 104.50 90.00 78.00 91.00 0.65 65.00 75.00	UNITS Hour Hour Per Day Per Mile Per Day Per Well Per Sample Per Sample Per Sample Volume Per Sample Per Day Per Day Per Day Per Day Per Day	8 20 2 350 3 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	****	COST  836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00 11,077.00 3,600.00 38,688.00 3,731.00 2,665.00 1,350.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Milleage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 8310 PAH (Water) EPA 8310 PAH (Water) Subtotal FASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist Project Scientist I - Excavation Project Scientist I - Excavation (Two people) Per Diem Willeage Vehicle Photoionization Detector O2/LEL Meter	***********	UNIT RATE  104.50 66.00 91.00 0.65 65.00 65.00 33.00 382.80 99.00 99.00 UNIT RATE  125.00 104.50 90.00 78.00 91.00 65.00 75.00	UNITS Hour Hour Per Day Per Mile Per Day Per Well Per Sample Per Sample Per Sample Volume Per Sample Per Sample Per Sample Per Sample Per Day Per Mile Per Day Per Day Per Day Per Day Per Day	ROF UNITS  36 106 400 41 4100 41 18 18	**********	COST  836.00 1,320.00 182.00 182.00 227.50 195.00 130.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00 11,077.00 36,608.00 3,731.00 2,665.00 2,665.00 1,350.00 900.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 80218TEX (water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6010 Metals (Water) Subtotal FASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist Project Scientist II - Excavation Per Diem Mileage Vehicle Photoionization Detector D2/LEL Meter Ground Water Quality Meter	**********	UNIT RATE  104.50 66.00 91.00 0.65 65.00 50.00 65.00 33.00 99.00 99.00  UNIT RATE  125.00 104.50 90.00 78.00 0.65 65.00 75.00 50.00 50.00	UNITS Hour Hour Per Day Per Mile Per Day Per Well Per Sample Per Sample Per Sample VNITS Hour Hour Hour Hour Hour Per Day	R OF UNITS  36 106 40 41 4100 41 18 18	*********	COST  836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST  4,500.00 11,077.00 36,688.00 3,731.00 2,665.00 2,665.00 1,350.00 900.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 80218TEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6010 Metals (Water) Subtotal FASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist Project Scientist II - Excavation Project Scientist II - Excavation (Two people) Per Diem Mileage Vehicle Photoionization Detector D2/LEL Meter Ground Water Quality Meter Bailers and Rope	*********	UNIT	UNITS Hour Hour Per Day Per Mile Per Day Per Well Per Sample Per Sample Per Sample Per Sample UNITS Hour Hour Hour Per Day Per Well	R OF UNITS  8 20 2 350 3 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	**********	COST  836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00 11,077.00 36,606.00 3,731.00 2,665.00 1,350.00 900.00 45.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6310 PAH (Water) EPA 6310 Netals (Water) Subtotal TASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist I - Excavation Project Scientist I - Excavation (Two people) Per Diem Mileage Vehicle Photoionization Detector O2/LEL Meter Ground Water Quality Meter Bailers and Rope Miscellaneous Materials and Supplies	***********	UNIT RATE  104.50 66.00 91.00 0.65 65.00 15.00 33.00 382.80 99.00 99.00  UNIT RATE  125.00 104.50 90.00 78.00 91.00 0.65 65.00 75.00 50.00 50.00 15.00 100.00	UNITS Hour Hour Per Day Per Mile Per Day Per Well Per Sample Per Sample Per Sample Per Sample INUMBI UNITS Hour Hour Hour Per Day Per Well Each	R OF UNITS  36 106 40 41 410 418 18 18 18 18	*****	COST  836.00 1,320.00 182.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00 11,077.00 3,600.00 38,688.00 3,731.00 2,665.00 1,350.00 900.00 900.00 900.00 1,800.00 1,800.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 8010 Metals (Water) Subtotal TASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist Project Scientist I - Excavation Project Scientist I - Excavation (Two people) Per Diem Mileage Vehicle Photoionization Detector O2/LEL Meter Ground Water Quality Meter Bailers and Rope Miscellaneous Materials and Supplies EPA 8021 BTEX (Soil) with RUSH surcharge	*********	UNIT	UNITS Hour Hour Per Day Per Mile Per Day Per Well Per Sample Per Sample Per Sample Per Sample INUMBI UNITS Hour Hour Hour Per Day Per Well Each	ROF UNITS  3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	*****	COST  836.00 1,320.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00 11,077.00 3,600.00 38,688.00 3,731.00 2,665.00 1,350.00 900.00 900.00 450.00 11,935.00 11,935.00	\$ 5,210.
Senior Scientist Staff Scientist Per Diem Willeage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope EPA 8021BTEX ( water) Geochemical monitoring (Water) for Chem Ox EPA 8310 PAH (Water) EPA 6310 PAH (Water) EPA 6310 Netals (Water) Subtotal FASK 4: EXCAVATION - CHEMICAL OVERSPRAY - BACKFILLING OVERSIGHT PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist II - Excavation Project Scientist II - Excavation (Two people) Per Diem Willeage Vehicle Photoionization Detector D2/LEL Meter Ground Water Quality Meter Bailers and Rope Miscellaneous Materials and Supplies	\$	UNIT RATE  104.50 66.00 91.00 65.00 65.00 15.00 33.00 382.80 99.00 99.00  UNIT RATE  125.00 104.50 90.00 75.00 50.00 15.00 75.00 50.00 15.00 17.00	UNITS Hour Hour Per Day Per Mile Per Day Per Well Per Sample Per Sample Per Sample Per Sample Per Sample Per Sample Per Day Per Sample	R OF UNITS  36 106 40 41 410 418 18 18 18 18	*****	COST  836.00 1,320.00 182.00 182.00 227.50 195.00 100.00 130.00 45.00 99.00 1,148.40 297.00 297.00 4,876.90  TOTAL COST 4,500.00 11,077.00 3,600.00 38,688.00 3,731.00 2,665.00 1,350.00 900.00 900.00 900.00 1,800.00 1,800.00	\$ 5,210.

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TASK 5: CHEM-OX IN-SITU APPLICATION AND OVERSIGHT				- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1			
PROFESSIONAL SERVICES LABOR CATEGORY		UNIT RATE	NUMBE UNITS	RIOF JUNITS		TOTAL COST	WITH NMGRT
Principal	\$	125.00	Hour	34	\$	4,250.00	
Senior Scientist	\$  \$	104.50 78.00	Hour Hour	104 236	\$ \$	10,868.00 18,408.00	
Project Scientist I Per Diem	\$	91.00	Per Day	236	\$  \$	1,820.00	
Mileage	\$	0.65	Per Mile	2800	\$	1,820.00	
Vehicle	š	65.00	Per Day	20	\$	1,300.00	.* -
Photoionization Detector	s	75.00	Per Day	15	\$	1,125.00	
O2/LEL Meter	\$	50.00	Per Day	15	\$	750.00	
Ground Water Quality Meter	\$	50.00	Per Day	15	\$	750.00	
Bailers and Rope	\$	15.00	Per Well	10	\$	150.00	
Miscellaneous Materials and Supplies	\$	100.00	Each	15	\$	1,500.00	
Chem-ox contractor	-II	\$259,706	Lump Sum	1.1	\$	285,676.60	
Subtotal	Malica				\$_	328,417.60	\$ 350,914.21
TASK 6: MONITORING WELL INSTALLATION (8 wells)	<i>.</i>						
PROFESSIONAL SERVICES LABOR CATEGORY		UNIT * RATE	NUMBE UNITS	R OF UNITS		TOTAL COST	WITH NMGRT
Principal Principal	\$	125.00	Hour	2	\$	250.00	
Senior Scientist	\$	104.50	Hour	10	\$	1,045.00	
Project Scientist I	\$	78.00	Hour	40	\$	3,120.00	
Per Diem	\$	91.00	Per Day	3	\$	273.00	
Mileage	\$	0.65	Per Mile	350	\$	227.50	
Vehicle	\$	65.00	Per Day	4	\$	260.00	,
Miscellaneous Field Equipment	\$	75.00	Per Day	3 3	\$	225.00	
Photoionization Detector Miscellaneous Materials	\$   \$	75.00 100.00	Per Day Each	3	\$	225.00 300.00	
Miscellaneous Materials Surveyor	\$	1,300.00	Lump Sum	1.1	\$	1,430.00	
Drilling Services Earth Tec	\$	7,908.20	Lump Sum	1.1	\$	8,699.02	1
Subtotal		.,000.20	-amp Culti		\$	16,054.52	\$ 17,154.25
TASK 7: REMEDIATION REPORTING - AS-BUILD REPORT AND DRAWINGS			Land Control of the C	d d	<u></u>	,1.02	,
Completed one month after excavation and injection		A SALA		1			<u></u> _
PROFESSIONAL SERVICES  LABOR CATEGORY		UNIT RATE	NUMBI UNITS	R OF UNITS		TOTAL COST	WITH NMGRT
Principal	15	125.00	Hour	20	\$	2,500.00	
Senior Scientist	\$	104.50	Hour	10	\$	1,045.00	-
Project Scientist II	\$	90.00	Hour	40	\$	3,600.00	
Staff Scientist	\$	66.00	Hour	40	\$	2,640.00	
Draftsperson	\$	60.00	Hour	60	\$	3,600.00	
Administrator	\$	50.00	Hour	25	\$	1,250.00	· · · · · · · · · · · · · · · · · · ·
Clerk	\$	35.00	Hour	25	\$	875.00	
Subtotal	V.		(1) 33A		\$	15,510.00	\$ 16,572.44
TASK 8: POST CHEM-OX GROUNDWATER MONITORING Cost for 1 EVENT (see roll up for 2 events) - 9 samples collected	y 19					×.	
PROFESSIONAL SERVICES	1	UNIT	NUMBI	P OF	· ·	TOTAL	WITH
LABOR CATEGORY		RATE	UNITS	UNITS		COST	NMGRT
Principal	\$	125.00	Hour	2	\$	250.00	
Senior Scientist	\$	104.50	Hour	8	\$	836.00	1
Staff Scientist	\$	66.00	Hour	30	\$	1,980.00	
Per Diem	\$	91.00	Per Day	2	\$	182.00	
Mileage	\$	0.65	Per Mile	350	\$	227.50	* *
Vehicle	\$	65.00	Per Day	3	\$	195.00	1 .
Ground Water Quality Meter	\$	50.00		2	\$	100.00	1.
Interface Probe	\$	65.00	Per Day	2	\$	130.00	Same and
Bailers and Rope EPA 8021BTEX ( water)	\$	15.00 33.00	Per Well Per Sample	9	\$	135.00 297.00	
Geochemical monitoring (Water)	\$	382.80	Per Sample	9	\$	3,445.20	
EPA 8310 PAH (Water)	\$	99.00	Per Sample	9	\$	891.00	1 11
EPA 6010 Metals (Water)	\$	99.00		9	\$	891.00	
Subtotal				Andrew Co.	\$	9,559.70	\$ 10,214.54
TASK 9: POST CHEM-OX CONFIRMATORY SOIL SAMPLING	:	* * * * * * * * * * * * * * * * * * * *		S			
10 samples collected PROFESSIONAL SERVICES	1	UNIT	NUMBI	ER OF	<u> </u>	TOTAL	WITH
		U140 I	II . INUIVIBI		1	;	NMGRT
LABOR CATEGORY		RATE	UNITS	UNITS	"	COST	
	\$	725.00	UNITS Hour	2	\$	250.00	
LABOR CATEGORY	\$				\$ \$		
LABOR CATEGORY Principal		125.00	Hour	2		250.00	
LABOR CATEGORY  Principal Senior Scientist Project Scientist   Per Diem	\$ \$ \$	125.00 104.50 78.00 91.00	Hour Hour Hour Per Day	2 8 21 2	\$ \$ \$	250.00 836.00	- X
LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Diem Mileage	\$ \$ \$	125.00 104.50 78.00 91.00 0.65	Hour Hour Hour Per Day Per Mile	2 8 21 2 350	* * * *	250.00 836.00 1,638.00	
LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Diem Mileage Vehicle	* * * * *	125.00 104.50 78.00 91.00 0.65 65.00	Hour Hour Hour Per Day Per Mile Per Day	2 8 21 2 350 2	***	250.00 836.00 1,638.00 182.00 227.50 130.00	
LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Dierm Mileage Vehicle Miscellaneous Field Equipment	***	125.00 104.50 78.00 91.00 0.65 65.00 75.00	Hour Hour Hour Per Day Per Mile Per Day Per Day	2 8 21 2 350 2 2	***	250.00 836.00 1,638.00 182.00 227.50 130.00 150.00	
LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector	***	125.00 104.50 78.00 91.00 0.65 65.00 75.00	Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day	2 8 21 2 350 2 2 2	* * * * * * *	250.00 836.00 1,638.00 182.00 227.50 130.00 150.00	
LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector Miscellaneous Materials	***	125.00 104.50 78.00 91.00 0.65 65.00 75.00 75.00 100.00	Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day Each	2 8 21 2 350 2 2 2 1	***	250.00 836.00 1,638.00 182.00 227.50 130.00 150.00 150.00	
LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector Miscellaneous Materials EPA 8021 BTEX (Soil)	* * * * * * * * * *	125.00 104.50 78.00 91.00 0.65 65.00 75.00 75.00 100.00 33.00	Hour Hour Hour Per Day Per Day Per Day Per Day Each Per Sample	2 8 21 2 350 2 2 2 2 1	***	250.00 836.00 1,638.00 182.00 227.50 130.00 150.00 150.00 100.00 330.00	
LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector Miscellaneous Materials EPA 8015B GRP, DRO, ORO (Soil)	* * * * * * * * * * *	125.00 104.50 78.00 91.00 0.65 65.00 75.00 75.00 100.00 33.00 66.00	Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day Each Per Sample Per Sample	2 8 21 2 350 2 2 2 2 1 10	***	250.00 836.00 1,638.00 182.00 227.50 130.00 150.00 150.00 100.00 330.00 660.00	
LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector Miscellaneous Materials EPA 8021 BTEX (Soil) EPA 8015B GRP, DRO, ORO (Soil) Surveyor	***	125.00 104.50 78.00 91.00 0.65 65.00 75.00 75.00 100.00 33.00 66.00	Hour Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Sample Per Sample Lump Sum	2 8 21 2 350 2 2 2 1 10 10	***	250.00 836.00 1,638.00 182.00 227.50 130.00 150.00 150.00 100.00 330.00 660.00 1,430.00	
LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector Miscellaneous Materials EPA 8015B GRP, DRO, ORO (Soil)	* * * * * * * * * * *	125.00 104.50 78.00 91.00 0.65 65.00 75.00 75.00 100.00 33.00 66.00	Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day Each Per Sample Per Sample	2 8 21 2 350 2 2 2 2 1 10	***	250.00 836.00 1,638.00 182.00 227.50 130.00 150.00 150.00 100.00 330.00 660.00	\$ 9,656.27

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TASK 10: INSITU CHEMICAL REAGENT APPLICATION EFFICACY REPORTING Completed three months after injection event	)	` .						
PROFESSIONAL SERVICES LABOR CATEGORY		UNIT RATE	NUMBE UNITS	RIOF UNITS		TOTAL COST		ITH IGRT
Principal	\$	125.00	Hour	10	\$	1,250.00		
Senior Scientist	\$	104.50	Hour	15	\$	1,567.50		
Project Scientist II	\$	90.00	Hour	20	\$	1,800.00		
Staff Scientist	\$	66.00	Hour	20	(\$	1,320.00	ĺ	
Draftsperson	\$	60.00	Hour	12	\$	720.00		
Administrator	\$	50.00	Hour	10	\$	500.00		
Clerk	\$	35.00	Hour	10	\$_	350.00		
Subtotal			7.4		\$	7,507.50		8,021.76
Total FRP, Implementation and Reporting				<. Fi	\$ 1	1,159,116.72	\$ 1,23	8,516.21
OPTION 1: EXCAVATION PILOT TEST	-			9				
PROFESSIONAL SERVICES LABOR CATEGORY		UNIT RATE	NUMBE UNITS	R OF UNITS		TOTAL COST		TH GRT
Principal	\$	125.00	Hour	2	\$	250.00		
Senior Scientist	\$	104.50	Hour	14	\$	1,463.00		
Project Scientist I - Excavation	ŝ	78.00	Hour	30	Š	2,340.00	ĺ	
Staff Scientist - Excavation	\$	66.00	Hour	22	\$	1,452.00		
Start Scientist - Excavation Per Diem	\$	91.00	Per Day	4	\$	364.00		
Mileage	\$	0.65	Per Day Per Mile	1150	\$	747.50		
Whicle	\$ \$	65.00	Per Nille Per Day	4	\$	260.00		
	\$	75.00	Per Day Per Day	1			İ	
Miscellaneous Field Equipment	11 .		, , ,	4	\$	300.00		
Photoionization Detector	\$	75.00	Per Day	2	\$	150.00		
O2/LEL Meter	\$	50.00	Per Day	2	\$	100.00	}	
Ground Water Quality Meter	\$	50.00	Per Day	2	\$	100.00		
Interface Probe	\$	65.00	Per Day	2	\$	130.00		
Bailers and Rope	\$	15.00	Per Well	6	\$	90.00	1	
Hand Auger System	∬\$	50.00	Per Day	2	∥\$	100.00	ļ	
Miscellaneous Materials	\$	100.00	Each	2	\$	200.00		•
EPA 8021BTEX ( water)	\$	33.00	Per Sample	4	\$	132.00	-	
Cations, Anions (Water)	\$	154.00	Per Sample	1	∥\$	154.00	1	
	11	99.00	Per Sample	4	\$	396.00		
	II \$						i	
EPA 8310 PAH (3 Water)	"	99.00	Per Sample	l 4	\$	396.00 l		
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water)	\$	99.00 8.619.77	Per Sample Lump Sum	4	\$	396.00 9 481 74		
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal DPTION 2: STORM WATER MANAGEMENT PLAN	\$ \$	8,619.77	Lump Sum	1.1	\$ \$	9,481.74 18,606.24		
EPA 8310 PAH (3 Water)  EPA 6010 Metals (3 Water)  Excavation Subcontractor - Pilot test - 1 Frac tank  Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN	\$ \$	8,619.77		1.1	\$	9,481.74	W	9,880.7 ITH IGRT
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal  PROFESSIONAL SERVICES  LABOR CATEGORY	\$ \$	8,619.77	Lump Sum	1.1 R OF	\$	9,481.74 18,606.24 TOTAL	W	итн
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal	\$ \$	8,619.77 UNIT RATE	Lump Sum NUMBE	1.1 R OF	\$	9,481.74 18,606.24 TOTAL COST	W	итн
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal OPTION 2: STORM WATER MANAGEMENT PLAN PROFESSIONAL SERVICES LABOR CATEGORY Principal Senior Scientist	\$ \$ \$	8,619.77 UNIT RATE 125.00	NUMBE UNITS	R OF UNITS	\$	9,481.74 18,606.24 TOTAL COST 500.00	W	/ITH
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal OPTION 2: STORM WATER MANAGEMENT PLAN PROFESSIONAL SERVICES LABOR CATEGÓRY Principal Senior Scientist Project Scientist I	\$ \$ \$ \$ \$ \$ \$	8,619.77 UNIT RATE 125.00 104.50	NUMBE UNITS Hour Hour	R OF UNITS  4 10	\$ \$ \$ \$	9,481.74 18,606.24 TOTAL COST 500.00 1,045.00	W	/ITH
EPA 8310 PAH (3 Water) EPA 8010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN PROFESSIONAL SERVICES	\$ \$ \$ \$ \$ \$	8,619.77 UNIT RATE 125.00 104.50 78.00	NUMBE UNITS Hour Hour Hour	ER OF UNITS  4 10 25	\$ \$ \$ \$ \$	9,481.74 18,606.24 TOTAL COST 500.00 1,045.00 1,950.00	W	итн
EPA 8310 PAH (3 Water) EPA 8010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$	8,619.77 UNIT RATE 125.00 104.50 78.00 50.00	NUMBE UNITS Hour Hour Hour Hour	1.1 ER OF UNITS 4 10 25 8	\$ \$ \$ \$ \$	9,481.74 18,606.24 TOTAL COST 500.00 1,045.00 1,950.00 400.00	W	итн
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	8,619.77 UNIT RATE 125.00 104.50 78.00 50.00 91.00	NUMBE UNITS Hour Hour Hour Hour Per Day	1.1 R OF UNITS 4 10 25 8 1	\$ \$ \$ \$ \$ \$	9,481.74 18,606.24 TOTAL COST 500.00 1,045.00 1,950.00 400.00 91.00	W	итн
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGÓRY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle	* * * * * * * * * * * * * * * * * * * *	8,619.77 UNIT RATE: 125.00 104.50 78.00 50.00 91.00 0.65	NUMBE UNITS Hour Hour Hour Hour Per Day Per Mile	1.1 R OF UNITS 4 10 25 8 1 350	\$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606.24 TOTAL COST 500.00 1,045.00 1,950.00 400.00 91.00 227.50	W	итн
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment	****	8,619.77 UNIT RATE 125.00 104.50 78.00 50.00 91.00 0.65 65.00	NUMBE UNITS Hour Hour Hour Per Day Per Mile Per Day	1.1 ER OF UNITS 4 10 25 8 1 1 350 2	\$ \$ \$ \$ \$ \$	9,481.74 18,606.24 TOTAL COST 500.00 1,045.00 1,950.00 400.00 91.00 227.50 130.00	V NN	ITH IGRT
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION	****	8,619.77 UNIT RATE 125.00 104.50 78.00 50.00 91.00 0.65 65.00	NUMBE UNITS Hour Hour Hour Per Day Per Mile Per Day	1.1 ER OF UNITS 4 10 25 8 1 1 350 2	\$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24 TOTAL COST 500.00 1,950.00 400.00 91.00 227.50 130.00 150.00	V NN	
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES	****	8,619.77  UNIT RATE  125.00 104.50 78.00 50.00 91.00 0.65 65.00 75.00	NUMBE UNITS Hour Hour Hour Hour Per Day Per Mile Per Day Per Day	1.1 ER OF UNITS 4 10 25 8 1 350 2 2	\$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24 TOTAL COST 500.00 1,950.00 400.00 91.00 227.50 130.00 1,50.00 4,493.50	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY	***	8,619.77  UNIT RATE  125.00 104.50 78.00 50.00 91.00 0.65 65.00 75.00  UNIT RATE	NUMBE UNITS Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day	R OF UNITS  4 10 25 8 1 350 2 2 2	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24 TOTAL COST 500,00 1,950,00 400,00 91,00 227.50 130,00 1,50,00 4,493,50	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal	\$	8,619.77  UNIT RATE  125.00 104.50 78.00 50.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00	NUMBE UNITS Hour Hour Hour Per Day Per Day Per Day NUMBE UNITS Hour	R OF UNITS  4 10 25 8 1 350 2 2 2 ER OF UNITS 6	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24 TOTAL COST 500,00 1,045,00 400,00 91,00 227,50 130,00 4,493,50 TOTAL COST	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist LABOR CATEGORY  Principal Senior Scientist	\$	8,619.77  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00 UNIT RATE  125.00 104.50	NUMBE UNITS Hour Hour Hour Per Day Per Day Per Day NUMBE UNITS  NUMBE UNITS Hour Hour	R OF UNITS 4 10 25 8 1 350 2 2 2 ER OF UNITS 6 20	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606.24 TOTAL COST 500.00 1,045.00 1,950.00 400.00 91.00 227.50 130.00 150.00 4,493.50 TOTAL COST 750.00 2,090.00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water)  EPA 6010 Metals (3 Water)  EPA 6010 Metals (3 Water)  Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist  Project Scientist I  Administrator  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Subtotal  OPTION 3: LAGOON CHARACTERIZATION  Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist I  ABOR CATEGORY  Principal  Senior Scientist  Professional Services  LABOR CATEGORY  Principal  Senior Scientist  Project Scientist I	\$	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00 UNIT RATE  125.00 104.50 78.00 104.50 78.00	NUMBE UNITS Hour Hour Hour Per Day Hour Hour Hour Hour Hour Hour Hour Hour	R OF UNITS 8 1 350 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24 TOTAL COST 500.00 1,045.00 1,950.00 400.00 91.00 227.50 130.00 1,50.00 4,493.50 TOTAL COST 750.00 2,090.00 2,340.00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water)  =PA 6010 Metals (3 Water)  EPA 6010 Metals (3 Water)  Subtotal  DPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist  Project Scientist I  Administrator  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Subtotal  DPTION 3: LAGOON CHARACTERIZATION  Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist Project Scientist I  ABOR CATEGORY  Principal  Senior Scientist I  Per Diem  Professional Services  LABOR CATEGORY  Principal  Senior Scientist I  Per Diem  Professional Services  LABOR CATEGORY	\$	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00 UNIT RATE  125.00 104.50 78.00 91.00 0.65	NUMBE UNITS Hour Hour Hour Per Day Per Day Per Day Per Day Per Day NUMBE UNITS Hour Hour Hour Per Day	R OF UNITS  4 10 25 8 1 350 2 2 2 2 2 2 2 2 3 3 0 4	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24 TOTAL COST 500.00 1,950.00 400.00 91.00 227.50 130.00 1,50.00 4,493.50 TOTAL COST 750.00 2,090.00 2,340.00 364.00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal  DPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  DPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Diem Mileage	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	8,619.77  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 78.00 91.00 0.65	NUMBE UNITS Hour Hour Per Day Per Day NUMBE UNITS Hour Hour Hour Hour Hour Per Day Per Day Per Day	R OF UNITS  4 10 25 8 1 350 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24 TOTAL COST 500,00 1,045,00 400,00 91,00 227,50 130,00 4,493,50 TOTAL COST 750,00 2,090,00 2,340,00 364,00 227,50	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water)  EPA 6010 Metals (3 Water)  EPA 6010 Metals (3 Water)  Subtotal  DPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist  Project Scientist I  Administrator  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Subtotal  DPTION 3: LAGOON CHARACTERIZATION  Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist  LABOR CATEGORY  Principal  Senior Scientist  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist  Per Diem  Milleage  Vehicle	\$	8,619.77  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00	NUMBE UNITS Hour Hour Hour Per Day Per Day NUMBE UNITS  NUMBE UNITS Hour Hour Hour Per Day	R OF UNITS 4 10 25 8 1 350 2 2 2 2 2 2 30 4 350 4	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606.24 TOTAL COST 500.00 1,045.00 1,950.00 400.00 91.00 227.50 130.00 4,493.50 TOTAL COST 750.00 2,090.00 2,340.00 364.00 227.50 260.00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water)  EPA 6010 Metals (3 Water)  EPA 6010 Metals (3 Water)  Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist  Project Scientist I  Administrator  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Subtotal  OPTION 3: LAGOON CHARACTERIZATION  Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist  Project Scientist I  ABOR CATEGORY  Principal  Senior Scientist  Project Scientist I  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment Substantial  Mileage  Vehicle  Miscellaneous Field Equipment Substantial  Mileage  Vehicle  Miscellaneous Field Equipment Substantial  Mileage  Vehicle  Miscellaneous Field Equipment	\$	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00	NUMBE UNITS Hour Hour Hour Per Day Per Mile Per Day Per Day NUMBE UNITS Hour Hour Hour Per Day Per Mile Per Day Per Mile Per Day	R OF UNITS  4 10 25 8 1 350 2 2 2  ER OF SUNITS  6 20 30 4 350 4 350 4 4 4	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481,74 18,606,24  TOTAL COST 500,00 1,950,00 400,00 91,00 227,50 130,00 1,50,00 4,493,50  TOTAL COST 750,00 2,090,00 2,340,00 364,00 227,50 260,00 300,00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water)  EPA 6010 Metals (3 Water)  EPA 6010 Metals (3 Water)  Subtotal  DPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist  Project Scientist I  Administrator  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Subtotal  DPTION 3: LAGOON CHARACTERIZATION  Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist I  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Subtotal  DPTION 3: LAGOON CHARACTERIZATION  Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist I  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Photoionization Detector	\$	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 75.00  0.65 65.00 75.00 75.00	NUMBE UNITS Hour Hour Hour Per Day Per Day Per Day NUMBE UNITS Hour Hour Hour Per Day	R OF UNITS 4 10 25 8 1 350 2 2 2 2 2 2 30 4 350 4	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24  TOTAL COST 500.00 1,950.00 400.00 91.00 227.50 130.00 1,50.00 4,493.50  TOTAL COST 750.00 2,090.00 2340.00 364.00 227.50 260.00 300.00 225.00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal  DPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  DPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Project Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector Ground Water Quality Meter	\$	8,619.77  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00 91.00 0.65 65.00 75.00 75.00	NUMBE UNITS Hour Hour Per Day Per Day NUMBE UNITS Hour Hour Hour Per Day Per Day Per Day Per Day NUMBE UNITS Hour Hour Per Day	R OF UNITS  4 10 25 8 1 350 2 2 2  ER OF SUNITS  6 20 30 4 350 4 350 4 4 4	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24  TOTAL COST 500,00 1,045,00 400,00 91,00 227,50 130,00 4,493,50  TOTAL COST 750,00 2,090,00 2,340,00 364,00 227,50 260,00 300,00 225,00 50,00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) PA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Professional Services LABOR CATEGORY  Principal Senior Scientist Project Scientist I Per Diem Milleage Vehicle Miscellaneous Field Equipment Principal Senior Scientist I Per Diem Milleage Vehicle Miscellaneous Field Equipment Photoionization Detector Ground Water Quality Meter Interface Probe	\$	8,619.77  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00 75.00 75.00 75.00 75.00 75.00 75.00	NUMBE UNITS Hour Hour Hour Per Day Per Day NUMBE UNITS Hour Hour Hour Per Day Per Day Per Day NUMBE UNITS Hour Hour Hour Per Day Per Mile Per Day	R OF UNITS 4 10 25 8 1 350 2 2 2 2 2 30 4 4 350 4 4 3 1 1	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24  TOTAL COST 500.00 1,045.00 400.00 91.00 227.50 130.00 4,493.50  TOTAL COST 750.00 2,340.00 364.00 327.50 260.00 300.00 225.00 50.00 65.00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water)  EPA 6010 Metals (3 Water)  EPA 6010 Metals (3 Water)  Subtotal  DPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist  Project Scientist I  Administrator  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Subtotal  DPTION 3: LAGOON CHARACTERIZATION  Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist I  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment Subtotal  DPTION 3: LAGOON CHARACTERIZATION  Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist I  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Photoionization Detector  Ground Water Quality Meter  Interface Probe  Bailers and Rope	***************************************	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00 75.00 104.50 78.00 91.00 0.65 65.00 75.00 15.00	NUMBE UNITS Hour Hour Hour Per Day Per Day NUMBE UNITS Hour Hour Hour Per Day Per Well	ER OF UNITS  4 10 25 8 1 350 2 2 2 2 2 2 3 30 4 350 4 3 3 1 1 1 1	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24  TOTAL COST 500,00 1,950,00 400,00 91,00 227,50 130,00 1,50,00 4,493,50  TOTAL COST 750,00 2,090,00 2,340,00 364,00 227,50 260,00 300,00 225,00 50,00 65,00 15,00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal  DPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Wehicle Miscellaneous Field Equipment Subtotal  DPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Wehicle Miscellaneous Field Equipment Senior Scientist Project Scientist I Per Diem Mileage Wehicle Miscellaneous Field Equipment Photoionization Detector Ground Water Quality Meter Interface Probe Bailers and Rope Miscellaneous Materials	\$	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 75.00 75.00 75.00 75.00 75.00 75.00 75.00 100.00	NUMBE UNITS Hour Hour Per Day	R OF UNITS  4 10 25 8 1 350 2 2 2 2 2 3 3 4 3 3 5 0 4 4 3 3 1 1 1 2 2	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24  TOTAL COST 500.00 1,950.00 400.00 91.00 227.50 130.00 1,50.00 4,493.50  TOTAL COST 750.00 2,090.00 2340.00 364.00 227.50 260.00 300.00 225.00 65.00 65.00 65.00 65.00 200.00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector Ground Water Quality Meter Interface Probe Bailers and Rope Miscellaneous Materials EPA 8021 BTEX (Soil)	\$	8,619.77  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 78.00 0.65 65.00 75.00 91.00 0.65 65.00 75.00 100.00 33.00	NUMBE UNITS Hour Hour Hour Per Day Per Day  NUMBE UNITS  Hour Hour Hour Per Day Per Day  Per Day Per Sample	ER OF UNITS  4 10 25 8 1 350 2 2 2 2 2 2 3 30 4 350 4 3 3 1 1 1 1	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24  TOTAL COST 500,00 1,950,00 400,00 91,00 227,50 130,00 1,50,00 4,493,50  TOTAL COST 750,00 2,090,00 2,340,00 364,00 227,50 260,00 300,00 225,00 50,00 65,00 15,00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) PA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photolonization Detector Ground Water Quality Meter Interface Probe Bailers and Rope Miscellaneous Materials EPA 8021 BTEX (Soil) EPA 8021 BTEX (Soil) EPA 8021 BTEX (water)	\$	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 75.00 75.00 75.00 75.00 75.00 75.00 75.00 100.00	NUMBE UNITS Hour Hour Hour Per Day Per Day  NUMBE UNITS  Hour Hour Hour Per Day Per Day  Per Day Per Sample	R OF UNITS  4 10 25 8 1 350 2 2 2 2 2 3 3 4 3 3 5 0 4 4 3 3 1 1 1 2 2	***	9,481.74 18,606,24  TOTAL COST 500.00 1,950.00 400.00 91.00 227.50 130.00 1,50.00 4,493.50  TOTAL COST 750.00 2,090.00 2340.00 364.00 227.50 260.00 300.00 225.00 65.00 65.00 65.00 65.00 200.00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) PA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photolonization Detector Ground Water Quality Meter Interface Probe Bailers and Rope Miscellaneous Materials EPA 8021 BTEX (Soil) EPA 8021 BTEX (Soil) EPA 8021 BTEX (water)	\$	8,619.77  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 78.00 0.65 65.00 75.00 91.00 0.65 65.00 75.00 100.00 33.00	NUMBE UNITS Hour Hour Hour Per Day Per Day  NUMBE UNITS  Hour Hour Hour Per Day Per Day  Per Day Per Sample	R OF UNITS  4 10 25 8 1 350 2 2 2 2 2 3 3 3 3 3 1 1 1 1 2 1 2 1 2	***	750.00 2,340.00 364.00 227.50 2,090.00 2,340.00 364.00 227.50 2,090.00 2,340.00 364.00 227.50 260.00 300.00 225.00 300.00 200.00 396.00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water)  EPA 6010 Metals (3 Water)  EPA 6010 Metals (3 Water)  Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist  Project Scientist I  Administrator  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Subtotal  OPTION 3: LAGOON CHARACTERIZATION  Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist I  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION  Two site visits  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal  Senior Scientist I  Per Diem  Mileage  Vehicle  Miscellaneous Field Equipment  Photoionization Detector  Ground Water Quality Meter Interface Probe  Bailers and Rope  Miscellaneous Materials  EPA 8021 BTEX (Soil)  EPA 8021BTEX (water)  EPA 8015B GRP, DRO, ORO (Soil)	***************************************	UNIT RATE  125.00 104.50 78.00 50.00 91.00 65.00 75.00  UNIT RATE  125.00 104.50 76.00 75.00 104.50 78.00 104.50 78.00 104.50 104.50 104.50 104.50 104.50 104.50 104.50 104.50 104.50 104.50 104.50 105.00 105.00 100.00	NUMBEUNITS Hour Hour Hour Per Day Per Mile Per Day Per Sample Per Sample Per Sample Per Sample Per Sample Per Sample	R OF UNITS 4 10 25 8 1 350 2 2 2 2 2 30 4 4 350 4 4 1 1 1 2 12 1 1	***	9,481,74 18,606,24  TOTAL COST 500,00 1,045,00 1,950,00 400,00 227,50 130,00 1,50,00 4,493,50  TOTAL COST 750,00 2,090,00 2,340,00 364,00 227,50 300,00 225,00 50,00 65,00 15,00 200,00 330,00 225,00 300,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00 330,00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Excavation Subcontractor - Pilot test - 1 Frac tank Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector Ground Water Quality Meter Interface Probe Bailers and Rope Miscellaneous Materials EPA 8021 BTEX (Soil) EPA 8021 BTEX (Soil) EPA 8021 BTEX (Water) EPA 8015B GRP, DRO, ORO (Soil) Cations. Anions (Water)	*************************	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 75.00 75.00  0.65 65.00 75.00 104.50 75.00 104.50 75.00 104.50 75.00 104.50 75.00 104.50 75.00 104.50 75.00 105.00 105.00 105.00 105.00 106.00	NUMBEUNITS Hour Hour Hour Per Day Per Mile Per Day Per Sample Per Sample Per Sample Per Sample Per Sample Per Sample	ER OF UNITS  4 10 25 8 1 350 2 2 2 2 2 2 3 3 3 4 4 3 3 1 1 1 2 2 1 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9,481.74 18,606,24  TOTAL COST 500,00 1,950,00 400,00 91,00 227,50 130,00 1,50,00 4,493,50  TOTAL COST 750,00 2,090,00 2340,00 364,00 227,50 260,00 300,00 225,00 65,00 65,00 65,00 65,00 155,00 396,00 33,00 792,00 154,00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  DPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  DPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  DPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector Ground Water Quality Meter Interface Probe Bailers and Rope Miscellaneous Materials EPA 8021 BTEX (Soil) EPA 8021BTEX (water) EPA 8015B GRP, DRO, ORO (Soil) Cations. Anions (Water) EPA 8015B GRP, DRO, ORO (Soil) Cations. Anions (Water) EPA 8270 PAH (3 Water)	***************************************	8,619.77  UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 75.00 104.50 75.00 104.50 75.00 105.00 100.00 33.00 65.00 15.00	NUMBEUNITS Hour Hour Hour Per Day Per Mile Per Day Per Sample Per Sample Per Sample Per Sample Per Sample Per Sample	R OF UNITS  4 10 25 8 1 350 2 2 2 2 2 3 3 3 4 3 5 0 4 4 3 1 1 1 2 1 2 1 1 1 1 2 1 1 1 2 1 1 1 1	***	9,481.74 18,606,24  TOTAL COST 500,00 1,045,00 400,00 91,00 227,50 130,00 4,493,50  TOTAL COST 750,00 2,090,00 2,340,00 364,00 227,50 260,00 300,00 225,00 65,00 15,00 200,00 33,00 200,00 396,00 33,00 792,00 154,00 85,00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) PA 6010 Metals (3 Water) PA 6010 Metals (3 Water) Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Webicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Milleage Webicle Miscellaneous Field Equipment Photoionization Detector Ground Water Quality Meter Interface Probe Bailers and Rope Miscellaneous Materials EPA 8021 BTEX (Soil) EPA 8021 BTEX (water) EPA 8015B GRP, DRO, ORO (Soil) Cations, Anions (Water) EPA 8010 Metals (3 Water)	***************************************	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 75.00 104.50 104.50 105.00 105.00 100.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00	NUMBE UNITS Hour Hour Hour Per Day Per Mile Per Day Per Mile UNITS  Hour Hour Hour Hour Hour Hour Hour Hou	R OF UNITS  4 10 25 8 1 350 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		9,481.74 18,606,24  TOTAL COST 500.00 1,045.00 1,950.00 400.00 91.00 227.50 130.00 1,50.00 4,493.50  TOTAL COST 750.00 2,090.00 2,340.00 364.00 227.50 300.00 225.00 50.00 65.00 15.00 200.00 33.00 792.00 154.00 85.00 65.00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  OPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Subtotal  OPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Vehicle Miscellaneous Field Equipment Photoionization Detector Ground Water Quality Meter Interface Probe Bailers and Rope Miscellaneous Materials EPA 8021 BTEX (Soil) EPA 8021 BTEX (Soil) EPA 8021 BTEX (Soil) EPA 8021 BTEX (water) EPA 8015B GRP, DRO, ORO (Soil) Cations, Anions (Water) EPA 8010 Metals (3 Water) EPA 8010 Metals (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Soil)	***********************	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 75.00 50.00 104.50 75.00 50.00 105.00 150.00 150.00 150.00 154.00 85.00 65.00 65.00 65.00 65.00	NUMBEUNITS Hour Hour Hour Hour Per Day Per Mile Per Day Per Day Per Mile Per Day Per Day Per Mile Per Day Per Mile Per Day Per Mile Per Day Per Mile Per Day Per Day Per Day Per Day Per Day Per Sample	ER OF UNITS  4 10 25 8 1 350 2 2 2 2 2 2 3 3 3 4 4 3 3 1 1 1 2 2 1 2 1 1 1 1 1 1 1 1 1 1 1		9,481.74 18,606,24  TOTAL COST 500,00 1,950,00 400,00 91,00 227,50 130,00 1,50,00 4,493,50  TOTAL COST 750,00 2,090,00 2,340,00 364,00 227,50 260,00 300,00 225,00 65,00 65,00 15,00 200,00 33,00 792,00 154,00 85,00 65,00 65,00 65,00	\$	/ITH IGRT 4,801.3
EPA 8310 PAH (3 Water) EPA 6010 Metals (3 Water) EPA 6010 Metals (3 Water) Subtotal  DPTION 2: STORM WATER MANAGEMENT PLAN  PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist Project Scientist I Administrator Per Diem Mileage Wehicle Miscellaneous Field Equipment Subtotal  DPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Wehicle Miscellaneous Field Equipment Subtotal DPTION 3: LAGOON CHARACTERIZATION Two site visits PROFESSIONAL SERVICES  LABOR CATEGORY  Principal Senior Scientist I Per Diem Mileage Wehicle Miscellaneous Field Equipment Photoionization Detector Ground Water Quality Meter Interface Probe Bailers and Rope Miscellaneous Materials EPA 8021 BTEX (Soil) EPA 8021 BTEX (water) EPA 8015B GRP, DRO, ORO (Soil) Cations, Anions (Water) EPA 8010 Metals (3 Water)	***************************************	UNIT RATE  125.00 104.50 78.00 91.00 0.65 65.00 75.00  UNIT RATE  125.00 104.50 75.00 104.50 104.50 105.00 105.00 100.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00	NUMBEUNITS Hour Hour Hour Hour Per Day Per Mile Per Day Per Day Per Mile Per Day Per Day Per Mile Per Day Per Mile Per Day Per Mile Per Day Per Mile Per Day Per Day Per Day Per Day Per Day Per Sample	R OF UNITS  4 10 25 8 1 350 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		9,481.74 18,606,24  TOTAL COST 500.00 1,045.00 1,950.00 400.00 91.00 227.50 130.00 1,50.00 4,493.50  TOTAL COST 750.00 2,090.00 2,340.00 364.00 227.50 300.00 225.00 50.00 65.00 15.00 200.00 33.00 792.00 154.00 85.00 65.00	\$	/ITH IGRT 4,801.3

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OPTION 4: CHEM-OX IN-SITU APPLICATION AND OVERSIGHT - 2ND EVENT		*	4 · · · ·	6				
PROFESSIONAL SERVICES LABOR CATEGORY	<u> </u>	UNIT RATE	NUMBE UNITS	R OF		TOTAL COST		WITH NMGRT
Principal	\$	125.00	Hour	14	\$	1,750.00		
Senior Scientist	\$	104.50	Hour	42	\$	4,389.00		
Project Scientist I	\$	78.00	Hour	100	\$	7,800.00		
Per Diem	\$	91.00	Per Day	8	\$	728.00	İ	
Mileage	\$	0.65	Per Mile	1400	\$	910.00		
Vehicle	\$	65.00	Per Day	12	\$	780.00		
Miscellaneous Field Equipment	\$	75.00	Per Day	7	\$	525.00		
Photoionization Detector	\$	75.00	Per Day	7	\$	525.00		
O2/LEL Meter	\$	50.00	Per Day	7	∥\$	350.00		
Ground Water Quality Meter	\$	50.00	Per Day	7	\$	350.00	Į	
Bailers and Rope	\$	15.00	Per Well	10	\$	150.00		
Miscellaneous Materials	\$	100.00	Each	15	\$	1,500.00		
Chem-ox contractor	\$	103,882.40	Lump Sum	1.1	\$	114,270.64		
Subtotal					\$	134,027.64	\$	143,208.53
OPTION 5: POST CHEM-OX GROUNDWATER MONITORING, 3 EVENTS 9 samples collected	1.0	3 2 S			,			
PROFESSIONAL SERVICES	<u> </u>	UNIT	NUMBE		Ī.	TOTAL		WITH
LABOR CATEGORY	<u></u>	RATE	UNITS	UNITS	L	COST		NMGRT
Principal	\$	125.00	Hour	2	\$	250.00	1	
Senior Scientist	\$	104.50	Hour	8	\$	836.00	1	
Staff Scientist	\$	66.00	Hour	30	\$	1,980.00		
Per Diem	\$	91.00	Per Day	2	\$	182.00		
Mileage	\$	0.65	Per Mile	350	\$	227.50	1	
Vehicle	\$	65.00	Per Day	3	\$	195.00	l	
Ground Water Quality Meter	\$	50.00	Per Day	2	\$	100.00	l	
Interface Probe	\$	65.00	Per Day	2	\$	130.00	-	
Bailers and Rope	\$	15.00	Per Well	9	\$	135.00	1	
EPA 8021BTEX ( water)	\$	33.00	Per Sample	9	\$	297.00		
Geochemical monitoring (Water)	\$	382.80	Per Sample	9	\$	3,445.20		
EPA 8270 PAH (Water)	\$	99.00	Per Sample	9	\$	891.00		
EPA 6010 Metals (Water)	\$	99.00	Per Sample	. 9	\$	891.00	)	
Subtotal	AIRT O			10000000000000000000000000000000000000	\$	9,559.70	\$	10,214.54
OPTION 6: INSITU CHEMICAL REAGENT APPLICATION EFFICACY REPORTING		-21.12		i.				
Completed three months after injection event	٠			and an a				
PROFESSIONAL SERVICES	F .	UNIT	NUMBE	R OF	T	TOTAL		WITH
LABOR CATEGORY	6.4	RATE	UNITS	UNITS		COST	1	NMGRT
Principal	\$	125.00	Hour	5	\$	625.00		
Senior Scientist	\$	104.50	Hour	10	\$	1,045.00		
Project Scientist II	\$	90.00	Hour	20	\$	1,800.00	l	
Staff Scientist	\$	66.00	Hour	20	\$	1,320.00		
Draftsperson	\$	60.00	Hour	12	\$	720.00		
Administrator	\$	50.00	Hour	10	\$	500.00	1	
Clerk	\$	35.00	Hour	10	\$	350.00		
Subtotal					\$	6,360.00	\$	6,795.66
OPTION 7: QUARTERLY GROUNDWATER MONITORING, 7 EVENTS Assumes 9 wells sampled, petroleum only, compliance monitoring		State of Maria	100 L	- Au			<u> </u>	8
PROFESSIONAL SERVICES				F			11	
LABOR CATEGORY		LINIT	NUMBE	ROF	Í	TOTAL	<u> </u>	WITH
LADUR CALEGURI		UNIT RATE	NUMBE UNITS	R OF		TOTAL COST		WITH NMGRT
	\$	UNIT RATE 125.00	NUMBE UNITS Hour		\$	COST		WITH NMGRT
Principal	\$	125.00	UNITS Hour	UNITS 2	\$ \$	COST 250.00		
Principal Senior Scientist	\$	125.00 104.50	UNITS Hour Hour	UNITS 2 8	\$	250.00 836.00		
Principal Senior Scientist Staff Scientist		125.00 104.50 66.00	UNITS Hour Hour Hour	UNITS 2		250.00 836.00 1,980.00		
Principal Senior Scientist Staff Scientist Per Diem	\$ \$ \$	125.00 104.50 66.00 91.00	UNITS Hour Hour Hour Per Day	2 8 30 2	\$ \$ \$	250.00 836.00 1,980.00 182.00		
Principal Senior Scientist Staff Scientist Per Diem Mileage	\$ \$ \$	125.00 104.50 66.00 91.00 0.65	UNITS Hour Hour Hour Per Day Per Mile	2 8 30	\$ \$ \$	250.00 836.00 1,980.00 182.00 227.50		
Principal Senior Scientist Staff Scientist Per Diem Mileage Vehicle	\$ \$ \$ \$	125.00 104.50 66.00 91.00	UNITS Hour Hour Hour Per Day	2 8 30 2 350 5	\$ \$ \$ \$	250.00 836.00 1,980.00 182.00		
Principal Senior Scientist Staff Scientist Per Diem Mileage	\$ \$ \$ \$ \$	125.00 104.50 66.00 91.00 0.65 65.00	UNITS Hour Hour Hour Per Day Per Mile Per Day	2 8 30 2 350	\$ \$ \$	250.00 836.00 1,980.00 182.00 227.50 325.00		
Principal Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter	\$ \$ \$ \$	125.00 104.50 66.00 91.00 0.65 65.00 50.00	UNITS Hour Hour Hour Per Day Per Mile Per Day Per Day	2 8 30 2 350 5 2	\$ \$ \$ \$ \$ \$	250.00 836.00 1,980.00 182.00 227.50 325.00 100.00		
Principal Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe	***	125.00 104.50 66.00 91.00 0.65 65.00 50.00 65.00	UNITS Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Day	2 8 30 2 350 5 2	\$ \$ \$ \$ \$ \$ \$	250.00 836.00 1,980.00 182.00 227.50 325.00 100.00 130.00		
Principal Senior Scientist Staff Scientist Per Diem Mileage Vehicle Ground Water Quality Meter Interface Probe Bailers and Rope	***	125.00 104.50 66.00 91.00 0.65 65.00 50.00 65.00 15.00	Hour Hour Hour Per Day Per Mile Per Day Per Day Per Day Per Day Per Well	2 8 30 2 350 5 2 2 9	\$ \$ \$ \$ \$ \$ \$ \$ \$	250.00 836.00 1,980.00 182.00 227.50 325.00 100.00 135.00 297.00		
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PHASE 1 SUBSURFACE ASSESSMENT FORMER AEREX REFINERY BLOOMFIELD, NEW MEXICO KLEINFELDER PROJECT NO. 64110

April 6, 2006

Prepared for: NEW MEXICO OIL CONSERVATION DIVISION

1200 SOUTH SAINT FRANCIS DRIVE SANTA FE, NEW MEXICO 87505

Prepared by:



8300 Jefferson NE Suite B Albuquerque, New Mexico 87113 April 6, 2006

Kleinfelder Project No. 64110 File No.: 64110.3-ALB06RP001

Mr. Ben Stone New Mexico Oil Conservation Division 1200 South St. Francis Drive Santa Fe, New Mexico 87505

Subject:

Phase I Subsurface Assessment

Former Aerex Refinery Bloomfield, New Mexico

Dear Mr. Stone:

Kleinfelder is pleased to present the results of the Phase I Subsurface Assessment performed at the former Aerex Refinery Site in Bloomfield, New Mexico. This report includes a description of sampling procedures, sample results, conclusions, and recommendations.

Should any questions arise concerning this report, we would be pleased to discuss them with you.

Respectfully submitted,

KLEINFELDER, INC.

Justin D. Ball, P.G. Project Geologist

Reviewed by:

Bob Wilcox, P.G.

Senior Project Manager

Boblehlers

JDB:ylw

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- Appendix C Health and Safety Plan Signatory Pages
- Appendix D Field Operating Procedures
- Appendix E Boring Logs
- Appendix F Field Notes
- Appendix G Laboratory Analytical Results, QA/QC, and Chain-of-Custody
- Appendix H Water Well Search Results
- Appendix I Technical Specifications Cool-Ox® Copyright Technology

This report presents the results of the Phase I Subsurface Assessment performed on a portion of the former Aerex Refinery (Site) located in Bloomfield, New Mexico (Figure 1). The scope of work for this sampling event was detailed in Kleinfelder, Inc.'s (Kleinfelder's) Work Plan No. ALB05WP001 dated December 14, 2005. The New Mexico Oil Conservation Division (NMOCD) reviewed and approved Kleinfelder's Work Plan. Field work for this event was performed between January 9 through February 2, 2006.

# 1.1 Project Description

The Site is located in the NW1/4 of Section 22 Township 29 North, Range 11 West, in Bloomfield, San Juan County, New Mexico. After the facility was abandoned, the property was subdivided; a portion of the property west of Fifth Street is currently owned by Giant Industries, and was not included as a part of this assessment. The 3.5-acre vacant property located at the southeast of the corner of Blanco Boulevard and Fifth Street is the subject of the Phase I Subsurface Assessment (Figure 2). This parcel is currently owned by Clayton Investments and is not considered by the NMOCD as the responsible party for environmental liabilities associated with the former refinery. Kleinfelder has determined that vacant portions of the former Aerex facility south and west of the Giant Property are also owned by Clayton Investments. Current property use in the Site vicinity includes residential to the east, south, and across Blanco Boulevard to the north. Salmon Park is located at the intersection of Fifth Street and Larch Street, approximately 1000 feet (ft) south of the Site. Central Primary School is located at 310 W Sycamore Ave, approximately 2000 ft southeast of the Site.

The Site is currently vacant; aboveground structures have been removed from the property, although numerous concrete foundations from the former refining operations are visible. The land surface is relative flat with drainage trending towards the south. Numerous piles of fill dirt have been imported to the Site and have covered approximately one-quarter of the surface of the Site. Conversations with Mr. Denny Faust of the NMOCD indicate the fill dirt is not the subject of this assessment since the material was not related to the former Aerex facility.

To the west across Fifth Street is the portion of the former Aerex property now owned by Giant Industries. A number of aboveground storage tanks (ASTs) are located on the Giant Industries property, but the facility is not in operation. Groundwater monitoring is currently being conducted by Giant Industries; the NMOCD provides regulatory oversight of these monitoring activities.

Selected photographs obtained at the project Site are shown in Appendix A.

# 1.2 Site History

The former Aerex Refinery operated from approximately 1932 to the 1960's and was dismantled in the 1980's. The facility refined crude oil from wells in the Bloomfield area utilizing fractional distillation to produce gasoline, kerosene, and other petroleum

L:\2005\Projects\64110 Former Aerex Refinery\4.0 Technical Information\4.3 KA Deliverables\Phase I Report - Final\64110.3-ALB06RP001.doc 04/06/06 Page 1 of 21 Final products. Additional data collected during an initial file review and Site visit indicate the following:

- (1) The Site was investigated by the New Mexico Environmental Improvement Department (NMEID) Superfund Bureau in 1989 and 1990 to assess the property for possible hazardous materials. A soil vapor survey and three monitoring wells, ARMW-1, ARMW-2, and ARMW-3, were installed to assess soil and groundwater contamination at the Site. Kleinfelder has redesignated ARMW-1, ARMW-2, and ARMW-3 as MW-1, MW-2 and MW-3, respectively (Figure 2). MW-1 and MW-2 were recently observed at the Site by Kleinfelder personnel. MW-3 was not observed during our initial Site visit and may be buried by fill materials imported to the property.
- (2) The monitoring wells were drilled to a depth between 15 to 25 feet (ft) below ground surface (bgs) (NMEID, 1990). Soils encountered during drilling generally were brown silty clay and clay and fine to coarse sands; very little gravel was observed. Soils with hydrocarbon staining were noted in MW-2 and heavy crude oil-stained soils, sheen, and odor were observed in MW-3.
- (3) Depth to groundwater from ground surface during the 1990 investigation ranged from 5.17 ft bgs in MW-1 to 6.34 ft bgs in MW-2 (NMEID, 1990). Groundwater flow direction was determined to be towards the south-southwest. During Kleinfelder's initial Site visit depth to groundwater was measured between 6 to 7 ft bgs.
- (4) Hydrocarbon concentrations in soils were detected in MW-3 from a sample obtained from 13-15 ft bgs during the NMEID investigation (NMEID, 1990). Concentrations of benzene were 0.185 parts per million (ppm), toluene concentrations were 0.345 ppm, ethylbenzene concentrations were 0.650 ppm, and total xylenes concentrations were 0.685 ppm. The sample was not tested for total petroleum hydrocarbons (TPH).
- (5) Dissolved-phase hydrocarbons were also detected in groundwater obtained from MW-3 (NMEID, 1990). Benzene concentrations were 15.3 parts per billion (ppb) and naphthalenes concentrations were 25 ppb. Total dissolved solids were 680 ppm.
- (6) While light non-aqueous phase liquid (LNAPL) was not observed during the 1990 project, review of the monitor well construction details from MW-3 indicate the well screen was submerged by approximately 5.1 ft (NMEID, 1990). A LNAPL sheen was noted in MW-1.
- (7) In 1994, Fluor Daniel Arcs Team Inc. (FDAT), under direction of the United States Environmental Protection Agency (USEPA), performed a Site Inspection Prioritization at the property. FDAT concluded that since an oil refinery operated at the Site, the onsite source of contamination and associated wastes were excluded from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) definition of hazardous substances under the

L:\2005\Projects\64110 Former Aerex Refinery\4.0 Technical Information\4.3 KA Deliverables\Phase I Report - Final\64110.3-ALB06RP001.doc 04/06/06 Page 2 of 21 Final Petroleum Exclusion Act. Since no CERCLA eligible wastes were present or potentially present at the Site, no further remedial action was planned under CERCLA. FDAT estimated that 70,000 cubic ft of soils were potentially contaminated by petroleum-related compounds. During the mid 1990's, the Site was referred to the State of New Mexico and was placed under the regulatory jurisdiction of the NMOCD.

# 1.3 Proposed Scope of Work

The scope of work specified in the approved work plan included the following key elements:

- Perform a Site visit and extensive file review to obtain relevant information for developing a work plan for future assessment activities.
- Research available records at the State Engineer's Office to locate groundwater supply wells in the vicinity.
- Characterize source area soils using Direct Push Technologies (DPT).
- Obtain groundwater samples from existing monitoring wells and install an additional well, if necessary, to assess groundwater contamination.
- Prepare a report summarizing our findings and prepare a Conceptual Remedial Plan (CRP) and cost estimate to implement the CRP.

### 1.4 Work Plan Deviations

There were no significant deviations from the proposed work plan.

#### 2.1 **Project Preparation**

Upon receipt of authorization to proceed, Kleinfelder performed the following tasks prior to commencing field activities:

- Secure property access from Clayton Investments, Inc.
- Obtain copies of NMED and NMOCD files and research available Site information.
- Perform a records search to assess whether private water supply wells are located within 200 ft of the Site or if there are water sources within 1000 ft of the Site.
- Development of work orders for subcontractors.
- Notify New Mexico One-Call to facilitate location of underground utilities.
- Notified the Client representatives, Mr. Ben Stone and Mr. Denny Faust; and Mr. Bob Moss, agent of the current property owner Clayton Investments, a minimum of 96 hours prior to the commencement of onsite activities.
- Generated a Health and Safety Plan (HASP) for the project.
- Secured and checked field supplies for workability.
- Obtained analytical sample containers from Environmental Science Corp. (ESC).

#### 2.2 **Direct Push Boring Advancement**

Prior to mobilizing to the Site, access to the Site was obtained from Clayton Investments, Inc. A copy of the access agreement is included in Appendix B. Field activities were conducted on January 9, 16 through 20, and 26, 2006. Upon arriving on site, the HASP was reviewed. The signatory HASP pages are included in Appendix C.

The subsurface soil conditions were explored by advancing 69 direct push (DP) soil borings at the Site. The locations of soil borings A-1 through L-6 are provided on Figure 2. At each sampling location, soil samples were collected continuously from surface to depths ranging from 12 to 20 ft bgs using a 4-ft-long, 1.25-inch-diameter acetate-lined continuous sampler. Each boring was advanced until the vertical extent of contamination was established by the field screening methods described below or until conditions precluded collection of reliable data. Boring L-3 was attempted but not completed due to a widespread shallow obstruction at that location, perhaps a former building foundation. Once collected, soils were visually classified and logged in accordance to Kleinfelder's Field Operating Procedures (Appendix D).

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Field screening of soil samples was conducted using a Rae Systems Inc. Model PGM-761S Photo-ionization Detector (PID) and the highest (peak) measurement was recorded in accordance with Kleinfelder's Field Operating Procedures (Appendix D). The PID was calibrated daily using isobutylene span gas to a concentration of 100 parts per million by volume (ppmv). Field screening results are provided on the log of borings (Appendix E), tabulated in Table 1 and discussed in Section 3.5.

A second soil sample was placed in laboratory-provided glassware and preserved on ice for possible laboratory analyses. Soil samples were chosen for laboratory analysis, based on field screening results and field observations. Twenty soil samples were then placed on ice and delivered overnight via Federal Express under standard chain-of-custody procedures to ESC in Mt. Juliet, Tennessee. Soil samples were submitted for laboratory analysis for benzene, toluene, ethlylbenzene, total xylenes, and methy tertiary-butyl ether (MTBE) by EPA Method 8021 and gasoline, diesel, and oil range total petroleum hydrocarbons (TPH-GRO, DRO, and ORO) by EPA method 8015B. Three soil samples containing the highest concentrations of volatile organic compounds (VOCs) as determined by headspace readings (from F-2, I-2, and K-3) were also submitted for analysis for dissolved metals by EPA method 6010B. Sample intervals, sampling methods, and soil classifications are outlined in Kleinfelder's field operating procedures in Appendix D and illustrated on the boring logs provided in Appendix E.

### 2.3 Well Installation

On January 26, 2006, soil boring MW-3K was advanced on the northern section of the site, near the location of MW-3, a previously installed well presumably destroyed during construction associated with Blanco Boulevard (Figure 2). The drilling was performed using a 7 3/4-inch outside diameter hollow-stem auger (HSA) to a total depth of 16 ft bgs.

As illustrated in Appendix E, soil boring MW-3K was converted to a groundwater monitoring well. The well was constructed with 2-inch inside diameter (ID), schedule 40, flush-joint threaded polyvinyl chloride (PVC) casing, screen, and bottom sump. Well construction consisted of a threaded PVC bottom plug and 10 ft. of flush-joint, threaded, factory-slotted (0.010 machine-slot), well screen. The remaining construction and development procedures are outlined in Appendix D.

