Weber, Hayes and Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA 95076
(831) 722-3580 Fax: (831) 722-1159

ORIGINAL

November 12, 2004

Alameda County Health Care Services Agency
Environmental Health Services, Environmental Protection
To the attention of: **Robert Schultz**
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Fuel Leak Site: **Sunol Tree Gas Station, 3004 Andrade Road, Sunol**

Subject: **Site Conceptual Model (SCM) for a Gasoline Release (MTBE)**
- Sunol Tree Gas Station Fuel Release, 3004 Andrade Road, Sunol

Weber, Hayes and Associates (WHA) has prepared a digital SCM describing site conditions associated with a fuel release originating from the Sunol Tree Gas Station site (hard copy is also enclosed for public record documentation). This work has been completed on behalf of Alameda County Environmental Health (ACEH). ACEH is managing the characterization and cleanup of this fuel release under a grant from the State Petroleum Underground Storage Tank Cleanup Fund's Emergency, Abandoned, and Recalcitrant (EAR) Account.

LIMITATIONS: Our service consists of professional opinions and recommendations made in accordance with generally accepted geologic principles and practices. This warranty is in lieu of all others, either expressed or implied. The analysis and conclusions in this report are based on sampling and testing which are necessarily limited. Additional data from future work may lead to modifications of the *options expressed herein.*

All work has be conducted by and/or under the direct supervision of a geologist registered in the State of California. If you have any questions or comments regarding this workplan, please contact us at our office.

Respectfully submitted,

WEBER, HAYES AND ASSOCIATES
A California Corporation

Patrick Hoban
Senior Geologist

Joseph Hayes
Certified Engineering Geologist #1629
Certified Hydrogeologist #373

Nov-2004

	DESCRIPTION (Chronology of events**)	Hyperlink Graphics & Tables	Reference (references)	Data Gaps	Work Necessary To Fill the Data Gap	Comments
Section I. Regional Setting	**a. Regional Geology/Stratigraphy** The subject site is situated in the southwestern portion of the Sunol Groundwater Basin (in a "subbasin" identified as the Sunol subbasin, see Topo Map). The Sunol Valley is a structural trough surrounded by Diablo Range hills. Unconsolidated surface soils at the subject site have previously been mapped as water-bearing, alluvium deposits (Qal). Underlying the shallow alluvial deposits is the Livermore Formation (Tlo), significant water-bearing strata for the region. Non-water bearing, marine shale and sandstone deposits (JK) underlie the Livermore Formation (see *Regional Geologic Map & Cross-Section) The Livermore and Sunol region is offset by a number of faults including the nearby Sinbad fault, which is buried beneath Alameda Creek-deposited alluvium, approximately 2,000 feet northwest of the site (additional writeup on Regional Geologic Setting).	Map - Sunol Groundwater Basin Map - Regional Geologic Plan View Map & Cross-Section	DWR Bulletin 118-2	a-1: Have not determined whether a regional clay barrier is present beneath the fuel release site (for identifying barriers to MTBE transport + replacement well design). a-2: It is unclear whether the "blue shale" identified in some local driller's logs is really a blue clay (data would be helpful for replacement well screen placement).	a-1: Deep soil coring at two on-site locations, ideally using continuous sonic coring which provides the best, relatively undisturbed soil samples in saturated zones. Two cores would provide data for determining lateral continuity of units. a-2: The coring program described above (a-1) could be used to determine whether the soils are a blue clay or shale, as well as provide a better understanding of the significance of the release to deeper water resources.	
	b. Regional Hydrogeology The general direction of regional groundwater movement is from the upland areas toward Alameda Creek and then westward toward the outlet of the basin (see Topo Map). The main surface water drainage in the Sunol subbasin is the northwest-flowing Alameda Creek located approximately 2,000 feet north of the subject site. Locally, groundwater is reported to be both confined and unconfined and generally flows to the northwest. Recharge occurs by infiltration of the surface water along Alameda Creek. The northwest trending Sinbad fault is likely to act as a barrier to the lateral movement of groundwater. Regional geologic cross-sections indicate the subject site is on the up-gradient side of the Sinbad fault where groundwater levels reportedly stand higher (see: Regional Geologic Map & Cross-Section) The Sunol Valley contains two water-bearing geologic formations that are documented to yield adequate to large quantities of groundwater from production wells. They include Plio-Plesistocene sediments of the Livermore Formation (Tlo) and more recent Quaternary alluvium (Qal). These aquifer sediments are composed largely of sand and gravel with discontinuous layers of clay, and are underlain at a shallow depth by nonwater-bearing rocks that are exposed in the bordering highlands. Specifically, the total thickness of these water-bearing sediments is reported to be less than 200 feet in the vicinity of the site. Drillers logs completed during the drilling of two nearby water production wells indicate non-water bearing shale was logged at a depth of approximately 140', although given soil descriptions of other borings in the area suggest it is likely to be blue clay (see [illegible]). Logs of local water wells installed in the vicinity of the fuel leak site suggests some continuity in the shallow aquifer containing upwards of 50 feet of sand and gravel with limited clay. The stratigraphy underlying the shallow aquifer is less consistent due to the logged description of	Map - Topographic Location Map	DWR Bulletin 118-2 DWR Sunol Basin Description	b-1: The primary gap for understanding the impact to regional aquifer, again, is the lack of site-specific stratigraphic information regarding a continuous clay barrier beneath the fuel release site (for assessing potential threat of MTBE transport + replacement well design). b-2: No comparison of rough groundwater velocity estimates of regional aquifers with site-specific velocity data. b-3 Missing lateral hydraulic gradients along the southern flank of the plume b-4 So far, there is no data on potential capture zones of nearby supply wells	b-1: As mentioned above, completing deep soil coring at two on-site locations would significantly close this gap. b-2: Research: Get regional groundwater gradient maps for the Sunol area from Zone 7 & compare to shallow water data. - Field Work: Ideally, install multi-level wells to develop accurate lateral and vertical gradient maps b-3 Monitoring well points should be placed along the southern flank (ideally multi-level wells) b-4 Install transducer in Sunol Tree Water Well. Compare influence in shallow saturated	

DESCRIPTION (Chronology of events**)	Hyperlink Graphics & Tables	Reference (references)	Data Gaps	Work Necessary To Fill the Data Gap	Comments
shale in two well logs but discontinuous sand and gravel lenses appearing at varying depths could indicate aquifer connectivity by river channel deposition (see: Geologic Cross Section).	Cross Section- Local, Geologic			zones. Further evaluation of additional water wells as needed	
c. Regional Groundwater Pumping (water wells) The subject site is located in a rural area of Alameda County and utility water supply and sewer are unavailable. Water supply in the vicinity is provided by individual water wells. A previous survey identified a water production well at the fuel leak site, 5 additional industrial and residential wells in the immediate downgradient direction, and a number of upgradient water wells (see map showing local water supply well locations). Drinking Water Well Testing: Testing was completed on the Sunol Tree Gas Station well and the 5 downgradient/sidegradient water wells in May 2003 following the discovery of MTBE in the T Bear Ranch well. Off-site water production wells were located between approximately 550-1,700 feet downgradient from the former underground fuel storage tanks (USTs). Additional sampling was also completed on two upgradient water production wells (July 2004). The results indicate: - The T Bear Ranch was the only well that was significantly impacted (130 ppb MTBE). No driller's log is available for this well although a video log is scheduled for June 29, 2004. - The sidegradient well located at the adjoining driving range parcel contained a trace hit of MTBE (0.5 ppb) – it should be noted that this water well only has a 20-foot cement seal and well screens that start at a depth of 25' (see Drillers Log of Water Well "A2") Aquifer Pumping: There are no documented pumping records for water production wells in the vicinity of the fuel leak site although pumping analysis has recently been completed for the MTBE-impacted T-Bear water well (discussed further in Site Groundwater Conditions, Section II-b, below). Drill records, collected soil cores, and pressure transducer data indicates the following: - Water wells in the immediate vicinity of the site are drilled to depths ranging from 150-250 feet below ground surface and screen intervals generally target sandy-gravely units (see Geologic Cross Section). - Transducer data indicates the T Bear Ranch property domestic well obtains water from the first encountered aquifer (i.e., there is connectivity between a shallow saturated zone @ depths of 15-17 feet and a deeper saturated zone encountered at depths of 42-44 feet (see details below). A downward vertical gradient is present (see: Table – Water Levels). - It is unclear whether there is a significant clay barrier beneath the fuel leak site although logs from nearby water wells show a 30-50 foot thick clay unit (clay, sandy clay) encountered at depths starting approximately 90-100 feet below ground surface (see Geologic Cross Section). - The T Bear Ranch well transducer and flow data indicates that the periodic flow rate of 7.5 gpm water and the daily water consumption average of 5,100 gallons per day consumption at the does not stress the shallow aquifer. Pumping drawdown was consistently measured to be just 1.5 feet, and the well recovered immediately following pump shutoff. The limited analytical results that exist suggest the T Bear Ranch well appears to be capturing at least the bulk of the dissolved MTBE Plume (see Map of MTBE analytical results)	Cross Section- Local, Geologic Logs - Local Water Wells Drillers Logs Table: Downgradient Water Well Results (May 2003) Table: Upgradient Well Results (July 2004) Figure: Site Map and MTBE Results	Water Well Sampling Report (May-2003) Summary Writeup of Aquifer Testing Results	c-1: It is unclear whether a complete reconnaissance of local water wells has been completed. c-2: An assessment of the Sunol Tree Gas Station water well has not been completed. There is no well log or well construction specifications so it is unclear whether it is acting as a conduit for downward migration of the dissolved MTBE contamination. c-3: Capture zones of nearby production wells have not been calculated.	c-1: Complete a confirmation reconnaissance of the neighborhood for water wells. It would also be prudent to complete a review of historical land use maps (aerials-topos) as a check for abandoned wells that could be conduits for downward migration of the plume. c-2: Review existing video log to confirm well screens. Conduct discrete water sampling and if possible, check well for high-flow zones (preferential paths) and vertical gradient. c-3: Need to determine which supply wells have potential pumping influence on the contaminant plume (i.e. capture zones). Tasks could include pump testing, and installation/ monitoring of digital flow meters on potential capture zone wells.	
d. Preferential Pathways Active/Abandoned Wells A water well survey appears to have been completed based on DWR drilling logs and maps provided by Zone 7 Water District but it is unclear whether a detailed site reconnaissance was completed. A follow-up testing program included collection of water samples from a number of local wells but accurate mapping and sampling protocols	[illegible]	[illegible] Groundwater Well Sampling Report May 2003,	d-1 There is a need to complete additional neighborhood reconnaissance for abandoned/undocumented wells	d-1 See work tasks described in c-1 (above) d-2 Sunol Tree Gas Station water	

DESCRIPTION (Chronology of events**)	Hyperlink Graphics & Tables	Reference (references)	Data Gaps	Work Necessary To Fill the Data Gap	Comments
have not been documented. On-Site Water Well: The Sunol Tree Gas Station has a production well on the premises and the well construction is unclear, as no log exists. A video log was completed which has cryptic information on the well screen. Specifically, first screens appear at 60 feet, and "water movement was noted at 62', 67', 101', & 103') (see Log of the Sunol Tree water well video). At this point we assume the well is perforated from 60' to 153 below ground surface. T Bear Well: The MTBE-impacted T Bear Ranch well was fully characterized using video logging, geophysical & discrete testing (see Geophysical Report, discussed further below). However, recent communication from a local driller indicates the PVC casing may be an insert to a deeper cable tool drilled well (metal cased), so unusual preferential flow paths may exist. Utility Survey: No utility survey has yet been completed in the immediate vicinity of the fuel release site (i.e., utility trenches with gas, sewer, water, storm drain, telephone, and electric lines).		Geophysical Report (T Bear Well)	d-2: Well construction details for the Sunol Tree Gas Station site are unclear so there is a potential for downward migration of the nearby source d-3: It is possible the shallow MTBE-impacted T Bear Ranch well may be a deeper cable tool-drilled well which was modified with a PVC "insert". Potential preferential flow paths may exist along the exterior casing. d-4: Utility survey for preferential pathways	well data gaps could be closed by carefully reviewing the existing video log, and conducting discrete sampling +/- production well logging. d-3: Contact driller and confirm construction details and reason for insert (damaged well?). Assess whether metal casing is present (cable drilling) on the exterior of the PVC well casing and determine appropriate closure technique. d-4: Contact underground utility providers and map locations (plan view and x-section).	
e. Nearby Release Sites Mission Valley Rock & Asphalt Operating gravel mining operation. This site is an active fuel leak site discovered in June 1996 during a UST closure. The release is located well downgradient of the subject site and is impacted with relatively low-level gasoline and gasoline constituents	GeoTracker- map & data	GeoTracker database	e-1: Data from closest fuel leak site (wells, concentrations, flow direction) has not been compiled.	e-1: -Review ACEH files for relevant information (groundwater flow direction, depth to water and extent of plume details). Confirm accurate LUFT site overlap of GeoTracker-ACEH maps (active & closed sites)	

	DESCRIPTION (Chronology of events**)	Hyperlink Graphics & Tables	Reference (references)	Data Gaps	Work Necessary To Fill the Data Gap	Comments
Section II. Site Setting	**Site Background:** The fuel release occurred at Sunol Tree Gas Station, an operating facility selling gasoline and diesel. The site located at 3004 Andrade Road, in Sunol, California, near the northbound exit ramp of Highway 680.The relatively flat-lying site contains 6 USTs The fuel release was discovered on April 12, 2002, during the removal of five, 15,000-gallon underground fuel tanks (USTs) and piping at the Sunol Tree Gas Station. The USTs were reported to be in good condition having no observable holes or corrosion. The consultant on-site noted hydrocarbon odor and soil staining in excavated soils. Ten sidewall samples and a water sample were obtained from the tank pit. Trace to non-detectable levels of TPH(gas-diesel)+BTEX-MTBE were found in the sidewall samples (ND-to-0.25 mg/kg MTBE). The pit water sample contained 84 ug/L MTBE. Sampling beneath the dispensers (12 samples) and piping trenches (3 samples) revealed generally low concentrations of gas and BTEX. A single elevated diesel hit was detected beneath dispenser #7 (1,300 mg/kg) and trace to elevated MTBE concentrations were detected in nine of the 14 samples (0.0058 to 5.9 mg/kg). Approximately 3-500-4,000 cubic yards of soil was excavated, stockpiled on-site, and covered with plastic sheeting. Stockpile screening (four composite samples) revealed only trace concentrations of diesel/motor oil and no detections of gas-BTEX-MTBE. In addition, 160,000 gallons of contaminated water were pumped out during installation of replacement tanks. The containerized water samples had MTBE detections ranging from 73 to 190 ug/L	Figures: Sunol Tree UST Closure Sample Locations Tables Sunol Tree Gas Stations (Soil & Groundwater) Sample Results of four, 21,000-gal tanks	Report: UST Removal & IRA (Environ-Bio-Systems, 2002)			
	a. Site Geology Previously, shallow borings drilled at the Sunol Tree Gas Station fuel leak site showed relatively consistent lithology of low-permeability clays and silts that contained some generally small percentage of sand and gravel in the saturated zone. First groundwater was encountered as saturated silts at depths ranging from 15-to-18 feet below ground surface. Logs of recently drilled soil cores drilled to 56 feet below ground surface combined with local water well logs suggest potential continuity in the shallow aquifer (see Figure of site subsurface conditions). Logs indicate the presence of an aquifer containing upwards of 50 feet of sand and gravel with limited clay. This aquifer appears to be underlain by a relatively thick clay unit that could be upwards of 80 feet thick although most drillers have screened across sandy gravely lenses encountered within the clay unit (potential river deposition connectivity through meandering river channels/lobes). A few logs indicate the potential presence of a "soft blue shale", which is likely to be the blue clay that is prevalent in the area.	Logs - Sunol Tree Gas borings Cross Section- Local, Geologic Logs - Soil Cores of T Bear Ranch PZs Logs - Local Water Wells Drillers Logs	Preliminary Site Assessment Report (Clearwater, 2003)	a-1: Logs indicate the potential presence of regional "aquitard" at depths starting at approx. 50-100' below ground surface (bgs). It would seem prudent to confirm whether the replacement well should be installed beneath this clay unit. a-2: Utilities and pipelines not shown on cross sections.	a-1: The sonic coring program discussed above (see regional section a-1) could satisfy this data gap. Driven probe continuous soil coring & CPT probing could not get to depth, particularly with the gravels and cobbles present. a-3: Need to plot utilities on cross sections	
	b. Site Groundwater Conditions Three sets of dual piezometers have been installed at the site. Initial groundwater flow gradient, transmissivity, hydraulic conductivity, and flow velocity have been calculated. Dissolved concentrations have been obtained at each location and plotted and the lateral and horizontal extent of the dissolved plume has not yet been determined. It should be noted that the impacted T-Bear Ranch well is likely to be controlling most of the flow from the Sunol Tree Gas Station release as the production well on the adjoining golf driving range parcel has only had 1 trace detection of MTBE (see Site map showing MTBE results). Transducer data indicates connectivity between a shallow saturated zone (encountered at depths of 15-17 feet) and a deeper saturated zone (encountered at depths of 42-44 feet see [illegible]) So far no evidence of a significant clay barrier has been encountered although drilling has only extended to depths of 56 feet Transducer and flow meter data indicates that water consumption at the T Bear Ranch does not stress the shallow aquifer A year and a half of data from a totalizing flow meter installed at the T Bear Ranch shows daily water consumption to average 5 100 gallons per day A continuously-recording digital flow meter showed sporadic pumping cycles triggered by need and actual flow rate generally at 7 5 gpm (compare single cycle vs daily pumping cycles)	Figure: GW-Gradient, Shallow Zone Figure: GW-Gradient, Deeper Saturated Zone Figure: Site Map and MTBE Results Chart: GW Fluctuations (PZs) [illegible] [illegible] and [illegible]	Video Log of Sunol Tree Water Well	b-1: The depositional connection between the two shallow saturated zones is unclear although the T Bear Well has hydraulic connection with both saturated zones. b-2: It is unclear if the Sunol Tree Gas Station Well is linked to the two saturated zoned encountered during the current round of drilling b-3 The initial results (lateral and vertical gradient maps dissolved plume) are preliminary and should be confirmed	b-1: Install multi-level MWs to monitor each saturated zone for both contaminant concentrations (mass transfer) and gradient. b-2: Confirm adequacy of existing video log, conduct depth-discrete sampling, and transducer/flow monitoring of the Sunol Tree Gas Station well b-3 Complete monthly water level measurements and gradient maps Complete selected continuous transducer monitoring to determine f the effects of production well pumping (T Bear Sunol Tree Gas and/or Golf Range wells)	