# 2.4 Fluid Level Gauging and Groundwater Sampling

Groundwater monitoring related field activities were conducted on January 26 and February 2, 2006. Well caps were partially removed from monitoring wells proposed for fluid level gauging so pressure caused by a fluctuating water table could be relieved. Fluid level gauging data was then collected using a properly decontaminated interface meter. The monitoring wells were also checked for the presence of LNAPL using dedicated disposable bailers. The data collected was documented in a field book and is summarized in Table 2. A copy of the field notes is provided in Appendix F and the procedures used to collect the data are provided in Appendix D.

L:\2005\Projects\64110 Former Aerex Refinery\4.0 Technical Information\4.3 KA Deliverables\Phase I Report - Final\64110.3-ALB06RP001.doc 04/06/06 Page 5 of 21 Final Monitoring wells were sampled on January 26, 2006 after fluid levels were measured and documented. Prior to sampling, the wells were purged by bailing either three-casing volumes or the well was purged to near dryness. The temperature, pH, and conductivity of the purged groundwater were measured using an YSI-556 water quality meter and the data was datalogged within the instrument. Final measurements were recorded in the field book. A copy of Kleinfelder's field notes, including measured groundwater quality field parameters, is included in Appendix F. The procedures used to purge and sample the wells are detailed in Appendix D.

Following purging, a groundwater sample was collected from each monitoring well with a dedicated disposable bailer equipped with a bottom-emptying device and placed in laboratory-prepared glassware. For VOC analysis, groundwater samples were placed in 40-milliliter (mL) vials and were preserved with hydrochloric acid. For Polynuclear Aromatic Hydrocarbons (PAH) analysis, groundwater samples were placed in 1 Liter (L) amber bottles. For metals analysis, groundwater samples were placed in one 250 and one 500 mL unpreserved, plastic bottle for filtering and preservation by the laboratory. For geochemical parameter analysis, groundwater samples were placed in one 125, one 250, and one 500 mL unpreserved, plastic bottle. The samples were then placed on ice and delivered overnight via Federal Express under standard chain-of-custody procedures to ESC. Laboratory results are provided in Appendix G.

Purged groundwater was disposed of at the Site on an impermeable surface and allowed to evaporate.

# 3.1 Fluid Level Gauging

The depth to groundwater at the Site ranged from 7.90 ft below top of casing (TOC) in MW-2 to 10.66 ft below TOC in MW-3K. Potentiometric surface elevations (PSEs) ranged from 5,477.27 ft above mean sea level (amsl) at MW-3 to 5,469.82 ft amsl at MW-1 (Table 2). The gradient was calculated to have a magnitude of 0.0136 ft/ft with groundwater flow to the south-southwest (Figure 3). Gauging data collected on January 26, 2006 was not considered due to potential localized disturbances due to drilling activities. Final depth to groundwater measurements were recorded on February 2, 2006.

# 3.2 Light Non-Aqueous Phase Hydrocarbons

During the development of MW-3K on January 26, 2006, globules of LNAPL were observed in the purge water. LNAPL was not detected in the other two Site monitoring wells during the gauging events on January 26 and February 2, 2006.

LNAPL was observed in the soil samples collected from K-4 during the direct push investigation; subsaturation volumes of LNAPL were observed at depths of 7.8-8, 14-14.5 and 15.5-16 ft bgs, respectively. LNAPL was not observed in the remaining direct push borings.

# 3.3 Groundwater Quality Parameters

Groundwater quality parameters were recorded during monitoring well purging. These parameters were recorded using a YSI-556 groundwater quality meter. Measured parameters are provided in the field notes presented in Appendix F. The recorded parameters include temperature, pH, and specific conductance. Stabilized recorded temperature values ranged from 13.5 to 14.0 degrees Celsius. Stabilized recorded pH values ranged from 6.64 to 7.08. Stabilized specific conductance values range from 968 to 1,339 microSiemens per centimeter.

# 3.4 Groundwater Analytical Results

Results of the analytical testing performed on groundwater samples revealed concentrations of petroleum related analytes above the laboratory practical quantitation limit (PQL) in water samples from two of the three monitoring wells sampled. A summary of the laboratory test results for groundwater samples collected and analyzed from monitoring wells MW-1, MW-2, and MW-3K is presented in Tables 3 through 5 and concentrations of contaminants of concern (COC) are presented on Figure 4. New Mexico Water Quality Control Commission (NMWQCC) regulatory limits are also presented in Tables 3 through 6. Analytes exceeding the NMWQCC standards are given in boldface. As shown on Table 3, total naphthalenes were detected at a concentration of 180 micrograms per liter ( $\mu$ g/L) in MW-3K. The NMWQCC standard for total naphthalenes is 30  $\mu$ g/L. The remaining analytes in each of the three wells

L:\2005\Projects\64110 Former Aerex Refinery\4.0 Technical Information\4.3 KA Deliverables\Phase I Report - Final\64110.3-ALB06RP001.doc 04/06/06 Page 7 of 21 Final samples were reported by the analytical laboratory as being below the NMWQCC standards. A copy of the laboratory analytical report is provided in Appendix G.

Results of the analytical testing for geochemical parameters from the samples collected from MW-3K are summarized in Table 6. NMWQCC regulatory limits are also presented in Table 6. Analytes exceeding the NMWQCC standards are given in boldface. As shown on Table 6, dissolved magnesium was detected at a concentration of 9.8 milligrams per liter (mg/L) in MW-3K. The NMWQCC standard for dissolved magnesium is 0.2 mg/L for domestic water wells. All remaining geochemical analytes in the samples collected from MW-3K were reported by the analytical laboratory as being below the NMWQCC standards. A copy of the laboratory analytical report is provided in Appendix G.

### 3.5 Site Stratigraphy

Based on soil samples collected from the boring locations indicated on Figure 2, the upper 20 ft of the Site's subsurface consists of predominantly silty sands, clayey sands with clay layers. A cross section (A-A') oriented south to north, parallel to Fifth Street across the site is presented as Figure 5. A second cross section (B-B') running southwest to northeast across the site is presented as Figure 6. Referring to Figure 5, the southern portion of the site has approximately 6 ft of clayey sand and clays over silty sand. The clayey sand layer extends across the site but has two characteristics. The southern portion of the site, the clayey sand unit also includes 2 ft thick clay layers at approximately 4-6 ft bgs. In the northern portion of the site, the clayey sand is interlayered with a silty sand layer at 2-8 f t bgs (Figure 6) with some 1-2 ft thick clay layers (Figure 5). The clayey sand layer is interrupted in the central portion of site in the vicinity of E-2. The surfical silty sand layer encountered in borings J-2, K-2, and L-2 (Figure 5) likely represents fill material graded onto the site during construction of Fifth Avenue. The lower silty sand from approximately 6-12 ft bgs layer extends across the site, with the exception of the L series of borings on the northern boundary of the site. These borings were likely terminated before encountering the lower silty sand layer.

### 3.6 Soil Screening Results

Soil VOC field screening results for each boring are provided on the boring log presented in Appendix E and summarized in Table 1. Results that exceed the NMOCD Remediation Action Level of 100 ppm-v are shaded on Table 1. The samples screened for the presence of VOCs were collected from the continuous samplers as discussed in Section 2.2. Field screening results ranged from non detect (ND) in A-6 to 1376 ppm-v in I-2. The concentration of 1376 ppm-v represents the maximum reading of the instrument based upon its calibration. Regulatory actionable levels based on heated headspace readings (maximum) were noted in samples collected from D-1 (191 ppm-v), F-1 (1248 ppm-v), F-2 (1248 ppm-v), G-2 (1248 ppm-v), G-3 (287 ppm-v), G-4 (152 ppm-v), G-5 (143 ppm-v), H-1 (437 ppm-v), H-2 (898 ppm-v), H-4 (174 ppm-v), I-2 (1376 ppm-v) I-6 (315 ppm-v), K-3 (551 ppm-v), K-4 (461 ppm-v) and K-5 (210 ppm-v). Field screening results are also noted on the cross sections (Figures 5 and 6).

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### 3.7 Soil Analytical Results

Soil analytical laboratory results for the 20 soil samples collected are summarized in Tables 7 and 8 and presented graphically as Figure 7.

Field screening and soil analytical results were used to create an isopach map for estimated thickness of regulatory actionable contaminated soil (Figure 8) and an isopach map for estimated overburden thickness (Figure 9).

# 3.7.1 Volatile Organic Compound and TPH Soil Analytical Results

Benzene concentrations in soils ranged from < 0.0026 (H-1) to 2.1 mg/kg (H-2). The NMOCD Remediation Action Level for benzene in soils is 10 ppm (equivalent to mg/kg) with a depth of groundwater less than 50 ft bgs.

Total BTEX results ranged from <0.0085 (G-5) to 30 mg/kg (F-2). The NMOCD Remediation Action Level for total BTEX is 50 ppm (equivalent to mg/kg) with groundwater at a depth less than 50 ft bgs. MtBE results were less than the detection limit with the exception of 0.028 mg/kg (K-4). The NMOCD has not established standards for MtBE in soil.

The total TPH values presented in Table 7 represent the sum of GRO, DRO and ORO values reported for each sample. The total TPH results ranged from <4.6 (A-2) to 5,500 mg/kg (F-2). Thirteen of the twenty samples analyzed exceed the total TPH concentration of 100 ppm NMOCD Remediation Action Level for soils for sites with groundwater at a depth less than 50 ft bgs. These exceedances are shaded on Table 7 and Figure 8. TPH-GRO results ranged from <0.58 (A-2) to 1,400 milligrams per kilogram (mg/kg) (F-2). The NMOCD has not established standards for TPH-GRO in soil. TPH-DRO results ranged from <4.6 to 4,100 mg/kg (F-2). The NMOCD has not established standards for TPH-DRO in soil. TPH-ORO results ranged from <4.6 to 900 mg/kg (K-4). The NMOCD has not established standards for TPH-ORO in soil. Copies of the laboratory analytical reports are provided in Appendix G.

# 3.7.2 Inorganic Compound Soil Analytical Results

Mercury results ranged from <0.021 ppm (K-3) to <0.025 ppm (F-2). Arsenic results ranged from <1.2 (F-2) to 1.9 ppm (I-2). Barium results ranged from 130 (K-3) to 220 ppm (I-2). Cadmium results ranged from 0.33 (I-2) to 0.79 ppm (F-2). Chromium results ranged from 1.8 (I-2) to 4.8 ppm (F-2). Lead results ranged from 1.5 (I-2) to 10 ppm (F-2). Selenium results ranged from <1.1 (I-2, K-3) to <6.3 ppm (F-2). Silver results ranged from <0.54 (K-3) to <0.63 ppm (F-2). Copies of the laboratory analytical reports are provided in Appendix G.

Soil inorganic analytical laboratory results for the 20 soil samples collected are summarized in Table 8. Regulatory standards for inorganic compounds in soil have not been established by NMOCD.

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#### 3.8 Water Well Search Results

An online water well search was conducted on March 7, 2006 on the Water Administration Technical Engineering Resource System (WATERS) of the New Mexico Office of the State Engineer website located at

http://iwaters.ose.state.nm.us:7001/iWATERS/. The database was searched using the "Water column report" function based on township and range location information of the Site. Since the location information of the WATERS database utilizes the township and range system, a precise radial search is not possible. The area prescribed by the 200 ft radius around the Site includes the southern and northern quarter-quarter of Sections 15 and 22 respectively of Township 29 North, Range 11 West. The results of the search are included in Appendix H. Nine domestic wells located within these four quarter-quarter sections are listed in the WATERS database. Additionally, three domestic wells whose location information does not specify down to the quarter-quarter section and therefore may be located in one of these four quarter-quarter sections. None of the 12 domestic wells are identified as located within 200 ft of the Site. The neared domestic supply well to the Site is located near the intersection of Blanco Boulevard and 3<sup>rd</sup> Street, approximately 1200 ft to the east of the Site.

The City of Bloomfield was contacted to confirm that the public water supply is diverted from the San Juan River, which is not located within 1000 ft of the Site.

#### 4.1 **Extent of Groundwater Contamination**

Results of the groundwater sampling and analysis event revealed the presence of dissolved-phase petroleum-related hydrocarbons in two of the three wells sampled (MW-2 and MW-3K) (Tables 3 through 6). The highest concentrations of contaminants were observed in MW-3K. The groundwater sample collected from MW-3K contained total naphthalenes at concentrations exceeding the NMWQCC standards.

#### **Extent of Soil Contamination** 4.2

The site was characterized on a grid pattern of borings. The horizontal extent of actionable contaminated soil is shown on Figure 8. Actionable contaminated soil is defined as soils which exhibited total TPH over 100 mg/kg or heated headspace readings over 100 ppm-v. The estimated lateral extent of actionable soil is shown as orthogonal blocks, extending equal distance between the impacted boring and the In cases where adjacent clean borings heated headspace adjacent clean boring. reading were between 50 and 99 ppm-v, the blocks were extended three-quarters of the distance between the impacted boring and the adjacent boring. The actionable soil onsite is limited to four areas:

- 1. Within the southern zone of impact, boring D-1 encountered actionable soil from 4 to 6 ft bgs. This boring is located approximately 35 ft south of an area which according to the 1961 air photo, apparently contained two, twin 35'x10' horizontal above ground storage tanks (ASTs).
- 2. The central zone of impact contains the largest lateral extent of actionable soils as encountered in borings F-1, F-2, G-2, G-3, G-4, G-4, G-5, H-1, H-2, H-4 and I-2. These boring encountered actionable soils at depths ranging from the surface to approximately 8 ft bgs (F-2, G-2, G-3) to 10-12 ft bgs. Based on the 1961 air photo, this area formerly contained portions of four ASTs, a building, and what appears to be aboveground piping. Foundations observed during field activities indicated that boring G-2 was near a bulk product loading area. The central portion of the site contains the only area of impact predominantly of gasoline range organics (borings G-2 and H-2).
- 3. Boring I-6 in the northeast zone of impact encountered actionable soil from 4-6 ft Foundations observed during field activities indicate that boring I-6 was near a bulk product loading area. The 1961 air photo shows a building and pad at that location.
- 4. The northern zone of impact contains the second largest area of actionable soil as encountered in borings K-3, K-4 and K-5. These borings encountered actionable soil at depths ranging from 4-8 ft bgs in K-3 to 2-16 ft bgs in K-4 and K-5. The 1961 air photo shows refining processing equipment and open space in that area.

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As can be seen in the north-south cross section (Figure 5), the vertical extent of actionable, contaminated soil, as defined by heated headspace screening levels above 100 ppm, is generally not limited to the soil type or unit. Groundwater at the Site exists at depths ranging from approximately 6 to 9 ft bgs. Of the four identified areas of impacted soil, two areas include a vertical extent of impacted soil that extends between 4.5 to 7.5 ft into the saturated zone. These two areas include portions of the central zone of impact (borings F-1, H-2 and I-2) and the northern zone of impact (borings K-4 and K-5).

The thickness of actionable soil is illustrated on Figure 8, and an estimated volume of in-place actionable soil is calculated for each of the four areas. An estimated 7,600 cubic yards of actionable soil is located in place on Site.

#### 4.3 Extent of Overburden Soils

Figure 9 illustrates the thickness of soil above the actionable soil zones. Isopachs illustrate the thickness of clean overburden to be removed prior to revealing and excavating actionable soil. Figure 9 lists an estimated volume of overburden for each block within each zone of impact. Approximately 3,100 cubic yards of overburden is located on Site. The overburden thickness ranges from 2 ft near I-6 and G-3 to approximately 6 ft by borings G-4. Based on preliminary physical soil characterization, most of the overburden material can be re-used as compacted fill material. Some blending of the overburden material with import fill material may be required.

# 4.4 Conceptual Remedial Action Plan

Various remedial action technologies were considered for addressing on-Site soil and groundwater contamination including soil vapor extraction, groundwater pump and treat, air sparge/air venting, in-site chemical reagent application, and excavation with offsite disposal of soil. These remedial methods were evaluated based on the following criteria: 1) the Site-specific applicability of each technology for remediation of impacted soil and groundwater, 2) duration and costs required for system design and permitting, 3) duration and costs required for system installation, 3) costs required for system operation and maintenance, 4) costs associated with long-term system and groundwater monitoring, and 5) time interval required between system implementation and obtaining regulatory closure.

Based on the information obtained during our Phase I Assessment and Kleinfelder's Site-specific evaluation, we have determined that excavation and off-site disposal combined with in-Situ chemical reagent application to be the most time and cost effective remedial approach for the Site. Excavation and off-site disposal combined with in-Situ chemical reagent application of the contaminated source materials is the most advantageous due to the following Site-specific characteristics: 1) the Site is currently undeveloped, allowing for the space required for large equipment and staging of clean and impacted soil; 2) the Site is located relatively close to a facility permitted to accept petroleum impacted soil for land farming; 3) the contaminated areas are situated within easily excavatable soils; 4) the onsite availability of backfill material (Appendix A; 5) the

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Kleinfelder proposes to address the remediation of onsite petroleum hydrocarbon impacted soil by three methods: 1) limiting the excavation of impacted soil to the vadose zone and where necessary, slightly below the water table (<2 ft), 2) applying a chemical reagent to open excavations prior to backfilling to remediate residual amounts of remaining impact in the soil and groundwater, and 3) insitu injection of a chemical reagent into the subsurface in areas of impact significantly below the water table (> 2 ft). The chemical reagent will be applied at concentrations necessary to reduce the mass of petroleum hydrocarbons.

# Geophysical Survey

Given the foundations and stubbed off steel pipes observed during the site visits, it is likely that subsurface portions of the refining facility were not removed during dismantling of the facility (Appendix A. In order to identify underground items prior to excavation (such as piping, etc), Kleinfelder proposed to conduct a geophysical survey of the Site. The geophysical survey of the Site will provide valuable shallow subsurface information prior to implementing the contaminant soil removal activities. Should significant burial debris be identified during the geographical survey, removal of the debris can be factored into the final remediation scope of services.

#### 4.4.1 Final Remediation Plan

Kleinfelder will prepare and submit to the NMOCD project manager a draft final remediation plan (FRP). Within 30 days of receiving NMOCD comments, Kleinfelder will submit the final FRP. The design and engineering of the FRP will be conducted under the supervision of a licensed professional engineer registered in New Mexico. The drawings, plans, and diagrams will be signed and sealed by the same professional engineer who supervises the design of the FRP. A final cost estimate will be submitted concurrently with the FRP.

#### 4.4.2 FRP Implementation

#### 4.4.2.1 Pre-Field Activities

#### **Public Notice**

Kleinfelder will publish legal notice at least twice in a newspaper of appropriate circulation. The date of the second publication shall be no later than 7 days after submitting the final remediation plan to NMOCD. An Affidavit of Publication shall be submitted to NMOCD no later than 21 days from the date of final remediation plan submittal.

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# **Permitting**

An Underground Injection Control Permit for the chemical reagent in-Situ injection will be sought from the NMED. Since the planned area of excavation of 0.78 acres is less than the 1.0 acre EPA threshold value, an EPA Storm Water Management Plan (SWMP) is not required; however, Kleinfelder proposes to prepare and implement a SWMP in the event that the excavation exceeds the 1.0 acre EPA threshold. A SWMP will also assist in reducing impact to the nearby community caused by site excavation activities and will avoid unnecessary delays and associated costs. Kleinfelder will contact local governments to determine if traffic or construction permits will be required. In addition, dust suppression will be conducted by water spraying during the course of the excavation.

# Site Preparation

Kleinfelder will contact local utility operators to discuss the necessity of temporally capping or disconnecting utilities adjacent to the proposed excavations.

# On-Site Traffic Control Plan/Site Controls

Personal safety is Kleinfelder's highest priority. An On-Site Traffic Control Plan will be implemented to accommodate truck traffic and excavation equipment. The plan will also control access to the site and protect the safety of the public, site occupants, and on-site workers. Security fencing shall be placed around the work area perimeter before excavation begins and remain in place until after site restoration is accomplished. All site gates will be locked at the end of each work day and remain locked until the next workday begins.

# Competent Person Designation / Health and Safety Plan

A Kleinfelder engineer, experienced with the excavation of petroleum-contaminated soils, will oversee excavation activities. The engineer will document material excavated, field screening results, volumes of soil removed, and will serve as the OSHA-excavation competent person and on-site health and safety officer. The Site specific Health and Safety Plan will be updated for hazards associated with excavation and chemical reagent application.

# 4.4.2.2 Excavation, Soil Disposal, and Site Restoration

#### Excavation

The excavation volumes discussed in section 4.2 are based upon projecting the available data assuming homogeneous conditions. Actual excavated volume will be based upon results of soil screening by the heated headspace method and visual and olfactory observations. Additionally, Kleinfelder has assumed a soil expansion factor of 1.3. The excavation, backfilling and compaction portion of the project is expected to take 20 working days.

L:\2005\Projects\64110 Former Aerex Refinery\4.0 Technical Information\4.3 KA Deliverables\Phase I Report - Final\64110.3-ALB06RP001.doc 04/06/06 Page 14 of 21 Final Heavy equipment on-site to excavate, load trucks, and provide backfilling will be a track hoe and a front-end loader. During the excavation, the soils will be field screened by Kleinfelder using heated-headspace techniques with a photoionization detector (PID) as described in Appendix D. The excavation work will proceed until the contamination in the remaining soils has been lowered to less than 100 ppmv as determined by the heated-headspace method. For temporary storage, field-screened, contaminated soil will be placed in a secure area of the Site, on 40-milliliter (mL) plastic, and bermed with clean soil. The soils will be covered with plastic sheeting at the end of each day to prevent weather impacts. As a result of the shallow groundwater table, the final 1 to 2 ft of soils to be excavated from F-1, G-2, G-3 and G-4 may be water saturated. Saturated soils will be segregated in a separate lined and bermed stockpile and if possible will be direct loaded into transport trucks with bed liners to prevent water from leaking during transport. Air quality will be monitored for VOCs near the excavation and soil stockpiles. Monitoring activities are described in the HASP. If VOC levels approach a threshold above those specified in the HASP, the fieldwork will cease and the field conditions will be reassessed. Air monitoring will determine if an upgrade in PPE to modified Level D or C is necessary.

For this discussion, we have assumed that it is safe for personnel to entry the excavation; however, soil-slope stability and excavation entry will be evaluated by the professional engineer and options for shoring, use of engineered fill, and sloping will be considered. To avoid conditions subject to 29 CFR 1926 Part P, no unsupported walls in excess of 5 ft deep will be left open overnight.

# Soil Removal

When possible, excavated soil will be loaded directly into transport trucks. If necessary, impacted soil will be staged on lined, bermed stockpiles. Trucks leaving the site shall pass over a cobble shakedown zone to minimize soil adhering to the bottom or sides of the truck or between or on the tires.

#### Waste Management

Disposed soil will be transported to Envirotech's NMOCD Permitted Landfarm #2 in Hilltop, New Mexico. Waste shall be removed in accordance with NMOCD, NMED, and NMDOT requirements. In consideration to nearby residences, soil hauling will only be conducted between business hours. All soil treatment and disposal will be done in accordance with the landfill permit. Kleinfelder's on-site representative will document and verify all soil quantities before leaving the Site.

# Sidewall Stability

Due to the expected nature of the aquifer material (flowing sand), unsupported excavation of more than 1-2 ft beneath the water table may result in slumping/subsidence of the soils near the excavation walls. With the proposed excavation in close proximity to Fifth Street, subsidence of subsurface soils may occur. Should Kleinfelder's OSHA-competent person determines that there is insufficient soil

L:\2005\Projects\64110 Former Aerex Refinery\4.0 Technical Information\4.3 KA Deliverables\Phase I Report - Final\64110.3-ALB06RP001.doc 04/06/06 Page 15 of 21 cohesion to achieve required depths without sidewall sloping or shoring, the OCD manager will be contacted, advised of the conditions, and provided recommendations to mitigate. Kleinfelder will not implement engineered sidewall stability measures without first receiving approval from the OCD project manager.

# Confirmatory Soil Sampling

In order to document all available impacted soil mass has been removed, confirmatory soil samples will be collected from the sidewalls of the excavations at a frequency of one every 20 ft. Additionally, a bottom samples will be collected for every 400 ft<sup>2</sup>. Soil samples will be collected using the excavator bucket or hand auger as discussed in Appendix D. Soil samples will be collected and analyzed as discussed in Section 2.2. Kleinfelder will use the services of Hall Environmental Analytical Laboratory in Albuquerque, NM in order to receive results within 24 hours. Excavations will not be completely backfill until clean confirmatory sampling has been received from the laboratory.

# **Excavation Backfill/Compaction**

Excavations will be backfilled with the overburden material present onsite with additional soil imported to the site. Pit-run gravel will be used in excavations that extend below the water table where necessary. Specific compaction requirements will be assessed in the FRP based on estimates of the future use of the Site; our cost estimates assumes heavy equipment wheel rolled compaction and no geotechnical testing. The FRP will provide the appropriate backfill/compaction specifications.

#### Site Restoration

Kleinfelder proposes to remove all foundation and subsurface materials remaining onsite from the operations of the refinery as identified during the geophysical survey and soil removal excavation. Following the backfilling and compaction of the excavation zones, the site will be restored to approximately the original grade and drainage pattern.

#### 4.4.2.3 Chemical Reagent Application

# Chemical Reagent Application to Excavation

The chemical reagent chosen for the in-Situ application and overspray to the excavations is an aqueous suspension of solid peroxygen compounds. This reagent was chosen over potassium permanganate. Both chemicals have the ability to consume petroleum constituents, but the peroxygen compounds also has the ability to consume benzene, the primary carcinogen in petroleum products. Although benzene has not been detected at the Site at significant levels, use of a reagent capable of destroying any benzene present is a conservative choice for the benefit of the future users of the Site. Subcontractor supplied information concerning the specific peroxygen compounds are included as Appendix I. Applying peroxygen compounds to excavations prior to backfilling will destroy residual amounts of remaining impact in the soil and groundwater.

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# Chemical Reagent In-Situ Application (Optional)

Insitu injection of peroxygen compounds will destroy petroleum compounds areas of soil impact below the water table. The insitu chemical injection will be conducted using a direct push rig. A boring will be advanced to the impacted soil at which point the peroxygen solution will be injected via highpressure hose. The addition of peroxygen compounds causes a significant increase of secondary aerobic biological activity due to the increase of dissolved oxygen following the primary chemical degradation of petroleum hydrocarbons.

# Excavation Pilot Study (Optional)

As an option, Kleinfelder can determine if dewatering of an excavation is a feasible option for localized depression of the water table by conducting a 24-hour pilot test. A 15x15x10 ft. test hole in the southern portion of the site will be excavated. A pump will be used to pump water from the excavation into a frac tank. A light tower will be used for safe nighttime operations during the pilot test. Extracted groundwater will be sampled and tested to determine the necessary disposal options. Groundwater will be disposed of at Envirotech's NMOCD Permitted Landfarm #2 in Hilltop, New Mexico. If recharge to the excavation occurs at a sufficiently slow rate, it may be feasible to excavate the impacted soil at depths > 2 ft below the water table.

# Baseline Groundwater Sampling Event (Optional)

Geochemical monitoring and sampling will be necessary to gauge the effects of the application of the peroxygen compounds. The monitoring should be conducted prior to application to establish background conditions.

# 4.4.2.4 Groundwater Monitoring

# Monitoring Well Installation-Lagoon Assesment (Optional)

Following remedial activities, eight additional groundwater monitoring wells will be necessary to delineate groundwater in the interior of the Site and along the western boundary for petroleum hydrocarbon impact. A monitoring well will be installed downgradient from each of the identified areas of soil impact. These monitoring wells will be installed and construction as discussed in section 2.3.

Kleinfelder discussed the lagoon feature shown on the 1961 air photo (Figure 2) with Mr. Denny Faust of the NMOCD during the field activities of this investigation. The former lagoon is located immediately west of the southwest corner of the Site. Faust expressed interest in characterizing any petroleum impact to soil and groundwater associated with this feature. Clayton Investments, Inc. owns this property as well as the Site. Kleinfelder proposes to obtain access to the property from Clayton Investments, Inc., install 12 soil borings in the vicinity of and downgradient of the former lagoon, install a single groundwater monitoring well in the center of the former lagoon, and collect soil and groundwater samples similarly to section 2.0. The results will be included in the proposed excavation remediation report. This task could also be

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completed prior to beginning remedial activities at the Site. If remedial action was deemed necessary at the lagoon location, remediation could be incorporated into the FRP.

# **Groundwater Monitoring (Optional)**

Geochemical monitoring and sampling will be necessary to gauge the effects of the application of the perxoygen compounds. The monitoring should be conducted prior to application to establish background conditions and at one week, one month and two months following application. Recommended geochemical parameters are included in Appendix I. Kleinfelder proposes to continue quarterly groundwater monitoring at the site for a period of one year following remediation in order to assess if petroleum concentrations in groundwater exceed NMWQCC standards.

# **Quarterly Groundwater Monitoring Reports**

Kleinfelder will prepare four quarterly groundwater monitoring reports. These reports will compare current and historical groundwater analytical laboratory results to NMWQCC standards and included a discussion of data (spatial and temporal trends of potentiometric surface and contaminant concentrations) and conclusions addressing plume stability, threat to receptors, delineation, qualitative natural attenuation trends, and recommendations.

Conversations with local residents suggests that the potentiometric surface rises approximately 2 ft beginning early May due to irrigation upgradient from the Site and remains high throughout the growing season. The rise of the water table will decrease the volume of impacted soil onsite suitable for remediation by excavation.

# 4.4.3 Reporting

# As-Built Report and Drawings

Kleinfelder will submit an As-Built Report following completion of the FRP. This report will be a comprehensive description of activities conducted at the Site under the contract. Kleinfelder will discuss and compare current and historical laboratory analyses collected and provide a table to include analytical results.

Modifications to or variances from the drawings and specifications included in the final remediation plan will be discussed. Significant modifications or variances will not be made without receiving prior written approval from NMOCD. A New Mexico Professional Engineer shall sign and seal all drawings, plans, and diagrams submitted with this report.

# 4.4.4 Cost Estimate Table

To assist the NMOCD with a budget estimate for the proposed activities, Kleinfelder presents the following table

SUMMARY OF LUMP SUM COST		LUMP SUM		WITH
TASK	L	COST		NMGRT
TASK 1: REMEDIATION WORK PLAN AND PROJECT PREPARATION	\$.	20,022.00		21,373.49
TASK 2: STORM WATER MANAGEMENT PLAN, PERMITTING, PUBLIC NOTICE	\$	12,768.50		13,630.37
TASK 3; EXCAVATION AND OVERSIGHT	\$	669,151.37		714,319.09
TASK 4: REMEDIATION REPORTING	\$	16,500.00		17,613.75
SUBTOTAL FRP. Implementation and Reporting (Lump Sum)	\$	718,441.87		766,936.70
OPTIONS	١.			
Option 1: EXCAVATION PILOT TEST	\$	18,781.29		20,049.03
Option 2: BACKFILL COMPACTION PROCTOR AND TESTING	\$	11,000.00		11,742.50
Option 3: CHEM-OX IN_SITU APPLICATION AND OVERSIGHT	\$	254,438.90		271,613.53
Option 4: GROUNDWATER MONITORING EVENT (4 events)	\$	34,578.00		36,912,02
(Pre and Post Chem Ox Application)		040 700 40	_	040 047 07
SUBTOTAL Options 1-4 (Lump Sum)	*	318,798.19	\$	340,317.07
GW MONITORING	,	20.444.50		04 444 75
Option 5: MONITORING WELL INSTALLATION, LAGOON CHARACTERIZATION	\$	29,144.50		31,111.75
Option 6: GROUNDWATER MONITORING EVENT (4 events)	\$	36,664.00 14,480.00		39,138.82
Option 7: QUARTERLY GROUNDWATER MONITORING REPORTING (4 events)  SUBTOTAL Options 5-7 (Lump Sum)	I T	8 <b>0,288.50</b>		15,457.40 <b>54,596.22</b>
SOBTOTAL OPRORS 3-7 (Camp Sum)	۳	00,200.50	٦	54,590.22
Total Lump Sum Cost	\$	1,117,528.56	\$	1,161,849.99
ESTIMATED REMEDIATION COSTS				
FRP. Implementation and Reporting (Lump Sum)	\$	718,441.87		766,936.70
Cyds Removed/Disposed		<u>7,600</u>		7,600
Price per Cyds	\$	94.53	\$	100.91
Chem Ox Treatment	\$	318,798.19	\$	340,317.07
Treated Area (sq ft)		<u>40,948</u>		40,948
Price per Sq Ft	\$	7.79	\$	8.31

#### 5.0 LIMITATIONS

The scope of work for this report was intended to provide a limited investigation related to the presence of hazardous materials at the referenced site. This assessment was not intended to be comprehensive, identify all potential concerns, or eliminate the possibility of using this information with some degree of risk.

This report may be used only by the client and only for the purposes stated, and within a reasonable time from its issuance, but in no event later than one year from the date of the report. Land use, site conditions (both off and on site), or other factors may change over time and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify Kleinfelder of such intended use. Non-compliance with any of these requirements by the client or anyone else will release Kleinfelder from any liability resulting from the use of this report by any unauthorized party and client agrees to defend, indemnify, and hold harmless Kleinfelder from any claim or liability associated with such unauthorized use or non-compliance.

It should be recognized that definition and evaluation of environmental conditions is a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the conditions present. More extensive studies may reduce the inherent uncertainties associated with environmental conditions. If the client wishes to further reduce the uncertainty associated with this study, Kleinfelder should be notified for additional consultation. No warranty, expressed or implied, is made.

#### 6.0 REFERENCES

Fluor Daniel Arcs Team, 1994. Letter Memorandum, Aerex Refinery, EPA ID No. NM980622765, Bloomfield, San Juan County, New Mexico, Site Inspection Prioritization, Work Assignment No. 33-6JZZ. August 30, 1994.

Interstate Technology & Regulatory Council, 2005. Technical and Regulatory Guidance for In Situ Chemical Oxidation of Contaminated Soil and Groundwater Second Edition. January 2005.

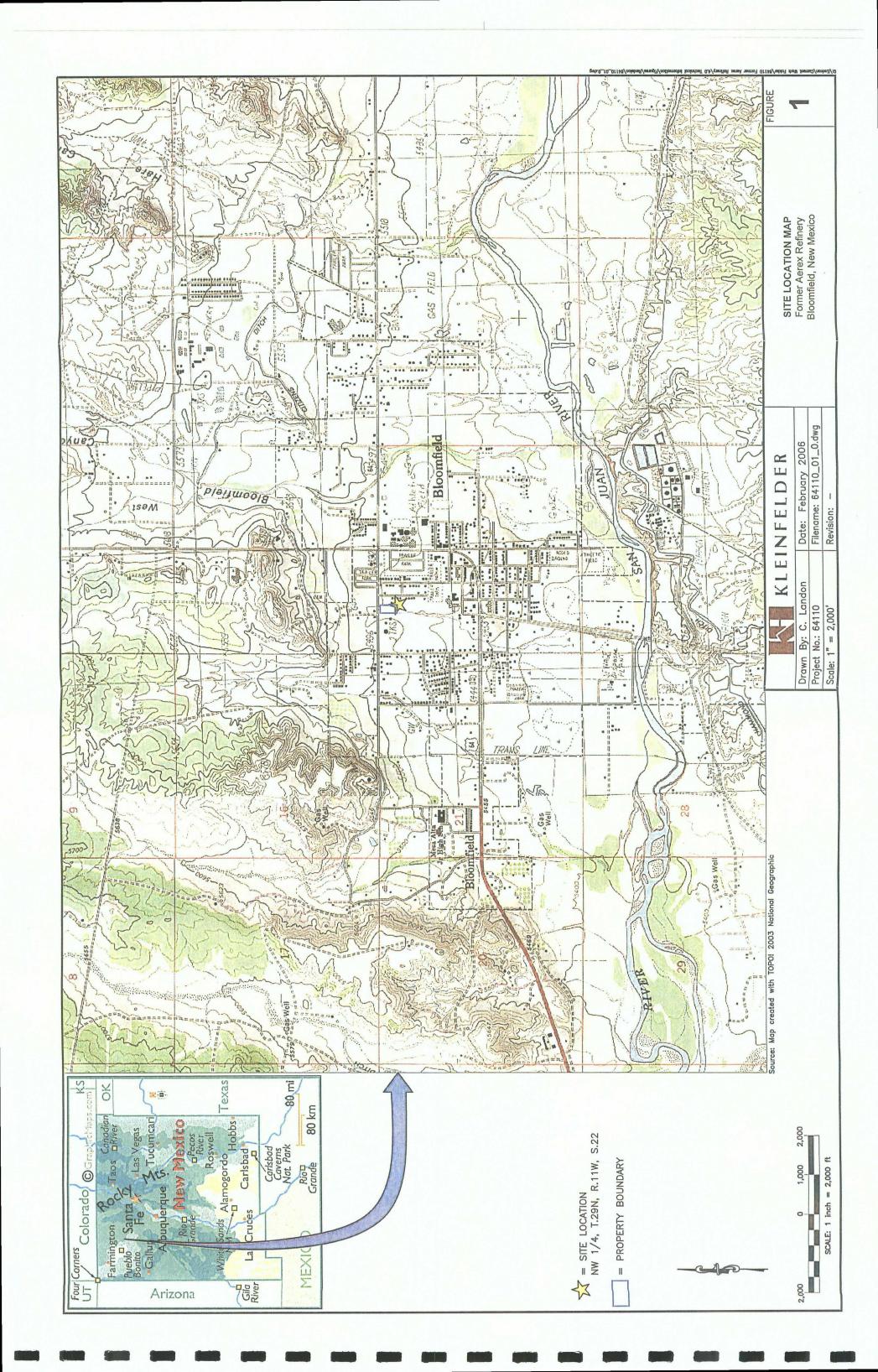
Kleinfelder, 2005. Proposed Work Plan for Phase 1 Subsurface Assessment, Former Aerex Refinery, Bloomfield, New Mexico, Proposal No. ALB05WP001, December 2005.

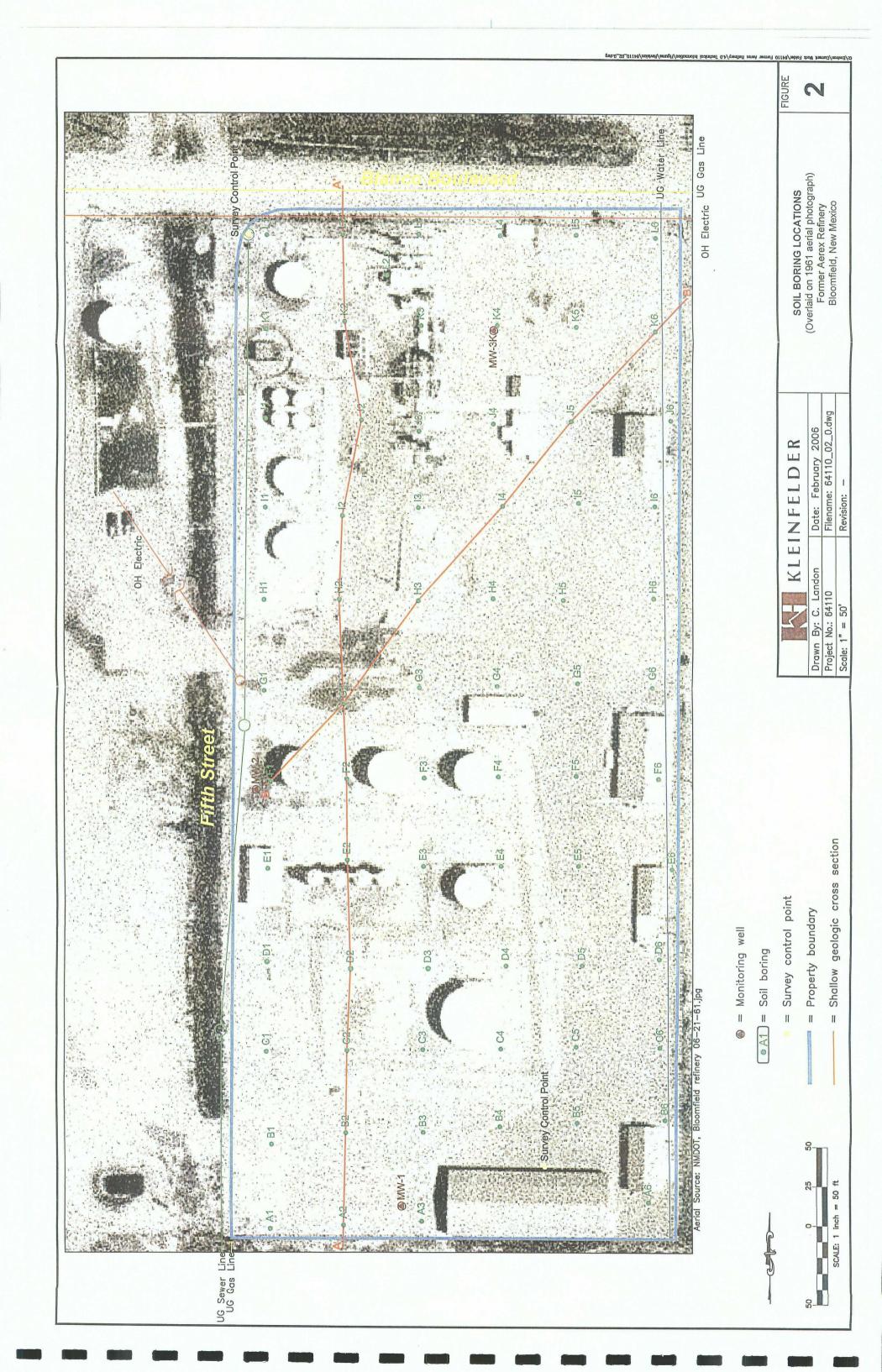
New Mexico Environmental Improvement Division. 1990. Screening Site Inspection Report for Aerex Refinery, City of Bloomfield, San Juan County. October 1990.

New Mexico Oil Conservation Division. 1993. Guidelines for Remediation of Leaks, Spills and Releases. August 13, 1993.

State of New Mexico. 2002. New Mexico Water Quality Control Commission Regulations. New Mexico Administrative Code, 2002.

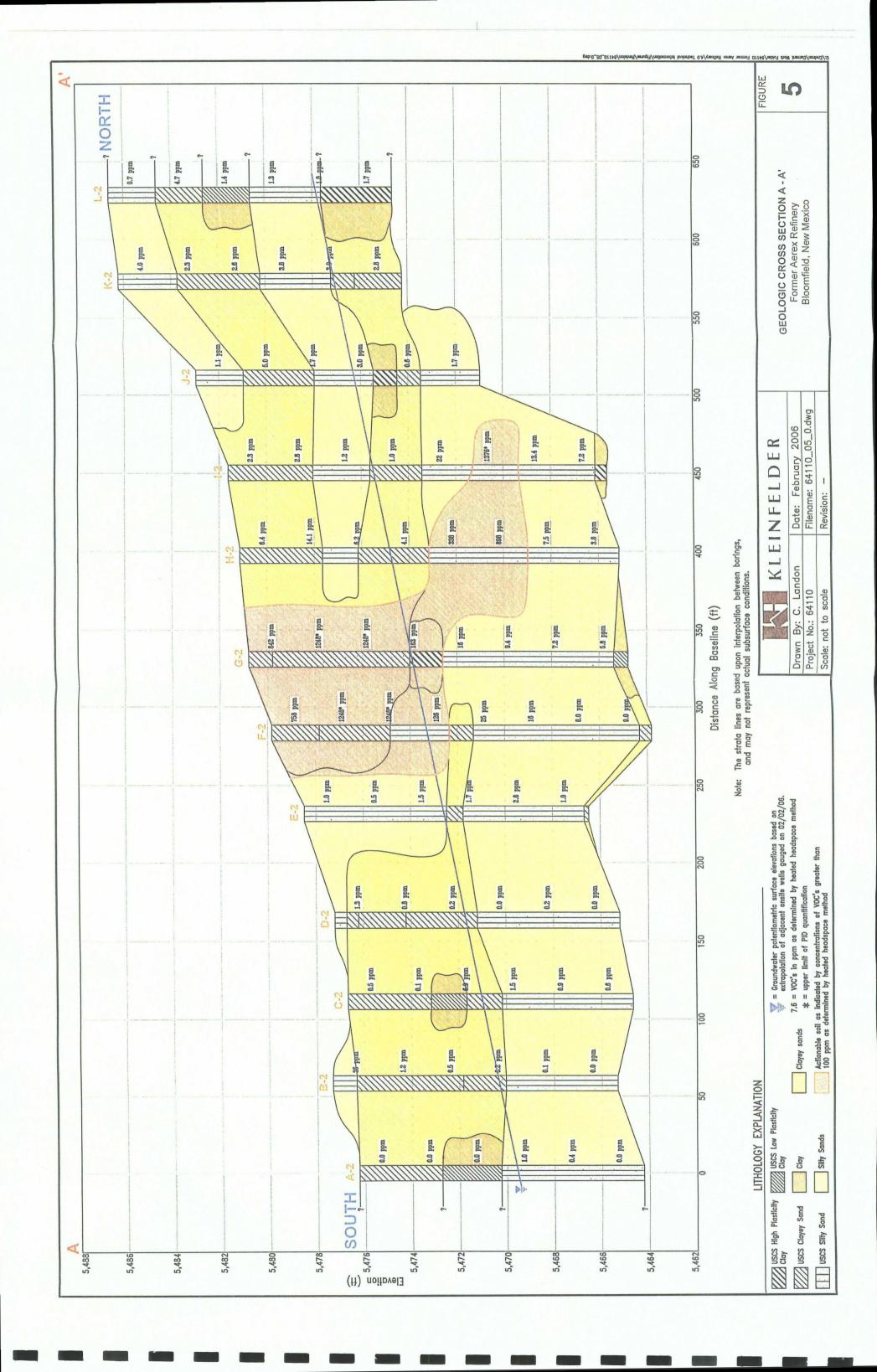
# **FIGURES**

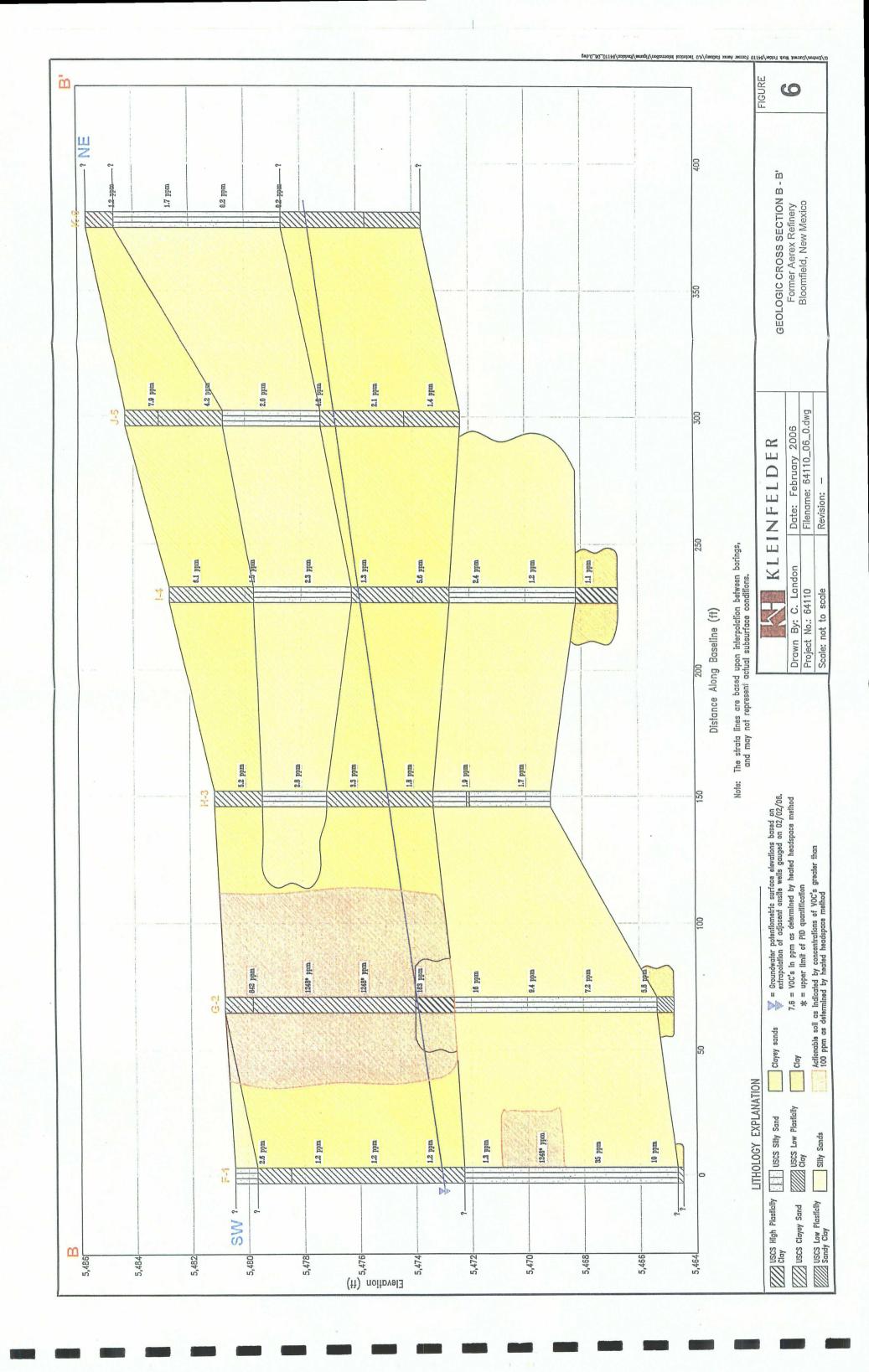




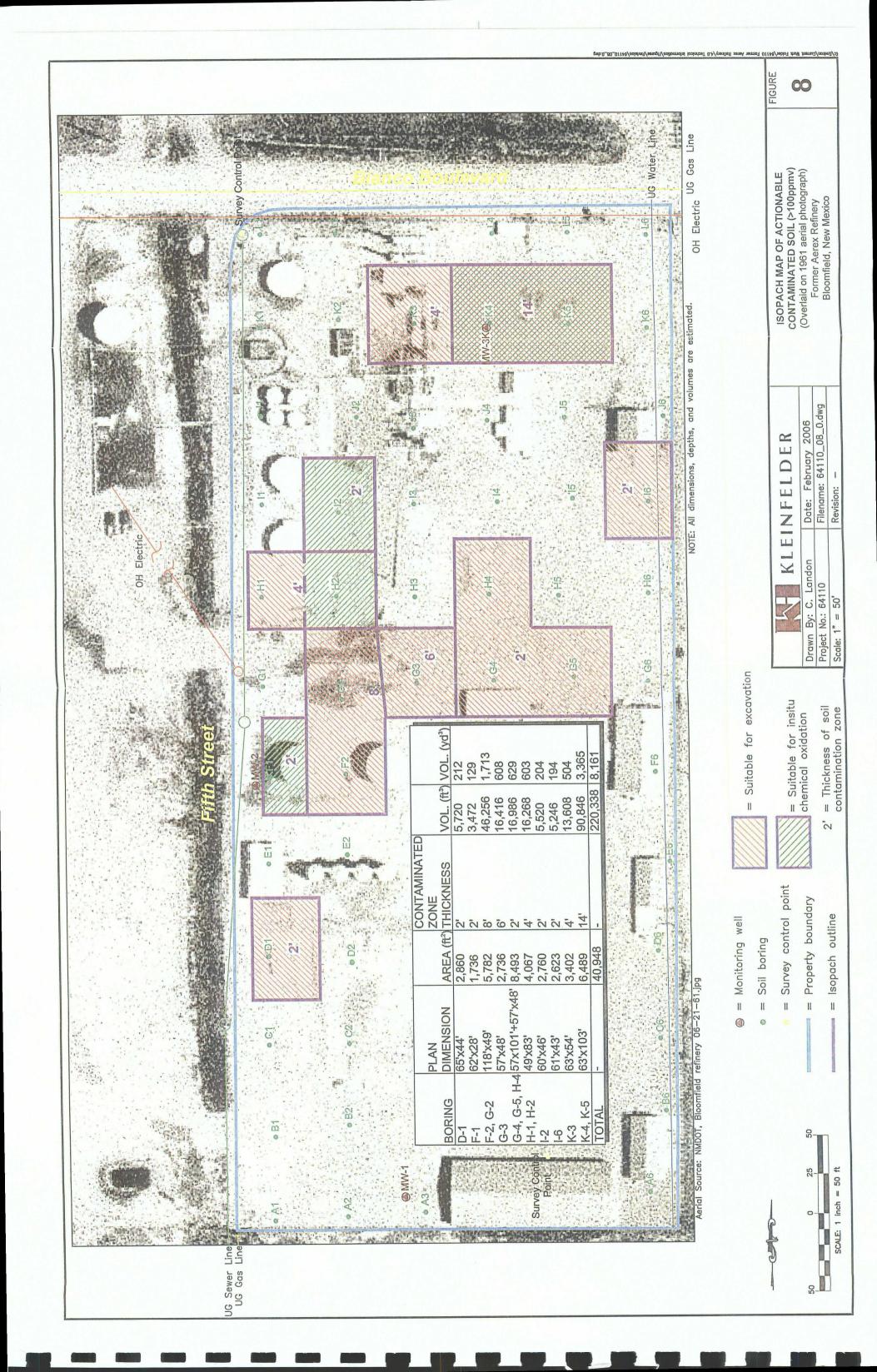


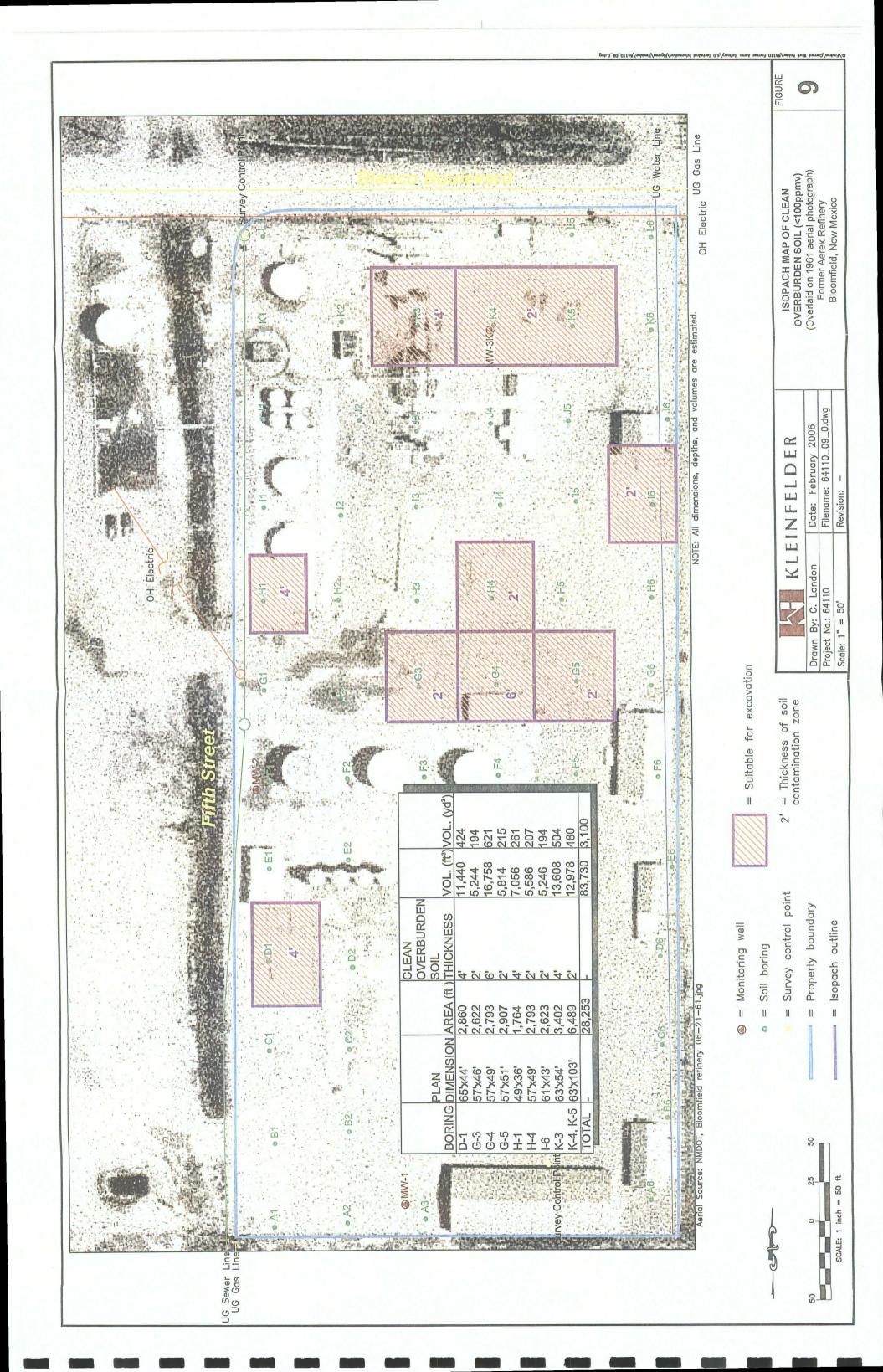












# **TABLES**

60

Table 1 Soil Field Screening Results Former Aerex Refinery Bloomfield, NM

Boring Number	Date	Depth <sup>1</sup>	Voc²
	rose jezaje i og s	0-2	1.5
		2-4	0.4
A-1	10/11/2005	4-6	0.1
		6-8 8-10	0.0
		10-12	0.0
		0-2	0.0
		2-4	0.0
A-2	10/11/2005	4-6	0.0
A-2	10/11/2005	6-8	1.0
		8-10	0.4
		10-12	0.0
		0-2	0.0
		2-4	0.0
A-3	10/11/2005	4-6 6-8	0.0
		8-10	0.0
		10-12	0.0
		0-2	0.0
		2-4	0.0
A-6	10/11/2005	4-6	0.0
A-0	10/11/2005	6-8	0.0
		8-10	0.0
		10-12	0.0
		0-2	0.0
J		2-4	0.0
B-1	10/11/2005	4-6	0.0
-		6-8 8-10	0.0
-		10-12	0.0
		0-2	36
		2-4	1.2
	40445005	4-6	0.5
B-2	10/11/2005	6-8	0.2
}		8-10	0.1
		10-12	0.0
1		0-2	0.0
	-	2-4	0.0
B-3	10/11/2005	4-6	0.0
)	}	6-8 8-10	0.0
1	ŀ	10-12	0.0
		0-2	0.0
	ľ	2-4	0.4
B-4	10/11/2005	4-6	0.0
P-1	10/11/2003	6-8	0.0
	Ţ	8-10	0.0
		10-12	0.0
1	ļ.	0-2	0.4
	Į-	2-4 4-6	0.1
B-5	10/11/2005	6-8	0.5
[	-	8-10	0.2 1.1
		10-12	0.1
		0-2	0.0
1	-	2-4	0.0
B-6	10/11/2005	4-6	0.0
D-0	10/11/2003	6-8	0.0
		8-10	0.0
		10-12	0.0
1	<u> </u>	0-2	0.4
]	}-	2-4	0.1
C-1	10/11/2005	4-6 6-8	0.2
	<u> -</u>	8-10	1.7 3.2
1	H	10-12	1.6
1	F	12-14	1.1
	ļ	14-16	0.7

Depth measurements are provided in feet below ground surface

Depth measurements are provided in teet below ground surrace

7 Healed Headspace readings were taken with a Mini Rne organic vapor meter; the
instrument was calibrated twice a day (at a minimum) with 100 parts per million
concentration isobutylene. Healed Headspace readings of Volatile Organic
Compounds (VOCs) are provided in parts per million by volume

<sup>\*</sup>value that PID pegged at for that calibration =PID Results > 100 ppm-v

Table 1 Soil Field Screening Results Former Aerex Refinery Bloomfield, NM

	niooid	tiela, NIVI	, , , , , , , , , , , , , , , , , , ,
1811 1811		<u> </u>	a julia ustij
Boring Number	Date	Depth <sup>1</sup>	voc²
		0-2	0.5
		2-4	0.1
C-2	10/11/2005	4-6	6.9
~ ~	, -	6-8	1.5
		8-1C	0.9
		10-12 0-2	0.0
		2-4	0.5
		4-6	0.6
C-3	10/12/2005	6-8	0.5
		8-10	0.7
		10-12	0.1
		0-2	1.1
		2-4	0.6
C-4	10/12/2005	4-6	0.5
0.4	10/12/2000	6-8	0.8
	ļ	8-10	0.7
		10-12	0.8
		0-2	0.6
		2-4	0.7
C-5	10/12/2005	4-6 6-8	1,2
		8-10	3.3
		10-12	0.8
		0-2	0.0
		2-4	0.0
	40/40/2005	4-6	0.0
C-6	10/12/2005	6-8	0.0
		8-10	13.8
		10-12	0.0
		0-2	0.4
		2-4	92
D-1	10/12/2005	4-6	\$ 191
	10.1-2	6-8	12.9
		8-10	7.3
		10-12	3.9
		12-14 14-16	2.5
		0-2	1.3
		2-4	0.8
		4-6	0.2
D-2	10/12/2005	6-8	0.0
		8-10	0.2
		10-12	0.0
		0-2	0.0
		2-4	0.0
D-3	10/12/2005	4-6	4.4
2-0	, 5, . 1, 2, 2, 5	6-8	0.8
		8-10	1.1
		10-12	0.7
		0-2	0.1
		2-4 4-6	0.6
D-4	10/12/2005	6-8	0.2
		8-10	0.2
		10-12	0.2
		0-2	0.0
		2-4	0.4
D-5	10/12/2005	4-6	0.4
ม-อ	10/12/2003	6-8	0.2
		8-10	0.1
		10-12	0.1
		0-2	0.9
		2-4	0.6
D-6	10/12/2005	4-6 6-8	0.5
		8-10	0.3
		10-12	0.3
		0-2	1.6
		2-4	1.3
		4-6	1.1
- a			
E-1	10/13/2005	6-8	80
E-1	10/13/2005		80 7.4 47

Depth measurements are provided in feet below ground surface

Depin measurements are provided in tect below ground surface.