DESCRIPTION (Chronology of events**)	Hyperlink Graphics & Tables	Reference (references)	Data Gaps	Work Necessary To Fill the Data Gap	Comments
Pumping drawdown was consistently measured to be just 1.5 feet, and the well recovered immediately following pump shutoff. This shallow aquifer was calculated to contain a transmissity equal to a gravel-type material, as calculated from transducer data collected in the T Bear well. The following is a summary of groundwater conditions calculated from transducer and pumping data: Shallow Saturated Zone (Aquifer Analysis Graphic): - Transmissivity was calculated to be 9.97x10 2 ft 2/day. Recovery of the shallow aquifer is relatively slow compared to the deeper aquifer (but consistent with a gravel). - Hydraulic Conductivity was calculated to be 30.6 ft/day (equivalent to a gravel soil type). - Aquifer storage coefficient was calculated to be 3.73x10 3 (indicative of an unconfined aquifer). - The hydraulic gradient of the shallow aquifer was calculated to be 0.008 ft per ft in a southeasterly direction (based on 8/2/04 data set). - The groundwater flow velocity for the shallow aquifer was calculated to be 1.08 ft/day (equivalent to 394.80 ft/yr). Deeper Saturated Zone (Aquifer Analysis Graphic): - Transmissivity was calculated to be 2.02x103 ft2/day - Hydraulic Conductivity was calculated to be 62.1 ft/day (also equivalent to a gravel soil type) - Aquifer storage coefficient was calculated to be 2.83x10 -2.(indicative of a confined aquifer) - The hydraulic gradient of the deeper aquifer (based on 8/2/04 data set) was calculated to be 0.0006 ft per ft in a south to southeasterly direction. This is an order of magnitude flatter than the shallow aquifer - The groundwater flow velocity for the deeper aquifer was calculated to be 0.05 ft/day (equivalent to 20.03 ft/yr). T Bear Well (Aquifer Analysis Graphic) - Average daily water consumption is nearly 6,000 gallons per day - The T-Bear well does not have a consistent pumping cycle. The pumping is sporadic, with different duration cycles but at an average pumping rate is 7.5 gpm. - The T-Bear well generally has limited drawdown during its pumping cycles, on the order of 1.7 feet and recovers quickly (although it likely due in part to the lack of a check value on the pump column. - Transducer monitoring of the shallow and deeper saturated zones indicate the T-Bear well is in connection with both zones. - T Bear well Transmissivity was calculated to be 2.81x10 2 ft 2/day (equivalent to a gravel soil type) - Its Hydraulic conductivity was calculated to be 111 ft/day.	Graphic: Pumping Analysis (T Bear Well)). Chart: T-Bear Influence on Shallow Saturated Zone (PZ-2a) Chart: T-Bear Influence (closeup of one pumping cycle on PZ-2a) Aquifer Analysis: Shallow Saturated Zone Chart: T-Bear Influence on Deeper Saturated Zone (PZ-2b) Aquifer Analysis: Deeper Saturated Zone Aquifer Analysis: T Bear Well		b-4: Groundwater flow modeling to define capture zones.	b-4: Complete assessment of Sunol Tree & T Bear supply well pumping rates, volumes pumped, and connectivity to shallow water bearing zones.	
c. Source Area TPH and MTBE were detected in soil sidewalls during the UST closure operations in May 2002 when five, 15,000-gallon USTs were replaced. Pit sidewall and dispenser samples generally contained low concentrations of fuel contaminants (gas/diesel) and volatile constituent compounds. Specifically, soil concentrations ranged from non-detect to 150 ppm for gasoline, non-detect to 5 9 ppm for MTBE trace TBA and no DIPE "ETBE or TAME Groundwater samples were subsequently obtained from driven probe borings cored at 5 locations targeting the dispensers and USTs Groundwater samples contained up to 17 000 opb gasoline and 43 ppb MTBE (Nov-2002) The Horizontal and vertical extent of fuel contamination in groundwater is undefined	Figures: Sunol Tree UST Closure Sample Locations Tables Sunol Tree Gas Stations (Soil & Groundwater)	Preliminary Site Assessment Report (Clearwater, 2003)	c-1: Lateral & vertical extent of source zone undefined, particularly from dispenser area. c-2 Temporal MTBE concentrations unknown	c-1: Complete initial confirmation of on-site (Sunol Tree) conditions by completing two exploratory borings downgradient of the UST's and dispensers. Convert the two borings into multi-level wells for lateral/vertical assessment c-2 Additional discrete sampling and transducer monitoring of the on-site water production well should be completed to vertical gradients and potential deeper aquifer impacts	

DESCRIPTION (Chronology of events**)	Hyperlink Graphics & Tables	Reference (references)	Data Gaps	Work Necessary To Fill the Data Gap	Comments
d. Dissolved plume As noted above, the extent of the dissolved plume has not yet been fully characterized. Dissolved concentrations have been obtained from 4 driven probe locations and have been plotted with some limited water well data. It should be noted that although the impacted T-Bear Ranch well appears to be controlling most of the contaminant flow from the Sunol Tree Gas Station release, the upgradient and southeastern flank of the plume are not defined. A production well on the adjoining golf driving range parcel has previously had a single trace detection of MTBE (see: site map showing recent MTBE results). Additional data includes: - During the May 2002 UST Closure Operations, collected pit water contained no detectable gasoline concentrations but did contain 84 ppb MTBE. Disposal acceptance testing of 160,000 gallons of fuel-impacted groundwater pumped from the open pit containerized in storage tanks contained up to 170 ppb gasoline and 190 ppb MTBE. - The T-Bear Ranch water well, located approximately 550 feet downgradient of the Sunol Tree Gas Station tank pit, was initially tested in Feb-2003 as part of a property transaction screen and contained 73 ppb MTBE. MTBE concentrations in the T Bear well have decreased over the last year and a half (see: Chart – T Bear Well MTBE Concentrations)	Figure: Site Map and MTBE Results Table - Groundwater Lab Results (PZ+Tbear) Table – Piezometer Specs & Water Levels Tables- Sunol Gas Station –– Soil/GW	Water Well Sampling Report (May-2003)	d-1: Distal ends of plume not defined. d-2: Check of results with existing health based screening charts – initial check of health risks.	d-1: Conduct initial plume definition assessment to include multi-level piezometers and water quality testing. - Install multi-level wells to define the extent of the plume and monitor plume growth/stability/ attenuation. d-2: Complete review of preliminary health-based charts (CRWQCB SF Bay Area Region Screening Levels).	
e. Remediation During UST replacement operations in May-2002, 4,000 cubic yards of contaminated soil were removed from the tank pit area and stockpiled in the back portion of the service station, where it remains today. Pit sidewall and dispenser samples generally contained low concentrations of fuel contaminants (gas/diesel) and volatile constituent compounds. Concentrations ranged from non-detect to 150 ppm for gasoline and non-detect to 5.9 ppm for MTBE. In addition, 160,000 gallons of fuel-impacted water were pumped from the open pit and disposed of off-site. Pit water was tested and contained no detectable gasoline concentrations but did contain 84 ppb MTBE. Disposal acceptance testing of the pumped groundwater containerized in storage tanks contained up to 170 ppb gasoline and 190 ppb MTBE A non-standard, carbon filtration system was installed on Nov 6, 2003 to remove MTBE from groundwater pumped at the T Bear Ranch well. A summary of operational data follows: -Initial filtration system monitoring showed MTBE to have "broken through" the first set of carbon vessels somewhere between 68-89 days. Following carbon change-out, MTBE breakthrough of the first set of carbon vessels occurred somewhere between 35-76 days. This suggests that the first set of carbon vessels can effectively remove the MTBE for at least 5 weeks prior to breakthrough - Carbon loading of MTBE concentrations did not cause breakthrough of the full treatment system (both sets of carbon vessels), until at least 138 days (4.5 months). - The MTBE concentrations in the groundwater influent are fairly low at the subject site and appear to be decreasing in magnitude. The existing setup of four fiberglass tanks placed in a parallel series configuration contains a minimum of 5 ft^3 per tank. Based on carbon wetting specifications of similar filtration models the groundwater contact/retention time within the carbon canisters is approximated 8 minutes based on the average pumping rates at the site (8 9 gpm) - Sampling results indicate that the existing setup of four, carbon-filled, fiberglass tanks placed in a parallel series configuration appears to be adequately filtering MTBE concentrations.	Chart – T Bear Well Pumping & MTBE Concentrations Photos of the Carbon Treatment System Tables Presenting Collected Soil & Groundwater Samples Table - T Bear Water Well Results Carbon System Testing Results	Preliminary Site Assessment Report (Clearwater, 2003)	e-1: Need to determine whether interim remediation is needed to protect water resources & insure no significant risk to other water wells (i.e. hydraulic control of the dissolved plume; removal of the soil stockpile). - Need to confirm there is no ongoing source continuing to add mass to the plume	e-1: Recommend actions following initial characterization assessment.	

DESCRIPTION (Chronology of events**)	Hyperlink Graphics & Tables	Reference (references)	Data Gaps	Work Necessary To Fill the Data Gap	Comments
f. Evaluation of potential impacts to water supply wells Currently two downgradient water production wells have been impacted by fuel contaminants. -The T Bear Ranch were has been impacted with up to 130 ppb MTBE. - A side-gradient well located at the adjoining driving range parcel previously contained a trace hit of MTBE (0.5 ppb)	Map of Water Well Locations Logs - Local Water Wells Drillers Logs TABLE: Water Quality Results of Local Water Production Wells	Water Well Sampling Report (May-2003)	f-1: Need to determine capture zone for impacted and threatened water production wells. f-2: Need to calculate mass discharge of source contamination when data is available.	f-1: Conduct round of data collection to determine supply wells (T Bear/Sunol Tree) are in connection with the dissolved MTBE plume. f-2: Estimate mass discharge of contamination at site.	

Velocity of Groundwater Flow
Sunol Tree Gas Station
Alameda County Environmental Health

$$V = \frac{K\,(h_1 - h_2)}{\frac{L}{n}}$$

Where

V = Actual velocity of groundwater flow through the pore space of material being investigated

K = Hydraulic conductivity (ft/day)
Hydraulic conductivity determined by analyzing pumping data (T-Bear Well) and use of observation wells (PZ-2a, PZ-2b) at T-Bear Ranch

WELL AND PIEZOMETER CHARACTERISTICS:

T-Bear Well Total Depth @ 40' bgs, Mills Knife Perforations @ 4-39' bgs, Average Flow Rate @ 7 5 gpm
PZ-2a Total Depth @ 29' bgs, Factory Slotted Perforations (0.010) @ 24-29' bgs
PZ-2b Total Depth @ 49' bgs; Factory Slotted Perforations (0 010) @ 44-49' bgs.

HYDRAULIC CONDUCTIVITY VALUES:

Hydraulic Conductivity Values Determined by Using AquiferTest Method Analysis Version 3 5 See supporting documentation - attached.
Two Analysis Methods Used Cooper-Jacob Method Analysis and Theis Recovery Method Analysis

	Cooper-Jacob		Theis Recovery	
	ft/day	cm/sec	ft/day	cm/sec
T-Bear Well	111 ft/day	$3\,9x10^{2}$ cm/sec	Inconclusive data	NA
PZ-2a	30 6 ft/day	$1\,1x10^{2}$ cm/sec	42 6 ft/day	$1\,5x10^{2}$ cm/sec
PZ-2b.	62 1 ft/day	$2\,2x10^{2}$ cm/sec	41 1 ft/day	$1\,4x10^{2}$ cm/sec

K values calculated are consistent with a Gravel Groundwater, Freeze and Cherry, 1979).
For this analysis, Cooper-Jacob K values will be used because observation well data is not affected by minor changes in pumping discharge caused by variations in pump speed, or by uncertain measurements of the true groundwater level because of turbulence in the well bore, and because PZ-2a recovery data was incomplete prior to the next pumping cycle.

Hydraulic Gradient Data:

Groundwater elevation data measured on August 2, 2004
Sitemap surveyed by McGregor Surveying on 7/23/04

$h_{1shallow}$ = head (in feet) at PZ-3a is 90 46 ft (site datum) - Upgradient piezometer
$h_{2shallow}$ = head (in feet) at PZ-2a is 88 46 ft (site datum) - Downgradient piezometer

h_{1deep} = head (in feet) at PZ-3b is 86 92 ft (site datum) - Upgradient piezometer
h_{2deep} = head (in feet) at PZ-2b is 86 87 ft (site datum) - Downgradient piezometer

$L_{shallow}$ = Distance between shallow piezeomters (PZ-3a and PZ-2a) h_1-h_2 is 246 ft as measured from upgradient to downgradient in the direction of groundwater flow
L_{deep} = Distance between deep piezeomters (PZ-3b and PZ-2b) h_1-h_2 is 245 ft as measured from upgradient to downgradient in the direction of groundwater flow

Estimation of Soil Porosity:

n = Soil porosity is based on a sand and gravel mixture of fluvial deposition
n = sand and gravel mixture within the range of 10% to 35% or 0.1 to 0 35 (Groundwater and Wells, Second Edition Driscol, 1995, pg 67)
For this analysis, an average soil porosity of 0.23 will be used.

CALCULATE GROUNDWATER FLOW VELOCITY IN THE SHALLOW AND DEEP AQUIFER ZONE:

Shallow Aquifer Zone

$$V = \frac{30\,6\ \text{ft/day}\ (90.46\ \text{ft} - 88\,46\ \text{ft})}{\frac{246\ \text{ft}}{0\,23}}$$

$$V = \frac{30.6\ \text{ft/day}\ (2\ \text{ft})}{\frac{246\ \text{ft}}{0.23}}$$

$$V = \frac{61\,2\ \text{ft}^2\text{/day}}{\frac{246\ \text{ft}}{0.23}}$$

$$V = \frac{0\,24878\ \text{ft/day}}{0\,23}$$

V = 1 08 ft/day equivalent to 394 80 ft/yr

Deep Aquifer Zone

$$V = \frac{62\,1\ \text{ft/day}\ (86\,92\ \text{ft} - 86\,87\ \text{ft})}{\frac{245\ \text{ft}}{0\,23}}$$

$$V = \frac{62\,1\ \text{ft/day}\ (0\,05\ \text{ft})}{\frac{245\ \text{ft}}{0\,23}}$$

$$V = \frac{3\,105\ \text{ft}^2\text{/day}}{\frac{245\ \text{ft}}{0\,23}}$$

$$V = \frac{0\,01262\ \text{ft/day}}{0\,23}$$

V = 0 05 ft/day or 20.03 ft/yr

Summary of Aquifer Test Data

Sunol Tree Gas Station

Alameda County Environmental Health

The following is a summary of pumping well, and observation well data for quantifying aquifer characteristics. Data provide insight on the pumping well (T-Bear Well), and the shallow and deeper aquifers beneath T-Bear Ranch and Sunol Tree Gas Station.

T-Bear Well:

Average pumping rate is 7.5 gpm.

Average daily water consumption is approximately 6,000 gallons per day

The T-Bear well does not have a consistent pumping cycle. The pumping is sporadic, with different duration cycles

The T-Bear well casing storage effects become negligible after 3 6 minutes after pump on.

The T-Bear well generally has limited drawdown during its pumping cycles, on the order of 1.7 feet.

The T-Bear well recovers quickly (although it likely due in partl to the lack of a check value on the pump column.

Testing indicates the T-Bear well is screened across more than one aquifer.

T-Bear well Transmissivity was calculated to be 2.81×10^{2} ft ^{2}/day (equivalent to a gravel soil type)

T-Bear well Hydraulic conductivity was calculated to be 111 ft/day.

Shallow Aquifer:

Collected data indicates the shallow aquifer is unconfined to semiconfined (based on recovery data and calculation of storage coefficient at PZ-2a[1]).

[1] It should be noted that the data set may be limited (I.e. the pumping test not run for long enough to reveal actual aquifer characteristics)

Total drawdown in PZ-2a during one pumping cycle was 0.24 feet

Recovery of the shallow aquifer is relatively slow compared to the deeper aquifer (but consistent with a gravel).

The shallow aquifer Transmissivity was calculated to be $9\ 97 \times 10^{2}$ ft ^{2}/day

The shallow aquifer Hydraulic Conductivity was calculated to be 30.6 ft/day (equivalent to a gravel soil type)

The shallow aquifer storage coefficient was calculated to be $3\ 73 \times 10^{3}$ (indicative of an unconfined aquifer)

The hydraulic gradient of the shallow aquifer was calculated to be 0 008 ft per ft in a southeasterly direction (based on 8/2/04 data set)

The groundwater flow velocity for the shallow aquifer was calculated to be 1 08 ft/day equivalent to 394 80 ft/yr

Deep Aquifer:

The deep aquifer appears to be confined, receives recharge (leakage from the above aquifer) based on recovery data and calculation of storage coefficient from PZ-2b

Total drawdown in PZ-2b during one pumping cycle was 0.66 feet.

Recovery of the deeper aquifer is fairly rapid, recovering in 24 minutes after pump off

The deep aquifer Transmissivity was calculated to be 2.02×10^{3} ft^{2}/day

The deep aquifer Hydraulic Conductivity was calculated to be 62 1 ft/day (also equivalent to a gravel soil type)

The deep aquifer storage coefficient was calculated to be 2.83×10^{-2}.(indicative of a confined aquifer)

The hydraulic gradient of the deeper aquifer (based on 8/2/04 data set) was calculated to be 0.0006 ft per ft in a south to southeasterly direction This is an order of magnitude flatter than the shallow aquifer

The groundwater flow velocity for the deeper aquifer was calculated to be 0 05 ft/day equivalent to 20.03 ft/yr

It should be noted that this analysis is based on a limited data set with short duration, sporadic pumping cycles.

The data was analyzed in part using Waterloo Hydrogeologic AquiferTest Method Analysis version 3.5.