Heated Headspace readings were taken with a Mini Rae organic vapor meter; the instrument was calibrated twice a day (at a minimum) with 100 parts per million concentration isobutylene. Heated Headspace readings of Volatile Organic Compounds (VOCs) are provided in parts per million by volume

<sup>\*</sup>value that PID pegged at for that calibration =PID Results > 100 ppm-v

Table 1 Soil Field Screening Results Former Aerex Refinery Bloomfield, NM

Boring Number	Date	Depth	νοc²
		0-2	1.0
		2-4	0.5
E-2	10/13/2005	4-6 6-8	1.5 1.7
		8-10	2.8
		10-12	1.0
		0-2	2.6
		2-4	1.3
E-3	10/13/2005	4-6	0,3
		6-8 8-10	6.0 6.0
		10-12	0.7
		0-2	1.4
		2-4	0.6
E-4	10/13/2005	4-6	1.5
- '		6-8	0.9
		8-10 10-12	1.0
		0-2	2.1
		2-4	2.5
E-5	10/13/2005	4-6	1.2
E+5	10/13/2003	6-8	0.5
		8-10	0.3
		10-12	0.4
		0-2 2-4	0.7
		4-6	0.4
E-6	10/13/2005	6-8	0.4
		8-10	0.7
		10-12	0.7
		0-2	2.6
		2-4	1.2
		4-6 6-8	1.2
F-1	10/13/2005	8-10	1.3
		10-12	12481
		12-14	35
		14-16	. 10
		0-2	758 1248*
		2-4 4-6	1248*
		6-8	1248
F-2	10/13/2005	8-10	25
		10-12	16
		12-14	- 8
		14-16	9
		0-2 2-4	2.5 3.8
		4-6	2.9
F-3	10/13/2005	6-8	6.7
		8-10	1.4
		10-12	0.9
		0-2	2.2
			1.5 3.8
		2-4	
F-4	10/13/2005	4-6	
F-4	10/13/2005	4-6 6-8	3.7
F-4	10/13/2005	4-6	
F-4	10/13/2005	4-6 6-8 8-10	3.7 2.6 1.4 0.0
F-4	10/13/2005	4-6 6-8 8-10 10-12 0-2 2-4	3.7 2.6 1.4 0.0
F-4 F-5	10/13/2005	4-6 6-8 8-10 10-12 0-2 2-4 4-6	3.7 2.6 1.4 0.0 19 6.6
		4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8	3.7 2.6 1.4 0.0 19 6.6 2.5
		4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0
		4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12	3.7 2.6 1.4 0.0 19 6.6 2.5
		4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0
F-5	10/13/2005	4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0 1.2 1.0 1.7
		4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0 1.2 1.0 1.7
F-5	10/13/2005	4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0 1.2 1.0 1.7 1.3
F-5	10/13/2005	4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0 1.2 1.0 1.7 1.3 1.1 1.1
F-5	10/13/2005	4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0 1.2 1.0 1.7 1.3
F-5	10/13/2005	4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 0-2 2-4 2-4 2-4 2-4 2-4 2-4 2-4 2-4 3-4 3-4 3-4 3-4 3-4 3-4 3-4 3-4 3-4 3	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0 1.2 1.0 1.7 1.3 1.1 1.1 0.9 3.8 3.2 7.5
F-5 F-6	10/13/2005 10/13/2005	4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 6-8 8-10 6-8 8-10	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0 1.2 1.0 1.7 1.3 1.1 1.1 0.9 3.8 3.2 7.5 4.5
F-5	10/13/2005	4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 6-8 8-10 10-12 0-2 8-10 10-12 0-2 8-10 10-12 0-2 8-10 10-12 0-2 8-10 10-12 0-2 8-10 10-12 0-2 8-10 10-12 0-2 8-10 10-12 0-2 8-10 10-12 0-2 8-10 10-12 0-2 8-10 10-12 0-2 8-10 10-12	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0 1.2 1.0 1.7 1.3 1.1 1.1 0.9 3.8 3.2 7.5 4.5 3.4
F-5 F-6	10/13/2005 10/13/2005	4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8 8-10 6-8 8-10 6-8 8-10	3.7 2.6 1.4 0.0 19 6.6 2.5 2.0 1.2 1.0 1.7 1.3 1.1 1.1 0.9 3.8 3.2 7.5 4.5

Depth measurements are provided in feet below ground surface

Depth measurements are provided in teat own ground sonace.

2 Heated Neadspace readings were taken with a Mini Rae organic vapor meter; the instrument was calibrated twice a day (at a minimum) with 100 parts per million concentration isohulylene. Heated Headspace readings of Volatile Organic Compounds (VOCs) are provided in parts per million by volume

<sup>\*</sup>value that PID pegged at for that calibration =PID Results > 100 ppm-v

Table 1 Soil Field Screening Results Former Aerex Refinery Bloomfield, NM

	ian ingga d	aga yayan ali	folgste i
Boring Number	Date	Depth <sup>1</sup>	voc <sub>3</sub>
		0-2	:00:4: 842
i		2-4	* 1248*
1		4-6	1248*
i		6-8	
G-2	10/27/2005	8-10	16
1			
		10-12	9.4
		12-14	7.2
		14-16	5.8
		0-2	80
[		2-4	287
l l		4-6	45
G-3	10/27/2005		
		6-8	266
		8-10	12
1		10-12	7.7
		0-2	64
		2-4	96
G-4	10/27/2005	4-6	58
		6-8	152
1		8-10	14
1		10-12	6.6
		0-2	83
j		2-4	143 -
l			
G-5	10/27/2005	4-6	63
- "		6-8	17
1		8-10	7.3
		10-12	7.8
<del></del>		0-2	0.6
1			
1		2-4	0.9
G-6	10/27/2005	4-6	1,0
3-0	10:21/2000	6-8	0.7
1		8-10	0.5
		10-12	0.4
			0.7
		0-2	V.7
		2-4	437
н-1	10/27/2005	4-6	286 ·
n-1	10/2/12000	6-8	19.9
i		8-10	8.5
		10-12	6.6
I		0-2	6.4
1		2-4	14.1
1		4-6	6.2
	40.07.0005	6-8	4,1
H-2	10/27/2005	8-10	338 %
			898
		10-12	
1		12-14	7.5
		14-16	3.8
		0-2	5.2
1		2-4	2.8
1		4-6	3.3
H-3	10/27/2005		
l		6-8	1,8
į		8-10	1.9
ĺ		10-12	1.7
		0-2	0.7
		2-4	174 ::
H-4	10/27/2005	4-6	4.3
		6-8	2
		8-10	1,5
I		10-12	1
		0.2	2.3
ļ		2-4	1.2
l			1,5
H-5	10/27/2005	4-6	
		6-8	1.6
j.		8-10	1.6
1		10-12	0.9
- 1		0-2	6,8
			5.9
		2-4	
H-6	10/27/2005	2-4 4-6	3.3
н-6	10/27/2005	2-4 4-6 6-8	3.3 2.4
H-6	10/27/2005	2-4 4-6	3.3 2.4 2.0
H-6	10/27/2005	2-4 4-6 6-8	3.3 2.4
H-6	10/27/2005	2-4 4-6 6-8 8-10 10-12	3.3 2.4 2.0 2.2
H-6	10/27/2005	2-4 4-6 6-8 8-10 10-12 0-2	3.3 2.4 2.0 2.2 5.0
H-6	10/27/2005	2-4 4-6 6-8 8-10 10-12 0-2 2-4	3.3 2.4 2.0 2.2 5.0 4.4
	10/27/2005	2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6	3.3 2.4 2.0 2.2 5.0 4.4 3.7
H-6	······································	2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6 6-8	3.3 2.4 2.0 2.2 5.0 4.4 3.7 0.9
	······································	2-4 4-6 6-8 8-10 10-12 0-2 2-4 4-6	3.3 2.4 2.0 2.2 5.0 4.4 3.7

Depth measurements are provided in feet below ground surface

Depart treasstraines are provided in the Control grant of the Property of the International Provided International

<sup>\*</sup>value that PID pegged at for that calibration =PID Results > 100 ppm-v

Table 1 Soil Field Screening Results Former Aerex Refinery Bloomfield, NM

Boring Number	Date	Dépth <sup>1</sup>	VOC2
		0-2	2.3
		2-4	2.8
		4-6	1.2
I-2	10/27/2005	6-8	1 1
1-2	10/2/12003	8-10	22
		10-12	1376*
		12-14	13.4
		14-16	7.2
		0-2	2.8
		2-4	2.2
		4-6	3.0
1-3	10/11/2005	6-8	7.7
		8-10	4.7
		10-12	85
		12-14	10.5
		14-16	35
		0-2	6.1
	'	2-4	1.5
		4-6	2.3
1-4	10/11/2005	6-8	1.3
	j	8-10	5.6
	1	10-12	2.4
		12-14	1.2
		14-16	1.1
ŀ	ŀ	0-2	7.0
	}	2-4	3.0
1-5	10/11/2005	4-6	4.0
	ļ	6-8	2.2
ĺ.	<b>F</b>	8-10	1.8
		10-12 0-2	2.4
	<b> </b>		1.3
1	ļ	2-4	315
1-6	10/11/2005	4-6	22
1	-	6-8 8-10	12
1	-		7.8
		10-12 0-2	5.7
İ		2-4	1.6
l	H	4-6	
J-1	10/11/2005	6-8	0.7
	-	8-10	1,1
	-	10-12	0.4
		0-2	1.1
1	F	2-4	5.0
		4-6	1.7
J-2	10/11/2005	6-8	3.0
	<u> </u>	8-10	0.6
	ŀ	10-12	1.7
J-3	10/11/2005	0-2	0.6
	-	2-4	3.6
ľ	T T	4-6	1.2
	1	6-8	3.3
	Ť	8-10	11
}	T	10-12	3,3
	<b> </b>	12-14	0.4
1	F	14-16	2.5
		0-2	1.6
l l	<u> </u>	2-4	6.6
ا ہا	10/14/0005	4-6	6.4
J-4	10/11/2005	6-8	4.5
J	F	8-10	5.0
		10-12	10.5
		0-2	7.9
	ľ	2-4	4.2
J-5	10/11/2005	4-5	2.0
3-0	1011112003	6-8	4.8
		8-10	2.1
		10-12	1.4
		0-2	1.5
1	T	2-4	0.5
J-6	10/11/2005	4-6	1.3
7-0	10/11/2005	6-8	1,6
	<u> </u>	8-10	1.2
		10-12	

Depth measurements are provided in feet below ground surface

Depin intrastrements are provided in test below ground sortiace. 

2 \*\*Heated Headspace readings were taken with a Mini Rae organic vapor meter, the 
instrument was calibrated hvice a day (at a minimum) with 100 parts per million 
concentration isobutylene. Heated Hendspace readings of Volatile Organic 
Compounds (VOCs) are provided in parts per million by volume

<sup>&</sup>quot;value that PID pegged at for that calibration =PID Results > 100 ppm-v

Table 1 Soil Field Screening Results Former Aerex Refinery Bloomfield, NM

Boring Number	Date	Depth <sup>1</sup>	voc²
	<del> </del>	0-2	2.7
		2-4	0.7
w.,	104110005	4-6	1.1
K-1	10/11/2005	6-B	0.7
		8-10	0.7
		10-12	0.3
		0-2	4.0
		2-4	2.3
K-2	10/11/2005	4-6	2.6 3.8
	j	6-8 8-10	3.9
		10-12	2.8
	<b></b>	0-2	6.0
	1	2-4	58
		4-6	551
K-3	10/12/2005	5-8	425
1(-5	10/12/2003	8-10	5.9
		10-12	27.0
		12-14	8.6
		14-16	3.2
		0-2	8.9
		2-4	115
		4-5 6-8	172
		8-10	153 - 6 169
K-4	10/12/2005	10-12	149
		12-14	105
		14-16	461
		16-18	29
		18-20	6.9
		0-2	0.2
		2-4	103
		4-6	118
		6-8	106 130
K-5	10/12/2005	8-10	
		10-12 12-14	92 210
		14-16	00 1574 1
J		16-18	7.4
		18-20	7.4
		0-2	1.2
K-6	10/12/2005	2-4	1.7
1,1-0	10/12/2003	4-6	0.2
		6-8	0.2
		0-2	4.2
		2-4	3.0
L-1	10/12/2005	4-6	3.3
1	ł	6-8	1.2
1	ŀ	8-10 10-12	1.1
		0-2	0.7
1	Ì	2-4	4.7.
	1040,0005	4-6	1.4
L-2	10/12/2005	6-8	1.3
1	[	8-10	1.0
		10-12	1.7
		0-2	0.4
ľ	ļ	2-4	1.2
L-4	10/12/2005	4-6	1.0
	}	6-8	0.5
	ŀ	8-10 10-12	8.0 6.8
		0-2	4.8
	f	2-4	4.8
L-5	10/12/2000	4-6	4.6
F-2	10/12/2005	6-8	3,5
I		8-10	1,1
		10-12	0,3
1	L	0-2	0.6
1	<u> </u>	2-4	4.2
L-6	10/12/2005	4-6	0.8
1	-	6-8 8-10	2.6 2.7
	i i	n-10 1	

Depth measurements are provided in feet below ground surface

Heated Headspace readings were taken with a Mini Rae organic vapor meter; the instrument was calibrated fiwice a day (at a minimum) with 100 parts per million concentration isobulytene. Heated Headspace readings of Votatile Organic Compounds (VOCs) are provided in parts per million by volume

<sup>\*</sup>value that PID pegged at for that calibration =PID Results > 100 ppm-v

# Table 2 Fluid Level Data Former Aerex Refinery Bloomfield, NM

Well ID	Screened Interval	TOC Elevation (A) <sup>2</sup>	Date	Depth to Product (B) <sup>3</sup>	DTW (C) <sup>4</sup>	LNAPL Thickness (D) <sup>5</sup>	Potentio- metric Surface Elevation <sup>6</sup>
MW-1	6.7-16.7	5478.17	1/26/2006		8.37		5469.80
IALAA-I	0.7-10.7	3470,17	2/2/2006		8.35		5469.82
MW-2	4-14	5480.8	1/26/2006		7.92		5472.88
IAIAAT	4-14	3400.0	2/2/2006		7.90		5472.90
MW-3	4-14	5487.93	1/26/2006		10.81		5477.12
INI AA-2	4-14	5467.93	2/2/2006		10.66		5477.27

<sup>&</sup>lt;sup>1</sup> Screened intervals are provided in feet below ground surface.

<sup>&</sup>lt;sup>2</sup> Top-of-casing (TOC) elevation values are provided in feet above mean sea level (NAVD 88 datum). Top of casing elevation data was provided by Kleinfelder's subcontractor, Johnson Mapping and Surveying, LLC. The survey was performed in January 2006.

<sup>&</sup>lt;sup>3</sup> Depth-to-product measurements are provided in feet below top of casing.

<sup>&</sup>lt;sup>4</sup> Depth-to-water measurements are provided in feet below top of casing.

 $<sup>^{\</sup>rm 5}$  LNAPL thickness is provided in feet.

 $<sup>^{6}</sup>$  Potentiometric surface elevation is calculated by (A-C) + [(0.79)(D)], where 0.79 is the assumed specific gravity of the LNAPL, and D = B-C.

Table 3

Groundwater Sample Laboratory Analytical Results - Volatile Organic Compounds<sup>1</sup>

Former Aerex Refinery

Bloomfield, NM

				,			
100 /1 02	Date	Joseph e	::::::::::::::::::::::::::::(	CONCENTRA	ATION (μg/L)	2,5	199 P. E.
Well ID	Sampled	B. 654	Tigg	E	×X	M	N N
MW-1	1/26/2006	<0.50	<5.0	<0.50	<1.5	<1.0	< 0.050
MW-2	1/26/2006	<0.50	<5.0	<0.50	<1.5	<1.0	<0.050
MW-3	1/26/2006	<0.50	<5.0	1.9	<1.5	<1.0	180
NMWQCC:	Standard	10	750	750	620	100	30

<sup>1</sup>Refer to Appendix F for the complete list of laboratory analytical results

Values in shaded boxes indicate that the result exceeds the NMWQCC standard

B = benzene

T = taluene

E = ethylbenzene

X = total xylenes

M = Methyl pert butyl ether

N = naphthalene + 1-methylnaphthalene + 2-methylnaphthalene

B,T,E,X, and M by EPA Method 8021

N by EPA Method 8310

<sup>&</sup>lt;sup>2</sup>Units in micrograms per liter

<sup>&</sup>lt;sup>3</sup> New Mexico Water Quality Control Commission

Table 4

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Groundwater Sample Laboratory Analytical Results - Polynuclear Aromatic Hydrocarbons<sup>1</sup> Former Aerex Refinery Bloomfield, NM

			÷	The second second	5.4			CONCENT	CONCENTRATION (µg/L)		13.00			XXX.	Annual Control of the	
	Date				Benzo(a)-	Benzo(a)-	Benzo(b)-	Benzo(g,h,l)-	Benzo(k)-	- 1 . 1 . 1 . 1	Dibenz(a,h)-			Indeno(1,2,3-		
Well ID		Anthracene	Sampled Anthracene Acenaphthene	Acenaphthylene		pyrene	pyrene fluoranthene	٠.	perylene   fluoranthene   Chrysene	_	anthracene	Fluoranthene	Fluorene	cd)pyrene	anthracene Fluorenthene Fluorene culpyrene Phenanthrene	Pyrene
MW-1	1/26/2006	<0.010	<0.010	010.0>	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010
MW-2	1/26/2006	<0.010	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.010	<0.010	<0.010	<0.050	Ĺ
MW-3	1/26/2005	<0.010	<0.010	010.0>	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010
NMWOCL	MWQCC <sup>3</sup> Standard				,	,			-	,			,	,	•	z
Refer to Ap	pendix F for th	ne complete list of	Refer to Appendix F for the complete list of laboratory analytical results	il results.												
Units in mik	Units in micrograms per liter	ter														
New Mexic	o Water Qualit	y Control Commit	ssion has not establi:	New Mexico Water Quality Control Commission has not established a standard for the listed analy	isted analytes											
All analysis	All analysis by EPA Method 8310	d 8310														

# Table 5 Groundwater Sample Laboratory Analytical Results - Dissolved Metals<sup>1</sup> Former Aerex Refinery

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				Bloomfield, NM	id, NM				
				00 🗼	CONCENTRATION	l'(mg/L) <sup>2</sup>			
Well ID	Date Sampled	Mercury	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver
MW-1	1/26/2006	<0.00020	<0.020	0.11	<0.0050	<0.010	<0.0050	<0.020	<0.010
MW-2	1/26/2006	<0.00020	<0.020	0.12	<0.0050	<0.010	<0.0050	<0.020	<0.010
MW-3	1/26/2006	<0.00020	<0.020	0.99	<0.0050	<0.010	<0.0050	<0.020	<0.010
NMWOCC	<sup>3</sup> Standard	0.002	0.1	1.0	0.01	0.05	0.05	0.05	0.05

' Refer to Appendix F for the complete list of laboratory analytical results.

<sup>2</sup> Units in milligrams per liter

<sup>3</sup> New Mexico Water Quality Control Commission

Values in shaded boxes indicate that the result exceeds the NMWQCC standard

All analysis by EPA Method 6010B

Table 6

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Groundwater Sample Laboratory Analytical Results - Geochemical Parameters <sup>1</sup>
Former Aerex Refinery
Bloomfield, NM

Date   Bromide   Chloride   Ti26/2006   -1.0   Ti26/2006   -1.0   Ti26/2006   -2.0   Ti26/2006   -2.0   Ti26/2006   -2.0   Ti26/2006   Spendix F for the complete list of aboratory analytic	ride Fluoride 7.8 0.4	ride	***		١.	Chom! MOIT A GTING CHOO	200	1 1 100 100		Salar Salar	50800	70 1998	
Well ID:         Sampled Sominger         Bromide         Chlon           MW-3         1/26/2006         <1.0         350.           MWQCC 3 Standard         . 250.         250.           EPA Method         9956         995           efer to Appendix F for the complete list of laboratory standard	. 6	ride		Total Statement of	1	CONCERTION	וכש שפורו		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The second of the second of			
MWv.3           1/26/2006           <1.0           WWQCC <sup>3</sup> Standard         -         250,           EPA Method         9056           905           fer to Appendix F for the complete list of laboratory         905         905	7.8		Nitrate * Nitrite*	Nitrite	Sulfate	N Alkatinity	Ortho Phosphate	Ortho Specific Phosphate Conductance	Dissolved	Calcium	Magneslum	Potassium	Sodium
MVQCC 3 Standard         -         250.           EPA Method         9056         905           Effect o Appendix F for the complete list of laboratory at the complete list of laborator	0.0	0.45	<0.10	<0.10	7.2	570	<0.025	086	570	130	8.6	2.2	83
EPA Method 9056 905		9	10.0	•	600.0	-		•	1000.0"		0.2*		٠
Refer to Appendix F for the complete list of Jaboratory analytical results.	36 9056	3.6	9056	9026	9056	310.2	4500P-E	9050A	160.1	60108	60108	60108	6010B
	analylical results.												
<sup>2</sup> Units in milligrams per liter													
<sup>3</sup> New Mexico Water Quality Control Commission													
* Standards for Domestic Water Supply													
Values in shaded boxes indicate that the result exceeds the NMWQCC standard	s the NMWQCC stand	fard											
Method ≈ EPA Method Number												•	
-=NMOCC has not established standards for the listed analytes	analytes												

Soil Sample Laboratory Analytical Results - Volatile Organic Compounds 1 Former Aerex Refinery Bloomfield, NM Table 7

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П	H	<4.6	×4.8	260	7.3	5500	700	190	72	1800	1400	1900	560	190	7.3	670	62	9.4	2400	4600	2300	100
	Total TPH					100 100 100 100 100 100 100 100 100 100		ĭ		₹.; 		. A.	447							7		
# : :::	TPH-ORO	<4.6	×4.8	30	<b>&lt;4</b> .6	<1000	42	40	<4.8	<91.	92	120	130	33	C4.7	36	11	<4,9	150	006	430	,
	TPH-DRO	<4.6	×4.8	230	5.7	4100	410	150	71	1800	1300	089	330	150	6.5	620	44	9.4	2100	3500	1800	1
mg/kg)*	TPH-GRO	<0.58	<0.60	<0.59	1.6	1400	1200	0.71	0.7	2.1	20	1100	100	10	0.81	11	6.7	<0.62	160	170	. 55	-
CONCENTRATION (mg/kg)	M	<0.0058	<0.0060	<0.0059	<0.0058	<0.12	<0.11	<0.0057	<0.0061	<0.0057	<0.0052	<0.30	<0.0055	<0.0057	<0.0059	<0.0058	<0.0060	<0.0062	<0.0054	0.028	<0.0058	•
CONCEN	Total	<0.0087	0600.0>	6800.0>	<0.0087	30	14	0.013	<0.0091	<0.0085	0.084	4.8	0.56	0.051	<0.0088	0.032	<0.0091	<0.0092	0.088	0.53	0.13	50
	×	<0.0087	0600.0>	<0.0089	<0.0087	27	12	0.0091	<0.0091	<0.0085	0.084	2.7	0.51	0.034	<0.0088	0.032	<0.0091	<0.0092	0.088	0.29	0.13	
	ш Ш	<0.0029	<0.0030	<0.0030	<0.0029	2.5	1.5	0.0037	<0.0030	<0.0028	<0.0026	<0.15	0.049	0.0046	<0.0030	<0.0029	<0.0030	<0.0031	<0.0027	0.14	<0.0029	
	F	<0.029	<0.030	<0.030	<0.029	<0.63	<0.57	<0.029	<0.030	<0.028	<0.026	<1.5	<0.028	<0.028	<0.030	<0.029	<0.030	<0.031	<0.027	<0.030	<0.029	•
- N	<b>a</b>	<0.0029	<0.0030	<0.0030	<0.0029	0.14	0.066	<0.0029	<0.0030	<0.0028	<0.0026	2.1	0.0033	0.012	<0.0030	<0.0029	<0.0030	<0.0031	<0.0027	860.0	0.0039	10
	DEPTH*	9	8.5	S	11	5	4	3	7	m	က	11	ဗ	10	10	က	10	ω	9	16	10	
100	DATE	1/26/2006	1/26/2006	1/19/2006	1/18/2006	1/18/2006	1/18/2006	1/18/2006	1/18/2006	1/18/2006	1/17/2006	1/17/2006	1/18/2006	1/17/2006	1/17/2006	1/17/2006	1/17/2006	1/17/2006	1/16/2006	1/16/2006	1/16/2006	
	SAMPLE NAME	A2-6'	A6-8.5	D1-5'	F1-11'	F2-5'	G2-4'	.23-3,	G4-7'	.8-35	H1-3'	H2-11'	H4-3'	12-10	13-10'	.6-91	J3-10'	J5-8'	K3-6'	K4-16'	k5-10'	Standard
	BORING NUMBER	A-2	A-6	D-1	F-1	F-2	G-2	6-3	G-4	G-5	H-1	H-2	H-4	1-2	F-3	9-1	J-3	J-5	K-3	K-4	K-5	NMOCD <sup>3</sup> Standard

Refer to Appendix F for the complete list of laboratory analytical results

<sup>2</sup> Units in milligrams per kilograms

<sup>3</sup> New Mexico Oil Conservation District Remediation Action Levels for sites with groundwater < 50 ft below ground surface

<sup>4</sup> Depth measurements are provided in feet below ground surface

Values in shaded boxes indicate that the result exceeds the NMWOCD standard

B = benzene

T = toluene

E = ethylbenzene X = total xylenes

M = Methyl Tertiary Butyl Ether Total BTEX = B+T+E+X

TPH = Total Petroleum Hydrocarbons

TPH-GRO = Gasoline Range Organics

TPH-DRO = Diesel Range Organics
TPH-ORO = Oil Range Organics
Total TPH = sum of GRO, DRO, and ORO

B.T.E.X, and M by EPA Method 8021

TPH-GRO, DRO, and ORO by EPA Method 8015

-=NMOCD has not established standards for the listed analyte

Soil Sample Laboratory Analytical Data - Inorganic Compounds 1 Former Aerex Refinery Table 8

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Bloomfield, NM

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						)	ONCENTR,	CONCENTRATION (mg/kg)	g)²		
BORING	SAMPLE NAME	DATE	DEPTH	Mercury	Arsenic	Barlum	Cadmium	Chromium	Lead	Selenium	Silver
A-2	A2-6'	1/26/2006	9	NA	NA	NA	NA	AN	NA	AN	AN
A-6	A6-8.5'	1/26/2006	8.5	NA	AN	NA	NA	NA	NA	NA	AN
<u></u> -	D1-5'	1/19/2006	သ	A'A	AN	AN	NA	ΑN	AN	NA	NA
F-7	F1-11	1/18/2006	17	AN	AA	AN	AN	AN	NA	NA	NA
F-2	F2-5'	1/18/2006	5	<0.025	<1.2	160	0.79	4.8	10	<6.3	<0.63
G-2	G2-4'	1/18/2006	4	AN	NA	ΑΝ	AN AN	NA	NA	NA	AN
6-3	G3-3,	1/18/2006	က	AN	NA	N.	AN	NA	NA	NA	ΑN
G-4	G4-7'	1/18/2006	7	ΑN	AN	NA	AN	NA	NA	NA	NA
G-5	G5-3;	1/18/2006	3	ΨN	AN	Ą	NA	NA	NA	NA	NA
H-1	H1-3'	1/17/2006	3	ΑN	ΑΝ	AN	AN	ΑĀ	ΑN	NA	AN
H-2	H2-11'	1/17/2006	11	ΑΝ	ΑΝ	ΑN	NA	ΑN	AN	NA	Ą
H-4	H4-3'	1/18/2006	3	ΑN	Ϋ́Z	ΑN	NA	Ϋ́	AN	NA	ĄZ
1-2	12-10'	1/17/2006	10	<0.023	1.9	220	0.33	1.8	1.5	V.1.>	<0.57
1-3	13-10'	1/17/2006	10	ΑN	NA	Ϋ́	ΑN	NA	ΑN	NA	ΑN
9-1	16-3'	1/17/2006	3	Ϋ́	ΑΝ	ΑΝ	A'A	ΑΝ	ΑN	NA	AN
J-3	J3-10'	1/17/2006	10	NA	N A	A'A	NA	AN	NA	NA	AN
ე-5	15-8'	1/17/2006	Ø	NA	A A	A'A	AN	ΑN	ΑN	AN	ΑN
K-3	K3-6'	1/16/2006	9	<0.021	1.5	130	0.52	3.4	2.7	<1.1	<0.54
大 <b>-</b> 4	K4-16'	1/16/2006	16	NA	A A	Ϋ́	ΑN	A A	Ϋ́	AN	AN
K-5	K5-10'	1/16/2006	10	AN	AN	NA A	NA	AN.	NA	NA	AA
							***************************************				

Refer to Appendix F for the complete list of laboratory analytical results

<sup>2</sup> Units in milligrams per kilograms

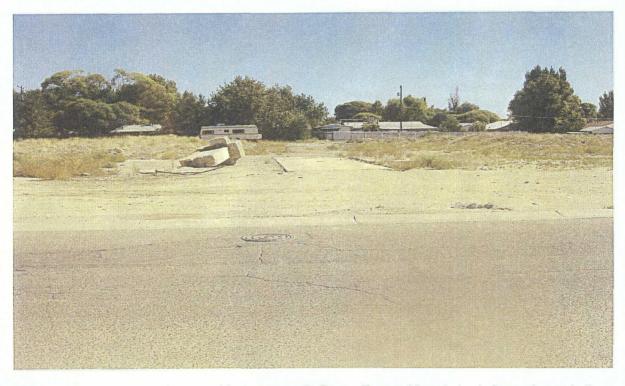
3 Depth measurements are provided in feet below ground surface

NA - not analyzed Analyzed by EPA Method 6010B

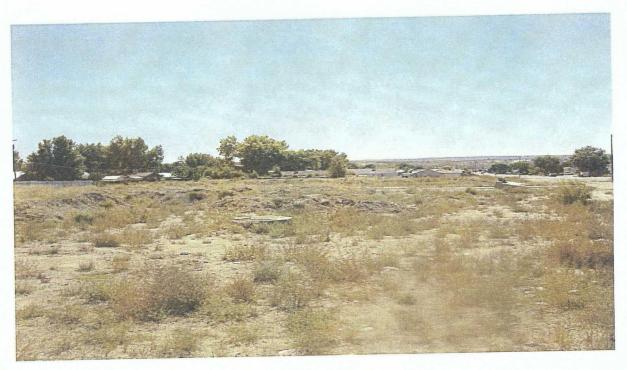
## APPENDIX A Site Photographs



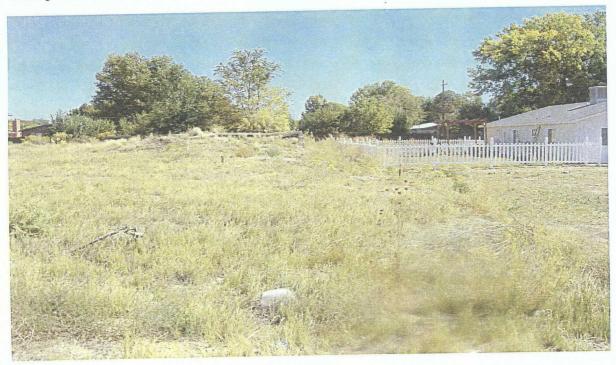
Viewing south from northeast corner of former Aerex Refinery property. Exposed foundation is from a former bulk product loading facility.



Viewing east across central potion of former Aerex Refinery. Exposed foundation is from a former bulk product loading facility.



Viewing south across central portion of the former Aerex facility.



Viewing east from the southwest corner of former Aerex Refinery property. MW-1 well cover is evident in the distance.



Viewing east near central portion of the former Aerex site. Soil stockpiles were moved to allow access for direct push grid locations. Stockpiled soils apparently were placed onsite from excavation for road construction along adjacent Blanco Boulevard.



Viewing west near central potion of the former Aerex facility. Former Aerex tank farm facilities are in the background across Fifth Street. These facilities are now owned by Giant Refining.

## APPENDIX B

Site Access Agreement

\* 300 Car

#### CONSENT FOR ACCESS TO PROPERTY

Name of Property Owner:

Clayton Investments, Inc.

Location of Property:

Southeast corner of Blanco Blvd. and Fifth St., Bloomfield, New

Mexico, Former Aerex Refinery Site

This is my consent to Kleinfelder, Inc., the State of New Mexico Oil Conservation Division, and its authorized officers, employees, contractors, and representatives for access to the above-described Property for a period of two (2) years for the following possible purposes:

- Inspect property for presence of preexisting monitoring wells, measure groundwater levels, obtain utility clearance, and observe Site conditions.
- Move soil piles to allow access for drilling locations.
- · Install soil borings and obtain soil samples for analytical testing.
- Drill and construct monitoring wells and obtain groundwater samples for analytical testing.
- Survey for elevations of soil boring locations and monitoring well casing and ground elevations.
- Periodically measure groundwater levels and collect groundwater samples from onsite monitoring wells.

Kleinfelder, the New Mexico Oil Conservation Division, or its representative will provide the Property Owner oral notice prior to each entrance onto Property. This notice shall be given to:

#### Owner:

Clayton Investments 501 Airport Drive, Suite 100 Farmington, New Mexico 87401 Attn: Mr. Bob Moss (Owner's Agent) (505) 326-5571

#### Conditions

Property Owner may observe activities on the Property, consistent with Occupational Health and Safety Regulations (29 CFR § 1910.120). Surface finishing of the wells would include installing above ground completions with traffic bollards with concrete aprons (2-foot square minimum) installed at the wellheads.

Project activity on the Property will be designed to minimize interference with the movement of vehicles and regular activities on the Property. Following completion of the project, Kleinfelder or its representative will remove equipment, all materials, trash, and other items associated with Kleinfelder's activities. Kleinfelder or its representative will otherwise return the property as close as possible to the pre-entrance condition.

#### **Indemnification**

Allocation of Risk Neither party shall be responsible to the other for any special, incidental, indirect, penal or consequential damages (including lost profits) incurred by either KLEINFELDER or CLAYTON INVESTMENTS or for which either party may be liable to any

third party. The indemnity obligations and the limitation of liability established below shall survive the expiration or termination of this Agreement.

- (a) Indemnification of CLAYTON INVESTMENTS. Subject to the provisions and Limitation of Liability of this Agreement, KLEINFELDER agrees to indemnify and hold harmless CLAYTON INVESTMENTS, its shareholders, officers directors, employees, and agents from and against any claims, suits, damages, expenses, including reasonable attorneys' fees, or other losses (collectively "Losses") to the extent caused by KLEINFELDER's negligent performance of Services under this Agreement.
- (b) Indemnification of KLEINFELDER. CLAYTON INVESTMENTS will indemnify and hold harmless KLEINFELDER, its shareholders, officers, directors, employees, and agents from and against Losses to the extent caused by the active negligence of CLAYTON INVESTMENTS, its employees, agents, and contractors.

I give this permission voluntarily, without expectation of monetary compensation, and with knowledge of my right to refuse and without coercion. I have had an opportunity to ask questions and my questions have been answered to my satisfaction.

Signature-Property Owner

Signature- Kleinfelder

Date 1/6/06

## APPENDIX C Health and Safety Plan Signatory Pages

All Kleinfelder personnel, subcontractor personnel, and Site Visitors are required to sign the following acknowledgment of instruction form prior to conducting project activities. This acknowledgment is not a waiver. It is the primary method used in compiling environmental experience and contaminant exposure records for Kleinfelder personnel. Upon written request, a copy of your environmental work record will be provided by the Corporate Safety and Health Manager.

I understand that this project involves the investigation of a project site with potential petroleum hydrocarbon contamination. I have read this Safety and Health Plan and have received instructions for safe work practices, personal protective equipment, and air monitoring requirements. I further understand that if I encounter unanticipated contamination I am to leave the Site and immediately notify the Project Manager and Corporate Safety and Health Manager of conditions discovered.

COMPANY	PERSONNEL	SIGNATURE	DATE
Kkinfelder	Justin Ball	Matri Gall	1)9/06
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COMPANY	PERSONNEL	SIGNATURE	DATE
Llenterder	Bob Wilcox Risy Dunyon	Beblile	1/10/06
Elenterder Ew roted	Risy Dunyon	Kunddiova	1-10.06

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KLEINFELDER PROJECT NO. 64110
PERSONAL PROTECTIVE EQUIPMENT UTILIZED:
LEVEL D LEVEL D MODIFIED LEVEL C
SAFETY BRIEFING PERFORMED BY:
PETROLEUM CONTAMINANT(S):
AIR MONITORING RESULTS (Attach separate page if required.):
SIGNATURE FORM
I have read, understand, and agreed to abide by this site-specific safety and health plan.

COMPANY	PERSONNEL	SIGNATURE	DATE
Keinelder	Justin Ball	Contra Bal	1/16/05
ESN-SW	Louis Trui: 16	Mini	1/16/05
KA	L. Dalton	L. Dit	1-16-05
NMOCD	Denny Forst	Deny Jant	1117/05
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PERSONAL PROTECTIVE EQUIPMENT UTILIZED:
LEVEL D LEVEL C LEVEL C
SAFETY BRIEFING PERFORMED BY: Just N Ball DATE: 1/17/06
PETROLEUM CONTAMINANT(S): (rude Oil, gasoline diese
AIR MONITORING RESULTS (Attach separate page if required.):
SIGNATURE FORM
I have read, understand, and agreed to abide by this site-specific safety and health plan.

COMPANY	PERSONNEL	SIGNATURE	DATE
Kpin-Adder	Instin Ball LOVIS Trujillo	(Morter Bell	1/17/06
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KA	L. Dalton	An Det	1-17-06

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KLEINFELDER PROJECT NO. 64110
PERSONAL PROTECTIVE EQUIPMENT UTILIZED:
LEVEL D LEVEL D MODIFIED LEVEL C
SAFETY BRIEFING PERFORMED BY: Justin Bal DATE: 1/19/08
PETROLEUM CONTAMINANT(S): Crude 0:/ dicsel, gasdine
AIR MONITORING RESULTS (Attach separate page if required.):
SIGNATURE FORM
I have read, understand, and agreed to abide by this site-specific safety and health plan.

COMPANY	PERSONNEL	SIGNATURE	DATE
Kleinfelder	Justia Ball	Gentro Bull	1/19/05
KA	L. Dalton	G. Do	1-19-06
ESPSU	LTruilla	Ti Ai	1-19-06
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COMPANY	PERSONNEL	SIGNATURE	DATE,
Kleinfelder	Justin Ball	Confor Ball	1/20/05
ESJ-SW	LOUIS Trajillo	1/2 2:1	1/20/05
KA	L. Dalton	14. Det	1/20/05
			<u></u>

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## SIGNATURE FORM I have read, understand, and agreed to abide by this site-specific safety and health plan.

COMPANY PERSONNEL SIGNATURE DATE

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PROJECT NAME: NMOCD Former Aerex Refinery, Bloomfield, San Juan County, New Mexico
KLEINFELDER PROJECT NO. 64110

PERSONAL PROTECTIVE EQUIPMENT UTILIZED:

LEVEL D LEVEL D MODIFIED LEVEL C

SAFETY BRIEFING PERFORMED BY:

PETROLEUM CONTAMINANT(S):

Patrolam Have read, understand, and agreed to abide by this site-specific safety and health plan.

COMPANY	PERSONNEL	SIGNATURE	DATE
Kleinfelder	Bab Wilcox	Balley	2/2/06

# APPENDIX D Field Operating Procedures

#### Field Operating Procedures

**Soil Sampling Procedure** – Before collecting each soil sample, the continuous sampler or split-spoon sampler and other soil sampling tools will be cleaned using a solution of Alconox and clean tap water. The sampler will then be rinsed with additional distilled water. New disposable latex gloves will be used for all soil sampling procedures to minimize the potential for cross contamination.

Upon retrieval of the sampler, a degreed geologist will first collect samples for field screening and laboratory analysis. Once these samples have been secured and preserved as required, the geologist will document percent recovery of the interval targeted for sampling and log the sample in accordance with American Society Testing and Materials (ASTM) standard D 2488-00 (ASTM 2000) for the description and identification of soils, visual-manual procedure.

Soil samples collected for field screening by the heated-headspace method will be collected in accordance with the SOP below and analyzed with a Rae Systems, Model PGM-761S Photo-Ionization Detector (PID), or equivalent. The PID will be calibrated daily to 100-parts per million (ppmv) using isobutylene span gas as specified in the users' manual. The samples used for field-screening purposes will be collected from each distinct lithologic unit and obviously stained areas. At a minimum, one field-screen sample will be obtained from each 5-foot (ft) section of soil, where the quantity of soil obtained during sampling allows.

The second soil sample or samples will be collected for possible laboratory analyses in laboratory-supplied glassware. Each sample will be placed on ice in a cooler until selection of samples for laboratory analyses is made. Selected samples will remain in the cooler, which will be maintained at a temperature of 4 degrees Celsius or less and under the custody of the sampler until properly relinquished. Chain-of custody documentation will follow the samples until delivered to the laboratory analysis.

Heated Headspace Screening Method (per NMED, 2000) – Equipment needed for soil screening includes clean 0.5- to 1-liter or 16-ounce jars, aluminum foil, and a Flame Ionization Detector (FID), Photo-Ionization Detector (PID), detector tubes, or other acceptable field instruments. Use best judgment in choosing a field instrument. Factors to consider include, but are not limited to, the age of the underground storage tank system, soil characteristics, and extent of contaminant degradation. Instruments for field screening should be calibrated in the field following the manufacturer's instructions. If the temperature is below 60° Fahrenheit or 15° Celsius, a thermometer and water bath will also be needed. The container for the water bath must be large enough to hold the sample jar, heat source, and deionized water. It is also acceptable to warm up the sample using heated air from the interior of a vehicle. However, care should be taken to keep the sample out of direct sunlight since hydrocarbons can be oxidized by ultraviolet radiation. The use of a portable gas chromatograph is optional.

The steps for the heated headspace method are:

- <u>Step 1:</u> Fill a 0.5-liter/16-ounce or larger clean glass jar half full of soil sample. Plastic bags or other non-glass containers are not acceptable.
- Step 2: Seal top of jar with clean aluminum foil and lid ring or equivalent.
- <u>Step 3:</u> Ensure sample is at 15° C to 25°C, or approximately 60°F to 80°F. A warm water bath or heated air from the interior of a vehicle should be used if necessary to raise sample temperature to the acceptable range. Samples are to be protected from direct sunlight in order to prevent photo-destruction of the volatiles.
- <u>Step 4:</u> Aromatic hydrocarbon vapor concentrations should be allowed to develop in the headspace of the sample jar for 5-10 minutes. During the initial stages of headspace development, the sample is to be shaken vigorously for one minute.
- <u>Step 5:</u> Immediately pierce the foil seal with the probe of an FID, a PID, or colorimetric tubes, and record the highest (peak) measurement. The instrument should be able to accurately detect total aromatic hydrocarbons (TAH) between 0 and 1000 parts per million (ppm).
- Sample Collection for Methanol Extraction (per NMED, 2000) This section applies to samples collection for analysis of volatile constituents.
- <u>Step 1:</u> Soil samples can be collected from a backhoe bucket (for tank removals) or from a split-spoon sampler (for soil borings or monitoring wells). Avoid placing pebbles or other large particles in the sample.

If soil samples are collected from a backhoe bucket, ensure that the samples are representative of the area being sampled. Scrape off the top six inches of soil in the bucket and fill the syringe supplied by the laboratory with 10-15 cm<sup>3</sup> of soil. The syringe should be marked to indicate whether the correct amount of soil has been collected.

For soil borings or monitoring well installations, soil samples should be collected from a split-spoon sampler using a syringe.

<u>Step 2:</u> Extract the soil sample with methanol using one of the two extraction procedures described below. In both procedures, work should be completed quickly to avoid losses of volatile compounds from the sample. In addition, sample bottles should be labeled, chain-of-custody documentation filled out, and sample bottles placed on ice for transport to the laboratory. For each sample, two bottles should be collected and extracted for volatile analysis.

Unscrew the cap on the sample bottle and quickly push the sample into the bottle with the syringe plunger, being careful not to get soil particles on the rim of the bottle. Quickly replace the cap and tighten securely.

If the methanol is provided in a vial separate from the sample bottle, unscrew the cap on the sample bottle and quickly push the sample into the bottle with the syringe plunger, being careful not to get soil particles on the rim of the bottle. Open the vial containing the methanol and pour it into the sample bottle, being careful not to spill any methanol. Quickly replace the cap and tighten securely. Gently agitate the sample to immerse the soil in the methanol. Excessive agitation may cause undue volatilization.

Step 3: For each sampling location at the site, collect a dry-weight sample in a bottle supplied by the laboratory. At least 20 grams of soil should be collected (the bottle must be at least half full with soil). Label the sample to correspond with the labeling on the matching field-preserved sample. This sample is used to measure moisture content and does not need any special preservation. Fill out the necessary chain-of-custody documentation indicating that the soil sample is for moisture analysis only.

Monitoring well Installation – Groundwater monitoring wells will be constructed with 2-inch outer diameter, Schedule 40, flush-joint, threaded polyvinyl chloride (PVC) casing and screen. The well construction will consist of a threaded PVC bottom plug and flush-joint, threaded, 0.010 or 0.020 inch factory-slotted, well screen. The remainder of the well will be constructed with the appropriate length of flush-joint, threaded PVC blank casing to the ground surface. A 2-inch-diameter PVC expanding, locking top plug will be placed at the top of the well. Care will be taken to keep the PVC in the center of the hollow-stem auger (HSA) as the HSA is being removed and annular materials are emplaced.

The sand filter pack, consisting of Colorado silica sand, No. 10-20 or equivalent, will be placed approximately 1-2 ft above the top of the screened interval. The sand pack will be followed by a %-inch bentonite chip seal for a minimum thickness of approximately two ft, with the remainder of the annulus backfilled with a Portland cement/bentonite grout. The casing, sand filter pack, and bentonite seal and cement grout will be placed inside the annulus as the augers are withdrawn from the boring. Surface finishing of the wells will include installing a traffic-rated utility bolt-down manholes with a concrete apron (2-foot minimum diameter) installed at each wellhead.

**Monitoring Well Development** - Development of monitoring wells shall be conducted in accordance with the following procedures:

Monitoring well development equipment will be decontaminated (in accordance with our decontamination SOP) before any development activities are initiated.

Water level measurements will be collected in accordance with our groundwater sampling SOP

Well volumes will be calculated

Well development equipment will be assembled, depending on the development method used (e.g., bailer or pump), and development activities will be initiated

Field parameters will be measured (e.g., temperature, pH, specific conductance) after each well volume and recorded in a field log book or field data sheet

As the purge water clears, a weighted bailer will be placed in the well and lowered until it is near the top of the screen or water surface, the bailer will be alternately raised and lowered through the vertical distance of one to two ft; the velocity of the motion will depend upon the tightness of the formation in which the well is installed

After surging the well a few times at a given depth, the bailer will be moved deeper by one or two ft; steps 6 and 7 will be repeated until the bailer has been lowered to the bottom of the screened section of the well

The bailer will be raised out of the well and the well will be purged of sediment that may have accumulated due to the surging

Steps 5 through 8 will be repeated until the purge water remains clear and field parameters have stabilized

If the well is pumped to dryness or near dryness, the water level will be allowed to sufficiently recover (to the static level) before the next development period is initiated

All field decisions will be document in a field logbook

Groundwater Sampling by Bailing – Before sampling groundwater, the interface probe will be used to measure the depth to groundwater and to check for the presence of LNAPL. After the depth to groundwater is measured, each groundwater monitoring well will be purged to allow fresh groundwater from the aquifer to enter the well. Kleinfelder will attempt to remove a minimum of three well volumes of groundwater from each well using either disposable bailers or a small electric pump until either the parameters of temperature, conductivity, pH, and turbidity have stabilized, or the well becomes dry.

New disposable latex gloves will be worn for each sampling event to minimize the possibility of cross contamination. Groundwater samples will be collected in laboratory-prepared glassware using the appropriate preservative and kept on ice until laboratory submittal. Submittal of groundwater samples will be performed under chain-of-custody procedures to the selected laboratory. Kleinfelder will submit the collected samples under chain-of-custody.

#### Groundwater Sampling using Low Flow Techniques –

Low-flow Purging <L/min (0.26gpm), Low-flow Sampling <300ml/min (0.3L/min or 0.1 gpm) and Monitoring Indicator Parameters for Stability in a Closed Flow-through Cell

- 1. SLOWLY lower the pump to the *middle* of the well's screened area. (A dedicated system is recommended.) Securely fasten the power cable and sample tubing at the top of the well. Connect the power source, controller box, gas source, etc., to the pumping equipment.
- 2. Connect the sample tubing to the water entry point of the closed flow-through cell.

Closed Flow-Through Cell

Air pockets may exist in the upper neck of each port hole that has a probe inserted into it — this is not a problem. Just make sure the probe's sensors are completely submerged in water during use.

Avoid exposing the flow-through cell to extreme heat and sun in the summer and freezing temperatures in the winter.

- 3. Set up and calibrate all indicator parameter instruments and place each probe into its respective port of the closed flow-through cell.
- 4. Set the pump controller to the desired purging rate (i.e., <1L/min). Do *not* use a valve to reduce the flow from a pump; valves can cause an "orfice" effect that can cause a sample agitation and alteration.
- 5. Record the "purging time start," and start purging the well at a rate of 1 L/min or less. During purging, the water level in the well should not decrease significantly and should stabilize after purging for a few minutes. If the water level continues to decline while purging, decrease the purging rate if possible. Record the "purging flow rate" as an average. Use a graduated beaker, cylinder, calibrated bucket or other device to measure the flow rate while purging and sampling.
- 6a. Purge the well until you have taken at least three consecutive readings that are within the following ranges for the following indicator parameters:

Dissolved Oxygen +/- 0.2 mg/L

Specific Conductance +/- 5.0µmhos/ cm for values <1000

µmhos/ cm

+/- 10.0 µmhos/ cm for values >1000

µmhos/ cm

pH +/- 0.1 pH units

Temperature +/- 0.1 °C

Turbidity <5 NTUs (Required if metals samples

will not be filtered. Recommended if sorptive compounds or elements are collected. Optional, but recommended, if other compounds or elements are

collected).

Eh (optional) +/- 30 mv

Readings should be collected every ~2 minutes or ~0.5 well volumes or more apart.

Stable dissolved oxygen, specific conductance and turbidity readings are considered the most reliable parameters for indicating that stagnant water has been replaced by formation water. You may adjust the +/- ranges and which indicator parameters you use to indicate that stagnant water has been replaced by formation water to reflect site-specific data, geochemistry, and hydrogeologic conditions.

hydrophobic, or high octanol-water partition coefficient (Kow) compounds or elements.

OR

- 6b....... Purge the well until the readings for indicator parameters listed above (or well-specific indicator parameters) vary within +/-10% over three or more consecutive readings, spaced ~2 minutes or ~0.5 well volumes or more apart.
- 7........... Record the final three stable readings for each indicator parameter on the "Well Specific Field Sheet Monitoring Wells" (Appendix B, or use the project specific data sheet.
- 8. ....... Record the "volume purged," "purging time stop," "purged dry (Y/N)," and any problems purging.
- 9........ Collect samples as described in the sample collection procedure. Record "sample flow rate" as an average, "time sample collected," and any other pertinent information related to the sampling event.

Investigation-Derived Waste Management — Cuttings from the soil borings identified through field-screening procedures as containing 100 ppm or greater volatile organic compounds (VOCs) will be placed in 55-gallon drums and disposed of at a regulated disposal facility. Assuming there is adequate physical space located onsite, cuttings that are identified as containing less than 100 ppm VOCs will be thin-spread onsite. Should there not be sufficient space to dispose of cutting onsite, they will be containerized, manifested, and transported to an off-site regulated facility.

Groundwater not containing LNAPLs generated from well development and purging will be placed on an impervious surface and allowed to evaporate. Groundwater containing LNAPLs will be placed in 55-gallon drums and disposed of at a regulated disposal facility.

**Documentation** – Fieldwork will be documented in a field book and photographed. Soil will be described in accordance with ASTM standard D 2488-00 (ASTM, 2000) and will be documented on a boring log. An as-built drawing of the monitoring well(s) will be included in the field book. If available, contaminant screening results and groundwater quality results obtained in the field may be stored in automatic data loggers contained within the field instrumentation.

**Decontamination** – The drill rig and down-hole drilling equipment will be decontaminated with a steam cleaner before mobilizing to the Site. The down-hole equipment will also be decontaminated between boring locations. All sampling and measuring equipment that will or may come in contact with the sample will be decontaminated between samples with a water/detergent wash, tap water rinse, and deionized water rinse.

### References

ASTM, 2000. Designation D 2488-00, "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)."

NMED, 2000. "Guidelines for Corrective Action," March 13, 2000.

## APPENDIX E

10

6

Boring Logs



## Soil Boring/Monitoring Well Log

Sheet 1 of 1

Started: 1/20/20						ring/Moi		0		)g	
	306	Rig T	ype: Strata Pr	obe		Pro	ject				Well No.
Completed: 1/2	0/2006	Drille	er: Louis Trujil	lo		Former Aer	ex R	efinery			Λ-1
Backfilled: 1/20	/2006	Weat	her:		Surface Elev	ation: 5475.1'	L	agged By: I	Lee Dalton		
orthing: 2080208	.13	Easti	ng: 2678801.24			oomfield, NM		88 .			
Depth (It.) Groundwater Depth (It.) Graphical Log	34/				G - Grab Sample CS - 3.5" I.D. Contin SPT - 2" O.D. 1.38" U - 3" O.D. 2.42" I.E ST - 3" O.D. Tien-W NR - No Recovery	uous Sampler I.D. Tube Sample ), Ring Sample		Depth (ft) 5.5	Groundy		Date 1/20/2006
చ్రీట్ రీ	San Per Res	표목품	Z Sar		<b>\</b>	Visual Classific	cation				WELL STRUCTIO
5 —	CS	0.4		1.7 CLA  4.0' FAT  5.5' SILT  Fine t Chan, With	Y SAND (SM) coarse sand (su YEY SAND (SG medium plastic  CLAY (CH) - b sand.  Y SAND (SM) medium (suban no coarse sand fr ge in color to gr some clay from o coarse sand fr	c) - brown, moi ity.  rown, moist, hi  - red-brown, we gular to subrou rom 6.5 to 7 ft. ay from 7 to 11 7 to 8 ft, low p	gh plaset, no conded).	ed).  e grained san  sticity, trace  odor, fine to	El. 5473.4' id, El. 5471.1'		
		Total	Depth 12.0'	Chan <sub>1</sub>	ge in color to re clay, low plastic	d-brown from 1	1.7 to	12 ft, with s	ome El. 5463.1'		
				12.0	ge in color to re clay, low plastic	city.		12 ft, with s			
Depth (fi)	Hour		Add	12.0	clay, low plastic	city.	s	12 ft, with s			Date

がある。

Started: 1/20	2006		Rig T	ype: Strata Pro	obe		Proje	ect		Well No.
Completed: 1	/20/2006		Drilk	er: Louis Trujill	lo		Former Aere	x Refinery		A-2
Backfilled: 1/	20/2006		Weat	her:		Surface Ele	vation: 5476.2'	Logged By: I	.ee Dalton	
orthing: 20802	10.33			ng: 2678848.28		Location: B	loomfield, NM			
<u></u> 50		Penetration Resistance (Blows per foot)	F		all (	G - Grab Sample CS - 3.5" I.D. Cont	inuous Samoler	Depth (ii)	Groundwa Hour	Date
wate (C)	13, 15	lion ree	ated ace 3. pp	<b>T</b>	Sample Type	SPT - 2" O.D. 1,38 U - 3 * O.D. 2,42" I	" I.D. Tube Sample .D. Ring Sample	6	1778	1/20/2006
Groundwater Groundwater Depth (ft.) Graphical Log	Sample Type	ietra sistm ows	PID Heated Headspace Reading, ppm	Analytical Sample Number	Sar	ST - 3" O.D. Thin-V NR - No Recovery			<u> </u>	
3 5 5	San	5 5 8	돌음왕	San Z			Visual Classifica	tion 		WELL CONSTRUCTION
	111	η			T					
					CLA	YEY SAND (Sagrained sand.	SC) - light brown, low plasticity, trac	dry to moist, line ce quartzite grave	1	
- (////	<b>]</b>		0.0		-	(subrounded,	2 cm).	, ,		
- ////	GS.			,						
			0.0							
					3.5'	AT COL ARE COLL		1. 1. 1.	El. 5472.7'	
- /////	H	ļ			LEA	N CLAY (CL) fine sand.	- brown, moist, m	edium plasticity,	with	
_ /////	1		0,0	,						
<i>\\\\\\</i>					6.0°				El. 5470.2'	
- 3/////	CS.			A2-6'			) - gray, wet, no oc	lor, fine to mediu		
	]]]		1.0		Colo	sand.	nt brown from 6.3	to 7.5 ft		
					1	-	y from 7.5 to 8 ft.	10 7,5 11.		
						r change to ligh	it brown from 8 to	12 ft, with clay I	from	
- 146			0.4			8 to 9 ft, low p	plasticity to non-pl	astic.		
_	.cs									
-			0.0							
	╢				12.0' With	clay from 11.5	to 12 ft, low plast	icity to non-plast	iEl. 5464.2'	
			Total	Depth 12.0'						
•										
				Add	itional Gr	oundwater i	Weasurements			
	¥===========									
Depth (ft)	He	)ur	Di	ite	Depth (fit)	Hour	Date	Depth (ft)	Hour	Date
	-					-				
	1	1		1 1		1	,	i	F	1



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	7間12	تايا	TLAT	'EL	.DER		Soil Boring/Mon	itoring	Well Lo	g Sheet I a
Star	rted: 1/26/2			Rig T	ype: Strata Pro	obe	Proje	ect		Well No.
Con Con	mpleted: 1/2	26/2006		Drille	er: Louis Trujil	lo	Former Aere	x Relinery		A-3
Bac	kfilled: 1/26	6/2006		Weat	her:		Surface Elevation: 5477.6'	Logged By	: Lee Dalton	·
Northin	ng: 2080212	67			ng: 2678898.60		Location: Bloomfield, NM			
<u></u>	a a		(100	=			G - Grab Sample CS - 3.5" LD, Continuous Sampler	Depth (fi	Groundw ) Hour	afer Date
ft.) wate e.)		1.7.	ion ice ier f	ared aree	<u> </u>		≦ SPT - 2" O.D. 1.38" I.D. Tube Sample ∃ U - 3 " O.D. 2.42"-I.D. Ring Sample	7.5	, rou	1/26/2006
Depth (ft.) Groundwater Depth (ft.)	Graphical Log	Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number		ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery			
<u> </u>	g g	S. S.	5 % E	EES	S S S		Visual Classifica	tion		WELL CONSTRUCTION
0			<del>,</del>	,		•••••				
						S	SILTY SAND (SM) - light brown, mo medium sand (subangular to sub	ist to dry, fine	to	
-				0,0			medium sand (subangum to suc	rounaca).		
		· CS·								
						2.5'	EANGLAN/OLD EAT		El. 5475.1'	
				0,0		_	EAN CLAY (CL) - light brown, dry plasticity, few fine sand.	to moist, medi	um	
_							1			
;				0.0						
		. CS								
						6.5'	TAMEN CAND (CC) VIAI		El. 5471.1'	
1				0.0		7.5'	"LAYEY SAND (SC) - light brown, r (subangular to subrounded), low	noist, fine to r plasticity.	El. 5470.1	
	***************************************	]					ILTY SAND (SM) - light brown, wei			
							(subangular to subrounded).			
_				0.0		F	ine to coarse sand from 9 to 10.5 ft.			
0		. CS								
						11	Sith along from 10 5 to 11 5 ft language	netate.		
-			,	0,0		1	Vith clay from 10.5 to 11.5 ft, low pla	suchy.		
		l		]		12.0'			El. 5465.6'	
				Total I	Depth 12.0'					

### Additional Groundwater Measurements

Depth (ft	) Hou	r Date

Sheinfölder fac., Caparight M824ffk

Depth (ft)	Hour	Date

Depth (it)	Hour	Date

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30 Ta ...