References include: Groundwater and Wells, Second Edition, Driscol, 1985

Groundwater, Frezze and Cherry, 1979

Velocity of Groundwater Flow
Sunol Tree Gas Station
Alameda County Environmental Health

$$V = \frac{K\,(h_1 - h_2)}{\frac{L}{n}}$$

Where

V = Actual velocity of groundwater flow through the pore space of material being investigated

K = Hydraulic conductivity (ft/day)
Hydraulic conductivity determined by analyzing pumping data (T-Bear Well) and use of observation wells (PZ-2a, PZ-2b) at T-Bear Ranch.

WELL AND PIEZOMETER CHARACTERISTICS:

T-Bear Well, Total Depth @ 40' bgs, Mills Knife Perforations @ 4-39' bgs, Average Flow Rate @ 7 5 gpm
PZ-2a, Total Depth @ 29' bgs, Factory Slotted Perforations (0 010) @ 24-29' bgs
PZ-2b, Total Depth @ 49' bgs, Factory Slotted Perforations (0 010) @ 44-49' bgs

HYDRAULIC CONDUCTIVITY VALUES:

Hydraulic Conductivity Values Determined by Using AquiferTest Method Analysis Version 3 5 See supporting documentation - attached
Two Analysis Methods Used Cooper-Jacob Method Analysis and Theis Recovery Method Analysis

	Cooper-Jacob		Theis Recovery	
	ft/day	cm/sec	ft/day	cm/sec
T-Bear Well	111 ft/day	$3\,9x10^{2}$ cm/sec	Inconclusive data	NA
PZ-2a	30 6 ft/day	$1\,1x10^{2}$ cm/sec	42 6 ft/day	$1.5x10^{2}$ cm/sec
PZ-2b	62 1 ft/day	$2\,2x10^{2}$ cm/sec	41.1 ft/day	$1\,4x10^{2}$ cm/sec

K values calculated are consistent with a Gravel Groundwater, Freeze and Cherry, 1979).
For this analysis, Cooper-Jacob K values will be used because observation well data is not affected by minor changes in pumping discharge caused by variations in pump speed, or by uncertain measurements of the true groundwater level because of turbulence in the well bore, and because PZ-2a recovery data was incomplete prior to the next pumping cycle.

Hydraulic Gradient Data:

Groundwater elevation data measured on August 2, 2004
Sitemap surveyed by McGregor Surveying on 7/23/04

$h_{1shallow}$ = head (in feet) at PZ-3a is 90 46 ft (site datum) - Upgradient piezometer
$h_{2shallow}$ = head (in feet) at PZ-2a is 88 46 ft (site datum) - Downgradient piezometer

h_{1deep} = head (in feet) at PZ-3b is 86 92 ft (site datum) - Upgradient piezometer
h_{2deep} = head (in feet) at PZ-2b is 86 87 ft (site datum) - Downgradient piezometer

$L_{shallow}$ = Distance between shallow piezeomters (PZ-3a and PZ-2a) h_1-h_2 is 246 ft as measured from upgradient to downgradient in the direction of groundwater flow
L_{deep} = Distance between deep piezeomters (PZ-3b and PZ-2b) h_1-h_2 is 245 ft as measured from upgradient to downgradient in the direction of groundwater flow

Estimation of Soil Porosity:

n = Soil porosity is based on a sand and gravel mixture of fluvial deposition
n = sand and gravel mixture within the range of 10% to 35% or 0 1 to 0 35 Groundwater and Wells, Second Edition Driscol, 1995, pg. 67)
For this analysis, an average soil porosity of 0.23 will be used.

CALCULATE GROUNDWATER FLOW VELOCITY IN THE SHALLOW AND DEEP AQUIFER ZONE:

Shallow Aquifer Zone

$$V = \frac{30\,6 \text{ ft/day } (90\,46 \text{ ft} - 88\,46 \text{ ft})}{\frac{246 \text{ ft}}{0\,23}}$$

$$V = \frac{30.6 \text{ ft/day } (2 \text{ ft})}{\frac{246 \text{ ft}}{0\,23}}$$

$$V = \frac{61.2 \text{ ft}^2\text{/day}}{\frac{246 \text{ ft}}{0\,23}}$$

$$V = \frac{0.24878 \text{ ft/day}}{0\,23}$$

V = 1.08 ft/day equivalent to 394 80 ft/yr

Deep Aquifer Zone

$$V = \frac{62\,1 \text{ ft/day } (86\,92 \text{ ft} - 86\,87 \text{ ft})}{\frac{245 \text{ ft}}{0\,23}}$$

$$V = \frac{62\,1 \text{ ft/day } (0\,05 \text{ ft})}{\frac{245 \text{ ft}}{0.23}}$$

$$V = \frac{3\,105 \text{ ft}^2\text{/day}}{\frac{245 \text{ ft}}{0\,23}}$$

$$V = \frac{0\,01262 \text{ ft/day}}{0\,23}$$

V = 0 05 ft/day or 20 03 ft/yr

23027\pumpdata\velocity xls

TABLE 1

Groundwater Results

Sunol Tree Gas Station Fuel Release
3004 Andrade Road, Sunol

All water results in parts per billion (ug/kg)

Investigation	Date	Sample Identification	Sample Location (feet)	Total Petroleum Hydrocarbons as GASOLINE	Volatile Organic Compounds										COMMENTS
									FUEL OXYGENATES						
					Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (2)	TBA	ETBE	DIPE	TAME	Ethanol	
PIEZOMETER INSTALLATION	7/21/2004	PZ-1	12	130	< 1	< 1	< 1	< 2	230	< 20	< 10	< 10	< 10	< 200	
	7/22/2004		20	34	ND	ND	ND	ND	13	ND	ND	ND	ND	ND	
	7/21/2004		42	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	7/23/2004	PZ-2	20	66	ND	ND	ND	ND	65	ND	ND	ND	ND	ND	
	7/23/2004		24	73	ND	ND	ND	ND	74	ND	ND	ND	ND	ND	
	7/22/2004		44	65	ND	ND	ND	ND	90	ND	ND	ND	ND	ND	
	7/23/2004	PZ-3	16	44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	7/23/2004		44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	7/21/2004	DP-1	16	ND	ND	ND	ND	ND	9.2	ND	ND	ND	ND	ND	
	7/21/2004		41	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
T-BEAR WELL -Discrete Sampling-	7/19/2004	T-Bear Well	8	ND	ND	ND	ND	ND	15	ND	ND	ND	ND		
	6/29/2004	T-Bear Well	15	ND	ND	ND	ND	ND	11	ND	ND	ND	ND		
	6/29/2004	T-Bear Well	22	ND	ND	ND	ND	ND	17	ND	ND	ND	ND		
	6/29/2004	T-Bear Well	30	ND	ND	ND	ND	ND	19	ND	ND	ND	ND		
	6/29/2004	T-Bear Well	38	ND	ND	ND	ND	ND	20	ND	ND	ND	ND		
NEARBY WATER PRODUCTION WELLS	7/21/2004	G-1	3111 Andrade Rd	ND	---	---	---	---	ND	ND	ND	ND	ND		
	7/19/2004	A-2	3220 Andrade Rd	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	7/19/2004	K-?	3511 Andrade Rd	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Regulatory Limits for Groundwater (AIs or MCLs) (1):				Not Established	1	150	300	1750	13	12	Not Established				
Laboratory's Practical Quantitation Limits (PQL's) (2):				50	0.5	0.5	0.5	0.5	0.5	5	0.5	0.5		0.5	

NOTES:

Bold Print = *Bold Print indicates concentrations are above regulatory Action Levels*
< # = *Detection limit elevated due to sample dilution and compound not detected at or above detection limit reported*
ND = *Not detected at or above the lab's practical quantitation limit*
--- = *Sample not analyzed for this compound(s)*
1 = *Water quality goals for groundwater are based on State DHS-established Maximum Contaminant*
2 = *MTBE detections are confirmed by EPA Method #8260.*
3 = *The Certified lab reported the TPH as gasoline value is the result of high concentrations of MTBE*

MTBE = Methyl-tert-Butyl Ether
TAME = Tert-amyl methyl ether
ETBE = Ethyl tert-butyl ether

DIPE = Di-isopropyl ether
TBA = Tert-butyl alcohol

TABLE 2

Piezometer Water Levels and Construction Specifications

Sunol Tree Gas Station Fuel Release
3004 Andrade Road, Sunol
All measurements are in feet

Monitoring Point Information			*Measured Groundwater*		
Sample Identification	*Well Screen Interval (feet below TOC)*	*Surveyed Top-of-Casing (TOC) Measurement (in Feet)*	*Date*	*Depth below TOC (feet, bgs)*	*Elevation (relative to site datum)*
PZ-1a	12 - 17	101.25	8-Sep-04	11 93	89.32
			13-Aug-04	10 95	90 30
			5-Aug-04	10 65	90 60
			2-Aug-04	10.41	90 84
			25-Jul-04	10 22	91 03
PZ-1b	41.5 - 46.5	101.37	8-Sep-04	15.69	85 68
			13-Aug-04	14 79	86 58
			5-Aug-04	14 68	86 69
			2-Aug-04	14.56	86 81
			25-Jul-04	14 84	86 53
PZ-2a	24 - 29	94.69	8-Sep-04	7 58	87 11
			13-Aug-04	6 53	88 16
			5-Aug-04	6 21	88 48
			2-Aug-04	6 05	88 64
			25-Jul-04	6 10	88 59
PZ-2b	44 - 49	94.69	8-Sep-04	8 95	85 74
			13-Aug-04	7 95	86.74
			5-Aug-04	7 95	86.74
			2-Aug-04	7 82	86.87
			25-Jul-04	8 25	86.44
PZ-3a	16 - 21'	98 15	8-Sep-04	9 64	88 51
			13-Aug-04	8 64	89 51
			5-Aug-04	8 00	90 15
			2-Aug-04	7 69	90.46
			25-Jul-04	6 57	91 58
PZ-3b	44 - 49	97 91	8-Sep-04	12 25	85 66
			13-Aug-04	11 31	86 60
			5-Aug-04	11 18	86 73
			2-Aug-04	10 99	86 92
			25-Jul-04	11.02	86.89

file. 23027/tables/piezometer-data

Table 3

Carbon Treatment System Sample Results

T Bear Ranch Domestic Well
3000 Andrade Road, Sunol

All water results in parts per billion (ug/kg)

Investigation	Date	Extracted Groundwater (gallons)	Sample Location (ID#)	Total Petroleum Hydrocarbons as GASOLINE	Volatile Organic Compounds: Benzene	Toluene	Ethylbenzene	Xylenes	FUEL OXYGENATES: MTBE (2)	TBA	ETBE	DIPE	TAME	Ethanol	COMMENTS
On-going Carbon Treatment System Testing (1)	Sept-8, 2004 (+38 days after changeout)	2,703,174	Influent (Pre)	---	ND	ND	ND	<1	**14**	< 10	<5	<5	<5	<100	Residual Chlorine = 0 15 ppm (at Retention Tank)
			Mid	---	ND	ND	ND	<1	<1	< 10	<5	<5	<5	<100	
	Jul-19, 2004 (+76 days after changeout))		Influent	---	ND	ND	ND	ND	**25**	<10	<5	<5	<5	---	Initial breakthrough of MTBE at "mid" following changeout (between 35-76 days)
			Mid	<25	**0 59**	ND	ND	<1	**17**	<10	<5	<5	<5	---	
			Effluent (Post)	<25	ND	ND	ND	<1	<1	<10	<5	<5	<5	---	
	Jun-22, 2004 (+35 days after changeout)	2,316,310	Influent (Pre)	---	ND	ND	ND	<1	**49**	< 10	<5	<5	<5	---	Residual Chlorine = 0 15 ppm (at Retention Tank)
			Mid	---	ND	ND	ND	<1	<1	< 10	<5	<5	<5	---	
	[illegible]														
	May-21, 2004 (+217 days)	2,146,760	Influent	ND	ND	ND	ND	<1	**43**	<10	<5	<5	<5	---	
			Mid	ND	ND	ND	ND	<1	3	<10	<5	<5	<5	---	
			Effluent (Post)	ND	ND	ND	ND	<1	<1	<10	<5	<5	<5	---	
	May-5, 2004 (+202 days)		Influent	ND	ND	ND	ND	ND	**44**	13	ND	ND	ND	<50	Initial breakthrough of MTBE at effluent end of carbon system (between 138-202 days)
			Mid	ND	ND	ND	ND	ND	6	ND	ND	ND	ND	<50	
			Effluent	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	<50	
	Mar-9, 2004 (+138 days)		Influent	ND - Sample obtained from incorrect sampling port											
			Mid	ND	ND	ND	ND	ND	3	<20	ND	ND	ND	<100	
			Effluent	ND	ND	ND	ND	ND	ND	<20	ND	ND	ND	<100	
	Feb-17, 2004 (+110 days)		Influent	ND - Sample obtained from incorrect sampling port											
			Mid	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	<50	
			Effluent	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<50	
	Jan-27, 2004 (+89 days)		Influent	ND - Sample obtained from incorrect sampling port											Initial breakthrough of MTBE at "mid" following changeout (between 68-89 days)
			Mid	ND	ND	ND	ND	ND	1	<20	ND	ND	ND	<100	
	Jan-8, 2004 (+68 days)		Influent	ND - Sample obtained from incorrect sampling port											
			Mid	ND	ND	ND	ND	ND	ND	<20	ND	ND	ND	<100	
	Dec-2, 2003 (+26 days)		"Hose Bib "	ND	ND	ND	ND	<1	ND	ND	ND	<1 0	ND	---	
	[illegible]			CARBON SYSTEM STARTUP											
	Aug-21-03	1,293,740		---	---	---	---	---	---	---	---	---	---	---	
Regulatory Limits for Groundwater (Als or MCLs) (2):				Not Established	1	150	300	1,750	13	12	Not Established				
Laboratory's Practical Quantitation Limits (PQL's) (3):				50	0 5	0 5	0 5	0 5	0 5	5	0 5	0 5	0 5	0 5	

NOTES:

Bold Print = *Bold Print indicates concentrations are above regulatory Action Levels.*
< # = *Detection limit elevated due to sample dilution and compound not detected at or above detection*
ND = *Not detected at or above the lab's practical quantitation limit*
--- = *Sample not analyzed for this compound(s).*
1 = Samples obained on July 19, and June 12, 2004 were sampled by Weber, Hayes and Associates Remaining samples obtaind by Sequoia Analytical or Cerco Labs
2 = *Water quality goals for groundwater are based on State DHS-established Maximum Contaminant*
3 = *MTBE detections are confirmed by EPA Method #8260.*
4 = *The Certified lab reported the TPH as gasoline value is the result of high concentrations of MTBE within the TPH as gasoline quantitation range*

MTBE = Methyl-tert-Butyl Ether
TAME = Tert-amyl methyl ether
ETBE = Ethyl tert-butyl ether