Completed: 1/26/2006 Driller: Louis Trujillo Former Aerex Refinery    Backfilled: 1/26/2006 Weather: Surface Elevation: 5479.1' Logged By: Lee Dulton	Date 1/26/2006 WELL STRUCTIO
Surface Elevation: 5479.1'   Logged By: Lee Dalton	Date 1/26/2006 WELL
Surface Elevation: 5479.1'   Logged By: Lee Dalton	1/26/2006 WELL
Second Sample   Second Sampl	1/26/2006 WELL
(i) the properties of the prop	1/26/2006 WELL
SILTY SAND (SM) - brown, moist to dry, fine to medium sand, some clay, with quartzite gravels (subrounded. 1-2 cm).  CS. 4.0' El. 5475.1' FAT CLAY (CH) - brown, moist, high plasticity.  CS. 6.5' El. 5472.6' CLAYEY SAND (SC) - light brown, moist, fine grained	1/26/2006 WELL
SILTY SAND (SM) - brown, moist to dry, fine to medium sand, some clay, with quartzite gravels (subrounded. 1-2 cm).  CS. 0.0 4.0' El. 5475.1'  FAT CLAY (CH) - brown, moist, high plasticity.  CS. 6.5' El. 5472.6' CLAYEY SAND (SC) - light brown, moist, fine grained	WELL
SILTY SAND (SM) - brown, moist to dry, fine to medium sand, some clay, with quartzite gravels (subrounded. 1-2 cm).  CS. 4.0' El. 5475.1' FAT CLAY (CH) - brown, moist, high plasticity.  CS. 6.5' El. 5472.6' CLAYEY SAND (SC) - light brown, moist, fine grained	
SILTY SAND (SM) - brown, moist to dry, fine to medium sand, some clay, with quartzite gravels (subrounded. 1-2 cm).  CS 4.0' Et. 5475.1' FAT CLAY (CH) - brown, moist, high plasticity.  CS 6.5' El. 5472.6' CLAYEY SAND (SC) - light brown, moist, fine grained	
SILTY SAND (SM) - brown, moist to dry, fine to medium sand, some clay, with quartzite gravels (subrounded. 1-2 cm).  6.5'  CLAYEY SAND (SC) - light brown, moist, fine grained	
1-2 cm).  1-2 cm).  4.0' El. 5475.1'  FAT CLAY (CH) - brown, moist, high plasticity.  6.5' El. 5472.6'  CLAYEY SAND (SC) - light brown, moist, fine grained	
FAT CLAY (CH) - brown, moist, high plasticity.  6.5' CLAYEY SAND (SC) - light brown, moist, fine grained	
FAT CLAY (CH) - brown, moist, high plasticity.  CS.  6.5' CLAYEY SAND (SC) - light brown, moist, fine grained	
FAT CLAY (CH) - brown, moist, high plasticity.  6.5'  CLAYEY SAND (SC) - light brown, moist, fine grained	
FAT CLAY (CH) - brown, moist, high plasticity.  CS  6.5'  CLAYEY SAND (SC) - light brown, moist, fine grained	
FAT CLAY (CH) - brown, moist, high plasticity.  CS.  6.5'  CLAYEY SAND (SC) - light brown, moist, fine grained	
CS. 6.5' El. 5472.6' CLAYEY SAND (SC) - light brown, moist, fine grained	
CS.  6.5'  CLAYEY SAND (SC) - light brown, moist, fine grained	
6.5' El. 5472.6'  CLAYEY SAND (SC) - light brown, moist, fine grained	
CLAYEY SAND (SC) - light brown, moist, fine grained	
sand, low plasticity.	
A6.85' 8.5' EL 5470.6'	
A6-8.5' SILTY SAND (SM) - light brown, wet, fine to medium sand	
(subangular to subrounded).	
10_ With some clay from 9 to 9.5 ft, low plasticity.	
	:
12.0' El. 5467.1'	
Total Depth 12.0'	
Total Depth 12.0	

D	epth (ff)	Hour	Date

Depth (lt)	Hour	Date

Depth (ft)	Hour	Date

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## Soil Boring/Monitoring Well Log

Sheet Lof 1

econom Tech							Son Boring/Mon	5		Sheet I a
Sta	irted: 1/20/2	.006		Rig 1	lype: Strata Pro	be	Proje	ect		Well No.
Cii	mpleted: 1/.	20/2006		Drille	er: Louis Trajill	0	Former Aere	x Refinery		B-1
Ва	cktilled: 1/2	0/2006		Weat	her:		Surface Elevation: 5476.2'	Logged By: Le	e Dalton	
lorthi	ing: 208026	1.41			ng: 2678802.15		Location: Bloomfield, NM			
Depth (ft.) Groundwater	Depth (it.) Graphical Log	Sample Taken Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analyticat Sample Number	Sample 13 pe	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3" O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery Visual Classifica	Depth (ft)	Groundwa Hour	Date 1/20/2006 WELL
7 0		8 00	285	I I I	< v. Z		VISUAI CIASSIIKA			CONSTRUCTIO
0 —		-CS		0.0	Depth 12.0'	CLA Change 6.0' SILT Wet a Slight With Fine t	Y SAND (SM) - light brown, more sand (subrounded, 1-2 cm). YEY SAND (SC) - green-gray, no sand, medium plasticity.  ge in color to red-brown from 3 to the sand (subangular to subrounded) at 7 ft, change in color to gray belot to door between 8 to 10 ft. some clay from 8 to 8.7 ft, inediate to coarse sand from 11 to 11.5 ft.	p, some quarzite noist, fine grained o 6 ft.  st, fine to medium o w 7 ft. un plasticity.	El. 5475.5' El. 5470.2'	
standard at 50 mg		No.								
		NACS			Addi	tional Gr	oundwater Measurements			
	Depth (ft)	Ho	,	Di		tional Gr	oundwater Measurements	Depth (ft)	Hour	Date

Sheet L of L

			son burng/monitoring wen Lug	Sheet Lot 1
ن	Started: 1/20/2006	Rig Type: Strata Probe	Project	Well No.
Date	Completed: 1/20/2006	Dritler: Louis Trujillo	Former Aerex Refinery	B-2
<b>-</b>	Backfilled: 1/20/2006	Weather:	Surface Elevation: 5477.3' Logged By: Lee Dalton	
N	orthing: 2080268.80	Easting: 2678849.80	Location: Bloomfield, NM	
	-1, Î		G - Grab Sample Groundwate	
_	atter  1 Log  ype  ype  er fo	in in in in in in in in in in in in in i	CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3" O.D. 2.42" I.D. Ring Sample 8.3	Date 1/20/2006
9	ndw h (II hica hica stenic ws.p.	Heated Heated Heated Heated Harmon Pytical ple her her Sample Sample	ST - 3" O.D. Thin-Walled Shelby Tube	1:20:2000
Drudt (B.)	Groundwater Depth (II.) Graphical Log Sample Taken Sample Type Penetration Resistance (Blows per feot)	PID Heated Headspace Reading, ppm Analytical Sample Sample Tsy	NR - No Recovery  Visual Classification	WELL
				CONSTRUCTION
0		SILT	Y SAND (SM) - light brown, moist, fine to coarse	
		36	sand (subangular to subrounded). El. 5476.3	
			YEY SAND (SC) - light brown, dry, fine grained sand,	
	- ////   .cs.		medium plasticity.	
	- ////	1.2.		
	- 1///			
				1
5	- <b>/////i</b> l	5.5'	E1, 5471.8'	
	_ /////    .cs	CLA	YEY SAND (SC) - red-brown, moist, fine to medium	
			sand (subangular to subrounded), medium plasticity.	
	- 2///	7.3'	EI. 5470.0'	
		SILT	Y SAND (SM) - red-brown, moist to wet, fine to	
	_ A:	Chan	medium sand (subangular to subrounded). ge of color to light brown below 8 ft.	
			to coarse sand at 8.3 to 9.7 ft and 11 to 12 ft.	
14	)	With	some clay at 7.3 to 8.3 ft and 9.7 to 10.3 ft, low plasticity.	
		0.0.	plasticity.	
	<u> FIELMII</u>	Total Depth 12.0'	El. 5465.3'	l
		rotat Dopui (2.0		

Hour	Date
	Hour

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date

Sheet L of L

Started: 1/20/2006	Rig Type: Strata Probe	Project	Wall Na
2 6 - 14 1 1/26/2006		Former Aerex Refinery	
Completed: 1/20/2006	Driffer: Louis Trujillo		
Backfilled: 1/20/2006	Weather:	Surface Elevation: 5478.0' Logged By: Lee Dalton	
Northing: 2080268.98	Easting: 2678899.52	Location: Bloomfield, NM	
i i i i i i i i i i i i i i i i i i i		Groundwate G- Grab Sample CS- 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample	Well No. B-3  Itter  Date 1/20/2006  WELL CONSTRUCTION
cated CD CO CO CO CO CO CO CO CO CO CO CO CO CO	e de l	G - Grab Sample CS - 3.5* I.D. Continuous Sample SPT - 2* O.D. 1.38* I.D. Tube Sample U - 3* O.D. 2.42* I.D. Ring Sample ST - 3* O.D. Thrr-Walled Shelby Tube  BL No. Representation	
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Taken Sample Type Reselration Resistance (Blows per foo	ding ding ding with the special ding ding ding with the special ding special ding special ding ding ding ding ding ding ding ding	U - 3" O.D. 2.42" I.D. Ring Sample 8.5 ST - 3" O.D. Thrn-Walled Shelby Tube NR - NR Recovery NR - NR Recovery	
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Taket Sample Type Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm Analytical Sample Number	Viewal Classification	WELL
			COMMENTAL
	С	LAYEY SAND (SC) - brown, moist, fine to coarse sand	-
_ ////	0.0. L.0'	(subangular to subrounded), low plasticity. E1.5477.0	
	C	LAYEY SAND (SC) - green-gray, dry, fine grained sand, medium plasticity.	
- (//// CS		medium pasticity.	
_ /////	0.0.		
	3.5'	E1. 5474.5'	
	4,5°	AT CLAY (CH) - red-brown, moist, high plasticity, some fine sand.	
5_		LAYEY SAND (SC) - red-brown, moist, fine grained	
		sand, medium plasticity, [few areas of gray staining,	
_ ///////////////////////		no odor].	
	0.0		
- 1////			
	8.5'	LTY SAND (SM) - light brown, wet, fine to medium sand	
- 1000000000000000000000000000000000000		(subangular to subrounded).	
10cs	Fi	ne to coarse sand at 9 to 10 ft and 10.5 to 11 ft.	
	0.0	ith clay at 8.5 to 9 ft and 11 to 11.3 ft, low plasticity.	
	12.0'	EI. 5466.0'	
	Total Depth 12.0'		
			11 11 11 11 11 11 11 11 11 11 11 11 11
			~

Hour	Date
	Hour

Depth (fi)	Hour	Date

Depth (ft)	Hour	Date

Ш		EINE	'ELDEK		Soil Boring/Mon	itoring Well L	$0\mathbf{g}$ Sheet Lo
۲,	Started; 1/20/2006	;	Rig Type: Strata P	robe	Proje	ect	Well No.
Date	Completed: 1/20/2	2006	Driller; Louis Truj	illo	Former Aere	x Refinery	B-4
-	Backfilled: 1/20/20	006	Weather:		Surface Elevation: 5478.61	Logged By: Lee Daltor	)
No	rthing: 2080272.67		Easting: 2678948.7	0	Location: Bloomfield, NM		
Depth (ft.)	Groundwater Depth (ft.) Graphical Log Sample Taken	Sample Type Penetration Resistance (Blows per foot)	PID Heated Hendspace Reading, pam Analytical Sumple Number	Sample Type	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3" O.D. 2-42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery Visual Classifica	Ground    Depth (ft)   Hou   8     tion	
5 - 10		CS	0.0	5.0° FAT  7.5° 8.0° CLA  SILT  Fine	YEY SAND (SC) - brown, moist with quartzite gravels (subround plasticity.  Y SAND (SM) - light brown, moist sand (subangular to subrounded YEY SAND (SC) - brown, dry to sand, medium plasticity.  CLAY (CH) - light brown, moist fine sand.  YEY SAND (SC) - red-brown, moist fine sand.  YEY SAND (SC) - light brown, we (subangular to subrounded Y SAND (SM) - light brown, we (subangular to subrounded). to coarse sand from 9 to 10 ft. e clay from 10 to 12 ft.	Let, 2-3 cm), medign 5477.6 poist, fine to medium  be moist, fine grained  El. 5473.6 poist, fine plasticity, trace  El. 5471.1 poist, fine to medium 5470.6 poist, fine to medium 5470.6 poist, medium plasticity.	П
				12.0'		El. 5466.6'	
			Total Depth 12.0'				

Hour	Date

Depth (fi)	Hour	Date

Depth (ft)	Hour	Date



Completed	19/2006 : 1/19/2000	j	ļ	ype: Strata Probe Project Pr: Louis Trujillo Former Aerex Refinery			Well No B-5		
Backfilled:	1/19/2006		Weath	ier:		Surface Elevation: 5479.1'	Logged By: L	ee Dalton	
Northing: 208	0275.24		Eastin	g: 2678998.52		Location: Bloomfield, NM			
		=			35	G - Grab Sample		Groundwa	ter
Depth (ft.) Groundwater Depth (ft.) Graphical Log	32.	T font)	PID Heated Headspace Reading, ppm		1 2	CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample	Depth (fi)	Hour	Date
S 45 15	14 E	mee i per	ente nace	E3 ., 5	Sample	U - 3 * O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube	7.5		1/19/200
Depth (ft.) Groundwater Depth (ft.) Graphical Loy	Sample Taken Sample Type	Penetration Resistance (Blows per I	PID Heated Headspace Reading, pp	Analytical Sample Number	- 7.	NR - No Recovery	LL		
ರಿಕೆಕಿ ಕ	San	2 % 8	E = 5	ā Š ž		Visual Classificat	tion		WELL CONSTRUCT
	•								
0 —	ЕШ	T	T		SILT	Y SAND (SM) - brown, moist, fi	ne to coarse sand		
			0.4		1.0'	with quartzite gravel (subrounde		El. 5478.1'	
- 7//	7	1			CLA'	YEY SAND (SC) - brown, moist			
_ ///	ZII.cs.					trace quartzite gravels (subround	led, 1-2 cm), med	ium	
	<b>8</b> 11					plasticity.			
- 1//	<b>/</b>		0.1						
- 1///	ZH								
			-						
5 — ///	<b>[</b> ]		0.5		5.5'			El. 5473.6'	
7///					·	N CLAY (CL) - brown, moist, mo	MARKET - A		
- ////	-CS					fine sand.	diam pasticity, t	race	
			0.2						
- 3////		1			7.5'			El. 5471.6'	
7 2 22		1				Y SAND (SM) - light brown, wet	, fine to medium	sand	
= 15/45			1.			(subangular to subrounded).			
-	[2] <b>†</b>	ļl	1,1	• • • • • • • • • • • • • • • • • • • •	Fine t	o coarse sand at 8.7 to 9.7 ft and	11.2 to 11.5 ft.		
						ge in color to gray at 9 to 11.5 ft,			
									ŀ
10_	.cs.	ļ	1,						
10	.cs.				With	clay at 10 to 11.2 ft, low plasticity	у.		
10	.cs		0.1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	With	clay at 10 to 11.2 ft, low plasticit	y.		

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date



A ST

4.0

ompleted: 1/2			1				Soil Boring/Moni	KUVK.	0	C 2 2	0	
ickfilled: 1/26	6/2006	Started: 1/26/2006 Rig Type: Strata Pro					Project Former Aerex Refinery			Well No.		
	Completed: 1/26/2006 Driller: Louis Trujil			ln		Former Aeres	X Ren	nery			B-6	
	Completed: 1/26/2006 Driller: Louis Trujill Backfilled: 1/26/2006 Weather:				Surface Elevation: 5478.3' Logged By: Lee Daltor		ce Dalton					
ing: 2080277	.14	·		ng: 2679054.81			Location: Bloomfield, NM	· p· · · · · · · · · · · · · · · · · ·				
20	(100		n n		ad s		G - Grab Sample	Groundwater			<del></del>	Date
	15	10 H	red rec . pp.	- -		E. G Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample			11001		1/26/2006	
th (I	hhic	etrait istam	Heg dang dang	lytic nple nber		ST - 3" O.D. Thin-Walled Shelby Tube						
Gra	Sam	Res (Bk	P.B.	San			Visual Classificat	tion			CO	WELL STRUCTIO
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										າາ		
			0.0					), with		E1 7177 DI		
	Ce				1.3			st. med			1	
	.03							,		···· <b>,</b>		
			0.0									
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			0,0		5.0'		<del></del>					
	·CS···						cana (shoungman to shorounded),	, ιοπ ρ	monenty.			
			0.0									
<b>X</b> /////						CII TX	Z CLANTO (CNA) - 11-1-3					
	·····							i, fine t	o coarse sa	nd		
			0.0				,					
								v.				
	. GS						,	, .				
			0.0									
	<u> </u>				12.0				1	El. 5466.3°		l
	Depth (I.) Graphical Log	.CS.	-CS	CS	GS	CS	CS. SILT 1.5'  CG. LEAN  0.0 5.0'  CLAY  CS. SILT 1.5'  LEAN  1.5'  LEAN  CS. SILT 1.5'  CS. SILT 1.5'  1.5'  LEAN  1.5'  LEAN  1.5'  CLAY  CS. 1.5'  CLAY  1.5'  1.5'  1.5'  1.5'  1.5'  CLAY  1.5'	SILTY SAND (SM) - light brown, more sand (subangular to subrounded plasticity.  CS. LEAN CLAY (CL) - light brown, more trace fine sand.  5.0'  CLAYEY SAND (SC) - light brown, to sand (subangular to subrounded)  7.5'  SILTY SAND (SM) - light brown, we (subangular to subrounded).  Fine to medium sand at 9 to 12 ft. With clay from 9 to 11 ft, low plasticity.	SILTY SAND (SM) - light brown, moist, fine sand (subangular to subrounded), with plasticity.  CS. LEAN CLAY (CL) - light brown, moist, med trace fine sand.  CS. CLAYEY SAND (SC) - light brown, moist, fine sand (subangular to subrounded), low point of subrounded), low point of subrounded.  T.5' SILTY SAND (SM) - light brown, wet, fine to (subangular to subrounded).  Fine to medium sand at 9 to 12 ft. With clay from 9 to 11 ft, low plasticity.	SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded), with clay, low plasticity.  LEAN CLAY (CL) - light brown, moist, medium plastic trace fine sand.  0.0   CLAYEY SAND (SC) - light brown, moist, fine to med sand (subangular to subrounded), low plasticity.  7.5'  SILTY SAND (SM) - light brown, wet, fine to coarse sa (subangular to subrounded).  Fine to medium sand at 9 to 12 ft. With clay from 9 to 11 ft, low plasticity.	SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded), with clay, low plasticity.  CS. LEAN CLAY (CL) - light brown, moist, medium plasticity, trace fine sand.  CS. CLAYEY SAND (SC) - light brown, moist, fine to medium sand (subangular to subrounded), low plasticity.  CS. SILTY SAND (SM) - light brown, wet, fine to coarse sand (subangular to subrounded).  Fine to medium sand at 9 to 12 ft. With clay from 9 to 11 ft, low plasticity.	SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded), with clay, low plasticity.  LEAN CLAY (CL) - light brown, moist, medium plasticity, trace fine sand.  5.0'  CLAYEY SAND (SC) - light brown, moist, fine to medium sand (subangular to subrounded), low plasticity.  CS.  7.5'  SILTY SAND (SM) - light brown, wet, fine to coarse sand (subangular to subrounded).  Fine to medium sand at 9 to 12 ft. With clay from 9 to 11 ft, low plasticity.

Depth (ft)	Hour	Date

Depth (fi)	Hour	Date

Depth (ft)	Hour	Date



Started: 1/19/			ļ -	ype: Strata Pro			-	Pro	ject	2.6		Well	
Completed: 1/	19/2006		Drille	r: Louis Trujil	lo		ŀ	ormer Aei	rex I	Refinery		C-	1
Backfilled: 1/	9/2006		Weat	her:			Surface Eleva	Surface Elevation: 5476.9' Logged By: Lee Dalton					
orthing; 208032	1.02			ng: 2678798.83			Location: Bloc	mfield, NM					
_ 50	٠	l (tou	=			ج ر و ر	G - Grab Sample CS - 3.5" I.D. Continuo	us Sampler		Depth (ft)	Groundw Hour	ater Da	ia.
Groundwater Depth (1).) Graphical Log	Sample Taken Sample Type	Penetration Resistance (Blows per foot)	PID Heared Headspace Reading, ppm	TE L		- U	SPT - 2" O.D. 1 38" I.D J - 3 " O.D. 2.42" I.D. F	Ring Sample		7.5	1773	1/19/	
Groundwai Depth (ft.) Graphical I	a year	netra Ssista Jows	D He	Analytical Sample Number		S. N	ST - 3" O.D. Thin-Walle NR - No Recovery					WEL	7
ပြိုင် ပြိ	Sa	238	E = 2	Z S Z	l	·	Vi	sual Classific	cation	11		CONSTRU	
	П						FILE WID (GG)	2 1 1		, ,	i	<del></del>	
					L.	LAYI gi	EY SAND (SC) trained sand, me	- light brown dium plasticit	a, dry tv.	to moist, line	•		
- ////		1	0,4			_	•		•				
- (////	·CS·			,									
			0.1										
-			0,1										
- /////	H												
_ ////			0.2		5.0'						El. 5471.9'		
			0,2		F.A		LAY (CH) - ligi	nt brown, mo	ist, hi	gh plasticity,			
- ////	.cs	ļ			6.3'		ine sand.				El. 5470.6'		
			1,7		Cİ	ËAYE	EY SAND (SC) nedium plasticit	- gray, moist	, fine	grained sand	,		
- <i>\$1114</i>	¥				7.5'						El. 5469,4'		
- 955	H				SI	ILIY (s	SAND (SM) - g subangular to su	gray, wet, fine brounded).	e to m	iedium sand			
			3,2		Fi		coarse sand at 8		d 14.	3 to 15.1 ft.			
												1	
-	· CS			· · · · · · · · · · · · · · · · · · ·							7		
	II		1,6	, , , ,									
- [1]	<b> </b>												
_ 333	<b> </b>		1,1										
-	CS			, ,									
			0.7		15.1'						El. 5461.8'		
					LE 16.0'		CLAY (CL) - lig	ght brown, me	oist, r	nedium plasti	icity, El. 5460.9'		
_ (////////////////////////////////////	Ш		Total I	Depth 16.0'			ace tine sand.			······································	231. 3400.5	1	
							4						
***************************************				Add	itional	Grou	undwater Me	asurement	ts				
<del></del>					<u> </u>				-		I		
Depth (fi)	Hes	ii i	Da	le	Depth (ft)	<u>'-</u>  -	Hour	Date	-	Depth (fi)	Hour	Date	
i		1		1 1		1	1	1	i		l		

Sheet Lof 1

П	Lyn'	IN INCLUSION TO THE PROPERTY OF THE PROPERTY O					2011 DoimStaron	normg v	CH LO	S	Sneet	101 1		
<u>ن</u>	Star	ted: 1/19/	2006		Rig T	ype: Strata Pro	ibe		Proje		,		Well?	
Date	Con	ipleted: 1/	19/2006	•	Drille	er: Louis Trujil	lo		Former Aerex Refinery				C-2	
	Back	kfilled: 1/1	19/2006		Weat	her:			Surface Elevation: 5476.7'	Logged By: 1	Lee Dalton			
N	Northing: 2080321.68 Easting: 2678850.55				Location: Bloomfield, NM									
		-11		=					G - Grab Sample		Groundwa	ater		
_	ater	, To	ype	6 2	b c cd	=			CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample	Depth (ft) 6.5	Hour		Date 1/19/20	
19	100	hica	F S	frainc stanc ws po	Figure Space ing.	ytica ske ber	1	ā	U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube	6.3			17.1.9: 2.0	JC/05
Dendi (fi.)	Groundwater Denth (ff.)	Graphical Log	Sample Taken Sample Type	Penetration Resistance (Blows per foot)	PID Figated Headspace Reading, ppm	Analytical Sample Number			NR - No Recovery  Visual Classificat	ion		<u></u>	WELL	
_		1		<u> </u>	l		J				L		INSTRUC	HON_
0		W. 1777	П				CL	Α)	EY SAND (SC) - light brown, o	Iry, fine grained	sand.			
	_				0,5				medium plasticity.	, <u> </u>				
	-		· CS· ·											
	_ ////							İ						
							3.5'		ror Androra 1' by 1		El. 5473,2'			
			₩		······				CLAY (CL) - light brown, moi. with fine sand.	st, medium plast	city,			
5					6,9		5.0'				El. 5471.7'			
							CL		EY SAND (SC) - red-brown, m sand (subangular to subrounded)					
			- GS-				6.5'	,	sand (subangular to subrodinded)	, medium piastic	EL 5470.2'			
	 -7			[]	1.5				SAND (SM) - light brown, wet	, fine to medium				
			1		.,,,,,			(	(subangular to subrounded).					
			H											
	_		<b> </b>		0,9									
							Fin	e to	coarse sand at 9 to 10.5 ft and	11.7 to 12 ft.				
10	)		.cs											
					0.6									
	_												1	
	_	لناتا	Ш		Total I	<u> </u> Depth 12.0'	12.0				El. 5464.7'		-	
					1 Otal 1	эсрин 12.0								

Depth (ft)	Hour	Date
	~	

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date



	Ż	K	LE	INF	FEL	DER		Soil Boring/Mon	itoring W	ell Lo	Sheet I of
යා	Star	ted: 1/19/20	006		Rig T	ype: Strata Pr	obe	Proje		Well No.	
Date	Com	pleted: 1/1	9/2006		Drille	r: Louis Trujíl	lo	Former Aere	x Refinery		C-3
_	Backfilled: 1/19/2006 Weather:				Surface Elevation: 5477.4'	Logged By: Lo	e Dalton				
Ne	orthing: 2080322.36 Easting: 2678899.28			Location: Bloomfield, NM							
				foot)	_		30,	G - Grab Sample		Groundw:	
_	) ler	ا ٿا ا	N.	3 3	po ed		F 3	CS - 3.5" f.D. Continuous Sampler SPT - 2" O.D. 1.38" f.D. Tube Sample	Depth (fi)	Hour	Date
Depth (ft.)	Groundwater Denth (ft.)	Graphical Log	Sample Type	Penetration Resistance (Blows per f	PID Heated Headspace Reading, phm	Analytical Sample Number	Sample	U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube	7.5		1/19/2006
CPIL	1 2 d	- E	l di	enct essis 3lov	cad cad	amb dumi	NR - No Recovery Visual Classification		tion	T	WELL
0	00	10	×	15 X C	-IE	₹%Z		Visual Classifica			CONSTRUCTION
5		T A	· CS· ·	:	0.2		LEAN	YEY SAND (SC) - light brown, grained sand, medium plasticity NCLAY (CL) - light brown, mostrace fine sand.  YEY SAND (SC) - red-brown, mand, medium plasticity.	st, medium plastic	El. 5475.9' ity.	
	\[ \frac{7}{2} \]						7.5' SILT	Y SAND (SM) - light brown, we		El. 5469.9° and	
								(subangular to subrounded).			
					0,7		Fine t	o coarse sand at 9 to 10 ft and 11	5 to 12 ft		
10	<u>_</u>		. GS			• • • • • • • • • • • • • • • • • • • •	7 1110 1	o compo gana ne y no re ana 1.	127 607 I am 36.		
					0.1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				Ì	
							12.0'		E	EL 5465.4'	
		<u>that di</u>	1	1	Total I	Depth 12.0'	1 12.0			a. 5 <del>405.4</del>	1

Depth (ft)	Heur	Date

Depth (fi)	Hour	Date

	Depth (ft)	Hour	Date
Γ			



# KLEINFELDER Soil Boring/Monitoring Well Log Sheet Lof 1

Ш		NE INTELLER			Son boring/momenting wen Los			Sheef I	1 ()			
	Start	ed: 1/19/2	006		Rig T	ype: Strata Pro	nbe	Proje			Well N	Vo.
Date	Com	pleted: 1/1	9/2006		Drille	r: Louis Trujil	lo	Former Aere	Former Aerex Refinery			
7	Back	filled: 1/19	9/2006		Weat	her:		Surface Elevation: 5477.7'	Logged By: Lo	e Dalton		
N,	orthing	g: 2080322	.77		Eastin	ng: 2678949.37		Location: Bloomfield, NM				
				of.)			1 4	G - Grab Sample	F	Groundwa	ter	
_	iter" )	Loi	, Sel	5 2	pr Milli		1 2	CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample	Depth (ft)	Hour	Date	
1	) \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	lical .	1 2	ratic tanic	death Spric mg.	rtica de ber	1 2	U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube	6.5		1/19/200	106
Depth (fl.)	Groundwater Depth (ft.)	Graphical Log	Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number	NR - No Recovery  Visual Classification				WELL	•
		<u> </u>	1			•••	I				CONSTRUCT	<b>I</b>
0 - CLAY							CLA	YEY SAND (SC) - green-brown.	dry to moist, fine			
			<b> </b>	<b> </b>	1.1			grained sand, medium plasticity.	•			
	-		.cs				LEAN CLAY (CL) - light brown, moist, medium plasticity,					
			, Co	1		.,,,,						
	_			ļ	0,6		trace fine sand.					
	-											
5				,	0.5 .		5.0'			El. 5472.7'		
			. CS				CLA	YEY SAND (SC) - light brown, r sand, medium plasticity.	noist, fine grained			
	_ 		.63		******		6.5'	· · · · · · · · · · · · · · · · · · ·		El. 5471.2'		
	-				8.0		SILT	Y SAND (SM) - light brown, we (subangular to subrounded).	t, fine to medium s	and		
			<b></b>	<b> </b>								
	_				0,7		Chan	ge in color to gray at 8.5 to 9.2 ft	, no odor.			
1(	<u></u>		. CS				Fine t	o coarse sand at 9.5 to 10.5.		***************************************		
					8.0							
							12.0'		E	EL 5465.7'		
	_ '				Total I	Depth 12.0'					•	

	Depth (ft)	Hour	Date
Ì			

Depth (ii)	Heter	Date

Depth (it)	Hour	Date



## Soil Boring/Monitoring Well Log

,									(,)	nitoring W		Sheet 1 of
T	Start	ted: 1/19/	/2()	36		Rig T	ype: Strata Pro	obe	Pro	ect		Well No.
2 -	Com	pleted: 1	/19	/2006		Drille	er: Louis Trajill	o	Former Aer	ex Refinery		C-5
۱,	Back	filled: 1/	19/	2006		West	her:		Surface Elevation: 5479.3'	Logged By: 1	ee Dalton	·
ساس (01	rthin	g: 20803)	24.	16		Easti	ng: 2678997.66		Location: Bloomfield, NM	1		
					Τş		1	<u> </u>	G - Grab Sample	-	Groundwat	er
_	ler (	Log		ods:	i ž	E . E		,£ 3	CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample	Depth (ft)	Hour	Date
Depth (ft.)	ndv:	lical	13kg	÷-	ratic tane vs pr	teats spac	vtica de ber	dane	U - 3 ° O.D. 2.42° I.D. Ring Sample ST - 3° O.D. Thin-Walled Shelby Tube	7.5		1/19/2006
Cept	Groundwater Depth (fi.)	Graphical Log	ample Tak	Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number	J.	NR - No Recovery Visual Classific	ation	1	WELL
			1-1		1		1	1				CONSTRUCTIO
) _	_					0.6	,	CLAY	YEY SAND (SC) - brown, mois with quartzite gravel (subround	st, fine to medium led, 1-3 cm).	sand,	
	-			. CS								
						0.7		3.0'			El. 5476.31	
	_						.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	LEAN	CLAY (CL) - brown, moist, r	nedium plasticity,	trace	
	-		$\mathbb{H}$		ļ		,		fine sand.			
						1.3						ļ
					,		,, , ,,,, , ,,,,,	5.5'			El. 5473.8'	
	_			.CS				CLAY	YEY SAND (SC) - light brown. sand, medium plasticity.	moist, fine graine	đ	
	- 5			• • • • • •	<b> </b>	0.9		7.5'			EI. 5471.8'	
	-¥							SILT	Y SAND (SM) - light brown, w	et, fine to medium		
						•			(subangular to subrounded).			
	-					3.3		Chang	ge in color to gray-black at 8.5	to 11.5 ft, no odor.		
0_				· CS								
. 0-				. (2)								
						0.8						
			ı					12.0'			El. 5467.3'	
	_	<u> — Г. А</u> .	1-1-1			Total	Depth 12.0'					,
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		,										
		,										
		,										
		,										
		,										
		,										
							4					
							Add	itional Gro	oundwater Measurement	s		
	Day	्रोत्त विद		Flo			Add	itional Gro	oundwater Measurement	S  Depth (ft)	Hour	Date

	Ź	<u>j</u> K	L	EINE	FEL	DER			Soil Boring/Mon	itoring W	∤ell Log	g s	heet I of A
	Start	ed: 1/19/.	2006		Rig T	Type: Strata Pro	obe		Proje	et		11	vell No.
Date	Com	pleted: 1/	19/200	96	Drille	er: Louis Trujill	lo		Former Aere	x Refinery			C-6
	Back	filled: 1/1	19/200	6	Weat	her:			Surface Elevation: 5479.31	Logged By: 1	ee Dalton		
No	orthing	g: 208032	3.77		Easti	ng: 2679051.52			Location: Bloomfield, NM	4		***************************************	5m
		21)	П	Cig	_			Type .	G - Grab Sample CS - 3.5" I.D. Continuous Sampler	[ [ ]	Groundwa	ater	
	Groundwater Depth (ft.)	Graphical Log	Sample Taken Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	<u></u>			SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3 " O.D. 2.42" I.D. Ring Sample	Depth (ft) 7.5	Hour		Date /19/2006
Depth (ff.)	in the contract of the contrac	phica	mole like	nelrat sistan	Hed adspa	Analytical Sample Number		#	ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery				
Del	250	2	San	Res (B)	F = 5	Ser N			Visual Classificat	ion		"CONSI	ELL RUCTION
0							-,						
-									Y SAND (SM) - brown, dry, fine (subangular to subrounded), few				
	-		, Î   ···		0.0		1.0'		(subrounded, 1-2 cm).	•	Λ		
	_		.cs	j				CLAY	YEY SAND (SC) - green-gray, m sand, medium plasticity.	ioist, fine grained	1		
							3.0'	•	suld, modulin promotory.		El. 5476,31		
	-		V		0,0				N CLAY (CL) - red-brown, moist	, medium plastic			
	-		<b></b> .		ļ			1	trace fine sand.				
5	_				0,0	<u></u>	5.0'				El. 5474.31		
·	_							SILTY	Y SAND (SM) - red-brown, mois medium sand (subangular to sub	at to wet, fine to			
	-		-GS					With c	clay at 5 to 7.5 ft and 10 to 10.8 f	it, low plasticity.			
	_				0.0								
	Ā												
	-		1		1								
	-				13.8			Fine to	o coarse sand at 8.7 to 9.5 ft and	10.8 to 11.5 ft.			
10	_		.cs		]								
•											İ		
	-				0.0								
	_		Ш		<u> </u>		_12.0'				El. 5467.31		
					Total	Depth 12.0'							

Depth (it)	Hour	Date	

i
-

Depth (ft)	Hour	Date

	N	$\mathbf{I}$ K	LEIN	FELD.	ER		Soil Bo	ring/Mo	nit	oring W	ell Log	Sheet Lof 1	
5	Starte	ed: 1/19/2	006	Rig Type:	Strata Pre	ibe		Pro	jec	t	······································	Well No.	
Date	Comp	oleted: 1/	19/2006	Driller: Lo	uis Trujil	lo	Former Aerex Refinery D-1						
	Backl	filled: 1/1	9/2006	Weather:			Surface Ele	vation: 5477.7'	$\perp$	Logged By: L	ee Dalton		
No	orthing	g: 2080371		Easting: 20	578799.19	Ι .	L	loomfield, NM			Groundwat		
Denth (ft.)	Groundwater Depth (fc.)	Oraphical Log	Sample Type Penetration Resistance	PID Heated Headspace Reading, ppun	Analynear Sample Number	Sample Type	G - Grab Sample CS - 3.5" LD. Confit SPT - 2" O.D. 1.38" U - 3 " O.D. 2.42" I. ST - 3" O.D. Thin-W NR - No Recovery	I.D. Tube Sample D. Ring Sample /alled Shelby Tube		Depth (ft)	Hour	Date 1/19/2006	
	كْمُ	Ğ	San Per Re	B H S S	282		Market - 1	Visual Classific	catio	on		WELL CONSTRUCTION	
0	- [	77.7723		Т		CLAS	ZENZ C ANTO (C	C) E-1.4					
5			· CS. · · · · · · · · · · · · · · · · · · ·	9212.97.3	D1-5!	4.0' Black SILT' 5.0' CL.A' 7.4' SILT'	grained sand, i with hydroca Y SAND (SM) (subangular to YEY SAND (S medium plastic Y SAND (SM) (subangular to	C) - light brown nedium plastici rbon odor at 3.5 - yellow, moist subrounded). C) - gray, moist city, strong odor - gray, wet, fine subrounded), w	to 4, finer, finer.	ft. e to medium sa e grained sand, medium sand dor.	El. 5473.7'		
	-			3,1		SANI		ght brown belov XY (CL) - light l plasticity.			El. 5464.6' nined		
15	<u>.                                    </u>			2.5							And the second s		
	_					16.0'		····		W. A. J. B. B. W. S. C. C. C. C. C. C. C. C. C. C. C. C. C.	El. 5461.7'		
				Total Deptl	1 16.0								
-	1>	1	11	T 5.	Add		Y	Measurement	ts	Paris Co.		T	
-	Dept	h (It)	Hom	Date	1	Depth (fi)	Hour	Date		Depth (ft)	Hour	Date	

		LE	11/1	'LL	DEK			Soil Boring/Mon	itori	ng W	ell Lo	g	Sheet 1	of
S	tarted: 1/19/20	106		Rig T	ype: Strata Pr	obe		Proje	ect				Well No	0.
Date	Completed: 1/1	9/2006	,	Drifte.	r: Louis Truji	llo		Former Aere	x Refi	nery			D-2	
В	ackfilled: 1/19	/2006		Weatl	ier:			Surface Elevation: 5477.2	Logg	ged By: L	ee Dalton			
Nort	hing: 2080373.	.55		Eastin	g: 2678852.92			Location: Bloomfield, NM						
	a a					G - Grab Sample			Groundw	ater				
	Log	ype	<u>Q</u>	E all			<u>ب.</u> ت	CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample		Depth (fi)	Hour		Date	
		Έ⊇	atio and s pc	Parti pare US. 1	tica er		÷	U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube		6			1/19/2006	<u> </u>
Depth (ft.)	Graphical Log	Sample Type	Penetration Resistance (Blows per foet)	PID Heated Headspace Reading, ppm	Analytical Sample Number		33	NR - No Recovery			1		WELL	
ر د	50 O 8	- ×	288	Z Z ≃	4%Z	<u> </u>	•	Visual Classifica	11011			CON	STRUCT	ЮŊ
0		······	· · · · · · · · · · · · · · · · · · ·			<del>1</del>								
						0.5' SI		Y SAND (SM) - light brown, dry (subangular to subrounded).	y, fine to	coarse sa			1	
-				1.3		h C	LAY	EY SAND (SC) - light brown, of	dry, fine	grained s	El. 5476.27		ŀ	
		· CS				11		medium plasticity.		_	/ 1			
		.65				1		EY SAND (SC) - light brown, i sand, low plasticity.	moist, fi	ne to med	нım			
_				0,8		3.0'					El. 5474.2'			
						Cl	LAY	EY SAND (SC) - light brown, i	moist, fi	ne grained	1			
			····				1	sand, medium plasticity.			ĺ			
5 —				0.2		Fi	ine to	o medium sand lens at 4.4 to 4.6	ft.					
		. CS			*******	6.0'					El. 5471.2'			
_				0.0		SI	LTY (	' SAND (SM) - light brown, we (subangular to subrounded).	t, fine to	medium	sand			
			} <u>-</u>		*****	Cl	hang	e in color to gray at 7.5 to 10 ft, coarse sand at 7.7 to 8.4 ft and	no odo:	r. 16 ft			]	
				0.7			ne n	Coarse sand at 7.7 to 6.4 It and	10101	1.0 11.				
				0.2										
10_		· CS		, ,										
			}								ĺ			
				0.0										
						120'		24 1 41164 1264	1	.,	El. 5465,2'			
_		L	J1.	Total F	Depth 12.0'	12.0 A	s abc	ove, with clay at 11.6 to 12 ft, lo	w plasti	city.	E1, 3403,2		ı	
					"									

Depth (ft)	Hour	Date

	Depth (ft)	Hour	Оне
ĺ			

Depth (fi)	Hour	Date

Date	Started: 1/19/2006 Rig Type: Strata Probe Completed: 1/19/2006 Driller: Louis Trujillo					Project Former Aerex Refinery	Well No. D-3
Ω	Backfilled: 1/19/2006		Weat	her:		Surface Elevation: 5477.6' Logged By: Lee Dalton	
No	Northing: 2080373.78 Easting: 2678902.73					Location: Bloomfield, NM	
Dends (fr.)		Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number	5	G - Grab Sample   Groundw	ater Date 1/19/2006 WELL CONSTRUCTIO
5			0.0		2.0' CL	(subangular to subrounded).  El, 5475.6'  YEY SAND (SC) - red-brown, moist, fine to medium sand (subangular to subrounded), medium plasticity.  to medium sand lens at 6 to 6.2 ft, wet, subangular to subrounded.  nge in color to light brown from 6.2 to 9 ft.	
10	- CS.		0.7	Depth 12.0'		Y SAND (SM) - light brown, wet, fine to coarse sand (subangular to subrounded). clay at 10 to 10.2 ft.	

Depth (ft)	Hour	Date

Depth (fi)	Hour	Date

Depth (ft)	Hour	Date

# KLEINFELDER Soil Boring/Monitoring Well Log

Sheet 1 of 1

			5011 250Kmg/1.10111	torms treat bos	SHEEL I OI
بو	Started: 1/19/2006	Rig Type: Strafa Probe	Projec		Well No.
Date	Completed: 1/19/2006	Drîller: Louis Trujillo	Former Aerex	Retinery	D-4
	Backfilled: 1/19/2006	Weather:	Surface Elevation: 5478.2'	Logged By: Lee Dalton	
No	orthing: 2080375.39	Easting: 2678952.74	Location: Bloomfield, NM		
		34.	G - Grab Sample	Groundwate	er
Denth (ff.)	Groundwater Depth (1.) Graphical Log Sample Taken Sample Type Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm Analytical Sample Number	CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1,36" I.D. Tube Sample U - 3" O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery	Depth (ft) Hour 6.8	Date 1/19/2006
Del	San San Grage	Reg Sam Num	Visual Classificati	on	WELL CONSTRUCTION
Δ.					
	- CS	0.1	Y SAND (SM) - light brown, dry, (subangular to subrounded). YEY SAND (SC) - light brown, rr sand, medium plasticity. ove, with clayey fine to medium s low plasticity.	enoist, fine grained sand at 1.5 to 2 ft,	
10		8.0 Wet b Chang SILT	Y SAND (SM) - light brown, mois medium sand (subangular to subra lelow 6.8 ft. ge in color to gray at 7.6 to 8 ft. no Y SAND (SM) - gray, wet, fine to (subangular to subrounded), no or ge in color to light brown below 9	ounded), with clay.  o odor. El. 5470.2'  coarse sand dor.	
		12.0		El. 5466.2'	
		Total Depth 12.0'			

	Depth (fi)	Hour	Date
Į			
Ì			

Depth (f))	Hour	Date

Depth (it)	Hour	Date

	Started: 1/19/2006 Rig Type: Strata Probe  Completed: 1/19/2006 Driller: Louis Trujillo		e	Project		Well No
Date				Former Aere	x Refinery	D-5
i :	Backfilled: 1/19/2006	Weather:		Surface Elevation: 5479.9'	Logged By: Lee Dalton	1
Vσ	orthing: 2080375.66	Easting: 2679001.43		Location: Bloomfield, NM		
Depth (ft.)	Groundwater Depth (R.) Graphical Log Sample Type Sample Type Penetration	Resistance (Blows per foot) PtD Heated Headspace Reading, ppm Analytical Sample Number	Sample Type	G · Grab Sample CS · 3.5" I.D. Continuous Sampler SPT · 2" O.D. 1.38" I.D. Tube Sample U · 3" O.D. 2.42" I.D. Ring Sample ST · 3" O.D. 7hin-Walled Shelby Tube NR · No Recovery  Visual Classifica	Groundwat  Depth (ft) Hour  7.8	Date
	00 0 % s  c	<u> </u>		Visual Classifica	11011	CONSTRUCT
0			Interb	Y SAND (SM) - light brown, dry (subangular to subrounded), wit (subrounded, 1-3 cm). edded clayey fine sand zones be moist, low plasticity.	h quartzite gravel tween 1 to 3 ft, dry to  El. 5476.9	
		.,	CLA	YEY SAND (SC) - light brown, i sand, medium plasticity.	moist, fine to medium	
5						
		0.2		ge in color to gray at 6 to 6.3 ft a odor.	nd 7.4 to 7.6 ft, no	
	-			Y SAND (SM) - gray, wet, fine to (subangular to subrounded), no o		
10	- CS		Chang With o	ge in color to light brown below clayey fine sand at 10.2 to 11.4 fl	10.2 ft. t, medium plasticity.	
			12.0'		El. 5467.9'	
		Total Depth 12.0'	12.0		El. 5467.9°	ļ

Depth (ft)	Hour	Date

Depth	(1)	Hour	Date

Depth (ii)	Hour	Date

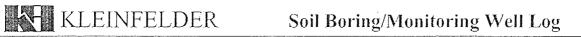


	Start	ed: 1/19/2	006		Rig T	vpe: Strata Pro	alre	Proje	ect	Well No
Date	Completed: 1/19/2006 Driller: Louis Trujillo		Former Aere	D-6						
2	Back	filled: 1/19	/2006		Weat	her:		Surface Elevation: 5479.9'	Logged By: Lee Dalton	
Northing: 2080379.86 Easting: 2679050.66			Location: Bloomfield, NM							
				1 =		<u></u>		L G - Grab Sample	Groundw	ater
	icr	Graphical Log	3d,	Penetration Resistance (Blows per foot)	PID Fleated Headspace Reading, ppm			CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample	Depth (ft) Hour	Date
Depth (fl.)	38	<u> </u>	Sample Type	ario mec.	PID Heated Headspace Reading, pp	Anafytical Sample Number		U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube	7.8	1/19/2006
5	교	l d	lgt.	sists owe	구	A de la company		NR - No Recovery	<u> </u>	
Õ	Groundwater Depth (II.)	5	San	55E	FII H	San No		Visual Classifica	tion	WELL CONSTRUCTI
_			***************************************							
							SII	TY SAND (SM) - light brown, dr	v fine to medium sand	
					0.9		"	(subangular to subrounded).	y, the to median said	
							Int	erbedded clayey fine sand zones be	stween 1 to 3 lt, dry to	İ
			· CS-					moist, low plasticity.		:
	-				,,,,,,,,,					
	***				0.6		3.0'		E1, 5476.9'	
								ND (SP) - light brown, dry to mois		
		77777	ļ				4.0'	(subangular to subrounded), wit		
							CL	AYEY SAND (SC) - light brown, sand (subangular to subrounded		
5				·····	0.5			sand (stroangthar to subrounded	), medium plasticity.	
					l					
	-		· CS							
					0.4					
	-				0.4					
	Σ	11/14					7.8'		El. 5472.1'	
					1		SIL	TY SAND (SM) - light brown, we	t, line to medium sand	
	_		ļ,,		0.3			(subangular to subrounded).		
1 (	<u> </u>		. CS				٨٠	above, with clay at 9.8 to 10 ft and	10.5 to 11.3 ft low	
							AS	plasticity.	10.5 to 11.5 ft, 10w	
	-				0.2			£		
							12.0'		E1 61/2 01	
	- 1		)		Total I	Depth 12.0'	14.0		El. 5467.9'	1

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date

Depih (fi)	Нош	Date



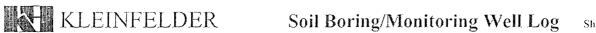
Sheet I of 1

	<del>,</del>	2011 DOLLING/AROUI		
Started: 1/18/2006	Rig Type: Strata Probe	Proje	Well No.	
Completed: 1/18/2006	Driller: Louis Trujillo	Former Aere	x Kennery	E-1
Backfilled: 1/18/2006	Weather:	Surface Elevation: 5478.5'	Logged By: Lee Dalton	
Northing: 2080436.58	Easting: 2678799.92	Location: Bloomfield, NM		
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Type Penetration Resistance (Blows per (out)	PID Heated Headspace Reading, ppm Analytical Sample Number	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" C.D. 1.38" I.D. Tube Sample U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thir-Walled Shelby Tube NR - No Recovery  Visual Classificat	Depth (ft) Hour 7.5	Date 1/18/2006 WELL CONSTRUCTIO
CS		YEY SAND (SC) - light brown, n sand (subangular to subrounded) gravels (subrounded, 1-3 cm), m with odor at 5 to 7.5 ft.  Y SAND (SM) - gray, wet, fine to (subangular to subrounded), with o medium sand at 8 to 9 ft and 10 ge in color to light brown below 1 medium sand, some clay.	El. 5471.0° o coarse sand odor.	

Depth (ft)	Hour	Date
		///

Depth (fi)	Hour	Date

Depth (fi)	Hour	Date



	LEIN.	FELDER		Soil Boring/Moni	normg vi	rem mos	Sheet 1 o
Started: 1/18	1/2006	Rig Type: Strata Pr	obe	Proje	ct		Well No.
Completed: 1	1/18/2006	Driller: Louis Truji	lla	Former Aeres	x Refinery		E-2
Backfilled: 1/	/18/2006	Weather:		Surface Elevation: 5478.5'	Logged By: I	ee Dalton	· <del> · · · · · · · · · · · · · · · ·</del>
Northing: 20804	41.97	Easting: 2678850.81		Location: Bloomfield, NM			······································
Ocpth (ff.) Groundwater Depth (ff.) Graphical Log	Sample Type Sample Type Penetration Resistance (Blowe not God)	PID Heated Headspace Reading, ppm Amaytical Sample	Sample Type	G - Grab Sample CS - 3.5° I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3" O.D. 2.42" I.D. Ring Sample ST - 3" O.D. 7 Tin-Walled Shelby Tube INR - No Recovery	Depth (ft) 7,4	Groundwa Hour	Date 1/18/2006
	Sam Sam	PIC Hear		Visual Classificat	ion		WELL CONSTRUCTION
5	CS.		6.0' 6.7' CLA' SILT	Y SAND (SM) - light brown, dry (subangular to subrounded), few (subrounded, 1 cm).  aminated clayey fine sand layers a sand, medium plasticity. Y SAND (SM) - gray, moist to we (subangular to subrounded), slighelow 7.4 ft.	quartzite gravels at 3 to 6 ft. noist, fine graine et, fine to coarse ht odor.	El. 5472.5'	CONSTRUCTION
		1.0		o medium sand at 6.7 to 8 ft and	10 to 11 ft.	El 5466 7	
0_	· CS····	Total Depth 12.0'	11.8'	o medium sand at 6.7 to 8 ft and YEY SAND (SC) - light brown, w		El. 5466.7' Sh 4 <sup>466.5</sup> '	
0	·CS···	Total Depth 12.0'	11.8° 12.0° CLAY	TEY SAND (SC) - light brown, w		El. 5466.7' Sahd, 466.5'	
0	· CS····	Total Depth 12.0'	11.8° 12.0° CLAY	/EÝ SAND (SC) - light brown, w		El. 5466.7'	
Depth (ft)	-CS	Total Depth 12.0'	11.8° 12.0° CLAY	TEY SAND (SC) - light brown, w		El. 5466.7' Sh 4,466.5'	Date

Started: 1/18/20 Completed: 1/18			LDER		Soil Boring/Mon	norms near bo	${f g}=$ Sheet I ${f 6}$
,	106	Ri	g Type: Strata Pro	obe	Proje	ct	Well No.
Completed: I/13	ompleted: 1/18/2006 Driller: Louis Trujillo		Former Aere	E-3			
Backfilled: 1/18	/2006	W	eather:		Surface Elevation: 5479.0'	Logged By: Lee Dalton	
orthing: 2080438.			sting: 2678899.75		Location: Bloomfield, NM		
Groundwater Depth (R.) Graphical Log	Sample Type	renetration Resistance (Blows per foot) PID Heated Headspace	Reading, ppm Analytical Sample Number	Sample Type	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" C.D. 1.38" I.D. Tube Sample U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery	Depth (fi) Hour	Date   Date   1/18/2006
Gray Gray	Sam	189 B 2	Ana Sam Num		Visual Classificat	ion	WELL CONSTRUCTIO
	-CS			3.6' SILT 5.0' CLAY  Gray, Wet b	Y SAND (SM) - light brown, dry (subangular to subrounded), som (subrounded). som (subrounded). som (subrounded). som (subrounded)2 cm). YEY SAND (SC) - yellow-brown medium sand (subangular to sub plasticity to non-plastic.  Y SAND (SM) - yellow, moist, fi (subangular to subrounded), few (subrounded, 1-2 cm). YEY SAND (SC) - red-brown, m sand (subangular to subrounded) non-plastic.  with slight odor at 7.8 to 11.6 ft. below 9 ft.	e quartzite gravelE1. 5478.0'  , moist, fine to rounded), low  E1. 5475.4'  ne to medium sand quartzite gravels  E1. 5474.0'  Dist, fine to medium, low plasticity to	
		Tot	al Depth 12.0'	3,21	(subangular to subrounded), few	clay.	
		Tot			oundwater Measurements	clay.	
Depth (ft)	Hour				(subangular to subrounded), few	Depth (ft) Hour	Date



NLEI NLEI	NEELDEK		S011 B0	ring/ivio	nn	oring w	en Log	Sheet 1 of
Started: 1/18/2006	Rig Type: Strata Pr	obe		Pro				Well No.
Completed: 1/18/2006	Driller: Louis Trujil	lu	Former Aerex Refinery				E-4	
Backfilled: 1/18/2006	Weather:		Surface Elev	ation: 5479.6'		Logged By: I	.ce Dalton	
Sorthing: 2080438.40	Easting: 2678949.56			oomfield, NM				
	100	ž.	G - Grah Sample		$\Box$		Groundwa	
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Taken Sample Type	= D 2 C E D E C E C E C E C E C E C E C E C E	Sample Type	CS - 3.5" I.D. Contin SPT - 2" O.D. 1.38" U - 3 " O.D. 2.42" I.I ST - 3" O.D. Thin-W	LD. Tube Sample		Depth (ft)	Hour	Date 1/18/2006
Depth (ft.) Groundwater Depth (ft.) Graphical Lo Sample Taker	stance was p. Heat by ple ple ple ple ple ple ple ple ple ple	Smul	ST - 3" O.D. Z.42 1.1 ST - 3" O.D. Thin-W NR - No Recovery	alled Shelby Tube		<u> </u>		1718/2000
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Taken	Reading Personal Resistance (Blows per foot) PID Heated Headspace Reading, ppm Analytical Sample Number			Visual Classific	catio	)ii		WELL CONSTRUCTIO
CS		3.6' SILT 5.0' CLA' 7.0' SILT 8.5' CLA' 11.5' 11.9' SILT' 12.0' CLA'	(subangular to (subrounded, I YEY SAND (S sand (subangu Y SAND (SM) YEY SAND (SM) YEY SAND (SM) (subangular to YEY SAND (SM) (subangular to YEY SAND (SM) (subangular to YEY SAND (SM) (subangular to YEY SAND (SM) (subangular to YEY SAND (SM) (subangular to YEY SAND (SM) (subangular to SAND (SM) (subangular to SAND (SM) (subangular to SAND (SM) (subangular to SAND (SM))	C) - light brown ar to subrounded - yellow, moist, - yellow, moist, - light brown, was brounded). C) - light brown beity to non-player - light brown, was brounded). C) - light brown, was brounded). C) - light brown, was brounded). C) - light brown, was brounded). C) - light brown, was brounded). C) - light brown, was brounded).	ome  n, mo ed), i  fine  first, fine  vet, f	quartzite grave pist, fine to medion-plastic.  e grained sand.  fine grained san  fine to medium  t, fine to medium  .	El. 5476.0'  El. 5476.0'  El. 5474.6' d,  El. 5472.6' sand  El. 5471.1' im  El. 5468.1' El. 5468.1' El. 5467.6'	
	Add	itional Gr	oundwater N	leasurement	ts			
			т		Г	12 1 2		
Depth (ft) Hour	Date	Depth (ft)	Hour	Date	ŀ	Depth (ft)	Hour	Date
			ł		}			+

	N		$\Box$	LE.	INF	EL	DER		Soil Boring/Moni	itoring W	'ell Log	Sheet 1	of 1
	Start	ed: 1/19	/200	)6	±	RigT	ype: Strata Pr	obe	Proje	et		Well N	0,
Date	Comp	Heted:	1/19	/2006		Drille	r: Louis Truji	llo	Former Aeres	Refinery		E-5	
-	Back	filled: 1	/19/	2006		Weat	her:		Surface Elevation: 5480.6'	Logged By: L	ee Dalton		
No	orthing	: 20804	38.5				ng: 2678999.29		Location: Bloomfield, NM		******		
		Sh			(to			all.	G - Grab Sample		Groundwa	<u> </u>	
~	aler.		#	715	E 25	red Ppn	=	1 %	CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3 " O.D. 2.42" I.D. Ring Sample	Depth (ft) 7.8	Hour	Date 1/19/200	6
Denth (ft.)	. śt	Graphical Log	Sangple Taken	Sample Type	stanc ws p	Heal Ispan	lytica ple iber	Sam	CT OF O D This Walted Challe, T. ha	7.0		117/200	-
Deni	Groundwater Depth (ft.)	Craft	Sample	Sam	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number		Visual Classificat	ion	1	WELL CONSTRUCT	ION
Δ.			خـــا			L							<b>A</b> .306.4.3
5				CS		2.5		CLA Clay Fat c 7.8' SILT	TY SAND (SM) - light brown, dry (subangular to subrounded, with (subrounded, 1-3 cm).  YEY SAND (SC) - light brown to fine grained sand, medium plasticely fine to coarse sand (subangular to 3.2 ft and 4 to 4.5 ft.  Elayey fine sand at 6.8 to 7.5 ft.  TY SAND (SM) - light brown, wet (subangular to subrounded). bove with silty fine to coarse sand	quartzite gravel red-brown, mois city.  to subrounded) a	t 3		
	_	41						12.0			El. 5468.6'		
				_		Total I	Depth 12.0'						

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date
	***************************************	

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KLEINF KLEINF	ELDER	Soil Boring/Monitoring Well Log	Sheet 1 of 1
Started: 1/19/2006	Rig Type: Strata Probe	Project	Well No.
Completed: 1/19/2006	Driller: Louis Trujillo	Former Aerex Refinery	E-6
Backfilled: 1/19/2006	Weather:	Surface Elevation: 5480.6' Logged By: Lee Dalton	
Northing: 2,080,436.67	Easting: 2,679,058.83	Location: Bloomfield, NM	
Depth (II.) Groundwater Depth (II.) Graphical Log Sample Taken Sample Type Penetration Resistance (Blows per foot)	PID Hented Hendspace Reading, ppnn Analytical Sample Number	Groundwater   CS - 3.5" I.D. Continuous Sampler   SPT - 2" O.D. 1.38" I.D. Tube Sample   U - 3" O.D. 2.42" I.D. Ring Sample   ST - 3" O.D. Thin-Walled Shelby Tube   NR - No Recovery   Visual Classification   CO	Date 1/19:2006 WELL ONSTRUCTION
0 — CS.		Y SAND (SM) - light brown, dry, fine to coarse sand (subangular to subrounded), few quartzite gravels (subrounded, 1-2 cm).  bedded clayey fine sand layers between 2 to 4 ft, dry to moist.  EL 5476.6'  YEY SAND (SC) - light brown to red-brown, moist, fine to medium sand (subangular to subrounded), medium plasticity.	
- \( \sqrt{\sq}}}}}}}}}}} \scrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sq}}}}}}}}} \sqrt{\sq}}}}}}}}}} \sqit{\sqrt{\sqrt{\sqrt{\sq}}}}}}}} \sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sinq}}}}}}}}} \end{\sqrt{\sqrt{\sq}}}}}}} \sqrt{\sqrt{\sqrt{\	.0.4 7.0' SILT Wet be Fine to As ab	Y SAND (SM) - light brown, moist to wet, fine to medium sand (subangular to subrounded). below 7.5 ft. to medium sand at 8 to 8.7 ft.	
	Total Depth 12.0'	El. 5468.6'	1

	Depth (ft)	Hour	Date
ı			
- 1			

Depth (ft)	Hour	Date

Depth (ff)	Hour	Date

5.