DIPE= Di-isopropyl ether
TBA = Tert-butyl alcohol
EtOH = Ethanol

AERIAL VICINITY MAP
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100

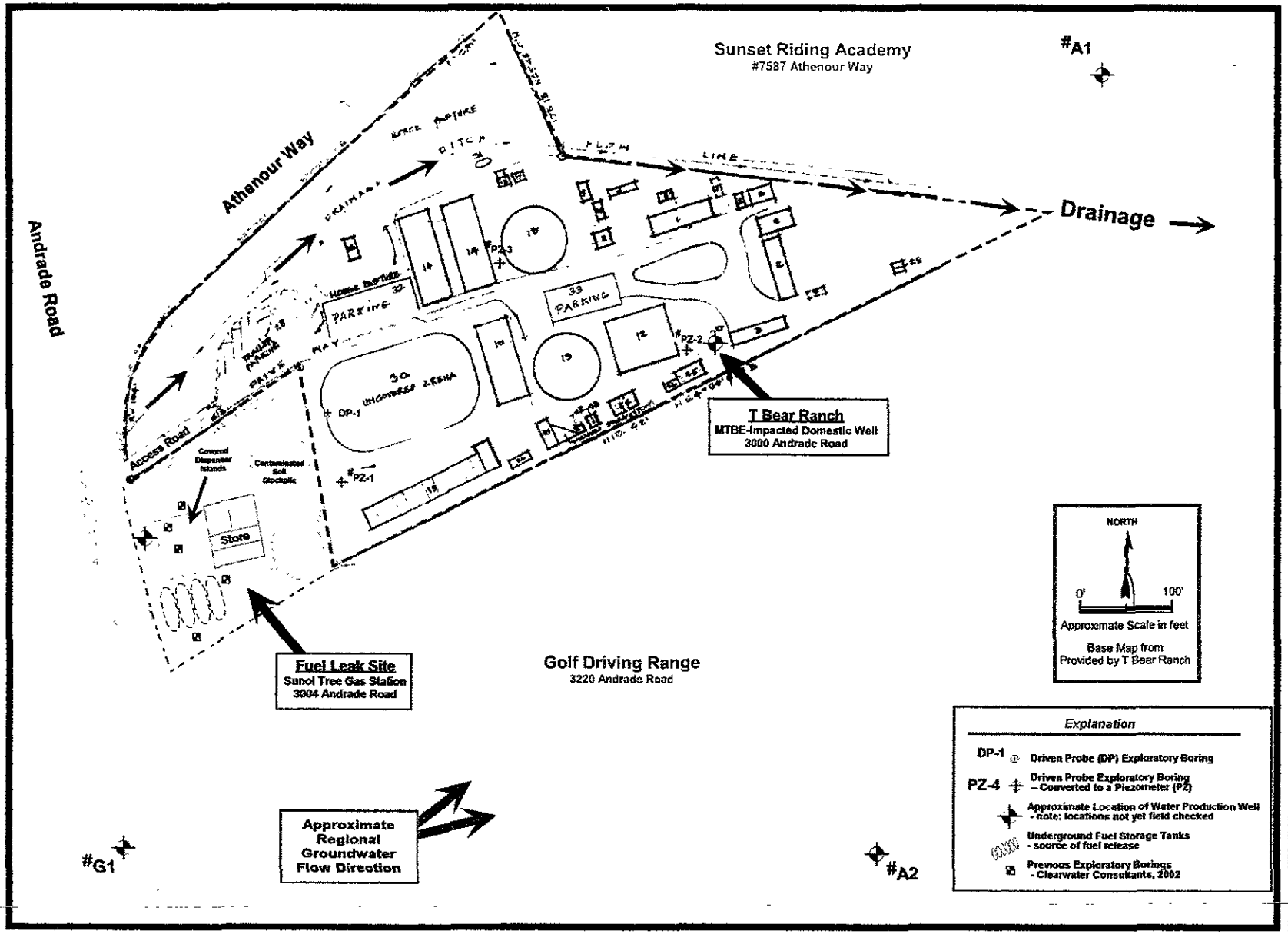
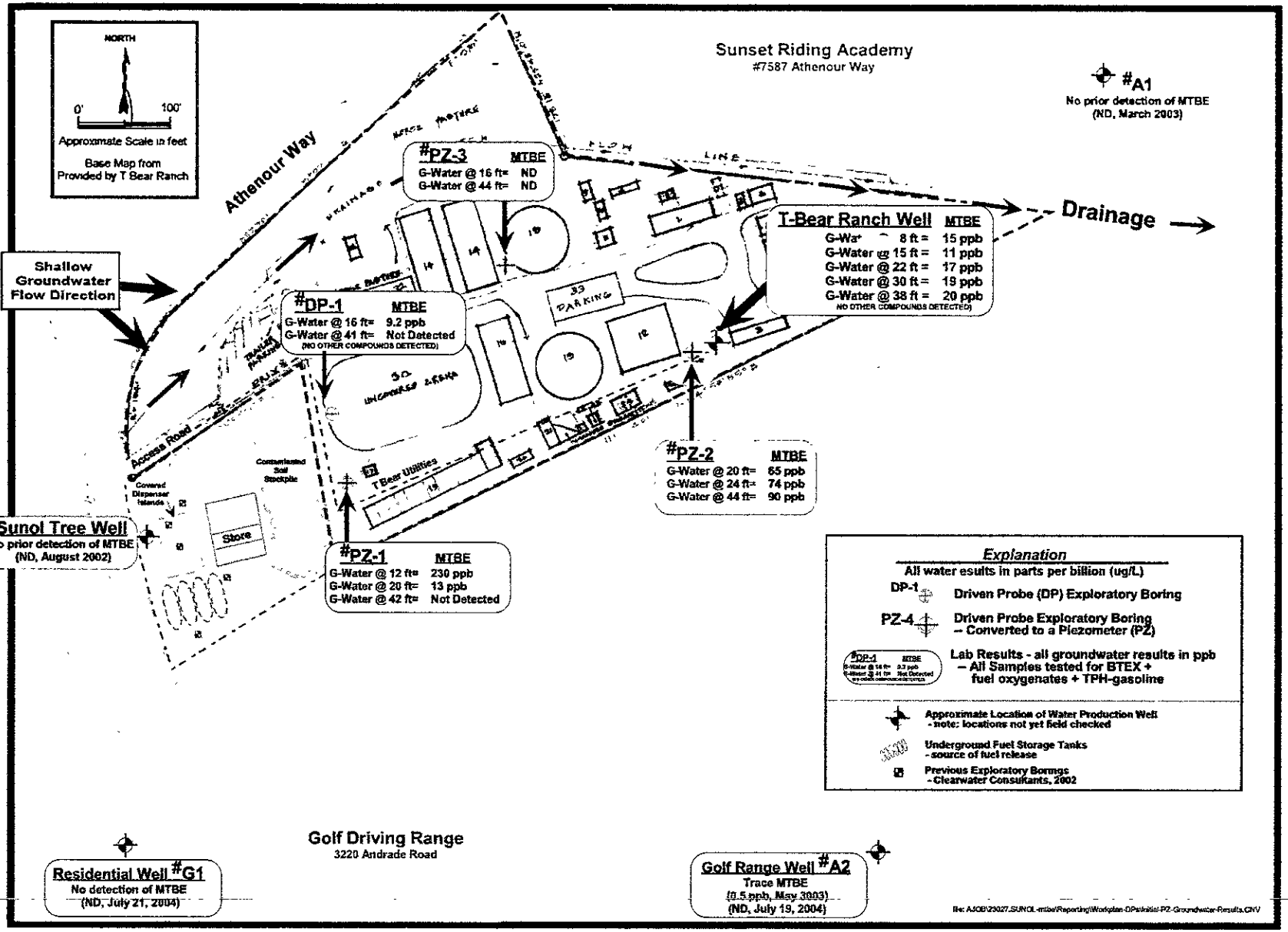


FIGURE
6
Job # 23027

SITE MAP
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100



EXTENT OF DISSOLVED MTBE PLUME & PIEZOMETER LOCATION MAP

July 21-23, 2004

SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100

Figure 2
T Bear Well
MTBE Concentrations & Cumulative Flow Volume

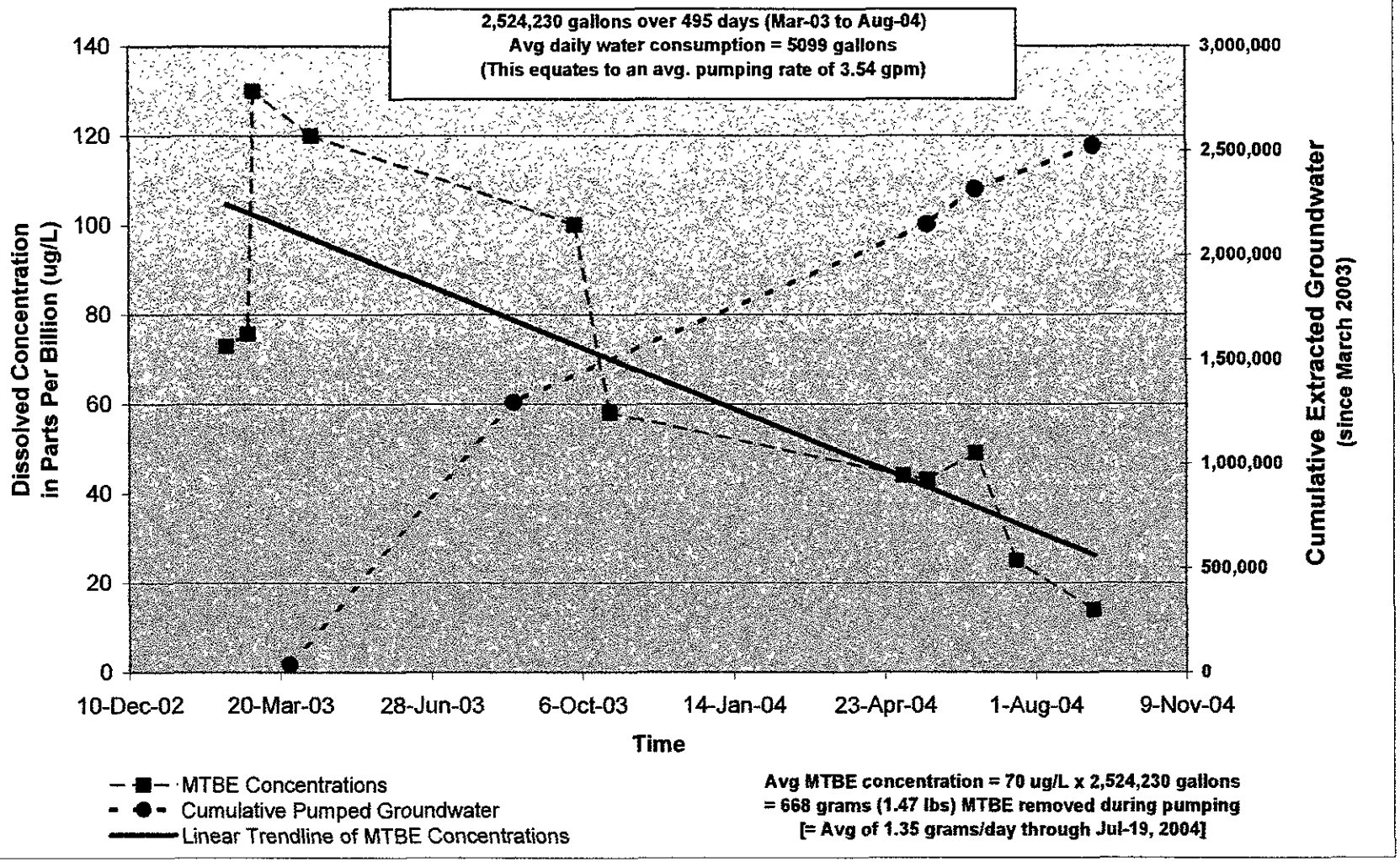
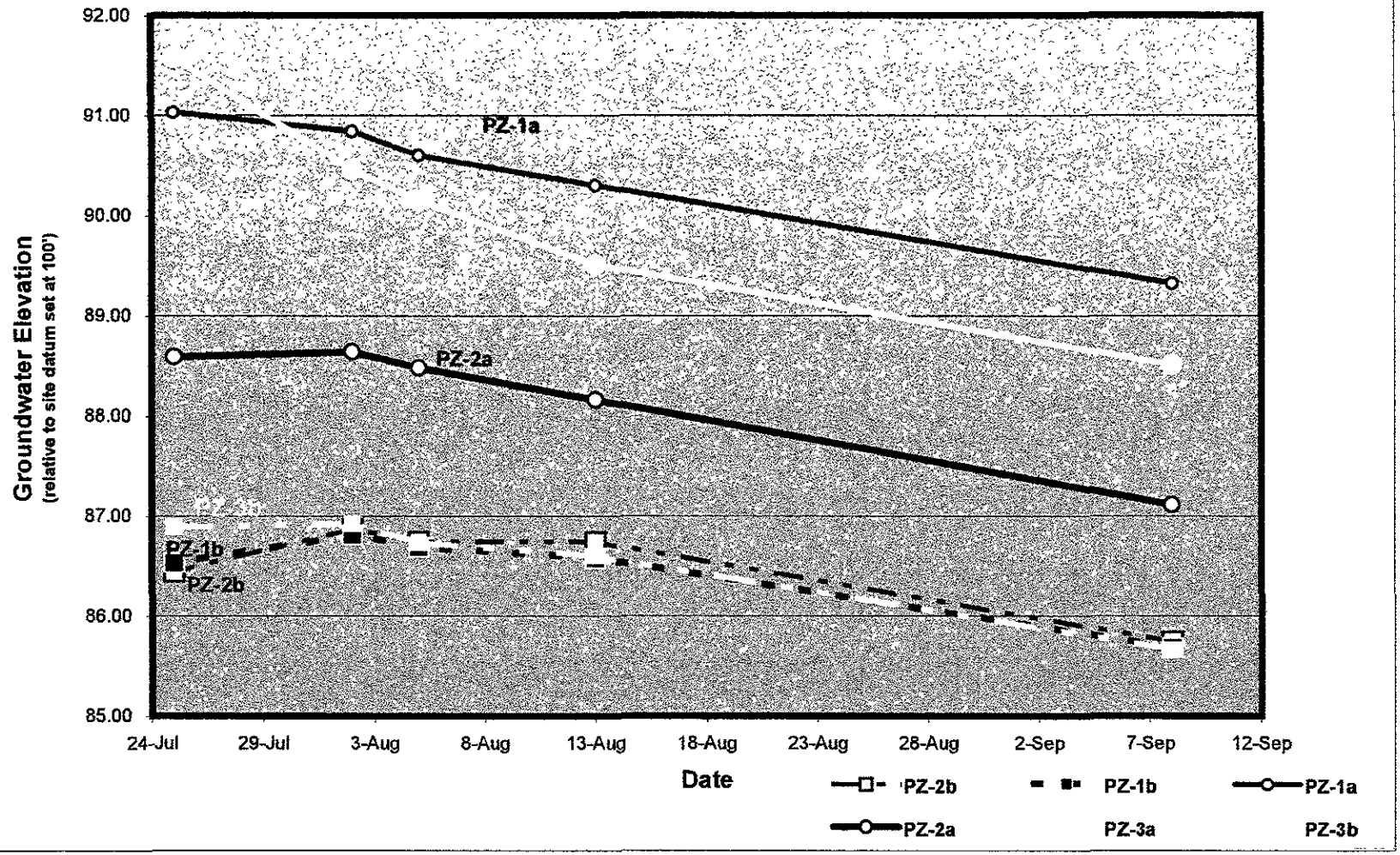


Figure 3

Piezometer Groundwater Fluctuations

July 25 - September 8, 2004



Weber, Hayes and Associates

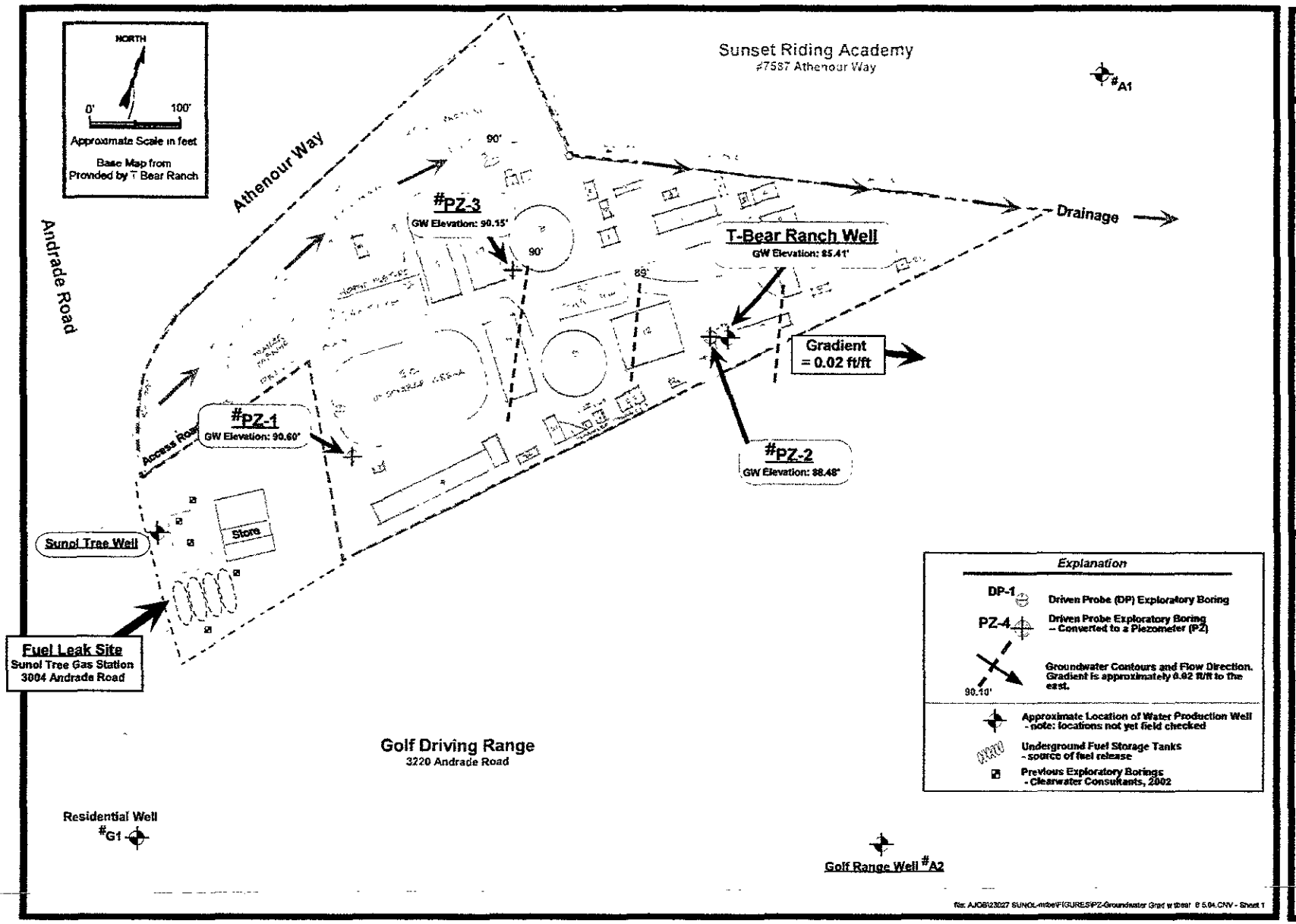


FIGURE 4
Job # 23027

Potentiometric Map
SHALLOW Water Bearing Zone
August 5, 2004
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100

file: AJOB\23027 SUNOL-mbe\FIGURES\PZ-Groundwater Grad w sheet 8 5.04.CNV - Sheet 1

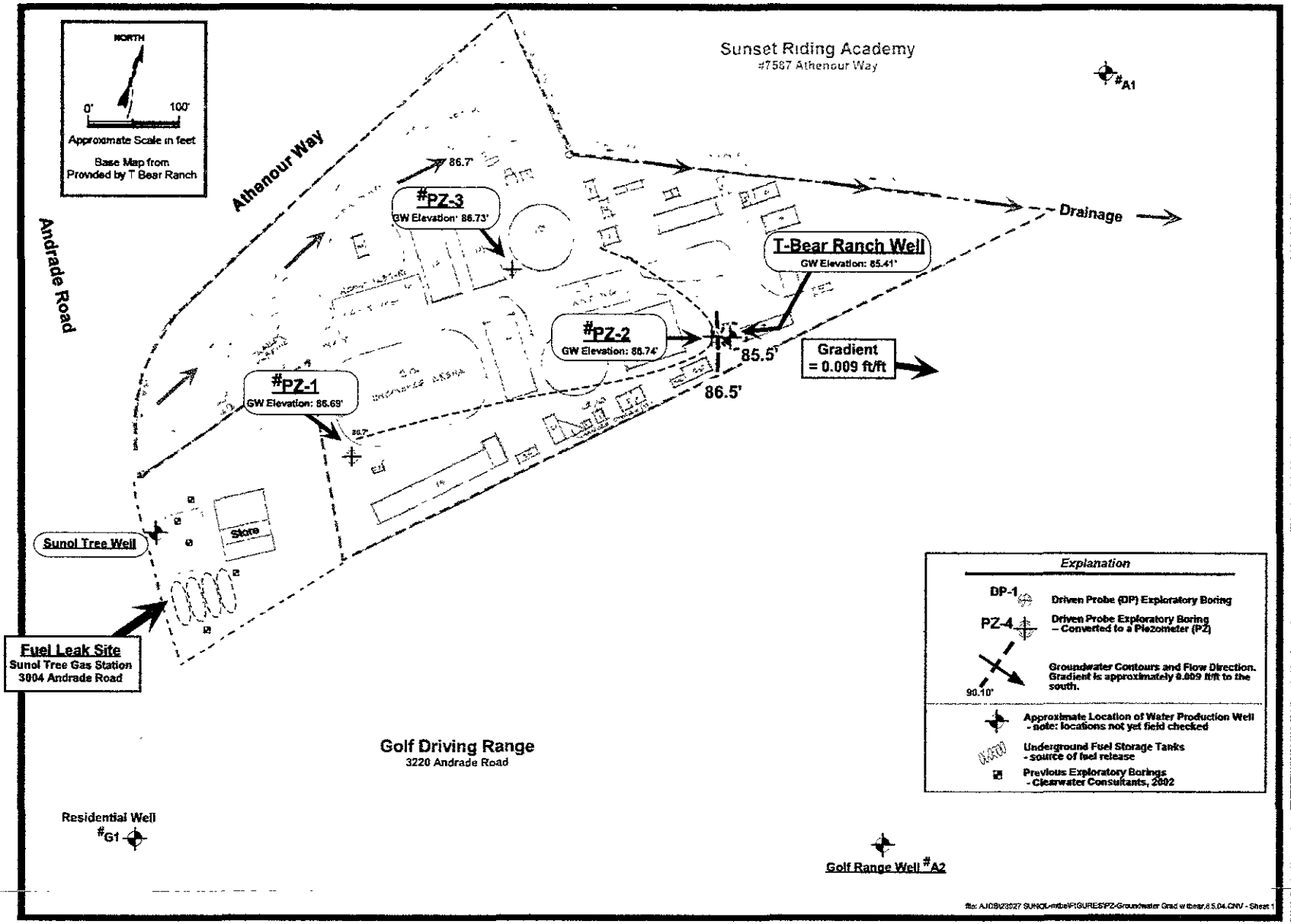
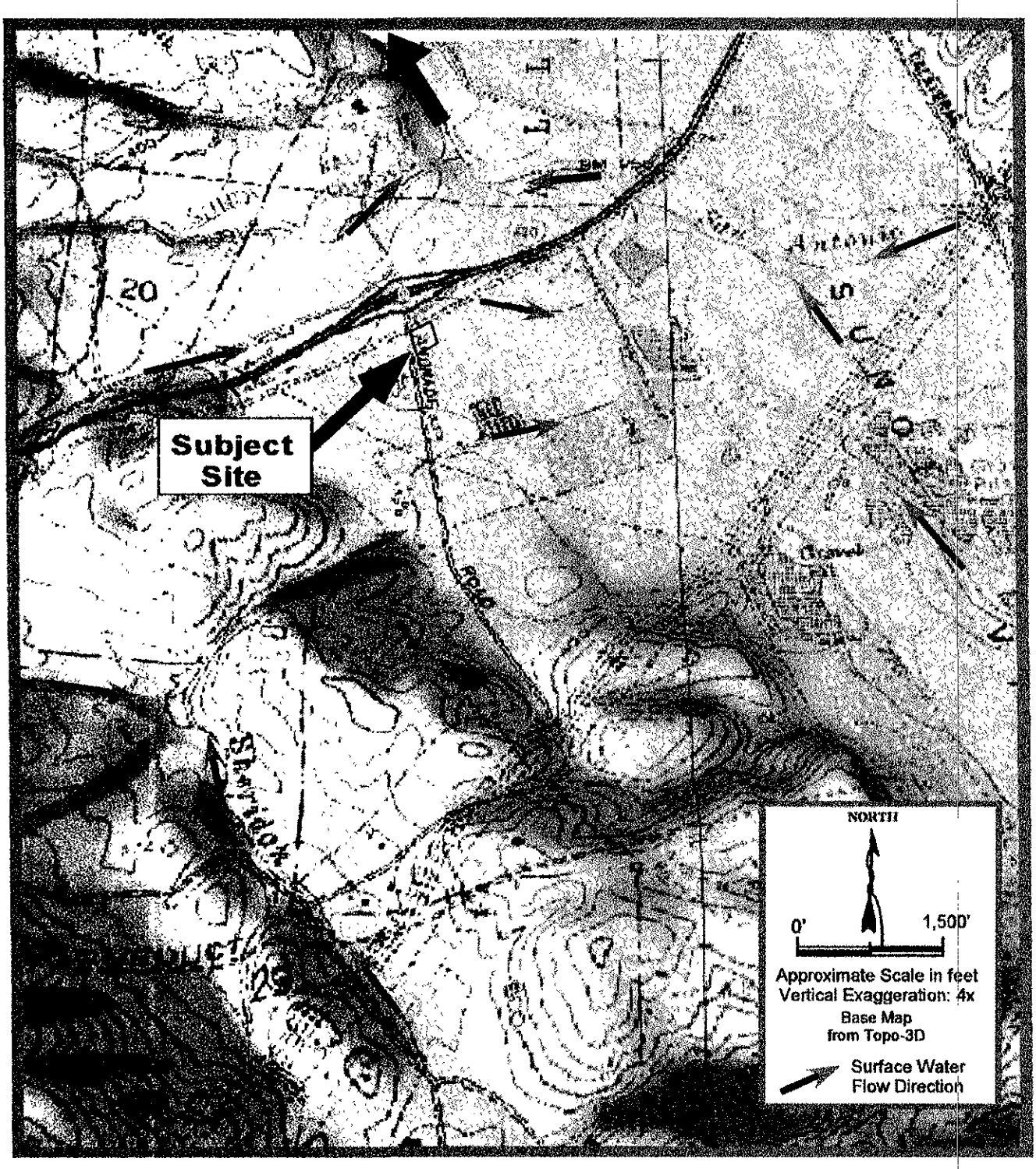


FIGURE 5
Job # 23027

Potentiometric Map
DEEPER Water Bearing Zone
August 5, 2004
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

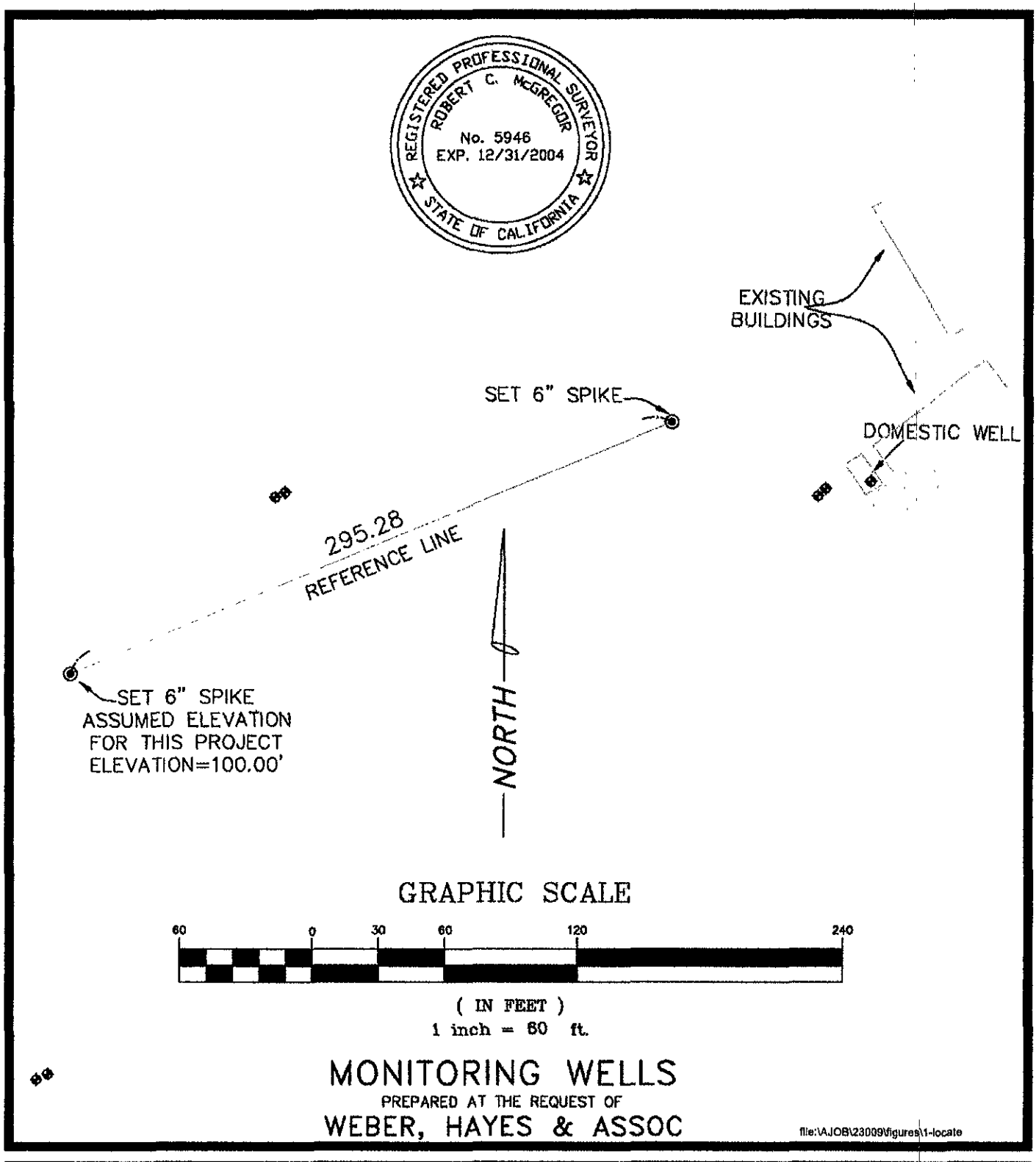
Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100

file: AJOB\23027 SUNOL-misc\FIGURES\PZ-Groundwater Grad w tbear 8.5.04.DWG - Sheet 1



file:\AJOB\23027\figures\2-Topograph-3D

Weber, Hayes & Associates Hydrogeology and Environmental Engineering 120 Westgate Drive, Watsonville, Ca. 95076 (831) 722 - 3580 (831) 662 - 3100	**3-Dimension Topographic Map** SUNOL TREE GAS STATION 3004 Andrade Road Sunol, Alameda County	FIGURE 6 Job # 23027



Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100

SURVEY MAP
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

FIGURE 1
Job # 23027

Figure 8

Comparison of T-Bear Pumping Well Flow Rate and Drawdown over One Pumping Cycle

Digital Recorded Flow Rate & Transducer Recorded Water Groundwater Levels

Aug-13 @ 20:46 through Aug 14, 2004 @ 0:55

(One Pumping Cycle + Recovery)

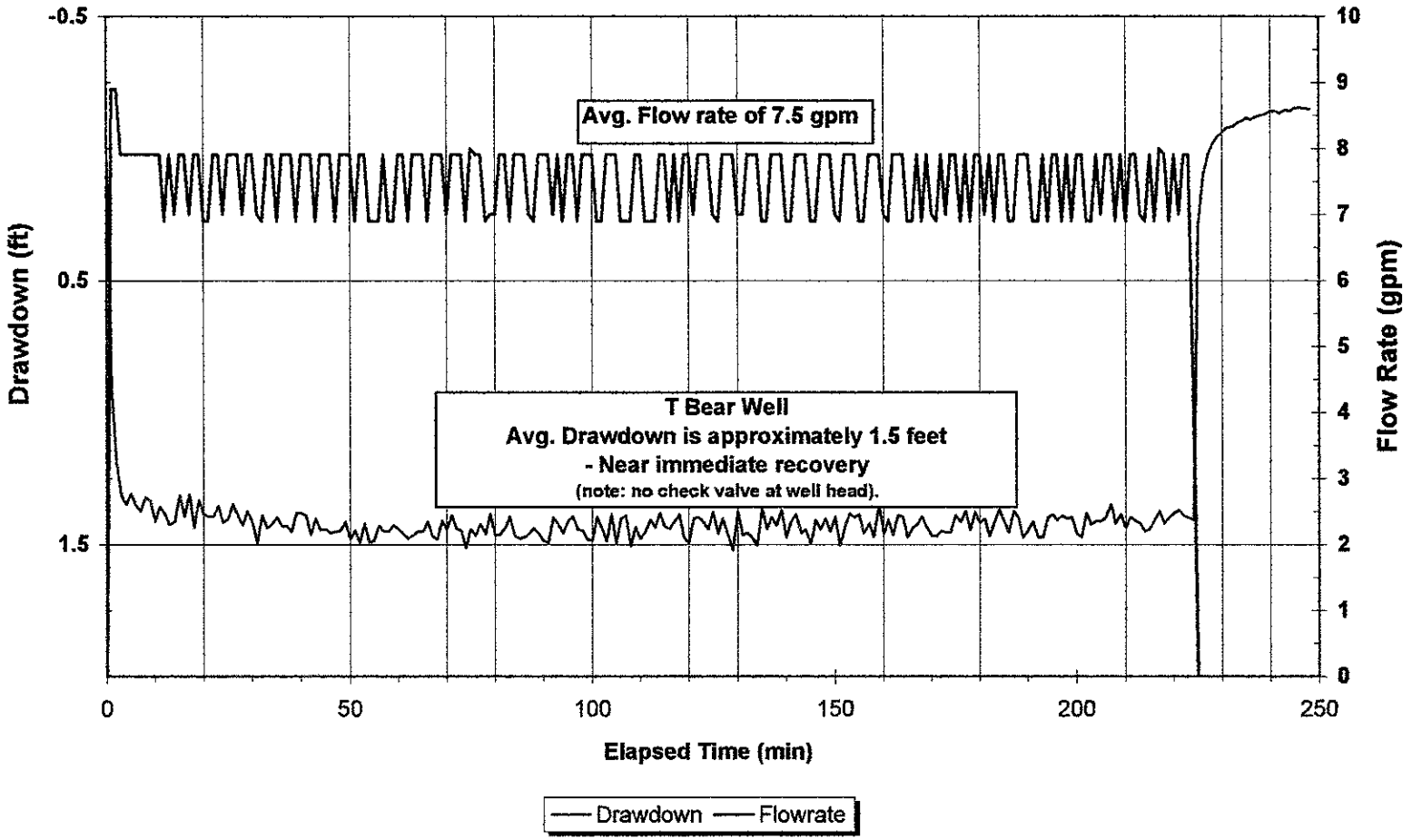


Figure 9

SHALLOW AQUIFER ANALYSIS (PZ-2a)
Depth to Groundwater vs Time
(Aug-5 @ 15:10 through Aug-13, 2004 @ 11:35)