	X	<b>l</b> K	LE	INF	FEL	DER		Soil Bo	ring/Mo	ni	toring W	ell Log	Sheet 1 of 1
[ _,	Start	ed: 1/18/2	006		Rig T	ype: Strata Pr	obe	Project			Well No.		
Date	Com	pleted: 1/1	8/2006		Drille	er: Louis Truji	10		Former Aei	rex	Refinery		F-1
	Back	filled: 1/1	3/2006		Weat	her:		Surface Ele	ration: 5480.51		Logged By: 1	ce Dalton	
No	orthing	g: 2080491	.97	·	Easti	ng: 2678801.41	_,	Location: B	loomfield, NM				
Depth (ft.)	Groundwater Depth (ft.)	Oraphical Log	Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number	Sample Type	G - Grab Sample CS - 3.5" I.D. Conti SPT - 2" O.D. 1.38" U - 3 " G.D. 2.42" I. ST - 3" O.D. Thin-V NR - No Recovery	I.D. Tube Sample D. Ring Sample	o o ti	Depth (ft) 9	Groundwa Hour	Date 1/18/2006 WELL
<u> </u>	00	0 8	- SS	15 2 6	ZIZ	<0.7 <0.7	<u> </u>		Visuai Ciassiiii	Catr	)HI		CONSTRUCTION
5	- - - - - - ¥		-CS		35	FI-11!  Depth 16.0'	Wet a  8.2' Gray SILT  Wet b  Fine t	(subangular to (subrounded, YEY SAND (S grained sand, 1 YEY SAND (S sand, low plas at 6.8 to 7 ft.  at 7.8 to 8.2 ft.  Y SAND (SM) to medium sampelow 9 ft.  ge in color to life YEY SAND (S grained sand, 1	C) - light brown nedium plasticit C) - light brown icity.  with slight odon - gray, moist to d.	to !	y to moist, fine oist, fine graine oist, fine graine oist, fine graine of the graine o	El. 5478.5' d	
	g pa carpo mentra acquire men					Ada	litional Gr	oundwater l	Measurement	ts			
١	Dept	di (fi)	Ho	ur_	Da	te	Depth (ft)	Hour	Date		Depth (fr)	Hour	Date

\*

# Soil Boring/Monitoring Well Log

Sheet 1 of 1

			Trong on Bog	) 3110011011
Started: 1/18/2006  Completed: 1/18/2006	Rig Type: Strata Probe  Driller: Louis Teajillo	Proje Former Aere		Well No. F-2
Backfilled: 1/18/2006	Weather:			
		Surface Elevation: 5479.81	Logged By: Lee Dalton	
Northing: 2080493.71	Easting: 2678850.41	Location: Bloomfield, NM	Groundwa	tor
and and and and and and and and and and	<u> </u>	董 G - Grab Sample CS - 3.5" t.D. Continuous Sampler	Depth (ft) Hour	Date
(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	ated aree	SPT - 2" O.D. 1,38" l.D. Tube Sample  U - 3 " O.D. 2,42" l.D. Ring Sample  ST - 3" O.D. Thin-Walled Shelby Tube	8.5	1/18/2006
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Type Penetration Resistance (Blows per Goo	PID Heated Headspace Reading, ppm Analytical Sample Number	NR - No Recovery		
P. 20 0	Reg San Nam Nam Nam Nam Nam Nam Nam Nam Nam Nam	Visual Classificat	tion	WELL CONSTRUCTION
0				
CS	2.0'	AYEY SAND (SC) - light brown, of medium sand (subangular to sub-quartzite gravels (subrounded, I plasticity)	orounded), with -3 cm), medium El. 5477.8	
-	.1248*	AYEY SAND (SC) - black, moist, grained sand, medium plasticity.	strong odor, tine	
- ////				
5	.1248* F2-5' 5.0'		El. 5474.8'	,
	SII	TY SAND (SM) - gray, moist, fine (subangular to subrounded), with	to medium sand h strong odor.	
	126		61.	
	7.5' Wi	th clay, wet at 7.3 to 7.5 ft, low plas	sticity. El. 5472.3'	
	8.5 CL	AYEY SAND (SC) - gray, moist, fi odor, medium plasticity.	ine grained sand, with	
	1 1	TY SAND (SM) - gray, wet, fine to		-
		(subangular to subrounded), odo	or concentration	
10		decreasing down the section.		
	16			
- MANAH				
	0.0			
	8,0	e to coarse sand at13 to 15.5 ft.		
15	9.0		El. 5464.3'	
	16.0' CL	AYEY SAND (SC) - light brown, w	vet, fine to medium. 5463.8'	
	Total Depth 16.0'	sand (subangular to subrounded)	non-plastic.	
	*=	Value that PID pegged at that calib	ration.	
	Additional (	Groundwater Measurements		
Depth (ft) Hour	Date Depth (ft)	Hour Date	Depth (fi) Hour	Date
	1 1		1	

ပ္				FEL	.DER		Soil Boring/Mon		ven Lo	g Sheet	lol
🗟   Comp	Started: 1/18/2006 Rig Type: Strata Probe						Project Former Aerex Refinery		Well		
	oleted: 1/1	8/2006		Drille	r: Louis Trujill	lo	rormer Aere	x Rennery		F-3	
Backf	illed: 1/18	/2006		Weat	her:		Surface Elevation: 5480.5'	Logged By:	Lee Dalton		
Northing	: 2080494	.39			ng: 2678900.08		Location: Bloomfield, NM				
.	描		t tor	=		ad a	G - Grab Sample CS - 3.5° I.D. Continuous Sampler	D10	Groundw		
C rate	=	Š	ion Ser fi	2 5 Ed.	Ħ	ծանչը չարարեն Մջագ	SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3 " O.D. 2.42" I.D. Ring Sample	Depth (ft) 8.2	Hour	1/18/20	
Depth (ft.) Groundwa Depth (ft.)	Graphical Log	Sample Type	strat istan iws p	Head dspar ding	lytic iple iber	Sann	ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery				
Depth (ft.) Groundwater Depth (ft.)	Graph	Sam	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number		Visual Classifica	tion		WELL CONSTRUC	
0		-									
°- [						CLA	YEY SAND (SC) - light brown,	dry to moist, fir	e to		
- 8				2.5			medium sand (subangular to sub quartzite gravel (subrounded, 1	rounded), trace cm).	Ì		
		.CS					qualities graver (addressingers, 7	••••			
- 1		,65			:						
-				3.8		25' Chan	as in colour to amount 2 to 2.5 ft.	na adam alam la	10 55454545		
Ĭ.	77274						ge in color to gray at 3 to 3.5 ft, i 3 to 3.2 ft.		Л		
-		1					Y SAND (SM) - gray, moist, fine	grained sand,	no		
5	1			2.9			odor.		F1 = 170 (V		
		C.				5.5' CLA`	YEY SAND (SC) - gray, moist, f	ine grained san	El. 5475.0'		
-		, CS			. ,	medium plasticity, no odor.					
-		ļ,		6.7		1174	C				
							fine to medium sand at 7 to 7.2 f ge in color to brown at 7.5 to 8.2		E) 6489.04	Ì	
- 7		1				V1.00	Y SAND (SM) - gray, wet, fine to		El. 5472.3'		
-				1.4		-	(subangular to subrounded), no	odor.			
10		. CS									
10		. 03			. , , , , , , , , , , , , , , , , , , ,						
-				0,9		With	clay at 10.7 to 11.3 ft, medium p	asticity.			
ľ						12.0'			El. 5468.5'		
		•		Total I	Depth 12.0'					,	

	Depth (ft)	Hour	Date
į			

Depth (f))	Hour	Date
	7	

Depth (f)	Hour	Date



De de de la company de la comp	F-4
Northing: 2080495.32  Easting: 2678947.85  Location: Bloomfield, NM   Groundwater  Co. 3.5 T.D. Confinencians Sampler  Depth (fi) Hour  Depth (fi) Hour  Str. 3.5 O.D. Tries Walled Shelby Tube  CONS  CLAYAY SAND (SC) - light brown, moist, fine to medium sand, few quartizite gravels (subrounded, 1-2 cm), medium plasticity.  CS  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  CLAYAY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  EL 5471.8°  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  EL 5471.8°  EL 5471.8°  EL 5471.8°  EL 5471.8°  EL 5471.8°  EL 5471.8°  EL 5471.8°  EL 5471.8°  EL 5471.8°  EL 5468.8°	
Second Particles   Second Part	
CLAYAY SAND (SC) - light brown, moist, fine to medium sand, few quartizte gravels (subrounded, 1-2 cm), medium plasticity.  CS  J.5.  SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded).  EL 5477.8'  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  Change in color to light brown from 6.8 to 9 ft.  J.6.  SILTY SAND (SM) - light brown from 6.8 to 9 ft.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  EL 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).	
CLAYAY SAND (SC) - light brown, moist, fine to medium sand, few quartizte gravels (subrounded, 1-2 cm), medium plasticity.  CS  3.0'  SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded).  EL 5477.8'  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  Change in color to light brown from 6.8 to 9 ft.  2.6  9.0'  EL 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  EL 5471.8'  EL 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).	Date
CLAYAY SAND (SC) - light brown, moist, fine to medium sand, few quartizte gravels (subrounded, 1-2 cm), medium plasticity.  SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded).  EL 5477.8'  SILTY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS.  Change in color to light brown from 6.8 to 9 ft.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  EL 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).	1/18/2006
CLAYAY SAND (SC) - light brown, moist, fine to medium sand, few quartizte gravels (subrounded, 1-2 cm), medium plasticity.  SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded).  EL 5477.8'  SILTY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS.  Change in color to light brown from 6.8 to 9 ft.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  EL 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).	WELL
CLAYAY SAND (SC) - light brown, moist, fine to medium sand, few quartizte gravels (subrounded, 1-2 cm), medium plasticity.  CS  1,5  3,0'  SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded).  E1, 5477.8'  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  Change in color to light brown from 6.8 to 9 ft.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  E1, 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).	TRUCTI
sand, few quartizte gravels (subrounded, 1-2 cm), medium plasticity.    CS	
SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded).  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  Change in color to light brown from 6.8 to 9 ft.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  EL 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).	
SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded).  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS.  3.8.  Change in color to light brown from 6.8 to 9 ft.  CS.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  EI. 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).	
SILTY SAND (SM) - light brown, moist, fine to medium sand (subangular to subrounded).  CLAYAY SAND (SC) - gray, moist to wet, slight odor, fine grained sand, medium plasticity.  CS  3.7  Change in color to light brown from 6.8 to 9 ft.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  EL 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).	
2.6. 2.6. 2.6. 2.6. 2.6. 2.6. 2.6. 2.6.	
CS.  Change in color to light brown from 6.8 to 9 ft.  2.6.  9.0'  El. 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  El. 5468.8'  El. 5468.8'	
CS  Change in color to light brown from 6.8 to 9 ft.  2.6  9.0'  EI. 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  EI. 5468.8'	
Change in color to light brown from 6.8 to 9 ft.  2.6  9.0'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  El. 5468.8'  12.0' Fine to access and 4.11.8 to 13.0.  El. 5468.8'	
Change in color to light brown from 6.8 to 9 ft.  2.6  9.0'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  El. 5468.8'  El. 5468.8'	
2.6 9.0' El. 5471.8'  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  El. 5468.8'	
SJLTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  1.4  12.0'  El. 5468.8'	
SJLTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  12.0' El. 5468.8'	
SJLTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  12.0' El. 5468.8'	
12.0' El. 5468.8'	
12.0' El. 5468.8'	
12.0' El. 5468.8'	
	ì
Additional Groundwater Measurements	

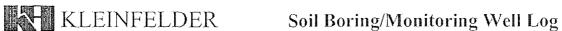
Sheet L of 1

	TEHA	T.T.T	DLK		Son boring/Mon	toring wen Lo	g Sheet I o
Started: 1/18/	2006	Rig T	ype: Strata Pro	be	Proje	et	Well No.
Completed: 1	18/2006	Drille	er: Louis Trujill	0	Former Aeres	Refinery	F-5
Backfilled: 1/	8/2006	Weat	her:		Surface Elevation: 5481.4'	Logged By: Lee Dalton	
Northing: 208049	5.85	Easti	ng: 2678997.89		Location: Bloomfield, NM	1 69	
Ī				ž.		Groundw	ater
Depth (ft.) Groundwater Depth (ft.) Graphical Log	Sample Type Penetration Resistance	(Blows per 100 PID Heated Headspace Reading, ppm	Analytical Sample Number	5	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3" O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recoyery	Depth (ft) Hour	Date 1/18/2006
Ga Dep	Sam Pen Res	\$   E = 5	San		Visual Classificat	ion	WELL CONSTRUCTION
0 — 5 — 10 — -	CS.			2.0° CLAY  CLAY  9.0°  SILTY	Y SAND (SM) - light brown, dry (subangular to subrounded), with (subrounded, 1-3 cm).  YEY SAND (SC) - light brown, degrained sand, low plasticity.  YEY SAND (SC) - light brown, nearly sand (subangular to subrounded).  YEY SAND (SM) - light brown, wet, (subangular to subrounded).	ry to moist, fine El. 5479.4*  noist, fine to medium, medium plasticity.	
كاندانا ــ	Ш	Total	Depth 12.0'	12.0		E1, 5469.4° ]	1

Depth (ft)	Hour	Date

Depth (fi)	Hour	Date

Depth (ft)	Hour	Date



	NZ		LE	IINE	'EL	DEK		Soil Boring/Mon	itoring W	ell Log	g Sh	eet 1 of 1
<u> </u>	Starte	ed: 1/19/20	106		Rig T	ype: Strafa Pře	be	Proje	ect		We	il No.
Date	Comp	oleted: 1/1	9/2006		Drille	r: Louis Trujil	lo	Former Aere	x Refinery		l	7-6
	Backf	filled: 1/19	/2006		Weat	her:		Surface Elevation: 5481.7'	Logged By: Lo	ee Dalton		
No	erthing	: 2080493	.97		Easti	ng: 2679050.29		Location: Bloomfield, NM				
		<b>21</b> 2		9	-		adá	G - Grab Sample CS - 3.5" LD. Continuous Sampler		Groundwa	T	
] =	catter :	의	Lype	E 8 5	p g la	73	Sample Type	SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3 " O.D. 2.42" (.D. Ring Sample	Depth (ft) 7.5	Hour	<del> </del>	Date 9/2006
Depth (ft.)	Groundwater Depth (R.)	Graphical Log	Sample Type	Penetration Resistance (Blows per foot)	PID Hented Headspace Reading, ppm	Analytical Sample Number	Sam	ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery				,,2000
Den	Pg 1	S S	Sam	25 X X X	PID Hea Rea	Sam		Visual Classifica	tion		CONSTR	LL UCTION
a												
-							SILT	Y SAND (SM) - light brown, dry (subangular to subrounded), few		nd		
	-				1.0			(subrounded, 1 cm).	quarizite graveis			
	_		.cs.			,,,	2.0'			El. 5479.7'		
							CLA	YEY SAND (SC) - light brown, i sand (subangular to subrounded)	noist, fine to medi	um		
	-				1.7			sand (storagerar to subrounded)	, to trapastions.			
	- }		ļ	<b></b>								
z	_				1.3		5.0'		Į	EL 5476.7'		
3	_ [						SILT	Y SAND (SM) - yellow-light bro	wn, moist to wet,			
	-		· C\$					to medium sand (subangular to s	ubrounded).			
	_				[,]	****						
	犎.							to coarse sand at 7 to 9 ft.				
	-	111		·····		,	weit	pelow 7.5 ft.				
	_				1,1							
	, [											
1(	_		. CS		•••••			ove, with clayey fine to medium		0		
	- 1				0.9			to 11 ft and 11.2 to 11.5 ft, low p	lasticity.			
							12.0'		F	E1. 5469.7'		
	_ •			,—t	Total I	Depth 12.0'						

Depth (ft)	Hour	Date

Kleinfelder Inc., Copyright 3/18/2086

Depth (f)	Hour	Date

Depth (fi)	Hour	Date

# Soil Boring/Monitoring Well Log

Sheet 1 of 1

	LL	TIAL	'LL	DEK			2011 120	ring/ivio	Щ	oring w	en Log	Sheet 1 o
Started: 1/18	/2006		Rig T	ype: Strata Pr	ohe			Pro	oject			Well No.
Completed: 1	/18/2006		Driller	r: Louis Trujil	llo			Former Ae	rex	Refinery		G-1
Backfilled: 1/	18/2006		Weath	ier:			Surface Elev	ation: 5481.0'		Logged By: L	ee Dalton	<u></u>
Forthing: 20805	49.67		Eastin	g: 2678797.16				oomfield, NM				
		Penetration Resistance (Blows per foot)	l md	E		adsi.	G - Grab Sample CS - 3.5" I.D. Contin SPT - 2" O.D. 1.38"	uous Sampler		Depth (ft)	Groundwat Hour	er Date
Depth (ft.) Groundwater Depth (ft.) Graphical Log	Sample Taken Sample Type	fration stance ws per	Heated Japace Jing, p	Analytical Sample Number		Sample Type	U - 3 " O.D. 2.42" I.E ST - 3" O.D. Thin-W NR - No Recovery	Ring Sample		9.6		1/18/2006
Grap Grap	Sam	Pene Resir (Blo	PID Head Read	Sam				Visual Classifi	icatio	n		WELL CONSTRUCTION
	· CS· · · · · · · · · · · · · · · · · ·		3.8	Depth 16.0'	7.6 C	CLAY Clay ( Clay ( CLAY CLAY CLAY CLAY CLAY CLAY CLAY CLAY	YEY SAND (Segrained sand, fem), low plastic yer sand (subangue content at 1.7 to 7.6 ft (wet).  YEY SAND (Segrained sand, femological sand, medium sand (sector change to at 9.6 to 10 ft.)  Change to light to coarse sand find sand coarse sand coarse sand find sand coarse sand find sand coarse sand find sand coarse sand find sand coarse sand coarse sand coarse sand coarse s	C) - light brown at to 14.6  C) - light brown at to 3.4 from 3.4 f	n, modeled), selft, 4.6	ist, fine to med some silt. It is to 5.2 ft and 7 ist, fine graine to wet, fine to unded). It, with some of	1-2 El. 5479.3' Jimm 7.4 to El. 5473.4' d	
				Ado	ditiona	l Gro	oundwater N	leasuremen	ıts			************
					EV surelle 1	6.	11	Det -	) [	Dauth (2)	[ t	l is
Depth (ft)	Ho	ur j	Dat	<u> </u>	Depth (	11}	Hour	Date		Depth (ii)	Hour	Date

1 [2		007		1			1				1 ,,,,,,,
عاد ا ا	rted: 1/18/2			ļ	Type: Strata Pr			Proje Former Aere	ect v Refinery		Well No. G-2
$\sim$ $\vdash$	mpleted: 1/				er: Louis Trujil	llo					1 0-2
Bac	kfilled: 1/1	8/2006		Weat			1	vation: 5480.8'	Logged By: 1	Lee Dalton	
Northi	ng: 208054	1.27		Easti	ng: 2678848.21	7	Location: B	loomfield, NM	-T	Committee	
<u></u>	สือ	و	(toot)	E		Type	G - Grab Sample CS - 3.5" I.D. Cont	inuous Sampler	Depth (ti)	Groundwa Hour	Date
Depth (ft.) Groundwater	Depth (ft.) Graphical Lug	Sample Type	Penetration Resistance (Blows per f	PID Heated Headspace Reading, ppm	le .	Sample	SPT - 2" O.D. 1,38 U - 3 " O.D. 2.42" I	" I.D. Tube Sample .D. Ring Sample	8.2		1/18/2006
Depth (ft.) Groundwa	ophic :	ગુતાતા મા	sistan ows	adsp ading	Analytical Sample Number	San	ST - 3" O.D. Thin-V NR - No Recovery	Valled Shelby Tube			
مُنْ مُنْ	ရီ ဗီ	San	2 % 8	금품器	4 S Z			Visual Classifica	tion		WELL CONSTRUCTIO
0 —		CS.			Depth 16.0'	CLA' Black Chang Decre Increa Back Chang Color SILT' Clay 2	sand (subanga plasticity. YEY SAND (S sand, medium with strong or 3.2 to 3.4 ft.  ge in color to grasing clay contract asing clay contract fine sand (Subangular to 200 at 10 to 10	dor at 1.3 to 3.4 ft. gray from 3.4 to 6. stent from 4 to 5 ft ent from 5 to 5.8 f stent from 5.8 to 6. gray, moist, no od i. gray, wet, fine to subrounded sand 0.5 ft, with odor.  t brown from 14.4	to 15.4 ft, no odst, medium plasticity.	El. 5479.8' ed s at  El. 5474.0' //, El. 5472.6'	
					Add	litional Gro	oundwater N				
	oth (6)	Į. I	. 1	rx -	10	Florith (fig.	Hanv	Data	Donth (E)	Litarion	D. r.
Dep	pth (fi)	Hoo	i) i	Da	ie	Depth (ft)	Heur	Date	Depth (fi)	Hour	Date

	Start	ed: 1/18/20	06		Rig T	ype: Strata Pro	be	Project	Well No.
777	Com	pleted: 1/18	8/2006		Drille	r: Louis Trujill	()	Former Aerex Refinery	G-3
2	Back	filled: 1/18	/2006		Weat	her:		Surface Elevation: 5481.0' Logged By: Lee Dalton	
\	orthing	g: 2080551.	69		Eastir	ng: 2678897.03		Location: Bloomfield, NM	
2 3 4 4 5	Groundwater Depth (ft.)	Graphical Lug Sample Taken	Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number		G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3" O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery  Visual Classification	ter Date 1/18/2006 WELL CONSTRUCTION
	<del>-</del>		· CS·		80		1.0	TY SAND (SM) - light brown, dry, fine to coarse sand, with quartzite gravels (subrounded, 1-2 cm). Et. 5480.0° AYEY SAND (SC) - light brown, dry to moist, fine grained sand, trace gravels, medium plasticity.	
			CS		287	G3-3'	3.6' Sl G 5.6' D	ck with strong odor at 2.5 to 2.9 and 3.4 to 3.6.  EL 5477.4'  TY SAND (SM) - gray, dry to moist, fine grained sand, with clay.  y to black with slight odor at 3.6 to 4 ft, low plasticity at 3.6 to 4.6 ft, non-plastic at 4.6 to 6.6 ft.  reasing clay content.  AYEY SAND (SC) - gray, moist, slight odor, fine grained sand, medium plasticity.  EL 5474.0'	
1	- - ⊊ - 0_		·CS·		12		F2 8.2'	CCLAY (CH) - gray, moist, no odor, trace fine sand, high plasticity.  El. 5472.8'  TY SAND (SM) - gray, wet, no odor, fine to medium sand (subangular to subrounded).	
					Total I	Depth 12.0'	D: 12.0'	reasing silt content.	

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date

	EINFE	ELDER		Soil Boring/Moni	itoring Well Log	Sheet I of
Started: 1/18/2006	ı	Rig Type: Strata Pro	he	Proje	ct	Well No.
Completed: 1/18/200	6 1	Driffer: Louis Trajillo	0	Former Aeres	G-4	
Backfilled: 1/18/2006	'	Weather: Easting: 2678947.03		Surface Elevation: 5481.2'		
Northing: 2080552.77				Location: Bloomfield, NM		
Backfilled: 1/18/2006	Penetration Resistance (Blows per foot) PID Heated		CLAN  3.0' Wood  SILTY  Color  6.4'  FAT (		noist, fine grained ounded, 1-2 cm).  o 3 ft with odor. El. 5478.2' ne to medium sand , with some odor.  El. 5474.8' lasticity, trace fine	Date 1/18/2006 WELL CONSTRUCTION
10cs		6.6	SILT:	YEY SAND (SC) - gray, moist, fi low plasticity, with some odor. Y SAND (SM) - gray, moist to we medium sand (subangular to subrecones at 8.6 to 8.8 ft and 9.2 to 9.2 elow 8.8 ft.	et, no odor, fine to counded).	
			12.0		El. 5469.2°	
		otal Depth 12.0				

### Additional Groundwater Measurements

Date

Schuteffer Inc., Copyright 3733/2006

ļ	Depth (ft)	 Hour	Date	
-		 		
Ц_		 	<u>i</u>	

Hour	Date

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1			
<b>#</b>			
<b>(2)</b>			
<b>36</b>			
<b>75</b>			
2			
<b>5</b>			
1 m			

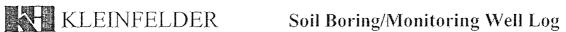
	ه صد سه		'EL			Soil Boring/Mon	normg vv	011 206	Sheet I of	
Started: 1/18/20	006		Rig T	ype: Strata Pro	ibe	Proje	Project			
Completed: 1/1	8/2006		Drille	r: Louis Trujill	0	Former Aere	x Refinery		G-5	
Backfilled: 1/18	3/2006		Weather:		Weather: Surface Elevation: 5482.1' Logged By: Lee Dalto				ee Dalton	
Northing: 2080554	.83		Easting: 2678998.78			Location: Bloomfield, NM				
Ī		=		**				Groundwate	?f*	
ater   Log	3.	H o H	ed Po	-		G - Grab Sample CS - 3.5" LD. Continuous Sampler SPT - 2" O.D. 1.38" LD. Tube Sample U - 3" O.D. 2.42" LD. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube	Depth (ft)	Hour	Date	
Depth (II.) Groundwai Depth (II.) Gruphical	1 36	tratic danc vs. pa	Heart Spac	ytica ole ber		U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube	7		1/18/2006	
Depth (II.) Groundwater Depth (II.) Graphical Log	Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number		^ NR - No Recovery Visual Classifica	tion	<del>'</del>	WELL CONSTRUCTIO	
					SI 1.0'	.TY SAND (SM) - light brown, dr subrounded, with quartzite grav	y, subangular to el (subrounded, 1	-A1 5481 11		
_	.cs.		\$3		$\land$	cm). AYEY SAND (SC) - green-brown sand, medium plasticity.		Λ		
-			143	G5-3'		ay intermix zone at 2 to 2.3 ft, some LTY SAND (SM) - light brown, mo		El. 5479.3' and.		
		,,			Wi	th clay at 2.8 to 3.2 ft and 3.6 to 3.3	8 ft, low plasticity			
-			63		5.6'			El. 5476.5'		
- 200	.CS				7.0'	TY SAND (SM) - light brown, mowith clay, low plasticity.	_	El. 5475.1'		
- //					FA	T CLAY (CH) - light brown, moist fine sand.	t, high plasticity, t	race		
- 2///		.,,	7.3		9.0! SH	LTY SAND (SM) - light brown, we		El. 5473.11 sand		
1, 1, 1, 1,	1 1		- 1			(subangular to subrounded).			ĺ	
0_	. C'S		7.0	,	Fe	w clay zones at 9.4 to 9.6 ft, 10.3 to ft, low plasticity.	10.5 ft and 11.8	to 12		
0_	. CS		7,8			v clay zones at 9.4 to 9.6 ft, 10.3 to				
-				Depth 12.0'	Fe <sup>-</sup>	v clay zones at 9.4 to 9.6 ft, 10.3 to		El. 5470.1'		
0 <u> </u>	CS			Depth 12.0'		v clay zones at 9.4 to 9.6 ft, 10.3 to				
	CS			Depth 12.0'		v clay zones at 9.4 to 9.6 ft, 10.3 to				
	CS			Depth 12.0'		v clay zones at 9.4 to 9.6 ft, 10.3 to				
	CS			Depth 12.0'		v clay zones at 9.4 to 9.6 ft, 10.3 to				
	CS				12.0'	v clay zones at 9.4 to 9.6 ft, 10.3 to				
O	l CS			Add	12.0'	v clay zones at 9.4 to 9.6 ft, 10.3 to ft, low plasticity.			Date	

# Soil Raring/Manitaring Well Lag Showther

1				<del></del>			***	lonito			
Star	rted: 1/18/2				ype: Strata I		Project V Former Acrex Refinery			Well No G-6	
	Completed: 1/18/2006 Driller: Louis Trujillo Backfilled: 1/18/2006 Weather:			jillo					<u> </u>		
				Surface Elevation: 5482		ogged By: L	ee Dalton				
orthin	ng: 2080552	1.09	T	£	ng: 2679046.7		Location: Bloomfield, N	M		Comment	
<u>.</u>	함	ن	Penetration Resistance (Blows per foot)	l =		Sample Type	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample		Depth (ft)	Groundw:	Date
r.) n.)		£ 25	16 m 16 m	ace ace	- - -	uple,	U - 3 " O.D. 2.42" I.D. Ring Sample	1 1	7.8	17020	1/18/2006
Croundwater Croundwater Doub (ft.)	Oraphical Lug	Sample Type	sista ows	PID Heated Headspace Reading, ppm	Analytical Sample Number	San	ST - 3" O.D. Thin-Walled Shelby Tub NR - No Recovery			<u> </u>	
క్ కేద్	i i	San	250	P.E. S.	San		Visual Class	sification			WELL CONSTRUCTI
		· CS· · ·		0.6		5.0° Clay of SANI  7.0° CLAY  8.5° Wet b	YEY SAND (SC) - light brosand, few quartzite gravel (medium plasticity.  YEY SAND (SC) - light brosand (subangular to subrounon-plastic.  Content decreasing down the DY FAT CLAY (CH) - red-plasticity, fine grained sand (YEY SAND (SC) - light bromedium sand (subangular telow 7.8 ft.  Y SAND (SM) - light brown (subangular to subrounded)	own, moist inded), low e section. brown, moist lo subround	, fine to mec  / plasticity to  oist, high  to wet, fine ded), non-pla	El. 5479.2' lium  El. 5477.7'  El. 5475.7' to astic.  El. 5474.2'	
_				Total	Depth 12.0'	Increa	sing silt content below 11 f	ft.		El, 5470,7'	
_						12.0	sing silt content below 11 f			El. 5470.7'	
Dej	րլի (մ.)	Ho	1)		Ad	12.0		ents	Depth (ft)	El. 5470.7'	Date

Depth (ft)	Hour	Date
1		

Depth (ft)	Hour	Date

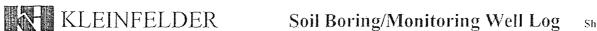


Started: 1/17/2006		Soil Boring/Moni			
·)	Started: 1/17/2006 Rig Type: Strata Probe		Project		
Completed: 1/17/2006			Former Acrex Refinery		
Backfilled: 1/17/2006	Weather:	Surface Elevation: 5481.6'	Logged By: Lee Dalton		
Forthing: 2080607.21	Easting: 2678797.28	Location: Bloomfield, NM			
		G - Grab Sample	Groundw	ater	
Log	Heated Ispace Ing. ppm yrical ple ple ple ple Sample Type	CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample	Depth (ft) Hour	Date	
Depth (ft.) Groundwat Depth (ft.) Graphical 1 Sample Taken Sample Ty Penetration Resistance (Blows pere	Spac spac ing.	U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube	9.5	1/17/2006	
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Taka Sample Type Penetration Resistance (Resistance	PID Heated Headspace Reading, ppm Analytical Sumple Number	NR - No Recovery Visual Classificati	ion	WELL	
3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	300 200 200			CONSTRUCTIO	
5 — CS		YEY SAND (SC) - light brown, digrained sand, with quartzite grave cm), medium plasticity.  Y SAND (SM) - yellow, dry to me sand (subangular to subrounded).  YEY SAND (SC) - light brown, me sand, medium plasticity. ocarbon staining at 6.6 to 8.2 ft, we are subrounded).  Y SAND (SM) - light brown, wet, (subangular to subrounded).	El. 5478.6'  Dist, fine to medium  El. 5475.1'  noist, fine grained  ith odor.  El. 5472.1'		

		Son Doring/Mon	toring wen Log	Sheet Fof I	
Started: 1/17/2006	Started: 1/17/2006 Rig Type: Strata Probe		Project		
Completed: 1/17/2006	Completed: 1/17/2006 Driller: Louis Trujillo		Refinery	14-2	
Backfilled: 1/17/2006	Weather:	Surface Elevation: 5481.1'	Logged By: Lee Dalton		
Northing: 2080607.47	Easting: 2678845.54	Location: Bloomfield, NM			
		G - Grab Sample	Groundwat	ter	
Log   1   1   2   2   2   2   2   2   2   2	Heated Ispanet	CS - 3.5" LD. Continuous Sampler SPT - 2" Q.D. 1.38" LD. Tube Sample	Depth (ft) Hour	Date	
h (ft. h	Heate space ing.	U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube	9	1/17/2006	
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Takou Sample Type Penetration Resistance Resistance (Blows per 1504)	PID Headed Headspace Reading, ppm Sample Number	NR - No Recovery  Visual Classificat	ion	WELL	
		2 1		CONSTRUCTION	
0 — CS. CS. CS. CS. CS. CS. CS. CS. CS. CS.	3.5' SILT 6.2 5.0' CLA' 4.1 8.0' Hydro SILT Wet b Fine t 7.5. Fine t	YEY SAND (SC) - light brown, digrained sand, medium plasticity.  Y SAND (SM) - light brown, moisand (subangular to subrounded).  YEY SAND (SC) - light brown, misand (subangular to subrounded), plasticity.  Occarbon staining at 7.5 ft. no odor.  Y SAND (SC) - gray, moist to we few clay zones, with odor.  Delow 9 ft.  To medium sand at 8 to 12 ft and 1.  To coarse sand at 12 to 15 ft.  The same of the	El. 5477.6' st, fine to medium  El. 5476.1' noist, fine to medium , medium to low  El. 5473.1' t, fine to coarse sand,		
	Additional Gr	oundwater Measurements			
			<b>1</b>	-	
Depth (ft) Hour	Date Depth (ft)	Hour Date	Depth (ft) Hour	Date	
	i + +	1 1	1 1	1 -1	

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Started: 1/1						Soil Boring/Mon	morms we	en Log	Sheet Lo
<i>,</i>	Started: 1/17/2006 Rig Type: Strata Probe		Project			Well No.			
Completed:	Completed: 1/17/2006 Driffer: Louis Trujillo		Former Aerex Refinery		H-3				
Backfilled:	1/17/2006		Weath	er:		Surface Elevation: 5481.1'	Logged By: Le	e Dalton	
orthing: 2080	606.75		Eastin	g: 2678896.32		Location: Bloomfield, NM			
- th		OI.)	_		idie	G - Grab Sample		Groundwate	
l Log	ype	S 2 5 -	2 c a		Sample Type	CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample	Depth (ft) 9.1	Hour	Date 1/17/2006
Deptin (11.) Groundwater Deptih (11.) Graphical Lug	Sample Taken Sample Type	stant ws p	Ing.	lytica ple iber	Samp	U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shalby Tube NR - No Recovery			1717-2000
Groundwater Depth (ft.) Graphical Log	Sam	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number		Visual Classifica	tion		WELL CONSTRUCTIO
- V	CS				1.7' SILT  4.0' CLA' Hydro  7.8' SILT  9.0' SILT Change	YEY SAND (SC) - light brown, few quartzite gravels (subrounder plasticity.  Y SAND (SM) - light brown, dry sand.  YEY SAND (SC) - light brown, grained sand, medium plasticity ocarbon staining at 5 ft, down the odor.  Y SAND (SM) - gray with hydrough to wet, fine to medium sand, no YEY SAND (SC) - gray, moist to sand, medium plasticity. Y SAND (SM) - gray, wet, fine to (subangular to subrounded), ge in color to light brown below	ed, 1-2 cm), medium  to moist, fine grain  moist to wet, fine ough the section, n  carbon staining, medor.  wet, fine grained  medium sand  10.1 ft.	1. 5473.3' poist	
_ الحائل			Total D	Pepth 12.0'	12.0'		E		
_ lidid			Total D				E		
_ Ldid			Total D			oundwater Measurements	E		
Depth (ft)	He		Total D	Addi		oundwater Measurements	Depth (th)	Hour	Date



Started: 1/18/2					Soil Bor		(_ <del>)</del>	-	Sheet 1 o
	Started: 1/18/2006 Rig Type: Strata Probe Completed: 1/18/2006 Driller: Louis Trujillo		Project Former Aerex Refinery		Well No.				
Completed: 1/					11-4				
Backfilled: 1/1	18/2006	Weather:			Surface Eleva	ition: 5481.7'	Logged By: I	_ee Dalton	
erthing: 208060	08.15	Easting: 267	8944.36		Location: Blo	omfield, NM			
5/1				34.	G - Grab Sample			Groundwate	
L Collect	2 3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Barrier F		Sample Type	CS - 3.5' I.D. Continu SPT - 2" O.D. 1.38" I. U - 3 " O.D. 2.42" I.D.	ous Sampler D. Tube Sample	Depth (ft) 8.5	Hour	Date 1/18/2006
Groundwater Depth (R.) Graphical Log	Sample Taken Sample Type Penetration Resistance (Blows ner fo	Fleat Ispac Jytics lytics	ple Per	Sam	ST - 3" O.D. Thin-Wa NR - No Recovery	led Shelby Tube	0.5		17702_000
Graphical Log	Sample Taken Sample Type Penetration Resistance (Blows ner foot)	PID Heated Headspace Reading, ppm	Sample Number			isual Classifica	ition		WELL CONSTRUCTION
- - - - - - - -	.CS.		8.	Black O' Gray SILT' Color FAT ( Color FAT ( Vet b) Hydro	with strong odo with strong odor Y SAND (SM) - sand (subangula change to yellor change to gray CLAY (CH) - gr trace fine sand, change to light	or and wood fiber from 2.5 to 3 figray, moist, no r to subrounded when 3.5 to 5 from 5 to 5.3 ft. ay, moist, no thydrocarbon stabrown from 6 to gray, moist to when the from 8 to 11.5 fro	odor, fine to med l). ft. dor, high plasticity ining. o 8 ft. wet, no odor, fine orounded).	El. 5478.7' itim  El. 5476.4'	
			·	onal Gre	oundwater M	easurements Date	Depth (fi)		

12.

THE TABLE IN THE PERSON OF THE		Son Doring/Mon		Sucction	
Started: 1/18/2006	Completed: 1/18/2006 Driller: Louis Trujillo		Project Former Aerex Refinery		
Completed: 1/18/2006					
Backfilled: 1/18/2006	Weather:	Surface Elevation: 5482.5'	Logged By: Lee Dalton		
Northing: 2080607.28	Easting: 2678989.36	Location: Bloomfield, NM			
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Takes Sample Type Penetration Resistance (Blows per foot)	n lype	G - Grab Sample CS - 3.5" LD, Contiguous Sampler	Groundwate  Depth (ft) Hour	Date	
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Taken Sample Type Penetration Resistance (Blows per foo	PID Heated Headspace Reading, ppm Analytical Sample Number	SPT - 2" O.D. 1,38" I.D. Tube Sample U - 3 " O.D. 2,42" I.D. Ring Sample	9	1/18/2006	
Depth (ft.) Groundwar Depth (ft.) Sample Taken Sample Ty Penetratior Resistance (Blows per	PID Headspuce Reading, pr Analytical Sample Number Sample	ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery			
Sar Ser Ser Ser Ser Ser Ser Ser Ser Ser Se	Nam Reger	Visual Classificat	ion	WELL CONSTRUCTION	
0 —					
	0.7' CLA	YEY SAND (SC) - light brown, r sand (subangular to subrounded)	noist, fine to coarse 5481.8'		
- 7////1000	2.3.	(quartzite, subrounded, 1-3 cm).	medium plasticity.		
_ ///// cs	CLA	YEY SAND (SC) - light brown, n sand (subangular to subrounded)	noist, fine to medium		
	Clay	content deccreasing down the sec	tion.	Per dila	
- /////	3.6		El. 5478.9'	***	
_ [[]]	SILT	Y SAND (SM) - yellow, moist, fi			
		(subangular to subrounded).			
5 —	1.5				
cs					
	7.0'		El. 5475.5'		
-	CLA	YEY SAND (SC) - light brown, n			
- (////		sand, medium plasticity.			
	9.0'		El. 5473.5'		
	SILT	Y SAND (SM) - light brown-gray	, wet, no odor, fine		
10cs		to medium sand (subangular to su			
	Color	change to light brown below 10	It.		
-					
	Total Depth 12.0'		El. 5470.5'		
	Additional Gr	oundwater Measurements			
		1 11 12	D. data		
Depth (ft) Hour	Date Depth (ft)	Hour Date	Depth (ft) Hour	Date	

<sub>63</sub> S	tarted: 1/18/2006	Rig Type: Strata Probe	Proje		Well No.
Date	Completed: 1/18/2006	Driller: Louis Trujillo	Former Aere	x Refinery	H-6
B	ackfilled: 1/18/2006	Weather:	Surface Elevation: 5483.2'	Logged By: Lee Dalton	
Nort	hing: 2080608.51	Easting: 2679047.09	Location: Bloomfield, NM		
Depth (ft.)	Craphical Log Sample Taken Sample Type Peretration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm Analytical Sample Number Sample	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" C.D. 1.38" I.D. Tube Sample U - 3 " C.D. 2.42" I.D. Ring Sample ST - 3" C.D. Thin-Walled Shelby Tube NR - No Recovery  Visual Classificat	Groundwa    Depth (ft)   Hour     S.8       tion	Date 1/18/2006 WELL CONSTRUCTIO
5	□ CS · · · · · · · · · · · · · · · · · ·	SILT  1.0'  1.0'  5'  CLA'  SILT  3.3  6.5'  FAT  CLA'  8.5'  SILT  Wet a	Y SAND (SM) - light brown, dry (subangular to subrounded), few subrounded. I cm). YEY SAND (SC) - light brown, of grained sand, medium plasticity. Y SAND (SM) - light brown, mo sand (subangular to subrounded)  CLAY (CH) - brown, moist, high sand. YEY SAND (SC) - same as 1 to 1  Y SAND (SM) - gray, moist to w medium sand (subangular to sub zones.  It 8.8 ft change to light brown from 9 to	gravels (quartziton, 5482.2'  EL 5481.2'  dry to moist, fine  iist, fine to medium  El 5476.7'  a plasticity, trace fine  1.5 ft.  El 5474.7'  ret, no odor, fine to rounded), few clay	CONSTRUCTIO

## Additional Groundwater Measurements

Depth (ft)	Hour	Date

Meinfelder inc., Cept right (413/2006

Depth (fi)	Hour	Date

-	Depth (ft)	Hour	Date
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	水	K	LE	INF	FEL	DER		Soil Boring/Moni	itoring W	ell Log	Sheet 1 of 1
	Starte	ed: 1/17/20	006		Rig T	ype: Strata Pro	obe	Proje	ct		Well No.
Date	Com	pleted: 1/1	7/2006		Drille	r: Louis Trujill	lo	Former Aeres	Refinery		1-1
	Backt	filled: 1/17	7/2006		Weat	her:		Surface Elevation: 5482.2'	Logged By: Le	e Dalton	
N	orthing	g: 2080665	.93		Eastin	ng: 2678798.03		Location: Bloomfield, NM			
		Sh.		(toot)	_		adx	G - Grab Sample CS - 3.5" LD, Continuous Sampler		Groundwat	
,	. Her	I Lo	od k	E 25	red Ppn	75	Sample Type	SPT - 2" O.D. 1.38" I.D. Tube Sample	Depth (ft) 7.5	Hour	Date 1/17/2006
9	Groundwath Church Chundwat	Sam	U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery								
		Gray	Sam	Res.	E = 5	Sam		Visual Classificat	ion		WELL CONSTRUCTION
-		·		-L	I	.,					
							CLA	YEY SAND (SC) - light brown, c trace quartzite gravel (subrounde			
	-				5.0			plasticity.	a, rem, meaan		
	_		· CS-	ļ		,					
	-				4,4						
			<b></b>					77.04.2722.702.6		EL 5478.21	
_ ا					2.7		SILI	Y SAND (SM) - yellow, dry to m sand.	oist, line gramed		
3	-										
			·CS	ļ			(5)		r	1 6475 7	
					0.9			YEY SAND (SC) - light brown, n		EI. 5475.7'	
	_ _						7.5'	sand, medium plasticity.	F	EL 5474.7'	
	-	11111	ļ				8.0' SILT	Y SAND (SM) - light brown, wet (subangular to subrounded).	, fine to medium \$	atmadi 74.2'	
					0.3		SAN	DY FAT CLAY (CH) - light brow	n, moist, high		
	_						9.5'	plasticity, fine grained sand.		El. 5472.7'	
1	0		.CS				CLA	YEY SAND (SC) - light brown, w sand (subangular to subrounded)	et, fine to medium low plasficity.	n	
	_				0,6		11.0'		E	El. 5471.2'	
								Y SAND (SM) - light brown, wet (subangular to subrounded).			
	_		1	<u></u>	Total l	Depth 12.0'	12.0	(Subangular to Subtounded).		El. 5470.2'	ŀ
						F 7 2.0					
1											

## Additional Groundwater Measurements

Kwinteller fac. Copyright 37582196

	Depth (fi)	Hour	Date
-			
ĺ			

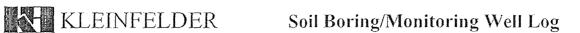
Depth (ft)	Hour	Date

A.

	於	K	LEIN	FELD	ER		Soil Bo	ring/Mo	nitoring V	Vell Log	Sheet Lof 1	
	Start	ed: 1/17/	2006	Rig Type:	Strata P	robe		Pro	ject		Well No.	
Dafe C	Com	pleted: 1	17/2006	Driller: L	ouis Truj	jillo		Former Aei	ex Refinery		1-2	
	Back	filled; 1/	17/2006	Weather:			Surface Ele	vation: 5481.6'	Logged By:	Lee Dalton		
	Sorthing	g: 208060	0.83	Easting: 2	678847.6	1	Location: B	loomfield, NM				
***************************************	Depth (It.) Groundwater Depth (It.)	Graphical Log	Sample Type Sample Type Penetration Resistance	(Blows per 1001) PID Heated Headspace Reading, ppm	Analytical Sample Number	Sample Type	□ SPT - 2" O.D. 1.38" I.D. Tube Sample					
-	000	U	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	S E E E	マガス			Visual Classific	cation	<u></u>	WELL CONSTRUCTION	
	)		CS	2.8	.12+10'	3.6' SILT  6.0' CLA' Gray 8.2' SILT	Y SAND (SM) sand (subangular to Y SAND (SM) (subangular to Y SAND (SM) (subangular to Y SAND (SM) (subangular to Y FAT CLAY plasticity, fine	gravel (subrounder yellow, dry to lar to subrounder to subrounder to subrounded), store yellow subrounded), store yellow staining at 6.4 ft, gray, wet, fine subrounded), store yellow staining classes to silty fine (CH) - light brounder to yellow y	ears-up to yellow a to coarse sand.	EI. 5478.0' dium  EI. 5475.6' ed  EI. 5473.4'		
				1.000.000.000	Ad	ditional Gre	oundwater N	<b>1</b> easurement	s			
	Depi	ıh (ft)	Hour	Date		Depth (ft)	Hour	Date	Depth (ft)	Hour	Date	
					1  -							

動物を

Starte								~	-
	ed: 1/17/20	006		Rig 7	Гуре: Strata Pi	obe	Proje	Well No	
Com	pleted: 1/1	7/2006		Drill	er: Louis Traji	llo	Former Aere	x Refinery	1-3
Back	filled: 1/17	/2006		Weat	ther:		Surface Elevation: 5482.2'	Logged By: Lee Dalto	n
erthing	;: 2080665	.91		Easti	ing: 2678896.41		Location: Bloomfield, NM		
Groundwater Depth (ft.)	Graphical Log	Sample Type	Penetration Resistance (Blows per foot)	PID Heated Hendspace Reading, ppm	Analytical Sample Number	adál aldung	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3" O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery	Depth (fi) Hou	ur Date 1/17/200
క రేది	5 \$	San	15 % E	12 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	San		Visual Classifica	tion	WELL CONSTRUCT
5		·CS·		2.2	Depth 16.0'	2.7' 3.2' CLA SILT  6.2' CLA Gray Wet  9.0' CLA  12.5' SILT	Y SAND (SM) - light brown, dry (subangular to subrounded).  YEY SAND (SC) - light brown, medium plasticity.  Y SAND (SM) - yellow, dry to medium plasticity.  YEY SAND (SC) - light brown, grained sand, medium plasticity, hydrocarbon staining begining at below 7.7 ft.  YEY SAND (SC) - gray, wet, find (subangular to subrounded), low odor.  Y SAND (SM) - gray, wet, fine to (subangular to subrounded), slight brown plasticity, fine grained sand.	El. 5479.5' dry, fine grained sækc.479.0' moist, fine to medium.).  El. 5476.0' moist to wet, fine to medium sand plasticity. strong  El. 5469.7' o medium sand ht odor.  El. 5467.2'	
					N.d.	litional Gr	oundwater Measurements		
Depti					Ado	litional Gr	oundwater Measurements	Depth (ft) Hour	



														0110011011	
່ຍ	Star	ted: 1/17	7/200	6		RigT	ĭype: Strata	Probe			Pro	ojec	t		Well No.
Date	Com	pieted:	1/17/.	2006		Drille	er: Louis Tru	ijillo			Former Ae	rex	Refinery		1-4
-	Back	cfilled: 1	/17/2	006		Weat	her:		Surface Elevation: 5				Logged By: I	Lee Dalton	
N	orthin	g: 20806	66.89	)		Easti	ng: 2678950.	).46 Location: Bloomfield, NM							
		th			(fe	_			v.n.c	G - Grab Sample				Groundwat	······
-	, afer	Lo.	5	Cype	on Se or fe	red Ppu	=		Sample Type	CS - 3.5" I D. Cont SPT - 2" O.D. 1.38	" I.D. Tube Sample		Depth (ft)	Hour	Date 1/17/2006
( )) dima()	and,	Graphical Log	12/2	Sample Type	strati istam ivs p	Hea dspa ding	lytic ple per		Saun	ST - 3" O.D. Thin-\ NR - No Recovery	D. Ring Sample Valled Shelby Tube				
	Groundwater Depth (ft.)	Grad	Samp	Sam	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number				Visual Classifi	cati	) <b>n</b>		WELL CONSTRUCTION
		.1				1	L								CO. W. TALLY TAKES
0	_				***************************************				CLA'	YEY SAND (S	SC) - light brow	n, m	oist, fine to me	dium	
	_		<b>71</b>  -			6.1				sand (subangu	ilar to subround	ed).	low plasticity t	0	
				cs						non placeres					
	_			( S											
	-	14/4	4][-			1,5		3.0	CH T	V CANID (CM	) - yellow, mois	+ (0. )	vat fina to mad	El. 5479.7'	
									SILI	sand (subangu	ilar to subround	ed).	vet, ime to met	aum	
5						2.3									
				cs											
				(3			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	6.5'						El. 5476.2'	
	_		<b>]]</b> [			1.3					C) - light brown low to medium				
										_		-			
	_		7						Gray	hydrocarbon s	taining at 7.9 ft,	slig	ht odor,		
	_		311-			5.6									
1	0 <u> </u>		AII.	cs.				10.0	,					El. 5472.7'	
^					,				SILT	Y SAND (SM)	- gray, wet, fin	e to	medium sand		
	-	111				2.4				(subangular to	subrounded), s	tron	g odor.		
			Ш.			. , . ,									
											staining at 12 to	13 1	ft, disappears b	elow	
						1.2				13 ft.					
	_		Ш.	cs.	<i>,</i>	, ,									
		m						14.5		NI PAT CLAS	I (CIT) V-E(I			El. 5468.2'	
1:	5		<b>3</b>   -		·	[,]		``-	SAM	grained sand,	Y (CH) - light bi high plasticity.	FOWE	i, wet to moist,	ine	
								16.0						El. 5466.7'	
						Total !	Depth 16.0'								
								<b></b>							
							۸۰	ldition	al Gr	nundwater!	Measuremen	fc.			
							AC	.a.uon	ai Off	Juitawatel I	nousui einei l	w			J.
	Dep	oth (ft)		Hou	ır	D:	ite [	Depth	r(ft)	Hour	Date		Depth (ft)	Hour	Date
-			1												
L										<u> </u>				L	<u> </u>

Sheet Lof 1

			سدسا	TIAT	سلاسلا			Son boring/mon	willing W	CHILLOS	5 Sheet	1 (	
• `	Start	ed: 1/17/20	006		Rig T	ype: Strata Pro	obe	Proje			Well I	No.	
Date	Com	pleted: 1/1	7/2006		Drille	r: Louis Trujil	lo	Former Aere	Former Aerex Refinery				
<u>.</u>	Back	filled: 1/17	/2006		Weat	her:		Surface Elevation: 5483.2'	Logged By: Le	e Dalton			
Νe	rthing	g: 2080669	.02		Eastin	ng: 2678999.12		Location: Bloomfield, NM					
			I	Τg			ă.	G - Grab Sample		Groundwa	iter		
_	ler	Log	3	ر . ي ا	р., ud.		1 h	CS - 3,5" LD. Continuous Sampler SPT - 2" O.D. 1,38" I.D. Tube Sample	Depth (ft)	Hour	Date		
Ξ	G (Fig.	Te la	5	arrice s pe	parce	tical le er	du a	U - 3 ° O.D. 2.42° I.D. Ring Sample ST - 3° O.D. Thin-Walled Shelby Tube	10		1/17/20	)06	
Denth (ft.)	Groundwater Depth (fc.)	Graphical Log	Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number		NR - No Recovery Visual Classificat	<u>                                     </u>		WELL		
۵	۵۵_	0 0	S	236	프로즈	∠%Z		Visual Classifica	10n	<u> </u>	CONSTRUC		
)													
,							CLA	YEY SAND (SC) - light brown, o	lry to moist, fine to	)			
	-				7.0			medium sand (subangular to sub	rounded), with				
								quartzite gravel (subrounded, 1-) to non-plastic.	z cm), iow piastici	ıy	}		
	_		·CS	·		,		to non plastic.					
							3.0"		F	EL 5480.2'			
	-	7774		1	3,0			TY SAND (SM) - yellow, moist to					
			J					sand (subangular to subrounded)	ļ.				
5					4.0					İ			
										l			
	۰		-CS	······							1		
			•		2.2					-			
	_									-			
	_		<b></b>				8.0'			1. 5475.2'			
							SAN	DY FAT CLAY (CH) - brown, m					
	_				1.8			sand, (few areas of light gray hydodor), high plasticity.					
							9.5'	Y SAND (SM) - light brown, wet		1. 5473.7'			
1(	(C_ \(\sigma\)		·CS.				SILI	(subangular to subrounded).	, me to medium s	and			
					3.4		Wet	at 10 ft.					
	-				2,4								
	_						12.0		E	1. 5471.2'			
	-				Total I	Depth 12.0'							

## Additional Groundwater Measurements

Depth (it)	Hour	Date

Depth (ft)	Hour	Date
		···

Depth (fi)	Hour	Date

Carried &

# KLEINFELDER Soil Boring/Monitoring Well Log Sheet 1 of 1

									John Dormg/montoring // en 20					once in i
41	Start	ed: 1/17/2	1006		Rig T	'ype: Strata Pr	obe			Pre	ojec	et e		Well No.
Date	Com	pleted: 1/	17/2006		Drille	er: Lonis Troji	llo		]	Former Ae	rex	Refinery		1-6
	Back	filled: 1/1	7/2006		Weat	her:			Surface Elev	ation: 5483.8		Logged By: I	ee Dalton	
N	rthin	g: 208066	7.03	•	Easti	ng: 2679048.13			1	oomfield, NM	<u>-</u>	5.7		····
-		] [	T	=		1	T	±			7		Groundwat	er
	le r	. fg	od	l (bod)	- E			<u>.</u>	CS - 3.5" I.D. Contin	uous Sampler LD Tube Sample		Depth (fi)	Hour	Date
9	1	cal .	F 5	ation mee	cate pace	ical e er		Sample Type	G - Grab Sample CS - 3.5" I.D. Contic SPT - 2" O.D. 1,38" U - 3 " O.D. 2,42" I.I ST - 3" O.D. Thin-V	D. Ring Sample		11		1/17/2006
Depth (f) 1	Groundwater Depth (ft.)	Graphical Log	Sample Taken Sample Type	Penetration Resistance (Blows per I	PID Heated Headspace Reading, ppm	Aualytical Sample Number	-	ž.	NK - NO Recovery					WELL
c	00	0	Š Š	530	Z I Z	< % Z	<u> </u>		······	Visual Classifi	cati	on		CONSTRUCTION
0		1777 3 3 3 3		1		1								
								SILT	Y SAND (SM)	- light brown,	dry,	fine to medium quartzite grave	sand	
		1777	<u> </u>		1.3	. , , , ,	1.0		(subrounded, I	-3 cm).		-	$\Box$	
			.cs.					CLA'	YEY SAND (S	<ul><li>C) - light brow</li></ul>	n, di	y to moist, fine		
							2.5'		grained sand, v				El. 5481.3'	
	-		<u></u>		315	16-3'	-		YEY SAND (S medium plastic		ist,	fine grained san	d,	
									meanin piasin	.ny.			F1 - 1 - 5 - 11	
						4.2'	Few z	ones of hydroc	arbon staining	at 4	ft, no odor.	El. 5479.6'		
5					22	, , , , , , , , , , , ,			Y SAND (SM) sand.	- light brown,	mois	st to dry, fine gr	ained	
									Sanu.					
			· GS.											
					12		7.0						El. 5476.8'	
			Ĭ						YEY SAND (S) medium plastic		oist, i	fine grained san		
	-		H	ļ			8.0'	Few z	ones of hydroc	arbon staining	at 8	ft, no odor.	El. 5475.8'	
			•		7.8			CLAY	YEY SAND (S	C) - brown, we	t, fin	e to medium sa	nd,	
	_				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				medium plastic	eny.				
10	)		.cs	ļ		*****	1							
	57													
	<del>-</del> X	<i>[[]</i>			5,7		11.5'						El. 5472.3'	
	_		<u> </u>	L		D . 1 12 01	12.0	SILTY	Y SAND (SM)	- light brown,	wet (	(saturated), fine	Rd. 5471.8'	ŀ
					lotal	Depth 12.0'	\		medium sand (	subangular to s	SUDIC	nunded).		
														ļ
														-
												· · · · · · · · · · · · · · · · · · ·		
						۸۵۰	lition	al Gr	oundwater M	Teasuremen	te			
						Add	шиоп	ai Of (	Junuwater IV	ıvasın emen	เร			
Γ	Dept	th (ft)	Ho	ur T	Di	ite	Depth	(fj)	Hour	Date		Depth (ft)	Hour	Date
													***************************************	
L												L		



	006			ype: Strata Pro		Proje	ct		Well No.
Completed: 1/1	17/2006		Drille	r: Louis Trujill	lo	Former Aere	Kelinery		J-1
Backfilled: 1/1	7/2006		Weat	her:		Surface Elevation: 5482.8'	Logged By: L	ee Dalton	
orthing: 2080721			Eastin	ıg: 2678797.82	,	Location: Bloomfield, NM	·		
L 방		(Joot)	8		al i	G - Grab Sample CS - 3.5" LD, Conlinuous Sampler	Depth (ft)	Groundwat Hour	er Date
al Cale	1. G	ies Pet I	ated ace s. Pp	<u> </u>	adá), addureS	SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3 " O.D. 2.42" I.D. Ring Sample	7.5		1/17/2006
Groundwater Depth (ft.) Gruphical Log	Sample Type	Penetration Resistance (Blows per faot)	PID Heated Headspace Reading, ppm	Analytical Sample Number	Sam	ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery			
င်းညီ င် <u>ပ</u>	Sar	25 E	E 5 5	Sur A		Visual Classificat	ion		WELL CONSTRUCTION
					SILT	Y SAND (SM) - light brown, dry (subangular to subrounded), som	, fine to medium : le quartzite eravel	sand	
- ////			1.6			(subrounded, 1 cm).	· -	21.5401.0	
- 1///	. CS:				CLA	YEY SAND (SC) - light brown, ograined sand, trace quartzite grav	iry to moist, tine /el (subrounded, l		
						cm), medium plasticity.	(		
-			1,3						
-				*********				}	
			3.1.						
- ////			3,1.		5.5'			EI. 5477,3'	
- 354	· CS· ·				SILT	Y SAND (SM) - yellow, dry to m sand (subangular to subrounded)	oist, fine to medi	ım	
			0.7			vane (variangular te successimilar)			
					7.5'	SALES OF ON ANY COSTS. If A 1		El. 5475.3'	
- ////						DY FAT CLAY (CH) - light brow plasticity, fine grained sand.	m, wel to moist, i	ngh	
_ ////	,	. ,				r			
					9.8'			El. 5473,0'	
- 7///	· CS		•••••	, , , , , , , , , , , , , , , , , , ,	CLA	YEY SAND (SC) - light brown, v	et, fine to mediu	n	
- ////			0,4			sand (subangular to subrounded)	-		
					11.4'	Y SAND (SM) - light brown, wet		El. 5471.4'	
_ [.1:1:11	L1	1	Total I		12.0 0.0.	(subangular to subrounded).		CF: 5470.8	ı



Diritor: Louis Trajillo   Driltor: Louis T		ЩK	LE	INF	FEL	DER		Soil Boring/Mon	itoring W	Vell Log	Sheet 1 of			
Surface Elevation: 5483.0'   Logged By: Lee Dalton	Star	ted: 1/17/20	006		Rig T	ype: Strata Pro	obe	Proje	ect					
Easting: 267889,88   Location: Bloomfield, NM   Easting: 267889,88   Location: Bloomfield, NM   Easting: 267889,88   Location: Bloomfield, NM   Easting: 267889,88   Location: Bloomfield, NM   Easting: 267889,88   East	Cor	npleted: 1/1	7/2006		Drille	er: Louis Trujil	16	Former Aere	x Refinery		J-2			
Signature   Section   Sample   Section   Sample   Section   Sect	Bac	kfilled: 1/17	7/2006		Weat	her:		Surface Elevation: 5483.0'	Logged By: I	ee Dalton				
Fig. 1 Section 1 Section 2 Section 3 Section 2 Section 2 Section 2 Section 2 Section 2 Section 2 Section 2 Section 2 Section 2 Section 2 Section 2 Section 2 Section 3 Section 2 Section 2 Section 2 Section 2 Section 3 Section 3 Section 2 Section 3	orthi	ıg: 2080721	.25		Easti	ng: 2678859.88		Location: Bloomfield, NM						
SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).   SILTY SAND (SM		z.h		(t) of	_		ad c	G - Grab Sample			<del></del>			
SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), some quartzite gravels (subrounded, 1-2 cm).  CS. 2.0° E1. 5481.0°  CLAYEY SAND (SC) - light brown, dry, fine grained sand, with silt.  5.0° E1. 5478.0°  SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).  CS. 3.0. 7.5° E1. 5475.5°  SANDY FAT CLAY (CH) - brown, moist, fine grained 8.5° sand, high plasticity. E1. 5474.5°  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium; 1.5473.5° plasticity.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  Total Depth 12.0° E1. 5471.0°  Total Depth 12.0°	rater :		Lype I	E 8 E	ed S.	777		SPT - 2" O.D. 1.38" I.D. Tube Sample		Hour	~ <del> </del>			
SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), some quartzite gravels (subrounded, 1-2 cm).  CS.	Groundwal	Phic I	il di	istan istan	Head ding	Jytic nple nber	Sam	ST - 3" O.D. Thin-Walled Shelby Tube.						
SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), some quartzite gravels (subrounded, 1-2 cm).  CS.	Groundwater	5 3	Sam	25 E	PID Hea Rea	Sam								
(subrounded, I-2 cm).  CS 2.0° El. 5481.0°  CLAYEY SAND (SC) - light brown, dry, fine grained sand, with silt.  1.7. SO El. 5475.5°  SANDY FAT CLAY (CH) - brown, moist, fine grained sand (subangular to subrounded).  8.5° SANDY FAT CLAY (CH) - brown, moist, fine grained sand, high plasticity.  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium[1, 5473.5° plasticity.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  1.7. SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).								-						
CS 2.0"  CLAYEY SAND (SC) - light brown, dry, fine grained sand, with silt.  5.0"  SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).  CS 2.0"  SANDY FAT CLAY (CH) - brown, moist, fine grained El. 5475.5"  SANDY FAT CLAY (CH) - brown, moist, fine grained El. 5474.5"  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), mediungl. 5473.5" plasticity.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  1.7.  Total Depth 12.0"  Total Depth 12.0"  El. 5471.0"					[,]		SIL	(subangular to subrounded), son	, fine to medium ne quartzite grave	sand els				
CLAYEY SAND (SC) - light brown, dry, fine grained sand, with silt.  11.7. 5.0' El. 5478.0'  SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).  12.5' SANDY FAT CLAY (CH) - brown, moist, fine grained sand, high plasticity.  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium sand (subangular to subrounded), medium sand (subangular to subrounded).  12.0' El. 5471.0'  Total Depth 12.0'  Total Depth 12.0'			Ce				2.0'	.,						
SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).  7.5' SANDY FAT CLAY (CH) - brown, moist, fine grained sand, high plasticity. CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium sand (subangular to subrounded).  CS. SILTY SAND (SM) - hight brown, wet, fine to medium sand (subangular to subrounded).  Total Depth 12.0'  Total Depth 12.0'									dry, fine grained	sand,				
SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).  7.5'  SANDY FAT CLAY (CH) - brown, moist, fine grained 8.5' sand, high plasticity.  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium sand (subangular to subrounded), medium sand (subangular to subrounded).  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  Total Depth 12.0'  Total Depth 12.0'	-				5,0			with silt.						
SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).  7.5'  SANDY FAT CLAY (CH) - brown, moist, fine grained 8.5' sand, high plasticity.  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium sand (subangular to subrounded), medium sand (subangular to subrounded).  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  Total Depth 12.0'  Total Depth 12.0'														
SILTY SAND (SM) - yellow, dry, fine to medium sand (subangular to subrounded).  7.5'  SANDY FAT CLAY (CH) - brown, moist, fine grained 8.5' sand, high plasticity.  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium sand (subangular to subrounded), medium sand (subangular to subrounded).  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  Total Depth 12.0'  Total Depth 12.0'	_		]											
(subangular to subrounded).  7.5'  SANDY FAT CLAY (CH) - brown, moist, fine grained 8.5' sand, high plasticity.  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium£1. 5473.5' plasticity.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  Total Depth 12.0'  Total Depth 12.0'  El. 5471.0'	<del></del>	[44]			1.7			CV SAND (SM) - vellow day fine	to madium cand					
3.0.  7.5'  SANDY FAT CLAY (CH) - brown, moist, fine grained 8.5' sand, high plasticity.  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium sand (subangular to subrounded).  CS.  Total Depth 12.0'  Total Depth 12.0'  El. 5471.0'  Total Depth 12.0'			Ċs.				SILI		, to median sand					
SANDY FAT CLAY (CH) - brown, moist, fine grained  8.5' sand, high plasticity.  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium sand (subangular to subrounded).  CS.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  Total Depth 12.0'  Total Depth 12.0'	_		100											
SANDY FAT CLAY (CH) - brown, moist, fine grained 8.5' sand, high plasticity. EL 5474.5'  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), mediumel. 5473.5' plasticity.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  12.0' EL 5471.0'  Total Depth 12.0'	-				3.0	· 	75'			E1 5475 5'				
8.5' sand, high plasticity.  CLAYEY SAND (SC) - brown, moist to wet, fine to medium sand (subangular to subrounded), medium sand (subangular to subrounded).  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  Total Depth 12.0'  Total Depth 12.0'  El. 5471.0'							SAN	DY FAT CLAY (CH) - brown, m	oist, fine grained	L1. 5473.3				
GS. 9.5' medium sand (subangular to subrounded), medium [1.5473.5' plasticity.  SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  12.0' El. 5471.0'  Total Depth 12.0'			1				8.5'	sand, high plasticity.						
SILTY SAND (SM) - light brown, wet, fine to medium sand (subangular to subrounded).  12.0'  Total Depth 12.0'  Total Depth 12.0'	-				0.6	************		medium sand (subangular to sub	to wet, fine to rounded), mediu	ŒL 5473.5'				
Total Depth 12.0'  El. 5471.0'	)		. CS				SILT	Y SAND (SM) - light brown, wer	, fine to medium	sand				
Total Depth 12.0'					1.7			(subangular to subrounded).						
Total Depth 12.0'							12.01			T1 547) 01				
			!		Total I	Denih 12 0'	12.0			El. 3471.0°	1			
	-				Total I	Depth 12.0'	12.0°			El. 5471.0'	!			