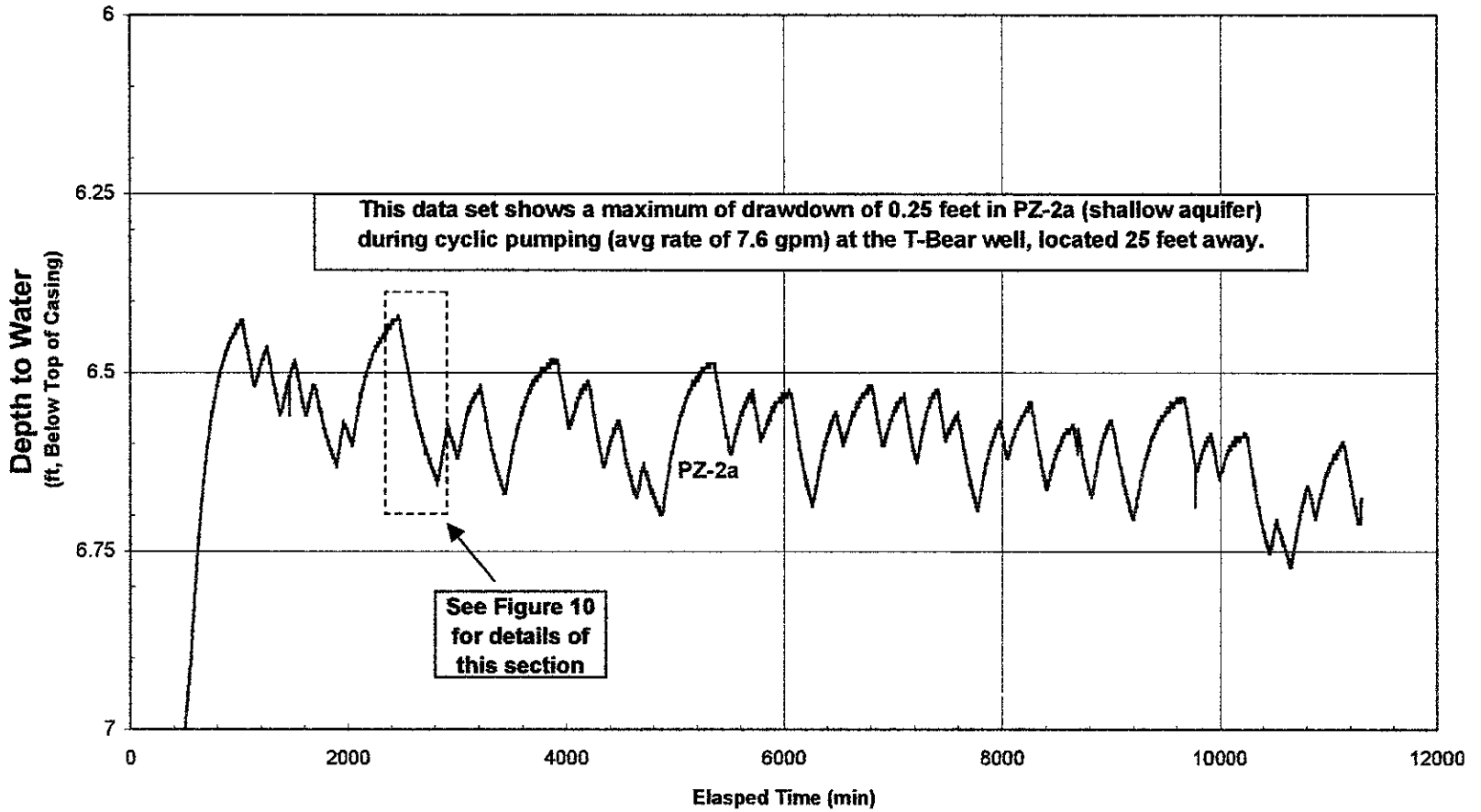
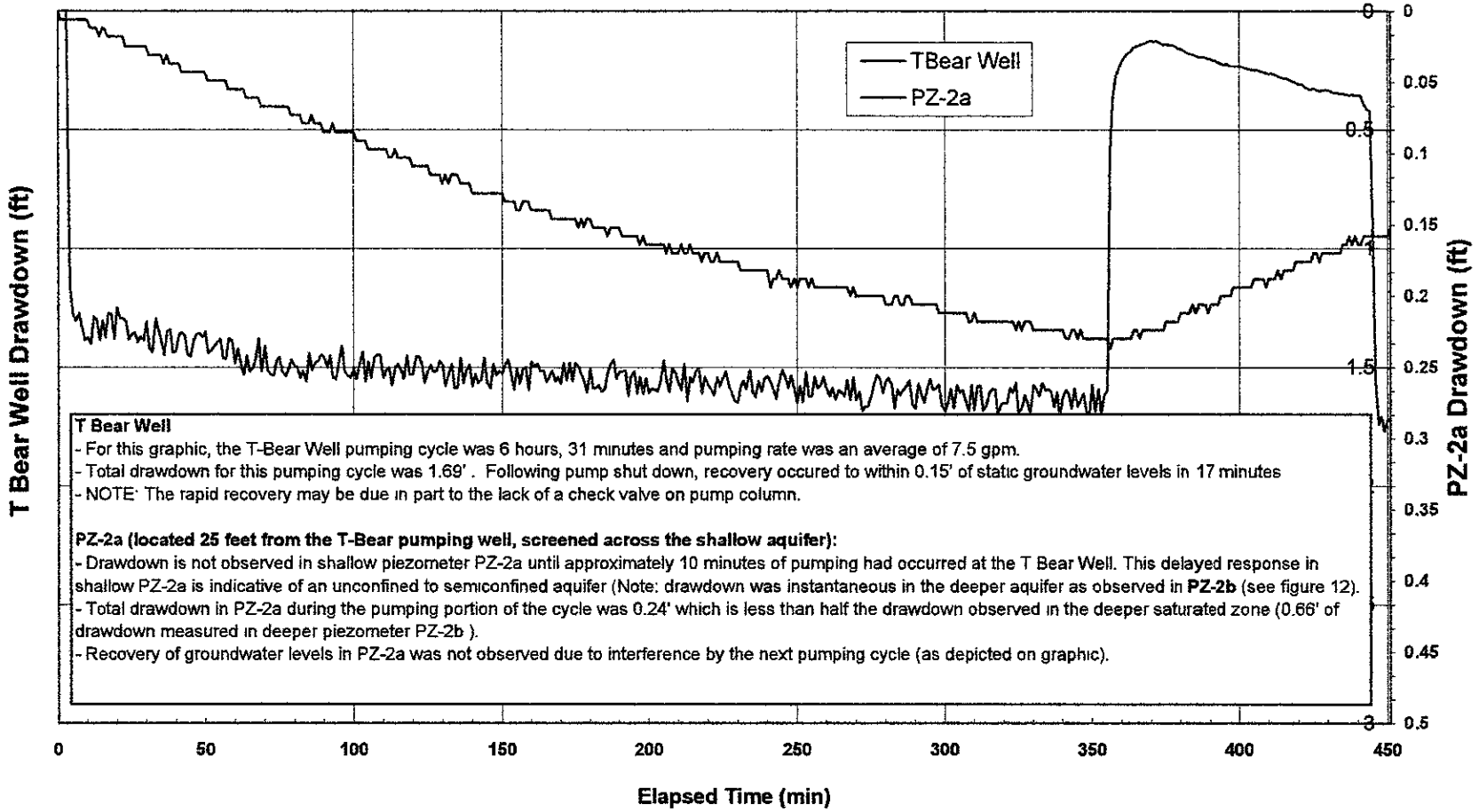


Figure 10

Shallow Aquifer Analysis (PZ-2a)

Comparison of Water Level Drawdown in the T Bear Pumping Well & PZ-2a

Aug-7, 2004 (One Pumping Cycle from 8:16 through 15:47)



T Bear Well

- For this graphic, the T-Bear Well pumping cycle was 6 hours, 31 minutes and pumping rate was an average of 7.5 gpm.
- Total drawdown for this pumping cycle was 1.69' . Following pump shut down, recovery occured to within 0.15' of static groundwater levels in 17 minutes
- NOTE: The rapid recovery may be due in part to the lack of a check valve on pump column.

PZ-2a (located 25 feet from the T-Bear pumping well, screened across the shallow aquifer):

- Drawdown is not observed in shallow piezometer PZ-2a until approximately 10 minutes of pumping had occurred at the T Bear Well. This delayed response in shallow PZ-2a is indicative of an unconfined to semiconfined aquifer (Note: drawdown was instantaneous in the deeper aquifer as observed in **PZ-2b** (see figure 12).
- Total drawdown in PZ-2a during the pumping portion of the cycle was 0.24' which is less than half the drawdown observed in the deeper saturated zone (0.66' of drawdown measured in deeper piezometer PZ-2b).
- Recovery of groundwater levels in PZ-2a was not observed due to interference by the next pumping cycle (as depicted on graphic).

Figure 12

Deeper Aquifer Analysis (PZ-2b)

Comparison of Water Level Drawdown in the T Bear Pumping Well & PZ-2b

Aug-13 @ 20:46 through Aug-14, 2004 @ 0:55 hours (One Pumping Cycle)

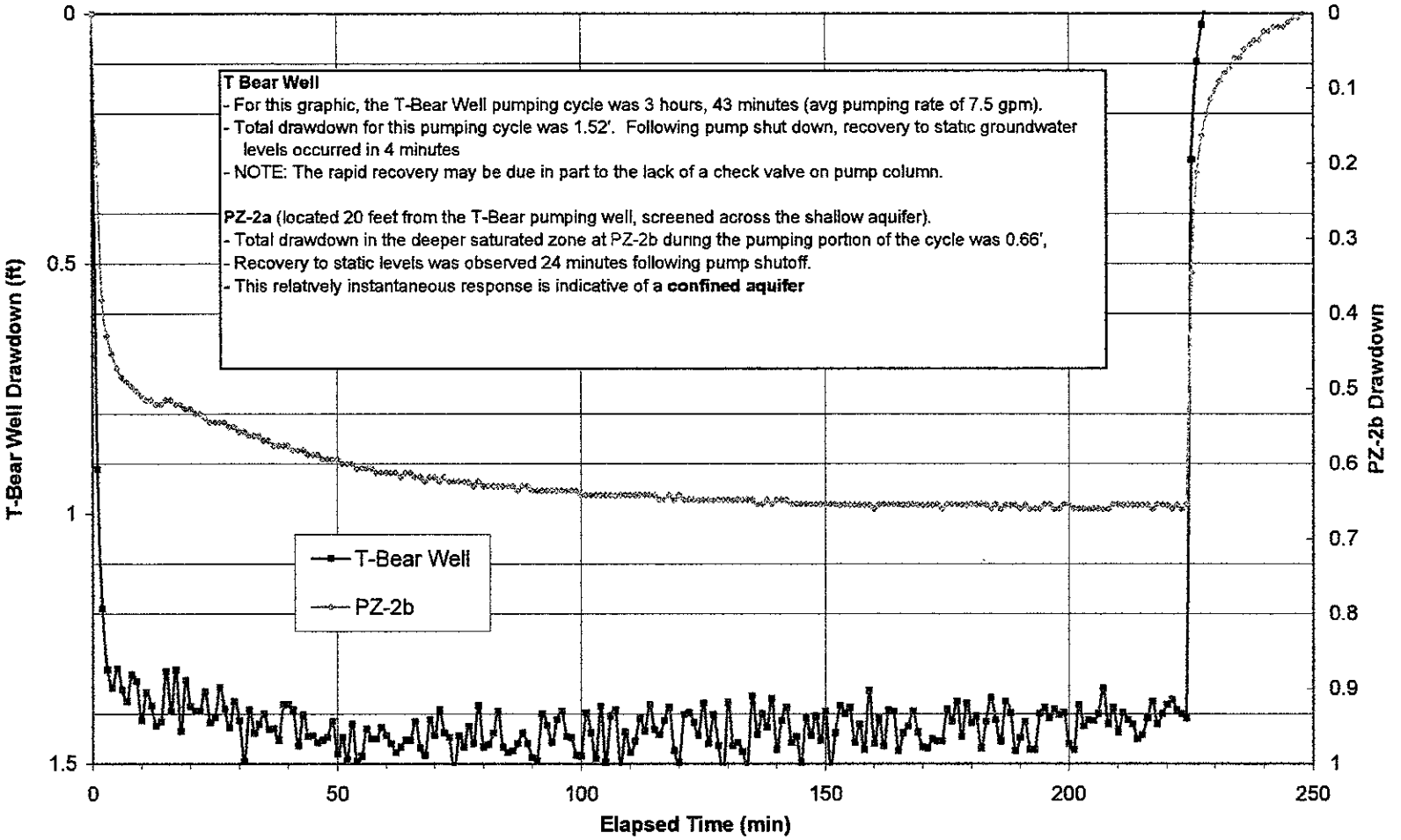
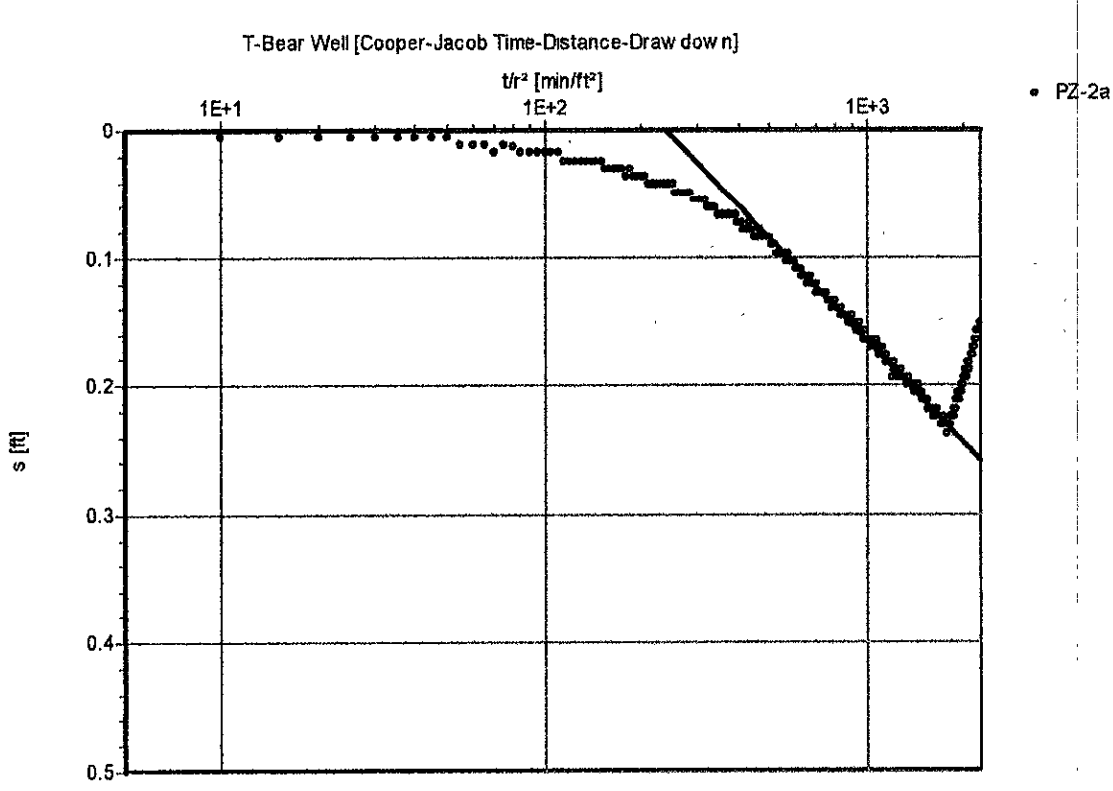


Figure 13 - Pump Test Analysis (PZ-2a)

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, California
(831) 722-3580

Pumping Test Analysis Report

Job Name:	Sunol Tree Gas Station
Job Number:	23027
Client:	Alameda County Environmental Health



Pumping Test: **T-Bear Well**

Analysis Method: **Cooper-Jacob Time-Distance-Drawdown**

Evaluated by: A. Blerman

Evaluation Date: 9/21/2004

Analysis Results:	Transmissivity:	9.97E+2 [ft²/d]	Conductivity:	3.06E+1 [ft/d]
	Storativity:	3.73E+2		
Test parameters:	Pumping Well:	T-Bear Well2	Aquifer Thickness:	32.61 [ft]
	Casing radius:	0.25 [ft]	Confined Aquifer	
	Screen length:	36 [ft]		
	Boring radius:	0.5 [ft]		
	Discharge Rate:	7.5 [U.S. gal/min]		

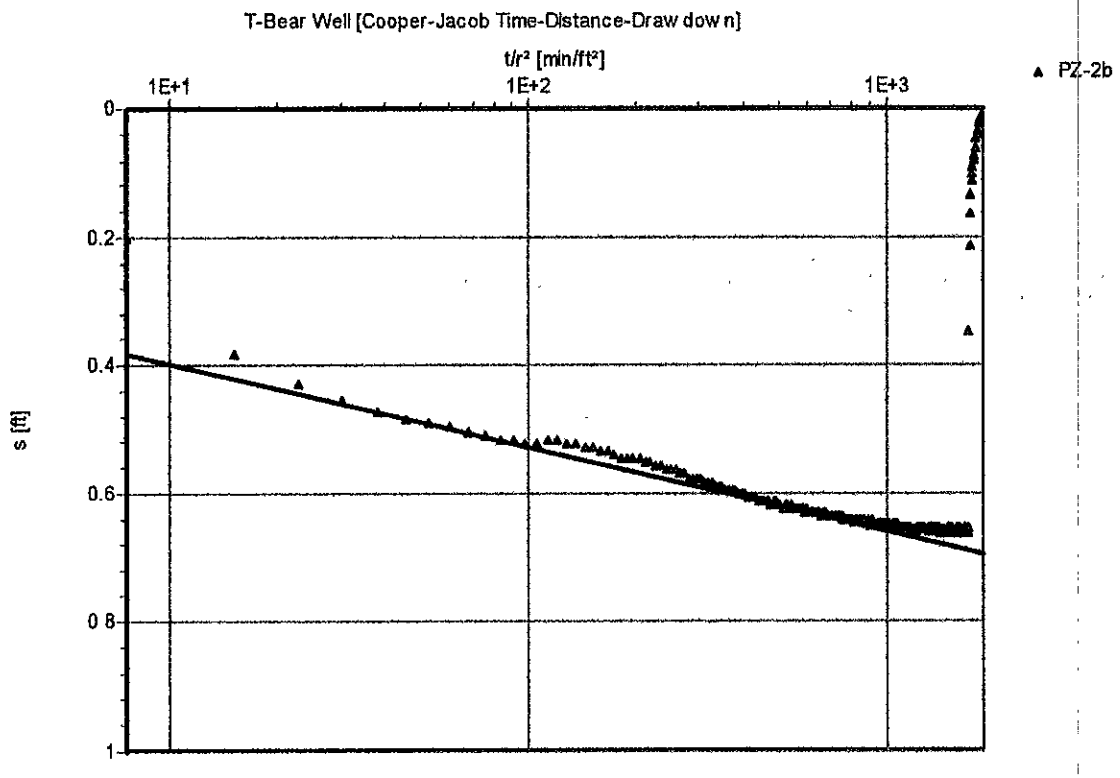
Comments: T-Bear Well is the pumping well, PZ-2a is the observation well (25 feet away) and the data is from 8/7/04 @ 8:16 through 8/7/04 @ 15:47 at an flow rate of 7.5 gpm.
Drawdown was observed after approximately 10 minutes into the test,

Figure 14 - Pump Test Analysis (PZ-2b)

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, California
(831) 722-3580

Pumping Test Analysis Report

Job Name:	Sunol Tree Gas Station
Job Number:	23027
Client:	Alameda County Environmental Health



Pumping Test: **T-Bear Well**

Analysis Method: **Cooper-Jacob Time-Distance-Drawdown**

Evaluated by: A. Bierman

Evaluation Date: 9/21/2004

Analysis Results:				
	Transmissivity:	2.02E+3 [ft²/d]	Conductivity:	6.21E+1 [ft/d]
	Storativity:	2.83E-2		

Test parameters:				
	Pumping Well:	T-Bear Well	Aquifer Thickness:	32.61 [ft]
	Casing radius:	0.25 [ft]	Confined Aquifer	
	Screen length:	36 [ft]		
	Boring radius:	0.5 [ft]		
	Discharge Rate:	7.4984375 [U.S. gal/min]		

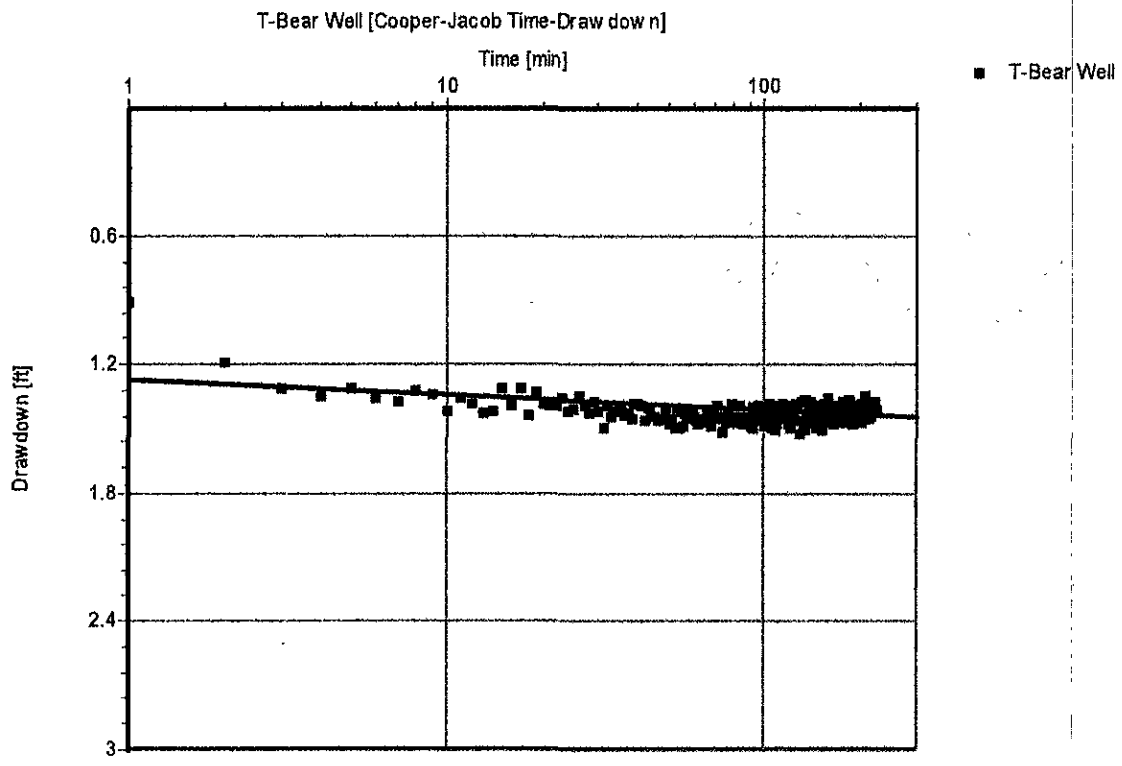
Comments: T-Bear Well is the pumping Well, PZ-2b is the observation well, (20 feet away) and the data is from 8/13/04 @ 20:46 through 8/14/04 @ 0:28 at an flow rate of 7.5 gpm.
Drawdown in PZ-2b was observed instantaneously after pump-on, representing a confined aquifer setting.
A delayed recharge was observed at about 12 minutes into the test as depicted in hump in drawdown curve, with later time recharge again appearing toward the end of the test.

Figure 15 - Pump Test Analysis (T Bear Well)

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, California
(831) 722-3580

Pumping Test Analysis Report

Job Name:	Sunol Tree Gas Station
Job Number:	23027
Client:	Alameda County Environmental Health



Pumping Test: **T-Bear Well**

Analysis Method: **Cooper-Jacob Time-Drawdown**

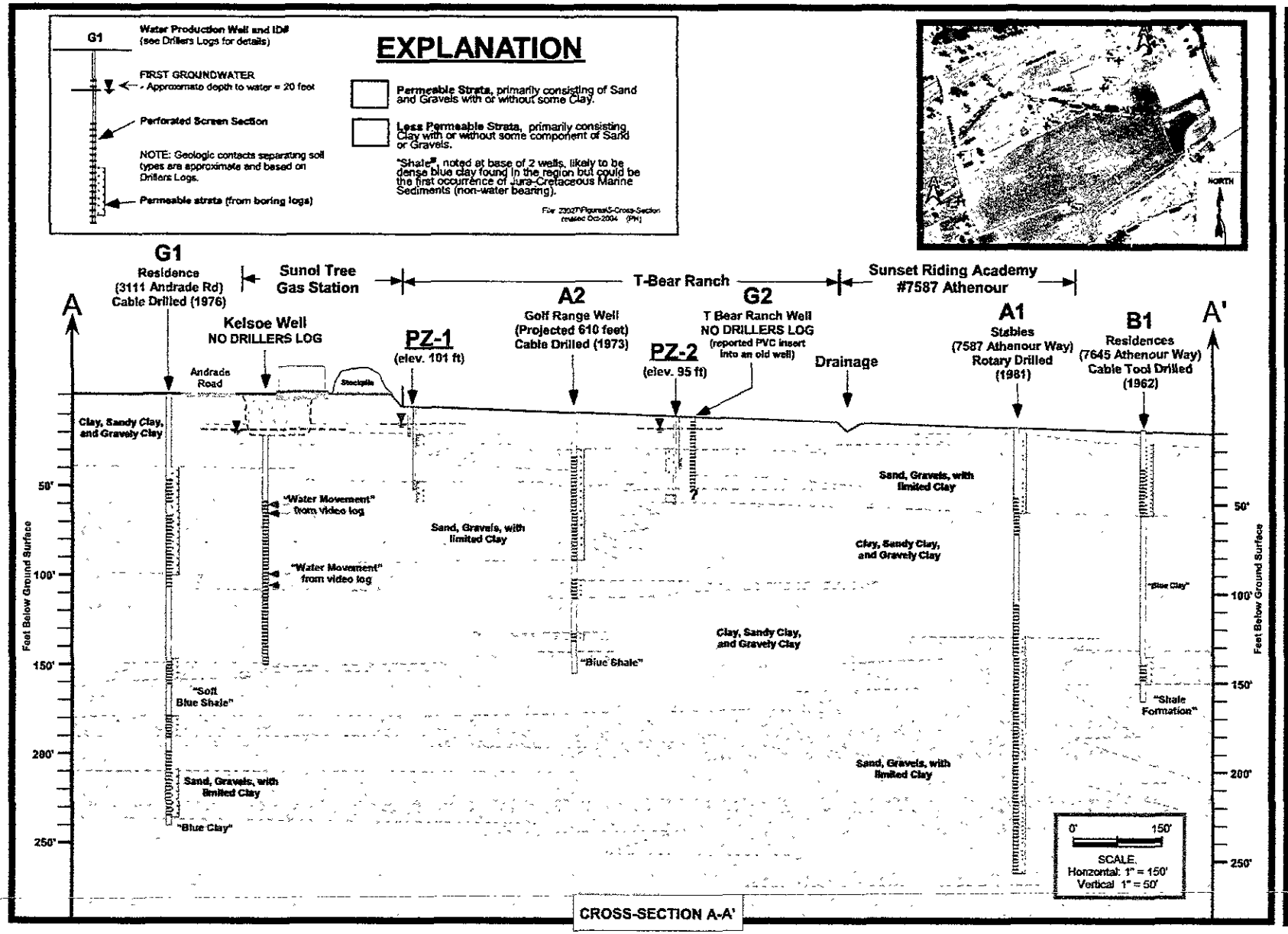
Evaluated by: A. Bierman

Evaluation Date: 9/15/2004

Analysis Results:				
	Transmissivity:	3.61E+3 [ft²/d]	Conductivity:	1.11E+2 [ft/d]

Test parameters:				
	Pumping Well:	T-Bear Well	Aquifer Thickness:	32.61 [ft]
	Casing radius:	0.25 [ft]	Confined Aquifer	
	Screen length:	36 [ft]		
	Boring radius:	0.5 [ft]		
	Discharge Rate:	7.4984375 [U.S. gal/min]		

Comments: Maximum drawdown was 1.52 feet.
Later time data was used to obtain T and K values.
Due to the sporadic pumping cycle of the T-Bear well, a longer duration pumping cycle (224 min) was chosen to optimize the accuracy of this analysis. Data for this test is from: 8/13/04 @ 20:46 through 8/14/04 @ 0:28 hours.
Casing storage effects calculated to expire at 3.6 minutes into a pumping cycle.
The data is scattered due to cascading water into the pumping well.



CROSS-SECTION A-A'

FIGURE
5
Job #
23027

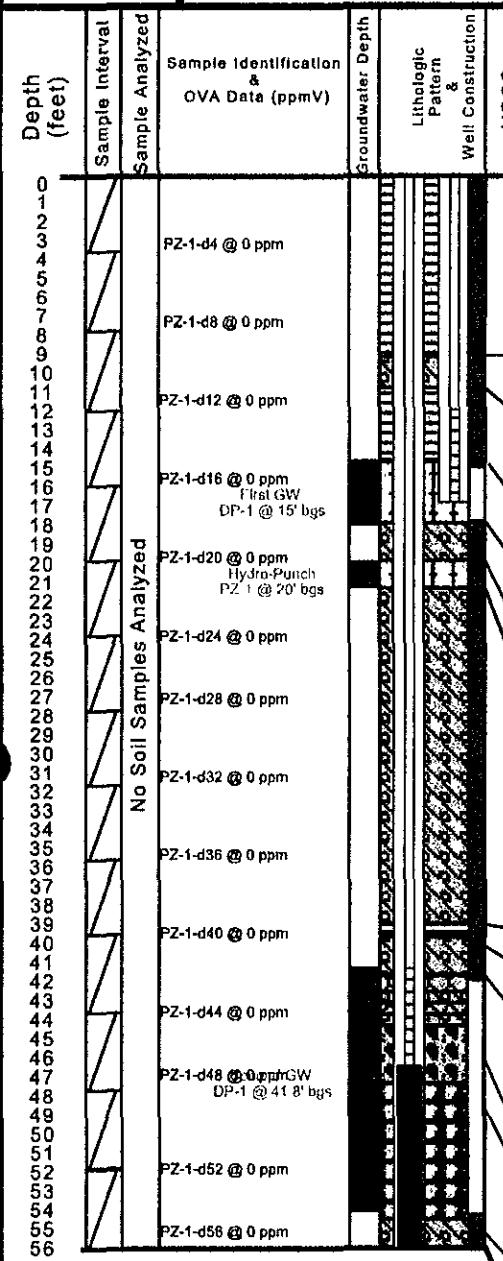
SIMPLIFIED GEOLOGIC CROSS SECTION
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100

GEOLOGIC LOG
PIEZOMETER
Hydraulic Driven Geo-Probe Boring

JOB NO.: 23027 DATE: July 21, 2004
CLIENT: Alameda County Environmental Health Services (ACEHS)
LOCATION: 3000, Andrade Road, Sunol, CA.
LOGGED BY: A. Bierman, RG #7490
DRILLER: Enprob Environmental Inc., C-57: 777007
DRILL METHOD: Hydraulic Driven Dual Tube, Large-Bore & Macro-Core ProbeS

BORING # **PZ-1**
Sheet 1 of 1



SOIL DESCRIPTION & CLASSIFICATION
(Lithologic name, color, moisture, density/consistency, grain size%, other descriptors, HC odor.)

CLAY, gray (10YR 4/1) to black (10YR 2/1) at 0.5' bgs, dry, hard, friable, non plastic, 90% silt and clay fines, 10% fine sand clasts within clay, no odor no discoloration.
-Color change at 4.4' just below 0.4' thick fine subrounded gravel stringer, very dark grayish brown (10YR 3/2), damp at 7 5' bgs, and becoming very stiff vs hard, low plasticity, no odor, no discoloration.

-Gradational contact at 9.2' bgs.

Sandy Gravelly CLAY, yellowish brown (10YR 5/4), dry to damp, stiff, friable, low to no plasticity, non sticky, 70% clay binder, 20% medium to coarse subrounded gravel clasts, 10% fine sands, with 0.5" thick fine sand at upper contact, no odor, no discoloration, abrupt contact at 10.3' bgs.

CLAY, dark yellowish brown (10YR 4/4), damp to moist at 11' bgs, stiff, moderate plasticity, 90% clay binder with 10% fine subrounded mudstone and sandstone clasts, with fine to medium subrounded gravel stringer from 14.5 to 15' bgs, gradational contact at 15' bgs (sandy silt stringer at 12-13 feet interbedded in clay for at shallow well location).

Sandy Clayey SILT, yellowish brown (10YR 4/4), very moist to wet, soft to very soft, moderate to high plasticity, slightly to non sticky, 70% silts, 20% clays, 10% fine subrounded gravels, gradational contact 18' bgs.

Sandy Gravelly CLAY, yellowish brown (10YR 5/4), damp, medium stiff, slightly friable, low to no plasticity, slightly sticky, 70% clay binder, 20% medium to coarse subrounded gravel clasts, trace fine subrounded cobble, 10% fine sands, coarsening downward, no odor, no discoloration, abrupt contact at 20' bgs.

Sandy Clayey SILT, dark yellowish brown (10YR 4/4), very moist, very soft to soft, moderate to high plasticity, non sticky, 70% silts, 20% clays, 10% coarse subrounded sands, gradational contact at 21.3' bgs.

Gravelly CLAY, dark yellowish brown (10YR 4/4), dry, hard, low to no plasticity, non sticky, 90% clay binder, 10% fine subrounded gravel clasts decreasing and fining to coarse sands with depth. slightly moist at 26-27' bgs, and at 29-29.5' bgs.
-Slightly moist from 36-39.5' bgs, with medium to coarse sand stringer in clayey matrix at 39-39.5' bgs, with yellowish brown (10YR 5/4) mottling.
-Abrupt contact at 39.5' bgs.

CLAY, dark grayish brown (10YR 4/2), dry, hard, low to no plasticity, friable, 95% clay binder with 5% medium subrounded sand clasts, abrupt contact at 40' bgs.

Sandy Gravelly CLAY, dark grayish brown (10YR 4/2), dry to very moist at 41.2' bgs (cap fringe), medium stiff, low to no plasticity, friable, 70% clay binder, 20% medium to coarse subrounded gravel clasts, trace fine subrounded cobbles, 10% fine to medium sands, abrupt contact at 41.8' bgs.

Clayey GRAVEL with Sandy Gravelly Clay, dark yellowish brown (10YR 4/2), saturated, loose, 80% medium to coarse subrounded to rounded gravels, 15% clay fines, 5% fine sands with sandy gravelly clay interbeds (as logged above), at 42.4-43.5, 43.7-44, and 44.2-44.6', wet between gravel grain contacts, otherwise moist. Abrupt contact at 44.6' bgs.

Gravelly SAND, yellowish brown (10YR 5/4), saturated, loose, 90% fine sands, 10% fine to medium subrounded gravels, abrupt contact at 47.9' bgs.

Well Graded GRAVEL, dark yellowish brown (10YR 4/2), saturated, loose, 80% coarse subrounded gravels, 20% fine to coarse sands.
-Gradational contact at 54.8' bgs.

Sandy Gravelly CLAY, dark grayish brown (10YR 4/2), with thin lens of dark greenish gray (5BG 3/1) from 55.2-55.4' bgs, moist, to very moist between gravel grain contact, very stiff, low to no plasticity, friable, 70% clay binder, 20% medium to coarse subrounded clasts, trace fine subrounded cobbles, 10% fine to medium sands.

Low Permeability, Non-Saturated

Higher Permeability, Saturated/wet

Terminate boring at 56 feet bgs. Backfill boring with TR-30 bentonite pellets from 56-to 46.5' bgs, thereafter set Piezometer PZ-1.
Move five feet west and set Shallow Piezometer PZ-1.

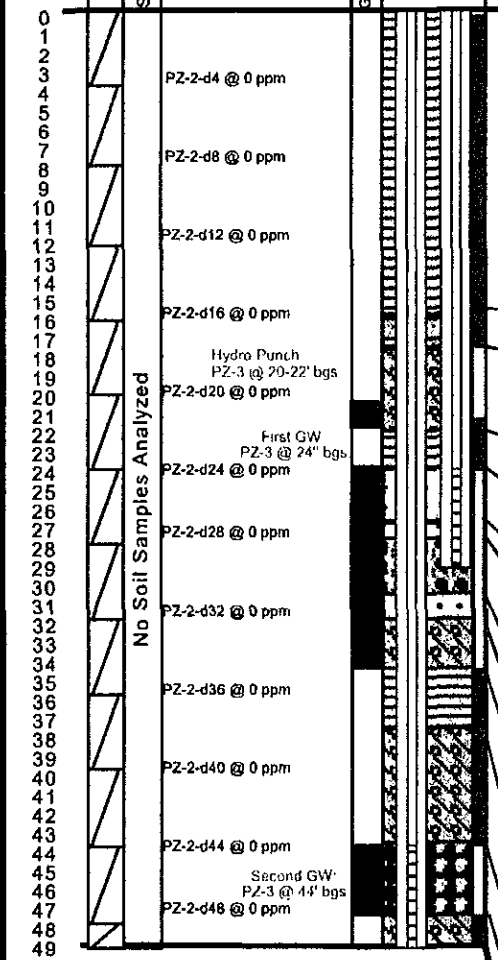
Deep Piezometer Construction Details:
Screen: 41-5 to 46.5' bgs
Sand: #3 RMC Lonestar from 40.5 to 46.5' bgs.
Bentonite: TR-30 from 38.5 to 40.5' bgs
Cement: Portland cement from ground surface to 38.5' bgs.

Shallow Piezometer Construction Details:
Screen: 12 to 17' bgs
Sand: #3 RMC Lonestar from 11 to 17' bgs.
Bentonite: TR-30 from 9 to 11' bgs
Cement: Portland cement from ground surface to 9' bgs.

GEOLOGIC LOG
PIEZOMETER
Hydraulic Driven Geo-Probe Boring

JOB NO.: 23027 DATE: July 22, 2004
CLIENT: Alameda County Environmental Health Services (ACEHS)
LOCATION: 3000, Andrade Road, Sunol, CA.
LOGGED BY: A. Bierman, RG #7490
DRILLER: Enprob Environmental Inc., C-57: 777007
DRILL METHOD: Hydraulic Driven Dual Tube, Large-Bore & Macro-Core ProbeS

BORING # **PZ-2**
Sheet 1 of 1



SOIL DESCRIPTION & CLASSIFICATION
(Lithologic name, color, moisture, density/consistency, grain size%, other descriptors, HC odor.)

CL **CLAY**, black (10YR 2/1), dry, hard, non plastic, friable, 90% silt and clay fines, 10% coarse sand clasts within clay dissipating at 5.3' bgs to 5% clasts, no odor no discoloration.

-At 7.5' bgs, 0.2' thick fine subrounded gravel stringer,
-Color change to very dark grayish brown (10YR 3/2), becoming very stiff vs hard, low plasticity, no odor, no discoloration.
-At 10.5' bgs clasts increase to 10%.
-At 12' bgs color changes to brown (10YR 4/3), clasts decrease to 0-5%, medium stiff becoming very stiff at 14' bgs, low plasticity, friable.
-Abrupt contact.

CL **ML** **Sandy Silty CLAY**, brown (10YR 5/3), with gray (10YR 5/1), motling, dry, medium stiff, moderate plasticity, 70% clay fines, 30 % silts and fine sands.

GC **Sandy Gravelly CLAY**, yellowish brown (10YR 5/4), damp to moist at 20' bgs, medium stiff, soft from 21' to 22' bgs, low plasticity, friable, non sticky, 70% clay binder, 20% medium to coarse subrounded gravel clasts, 10% fine to medium sands

CL **CLAY**, dark yellowish brown (10YR 4/4), damp, stiff, moderate plasticity, 90% clay binder with 10% fine subrounded mudstone and sandstone clasts.
-Gradational contact at 24' bgs.