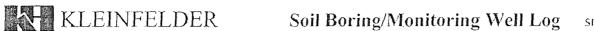
## **Additional Groundwater Measurements**

Depth (ft)	Hour	Date

Meinledge Inc., Copyright 3/18/2000

	Depth (ft)	Hour	Date
Ì			

Depth (ft)	Hour	Date



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											Sheet I
Start	ted: 1/17/2	006		Rig T	ype: Strata Pri	ibe		Pro	ject		Well No
Com	npleted: 1/1	7/2006	***************************************	Drille	er: Louis Trujil	lo		Former Aer	ex Refinery		J-3
Back	kfilled: 1/17	7/2006		Weat	her:		Surface Elev	ation: 5483.2'	Logged By:	Lee Dalton	
orthin	ng: 2080714	1.22		Easti	ng: 2678896.77			oomfield, NM		***************************************	
Groundwater Denth (ft.)	Ť	Sample Type	Perietration Resistance (Blows per foot)	=		Sample Type	G - Grab Sample CS - 3.5" I.D. Contin SPT - 2" O.D. 1.38" U - 3" O.D. 2.42" I.E ST - 3" O.D. Thin-Wi	Jous Sampler D. Tube Sample Ring Sample	Depth (fi) 9.5	Groundwa Hour	Date 1/17/2000
i in di		dune	erieti esist 310w	eads and	annly lumb	S.	NR - No Recovery	isual Classific	l L		WELL
<u> </u>	0 0	S 50	<u></u>	= = =	< 3 Z	<u> </u>		Asuai Ciassilic	211011		CONSTRUCT
	[-]- <u>1</u> -]				Ι	011.7	DV 8 4 3 10 7 (6) 43	1: 1 / 1	· · · · · · · · · · · · · · · · · · ·		<u> </u>
									ry, fine grained sa		
		·CS··		0.6		CLA	YEY SAND (SO sand (subangul	c) - light brown ar to subrounde	, dry, fine to medi d), non-plastic.	um	
**	[444]			3,6		3.0'	(M2) CIAND V	light brown d	ry to moist, fine g	El. 5480.2'	
_						2111	sand.	- ngm orown, di	ry to moist, tine g	ramed	
				1.2							
_		. CS			· · · · · · · · · · · · · · · · · · ·					İ	
						7.0'				E1 5476 21	
_				3.3		CLA	YEY SAND (SO sand, medium p , hydrocarbon st	lasticity.	moist, fine graine at 7.7 ft.	EJ. 5476.2' ed	
				14							
Ž						9.5'	VEV CANTY (CO	") crease switch has	drocarbon stainin	El. 5473.7'	
		. CS		3.3	J3-10'	CLA	wet to moist, fir subrounded), lo	ne to medium sa	ind (subangular to	g,	
_						11.7'				El. 5471.5'	
_							D (SW) - light b (subangular to s	rown, wet, fine	to medium sand	DL 34(1.2	
_				0.4			(Subanguar is	,.			
		·CS···									1
		l l		2.5		15.0'				El. 5468.2'	
									wet, fine to medi-	1	
	ZZZAI			T-4-1	Depth 16.0'	16.0	sand, low plasti	city.		El. 5467.2'	I
		4-3-9		and we will be a second of the	Add	itional Gr	oundwater M	easurements	5		
	pth (ft)	Hou	1	Di		itional Gr	oundwater M	easurements Date	Depris (fi)	Hour	Date

	7/2006			ype: Strata Pro r: Louis Trujill		Proje Former Aere	ect x Refinery		Well No. J-4	
Completed: 1/1 Backfilled: 1/1			Weath			Surface Elevation: 5483.6'	Logged By: 1	ec Dalton		
orthing: 2080718				ig: 2678944.48			Linggen by. 1	AC Danis))		
rumg. 2000/18	.05		Ensin	ig: 2070344.40	- v	Location: Bloomfield, NM G - Grab Sample		Groundwa	ter	
5 5	2	Foot	_ &		l di	CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample	Depth (fi)	Hour	Date	
dwar (PD)	5	ation ance s per	eater pace Ig. p	tical er	Sample Type	U - 3 * O.D. 2.42* I.D. Ring Sample ST - 3* O.D. Thin-Walled Shelby Tube	9.5	9.5		
Graphical Log	Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number		NR - No Recovery	<u>                                     </u>	<del></del>	WELL	
ט מט	<i>3</i> 5	5 % G		三王之			Visual Classifica	tion		CONSTRUCTI
	· · · · · · ·				I oxx =	N.C. (ANY) (CANY) IN A STATE OF THE STATE OF	<u> </u>	1 1		
					SILT 1.0°	Y SAND (SM) - light brown, dry (subangular to subrounded).	, line to medium	sand El. 5482,6'		
- 7777			1.6		CLA	YEY SAND (SC) - light brown, of	dry, fine to medi			
- ////	. CS					sand (subangular to subrounded)	), low plasticity.			
-			6.6							
					3.8'			El. 5479.81		
					4.8'	Y SAND (SM) - light brown, dry	, fine grained sai	nd. El. 5478.8'		
- 7777			6.4			YEY SAND (SC) - light brown, o	dry to moist, fine			
	600					medium sand (subangular to sub		lastic,		
- (44)	.CS					with silt. YEY SAND (SC) - light brown, 1	maist to wet fine	El. 5477.4'		
- /////	ļ		4.5			grained sand, low to medium pla	sticity.			
					Hydro	ocarbon staining begining at 6.5	ft.			
- /////	1									
- 11111			5,0							
\$////					9.5'	/TW C ( ) TD ( ( ( ( ) ) )   ( ( ) )		El. 5474.1'	1	
- <i>[[[]</i>	·CS···				CLA	YEY SAND (SC) - gray with hyd wet, fine to medium sand (suban	rocardon stainin gular to subroun	g, ded),		
			10.5			non-plastic.	<b>&amp;</b>	"		
					11.5'			El. 5472.1'		
_ !:::::1	<u> </u>		Tellir		_12.0′ SANI	(SW) - gray with hydrocarbon:	staining, wet, fin	eHb 5471.6'	ı	
			rotal L	Depth 12.0'	\	coarse sand (subangular to subro	unucu).			
			i otal L	Depth 12.0'	\	coarse sand (subangular to subro	unucu).			
			rotal L	Depth 12.0'		coarse sand (subangular to subro	unded).			
			rotal L	Depth 12.0'		coarse sand (subangular to subro	undcd).			
			rotal L	Depth 12.0 <sup>t</sup>		coarse sand (subangular to subro	unuca).	anne i contra si con con conscienti		
			rotal L	Depth 12.0'		coarse sand (subangular to subro	unuca).	anna destribute de Paracaca		
			rotal L	Depth 12.0'		coarse sand (subangular to subro	unuca).	anna ann ann ann ann ann ann ann ann an		
			rotal L	Depth 12.0'		coarse sand (subangular to subro	unuca).			
			i otal L	Depth 12.0'		coarse sand (subangular to subro	unucu).			
			i otal L	Depth 12.0'		coarse sand (subangular to subro	unuca).			
			rotat E	Depth 12.0'		coarse sand (subangular to subro	unuca).			
			i otal E	Depth 12.0'		coarse sand (subangular to subro	unuca).			
			i otal E	Depth 12.0'		coarse sand (subangular to subro	unucu).			
			i oiai E	Depth 12.0'		coarse sand (subangular to subro	unucu).			
			i oiai E	Depth 12.0'		coarse sand (subangular to subro	unucu).			
			i otat E	Depth 12.0'		coarse sand (subangular to subro	unucu).			
			i otal E	Depth 12.0'		coarse sand (subangular to subro	unucu).			
			i otal E	Depth 12.0'		coarse sand (subangular to subro	unucu).			
			i otal E	Depth 12.0'		coarse sand (subangular to subro	unucu).			
			i oiai E	Depth 12.0'		coarse sand (subangular to subro	unucu).			
			1 Olai E			oundwater Measurements	unucu).			
				Add	itional Gr	oundwater Measurements				
Depth (ft)	Ho		Dat	Add			Depth (ft)	Hour	Date	

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# Soil Boring/Monitoring Well Log

	TEIM				2011 R	oring/Mo	mit	oring w	en roa	Sheet 1 o
Started: 1/17/ Completed: 1	2006	Rig Type: St	rata Probe			Pr	oject			Well No.
Completed: 1	/17/2006	Driller: Loui	is Trujillo			Former Ae	erex t	Retinery		J-5
Backfilled: 1/	17/2006	Weather:			Surface E	evation: 5484.3	1	Logged By: I	ce Dalton	
orthing: 20807:		Easting: 267	8994.53		Location:	Bloomfield, NM	l			
دلنية	G G	۔		ad.	G - Grab Sample	ntinuous Sampler			Groundwa	
E Co	Type	nd led	ļ	Sample Type	SPT - 2" O.D. 1.3 U - 3 " O.D. 2.42	86" I.D. Tube Sample I.D. Ring Sample -Walled Shelby Tube		Depth (ft)	Hour	Date 1/17/2006
Depth (ft.) Groundwater Depth (ft.) Graphicat Log	Sample Taken Sample Type Penetration Resistance	ding ding	Sample Number		ST - 3" O.D. Thir NR - No Recover	-Walled Shelby Tube Y				
2 9 E	Sample Taken  Sample Type  Penetration  Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	R San			Visual Classif	icatio	1		WELL CONSTRUCTION
5 - 4	CS	7.9	-3 -5:-5:	CLA'  CLA'  CLA'  CLA'  CLA'	sand (subang grave) (subranon-plastic YEY SAND) (coarse sand plasticity, ocarbon stain Y SAND (SAND)	(SC) - light browgular to subrounded, 1-2 cm), (SC) - light browgular to subangular to subrounded) (SC) - light brown, rular to subrounded) (SC) - light brown, rular to subrounded) (SC) - light brown, redium plastic) (SC) - light brown to subrounded) (SC) - light brown to subrounded)	moist, led).  m, moist, led).	ome quartzite lasticity to to moist, fine ded), low fine to mediust to wet, fine	El. 5483.1'  To  El. 5480.8'  El. 5477.3'	
			Additio	onal Gr	oundwater	Measuremen	nts			
Depth (ft)	Hour	Date	De	pth (ft)	Heur	Date		Depth (ft)	Hour	Date
							1			



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## Soil Raying/Manitaring Wall Lag

100	_2000000_N					A_/ A	DER		2011 DOI	ing/Moi	шис	) [ ] [	'S '	rei	I L	US.	,31	eet Lo
-,   5	Started	l: 1/17/	2006			Rig T	ype: Strata Pro	obe		Pro	ject							ell No.
Dar C	Compl	eted: 1/	17/200	)6		Drille	r: Louis Trujill	lo	]	Former Aer	ex R	efin-	ery					J-6
<u> </u>	3ackfil	led: 1/1	7/200	6		Weat	her:		Surface Eleva	ntion: 5484.5'	<u>  [</u>	Jogge	d By: I	Lee I	alton	i		
Nor	thing:	208072	1.35				ig: 2679058.31		Location: Blo		·							
		뉟	١,		Penetration Resistance (Blows per foot)	ı.		, she	G - Grab Sample CS - 3.5" I.D. Continu SPT - 2" O.D. 1.38" I.I U - 3 " O.D. 2.42" I.D. ST - 3" O.D. Thin-Wat	ious Sampler	ľ	Da	oth (ft)	<u>Gr</u>	ounds Hou		T	Date
Ē.	wate (f.)	al L	Typy	:	non Per 1	ated nce p. ppa	tes .	Sample Type	SPT - 2" O.D. 1.38" I.I U - 3 " O.D. 2.42" I.D.	D. Tube Sample . Ring Sample		1/1	10	+	11003	-		7/2006
Depth (ft.)	Groundwater Depth (ft.)	Graphical Log	Sample Taken Sample Type	-	netra sista lows	PID Heated Headspace Reading, ppm	Analytical Sample Number	ang.	NR - No Recovery									
ă	<u>చ్చి</u>	_5_	San	_ :	536	<u> </u>	282		V	isual Classific	ation						ONST	ELL RUCTIO
0			.CS			1.5		3.0' SILT	Y SAND (SM) - (subangular to s YEY SAND (SC) grained sand, way Y SAND (SM) - sand, non-plastic	subrounded).  C) - light brown ith silt, mediun light brown, d	i, dry i n plas	to mo ticity.	ist, fine	El. 5	483.5°		;	
	- \tau_{}		. CS			Total	Depth 12.0'	Wet b	elow 10 ft.					El. 5	472.5'			
_						Total 1	Addi	itional Gro	oundwater Me		s							
_	- ▼			lour			Addi	12.0'		easurement Date	s	Depti	(ii)		472.5'		D	nle.



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Completed: 1/17/2006   Driller: Louis Trujillo   Backfilled: 1/17/2006   Weather:   Surface Elevation: 5486.0'   Logged By: Lee Dalton	KLEINF	ELDER	Soil Boring/Mon	itoring Well Log	Sheet Lot
Computed: 1/17/2896   Venter: Louis Trajillo   Former Acres Refinery   K:	Started: 1/17/2006	Rig Type: Strata Probe	Proje	ect	Well No.
Section   State   Provided   Pr	Completed: 1/17/2006	Driller: Louis Trujillo	Former Aere:	x Refinery	K-1
Easting: 2688798.66   Lacation: Bloomfield, NM   Groundwater   Groundw	Backfilled: 1/17/2006	Weather:	Surface Elevation: 5486.0'	Logged By: Lee Dalton	
Section   Sect	Northing: 2080779.24	Easting: 2678798.66	<del> </del>		<del>,</del>
SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), with quartzite gravel EL 5485.0 (SLAYEY SAND (SM) - light brown, moist, fine grained sand, medium plasticity.  SILTY SAND (SM) - yellow, moist to wet, fine to medium sand (subangular to subrounded).  SILTY SAND (SM) - yellow, moist to wet, fine to medium sand (subangular to subrounded).  SILTY SAND (SM) - yellow, moist to wet, fine to medium sand (subangular to subrounded).  CS SILTY SAND (SM) - yellow, moist to wet, fine to medium sand (subangular to subrounded).  CS CLAYEY SAND (SM) - yellow, moist to wet, fine to medium sand (subangular to subrounded).  CLAYEY SAND (SM) - yellow, moist to wet, fine to medium sand (subangular to subrounded).  CLAYEY SAND (SM) - yellow, moist to wet, fine to medium sand (subangular to subrounded).  CLAYEY SAND (SM) - yellow, moist to wet, fine to medium sand (subangular to subrounded).  CLAYEY SAND (SM) - yellow, moist to wet, fine to medium sand (subangular to subrounded).	Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Type Penetration Resistance (Blows per foot)	PID Heated Headspuce Reading, pum Analytical Sample Number	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube MR - No Recovery	Depth (ft) Hour	Date 1/17/2006 WELL CONSTRUCTIO
Additional Groundwater Measurements	5 — CS	0.7.   1.0'   CLA'	(subangular to subrounded), will (subangular to subrounded, 2-4 cyey SAND (SC) - light brown, resand, medium plasticity.  Y SAND (SM) - yellow, moist to sand (subangular to subrounded)  pelow 10 ft.  YEY SAND (SC) - light brown, we medium plasticity.	El. 5481.0' wet, fine to medium  El. 5481.0' wet, fine to medium  El. 5475.6' 'et, fine grained sand,	
Additional Groundwater Measurements					
		Additional Gro	oundwater Measurements		
Depth (ft) Hour Date Depth (ft) Hour Date Depth (ft) Hour Date					
Separate to the season of the	Depth (ft) Hour	Date Depth (ft)	Hour   Date	Depth (ft) Hour	Date



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# KLEINFELDER

## Soil Boring/Monitoring Well Log

Survival 1/16/2006   Driller   Loals Trajillo   Former Aeres Refinery   K-2		LE	INI	'EL	DER		Soil Boring/Mon	itoring W	Vell Log	Sheet 1
Burkilloof: 1762/866   Weather:   Surface Elevation: \$486.2'   Lagged By: Lee Dation	Started: 1/16	/2006		Rig T	Type: Strata Pro	abe	Proj	ect		Well No
Parting: 168/78.1232   Easting: 2678849.02   Liceation: Bloomfield, MM   Groundwater	Completed: 1	/16/2006	5	Drille	er: Louis Trujil	lo	Former Aere	x Refinery		K-2
SILTY SAND (SM) - light brown, dry, fine to coarse sand (subrounded, 2-3 cm)  CS 2-1 CLAYEY SAND (SM) - light brown, dry, fine to medium sond (subrungular to subrounded), few class.  Additional Groundwater Measurements  Additional Groundwater Measurements	Backfilled: 1/	16/2006		Weat	ther:		Surface Elevation: 5486.21	Logged By: 1	ce Dalton	
Sill y SAND (SM) - light brown, dry, fine to coarse sand (subrounded), few clay.  CS - 2.3 - 1.2	orthing: 20807	83.82			ing: 2678849.02		Location: Bloomfield, NM			
SILTY SAND (SM) - light brown, dry, fine to coarse sand (submigular to subrounded), with quartizite gravel (subrounded, 2-3 cm).  2.3	<b>23)</b>		(hoc			adsi	G - Grab Sample			· · ·
SILTY SAND (SM) - Hight brown, dry, fine to coarse sand (subangular to subrounded), with quartizite gravel (subrounded, 2-3 cm).  2.5 EL 5483.77  CLAYEY SAND (SC) - light brown, dry, fine grained sand, few quarizite gravels (subrounded, 1-2 cm), medium plasticity.  2.6 6.6 SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), few clay.  3.8 SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), few clay.  CS CLAYEY SAND (SC) - gray, moist, fine grained sand, 100 medium plasticity are coarse sand (subangular to subrounded), low plasticity, no odor.  2.8 CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  Total Depth 12.0*  Additional Groundwater Measurements	i de la companya de l	Fype	8 8 9	ndu Lange	-	T. ald	SPT - 2" O.D. 1.36" J.D. Tube Sample		Hour	
SILTY SAND (SM) - light brown, dry, fine to coarse sand (subangular to subrounded), with quartizite gravel (subrounded, 2-3 cm).  25  CLAYEY SAND (SC) - light brown, dry, fine grained sand, few quartizite gravels (subrounded, 1-2 cm), medium plasticity.  26.  6.0  SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), few clay.  SILTY SAND (SC) - gray, moist, fine grained sand, for medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  28.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  28.  Additional Groundwater Measurements	th (ii)	Hall Hall	stan ws	Hea dspa ding	lytic tyle tyle tyle	Sam	ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery		1	
SILTY SAND (SM) - light brown, dry, fine to coarse sand (subangular to subrounded), with quartizite gravel (subrounded, 2-3 cm).  2.5  CLAYEY SAND (SC) - light brown, dry, fine grained sand, few quartizite gravels (subrounded, 1-2 cm), medium plasticity.  2.6  6.6  SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), few clay.  2.5  CLAYEY SAND (SC) - gray, moist, fine grained sand, for medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  2.8  Total Depth 12.0  Additional Groundwater Measurements	Gray Char	Samp	Res (Blo	E Hear	Sam			tion		WELL
SILTY SAND (SM) - light brown, dry, fine to coarse sand (subrounded, 2-3 cm).  CS 2.5										
(subrounded, 2-3 cm).  2.5 EL 5483.7  CLAYEY SAND (SC) - light brown, dry, fine grained sand, few quantitie gravels (subrounded, 1-2 cm), medium plasticity.  2.6 6.0 EL 5489.2  SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), few clay.  3.8 CLAYEY SAND (SC) - gray, moist, fine to coarse sand, 10.0 medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  2.8 CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  Total Depth 12.0'  Additional Groundwater Measurements										
CS. 2.5 EL 5483.7*  CLAYEY SAND (SC) - light brown, dry, fine grained sand, few quantizite gravels (subrounded, 1-2 cm), medium phisticity.  2.6 6.0°  SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), few clay.  CS. 2.7 EL 5480.2°  CLAYEY SAND (SC) - gray, moist, fine grained sand, medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine grained sand, subangular to subrounded), low plasticity, no odor.  12.0°  Total Depth 12.0°  Additional Groundwater Measurements	- 1111			4.0	ļ		(subrounded, 2-3 cm).	in quartzile grave	!	
EL 3483.7  CLAYEY SAND (SC) - light brown, dry, fine grained sand, few quantzite gravels (subrounded, 1-2 cm), incdium plasticity.  CS. 6.07  SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), few clay.  CS. 1.38  CLAYEY SAND (SC) - gray, moist, fine grained sand, 10 0° medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  12.07  Total Depth 12.07  Additional Groundwater Measurements		.CS.	ļ							
few quartzite gravels (subrounded, 1-2 cm), medium plasticity.  CS. 6.0° EL 5450.2°  SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), few clay.  CLAYEY SAND (SC) - gray, moist, fine grained sand, medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  12.0° EL 5474.2°  Total Depth 12.0°  Additional Groundwater Measurements	72777						VEV CAND (CC) Light begans	dm. fine evaluad		
CS	- <i>VIII</i>	<b>                                      </b>		2.3		CLA	few quartzite gravels (subround	ed, 1-2 cm), med	sand, ium	
CS. SILTY SAND (SM) - light brown, dry. fine to medium sand (subangular to subrounded), few clay.  3.9. SL 5477.2*  CLAYEY SAND (SC) - gray, moist, fine grained sand, medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  12.0*  Total Depth 12.0*  Additional Groundwater Measurements	- ////	<b>]</b>	ļ		ļ		plasticity.			
CS SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), few clay.  3.9 SILTY SAND (SC) - gray, moist, fine grained sand, medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  12.0° EL 5474.2°  Total Depth 12.0°  Additional Groundwater Measurements					-					
SILTY SAND (SM) - light brown, dry, fine to medium sand (subangular to subrounded), few clay.  3.9				2.6					and the second s	
(subangular to subrounded), few clay.  3.9 9.0 EL 5477.2*  CLAYEY SAND (SC) - gray, moist, fine grained sand, medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  12.0 EL 5474.2*  Total Depth 12.0'  Additional Groundwater Measurements	- 444	-GS			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		17 O 4 2 TD (C2) ft . F . I . I	~		
CS CLAYEY SAND (SC) - gray, moist, fine grained sand, medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  12.0' El. 5474.2'  Total Depth 12.0'  Additional Groundwater Measurements				7.0					sand	
CLAYEY SAND (SC) - gray, moist, fine grained sand, medium plasticity.  CLAYEV SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  12.0' El. 5474.2'  Total Depth 12.0'  Additional Groundwater Measurements								•		
CLAYEY SAND (SC) - gray, moist, fine grained sand, medium plasticity.  CLAYEV SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  12.0' El. 5474.2'  Total Depth 12.0'  Additional Groundwater Measurements	- 1	<b>H</b>								
CLAYEY SAND (SC) - gray, moist, fine grained sand, medium plasticity.  CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  12.0'  Total Depth 12.0'  Additional Groundwater Measurements				3.0		9.0'			El. 5477.2'	ŀ
CLAYEY SAND (SC) - gray, moist, fine to coarse sand (subangular to subrounded), low plasticity, no odor.  12.0'  El. 3474.2'  Total Depth 12.0'  Additional Groundwater Measurements						CLAY	YEY SAND (SC) - gray, moist, f	ine grained sand,		
Total Depth 12.0'  Additional Groundwater Measurements	- <i>11111</i>	. C.S.	<b></b>					ine to coarse sand	El. 5476.2'	
Total Depth 12.0*  Additional Groundwater Measurements	- 999			2.8						
Total Depth 12.0*  Additional Groundwater Measurements		Ĭ				12.0'			E1 5474 21	
Additional Groundwater Measurements	_ (/////	LLL	J1	Total	Depth 12.0'	12.0			E1. J474,2	i
Depth (ft) Hour Date Depth (ft) Hour Date Depth (ft) Hour Date					Addi	itional Gro	oundwater Measurements			
								,		

Sheet Lof 1

KANA JAWA BARA	1			1
Started: 1/16/2006	Rig Type: Strata Probe	Project Former Aerex	ct · Rafinery	Well No. K-3
Completed: 1/16/2006	Driller: Louis Trujillo Weather:		1	10-3
Backfilled: 1/16/2006		Surface Elevation: 5485.6'	Logged By: Lee Dalton	
Northing: 2080781.28	Easting: 2678898.13	Location: Bloomfield, NM	Groundwate	er
Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Taken Sample Type Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, Ippu Analytical Sample Number	E G - Grab Sample C: CS - 3.5 I.D. Continuous Sampler SPT - 2" O.D. 1,38" I.D. Tube Sample U - 3 " O.D. 2,42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Sheltly Tube NR - No Recovery	Depth (fi) Hour 8.5	Date 1/16/2006
Gray Sample Resign (Blo	Reach North	Visual Classificat	ion	WELL CONSTRUCTION
0				
	6.0 SI	LTY SAND (SM) - light brown, dry, (subangular to subrounded), with (subrounded, 2-3 cm).	, fine to coarse sand quartzite gravels El. 5483.6'	
- CS		AYEY SAND (SC) - red-brown, dry sand (subangular to subrounded), gravels (subangular, 1-2 cm), low plasticity.	y, fine to medium , few quartzite	
5 —		LTY SAND (SM) - gray HC staining sand (subangular to subrounded).	g, dry, fine to medium	
_	K3-6			
- <del>▼</del>	7.5° CI	AYEY SAND (SC) - gray HC stains to medium sand (subangular to su high plasticity, sand grain size de	abrounded), low to creasing down the	
10_ CS	1	section, plasticity increasing dow et below 8.5 ft.	n the section.	
- ////	27		El. 5474.0'	
	12.5'	AYEY SAND (SC) - light brown, w sand (subangular to subrounded). ND (SP) - light brown, wet, fine to c	low plasticity. El. 5473.1'	
cs		(subangular to subrounded, (flow		
15	3.2		El. 5469.6'	
	Total Depth 16.0'			•
		Groundwater Measurements		<b>-</b>
Depth (ft) Hour	Date Depth (ft)	Hour Date	Depth (ft) Hour	Date

							<b>O</b>	***************************************
6	Started: 1/16/2006	Rig Type: Strata Pro	ihe		Projec	t D. C		Well No.
Dafe	Completed: 1/16/2006	Driller: Louis Trujill	0	Form	ier Aerex	Rennery		K-4
	Backfilled: 1/16/2006	Weather:		Surface Elevation:	5485.91	Logged By: I	ee Dalton	
	Forthing: 2080781.40	Easting: 2678947.05		Location; Bloomfie	<del></del>			
	Ta Sec	u	ad s	G - Grab Sample CS - 3.5" I.D. Continuous Sam SPT - 2" O.D. 1.38" I.D. Tube U - 3 " O.D. 2.42" I.D. Ring Sa ST - 3" O.D. Thin-Walled Shel	riplet	Danile (tix	Groundwate	
	Control of the contro	al led	Sample Type	SPT - 2" O.D. 1.38" I.D. Tube	Sample	Depth (ft)	Hour	Date 1/16/2006
	Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Taken Sample Type Penetration Resistance (Blows per fou	PID Heater Fleadspace Reading, p Analytical Sample Number	Sam.	ST - 3" O.D. Thin-Walled Shell NR - No Recovery	by Tube			
	Depth (ft.) Groundwater Depth (ft.) Graphical Log Sample Trice Sample Type Penetration Resistance (Blows per for	PID Healed Headspace Reading, ppm Analytical Sample Number			Classification	on		WELL CONSTRUCTION
	)							
'				Y SAND (SM) - light				
		8.9		(subangular to subrou (2-3 cm).	nded), some	e quartzite grave	ElEI. 5484.9'	
	- CS		SILTY	Y SAND (SM) - light		fine to medium	sand	
				(subangular to subrou	nded).			
			3.0'	YEY SAND (SC) - ligi	bt brown dr	v to maist: fine	El. 5482.9'	)
			4.0'	grained sand, low plas	sticity.		El. 5481.9'	
			With 9	gray hydrocarbon stair Y SAND (SM) - gray l	ning at 3.6 ft	ctaining dry f	ina	
:	5 — [2] [3] [3] [4] [4]			to medium sand (suba	ngular to su	brounded), son	ne l	
	_			clay.				
	-	. 153	7.4'				El. 5478.5'	
			CLAY	EY SAND (SC) - gra	y hydrocarb	on staining, mo		!
				fine grained sand, med L at 7.8 to 8 ft.	dium plastici	ty.		
	- 1/////1	. 169	C, 11 L	2 40 7.0 10 0 17.				
	10_ ///   cs							
	- (////)						,	
			11.8'	10.15.00			El. 5474.1'	
				Y SAND (SM) - gray I moist, fine to coarse sa				
		105			(			
	_ ▼							
			LNAP	L at 14 to 14.5 ft and	15.5 to 16 ft			
	15—	461						
		K4-16'						
	-	29						
	_ CS.							
		(0)	19.0'				El. 5466.9'	
		6,9	CLAY	EY SAND (SC) - ligh	nt brown, mc	oist, fine grained		
7		T . 1 D . 3 . 2 2 . 4	20.0' \$	sand, medium to high p	plasticity.		El. 5465.9'	
		Total Depth 20.0'						
								ļ
		A ما ط:	itional Cr	oundwater Measu	ramanta			
		Addi	mondi GfC	oundwater WeaSti	rements			***************************************
	Depth (ft) Hour	Date	Depth (ft)	Hour D:	ate	Depth (fi)	Hour	Date

,1550	WINA.				1 .				<u> </u>				•	J
a	Starte	ed: 1/16/	2006		Rig T	ype: Strata Pre	she			Pro	ojec	t n.c		Well No.
Date	Com	pleted: 1/	16/200	6	Drille	er: Louis Trujil	lo			Former Aei	rex	Rennery		K-5
	Back	filled: 1/1	6/200	5	Weat	her:			Surface Ele	vation: 5486.2'		Logged By:	Lee Dalton	
N	r(hing	g: 208078	0.61		Easti	ng: 2678997.72			Location: B	loomfield, NM				
				7 -	-		<u> </u>	ž.	G - Grab Sample		Ī		Groundwa	ater
	<u>5</u>	Log	35	foot	_ uz			Sample Type	CS - 3.5" I.D. Conti-	nuous Sampler LD: Tube Sample		Depth (ft)	Hour	Date
9	188	car	합니	ation mee	cate pace	Te je		1	SPT - 2" O.D. 1.38" U - 3 " O.D. 2.42" I.I ST - 3" O.D. Thin-Vi	D. Ring Sample		10		1/16/2006
Denth (ft.)	Groundwater Depth (ft.)	Graphical Log	Sample Taken Sample Type	Penetration Resistance (Blows per 1	PID Heated Headspace Reading, ppm	Analytical Sample Number	ļ	<u></u>	NR - No Recovery				<u> </u>	WELL
Ĕ	00	ే		55.6	EIZ	ZSZ				Visual Classifi	catio	)II		CONSTRUCTION
0														
-			ll .				0.8'	SILT	Y SAND (SM)	- light brown, o	dry,	fine to coarse	sand	
		17/17	11		0.2		₩		(subangular to (2-3 cm).	subrounded), v	vith (	quartzite grave	21,211 2403.4	
								CLA	YEY SAND (S	C) - light browi	n, dr	y, fine to medi	um	
			-CS						sand (subangu	lar to subround	ed),	with silt.		
	_				103									
			¥				3.8'						El. 5482.4'	
	-		<b>H</b>				.h	Black	/gray hydrocar	bon staining at black/gray hy	3.6 f	ì.		
ہ ا										- biack/gray ny nedium sand (si			.,	
٦			11		118				subrounded).			-		
			·CS		<b>]</b>								ŀ	THE PARTY OF THE P
			<u> </u>		106		7.5'	Some	clay at 6.8 to 7	7.5 ft; low plasti	icity.		El. 5478.7'	
		17/7		ļ			1			C) - black/gray,			L1. 3476.1	
			1							nedium plastici		,		
	_		<b>1</b>		130									
1	0— ⊼		.cs		. ,	K5-40'	10.0	Z 4 10	ZEV SAND (S	C) - black/gray,	116.31	fine to mediu	El. 5476.2'	
			H		00					lar to subrounde			111	
			1		92						,,			
			<u> </u>			,	12.0'						El. 5474.2'	
			H					SANI	) (SW) - black/	gray, wet, fine subrounded), fe	to co	arse sand		
	-		]		210				(Subangmai 10	subrounded), re	SW CI	ay.		
		::::::	. CS											
	-		11.03		,									
1:	S	-::::::			157									
			¥]				16.0						T1 5470 71	
	-		H				16.0'	SILTY	Z SAND (SM)	- light brown, v	vet. f	ine to medium	El. 5470.2' sand	
					7,4				(subangular to		, 1	tocorum		
	-				,1									
	- [		- CS				18.0	CLAS	EV CAND (C)	C) - light brown	1110	t to majet fin	El. 5468.2'	
					7.4		'			) - ngnt brown nedium plasticit		r to moist, fille		
	-		<b> </b>		7,4				-	,	-			
20	<u> </u>		Ц		لـــــا		20.0						El. 5466.2°	
					Total I	Depth 20.0'								
						٧٩٩	ition	al Gr	nundwater N	/leasuremen	te			
						Add	HOH	ai Oil	Juliuwatel II	neasuremen	13			
ſ	Dept	th (lì)	ſ-	lour	Di	ite	Depth	rft)	Hour	Date		Depth (fi)	Hour	Date
1														
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# Soil Boring/Monitoring Well Log

Sheet Lof 1

Stort 1/1							
Started: 1/1	6/2006	Rig Type: Strata Pr	obe	Proj	ect		Well No.
Completed:	1/16/2006	Drifler: Louis Truji	llo	Former Aere	x Refinery		K-6
Backfilled: 1	/16/2006	Weather:		Surface Elevation: 5485.7'	Logged By: 1	ce Dalton	******
orthing: 2080'	777.98	Easting: 2679048.23	}	Location: Bloomfield, NM	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		
Groundwater Depth (II.)	Sample Taken Sample Type Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm Analytical Sample Number	Sample Type	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3" O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery	Depth (ft) 7	Groundwat Hour	Date 1/16/2006
క్రిత్	San Per Reg (BI	E S S   S S S		Visual Classifica	tion		WELL CONSTRUCTION
- - - - - -	-CS		7.0°	YEY SAND (SC) - light brown, (subangular to subrounded), hig Y SAND (SM) - light brown, dry (subangular and subrounded).  YEY SAND (SC) - brown, wet, finedium plasticity.	h plasticity. y, fine to medium	El. 5484.7' sand	
<u> </u>	.CS.	Total Depth 12.0'	10.0° CLAY	YEY SAND (SC) - brown, wet, f		El. 5475.7' nd,	
	.CS.		CLAY	YEY SAND (SC) - brown, wet, f medium to low plasticity.		nd,	
O	-CS. Hour		CLAY	medium to low plasticity.		nd,	Date



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Started: 1/17/2	:006		Rìg T	ype: Strata Pro	obe			Proj	ject			Well No.	
Completed: 1/	17/2006		ļ	r: Louis Trujill	lo			Former Aer	ex R	tenery 		L-I	
Backfilled: 1/1	7/2006		Weat				Surface Eleva	ation: 5487.9'		Logged By: L	ee Dalton	,	
orthing: 208083	8.41	,		ig: 2678799.08			Location: Blo	omfield, NM					
50	ļ.,	Penetration Resistance (Blows per foot)	ı.			ali:	G - Grab Sample CS - 3.5" I.D. Continu	ous Sampler		Groundwa Depth (ft) Hour		Date	
al Die	i di	nee L	(Blows per foo PID Heated Headspace Reading, ppm Analytical Sample		E. PPs		ົນ :	SPT - 2" O.D. 1,38" I. U - 3 " O.D. 2,42" I.D. ST - 3" O.D. Thin-Wa	D. Tube Sample		None	1.000	1/17/2006
Groundwater Groundwater Depth (ft.) Graphical Log	Sample Taken Sample Type	netra sista ows	adsp uding	alyte npie mbei		S.	ST - 3" O.D. Thin-Wa NR - No Recovery	lled Shelby Tube			J		
50 5	Sar	5 % E	F 5 5	282				'isual Classific	ation	l 		WELL CONSTRUCTION	
					CI	LAY	'EY SAND (SC sand, some qua	() - light brown,	, moi	st, fine to med	lium		
- (////	]		4.2			1	medium to low	plasticity.	ioi o a	naca, 2-5 cm	•		
- 1111	.cs.												
-	<b> </b>		3,0										
-	Ц												
					5.0'						El. 5482.9'		
	<u> </u>		3.3			AND	Y FAT CLAY	(CH) - brown, 1	mois	t, high plastici			
- ////	. GS.					f	fine grained san	d.					
					6.5'	I AV	'EY SAND (SC	') light brown	mai	ct fine graine	El. 5481.4'		
-			1.2			LA I	sand, non-plasti	c.	, 11101;	si, fine granic	.		
- ////	Ц				8.0'						El. 5479.9'		
					SII	LTY	' SAND (SM) - grained sand.	light brown, m	ioist t	lo wet, fine			
-			1.6			٤							
	. CS												
17/77					10.5'	ΙΔΥ	EY SAND (SC	) - light brown	mais	st fine graine	El. 5477.41		
- ////	· · · · · · · · · · · ·				C1.	S	sand, medium p	lasticity.	11101	st, tine grame	1		
	<u> </u>				12.0						El. 5475.9'		
			Total 1	Depth 12.0'									
				Add	itional	Gro	oundwater M	easurement	s				
Depth (ii)	Ho	ur	Di	ite	Depth (i))	1	Hour	Date	F	Depth (ft)	Hour	Date	
									-				

The state of

# Soil Roving/Monitoring Well Log

Started: 1/10			FEL	DER		Son Bor	ng/Mon	itoring <b>V</b>	ven Log	Sheet Lo
Completed:	5/2006		Rig T	ype: Strata Pr	obe		Proje	ect		Well No.
Completed:	1/16/2006		Drille	r: Louis Trujil	lo	F	ormer Aere	x Refinery		L-2
Backfilled: 1	/16/2006		Weat	her:		Surface Eleva	ion: 5486.6!	Logged By:	Lee Dalton	
rthing: 20808	338.78	·	1	ng: 2678848		Location: Bloc	mfield, NM	.,		
_ l #	٠	Penetration Resistance (Blows per foot)	8		Eype	G - Grab Sample CS - 3.5" I.D. Continuo	us Sampler	Depth (fi)	Groundwa Hour	ter Date
Groundwater Depth (II.) Graphical Log	Sample Taken Sample Type	tion nee	PID Heated Headspace Reading, ppm	Tes _	Sample Type	SPT - 2" O.D. 1.38" I.D. U - 3 " O.D. 2.42" I.D. I	. Tube Sample ting Sample	9	77037	1/16/2006
Groundwa Depth (fl.) Graphical	uple 1	netra sista: lows	adsp adin	Analytical Sample Number	ž.	ST - 3" O.D. Thin-Walli NR - No Recovery				
<u> </u>	S. S.	538	E H S	Z Sur		Vi	sual Classifica	tion		WELL CONSTRUCTION
	-CS			Depth 12.0'	2.0' CLA' 4.0' SANI 6.0' SILT'	Y SAND (SM) - (subangular to su cm).  YEY SAND (SC) (subangular to su (1-3 cm).  DY LEAN CLAY plasticity, fine gr Y SAND (SM) - I grained sand, sor	- brown, moist brounded), wit (CL) - brown, nined sand.	h quartzite grav  i, fine to coarse h quartzite grav  moist, medium  sist to wet, fine	El. 5484.6'  El. 5482.6'  El. 5480.6'	
				Add	itional Gro	oundwater Me	asurements			
Depth (fi)	Но	w	Dat		itional Gro	oundwater Me	asurements Date	Depth (ft)	Hour	Date

Sand Ashar

Started: 1/16/20				Soil Boring/Mon		Sheet 1 o
	06	Rig Type: Strata Pro	obe	Proj	ect	Well No.
Completed: 1/16	5/2006	Driller: Louis Trujil	lo	Former Aere	x Refinery	L-4
Backfilled: 1/16/	2006	Weather:		Surface Elevation: 5486.8'	Logged By: Lee Dalfon	
rthing: 2080838.	09	Easting: 2678949.03		Location: Bloomfield, NM		
Groundwater Depuh (ft.) Graphical Lug Sample Taken	Sample Type Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm Analytical Sample Number	Sample Type	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U-3" O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walfad Shelby Tube NR - No Recovery Visual Classifica	Groundwat  Depth (ft) Hour  8	Date 1/16/2006 WELL
	N 545	TEN ANZ	<u> </u>	Visual Classifica	RION	CONSTRUCTIO
- V	CS.		7.8' CLA	Y SAND (SM) - light brown, dry (subangular to subrounded), sor (subrounded), sor (subrounded, 1 cm). YEY SAND (SC) - light brown, grained sand. Y SAND (SM) - yellow, dry to result of subrounded (subangular to subrounded) YEY SAND (SC) - light brown, medium sand (subangular to subrounded)	me quartzite gravelEL 5485.8'  dry to moist, fine EL 5484.8' moist, fine to medium ), few clay.  EL 5479.0' moist to wet, fine to	
		Total Depth 12.0'	12.0		El. 5474.8'	
		Total Depth 12.0		oundwater Measurements		
Depth (ft)	Hour	Add		oundwater Measurements		Dure

ZZ III r			····				·····		
Started: 1/16			ļ	2: Strata Pr		Proj	ect		Well No
Completed:				Louis Trujil	llo 	Former Aero	ex Retinery		L-5
Backfilled: 1			Weather			Surface Elevation: 5487.1'	Logged By: Lee Dalt	on	
rthing: 20808	38.66		Easting:	2678997.66	T	Location: Bloomfield, NM	C	ndwater	
Groundwater Depth (ft.) Graphical Log	Sample Taken Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspitee Reading, ppm	Analytical Sample Number	Sample Type	G - Grab Sample CS - 3.5" I.D. Continuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3" O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube NR - No Recovery		our	Date 1/16/2006
Grag	Sam	Pene Resi (Blo	PID Hea Rea	Ans Sam Num		Visual Classifier	ntion	CON	WELL
	111	·			T ~~~~	TA CANTRACTOR III SA			т
- 7777			4.8		1.0	Y SAND (SM) - light brown, dr (subangular to subrounded), wi cm).	th quartzite gravel 红-3486.	Л	
- 2/2/	CS.	,		,	2.0' CLA	YEY SAND (SC) - light brown, sand (subangular to subrounded plasticity.	dry, fine to medium, 5485. I), some silt, low	,1° /	
		,	4.8	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	SILT	Y SAND (SM) - light brown, dr (subangular to subrounded), fev	y, fine to medium sand v clay.		
-			4.6	********					
	:   .CS  :		3.5						
			3.5		7.5'	VEV CAND (CC) 1	El. 5479.	.6'	
					8.5'	YEY SAND (SC) - brown, wet, (subangular to subrounded), low	v plasticity. El. 5478.	.6'	
	][		1.1	,.,.	CLA	YEY SAND (SC) - brown, wet, plasticity.	fine grained sand, low		
	111 l		i					1	
- 77777	GS				10.0°	VEV SAND (SC) brown recie	El. 5477.	1.	
- 1111			0.3		CLA'	YEY SAND (SC) - brown, mois high plasticity.	t, fine grained sand, El. 5476.		
			0.3		CLA'	high plasticity. YEY SAND (SC) - brown, moist	t, fine grained sand, El. 5476. t, fine to coarse sand	1'	
- <i>Hill</i>	GS		Total Dep	oth 12.0'	CLA'	high plasticity.	t, fine grained sand, El. 5476. t, fine to coarse sand	1'	
				oth 12.0'	CLA'	high plasticity. YEY SAND (SC) - brown, moist	t, fine grained sand, El. 5476. t, fine to coarse sand	1'	
				oth 12.0'	CLA'	high plasticity. YEY SAND (SC) - brown, moist	t, fine grained sand, El. 5476. t, fine to coarse sand	1'	
				oth 12.0'	CLA'	high plasticity. YEY SAND (SC) - brown, moist	t, fine grained sand, El. 5476. t, fine to coarse sand	1'	
				oth 12.0'	CLA'	high plasticity. YEY SAND (SC) - brown, moist	t, fine grained sand, El. 5476. t, fine to coarse sand	1'	
				oth 12.0'	CLA'	high plasticity. YEY SAND (SC) - brown, moist	t, fine grained sand, El. 5476. t, fine to coarse sand	1'	
					CLA 11.0' CLA 12.0'	high plasticity. YEY SAND (SC) - brown, moist	t, fine grained sand, El. 5476. t, fine to coarse sand dium plasticity. El. 5475.	1'	
Depth (ft)	Hay	ır			CLA 11.0' CLA 12.0'	high plasticity. YEY SAND (SC) - brown, moist (subangular to subrounded), me	t, fine grained sand, El. 5476. t, fine to coarse sand dium plasticity. El. 5475.	1'	Date

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	rted: 1/16				Type: Strata Pr		Form	Projec	et Refinery		Well No.
<b> </b>	mpleted: 1		<u> </u>	Weat	er: Louis Trujil	110	<del> </del>				1,-0
L				-			Surface Elevation: 5		Logged By: I	Lee Dalton	
11111	ng: 20808.	37.01	T =		ng: 2679048.59	7	Location: Bloomfield			Groundwa	ler
ie.	n n	2.	Penetration Resistance (Blows per foot)	- E		Sample Type	G - Grab Sample CS - 3.5" I.O. Continuous Samp SPT - 2" O.D. 1.38" I.D. Tube S U - 3" O.D. 2.42" I.D. Ring Sam ST - 3" O.D. Thin-Walled Shelb	oler Samule	Depth (ft)	Hour	Date
Groundwa		Token le Ty	ration ance	feate space	tical le	dung	U - 3 " O.D. 2.42" I.D. Ring Sarr ST - 3" O.D. Thin-Walled Shelb	nple y Tube	8.5		1/16/2006
Groundwater	Depth (It.) Graphical Log	Sample Taken Sample Type	enel tesisl Blow	PID Heated Headspace Reading, ppm	Analytical Sample Number	x	NR - No Recovery	Classificati	on	<u> </u>	WELL
		[3] Q	1	<u> </u>	1 0.512		Tiguri C			<u> </u>	CONSTRUCTU
		111	1			0.5° SILT	Y SAND (SM) - light b	rown, dry,	fine to medium	£ind487.4'	
_		111	ļ	0.6			(subangular to subroun	ded), few	quartzite gravel	s (2-3	
	1.14					SILT	cm). Y SAND (SM) - light b	rown, dry,	fine to medium	sand	
_		. CS				•	(subangular to subroun-	ded), few	clay.		
_				4.2							
		1	1	1		4.5'			4-	El. 5483.41	
			<b></b>	8.0	,	SILT	Y SAND (SM) - light b sand (subangular to sub	rown, moi: prounded).	st, fine to coarse		
_		.cs					oma (monigina to otte	araumaca).			
-			·····	2.6							
		Щ									
	V////					8.5'	YEY SAND (SC) - brov	un wetto:	moist fine to	El. 5479.4'	
-		111	1	2,7	, ,		medium sand (subangu	lar to subr	ounded), mediu	m	
L		. CS					plasticity.				
				4,0							
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								
-	VIII.	Ш		Total	Depth 12.0'	12.0'				El. 5475.9'	
					Add	itional Gro	oundwater Measure	ements			
Do	ւ <b>ր</b> մե (Ո)	H	DUT.	Da		itional Gro	oundwater Measure		Depth (B)	Hour	Date

									50112011115111511							
ده	Start	ed: 1/26/	2006		Rig T	ype: CME 75			Proje		<b></b>		į	Well		
Date	Cont	oleted: 1	/26/2006		Drille	er: Louis Trujil	lo		Former Aerex	x R	efinery			MW	-3k	
_	Backfilled: 1/26/2006 Weather:						Surface Elevation: 5487.9' Logged By: Lee Dalton									
No	Northing: 2080778.19 Easting: 2678944.68 Location: Bloomfield, NM															
		e1.		2				ad.	G - Grab Sample Groundwater							
_	Ter.	<u> </u>	3		السطر			ਜ਼. ਦਿੰ	GS - 3.5" I.D. Conlinuous Sampler SPT - 2" O.D. 1.38" I.D. Tube Sample U - 3" O.D. 2.42" I.D. Ring Sample	-	Depth (ft)	Hou		Da		
=	dwn (ft.)	ical	Inker	atio ance s pe	pac pac	lica le er		di i	U - 3 " O.D. 2.42" I.D. Ring Sample ST - 3" O.D. Thin-Walled Shelby Tube	-	10.81	4:57:00	PM	1/26/.	2006	
Depth (ft.)	Groundwater Depth (ft.)	Graphical Log	Sample Taken Sample Type	Penetration Resistance (Blows per foot)	PID Heated Headspace Reading, ppm	Analytical Sample Number	-		NR - No Recovery			<u> </u>		WEL	.I.	
	_ ت	Ü	3 00	= ~ =	a I z	< vi Z	<u></u>		Visual Classificat	1()11			CC	NSTRU		01/-
0		r: 1 . 1	rn	· · · · · · · · · · · · · · · · · · ·									т		377	- 22
									Y SAND (SM) - light brown, dry (subangular to subrounded), som				Cen	ent Cap (0-1')	M	<b>\%</b>
	-		111		8.9		1.0		(2-3 cm).	•	Ü		-	(0.7	<i>Y//</i>	3//
			ll.cs				S		Y SAND (SM) - light brown, dry.	, fin	e to medium s	sand		nite Seal (1'-2.5')		
			-C.s					1	(subangular to subrounded).					(1-2.5)		
					115		3.0'					El. 5484.9'	_ ر	10/20 Colorado		
			11		1				EY SAND (SC) - light brown, d grained sand, low plasticity.	iry t		****	Sili	ca Sand		
		7777	H				4.0' N		gramed sand, low plasticity.  gray hydrocarbon staining at 3.6	ſt.		El. 5483.9'	- '	2.5'-16')	:	-
5					172		Si	ILTY	Y SAND (SM) - gray hydrocarbo	n st					E	]
3					d # <del>2</del>				to medium sand (subangular to si clay.	ubro	ounded), some	;				<b>∃</b>
	_							,	ciay.					ļ	E	3
														F	:	=
					1.53		7.4'				1	El. 5480.5'				3
								LAY	EY SAND (SC) - gray hydrocar	bon	staining, moi		1	ľ	E	<b>:</b>
	-							NT A D	fine grained sand, medium plastic L at 7.8 to 8 ft.	city.				ľ		∄
			<b> </b>		169		L	IVAL.	Lat 7.6 to 6 It.					Slotted		∃::::
													Screen	(4'-14')		<b>-</b>
1(	┕		.CS											ŀ		∄::::
	ζŽ				149									-		<b>=</b>
	-		1				110									]
	_		Щ		,		11.8"	II TY	' SAND (SM) - gray hydrocarboi	n etc		El. 5476.1'		ľ		=:::
							.51		moist, fine to coarse sand (subang			ed).				3
	-		[ ]	. , , , , ,	105				,	_					E	
															Ē	]
	-						Lì	NAP	L at 14 to 14.5 ft and 15.5 to 16	ft.				ŀ		
15	_				. 461.									mp/End		
			Ĭ				160						Cap (	14'-16')		
	{		Ш		Total I		16.0				<u>F</u>	El. 5471.9'	ļ	Į.		
					10.011	эри 10.0										
							Dr r :-	rilling	g Method HSA (7 3/4" OD) ogy taken from K-4 (nearest to M	rui 1	11Z \					
							* 3	3.15'	stickup encased in metal shroud	. witl	h bollards.					
									•							

## Additional Groundwater Measurements

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date

Depth (ft)	Hour	Date

## APPENDIX F

Field Notes

02/Em7	1/5 Je 30/41/1
4	
Drilling	The state of the s
OFIS: Meet J. Dall @ KA office	0800 J. Ball + L. Dullen on 5 te.
15 load eguipment	2 L. Truisille already or shier
leave for site.	to landered Health & Safety meeting.
1115: 5 Bell of L. Dallan On-Sile	4. Calibrate PID Slooppu Isobytlene 9053
1125: L. Truillo on site.	0837: Degin DPT oftilling @ J-2.
45 conduct Health & Safety Meeting.	1220 L. Truzille off-site for longh
15 Calibrate PID. Eleph Isobytlen 1253	1238: 3 Bull & L. Datton off-site
1200: Begin DPT Lrilling. (4.2)	in the state of th
1220: Complete 4-2.	1256: J. Ball + L. Jathan on-11to
15 Bear 1-3	
1224: DPT refusal 12 1.5' will step	4 Continue DPT drilling
over a retry 1-3.	D. faust on-si
(25 5° 200+h)	1520 ) Faust off-site.
1228: DPT refused @ 1.5' will postpore	
2-3 for 20.	1705, J. Bull of A. Datton off-wite.
1235: Begin DPT 4-4	DPT SUMMEN, J.2, J-4, J-3, J-5, J-6, J-
1257: Complete 1-4.	
Begin 4-5.	7-7
1315: Complete L-5.	Test
	H-1 H-2 H-3
1715. All crew off-site	
DPT Summary: L-2, L-4, 2-5, 2-6	3 Y/V
K-6, K-5, K-4, K-2, K-2	90/5/
1771 /	and the second of the second o
20	and the second s
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Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	meeting. bytlene gas 3	step.	5, te. 6, 6-5, D-6, C-1, C-2, S
	o L. Delton ensiste.  No ensite.  Health & Safety Mee.  PID & 100 ppn Isobytle.  PT. drilling.  Mee of your and the second to th	orth & 4 will  orth & 4 will  firste for lineh.  t L Dalton on  orth & Cilling.	2 off-site.  Dalton off.  : F.S., F.6. (6.  D-3, D-4, D-1,  C-5, C-6, Β-1,
	J. Ball ondert olibrate Besin D	D-6 No real 1 so	2. Ball 4. L.  Summary  D-5, D-4  C-3, C-4
10 (0) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	0800: 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5	1020: 1125: 3 1145: 3 1200: 1300: 1350:	1650 1916
/ ベンノ カロ	Meating. Itsobytiene gest	Site for lonch.  Site  One 11 Step	4.6, 6-6, 6-5, f-1, f-2, f-3, f-4.
	0800: J. Ball & L. Dalton on site.  2 Landrood Health of Satety Meating.  2 Control Health of Satety Meating.  3820: Begin DPT derilling.  1000: H-5 Septembly & 2 , step over		B 4 4 4
		1210: 6. Trusillo off-site for 1220: 5. Ball & L. Dalton oft 1250: 5. Ball & L. Dalton oft 1310: L. Trusillo on site. & Continue DPT - Drilli. 1420: D. Faust off-site. 1550: E-2 reportings 41 1550: E-2 reportings 41	1555: E-2 No recovery & over 6 North. 1715: All crw off-site.  5-4, 6-3, 6-1, 6-2, 6-3, f-4, f-4, f-4, f-4, f-1, f-2, f-3, f-3, f-4, f-3, f-4, f-3, f-4, f-3, f-4, f-3, f-4, f-3, f-4, f-3, f-4, f-4, f-1, f-2, f-3, f-4, f-4, f-1, f-2, f-3, f-4, f-4, f-1, f-2, f-3, f-4, f-4, f-1, f-2, f-3, f-4, f-4, f-1, f-2, f-3, f-4, f-4, f-1, f-2, f-3, f-4, f-4, f-4, f-4, f-4, f-4, f-4, f-4
1/18/04	0800; 4, 4, 4, 4, 4, 4, 4, 4, 4, 4,	1210: 1220: 1250: 1250: 120: 1420: 1857:0	25.21 11.41

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1120 16 15 17 18 18 18 18 18 18 18 18 18 18 18 18 18							
Laby (126/06  Drilling  n-site  n-site  by L. Truillo already or  Lebytler 9023  Leonard Hell + Solch  Leonard Hell + Solch  Leonard Hell + Solch  Leonard Hell + Solch  Leonard Hell + Louis  Leonard Hell + Louis  Leonard Hell + Louis  Leonard Hell + Louis  Leonard Hell + Louis  Leonard Hell + Louis  Louis - Leonard Hell + Louis  Louis - Leonard Hell + Louis  Louis - Leonard Hell + Solch  Louis - Louis - Leonard  Louis - Louis - Leonard  Louis - Louis - Leonard  Louis - Louis - Leonard  Louis - Louis - Leonard  Louis - Louis - Leonard  Louis - Louis - Leonard  L	6 Any	site. Mecting	1105 Call 6, to 0 ~ 4-3	bereath two	0 \$ 50 mg		
Lay (126)06  Lay (126)06  A-site barring by Confluct  Loughtless gas 3  Lough Meeting by Confluct  Loughtless gas 3  Lough barring by Confluct  Lough barrin	A LONG TO SHARE TO SH	site to		lera contract	201-11-4 50-4-4 71-59 (7		
Street 1/22 (1/2)  A-site 1030  A-site 1030  Lety merting 15  Street for 1100  Street for 1	erispand (Address	-	Degin DPT of Coffice (6 Toffice (6 Toffice (6)	7,7	ote:	4	
continue order!			1748:	(3200	7.50		
brilling  L. Truzillo alterady  Conduct Health of s  Conduct Health of s  Conduct Health of s  Conduct Health of s  Collection DPT Drilling.  B. O'leox on site.  A-Truzillo lest the  PPT derilling on m  PPT derilling on m  R. Johnson off-site for  R. J. Ball de L. Dalton  J. J. Ball de L. Dalton  J. J. Ball de L. Dalton  L. Truzillo of R. J. Lisa for			2 bee 2 bee 4 be 4 be 4 be 4 be 4 be 4 b		continue continue	9 borings.  off-site -3,-0-2, 8-1,	
6/66  Dril  Conduct  Conduct  Conduct  Conduct  Conduct  Conduct  Conduct  Dril  Dril  Dril  Dril  A Tobaser  A A A A A A A A A A A A A A A A A A A	U	2 Calterdy of Then Ith of S	T drilling.  1 drilling.  1 lest the  11. ng - 71e i  1 from	Johnson Johnson	11 have to 11 off of 12 off - site.	c off-site,  d L. Daltor	
1200 1400 1400 1400 1400 1400 1400 1400		0815: 5. Ball & b L. Truill b Condud	0840: Begin DP 1030: 6 Truille DPT 26:1		Shoe . Ui DPT CLri 1130 : A · Johnson 1140 : L · Trosillo 1200 : All crew	1500: All Long of 1400: D. Willow 1533: J. Ball of DPT Somma	10 m

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	5 gallens  ORP Vol.  -42:2 6.5  B7EX 67  anter)  Anter 3ar	plastic [ar]
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104110 herex 920am 2/2/86 MW-1 DTW 8.35 TRO MW-2 DTW 7.90 TOC MW-3 DTW 10,6672 Blue

YSI MW-1B											
DateTime M/D/Y	Temp C	SpCond mS/cm	DO Conc mg/L	i - I	ORP mV						
1/26/2006 15:33:00 PM	14.67	1028	2.83	5.65	138.3						
1/26/2006 15:35:00 PM	15.05	1027	2.58	6.01	36.7						
1/26/2006 15:37:00 PM	15.03	1032	2.8	6.22	-13.7						
1/26/2006 15:39:00 PM	14.99	1035	3.18	6.42	-34.9						
1/26/2006 15:40:00 PM	14.83	1040	3.64	6.53	-40.3						
1/26/2006 15:44:00 PM	14.89	1045	2.98	6.67	-41.9						
1/26/2006 15:45:00 PM	14.8	1048	3.61	6.64	-42.2						

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YSI MW-2B												
DateTime M/D/Y		SpCond mS/cm	DO Conc mg/L	рН	ORP m <b>V</b>							
1/26/2006 16:23:00 PM	12.68	1151	4.51	7.59	-171.1							
1/26/2006 16:25:00 PM	13.19	1313	3.33	7.17	-197.7							
1/26/2006 16:27:00 PM	13.44	1330	2.71	7.18	-212.7							
1/26/2006 16:29:00 PM	13.83	1378	2.7	7.24	-213.9							
1/26/2006 16:31:00 PM	13.51	1356	2.41	7.21	-218.3							
1/26/2006 16:34:00 PM	13.54	1339	1.77	7.08	-226.6							

YSI MW-3B									
DateTime M/D/Y	Temp C	SpCond mS/cm	DO Conc mg/L	рН	ORP mV				
1/26/2006 17:17:00 PM	13.37	953	6.37	7.26	-79.9				
1/26/2006 17:22:00 PM	13.68	977	3.76	6.99	-80.8				
1/26/2006 17:24:00 PM	13.74	979	4.49	7.04	-88				
1/26/2006 17:28:00 PM	13.86	973	4.45	6.94	-92.4				
1/26/2006 17:31:00 PM	13.92	968	4	6.88	-95				

## APPENDIX G

Laboratory Analytical Results, QA/QC, and Chain of Custody



12065 Lebahon Ed. Ht. Juliet, TH 37120 (615) 788-5858 1-890-767-5659 Fax (613) 756-5939

Tat: I.D. 61-0814183

Est. 1970

REPORT OF ANALYSIS

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

February 03,2006

Date Received : Januar Description : Aerex

January

ESC Sample # : L231523-01

01/31/06 1

Site ID :

% Rec.

Sample ID

: A-2 6 FT

Project # : 64110

8015

Collected By : Lee Dalton Collection Date : 01/26/06 11:00

Surrogate Recovery

o-Terphenyl

28, 2006

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	86.5		8	2540G	02/03/06	1
Benzene	BOL	0.0029	mg/kg	8021/8015	01/30/06	. 5
Toluene	BOL	0.029	mg/kg	8021/8015	01/30/06	5
Ethylbenzene	BDL	0.0029	mg/kg	8021/8015	01/30/06	5
Total Xylene	BDL	0.0087	mg/kg	8021/8015	01/30/06	5
Methyl tert-butyl ether	BDL	0.0058	mg/kg	8021/8015	01/30/06	5
TPH (GC/FID) Low Fraction	BDL	0.58	mg/kg	TNGRÓ	01/30/06	5
Surrogate Recovery (70-130)					,	
a,a,a-Trifluorotoluene	93.		% Rec.	8021/8015	01/30/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	BDL	4.6	mg/kg	8015	01/31/06	1
C28-C40 Oil Range	BDL	4.6	mg/kg	8015	01/31/06	1

91.3

ESC Pypresentative W. Beasley,

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, NN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093810

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Page 1 of 2



10:65 Lebanon Ed. Mol. 3018es, ED 37122 (813) 758-5858 14407-787-5858 Fan (CIS) 758-5659

Tem FLD: 62-0884283

Est. 1970

REPORT OF AUALYSIS

February 03,2006

Juscin Ball SSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

ESC Sample # : L231523-02

Date Received : January 28, 2006 Description : Aerex

Site ID :

Sample ID : A-6 8.5 FT

Project # : 64110.

Collected By : Lee Dalton Collection Date : 01/26/06 12:30

Parameter	Dry Result	Det. Limit	Units	Method	Date	<u>Dil</u> .
Total Solids	83,. 7			2540G	02/03/06	.1
Benzène	BDL	0.0030	mg/kg	8021/8015	01/30/06	5
Toluene	BDL	0.030	mg/kg	8021/8015	01/30/06	5
Ethylbenzene	BDL	00030	mg/kg	8021/8015	01/30/06	5
Total Xvlene	BDL	0.0090	mg/kg	8021/8015	01/30/06	5
Methyl tert-butyl ether	BDL	0.0060	mg/kg	8021/8015	01/30/06	5
TPH (GC/FID) Low Fraction	BDL	0.60	.mq/kq	TNGRO	01/30/06	5
Surrogate Recovery (70-130)			7 7			
a,a,a-Trifluorotoluene	94.		€ Rec.	8021/8015	01/30/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	BDL	4.8	mg/kg	8015	01/31/06	1
C28-C40 Oil Range	BDL	4.8	mg/kg	8015	01/31/06	1
Surrogate Recovery			· •			
o-Terphenyl	78.9		% Rec.	8015	01/31/06	1

Results listed are dry weight basis. BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(FQL)

Education Limit - Practical Quantitation Limitify(L)

Laboratory Certification Numbers:

AIHA - 100785, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, NN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Note:

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Page 2 of 2

## Summary of Remarks For Samples Printed 02/03/06 at 13:17:55

TSR Signing Reports: 134 R5 - Desired TAT

Report in FPB

Sample: L231523-01 Account: KLEINAMM Received: 01/28/06 09:00 Due Date: 02/03/06 00:00 RPT Date: 02/03/06 13:17

Sample: L231523-02 Account: KLEINANM Received: 01/28/06 09:00 Due Date: 02/03/06 00:00 RPT Date: 02/03/05 13:17

Chain of Custody	J.» J. «««	Prepared by:  ENVIRONMENTAL	SCIENCE CORP.	12065 Lebanon Koad Mt. Juliet, TN 37122	Phone (800) 767-5859	FAX (615) 758-5859		Accroum KLEINANM (tab use only)	Template/Precedin T34649/P165616	Shibodayla Fod EX Standard	meau.	[0525Z5~]				1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			Temp	Other		Condition.		ph Checked.	
מוואם				y en e	AWZ	# <u>*</u>								1921) 1921) 1944)	7.5. 7. 2. 7. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 7. 2. 7. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 7. 2. 7. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 7. 2. 7. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 2. 7. 7. 7. 2. 7. 7. 7. 2. 7. 7. 7. 2. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7.		4: A		pH	Flow		Jivia: UUPS	Bollies Receive	Time. 0	
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ormalion:			jball@kleinfelder.com, rwilc	City/State Bloomarield,	ject #	KLEINANM-AEREX		Date Results Needed	>	Email?No ^_Yes FAX? No Yes	Date Time	1/26/06 1100	1/26/06 1230									ed by: 15/g/fature/	Specific States	for leb by Signafure)	
Alternate billing information:			Email: jbal	City/State Collected	Lab Project #	KU	P.O.#;	Notified )	200%		Depth	19	15.8					***************************************	ater OT - Other			Racel		Recons	
Alk			<u> </u>					(Lab MUST Be Notified)			Matrix*	SS	5.5						W - Drinking W	714		Time:		1	
	ew Mexi	a S		***************************************	Client Project #:	64110	Site/Facility ID#:	Rush? (L	Same Day	Two Day	Comp/Grab	Grass	Grap						7 - WasteWater D		8682	Date:	Dave:	Date:	
	GSC/Kleinfelder - New Mexico	8300 Jefferson NE. Suite B Albuquerque,NM 87113	Report to: Justin Ball	Project Description: <b>Acrex</b>	Dhomo: (505) 244 7373	FAX:	Collected by (print): Da Ho A	Collected by (signature)	77 70	Packed on Ice N (Y)	Sample ID	Acres 1-182-6'	120x 1-1146 - 8.51					The state of the s	"Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Wa	Remarks:	8632 0521 1558	Relinquished by: (Signature)	Reinfaus led b Signal S	Representation of all singuistics	A COLUMN TO THE PARTY OF THE PA

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Tam 1.6. #2-0814193

Sat. 1970

REPORT OF ANALYSIS

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, HM 87113 January 30,2006

ESC Sample # : L230663-01

Date Received : January 21, 2006 Description : Aerex

Site ID :

Description

Sample ID

Dl 5 FT

Project # : 64110

Collected By : Justin Ball Collection Date : 01/19/06 13:15

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	84.4		dia.	2540G	01/25/06	1
Benzene	BDL	0.0030	ma/ka	8021/8015	01/26/06	5
Toluene	EDL	0.030	mq/kq	8021/8015	01/26/06	5
Ethylbenzene	BDL	0.0030	mg/kg	8021/8015	01/26/06	5
Total Xylene	BDL	0.0089	mg/kg	8021/8015	01/26/06	5
Methyl tert-butyl ether	BDL	0.0059	mg/kg	8021/8015	01/26/06	5
TPH (GC/FID) Low Fraction	BDL	0.59	mg/kg	THGRO	01/26/06	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	90.		% Rec.	8021/8015	01/26/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	230	4.7	mg/kg	8015	0.1/24/06	1
C28-C40 Oil Range	30.	4.7	mg/kg	8015	01/24/06	1
Surrogate Recovery			, ,			
o-Terphenyl	102.		& Rec.	8015	01/24/06	1

ESC Papresentative

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Note:

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Page 1 of 20



12005 Lehanon Rd. (81. 3.33es. TN 27122 (11. 788-5859 1-509-787-5859 Fax (415) 758-5859

Tan: 1.0. 60+6814089

Est. 1370

REPORT OF AMALYSIS

Justin Ball GSC/Kleinfelder - New Mexico B300 Jefferson NE, Suite B Albuquerque, NM 87113 January 30,2006

ESC Sample # : L230663-02

Date Received : January 21, 2006 Description : Aerex Description

Site ID :

Sample ID

F1 11 FT

Project # : 64110

Collected By : Justin Ball Collection Date : 01/18/06-13:15

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	85.9		ş	2540G	01/25/06	1
Benzene	BDL	0.0029	mg/kg	8021/8015	01/26/06	5
Toluene	BDL	0.029	mg/hg	8021/8015	01/26/06	5
Ethylbenzene	BDL	0.0029	mg/kg	8021/8015	01/26/06	5
Total Xylene	BDL	0.0087	mq/kq	8021/8015	01/26/06	5
Methyl tert-butyl ether	BDL	0.0058	mq/kg	8021/8015	01/26/06	5:
TPH (GC/FID) Low Fraction	1.6	0.58	mq/kq	TNGRO	01/26/06	5
Surrogate Recovery (70-130)			. 2 2			
a,a,a-Trifluorotoluene	90.		% Rec.	8021/8015	01/26/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	5.7	4.6	mg/kg	8015	01/24/06	1
C28-C40 Oil Range	BDL	4.6	mg/kg	8015	01/24/06	1
Surrogate Recovery	75.8		% Rec.	8015	01/24/06	1

Results listed are dry weight basis. BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - 1-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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Fage 2 of 30



12985 Levanon P.J. Sit. Juliet, TM 30012 (810) 758-3858 1-800-787-5839 Fam (615) 788-3859

Tan I.D. 81-0814192

Est. 1970

REPORT OF ANALYSIS

January 30,2006

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

ESC Sample # : L230663-03

Date Received : January 21, 2006 Description : Aerex

Site ID :

Description

Sample ID

: F2 5 FT

Project # : 64110

Collected By : Justin Ball Collection Date : 01/18/06 13:50

<u>Rarameter</u>	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	79.7		90	2540G	01/25/06	1.
Wercury	BOL	0.025	mg/hg	7471	01/27/06	1.
Arsenic Barium Cadmium Chromium Lead Selenium	BDL 160 0.79 4.8 10. BDL	1.2 0.31 0.31 0.63 0.31 6.3	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	6010B 6010B 6010B 6010B 6010B	01/23/06 01/23/06 01/23/06 01/23/06 01/23/06 01/23/06	1 1 1 5 5
Silver	BDE	0.63	mg/kg	6010B 8021/8015	01/23/06	1
Benzene Toluene Ethylbenzene .Total Xylene Methyl tert-butyl ether	0.14 BDL 2.5 27: BDL	0.063 0.63 0.31 0.94 0.12	mg/kg mg/kg mg/kg mg/kg mg/kg	8021/8015 8021/8015 8021/8015 8021/8015 8021/8015	01/28/06 01/25/06 01/25/06 01/28/06 01/25/06	100 500 500 100 500
TPH (GC/FID) Low Fraction Surrogate Recovery (70-130) a,a,a-Trifluorotoluene	1400 88.	63.	mg/kg % Rec.	8021/8015	01/23/06	100
Diesel and Oil Ranges C10-C28 Diesel Range C28-C40 Oil Range Surrogate Recovery o-Terphenyl	4100 BDL 0.00	1000 1000	mg/kg mg/kg % Rec.	8015 8015	01/25/06 01/25/06 01/25/06	200 200 200

Results listed are dry Weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87887, GA - 923, IN - C-TH-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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Page 3 of 20



12065 Labamon F3: 8t. Juliet, TN : 122 (611) T55-5859 1-800-767-5959 Fax (615) T58-5859

Tam I.E. 42-0814183

Est. 1978

REPORT OF ANALYSIS

January 30,2006

Justin Ball 6\$C/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NN 87113

ESC Sample # : L230563-04

Date Received : January 21, 2006 Description : Aerex

Site ID :

Sample ID

: G2 4 FT

Project # : 64110

Collected By : Justin Ball Collection Date : 01/18/06 11:05

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	87.7		\$	2540G	01/25/06	1
Benzene	0.066	0.057	mg/kg	8021/8015	01/28/06	100
Toluene	BDL	0.57	mg/kg	8021/8015	01/28/06	100
Ethylbenzene	1.5	0.28	mg/kg	8021/8015	01/25/06	500
Total Xylene	12.	0.86	ma/ka	8021/8015	01/25/06	500
Methyl tert-butyl ether	BDL	0.11	ma/kg	8021/8015	01/28/06	100
TPH (GC/FID) Low Fraction	1200	57.	mg/kg	TNGRO	01/25/06	500
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	86.		% Rec.	8021/8015	01/28/06	100
Diesel and Oil Ranges						
C10-C28 Diesel Range	410	4.6	mg/kg	8015	01/24/06	1.
C28-C40 Oil Range	42.	4.6	má/ka	8015	01/24/06	1
Surrogate Recovery					,	
o-Terphenyl	105.		% Rec.	8015	01/24/06	1

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100765, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 90109, WV - 233

AZ -0612, UN - 047-599-395, NY - 11742, NJ - 81002, WI - 998093910

Note:

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1204) Departor Ed. #100 / Designon Ed. ph. Julies, TH PTECC 1615/ TES-B686 1-800-767-8888 Fat. (818) TEX-8889

Tax 1.D. 62-0814189

Est. 1970

PEPORT OF ANALYSIS

Justin Ball

GSC/Kleinfelder - New Mexico 8300 Jefferson NE. Suite B Albuquerque, NM 87113

January 30,2006

ESC Sample # : L230663-05

Date Received : January 21, 2006 Description : Aerea

Site ID :

: G3 3 FT

Project # : 64110

Sample ID

Collected By : Justin Ball Collection Date : 01/18/06 10:47

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	87,3		Š	2540G	01/25/06	1.
Benzene	BDL	0.0029	mg/kg	8021/8015	01/26/06	Ś.
Toluene	BDL	0.029	mg/kg	8021/8015	01/26/06	5:
Ethylbenzene	0.0037	0.0029	ma/ka	8021/8015	01/26/06	5.
Total Xylene	0.0091	0.0086	mg/kg	8021/8015	01/26/06	5
Wethyl tert-butyl ether	BDL	0.0057	mg/kg	8021/8015	01/26/06	
TPH (GC/FID) Low Fraction	0.71	0.57	mq/kg	THGRO	01/26/06	5 5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	96.		% Rec.	8021/8015	01/26/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	150	4.6	mq/kq	8015	01/24/06	1
C28-C40 Gil Range	40.	4.6	mg/kg	8015	01/24/06	1
Surrogate Recovery			J. J			_
o-Terphenyl	81.,6		% Rec.	8015	01/24/06	1

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100785, AL - 40660, CA - I-2327, CT- PH-0157, FL - E87487, GA - 923, IN - C-TH-01

RY - 90010, RYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Note:

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10005 Lebenon Rd. Mr. Beltet, TM 30100 7010: TS2-3803 1-600-787-3852 Fac 7013: T56-3832

Tam 1.D. 61-6814188

Est. 1970

REPORT OF ANALYSIS

January 30,2006

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

ESC Sample # : L230663-06

Date Received : January 21, 2006 Description : Aerex

Site ID :

Sample ID

: G4 7 FT

Collected By : Justin Ball Collection Date : 01/18/06 10:30

Project # : 54110

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	82.5		ş	2540G	01/25/06	1
Benzene	BOL	0.0030	mg/kg	8021/8015	01/26/06	5
Toluene	BDL	0.030	mg/J:g	8021/8015	01/26/06	5:
Ethylbenzene	BDL	0.0030	mg/kg	8021/8015	01/26/06	5
Total Xvlene	BDL	0.0091	mg/kg	8021/8015	01/26/06	5
Methyl tert-butyl ether	BDL	0.0061	mg/kg	8021/8015	01/26/06	5
TPH (GC/FID) Low Fraction	0.70	0.61	mg/kg	TNGRO	01/26/06	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	96.		% Rec.	8021/8015	01/26/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	71.	4.8	mg/kg	8015	01/24/06	1.
C28-C40 Oil Range	BDL	4.8	mg/kg	8,015	01/24/06	1.
Surrogate Recovery						
o-Terphenyl	63 <i>.</i> 8		% Rec.	8015	01/24/06	1

ESC Presentative

Results listed are dry weight basis. BDL - Below Detection Limit

EDL - Detow Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TW-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - P-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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12965 Lebanov Mo. No. Goliet, IN 271.0 (6154 758-38)8 1-860-161-5859 Fact (615: 918-5059

Tan I.D. 60-0814069

Eat. 1370

REPORT OF ANALYSIS

January 30,2006

Justin Bell GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albüquerque, NM 87113

ESC Sample # : L230563-07

Date Received : January 21, 2006 Description : Aerex

Site ID :

Sample ID

: G5 3 FT

Project # : 64110

Collected: By Collection Date : 01/18/06 10:05

Justin Ball

Dry Result	Det. Limit	Units	Method	Date	Dil.
88.2		8	2540G	01/25/06	1,
BDL	0.0028	mg/kg	8021/8015	01/26/06	5
BDL	0.028	mg/kg	8021/8015	01/26/06	5
BDL	0.0028	mg/kg	8021/8015	01/26/06	5
BDL	0.0085	mg/kg	8021/8015	01/26/06	5
BDL	0.0057	mg/ha	8021/8015	01/26/06	5
2.1	057	mg/kg	TNGRO	01/26/06	5.
8,9.		% Rec.	8021/8015	01/26/06	5
1800	91.	mg/kg	8015	01/25/06	20
BDL	91.	mg/kg	8015	01/25/06	20
0.00		% Rec.	8015	01/25/06	20
	88.2  BDL BDL BDL BDL BDL 2.1  89.	88.2  BDL 0.0028  BDL 0.0028  BDL 0.0028  BDL 0.0085  BDL 0.0057  2.1 0.57  89.  1800 91.  BDL 91.	88.2 %  BDL 0.0028 mg/kg BDL 0.028 mg/kg BDL 0.0028 mg/kg BDL 0.0085 mg/kg BDL 0.0085 mg/kg Colored by the second	88.2 % 2540G  BDL 0.0028 mg/kg 8021/8015 BDL 0.028 mg/kg 8021/8015 BDL 0.0028 mg/kg 8021/8015 BDL 0.0085 mg/kg 8021/8015 BDL 0.0057 mg/kg 8021/8015 2.1 0.57 mg/kg TNGRO  69. % Rec. 8021/8015  1800 91. mg/kg 8015 BDL 91. mg/kg 8015	88.2 % 2540G 01/25/06  BBL 0.0028 mg/kg 8021/8015 01/26/06  BDL 0.028 mg/kg 8021/8015 01/26/06  BDL 0.0028 mg/kg 8021/8015 01/26/06  BDL 0.0085 mg/kg 8021/8015 01/26/06  BDL 0.0057 mg/kg 8021/8015 01/26/06  2.1 0.57 mg/kg TNGRO 01/26/06  89. % Rec. 8021/8015 01/26/06  1800 91. mg/kg 8015 01/25/06  BDL 91. mg/kg 8015 01/25/06

ESC Representative

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TH-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, WN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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11000 Berearu PH. 18. Jailes, TH 17712 4615: 708-585 H-: 00-787-5952 Fam JRIS- 751-5832

Tax 1.5. <2-0814289

Est. 1970

REPORT OF ANALYSIS

January 39,2006

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson ME, Suite B Albuquerque, NM 87113

ESC Sample # : L230663-08

Date Received : January 21, 2006 Description : Aerex

Sample ID

: 91 3 FT

Collected By : Justin Ball Collection Date : 01/17/06 15:00

Site ID :

Project # : 64110

Parameter	Dry Result	Det. Limit.	Units	Method	Ďate	<u>Di</u> l,
Total Solids	97.0		ş	2540Ġ	01/25/06	1
Benzene	BDL	0.0026	mg/kg	8021/8015	01/27/06	5
Toluene	BDL	0.026	mg/kg	8021/8015	01/27/06	.5
Ethylbenzene	BDL	0.0026	mg/kg	8021/8015	01/27/06	5
Total Xylene	0.084	0.0077	mg/hg	8021/8015	01/27/06	5
Methyl tert-butyl ether	BDL	0.0052	mg/kg	8021/8015-	01/27/06	5
TPH (GC/FID) Low Fraction	20.	0.52	mg/kg	THGRO	01/27/06	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	95.		% Rec.	8021/8015	01/27/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	1300	82.	mg/kg	8015	01/25/06	20
C28-C40 Oil Range	92.	82.	mg/kg	8.0,1.5	01/25/06	2.0
Surrogate Recovery						
o-Terphenyl	0.00		% Rec.	8015	01/25/06	20

ESC P presentative

Results listed are dry weight basis. BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TW-01

KY - 90010, KYUST - 0016, KC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 958053910

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10966 Labamon 84. He. Bullet, Td 27100 ,410; 756-5868 1-802-767-3868 Fatt (615) 758-8909

Tant 1.D. 00-0814089

Est. 1970

REPORT OF ANALYSIS

January 30,2005

Justin Ball GSC/Rleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NA 87113

ESC Sample # : L230663-09

Date Received : January 21, 2006 Description : Aerex

Description

Sample ID : H2 11 FT

Collected By : Justin Ball Collection Date : 01/17/06 15:25

Site ID :

Project # : 64110

Parameter	Dry Result	Det. Limit	Units	Method	Date	<u>Di</u> l,
Total Solids	83.8		Sha	2540G	01/25/06	1
Benzene	2.1	0.15	mg/kg	8021/8015	01/26/06	250
Toluene	BDL	1.5	mg/kg	8021/8015	01/26/06	250
Ethylbenzene	BDL	0.15	mg/kg	8021/8015	01/26/06	250
Total Xvlene	2,7	0.45	mg/kg	8021/8015	01/26/06	2.50
Methyl tert-butyl ether	BDL	0.30	mg/kg	8021/8015	01/26/06	250
TPH (GC/FID) Low Fraction	1100	30.	mg/kg	THGRO	01/26/06	250
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	91.		€ Rec.	8021/8015	01/26/06	250
Diesel and Oil Ranges						
C10-C28 Diesel Range	680	95.	mq/kg	8015	01/25/06	2.0
C28-C40 Oil Range	120	95.	mg/kg	8015	01/25/06	20
Surrogate Recovery						
	0.00		& Rec.	8015	01/25/06	20
o-Terphenyl	0.00		& Rec.	8015	01/25/06	20

ESC Proresentative

Results listed are dry weight basis.

BDL - Below Detection Limit

Det: Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - 1-2327, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 90109, WV - 233

AZ -0612, NN - 047-999-395, NY - 11742, NJ - 81002, WI - 598093910

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11000 Labson F-E. HE. AULIEE, TH BT10: (610: 758-5658 1-809-767-5858 Pair (616) 751-560/

Tan 1.D. 60-0814069

Est. 1970

PEPORT OF AMALYSIS

January 30,2006

Justin Ball GSC/Eleinfelder - New Mexico 9300 Jefferson HE, Suite B Albuquerque, NH 87113

ESC Sample # : L230663-10

Date Received : January 21, 2006 Description : Aerex

Site ID :

Sample ID

: H4 3 FT

Project # : 64110

Collected By : Justin Ball Collection Date : 01/18/06 08:20

Dry Result	Det. Limit	Units	Method	.Date	Dil.
90.7		Ş	2540G	01/25/06	1
0.0033	0.0028	ma/kg	8021/8015	01/28/06	5
BOL	0.028		8021/8015	01/28/06	5
0.049	0.028		8021/8015	01/26/06	50.
0.51	0.083		8021/8015	01/26/06	50
BDL	0.0055		8021/8015	01/28/06	5
100	5.5		TNGRO	01/26/06	.50
83.		% Rec.	8021/8015	01/28/06	5
330	22.	ma/ka	8015	01/25/06	5
130	22.		8015	01/25/06	5
		J. J			_
103.		% Rec.	8015	01/25/06	5
	90.7 0.0033 BOL 0.049 0.51 BDL 100 83.	90.7  0.0033	90.7 \$  0.0033	90.7	90.7 \$ 2540G 01/25/06  0.0033 0.0028 mg/kg 8021/8015 01/28/06  BDL 0.028 mg/kg 8021/8015 01/28/06  0.049 0.028 mg/kg 8021/8015 01/26/06  0.51 0.083 mg/kg 8021/8015 01/26/06  BDL 0.0055 mg/kg 8021/8015 01/28/06  100 5.5 mg/kg TNGRO 01/26/06  83. \$ Rec. 8021/8015 01/28/06  330 22. mg/kg 8015 01/25/06  130 22. mg/kg 8015 01/25/06

ESC Proresentative

Results listed are dry weight basis. BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TH-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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12905 Labenco Rd. Htt. Rollet, RH (M1.3 (615) 788-1888 1-800-767-6888 Paul (615) 755-0552

Tace 1.4: 45-0434339

Est. 1970

REPORT OF ANALYSIS

January 30,2006

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NH 87113

ESC Sample # : L230663-11

Date Received : January 21, 2006 Description : Aerex

Site ID :

Sample ID

: 12 10 FT

Project # : 64110

Collected By : Justin Ball Collection Date : 01/17/06 11:20

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	88.1		ş	2540G	01/26/06	1
Mercury	BDL	0.023	mg/kg	7471	01/27/06	1
Arsenic	1.9	1.1	mg/lg	6010B	01/23/06	1
Barium	220	0.28	mg/kg	5010B	01/23/06	1.
Cadmium	0.33	0.28	mg/kg	6010B	01/23/06	1
Chromium	1.8	0.57	mg/kg	6010B	01/23/06	1
Lead	1.5	0.28	mg/kg	6010B	01/23/06	1
Selenium	BDL	1.1	mg/kg	6010B	01/23/06	Ĺ
Silver	BDL	0.57	mg/kg	6010B	01/23/06	1
Benzene	0.012	0.0028	mg/kg	8021/8015	01/26/06	5;
Toluene	BDL	0.028	mg/kg	8021/8015	01/26/06	5.
Ethylbenzene	0.0046	0.0028	mg/kg	8021/8015	01/26/06	5
Total Xvlene	0.034	0.0085	mg/kg	8021/8015	01/26/06	5
Methyl tert-butyl ether	BDL	0.0057	mg/kg	8021/8015	01/26/06	5
TPH (GC/FID) Low Fraction	10.	0:.57	mg/kg	TNGRO	01/26/06	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	91.		% Rec.	8021/8015	01/26/06	5.
Diesel and Oil Ranges						
C10-C28 Diesel Range	150	4.5	mg/kg	8015	01/24/06	1
C28-C40 Oil Range	33.	4.5	mg/kg	8015	01/24/06	1
Surrogate Recovery			33		,	
o-Terphenyl	92.9		% Rec.	8015	01/24/06	1

ESC Representative

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100785, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 96010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 64004, TN - 2006, VA - 06109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Note:

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11660 Lebanon Pd. Rt. Juliat. TH 37900 (613: 758-8688 1-800-187-8889 Fax (615) 758-888

Tax 1.b. 82-0814289

Est. 1970

PEPORT OF ANALYSIS

January 30,2006

Justin Ball GSC/Eleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuguerque, IM 87113

ESC Sample # : L230663-12

Date Received : January 21, 2006 Description : Aerex

Site ID :

Sample ID

: 13 10 FT

Project # : 64110

Collected By

Justin Ball Collected By : Justin Ball Collection Date : 01/17/06 12:00

Parameter	Dry Result	Det. Limit	Units	Hethod	Date	Dil.
Total Solids	84.7		95	2540G	01/26/06	1
Benzene	BDL	0.0030	mg/kg	8021/8015	01/26/06	5
Toluene	BDL	0.030	mg/kg	8021/8015	01/26/06	5
Ethylbenzene	BDL	0.0030	mg/kg	8021/8015	01/26/06	5
Total Xylene	BDL	0.0088	mg/kg	8021/8015	01/26/06	5
Methyl tert-butyl ether	ËDL	0.0059	mg/kg	8021/8015	01/26/06	5
TPH (GC/FID) Low Fraction	0.81	0.59	mg/kg	TNGRO	01/26/06	5
Surrogate Recovery (70-130)			<b>.</b>			
a,a,a-Trifluorotoluene	95.		% Rec.	8021/8015	01/26/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	6.5	4.7	mg/kg	8015	01/24/06	1
C28-C40 Oil Range	BDL	4.7	mg/kg	8015	01/24/06	1
Surrogate Recovery						
o-Terphenyl	79.0		% Rec.	8015	01/24/06	1

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87467, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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Page 12 of 20



.005 Lebagon AJ. Mt. Joliet, TO 37121 0157 026-5838 1-900-187-5858 Sec (815-759-5858

Tam 1.D. 62-0914189

Cat. 1970

REPORT OF ANALYSIS

January 30,2006

Justin Ball 68C/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquergue, NM 87113

ESC Sample # : L230663-13

Date Received : January 21, 2006 Description : Aerex

Description

Site ID :

Sample ID

: 16 3 FT

Project # : 64110

Collected By : Justin Ball Collection Date : 01/17/06 11:40

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	86.2		Se Se	2540G	01/26/06	1
Benzene	BDL	0.0029	mg/kg	8021/8015	01/27/06	-
Toluene	BDL-	0.029	mg/kg	8021/8015	01/27/06	5
Ethylbenzene	BDL	0.0029	mg/kg	8021/8015	01/27/06	5
Total Xylene	0.032	0.0087	mg/kg	8021/8015	01/27/06	5
Methyl tert-butyl ether	BDL	0.0058	mg/kg	8021/8015	01/27/06	5
TPH (GC/FID) Low Fraction	11.	0.58	mg/kg	THGRO	01/27/06	5
Surrogate Recovery (70-130)						_
a,a,a-Trifluorotoluene	95.		% Rec.	8021/8015	01/27/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	620	23.	mg/kg	801,5	01/25/06	5
C28-C40 Oil Range	36.	23.	mg/kg	8015	01/25/06	5
Surrogate Recovery o-Terphenvl	102.		§ Rec.	8015	01/25/06	5
0 1415				*		

ESC Representative

Results listed are dry weight basis. BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - 1-2327, CT- PH-0197, FL - E67487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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12065 leranon FJ. 180. Julian, TH NTIOS 4618: TRE-066: 1-800-767-5839 Par (819) TC4-1:82

Tam I.D. 42-9814082

Est. 1976

PEPORT OF ANALYSIS

January 30,2006

Justin Ball GSC/Rleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

ESC: Sample # : L230663-14

Date Received : January 21, 2006 Description : Aerex

Site ID :

Sample ID

: J3 10 FT

Project # : '64110

Collected By : Justin Ball Collection Date : 01/17/06 09:15

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	82.6		S.	2540G	01/26/06	1
Benzene	BDL	0.0030	mg/kg	8021/8015	01/26/06	5
Toluene	BDL	0.030	mg/kg	8021/8015	01/26/06	5
Ethylbenzene	BDL	0.0030	mg/kg	8021/8015	01/26/06	5
Total Xylene	BDL	0.0091	mg/kg	8021/8015	01/26/06	5
Methyl tert-butyl ether	BDL	0.0060	mg/kg	8021/8015	01/26/06	5
TPH (GC/FID) Low Fraction	6.7	0.60	mg/kg	TNGRO	01/26/06	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	90.		% Rec.	8021/8015	01/26/06	5
Diesel and Oil Ranges						
Cl0-C28 Diesel Range	44.	4.8	mg/kg	8015	01/25/06	1
C28-C40 Oil Range	11.	4.8	mg/kg	8015	01/26/06	1
Surrogate Recovery o-Terphenyl	68.9		% Rec.	8015	01/26/06	1

ESC Proresentative

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Dimit(PQL)

Laboratory Certification Numbers:

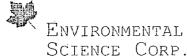
AIHA - 100769, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TU-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 958093910

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Page 14 of 20



10005 Department Rd. Mt. Juliet, TH 20105 10109 139-5858 1-400-785-5889 Fac 1413: 158-5889

Tax 1.5. 61-0614569

Sat. 1970

PEPORT OF AMALYSIS

January 30,2006

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

ESC Sample # : L230663-15

Date Received : Januar January 21, 2006

Site ID :

Sample ID

: J5 8 FT

Project # : 64110

Collected By : Justin Ball Collection Date : 01/17/06 09:40

Parameter	Dry Result	Det. Limit	Units	Kethod	Date	Dil.
Total Solids	81.0		8	2540G	01/26/06	1
Benzené	BDL	0.0031	mg/kg	8021/8015	01/26/06	5
Toluene	BDL	0.031	mg/kg	8021/8015	01/26/06	5
Ethylbenzene	BDL	0.0031	mg/kg	8021/8015	01/26/06	5
Total Xylene	BDL	0.0092	mg/kg	8021/8015	01/26/06	5
Methyl tert-butyl ether	BDL	0.0062	mg/):g	8021/8015	01/26/06	5
TPH (GC/FID) Low Fraction	BDL.	0.62	mg/kg	TNGRO	01/26/06	5
Surrogate Recovery (70-130)			• -			
a,a,a-Trifluorotoluene	85.		% Rec.	8021/8015	01/26/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	9.4	4.9	mg/kg	8015	01/26/06	1
C28-C40 Oil Range	BDL	4.9	mg/hg	8015	01/26/06	ī
Surrogate Recovery					,	
o-Terphenyl	75.8		% Rec.	8015	01/26/06	1

ESC Proresentative

Results listed are dry weight basis. BDL - Below Detection Limit

EDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, ÅL - 40660; CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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Page 15 of 20



11065 Lebamon Pd. US. Bullet, TH 57102 48184 TS845806 1-800-707-8880 Fam (415) 759-5659

Tax 1.D. 40-0614169

55t. 1970

REPORT OF ANALYSIS

January 30,2006

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

ESC Sample # : L230663-16

Date Received: Januar Aerex January 21, 2006

Site ID :

Sample ID

K3 6 FT

Project # : 641-10

Collected By : Justin Ball Collection Date : 01/16/06 16:00

Parameter	Dry Result	Det. Limit	Units	Method.	Date	Dil.
Total Solids	93.4		96	2540G	01/26/06	1
Mercury	BDL	0.021	mg/kg	7471	01/27/06	1
Arsenic	1.5	1.1	mg/kg	6010B	01/23/06	1
Barium	130	0.27	mg/kg	6010B	01/23/06	1
Cadmium	0.52	0.27	mg/kg	6010B	01/23/06	1.
Chromium	3.4	0.54	mg/kg	6010B	01/23/06	1
Lead	2.7	0.27	mg/kg	6010B	01/23/06	.1
Selenium	BDL	1.1	mg/kg	6010B	01/23/06	1
Silver	BDL	0.54	mg/kg	60103	01/23/06	1
Benzene	BDL	0.0027	mg/kg	8021/8015	01/26/06	5
Toluene	BDL	0.027	mg/kg	8021/8015	01/26/06	5
Ethylbenzene	BDL	0.0027	mg/kg	8021/8015	01/26/06	5
Total Xylene	0.088	0.0080	mg/kg	8021/8015	01/26/06	5
Methyl tert-butyl ether	BDL	0.0054	mg/kg	8021/8015	01/26/06	5
TPH (GC/FID) Low Fraction	160	5,4	mg/kg	THGRO	01/27/06	50
Surrogate Recovery (70-130)	2,50	• , .	973			
a.a.a-Trifluorotoluene	82.		% Rec.	8021/8015	01/26/06	5
a,a,a-illindiduduluene	V.		5 1100.	0022,0010	/	
Diesel and Oil Ranges						
C10-C28 Diesel Range	2100	86.	mg/kg	8015	01/26/06	20
C28-C40 Oil Range	150	86.	mg/kg	8015	01/26/06	20
Surrogate Recovery		*				
o-Terphenyl	0.00		% Rec.	8015	01/26/06	20
0 1012						

ESC Representative

Results listed are dry weight basis. BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Det. Dimit - Fractical Quantitation LimitifyDi Laboratory Certification Numbers: AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233 A2 -0612, NN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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Page 16 of 20



12005 Lebanon F.L. #1.000 becaptor for #1.3016ev, 18 80712 /619/788-5888 1-800-167-8188 Fac (813) 784-1689

Tax [.D. 63-0614269

Esc. 1970

REPORT OF ANALYSIS

Justin Ball GSC/Eleinfelder - New Mexico 8300 Jefferson NE, Suite B Albüquerque, MM 87113 January 30,2006

ESC Sample # : L230663-17

Date Received : January 21, 2006 Description : Aerex

Description

Sample ID

K4 16 FT

Site ID :

Project # : 64110

Collected By : Justin Ball Collection Date : 01/16/06 14:40

Dry Result	Det. Limit	Units	Method	Date	Dil.
84.3		95	2540G	01/26/06	1
0.098	0.0030	ma/ka	8021/8015	01/26/06	5
BDL	0.030				5
0.14	0.030				50
0.29					50
0.028	0.0059				5
170	5.9				50
				//	
100		% Rec.	8021/8015	01/27/06	50
3500	95.	ma/ka	8015	01/26/06	20
900					20
		5,9	0013	01/20/00	20
0.00		% Rec.	8015	01/26/06	20
	84.3 0.098 BDL 0.14 0.29 0.028 170 100 3500 900	84.3  0.098	84.3	84.3	\$ 2540G 01/26/06  0.098 0.0030 mg/kg 8021/8015 01/26/06  BDL 0.030 mg/kg 8021/8015 01/26/06  0.14 0.030 mg/kg 8021/8015 01/27/06  0.29 0.089 mg/kg 8021/8015 01/27/06  0.028 0.0059 mg/kg 8021/8015 01/26/06  170 5.9 mg/kg 8021/8015 01/26/06  170 \$ Rec. 8021/8015 01/27/06   \$ Rec. 8021/8015 01/27/06

Results listed are dry weight basis.

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - 1-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TH-01

KY - 90010, KYUST - 0016, NC - ENV375, DM21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-599-395, NY - 11742, NJ - 81002, WI - 998093910

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Page 17 of 20



#### ENVIRONMENTAL Science Corp.

12000 Mehanon Ad. Nt. Juliet, Mil 27212 (616) 766-3864 1-600-747-3869 Fam (613) 753-5453

Tax 1.5. 60-0014289

Est. 1970

REPORT OF AMALYSIS.

January 30,2006

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

ESC Sample # : L230663-18

Date Received : January 21, 2006 Description : Aerex

Description

Site ID :

Sample ID

: K5 10 FT

Collected By : Justin Ball Collection Date : 01/16/06 14:10

Project # : 64110

Parameter	Dry Result	Det. Limit	Units	.Method	Date	Dil.
Total Solids	86.7		ay	2540G	01/26/06	1
Benzene	0,0039	0.0029	ma/kg	8021/8015	01/29/06	5
Toluene	EDL	0.029	mg/kg	8021/8015	01/29/06	5
Ethylbenzene	BDL	0.0029	mg/kg	8021/8015	01/29/06	5
Total Xylene	0.13	0.086	mg/kg	8021/8015	01/26/06	50
Methyl tert-butyl ether	BDL	0.0058	mg/kg	8021/8015	01/29/06	5
TPH (GC/FID) Low Fraction	55.	5.8	mg/kg	TNGRO	01/26/06	50
Surrogate Recovery (70-130)			, ,	-		
a,a,a-Trifluorotoluene	83.		% Rec.	8021/8015.	01/29/06	5
Diesel and Oil Ranges						
C10-C28 Diesel Range	1800	92.	mg/kg	8015	01/26/06	20
C28-C40 Oil Range	430	92.	mg/kg	8015	01/26/06	20
Surrogate Recovery					52,20,00	
o-Terphenyl	0,00		% Rec.	8015	01/26/06	20
0-lerbuenyr	0.00		6 Rec.	9012	01/25/05	ΖŲ

ESC Presentative

Results listed are dry weight basis. BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Det. Limit - Practical Quantitation Limit(FQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TH-01

KY - 90010, KYOST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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Attachment A List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L230663-03	o-Terchenyl	J7
	Selenium	0
L230663-07	o-Terphenyl	<b>J</b> 7
1230663-08	o-Terphenyl	<b>J</b> 7
1230663-09	o-Terphenyl	J.7
L230663-16	o-Terphenyl	<b>J</b> 7
L230663-17	o-Terphenyl	J7
L230663-18	o-Terphenyl	J7

#### Attachment B Explanation of QC Qualifier Codes -

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
ó	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is slevated in order to reflect the necessary dilution.
	Qualifier Report Information
as required by by ESC, we have results. Each Data qualified the potential matrices inconstablished restablished results.	sample and result qualifiers as set forth by the EPA Contract Laboratory Program and a most certifying bodies including NELAC. In addition to the EPA qualifiers adopted we implemented ESC qualifiers to provide more information pertaining to our analytical in qualifier is designated in the qualifier emplanation as either EPA or ESC. It is are intended to provide the ESC client with more detailed information concerning bias of reported data. Because of the wide range of constituents and variety of approached by most EPA methods, it is common for some compounds to fall outside of anges. These exceptions are evaluated and all reported data is valid and useable ited as 'R' (Rejected).
tri re:	Definitions e relationship of the observed value of a known sample to the ue value of a known sample. Represented by percent recovery and levant to samples such as: control samples, matrix spike recoveries, progate recoveries, etc.
Re	ne agreement between a set of samples or between duplicate samples. elates to how close together the results are and is represented by elative Percent Differrence.
ar de id	rganic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to etermine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the surrogate compound and carried through all stages of preparation and analyses.  Control Limits (AO) (SS)
2-Fluoroph Phenol-d5 2,4,6-Tribrond	nenol 31-119 Nitrobenzene-d5 43-118 Dibromfluoromethane 68-128 64-125
	entatively Identified Compound: Compounds detected in samples that are

### Summary of Remarks For Samples Printed 01/30/06 at 12:53:49

TSR Signing Reports: 134 R5 - Desired TAT

Report in PPB

Sample: L230663-01 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/37/06 15:17 Sample: h230653-01 Account: RLEINAMM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RFT Date: 01/27/06 15:17 No stirbars received. Run from soil jar.

No stirbars received. Run from soil jar.

Sample: L230663-02 Account: KLEINAMM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RFT Date: 01/27/06 15:17 Sample: L230663-03 Account: KLEINAMM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RFT Date: 01/27/06 15:17 No stirbars received. Run from soil jar. Sample: L230663-04 Account: KLEINANN Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbars received. Run from soil jär. Sample: L230663-05 Account: KLEIMANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbars received. Run from soil jar. Sample: L230663-06 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbars received. Run from soil jar. Sample: L230663-07 Account: KLEINANN Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbars received. Run from soil jar.
Sample: L230663-08 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbars received. Run from soil jar. Sample: L230663-09 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbars received. Run from soil jar.
Sample: L230663-10 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 Sample: L230663-11 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 Ro stirbars received. Run from soil jar. Reserved: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 Ro stirbars received. Run from soil jar. Sample: L230663-12 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 Sample: L230063-13 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbars received. Run from soil jar. Sample: L230663-14 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbers received. Run from soil jar. Sample: L230663-15 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbars received. Run from soil jar.
Sample: L230663-16 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbars received. Run from soil jar. Sample: L230663-17 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17 No stirbars received. Run from soil jar.
Sample: L230663-18 Account: KLEINANM Received: 01/21/06 09:30 Due Date: 01/27/06 00:00 RPT Date: 01/27/06 15:17
No stirbars received. Run from soil jar.

Chain of Custody Page of	Prepared by: 製 ENVIRONMENTAL	SCIENCE CORP.	Mt. Juliet, TN 37122	Phone (800) 767-5859	FAX (615) 758-5859	の経過である。	Accinum: KLBINAINM (lab use only)	Cooler #     24649/ P165616	Shipped Via Roll X Standard	83 E	(2-5/2/27)				<b>3</b> 2-					J.Lomp	Other		Condition: ((lab use only)		ph Cinecked
Sative Control of the		gradinina, v				Section (Section )					\$2.1.1 1	, para		Arm Mare		Park Park Park Park Park Park Park Park			ar Vi	pld	Flow		id via: U UPS	Bottles Received	Time: 09 30
ontaine//Presen		Koraitaki Kalifeki	maria		1.1	sa	or L	V-11	)zo }	MRC TS \$	XX	XX	XXX	XX	XXX	XX	×	XX	Y				Samples returned via:	Temp:	Date: /-2/-010
Analysis/O	<del>ن را</del> ف	<b>⊝•}₩</b> /	άζ <u>ζ</u> / <del> </del>	an iki	qoV	[-1[	)ZOÞ	OAI	۷, (	BLE DISC	$ \mathbf{x} \mathbf{x} $	XX	XXX			X X	X		V						
		jball@kleinfelder.com, rwilc	S.K. N.M.		AEREX		Date Results Needed	,	No Yes of		1315 28	1315 29	^	1105, 26	gr 12401	1030 20			13.45			ړ	ture)		lignature)
ate billing information:		jball@kleinfel	Collected 13/00 mfreld,	Lab Project #	KLEINANM-AEREX	P.O.#;			FAX?		1/196	90/81/1					>	1/13/06	1/1/1/06	Other		C + ( )	eceived by: (Signa	Received by: (Signa	Ceived for lab by (Signature)
Alternate billi		Email:	<u> </u>	7		d	( Lab MUST Be Notified )		%09'	Matrix* Depth	Mise 25 5'				3,		3/			rinking Water OT-		1250	Time: R	ļ	Time;
w Mexico	)			Client Project #:	64110	Site/Facility ID#:	Rush? (Lab ML	Same Day	Тwo Day	Compression M	Æ	SS	SS	SS	SS	SS	SS	SS	00	WasteWater DW - Dr		8557	1/20/06	Date:	Date:
GSC/Kleinfelder - New Mexico	Albuquerque, NIM 87113	Report to: Justin Ball	Project Description: Acrex	(505) 344-7373		Collected by (print): All	Collected by (signature):	Chip. 15ul	Packed on Ice N Y	)ie Iū	01-5	FI-111	F2-5'	62-4	63-3'	64-7	65-3	H1-3'	1771	'Matrix; (SS - Soil ) GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other	Remarks:	7	Religious ped by (Signature)	/Aeinquished by (Signature)	Relinquished by≏( <u>รูโฐก</u> สเขาะ)

. No. 28. 29.

· (1)

100

Chain of Custody	Prepared by:  ENVIRONMENTAL	SCIENCE CORP.	Mt. Juliet, TN 37122	Phone (800) 767-5859 FAX (615) 758-5859		Accinum KLEINANM (lab use only) TemplatePrelogin T34649/ P165616	Cooler# ((2) SincoedAda Red FX Standard	ntaminant	1220105-10			<b>2</b>				11.22 1440	人
	a.		esta de la companya d	era e granda e granda e granda e granda e granda e granda e granda e granda e granda e granda e granda e granda		29 Ju	8	See See					-0 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	o de o de jor o de jor	00.4 Veri Gara	4	
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nation:		jbail@kleinfelder.com, rwilc	Chipsola Bloom field, NM	b Project #KT FINANM_ARBEX		Date Results Needed	Email? No X Yes No. FAX? No Yes of	Chirs Chirs	118/06 820 24	11766 1120 18	1200 \$	8   Ohil 30/21	117/06   915   8	113/06 940 8	116/06 1600 1 4	p (3/11) 30/91/	p 1 0/11 90/91/
Alternate billing information:		Email: jball@	City/State B Collected B	Lab Project #	P.O.#	(Lab MUST Be Notified)	100%	ix* Depth	m	10,01	10.1	31 1	(0, 1)	18	1 9 1	1 ,91	,01
ew Mexico	g e			Client Project #:	Site/Facility ID#:	Rush? (Lab MUS	Next Day Two Day	Comprigrab Matrix*	SS	SS	SS	SS	SS	SS	SS	SS 1 (	ss /,
GSC/Kleinfelder - New Mexico	3300 Jefferson NE. Suite B Albuquerque,NM 87113	ροή lo: Justin Ball	ject koription: Aerex	one: (505) 344-7373	ected by (print) Call	ected by signature):	Keed on Ice N (V)	Sample 10	14-3	E 2-101	3-10'	16-3/	13-101	5-81	3-6, 40	17-阿姆姆16	5-10-

\*\*\* TMatrix: \$5 - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other Remarks:

Temp Other

Flow ) Hd

(lab use only pH Checked: Samples returned via: □UPS Relinquished by (Signature)

Total Services

### SAMPLE NON-CONFORMANCE FORM

			* 1,	•	
Sample No	.: 1230663	•	-	* ,	:
Date:	1-8406				•
Evaluated	by: Some				
Client:	KIEWANM				
Non-Confo	rmance (check applicable items)	·	·· ··	•	
<i>3</i>		(//			
	Chain of Custody is missing	<u> </u>	Login Clar	ification Ne	eded
*	Improper container type		Improper p	reservation	
	Chain of custody is incomplete	o filipide de S <u>obre de la como</u> filip	Container l	id not in tac	
	Parameter(s) past holding time		Improper t	emperature	
	Broken container(s) see below			ainer: suffic	ient sámble.
				s for analysi	
	Insufficient packing i				à rediresteri.
•					
,	Insufficient packing i				· · · · · · · · · · · · · · · · · · ·
	Improper handling by	carrier (FedE)	x/UPS/C	courier).	* * :
	Sample was frozen				
		·			
Comments:	125 Years	U. SLOC	MUS SUN	Co	morin
ana lo					mof ment win
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	<del></del>	<del> </del>			
		<del></del>		<del></del>	<u> </u>
Login Instruc	tions:	TSR	Initials:_	MB	·. 
•			1		
Client informe	d by call / email / fax / voice mail	date: 1/7	3/03	time: 08	.45
Client contact					
- Analyz	e BTEXC-ROM from 402 for			, , , , , , , , , , , , , , , , , , , ,	
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	2 11 211			<u> </u>	
		4		-,	



12000 Lebence h.A. Ht. Builet. TH STILL (815. 758-5889 1-800-767-5850 Fam (815) 758-9852

Tax 1.D. 61-0614067

Est. 1970

REPORT OF ANALYSIS

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113 February 07,2006

ESC Sample # : L231439-01

Date Received : January 28, 2006 Description : Aerex

Site ID :

Sample ID

: AEREX MW-1

Project # : 64110

Collected By : Lee Dalton Collection Date : 01/26/06 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury, Dissolved	BDL	0.20	ug/l	7470A	02/01/06	1
Arsenic, Dissolved	BDL	20.	ug/1	6010B	02/01/06	1
Barium, Dissolved	110	5.0	ug/l	6010B	02/01/06	1
Cadmium, Dissolved	BDL	5.0	ug/l	6010B	02/01/06	1
Chromium, Dissolved	BDL	10.	υα/1	6010B	02/01/06	1
Chromium, Dissolved	BDL	5.0	ug/l	6010B	02/01/06	1
Lead, Dissolved	BDL	20.	ug/l	6010B	02/01/06	1
Selenium, Dissolved	BDL	10.	uq/l	6010B	02/01/06	1
Silver, Dissolved	151044	10.	- J	51202		
Benzene	BDL	0.50	ug/l	8021	01/31/06	1
Toluene	BDL	5.0	uq/1	8021	01/31/06	1
gthylbenzene	BDL	0.50	ug/1	8021	01/31/06	1 1 1
Total Xylene	BOL	1.5	ug/1	8021	01/31/06	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8021	01/31/06	1
Surrogate Recovery (77-118)			•			
a.a.a-Trifluorotoluene	93.		% Rec.	8021	01/31/06	1
a, a, a-iffiluorocordene						
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.010	ug/1	8310	02/03/06	1
Acenaphthene	BDL	0.010	ug/l	8310	02/03/06	1
Acenaphthylene	BDL	0.010	ug/l	8310	02/03/06	1
Renzo (a) anthracene	BDL	0.010	ug/l	8310	02/03/06	1
Benzo (a) pyrene	BDL	0.010	ug/l	8310	02/03/06	1
Benzo (b) fluoranthene	BDL	0.010	ug/l	8,310	02/03/06	1 1 1
Benzo (g, h, i) perylene	BDL	0.010	ug/1	8310	02/03/06	1
Benzo (k) fluoranthene	EDL	0.010	ug/l	8310	02/03/06	1
Chrysene	BDL	0.010	ug/l	8310	02/03/06	1
Dibenz (a, h) anthracene	EDL	0.0050	ug/1	8310	02/03/06	1
Fluoranthene	BDL	0.010	บตี/1	8310	02/03/06	1
Fluorene	BDL	0.010	ug/l	8310	02/03/06	1
Indend(1,2,3-cd)pyrene	BDL	0.010	ug/l	8310	02/03/06	1
	BDL	0.050	ug/l	8310	02/03/06	1
1-Methylnaphthalene	BDL	0.050	ug/l	8310	02/03/06	1
2-Methylnaphthalene	BDL	0.050	uq/1	8310	02/03/06	1.
Naphthalene	BDL	0.010	ug/1	8310	02/03/06	1
Phenanthrene	BDL	0.010	ug/1	8310	02/03/06	ī
Pyrene	BUL	Λ. Λ.Τ.Ω	49/1	5510	0.00,000,00	_
Surrogate						

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Det. Limit - Practical Quantifation Limit(FQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TW-01

EY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00108, WV - 233

AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Page 1 of 9



1:0008 Lebaton Fd. Mb. Juliet, TN 17103 (613) TSS-8886 1-400-787-5889 Fac (815) TSF-8888

Tan T.D. 61-0814289

Est. 1970

REPORT OF ANALYSIS

February 07,2006

Jüstin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

ESC Sample # : L231439-01

Date Received : Description :

January 28, 2006 Aerex

Site ID:

Description Sample ID

AEREX WW-1

Project # : 64110

Collected By : Collection Date :

Lee Dalton 01/26/06 16:00

Parameter p-Tarphenyl-d14 Result 81.9

Det. Limit Units

% Rec.

Method. 8310

Date 02/03/06

Dil.

ESC Pepresentative

BOL - Below Detection Limit

Det. Limit - Fractical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40650, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-995-395, NY - 11742, NJ - 81002, WI - 998093910

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/07/06 13:52 Frinted: 02/07/06 13:52

Page 2 of 9



10075 Lebenon Rd. No. Juliet. TD 37122 (815) 756-5858 (-300-767-5859 Fag /615) 758-5859

Tax 1.5. 62-0814288

Est. 1970

PEPORT OF ANALYSIS

Justin Bail G3C/Rleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

February 07,2006

ESC Sample # : L231439-02

Date: Received : January 28, 2006 Description : Aerex

Site ID :

Sample ID

: AEREX HW-2

Project # : 64110

Collected By : Lee Dalton Collection Date : 01/26/06 16:44

Parameter	Result	Det. Limit	Units	Method	Date	<u> </u>
Mercury, Dissolved	BDL	0.20	ug/l	7470A	02/01/06	1
	BDL	20.	ug/i	6010B	02/01/06	1
Arsenic, Dissolved	120	5.0	ug/1	6010B	02/01/06	î
Barium, Dissolved		5.0	ug/I	6010B	02/01/06	1
Cadmium, Dissolved	BDL	10.	ug/1 uo/1	6010B	02/01/06	1
Chromium, Dissolved	BDL	5.0	ug/1	6010B	02/01/06	í
Lead, Dissolved	BDL			6010B	02/01/06	1 1 1
Selenium, Dissolved	BOL	20.	ug/ <u>l</u> .	6010B	02/01/06	1 7
Silver, Dissolved	BDL	10.	ug/l	60108	02/01/08	1
Benzenè	BDL	0.50	ug/l	8021	01/31/06	1
Toluene	EDL	5.0	ug/l	8021	01/31/06	1
Ethylbenzene	BDL	0.50	ug/l	8021	01/31/06	1.
Total Xylene	BDL	1.5	ug/l	8021	01/31/06	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8021	01/31/06	1
Surrogate Recovery (77-118)						
a,a,a-Trifluorotoluenė	94.		% Re¢.	8021	01/31/06	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.010	ug/l	8310	02/03/06	1
Acenaphthene	0.015	0.010	ug/l	8.310	02/03/06	. J
Acenaphthylene	BDL	0.010	ug/l	8310	02/03/06	1
.Benzo(a)anthracene	BDL	0.010	ug/l	8310	02/03/06	1
Benzo (a) pyrene	BDL	0.010	uc/l	8310	02/03/06	1
Benzo (b) fluoranthene	BDL	0.010	ug/l	8310	02/03/06	1
Benzo (g, h, i) perylene	BDL	0.010	ug/l	8310	02/03/06	1
Benzo(k) fluoranthene	BOL	0.010	ug/l	8310	02/03/06	1
Chrysene Chrysene	BDL	0.010	ug/1	8310	02/03/06	1
Dibenz (a, h) anthracene	BDL	0.0050	ua/1	8310	02/03/06	
Fluoranthene	BDL	0.010	ug/l	8310	02/03/06	1 1 1
	BDL	0.010	ug/l	8310	02/03/06	1
Fluorené Indeno(1,2,3-cd)pyrene	BDL	0.010	ug/l	8310	02/03/06	ī
	BDL	0.050	ug/l	8310	02/03/06	1
1-Methylnaphthalene	BDL	0.050	ug/l	8310	02/03/06	ĩ
2-Methylnaphthalene	BDL	0.050	ug/l	8310	02/03/06	1
Naphthalene	BDL	0.010	ug/l ug/l	8310	02/03/06	1
Phenanthrene	BOL	0.010	ug/î	8310	02/03/06	1
Pyrene	ann	0.010	añ. r	0310	02,03700	2
Surrogate						

BDL - Below Detection Limit

EDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, MN - 047-995-395, NY - 11742, NJ - 81002, WI - 598093910

Page 3 of 9

12085 Lettanos (d. 16. Addier, FM 07102 (615) 751-1856 1-660-707-1856 Fam (615) 739-1819

Tan 1,5. 81-8814189

Est. 1970

REPORT OF ANALYSIS

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, INI 87113

February 07,2006

ESC Sample # : L231439-02

Dil.

January 28, 2006 Date Received : Description :

Description

Aerex

Sample ID

AEREX MW-2

Collected By : Collection Date :

p-Terphenyl-d14

Lee Dalton

01/26/06 16:44

Site ID :

Project # : 64110

Det. Limit Units Method Date. Result 02/03/06 8310 % Rec.

75.5

ESC Rypresentative

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

Laboratory Certification Numbers:

Alha - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, NN - 047-999-335, NY - 11742, NJ - 81002, WI - 998093910

Note:

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Reported: 02/07/06 13:52 Printed: 02/07/06 13:52

Page 4 of 9



12065 Lebanon Ad. Ut. Toller, TH SP122 (615) 784-6856 1-800-747-5859 Fam (615) 784-8668

Tam 1.5. 82-9814289

Est. 1970

REPORT OF ANALYSIS

February 07,2006

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

ESC Sample # : L231439-03

Date Received : Description : January 28, 2006 Aerex

Description

Site ID :

Sample ID

: AEREX MW-3K

Project # : 64110

Collected By : Lee Dalton Collection Date : 01/26/06 17:45

Parameter:	. Result	Det. Limit	Units	Method	Date	Dil.
Mercury, Dissölved	BDL	0.20	ug/l	7470A	02/01/06	1
Arsenic, Dissolved	BDL	20.	ug/1	6010B	02/01/06	1
Barium, Dissolved	990	.5.0	ug/l	6010B	02/01/06	1
Cadmium, Dissolved	BDL	5.0	ug/l	60103	02/01/06	1
Chromium, Dissolved	BDL	10.	ug/l	6010B	02/01/06	1
Lead, Dissolved	BDL	5.0	ug/l	6010B	02/01/06	1
Selenium, Dissolved	BDL	20.	ug/l	6010B	02/01/06	1
Silver, Dissolved	BDL	10.	ug/l	60108	02/01/06	1
Benzene-	BDL	0.50	ug/l	8021	02/02/06	1.
Toluene	BDL	5.0	ug/l	8021	02/02/06	1
Ethylbenzene	1.9	0.50	ug/l	8021	02/02/06	1
Total Xylene	BOL	1.5	ug/l	8021	02/02/06	1.
Methyl tert-butyl ether	BDL	1.0	ug/1	8021	02/02/06	1
Surrogate Recovery (77-118)			-			
a,a,a-Trifluorotoluene	95.		% Rec.	8021	02/02/06	1
Polynuclear Aromatic Hydrocarbons		•				
Anthracene	BDL	0.010	ug/1.	8310	02/03/06	1
Acenaphthene	BDL	9.010	ug/l	8310	02/03/06	1
Acenaphthylene	BDL	0.010	ug/l	8310	02/03/06	1
Benzo(a)anthracene	BDL	0.010	ug/1	8310	02/03/06	1
Benzo (a) pyrene	BDL	0.010	ug/l	8310	02/03/06	1
Benzo (b) fluoranthene	BDL	0.010	ug/l	8310	02/03/06	1
Benzo(g,h,i)perylene	BDL	0.010	ug/l	8310	02/03/06	1
Benzo(k) fluoranthene	BDL	0.010	ug/l	8310	02/03/06	1
Chrysene	BDL	0.010	ug/l	8310	02/03/06	1 1 1 1
Dibenz (a,h) anthracene	BDL	0.0050	ug/l	8310	02/03/06	1.
Fluoranthene	BDL	0.010	ug/1	8310	02/03/06	1
Fluorene	BDL	0.010	ug/l	8310	02/03/06	1
Indeno(1,2,3-cd)pyrene	BDL	0.010	ug/l	8310	02/03/06	1
1-Methylnaphthalene	58.	0.50	uq/l	8310	02/03/06	10
2-Methylnaphthalene	60.	0.50	ug/l	8310	02/03/06	10
Naphthalene	63.	0.50	ug/l	8310	02/03/06	10
Phenanthrene	BDL	0.010	ug/l	8310	02/03/06	1
Pyrene	BDL	0.010	ug/l	8310	02/03/06	i
Surrogate		7				
Qui rogace						

BDL - Below Detection Limit

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIRA - 100789, AL - 40660, CA - I-2327, CT- PR-0197, FL - E87487, GA - 923, IN - C-TN-01

KY - 90010, KYDST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84064, TN - 2006, VA - 00109, NV - 233

AZ -0612, EN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Page 5 of 9



12405 Lebanon Hd. Hr. Jelier, TD 27192 (415) 758-5866 1-406-767-5869 Fam (613) 756-5854

Tem I.D. 61-0814089

Est. 1970

REPORT OF ANALYSIS

Justin Ball GSC/Eleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

February 07,2006

ESC Sample # : L231439-03

Date Received : Description :

January 28, 2006

Description Aerex

Site ID :

Sample ID

: AEREX MW-3K

Det. Limit

Project # : 64110

Collected By : Collection Date :

Lee Dalton 01/26/06 17:45

p-Terphenyl-dl4

Result 94.9

Units % Rec.

8310

Method

Date

02/03/06

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

Det. Limit - Fractical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TH-01

KY - 90010, KYDST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, NN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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Reported: 02/07/06 13:52 Printed: 02/07/06 13:52

Page 6 of 9

10045 Letamon F4. Hp. Jeijan, TM 17122 (815) T58-1555 1-806-787-5859 Fan 7815) 758-5858

Tan I.D. 41-9814289

Ést. 1970

REPORT OF AUALYSIS

February 07,2006

Justin Ball GSC/Kleinfelder - New Mexico 8300 Jefferson NE, Suite B Albuquerque, NM 87113

ESC Sample # : L231439-04

January 28, 2006 Date Received : Description :

Description

Aerex

Site ID :

Sample ID

ABREX MW-3K

Project # : 64110

\*Collected By : Lee Dalton Collection Date : 01/26/06 17:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Bromide	BDĹ	1000	ug/l	9056	01/28/06	1
Chloride	7800	1000	ug/1	9056	01/28/06	1
Fluoride	450	100	ug/l	9056	01/28/06	1,
Nitrate	BDL	100	ug/l	9056	01/28/06	1
Nitrite	BDL	100	ug/l	9056	01/28/06	1
Sulfate	7200	5000	ug/l	9056	01/28/06	1
Alkalinity	570000	100000	ug/l	310.2	01/30/06	10
Phosphate, Ortho	BDL	25.	ug/l	4500P-E	01/28/06	1
Specific Conductance	980		umbos/cm	9050A	02/01/06	1
Dissolved Solids	570000	1000	ug/1	160.1	02/02/06	1,
Calcium, Dissolved	130000	500	ug/l	6010B	02/01/06	1
Magnesium, Dissolved	-9800	100	ug/l	6010B	02/01/06	ı
Potassium, Dissolved	2200	500	ug/l	60108	01/31/06	1
Sodium, Dissolved	83000	500	ug/l	6010B	01/31/06	1

ESC Perpresentative

BOL - Below Detection Limit

BPL - Relow Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TH-01

KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

AZ -0612, NN - 047-559-395, NY - 11742, NJ - 81002, WI - 998093510

note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/07/06 13:52 Printed: 02/07/06 13:52

Page 7 of 9

		Alle	Alternate billing information:	ormation:		]	Analys	is/Confe	Analysis/Container/Preservative	servativ	9	Chain of Custody
GSC/Kleinfelder - New Mexico	Vew Mexic	*****	•			<u> </u>	Tour Part	ergy!				Page Lof L
8300 Jefferson NE. Suite B	e B					ide.				erketter. V	i Seneral Seneral Seneral Seneral Seneral Seneral	
Albuquerque, NM 87113						tulf?"			La param La galann S	rational	yakisi Lafi	Prepared by:
, ,						Ţ.	oPres	. šə.i	ear4ol			ENVIRONMENTAL
Report to: Justin Ball		Email		jball@kleinfelder.com, rwilc	er.com, rw	T	hF-M	ΤοЙ-	bΕ-ν			SCIENCE CORP.
Project Description: Acrex			City/State Collected	Bloomfield	ek, NM	THE STATE	ıdHlı	IDbE	THI NO3	oPres	Si Si	Mt. Juliet, TN 37122
Phone: (505) 344-7373	Client Project #:		Lab Project #	lect #				Ilm	14.2		aj Ą	Phone (800) 767-5859
EAX:	64110		KLE	KLEINANM-AEREX	EREX			ıszı	1,807.6		οŃ	FAX (615) 758-5859
Collected by (print):	Site/Facility ID#;		P.O.9.					ÞΟ	37.		-qui	The second secon
Collected by (signature):	Rush? (La	( Lab MUST Be Notified	lotified.)	Date Results Needed	s Needed			s'ec			٧-٦	Accinum: KLEINANM ((ab.use.only)
the state	Same Day		.200%					)N'	100		ĻŢ	Template/Prelogin T34650/P165617
Packed on Ice. N. (Y.)	Next Day	Next Day.	. 100%	Email? No	X Yes		Br,Or XM <sup>4</sup>	ZON'	- Andrew	SCRA	310L	Cooler # [[2] [2] Shinned Var Food W. Stundard
Φ.	Comp/Grab	Matrix	Depth	Date	Time	Codits - 3 - 4 - 2		Cl'E	4438 CEE		8AS.	
Aerex / mw-1	Grab	GW	1	1/26/06	1600	S. E.	×	44	*	X	X	10624520
Aerex / MW-2	Grab	GW	1	1/26/06	6691	5	×		X	XX	X	
/	dand	GW	١	1/26/06	1745	S	×	2 (0) 2 (0) 2 (1) 2 (1) 2 (1)	×	XX	X	29
Acrx / MW-3K	Grad	βW	)	1/21/05	Shel	ر ا	×	×	變×	13354 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
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Section Line

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S. Sapare

SE R

\*Matrix\_SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other Remarks:

Temp

PH\_ Flow

_
423
1257
1558

		\		
•	Samples returned via: UPS Condition.	o Bottles Received ( — — — )	10 Janes 18 pH.Checked	
	Sarriples rotu	Temp /	187)	
	Reperved by 15 diagure)	Received by: (Sanalure)	Received of lab by: (Sundaure)	
	Time: 0900	Time: (2'00	Time:	
	Date: Time: //27/06 0900	1/27/b6	Oate:	
	Reinquished by: (Signature)	Reinfulshed by (Signature)	Refinquished by: (Signature)	



#### Darren Reeder

From:

Mark Beasley

Sent: To: Friday, January 27, 2006 8:29 AM Login; Ken Buckley; Due WetLab

Subject:

\*KLEINANM\* short hold nitrates arriving Saturday 1/28/06

We will receive 1 GW for NITRATE, NITRITE, & PORTHO for project Aerex. Sample will go out of hold Saturday afternoon- get to wetlab ASAP.

Thanks
Mark Beasley
Environmental Science Corp
Phone: 800-767-5859 ext 176
Email: mbeasley@envsci.com

This E-mail and any attached files are confidential, and may be copyright protected. If you are not the addressee, any dissemination of this communication is strictly prohibited. If you have received this message in error, please contact the sender immediately and delete/destroy all information received.

Mark

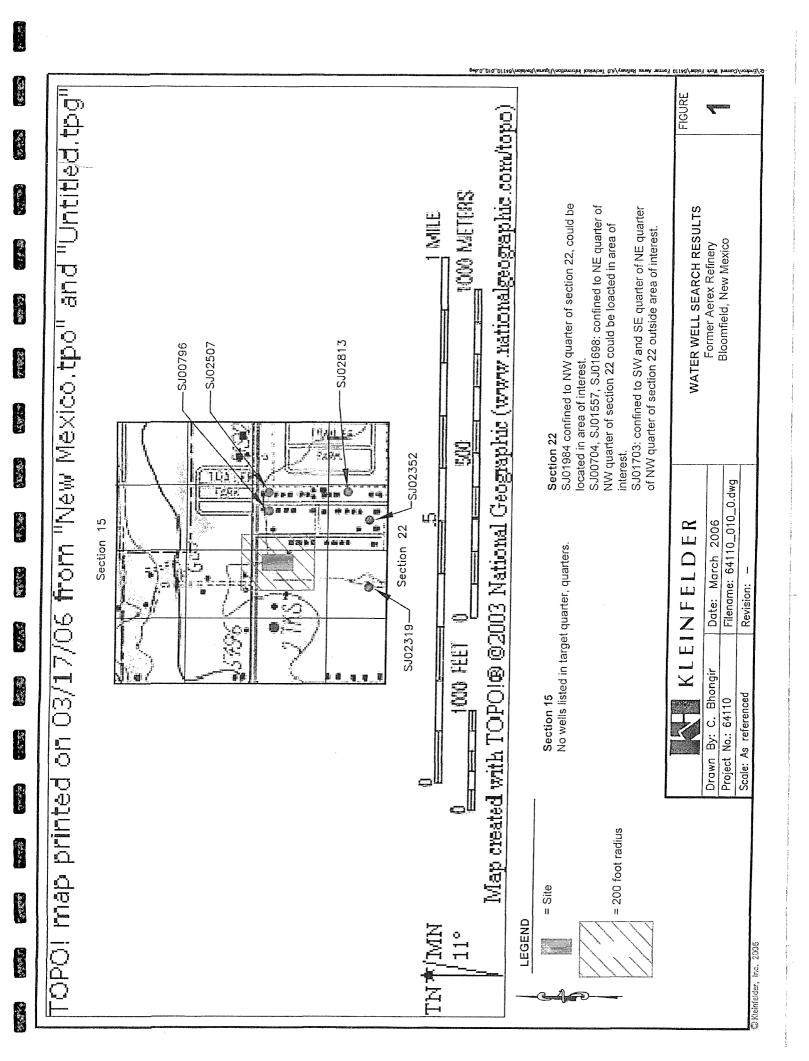
### ENVIRONMENTAL SCIENCE CORP.

SAMPLE NON-CONFORMANCE FORM

Sample No.: 123/439
Date: 1-28-04
Evaluated by: Danen
Client: KLEINANM
Non-Conformance (check applicable items)
Chain of Custody is missing Login Clarification Needed
Improper container type Improper preservation
Chain of custody is incomplete Container lid not in tact
Parameter(s) past holding time Improper temperature
Broken container(s) see below Broken container: sufficient sample
yolume remains for analysis requested
Insufficient packing material around container
lusufficient packing material inside cooler
Improper handling by carrier (FedEx / UPS / Courier)
Sample was frozen
Comments: (1) Received (3) 250 mi plantie
container with un preserved a made
and all a AEPEV LOUID - RY or in
I thited / CAL / 1000 - STORE
listed on the CC. Was the Chart.
need addition of analysis! on is the
Login Instructions: TSR Initials: Mb.
voume?
Client informed by call / email / fax / voice mail date: 1/30/06 time: 0845
Client contact:
- extra volume

# APPENDIX H

Water Well Search Results



#### Water Well Search Results Former Aerex Refinery Bloomfield NM

#### WATER COLUMN REPORT 03/07/2006

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quar	ters are 1=NW 2=NE 3=SW 4=SI	Ξ)			
(quar	ters are biggest to smallest)	Depth	Dep	oth Water (in feet)	Comment
POD Number	Tws Rng Sec q q q Zone	X	/ We	Il Water Column	
SJ.02256	29N 11W 22				Address located outside area of interest
SJ 02200	29N 11W 22	60	22	38	Address located outside area of interest
SJ 01984	29N 11W 22 1				potentially located in area of interest/address unknown
SJ 02319	29N 11W 22 1 1 4				Address located outside area of interest
SJ 00704	29N 11W 22 1 2	55	20	35	potentially located in area of interest/address unknown
SJ 00796	29N 11W 22 1 2	50	8	42	Address located outside area of interest
SJ 01703	29N 11W 22 1 2	68	3	65	Address located outside area of interest
SJ 02352	29N 11W 22 1 2				Address located outside area of interest
SJ 01557	29N 11W 22 1 2	70	11	59	potentially located in area of interest/address unknown
SJ 01698	29N 11W 22 1 2				potentially located in area of interest/address unknown
SJ 02507	29N 11W 22 1 2 1				Address located outside area of interest
SJ 02813	29N 11W 22 1 2 3	59	16	43	Address located outside area of interest
SJ 01214	29N 11W 22 13	49	12	37	
SJ 00320	29N 11W 22 1 3 1	38	10	28	
SJ 00484	29N 11W 22 131	37	10	27	
SJ 03532	29N 11W 22 133	49	14	35	
SJ 01280	29N 11W 22 133				
SJ 00160	29N 11W 22 133				
SJ 00151	29N 11W 22 134	45	18	27	
SJ 02721	29N 11W 22 14		59		
SJ 00476	29N 11W 22 23				
SJ 03503	29N 11W 22 233	72	18	54	
SJ 02578	29N 11W 22 233	58	24	34	
SJ 02379	29N 11W 22 233				
SJ 02372	29N 11W 22 2 3 4				
SJ 03093	29N 11W 22 234	42	22	20	
SJ 02368	29N 11W 22 243				
SJ 00623	29N 11W 22 3 1 4				
SJ 01320	29N 11W 22 3 2				
SJ 03189	29N 11W 22 3 2 1	45	20	25	
SJ 03188	29N 11W 22 3 2 2	45	11	34	
SJ 02777	29N 11W 22 3 2 2				
SJ 02020	29N 11W 22 3 3				
SJ 02138	29N 11W 22 4 2	40	7	33	
SJ 03479	29N 11W 22 4 2 3	43	4	39	
SJ 02529	29N 11W 22 4 2 3	30	9	21	
SJ 03049	29N 11W 22 4 2 4	33	10	23	
SJ 00696	29N 11W 22 4 3	34	12	22	
SJ 01974	29N 11W 22 4 3 3	47	11	36	
SJ 02630	29N 11W 22 4 3 3		.,		
SJ 01732	29N 11W 22 4 3 4				
0001102					

Record Count: 41

#### WATER COLUMN REPORT 03/07/2006

(quarters are 1=NW 2=NE 3=SW 4=SE)

(diguiters are 1-1444 2-145 3-344 4-35)								
ters are biggest to smalle	Depth	Depth	Water (in feet)					
Tws Rng Secqqq	Zone	X Y	Well	Water Column	į			
29N 11W 15 4 2 4								
29N 11W 15 432		75	12	63				
29N 11W 15 44								
29N 11W 15 4 4 1								
29N 11W 15 4 4 1								
29N 11W 15 441								
29N 11W 15 441								
29N 11W 15 4 4 3								
29N 11W 15 23								
29N 11W 15 3 2								
	ters are biggest to smalle.  Tws. Rng Sec q q q 29N 11W 15 4 2 4 29N 11W 15 4 4 29N 11W 15 4 4 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 2 3	ters are biggest to smallest) Tws Rng Sec q q q Zone 29N 11W 15 4 2 4 29N 11W 15 4 3 2 29N 11W 15 4 4 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 2 3	ters are biggest to smallest)  Tws Rng Sec q q q Zone  29N 11W 15 4 2 4  29N 11W 15 4 4  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 2 3	ters are biggest to smallest)  Tws Rng Sec q q q Zone  29N 11W 15 4 2 4  29N 11W 15 4 4  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 4 4 1  29N 11W 15 2 3	ters are biggest to smallest)  Tws Rng Sec q q q Zone 29N 11W 15 4 2 4 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 4 4 1 29N 11W 15 2 3			

Record Count: 10

<sup>=</sup> Wells within or potentially in target quarter-quarters

Back

DB File Nbr:

SJ 02256

Primary Purpose:

72-12-1 DOMESTIC ONE HOUSEHOLD DOM

Primary Status:

Permit

Total Acres:

PMT0

3

Total Diversion:

Owner: DAVID N. MOHLER

Documents on File

Doc

File/Act

Status 1 2 3 Trans\_Desc From/To

Acres

01/18/1990 PMT APR ABS SJ 02256

 $\mathbf{T}$ 

0

Point of Diversion

POD Number SJ 02256

(qtr are 1=NW 2=NE 3=SW 4=SE)

(qtr are biggest to smallest Source Tws Rng Sec q q q

11W 22

X Y are in Feet

Zone

Х

29N

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

5 20H 23 A9:58

1. Name and Address of Applicant:		File No. SJ-2256
DAVID N. MOHLER	1 - Apr. Jow W2N0 <b>0</b>	
115 N. MOHLER ST		
BLOOM FIELD NAIST		29.11.22.2431
Describe well location under one of the fol		
	-	
SAOI JUAOI County.	4 of Sec. 22 Twp. 519	Rgc. // N.M.P.M. in
•	ROPERTY DESCRIPTION NR SCH	OOLDISTHIC ATNT
b.Tract Noof Map No	BEG W 1075.98 FT & N1*( 394 FT FROM THE E1/4 CO	06'W
c.Lot Noof Block No	THENCE W 246.79 FT N1	*06'
Subdivision, recorded in	W 176 FT E 246.73 FT 06'E 176 FT TO PT OF BE	
d. X =feet. Y =		-9.
in the		
e. Give street address or route and box INC	or property upon which well is to be	located, or location by direction and
distance from known landmarks	//.= a/ // // // -/)	
W	113 /11. 11)0HLERE	51 R E F
-	5	
Approximate depth (if known)	feet; outside diameter of c	asinginches.
Name of driller (if known)		Ç.D
		2 1 4
Use of water (check appropriate box or boxe	s):	AN
M One household, non-commercial trees	lawn and garden not to exceed 1 acre.	
☐ Livestock watering.	Land 200 garden har to entrea 1 2000	mara Arab
_		
	reial trees, lawns and gardens not to exce	~ o
Drinking and sanitary purposes and the a commercial operation.	se irrigation of non-commercial trees, sh	nibs and Bawnsin conjugation with
·	ons to discover or develop natural resourc	ही <sub>ं पिर</sub>
Construction of public works, highway		1 3 3
If any of the last four were marked, give	name and nature of business under Rem	narks. (Item 5)
Remarks:		
3.		
INDAVID N. MOHLER		
and belief and that development shall not co	mmence until approval of the permit has	s been obtained.
Month mobile	Annticant	
	reportant	( ) ( ) (A)
By:	Date:	-12-90
AC*	TION OF STATE ENGINEER	
is application is approved for the use indicate	d, subject to all general conditions and to	o the specific conditions numbered
(a) and 4 on the	e reverse side hereof. This permit will aut	omatically expire unless this well is
lled or driven and the well record filed on or b	efore January 15, 1991	<del>.</del>
Allo Klenbert sid	hase refer to condition $\underline{\mathscr{A}}$ on the relie of this permit.	versa
By: C. A. Wohlenberg		
Date: January 18, 1990	F	File NoSJ-2256

Back

DB File Nbr:

SJ 02200

Primary Purpose:

DOM 72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Purpose:
Primary Status:

PMT

motol lamas.

Permit

Total Acres:

0

Total Diversion:

ersion: 3
Owner: JAMES T. STIFFLER

Documents on File

Point of Diversion

POD Number

SJ 02200

Doc

File/Act

Status 1 2 3 Trans\_Desc

From/To

Acres

72121 08/29/1988

PMT LOG ABS SJ 02200

 $\mathbf{T}$ 

0

`

(qtr are 1=NW 2=NE 3=SW 4=SE)

(qtr are biggest to smallest

X Y are in Feet Zone X

**Source** Shallow

Tws Rng Sec q q q

29N 11W 22

#### READ INSTRUCTIONS ON BACK

Revised March 1979

### APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

38 AUG 30 P5: 17

1. Name and Address of Applicants and Addres	File No. SJ-2200
James T Stiffer PE. HEW MEXICO	
Bay 33.5	
Bloom Field New Mexico 87413	
Describe well location under one of the following subheadings:	
a. 4 4 4 4 4 4 6 Sec. 22 Twp. 29N	Rge. 11W N.M.P.M., in
San Juan County.	•
b.Tract Noof Map Noof the	
c. Lot No. 10 of Block No. TWO of the TURNER Subdivision, recorded in Saw Juan County.	- subdivision (Bloomfre.
d. X =feet. Y =feet, N.M. Coor	dinate SystemZone Grant.
e. Give street address or route and box No. of property upon which well is to distance from known landmarks	be located, or location by direction and
3. Approximate depth (if known) 55 feet; outside diameter	of casing 7" inches.
Name of driller (if known)	
4. Use of water (check appropriate box or boxes):	
One household, non-commercial trees, lawn and garden not to exceed 1 act	re.
☐ Livestock watering.	
More than one household, non-commercial trees, lawns and gardens not to	exceed a total of 1 acre.
Drinking and sanitary purposes and the irrigation of non-commercial tree a commercial operation.	
Prospecting, mining or drilling operations to discover or develop natural res	sources. Quit NO.
Construction of public works, highways and roads.	-
If any of the last four were marked, give name and nature of business under	Remarks. () Remarks.
5. Remarks:	7 6 <u>2</u>
I. James I Style , affirm that the foregoing stateme and belief and that development shall not commence until approval of the perm	nts are true to the best of my knowledge it has been obtained
James T. St. FHa Capplicant	• ,
By Date:	8-25-88
ACTION OF STATE ENGINEER	
This application is approved for the use indicated, subject to all general conditions a 1(a) and 4 on the reverse side hereof. This permit wil	
drilled or driven and the well record filed on or before August 15, 1989	
S.E. Reynolds, Spite Engiger (1)  By:	
C.A. Wohlenberg Date: August 29, 1988	File No. SJ-2200

Back

DB File Nbr:

SJ 01984

Primary Purpose:

DOM 72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status:

Permit

Total Acres:

0 3

PMT

Total Diversion:

Owner: RICHARD A. & MARTINEZ

Documents on File

Point of Diversion

Doc

File/Act

Status 1 2 3 Trans\_Desc

From/To

Acres

06/14/1985 PMT APR ABS 72121

SJ 01984

T

0

(qtr are 1=NW 2=NE 3=SW 4=SE)

(gtr are biggest to smallest Source Tws Rng Sec q q q

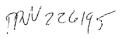
X Y are in Feet

Zone

X

POD Number SJ 01984

29N 11W 22 1



Revised March 1979

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

Name and Address of Applicant:	File No. SJ-1984
Richard America & Juan F. Garcia	
PO. Box 2870	
Bloomfield A.M 87413	
Describe well location under one of the following subheadings:	
a4	29N page 11N NIMPM in
County.	
b.Tract Noof Map Noof the	
c.Lot Noof Block Noof theCo	unty.
d. X =feet, Y =feet, N.M.	Coordinate System Zone Grant.
e. Give street address or route and box No. of property upon which weld distance from known landmarks La Sara Sub. Lat Bloomfield D.m. 87413	1 is to be located, or location by direction and
3. Approximate depth (if known) 40 feet; outside dian	, " S."
Name of driller (if known) Drats Stilling	10. WB-1084
4. Use of water (check appropriate box or boxes):	
One household, non-commercial trees, lawn and garden not to exceed	d 1 acre.
☐ Livestock watering.	not to exceed a totalof facte.
☐ More than one household, non-commercial trees, lawns and gardens	not to exceed a tota of facte.
<ul> <li>Drinking and sanitary purposes and the irrigation of non-commercial a commercial operation.</li> </ul>	<b>建</b> 超图
Prospecting, mining or drilling operations to discover or develop natu	tral resources.
Construction of public works, highways and roads.	2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
If any of the last four were marked, give name and nature of business	under Remarks, fitein 514 🗢
5. Remarks:	EX.
1	
hickord of Martine Applicant	
	Date: 6/10/85
ACTION OF STATE ENGINEER	R
This application is approved for the use indicated, subject to all general condit 1(a) and 4 on the reverse side hereof. This perfectly drilled or driven and the well record filed on or before	nit will automatically expire unless this well is
S.E. Reynolds, Scate Enginery A	•
By: C. A. Wohlenberg, District 1	
C. A. Wohlenberg, District 1  Date: June 14, 1985	E11. M Q 1_1097
Date:	File No. <u>SJ-1984</u>

Back

DB File Nbr:

SJ 02319

Primary Purpose:

DOM

72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status:

PMT

Permit

Total Acres:

0 Total Diversion: 3

Owner: DONALD C. GOODWIN

Documents on File

Doc

File/Act

Status 1 2 3 Trans Desc From/To

Acres

72121

**04/11/1991** PMT APR ABS SJ 02319

 $\mathbf{T}$ 

0

Point of Diversion POD Number

SJ 02319

(qtr are 1=NW 2=NE 3=SW 4=SE)

(qtr are biggest to smallest Source Tws Rng Sec q q q

29N 11W 22 1 1 4

Zone

X Y are in Feet Х

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

Back

DB File Nbr:

SJ 00704

Primary Purpose:

72-12-1 DOMESTIC ONE HOUSEHOLD DOM

Primary Status:

Permit

Total Acres: Total Diversion: 0 3

PMT

06/27/1978

Owner: CARLOS W. JARAMILLO

Documents on File

Doc File/Act Status 1 2 3 Trans\_Desc

From/To

Acres

X

72121

PMT LOG ABS SJ 00704

T

0

Point of Diversion

POD Number SJ 00704

(qtr are 1=NW 2=NE 3=SW 4=SE)

(qtr are biggest to smallest X Y are in Feet Source Tws Rng Sec q q q Zone

Shallow 29N 11W 22 1 2

#### APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 75-11-1 NEW MEXICO STATUTES

	770 HAY 31 PH 1 13
1. Nam	e and Address of Applicant: File No. SJ-704
0	who W. Jaconell STATE ENGINEER OFFICE
P	6. Box 594 SANTA FE. N.M. 87501
B	loonfield h. mex.
2. Desc	ribe well location under one of the following subheadings:
R	
b. T	ract No of Map No of the
c, Lo Su	bi No. 2+3 of Block No. 4 of the LOMA VISTA Addition, Bloom Field No.)  bdlvlsion, recorded in St. N. J. 4 N
	=feet, N. M. Coordinate SystemZone theGrant.
	we street address or route and box No. of property upon which well is to be located, or location by direction and
die	tance (rom known landmarks
	oximate depth (if known) 66' feet; outside diameter of casing 6' inches.
	e of driller (if known) DONALD'S
	·
. Use o	f water (check appropriate box or boxes):
X)	Household, non-commercial trees, lawn and garden not to exceed 1 acre.
	Livestock watering.
	Drinking and sanitary purposes and the irrigation of non-commercial trees, shrubs and lawns in conjunction with a commercial operation.
	Prospecting, mining or drilling operations to discover or develop natural resources.
	Construction of public works, highways and roads.
	If any of the last three were marked, give name and nature of business under Remarks. (Item 5)
. Remai	rks:
7	
I, L.	elief and that development shall not commence until approval of the permit has been obtained.
0	les W. Jonamille, Applicant
u	
Ву:	Date: <u>5-37-78</u>
	ACTION OF STATE ENGINEER
	ication is approved for the use indicated, subject to all general conditions and to the specific conditions numbered  4. on the reverse side hereof. This permit will automatically expire unless this well is driven and the well record filed on or before 6/30/79.
	nolds, State Engineer
Í	G D A
Ву:	C.C. Parry
	E. C. Barry, Engf-Tech. Water Rights Bureau
Date:	6/27/78 File No. S.1-704

Back

DB File Nbr: SJ 00796

Primary Purpose: DOM 72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status: PMT Permit

Total Acres: 0
Total Diversion: 3

Owner: T. P. JOHNSON

Documents on File

Doc File/Act Status 1 2 3 Trans\_Desc From/To Acres

72121 09/11/1978 PMT LOG ABS SJ 00796 T 0

(qtr are 1=NW 2=NE 3=SW 4=SE)

Point of Diversion (qtr are biggest to smallest X Y are in Feet POD Number Source Tws Rng Sec q q q Zone X

**SJ 00796** Shallow 29N 11W 22 1 2

(1)49 #224130
Revised March 1972

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 75-11-1 NEW MEXICO STATUTES

\*70 SEP B PH 1 49

l. Nan	ne and Address of Applicant:	File No. SJ-796
ŧ	T.P. Johnson	STATE ENGINEER OFFICE
	Box 1027	SANTA FE, N.M. 87501
1	Bloomfield, New Mexico 87	413
4,	cribe well location under one of the fol	
2. Des		<del>-</del>
a	San Juan Coun	IW
ь, т	ract No. A of Map No.	of the Loma Vista Addition, San Juan Co., Bloomfiel
c. L	ot No of Block No4_	of the
St	ubdivision, recorded in San Juan	County.
		feet, N. M. Coordinate System Zone
17)	t the	Grant.
e. G di —	istance from known landmarks 3rd	No. of property upon which well is to be located, or location by direction and a Blanco, Bloomfield, N.M.
3. App		fect; outside diameter of casing 7 inches.
		lling Ga.
		•
4. Use c	of water (check appropriate box or box	cs):
	Household, non-commercial trees, la	iwn and garden not to exceed 1 acre.
	Livestock watering.	
	Drinking and sanitary purposes and a commercial operation.	the irrigation of non-commercial trees, shrubs and lawns in conjunction with
	Prospecting, mining or drilling opera	tions to discover or develop natural resources.
	Construction of public works, highw	ays and roads.
	If any of the last three were marked,	give name and nature of business under Remarks, (Item 5)
5. Rema	arks:	
I, and b		affirm that the foregoing statements are true to the best of my knowledge commence until approval of the permit has been obtained.
7.6	PACE -	
[-J-	, Applica	
By:_		Detc: 9 4 78
	A	CTION OF STATE ENGINEER
This app		ted, subject to all general conditions and to the specific conditions numbered each slide hereof. This permit will automatically expire unless this well is
		before 9/30/79
S. E. Rey	ynolds, State Engineer	
Bv. (	0.("/Daniel	
E.	C. Barry, Engr. Tech,	Water Rights Bureau
Date:	Sept. 11, 1978	File NoSJ-796

Back

DB File Nbr:

SJ 01703

Primary Purpose:

DOM

72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status:

PMT

Total Acres:

0

Total Diversion: 3

Owner: JAMES R. WEST

Documents on File

Doc

File/Act

Status 1 2 3 Trans\_Desc

From/To

Zone

Acres

72121 04/27/1983

PMT LOG ABS SJ 01703

Permit

 $\mathbf{T}$ 

0

Point of Diversion

(qtr are 1=NW 2=NE 3=SW 4=SE) (qtr are biggest to smallest

X Y are in Feet

Source

Tws Rng Sec q q q

х

SJ 01703

POD Number

Shallow 29N 11W 22 1 2

プロスタの DETAILS EXPENSES DESCRIPTION OF THE SANTA EEL 機構はJune 1972

# STATE ENGINEER OFFICE WELL RECORD

'83 MAY 11 AM 9 59

#### Section 1. GENERAL INFORMATION

A) Owner of Street of	of well .Leme r Post Office A	s R. Wes Address 425 comfield,	t North	Stree	t.	TORMATIC		Owner's W	ell No. 1	
		it NoS*J				and is locate	ed in the:			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
		4 NW 4						Rance	11W	NMPM
		of Map No								
		-								
e. Lot t Subd	vo. 105.62. ivision, record	of Block No.	Juan	14 17-24	Cot	inty.		***************************************		
d. X=_		feet, Y=								Zone in Grant.
3) Drilling	Contractor	C. & C.	Liquid	Remov	ers		License N	o. <u>W-D</u>	809	
ddressP. C	). Box 66	3, Bloom	field,	N. M.	8741	3				
rilling Began	_4-29-83	Com	pleted	5-4-8	<b>3</b> т	Type tools	Cable To	ols s	lize of hole.	7" in.
evation of la	nd surface or				. at well is	;	ft. Total d	epth of wo	:(1	68 <b>'</b> ft.
ompleted we		shallow 🔲 a					er upon compl			
ampreted we	u as tJ			. rote: · · ·				erion of M	E-11	1t.
Depth	in Feet	Sec Thickness	tion 2. PRII		•				Estimated	Yield
From	To	in Feet		Descript	on of Wa	ter-Bearing	Formation		gallons per	minute)
631	68.1	5.1	Riv	er Ro	ck			10	) gal.	per min
		1.								
			Section	on 3. REC	CORD OF	CASING				!
Diameter (inches)	Pounds	Threads	Depth	in Feet		Length (feet)	Type of	Shoe	i	rations
(inches)	per foot	per in.	Тор	Bott			Standar		From	То
6_5/8_	15#	Welded	0	68	•	681	Drive	inoe	64'	68'
			J	<u> </u>						
Depth	in Feet	Section . Hole	on 4, RECO Sac		ĭ	Feet .				· · · · · · · · · · · · · · · · · · ·
From	То	Diameter	of M			ment	М	ethod of I	lacement	
	,		-							
			Olivinos de la companya de la compan		-					
							A AMERICAN			
·				v 5 D1 13	GGING B	e ECCi e n				
igging Confe	nctor			94 J. LLM	and the second					
ldress						No.		in Feet		bic Feet
te Well Plugg	ed					-	Тор	Bofto	331 (31	Cement
aging approv	red by:	:				- 3				
		State Engi	neer Reprose	ntative		4				
·***2	CALLANTINA ANTONIO									
Po. Po.	May 11	1983	FOR USE	OF STAT	E ENGIN	EER ONL	Υ			
e Received	May <sup>:</sup> 11,	1983	FOR USE				F84	· 	FSL_	

Back

DB File Nbr:

SJ 02352

Primary Purpose:

DOM

72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status:

PMT

Permit

Total Acres:

0

3 Total Diversion:

Owner: RAY OR LORIENE PHELPS

Documents on File

Doc

File/Act

Status 1 2 3 Trans\_Desc From/To

Acres

10/04/1991

SJ 02352 PMT APR ABS

T

0

Point of Diversion

POD Number SJ 02352

(qtr are 1=NW 2=NE 3=SW 4=SE) (qtr are biggest to smallest Source

Zone

X Y are in Feet Х

Tws Rng Sec q q q 29N 11W 22 1 2

http://waters.ose/state.nm.us:7001/iWATERS/WaterAdditionalReportsDispatcher?entail\_\_\_\_\_//17/2006

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS 228907 IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

	91 DCT 7 AM 10 59	
1.	1. Name and Address of Applicant: File No.	SJ-2352
	Ray and /or STATE ENGINEER OFFICE Loriene Phelps 632-2586 SANTA FE NEW MEXICO	
	413 N. 4th St. B-14	
	Bloomfield N.M. 87413	
2.	2. Describe well location under one of the following subheadings:	
	2 14 NE 14 NW 14 of Sec. 22 Twp. 29N Rgc. 11W	
	San Juan County.	N.M.P.M., in
	b. Tract Noof Map Noof the	
*	c.Lot No. 6. 7 of Block No. 1 of the McDaniel ( Lona Vista Addi Subdivision, recorded in <u>San Juan</u> County.	tion)
	d. X =feet. Y =feet, N.M. Coordinate System	Zone
	in the	Grant.
	e. Give street address or route and box No. of property upon which well is to be located, or loc distance from known landmarks  413 N. 4th St. B-14  Bloomfield N.M.	
1	3. Approximate depth (if known) 70 feet; outside diameter of casing	inches
٠.	Name of driller (if known) Bryce Chivers	
4	. 4. Use of water (check-appropriate box or boxes)	en de la composition de la composition de la composition de la composition de la composition de la composition
	One household, non-commercial trees, lawn and garden not to exceed 1 acre.	
	(2) Livestock watering.	
	☐ More than one household, non-commercial trees, lawns and gardens not to exceed a total of I	acre. (Co)
	Drinking and sanitary purposes and the irrigation of non-commercial trees, shrubs and lawn	
	2 commercial operation.	∰a.e ' <b>ω</b>
	Prospecting, mining or drilling operations to discover or develop natural resources.	7
	☐ Construction of public works, highways and roads.	
	If any of the last four were marked, give name and nature of business under Remarks. (Item 5)	်ိုး ငယ်
5.	5. Remarks:	<u> </u>
		***
	1	
	Ray I Philas A. Applicant	
	By: Ray S. Polelgas Date: 10-2-	-91
:		
	ACTION OF STATE ENGINEER	3· · ·
	This application is approved for the use indicated, subject to all general conditions and to the specific of 1(a) and 4 on the reverse side hereof. This permit will automatically exp	onattions numbered :
	drilled or driven and the well record filed on or before October 15, 1992	
List U	Eluid by Martines, State Engineer	
. 1	By:	
	C. A. Wohlenberg  Date: October 4, 1991  File No. SJ-	2352
I	Date: Vectober 4, 1991 File No. 30	

Back

DB File Nbr:

SJ 01557

Primary Purpose:

DOM

72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status:

PMT

Permit

Total Acres: Total Diversion: 0 3

Owner: EDWARD W. HUTTON

Documents on File

Doc

File/Act

Trans\_Desc Status 1 2 3

From/To

Acres

Х

04/23/1982

PMT LOG ABS SJ 01557 ηı

0

Point of Diversion

POD Number SJ 01557

(qtr are 1=NW 2=NE 3=SW 4=SE) (qtr are biggest to smallest

X Y are in Feet

Source Tws Rng Sec q q q Zone

Shallow 29N 11W 22 1 2

#### READ INSTRUCTIONS ON BACK

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

1. Name and Address of Applicant:	File No. SJ-1557
Edward W. Hutton, Jr.	
P. O. Box 1273	
Bloomfield, New Mexico 87413	
2. Describe well location under one of the following subheadings:	
a¼ NE¼ NW¼ of Sec22	Rge. 11-W N.M.P.M., in
b.Tract Noof Map Noof the	
c.Lot No. 4 of Block No. of the Loma Vista Sub	
c. Lot No of Block No of the County.	Tribion, broadlibra, III
d. X =feet, Y =feet, N.M. Coord	
e. Give street address or route and box No. of property upon which well is to distance from known landmarks	
3. Approximate depth (if known) 40-80 feet; outside diameter	of casing 7 inches.
Name of driller (if known) uncontracted	
4. Use of water (check appropriate box or boxes):	
XXX One household, non-commercial trees, lawn and garden nor to exceed 1 acr	
Livestock watering.	
☐ More than one household, non-commercial trees, lawns and gardens not to	and a rotal of Laura
Drinking and sanitary purposes and the irrigation of non-commercial trees	i.e.j
a commercial operation.	, sinulis and rawns in conjunction with
Prospecting, mining or drilling operations to discover or develop natural res	ources.
☐ Construction of public works, highways and roads.	n water
If any of the last four were marked, give name and nature of business under	Remarks. (Item 5)
5. Remarks:	
1. Edward Hutton, Jr., affirm that the foregoing statement and belief and that development shall not commence until approval of the permi	
Edward Hutton Applicant	
	4-20-82
By: Date:	4~20~62
ACTION OF STATE ENGINEER	
This application is approved for the use indicated, subject to all general conditions a	
4 on the reverse side hereof. This permit wil drilled or driven and the well record filed on or before April 30, 1983	
S.E. Reynolde State Engineer	
By: Col. Dany	
By: E.C.Barry, Water Resources Spec.1 Date: 4/23/82 Water Rights Bureau	File No. SJ-1557

Back

72-12-1 DOMESTIC ONE HOUSEHOLD

11W 22 1 2

DB File Nbr:

SJ 01698

Primary Purpose:

DOM

PMT

Permit

Primary Status: Total Acres:

0

Total Diversion:

ersion: 3 Owner: ROBERT CASSIDAY

Documents on File

Doc

File/Act

Status 1 2 3 Trans\_Desc

29N

From/To

Acres

72121

04/25/1983

PMT APR ABS SJ 01698

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(qtr are 1=NW 2=NE 3=SW 4=SE)

Point of Diversion POD Number

SJ 01698

(qtr are biggest to smallest Source Tws Rng Sec q q q

q Zone

X Y are in Feet Zone X

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES 228/177

File No. SJ-16		File NoSJ-1698		
Robert Cassiday	'83 APR 20	AH 9 20		
Box 735	-			
	~ 07.410			
Bloomfield, New Mexico	81413			
2. Describe well location under one of the l	following subheadi	ngs:		
2. ¼ NE ¼ NW San Juan County.	¼ of Sec. <u>22</u>	Twp <u>29-N</u>	Rgc11-WN.M.P.M., in	
b. Tract Noof Map No	of the			
c.Lot No. <u>20</u> of Block No. <u>3</u> Subdivision, recorded in			tion	
d. X =feet. Y =			inate System Zone Grant.	
3. Approximate depth (if known)	80-100 feet	; outside diameter o		
Name of driller (if known)	McDonå	ld		
4. Use of water (check appropriate box or be	oxes)·			
🔯 One household, non-commercial tre	es, lawn and garder	not to exceed 1 acre	:.	
☐ Livestock watering.				
☐ More than one household, non-com.	mercial trees, lawns	and gardens not to	exceed a total of 1 acte.	
<ul> <li>Drinking and sanitary purposes and a commercial operation.</li> </ul>	the irrigation of n	on-commercial crees	, shrubs and fawns in conjunction with	
<ul> <li>Prospecting, mining or drilling oper</li> </ul>	ations to discover o	develop natural reso	ources.	
Construction of public works, highways and roads.				
If any of the last four were marked, g	give name and natu	re of business under	Remarks. (Item 5)	
5. Remarks: To re-enter old exist Office	sting water we	ell not of rec	ord in the State Engineer's	
and benefit and that development attantion	commence and s	e foregoing statemer oproval of the permi	ns are true to the best of my knowledge has been obtained.	
Volabel Carryly	Applicant			
By:		Date:	4/13/33/	
A	CTION OF STAT	E ENGINEER		
This application is approved for the use indiction of the defendance of drilled or driven and the well record filed on of S.E. Reynolds, State Engineer	the reverse side her or before Apr	eof. This permit will 11 30, 1984	automatically expire unless this well is	
By:  E.C. Barry, Water Reso Date: 4/25/83	urce Spec.	I, Water Ri	ghts Division File NoSJ-1698	

Back

DB File Nbr:

SJ 02813

Primary Purpose:

DOM

72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status:

PMT

Permit

Total Acres:

0

3 Total Diversion:

Owner: GERHARD ZICHER

Documents on File

Doc

File/Act

Status 1 2 3 Trans Desc From/To

Acres

07/24/1997 PMT LOG PRC SJ 02813 T

0

Point of Diversion

POD Number SJ 02813

(qtr are 1=NW 2=NE 3=SW 4=SE)

(qtr are biggest to smallest Source Tws Rng Sec q q q

Zone

X Y are in Feet X

11W 22 1 2 3 Shallow 29N

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

1. Name and mailling address of applicant:	FILE NO. 57-28/3
GOR hard Zicher	
430 N. 3 Rd	
Bloomfield, NM 87413	
2. Describe well location under one of the following subheadings	
e. <u>SW x NE x NW x of sec. 23</u> in <u>JAN JUAN</u> county.	Тир. <u>29</u> М Rge. <u>////</u> МНРИ,
	feet, New Mexico Coordinate System
3. Approximate depth (If known) UNKNOWN feet; outside	
Hame of driller (If known) Mc Dow Ald's D	Peilling
4. Use of water (check use applied for):	
One household, non-commercial trees, lawn and garden not	to exceed one acre.
Livestock watering.	
More than one household, non-commercial trees, laune and g	pardens not to exceed a total of one acre.
Drill and test a well intended to be used for domestic, dr in conjunction with the building or dwelling unit.	inking and sanitary or stock water purposes
Drinking and samitary purposes and the irrigation of non-conjunction with a commercial operation.	comercial trees, shrubs and lawing in 3
Prospecting, mining or drilling operations to discover or	develop natural resources.
Construction of public works, highways and roads.	
If any of the last three items were marked, give name and natur	re of business under Remarks 31 tem 5)
5. Remarks:	1 S EXIO
	n n
1, Gerhan Zicher, affirm that the forego knowledge and belief and that development shall not commence until	ing statements are true to the best of my l approval of the permit has been obtained.
forband del , Applicant	
Ву:	Date: 7-24-97
ACTION OF STATE ENGI	INEER
This application is approved for the use indicated, subject to	all general conditions and to specific
conditions numbered 12 E4 on the automatically approxumes this well is drilled or driven or 1010 10, 1998	e reverse side hereof. This permit will ad the well record filed on or before
Thomas C. Tupney, State Engineer	
By: Hobut E Oxford	
Date: 7-34-97	FILE NO. 557-2813

Back

DB File Nbr:

SJ 02507

Primary Purpose:

DOM

72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status:

PMT

Owner: BASIL O. PLEMONS

Permit

Total Acres:

0

Total Diversion:

3

Documents on File

Doc

File/Act

09/24/1993

Status 1 2 3 Trans\_Desc

From/To

Acres

PMT APR ABS SJ 02507  $\mathbf{T}$ 

0

(gtr are 1=NW 2=NE 3=SW 4=SE) Point of Diversion

(qtr are biggest to smallest

X Y are in Feet

POD Number

Source

Tws Rng Sec q q q Zone

X

SJ 02507

29N 11W 22 1 2 1

Revised June 1991

# APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

Name and mailing address of applicant:	File No. 35-2507
BASIL O. Plemans	File No. SJ-2507 COMA Vista So.
221 W. Blanco Blu	
Bloom Field 11 M 77413	
Describe well location under one of the following subheadings:	gradient de la consta
in SAN THAN County.	р. <u>29 N</u> Rge. <u>// W</u> ммрн,
b. X = <u>N / A</u> feet, Y =	
3. Approximate depth (if known) 10-20 feet; outside d	iameter of casing <u>Ne on Mider</u> inches.
Name of driller (if known) <u>BASILO</u> , Plema	115
4. Use of water (check use applied for):	
$oxed{y}$ One household, non-commercial trees, lawn and garden not to	exceed one acre.
Livestock watering.	
Hore than one household, non-commercial trees, lawns and gar	rdens not to exceed a total of one acre.
Drill and test a well intended to be used for domestic, drin in conjunction with the building or dwelling unit.	wking and samitary or stock water purposes
Drinking and sanitary purposes and the irrigation of non-common conjunction with a commercial operation.	mercial trees, shrubs and lawns ins
Prospecting, mining or drilling operations to discover or de	TO NET L
Construction of public works, highways and roads.	
If any of the last three items were marked, give name and nature	e of business under Remarks (Item 62)
5. Remarks:	× Ö
	2. 1. 0
I, <u>BAS;   D Plearons</u> , affirm that the foregoin knowledge and belief and that development shall not commence until	ng statements are true to the best of my
BASILO PLEMENS , Applicant	
By: Bay a. Plino	Date: 9-22-93 = 3
	77 45 85 45
	7 (7)
ACTION OF STATE ENGI	NEER
This application is approved for the use indicated, subject to conditions numbered 1(4) and 4 on the automatically expire unless this well is drilled or driven and September 15, 1944	e reverse side hereof. This permit will
By: C.A. WOHLEN BERES  Etuid L. Hartinez, State Engineer Please side of	refer to condition <u></u> on the reverse this permit.
Date: Sept. 24, 1993	File No. ST-2507

### APPENDIX I

Technical Specifications – Cool-Ox® Copyright Technology

#### Exhibit I

### Cool-Ox<sup>©</sup> Technology

The patented  $Cool-Ox^{TM}$  Process\* is an in-situ (and ex-situ) remediation technology that combines controlled chemical oxidation with accelerated biodegradation subsequent to the oxidation phase. The process is based upon using hydrogen peroxide as the generator of the oxidizing radicals. However, unlike the Fenton or Fenton like processes that use liquid hydrogen peroxide, the  $Cool-Ox^{TM}$  Process generates hydrogen peroxide from solid peroxygens that are injected into the soil or groundwater in an aqueous suspension. Once in place, the peroxygens react with water to produce hydrogen peroxide. This reaction is widely understood.

In conventional Fenton or Fenton like processes, the liquid hydrogen peroxide reacts with iron salts introduced to produce the oxidizing radicals. This reaction is largely uncontrollable and usually produces excessive amounts of heat. Even where the iron is introduced in a separate injection sequence, the reaction can be robust. Similarly, other processes that have begun using solid peroxygens with introduced iron salts find it difficult to avoid volatilization of contaminants because of the heat produced. The Cool-Ox- $^{TM}$  Process has eliminated these problems.

Because most peroxygens are only sparingly soluble in aqueous solutions, their dissolution rate is quite slow. Therefore, once injected they remain in the contaminated media for an extended period of time before they become soluble. This low solubility characteristic also allows peroxygens to be hydraulically distributed by the injection equipment thereby increasing the radius of influence from the injection point. This significantly increases the probability of the oxidizer contacting the contaminants. However, the greatest distinguishing feature of the  $Cool-Ox^{TM}$  Process is that it does not require the introduction of iron salts to produce the radicals necessary for chemical oxidation.

The  $Cool\text{-}Ox^{TM}$  formulations include compounds that activate the catalytic metals that are intrinsic in the soil matrix being treated. This eliminates the need to artificially introduce iron salts either into the oxidizing reagent or injected sequentially. The use of these reagents also imposes a second control factor (the first is the low solubility of the peroxygens) on the reaction rates of the oxidizers. Knowing how to manipulate these factors allows the oxidation reactions to proceed without producing heat. Therefore, the probability of volatilizing contaminants because of heat generation is eliminated when the  $Cool\text{-}Ox^{TM}$  Process is employed. This increased control eliminates the risk associated with other oxidizing processes and there are no hazardous metals such as lead, chrome or arsenic in the  $Cool\text{-}Ox^{TM}$  formulations.

An additional and extremely important characteristic of the  $Cool\text{-}Ox^\text{TM}$  Process is the pH at which the oxidation reactions proceed. Unlike the Fenton or Fenton like reactions that require a low acidic pH, the optimum pH of the  $Cool\text{-}Ox^\text{TM}$  Process is slightly basic at around pH 8. This is critical for treating contaminants found in limestone or soils containing high concentrations of carbonates where a low pH would be buffered toward neutrality. Equally important is the factor that almost all phenolic, chlorophenolic and chlorinated organic compounds exhibit organic acid characteristics. In general, these compounds become increasing soluble in aqueous solutions as the pH is increased. Once soluble, they are quite susceptible to oxidation via the  $Cool\text{-}Ox^\text{TM}$  Process. Thus, a broad family of troublesome recalcitrant compounds such as creosotes, PCP, PCBs, PAHs, fuel hydrocarbons, dioxins as well as a host of herbicides and pesticides are treatable using the  $Cool\text{-}Ox^\text{TM}$  Process.

<sup>\*</sup> Cool-Ox<sup>TM</sup> is a trademark of DeepEarth Technologies, Inc. - all rights reserved. For information contact toll free 877-COOL-OX1 or tech@deepearthtech.com

### The Cool-Ox<sup>TM</sup> Bio-Spunge<sup>TM</sup> Reactor

DTI has determined through experience gained by field applications, that a broad range of organic chemical contaminants are readily oxidized using the patented  $Cool\text{-}Ox^{TM}$  Technology. Although the Technology has the capability of converting the contaminants completely to carbon dioxide, this total mineralization process would prove to be prohibitively expensive because of the amount of oxidizer required. However, it has been observed at nearly every site treated, using the  $Cool\text{-}Ox^{TM}$  Technology, that significant contaminant reductions have been achieved with concentrations of  $Cool\text{-}Ox^{TM}$  reagents that are significantly lower than the stoichiometric ratios one would predict necessary. A study of the oxidation mechanism provided the answer to this question.

It has been determined that a myriad of organic compounds (please refer to The  $Cool-Ox^{TM}$  Technology) are readily oxidized (hydroxylated) by the addition of a hydroxyl group to the molecule or the substitution (replacement) of a halogen atom by a hydroxyl group onto the molecule. This chemical reaction has been illustrated in organic chemistry textbooks and has been successfully applied, under field conditions, by DTI and DTI principles on numerous occasions. Once this conversion is complete, the resultant compounds are quite biodegradable and the indigenous microbes complete the remedial work.

A second, and very important characteristic of the  $Cool\text{-}Ox^{TM}$  Technology is that the chemical reaction is controllable. Virtually all hydrogen peroxide systems, or Fenton-type technologies, require the injection of iron salts either sequentially or as a co-injectant of the oxidation formula. It is the reaction of the liquid hydrogen peroxide with the iron salts that create the very robust exothermic reaction of the Fenton systems. The distinguishing feature of the  $Cool\text{-}Ox^{TM}$  Technology is that it does not require the injection of metal catalysts to activate the production of oxidizing radicals in the substrata; thus, the creation of heat is eliminated.

It is vitally important to understand that the reaction does not create heat. This feature eliminates the volatilization of the VOCs and is an extremely important safety factor when dealing with compounds having low toxicity thresholds and/or the potential for flammability.

DTI works on a continuing basis with its academic associates and major clients to perfect the DTI in-situ application techniques for both soil and groundwater. This work has produced major breakthroughs in the understanding of bioactivity subsequent to the application of the  $Cool-Ox^{TM}$  reagents. Cassidy<sup>(1)</sup> in his work with BTEX and PAH contaminated samples from Manufactured Gas Plant (MGP) sites, has stated that when conducting bench scale studies, "a most significant finding is that enhanced biological activity begins even before the oxidation reactions are completed. This would indicate that the hydrogen peroxide produced by the  $Cool-Ox^{TM}$  Process does not inhibit the activity of microbes indigenous in the samples."

Unlike Fenton chemistry where liquid hydrogen peroxide is used as the source of the oxidizing radicals, the Cool-Ox<sup>TM</sup> Technology injects an aqueous suspension of solid peroxygen compounds. These compounds hydrolyze in-situ to generate hydrogen peroxide in the proximity of the contaminants. A key to success of the technology is that the relative insolubility of these compounds allows the oxidizers to be produced over an extended period of time. This greatly enhances the probability of the oxidizing compounds contacting the contaminants as well as

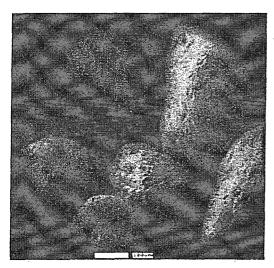
providing an ongoing source of molecular oxygen for the enhancement of aerobic microbial proliferation.

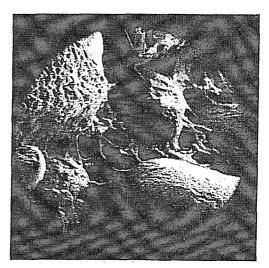
The keys to the development and successful application of the  $Cool-Ox^{TM}$  Bio-Spunge  $^{TM}$  Reactor for the in-situ remediation of groundwater contaminants are:

- The extended life of the peroxygen compounds,
- The conversion of the contaminants to biodegradeable co-metabolites,
- The oxidation buffering systems conversion to nutrients subsequent to the oxidation phase, and
- The absence of heat produced from chemical reactions.

With the development of the Cool- $Ox^{TM}$  Process, DTI became aware that at nearly all sites treated with the Cool- $Ox^{TM}$  reagents, the proliferation of indigenous aerobic microbes increased by as much as six orders of magnitude. Upon visual inspection of samples collected from numerous sites, it was obvious that the appearance of the soil had changed from a clean material to that resembling the type of natural sponges found in marine environments. It was also noted that contaminant concentrations found in groundwater down gradient from the injection zones, had significantly decreased – in most cases by orders of magnitude. Once this discovery was made, DTI developed Cool- $Ox^{TM}$  reagent formulations to improve both the efficiency of the oxidation reactions and optimize indigenous microbial proliferation.

The scanning electron microscopic photographs<sup>(2)</sup> below depict clean sand particles (left) and the same soil after treatment (right). Note, the Extra-Cellular Polymeric Substances (ECPS), giving the appearance of the matrix seen in live sponges, hold the microbes in place while allowing the groundwater to flow through. This forms the matrix of the Cool-Ox<sup>TM</sup> Bio-Spunge<sup>TM</sup> Reactor. This configuration increases the surface area, thus increasing the probability of contact between contaminants and microbial degraders.





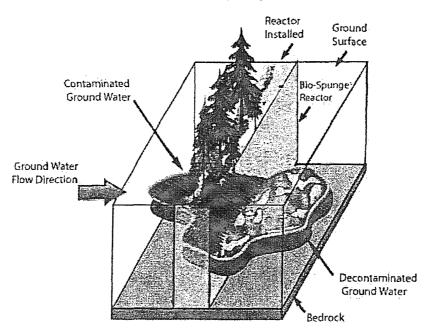
When the bio-fortified Cool- $Ox^{TM}$  reagents are properly placed in the groundwater plume including the soil/groundwater interface, the indigenous microbes produce the ECPS biofilm depicted above. If the injection points are properly placed and the reagent contains the formulation necessary to encourage the proliferation of microbes as well as the production of the biofilm, a filtration system (such as that depicted in the drawing below) is produced that allows

#### **30949**8

the microbes to cleanse the groundwater as it passes through the formation. No other technology is presently available that ties chemical oxidation to subsequent bioremediation in the efficient manner as the  $Cool\text{-}Ox^{\text{TM}}$  Process. DTI has proven through field applications, that this new technology concept is ideally suited for application where the contaminated groundwater plume is present in both permeable (sandy soil) and less permeable (clayey soils). The illustrations below depict these application concepts.

The Cool-Ox<sup>TM</sup> Bio-Spunge<sup>TM</sup> Reactor (Groundwater Defined Flow (Streamline) Application)

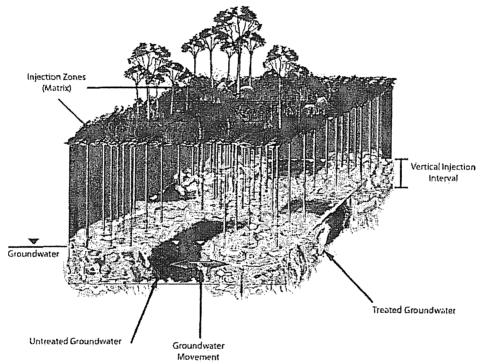
### Bio-Spunge® Reactor



The drawing above illustrates the Cool-Ox<sup>TM</sup> Bio-Spunge<sup>TM</sup> Reactor installation at a site where the soil consists of a permeable matrix and where the groundwater flow is defined. This installation technique calls for the placement of the  $Cool-Ox^{TM}$  reagents in a configuration perpendicular to the direction of the groundwater flow. Contaminants located in the installation zone are rapidly oxidized while the microbial population indigenous to the treatment zone are stimulated by the bio-fortified  $Cool-Ox^{TM}$  reagents and begin accelerated proliferation. This technique is especially economical because contaminated plumes can be mitigated by treating only a fraction of the area and volume of the overall mass of groundwater. For example, the developer of the Cool-Ox<sup>TM</sup> Process successfully remediated a BTEX contaminated groundwater plume over limestone bedrock underlain by hard clay. The groundwater area impacted was approximately three-hundred (300) feet long by sixty (60) feet wide (18,000 square feet). The scope of work consisted of placing six (6), twenty (20) feet wide by sixty (60) feet long injection zones (6,000 square feet) equally spaced and perpendicular to the length of the plume. The vertical injection interval extended from the bed rock surface, five (5) feet upwards into the clay. Decontamination of the groundwater plume was accomplished in approximately sixty (60) days with approximately only thirty percent (30%) of the entire area injected.

# The Cool-Ox<sup>TM</sup> Bio-Spunge<sup>TM</sup> Reactor (Static Groundwater (Matrix) Application)

While the Defined Flow Application technique works very well in the remediation of moving groundwater, it is less effective at sites where the groundwater is static, present in low permeable soils, doming or moving in different directions over a broad area. To meet the static groundwater treatment challenge, DTI has developed the matrix or checker-board injection technique. In the matrix technique, the area of the contaminant plume is subdivided into a series of squares resembling the configuration of a checker-board. The  $Cool-Ox^{TM}$   $Bio-Spunge^{TM}$  Reactor is then injected into the alternating squares (for example, only the black squares of the checker-board). This injection technique immediately reduces the treatment area by one-half there-by, instantly offering significant cost savings.



As depicted in the above figure, the injection point spacing that would normally be required to deliver sufficient  $Cool\text{-}Ox^{TM}$  reagents to oxidize the contaminants in the low permeability soil/groundwater matrix is maintained only in the treated squares. This assures that contaminant reductions will be accomplished in these areas and that the bio-fortified  $Cool\text{-}Ox^{TM}$  reagents will stimulate the accelerated proliferation of indigenous microbial degraders. This technique establishes a matrix of so called "clean zones" within the contaminant plume. As the groundwater slowly moves about within the plume area the  $Cool\text{-}Ox^{TM}$   $Bio\text{-}Spunge^{TM}$  Reactors ultimately facilitate the mitigation of the groundwater. Periodic analysis of the groundwater will reveal if supplemental  $Cool\text{-}Ox^{TM}$  reagent injections are required.

#### Exhibit VI

#### Suggested Sampling Protocol

The sampling protocol proposed for this site requires that samples be collected prior to injection to establish a baseline. Thereafter, it is suggested that samples be collected one week, one month and sixty (60) days post injection after which, the usual quarterly sampling program can be resumed. This protocol will establish a curve meaningful to the progress of the remediation program.

#### **Recommended Sampling Parameters**

Bio Analysis:

Degrader Plate Count

Lab. Analysis:

Target Contaminants BOD COD Nitrite Nitrogen Nitrate **TDS** Total Iron Phosphorus Bicarbonate Chloride Sulfate

Sodium

Potassium Calcium

Magnesium

Cation / Anion Balance

Field Measurements

In-situ: pН ORP

Conductivity DO

Temperature Water Level

Please note: Field measurements should be collected immediately before injection, twice daily during injection, and immediately after injection.