SM SC **Sandy Clayey SILT**, yellowish brown (10YR 4/4), with gray (10YR 6/1) mottling, very moist to wet, soft to very soft, moderate to high plasticity, non sticky, 70% silts, 20% clay binder, 10% fine sands, abrupt contact at 26.5' bgs.

SP **Poorly Graded SAND**, dark brown (10YR 3/3), saturated, loose, 95% medium to fine sand, 5% silts and fines, gradational contact at 27.5' bgs

GC **Clayey Sandy GRAVEL**, dark yellowish brown (10YR 4/2), wet, medium dense to loose, friable, 70% medium to coarse subrounded to rounded gravels, 20% medium to fine sands, 10% clay fines with thin lens of dark greenish gray (5BG 3/1) from 28.5-29' bgs with increase in fine rounded cobbles at 29' bgs to 5%, and decrease in sands to 15%

SP **Poorly Graded SAND**, dark brown (10YR 3/3), saturated, loose, 90% sands, 5% silts and fines, 5% coarse subrounded gravels, abrupt contact at 31.7' bgs.

GC **Sandy Gravelly CLAY**, yellowish brown (10YR 5/4), moist in upper 0.5' becoming damp, dry at 34' bgs, medium stiff, slightly friable, low to no plasticity, slightly sticky, 70% clay binder, 20% medium to coarse subrounded gravels, trace fine subrounded cobble, 10% fine to medium sands, abrupt contact at 34.2' bgs.

CL **CLAY**, yellowish brown (10YR 5/4), damp to dry, very stiff, high plasticity, non sticky, 95% fines, 5% fine sands to silt, gradational contact at 37.5' bgs.

GC **Sandy Gravelly CLAY**, dark grayish brown (10YR 4/2), damp to very moist to wet between gravel grain contact, medium stiff, low to no plasticity, friable, 70% clay binder, 20% medium to coarse subrounded gravels, 10% fine to coarse sands, trace fine subrounded cobbles.

GW **Well Graded GRAVEL**, dark yellowish brown (10YR 4/2), saturated, loose, 80% fine to coarse subrounded gravels, 15% medium to coarse sands, 5% fines.
-Gradational contact at 47.5' bgs.

GC **Sandy Gravelly CLAY**, dark grayish brown (10YR 4/2), damp to very moist to wet between gravel grain contact, medium stiff, low to no plasticity, friable, 70% clay binder, 20% medium to coarse subrounded gravels, 10% fine to coarse sands, trace fine subrounded cobbles.

Terminate boring at 49 feet bgs.
Construct Deep Piezometer PZ-2.
Move five feet west and construct Shallow Piezometer PZ-2.

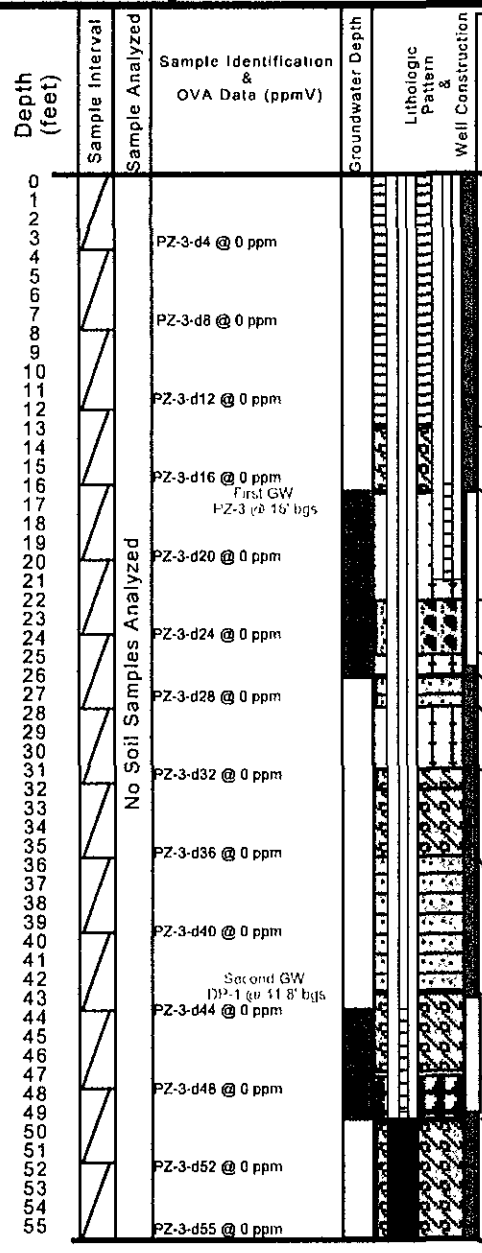
Deep Piezometer Construction Details:
Screen: 44 to 49' bgs
Sand: #3 RMC Lonestar from 42 to 49' bgs.
Bentonite: TR-30 from 39 to 42' bgs
Cement: Portland cement from ground surface to 39' bgs.

Shallow Piezometer Construction Details:
Screen: 24 to 29' bgs
Sand: #3 RMC Lonestar from 23 to 29' bgs.
Bentonite: TR-30 from 21 to 23' bgs
Cement: Portland cement from ground surface to 21' bgs.

GEOLOGIC LOG
PIEZOMETER
Hydraulic Driven Geo-Probe Boring

JOB NO.: 23027 DATE: July 23, 2004
CLIENT: Alameda County Environmental Health Services (ACEHS)
LOCATION: 3000, Andrade Road, Sunol, CA.
LOGGED BY: A. Bierman, RG #7490
DRILLER: Enprob Environmental Inc., C-57: 777007
DRILL METHOD: Hydraulic Driven Dual Tube, Large-Bore & Macro-Core ProbeS

BORING # **PZ-3**
Sheet 1 of 1



USCS	SOIL DESCRIPTION & CLASSIFICATION (Lithologic name, color, moisture, density/consistency, grain size%, other descriptors, HC odor.)
CL	**CLAY,** black (10YR 2/1), dry, hard, non plastic, friable, 90% silt and clay fines, 5% coarse sand clasts, no odor no discoloration.
	-Color change to very dark grayish brown (10YR 3/2), becoming very stiff vs hard, and clasts increase to 10%. low plasticity, no odor, no discoloration
	-Clasts decrease to 5% from 8-9.7' bgs. -At 9.7' color changes to brown (10YR 4/3), and increase to 10%, very stiff, low plasticity, friable.
CL	-Gradational contact at 13' bgs.
GC	**Sandy Gravelly CLAY,** yellowish brown (10YR 5/4), damp to moist at 14' bgs bgs, medium stiff, low plasticity, friable, non sticky, 70% clay binder, 20% medium to coarse subrounded gravel clasts, 10% fine to medium sands, with clayey silt stringer at 14.9-15.7' bgs, moist, moderate plasticity, gradational contact.
SM	**Sandy Clayey SILT,** brown (10YR 5/3), with gray (10YR 5/1), mottling, saturated, very soft with medium stiffness from 21.2 to 21.6', moderate plasticity, 70% silts, 20% clay binder, 10% medium to coarse sands to fine subrounded gravels from 16.3-17' bgs, thereafter only fine sands, gradtional contact at 22.2' bgs
GC	**Clayey Sandy GRAVEL,** dark yellowish brown (10YR 4/2), very moist, medium dense to loose, friable, 70% medium to coarse subrounded to rounded gravels, 20% medium to fine sands, 10% clay fines, gradational contact at 25' bgs
SM	**Sandy Clayey SILT,** brown (10YR 5/3), saturated, very soft, moderate plasticity, 70% silts, 20% clay binder, 10% fine sands, gradational contact at 26' bgs
SC	**Sandy CLAY,** dark yellowish brown (10YR 4/4), damp to dry, stiff, high plasticity, non sticky, 90% fines, 10% fine sands, gradational contact at 28'.
SM	**Sandy Clayey SILT,** brown (10 YR 5/3), very moist, very soft, moderate plasticity, 70% silts, 20% clay binder, 10% fine to medium sands, abrupt contact.
GC	**Sandy Gravelly CLAY,** yellowish brown (10YR 5/4), damp to moist, stiff, slightly friable, high plasticity, non sticky, 70% clay binder, 20% medium to coarse subrounded gravels, 10% fine to medium sands, gradational contact at 31.7' bgs, -From 34-34.8, moist, medium dense to dense otherwise medium dense to soft, slightly friable, coarsening downward to 60% clay fines, 30% medium to coarse subrounded to rounded gravels, 10% medium to fine sands. -Gradational contact at 36' bgs
SC	**Sandy CLAY,** dark yellowish brown (10 YR 4/4), damp to dry, very stiff, moderate plasticity, non sticky, 90% fines, 10% fine sands, at 41.5' bgs increasing fine sands to 20%, moist, stiff, abrupt contact at 43' bgs.
GC	**Sandy Gravelly CLAY,** dark yellowish brown (10YR 4/2), very moist to wet between gravel grain contact, saturated from 44-44.5' bgs, medium dense, friable, 60% clay fines, 20% medium to coarse subrounded gravels, 20% medium to coarse sands, trace cobbles 46'-47', gradational contact.
GW	**Well Graded GRAVEL,** dark yellowish brown (10YR 4/2), saturated, loose, 80% fine to coarse subrounded gravels, 15% medium to coarse sands, 5% fines. -Gradational contact at 49.2' bgs
GC	**Sandy Gravelly CLAY,** dark yellowish brown (10YR 4/2), moist, medium dense, friable, 60% fine to coarse subrounded gravels, 20% medium to coarse sands, 20% fines.

Terminate boring at 55 feet bgs.
Backfill with TR-30 bentonite from 55-49' bgs.
Construct Deep Piezometer PZ-3.
Move five feet west and construct Shallow Piezometer PZ-3.

Deep Piezometer Construction Details:
Screen: 44 to 49' bgs
Sand: #3 RMC Lonestar from 42 to 49' bgs.
Bentonite: TR-30 from 40 to 42' bgs
Cement: Portland cement from ground surface to 40' bgs.

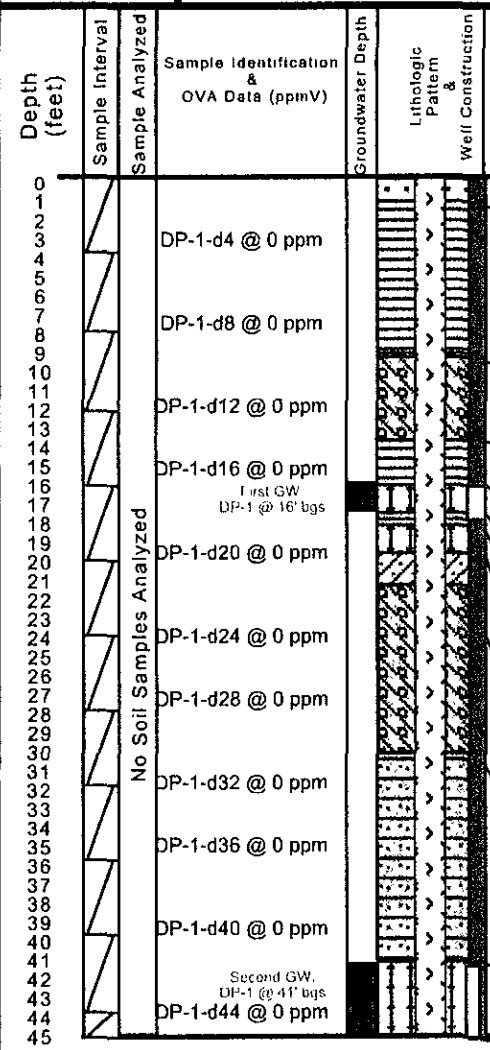
Shallow Piezometer Construction Details:
Screen: 16 to 21' bgs
Sand: #3 RMC Lonestar from 15 to 21' bgs.
Bentonite: TR-30 from 13 to 15' bgs
Cement. Portland cement from ground surface to 13' bgs.

GEOLOGIC LOG

Hydraulic Driven Geo-Probe Boring

JOB NO.: 23027 DATE: July, 21, 2004
CLIENT: Alameda County Environmental Health Services (ACEHS)
LOCATION: 3000 Andrade Road, Sunol, CA.
LOGGED BY: A. Bierman, RG #7490
DRILLER: Enprob Environmental Inc., C-57: 777007
DRILL METHOD: Hydraulic Driven Dual Tube, Large-Bore & Macro-Core ProbeS

BORING # **DP-1**
Sheet 1 of 1



SOIL DESCRIPTION & CLASSIFICATION
(Lithologic name, color, moisture, density/consistency, grain size%, other descriptors, HC odor.)

USCS	Description
SP	**Poorly Graded SAND,** (ARENA FILL SAND) light gray, (10YR 7/2), dry loose, 95% fine to medium sands, 5% fines.
CL	**CLAY,** black (10YR 2/1), dry, hard, friable, non plastic, friable, 90% silt and clay fines, 10% fine subrounded sand clasts within clay, many medium to fine root-lets decreasing with depth, no odor no discoloration -Color change to very dark grayish brown (10YR 3/2) at 5.7' bgs, dry, hard, low plasticity to friable, 90% clay binder with 10% of medium to fine subrounded mudstone and sandstone clasts, damp at 8 3' bgs, very stiff, low plasticity, no odor, no discoloration, gradational contact at 9.2' bgs.
SC	**Sandy Gravelly CLAY,** yellowish brown (10YR 5/4), dry to damp, stiff, friable, low to no plasticity, slightly sticky, 70% clay binder, 20% medium to coarse subrounded mudstone clasts, 10% fine sands, with 0.4' thick fine subrounded gravel at lower contact, no odor, no discoloration, abrupt contact at 13.7' bgs.
CL	**CLAY,** dark yellowish brown (10YR 4/4), damp to moist at 15' bgs, stiff to medium stiff at 15' bgs, moderate plasticity, 90% clay binder with 10% of fine subrounded sand clasts, gradational contact at 16' bgs.
MH	**Sandy Clayey SILT,** yellowish brown (10YR 4/4), saturated, soft to very soft, moderate to high plasticity, slightly to non sticky, 70% silts, 20% clays, 10% coarse subrounded sands, gradational contact at 17.5' bgs.
SC	**Sandy CLAY,** yellowish brown (10YR 5/4), damp to moist, medium stiff, slightly friable, low to no plasticity, slightly sticky, 80% clay binder, 30% medium to coarse subrounded sands, no odor, no discoloration, abrupt contact at 18.1'bgs.
MH	**Sandy Clayey SILT,** dark yellowish brown (10YR 4/4), moist to damp at 19.5' bgs, soft to medium stiff at 19.5' bgs, moderate to high plasticity, non sticky, 70% silts, 20% clays, 10% fine subrounded sands, gradational at 19.5' bgs.
GC	**Gravelly CLAY,** dark yellowish brown (10YR 4/4), dry, hard, low to no plasticity, non sticky, 90% clay binder, 10% fine subrounded gravels, gradational contact at 21.4' bgs.
GC	**Sandy Gravelly CLAY,** dark grayish brown (10YR 4/2), damp to very moist at 29-29.5' bgs, thereafter damp to 30' bgs, medium stiff, low to no plasticity, friable, 70% clay binder, 20% medium to coarse subrounded gravels, trace fine subrounded cobbles, 10% fine to medium sands, abrupt contact at 30' bgs.
GC	**Gravelly Sandy CLAY,** dark yellowish brown (10YR 4/4), dry, hard, low to no plasticity, non sticky, 90% clay binder, 10% fine subrounded gravel clasts decreasing at 31' bgs and fining to coarse sands from 31-36' bgs, fine sands from 36-41' bgs. Gradational contact at 41' bgs.
MH	**Sandy Clayey SILT,** dark yellowish brown (10YR 4/4), saturated, very soft, low to moderate plasticity, slightly sticky, 70% silts, 20% clays, 10% fine subrounded sands.

Terminate boring at 45' bgs, by grouting with portland cement to groundsuface. Move north 4 feet and hydropunch to 45' bgs, with 4' feet of screen from 41-45' bgs.

Low Permeability, Non-Saturated

Higher Permeability, Saturated/wet

R0244

WellSpy
WATER WELL SURVEYS

December 13, 2002

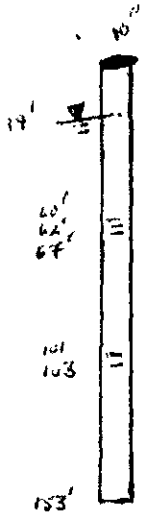
DEC 18 2002

Clear Water Group
229 Tewksbury Ave.
Richmond, CA 94801

Attn: Brian Pierskalla

Video Log of Sunol Tree Gas Station Water Production Well (10" diam, domestic)

Observation report on survey performed December 12, 2002 for Sunol Tree Gasoline Station, located at 3004 Andrade rd in Alameda County.



1) Well ID on top is 10". The well is under a diamond plate cover and is 12" below the level of the surounding concrete driveway.
2) Zero datum marked at top of the concrete driveway. All side view depths are 18" less than indicated on the monitor.
3) 19' Static water level.
4) 53' Casing appears to be slightly oblong in this area.
5) 55' Clean spot on the casing. Layer of rust was broke off the casing wall.
6) 60' First evidence of Mills knife perforations in the casing.
7) 62' One perforation is evident with water movement.
8) 67' One perforation is evident with water movement.
9) 101' One perforation is evident with water movement.
10) 103' One perforation is evident with water movement.
11) 153' Bottom of the well.
12) Note: There appears to be some biological growth on the casing walls.
13) Note: There may be more perforations in the well that are plugged or encrusted but not visible.

Thank you for choosing WellSpy for your well video service.

WellSpy

Bruce Hunter

2/27/03

CUSTOMER COPY

DE LUCCHI WELL & PUMP, INC.

DRILLING, CLEANING & REPAIR

SALES, SERVICE & SUPPLIES

35137 MISSION BLVD. FREMONT, CALIFORNIA 94536

PHONE (415) 793-2822

COMPLETED

Invoice No. 24812

Well G2
T-Bear Pump Test, 3000 Andrade Road

APN 96-0001-007-06

45/1E 20 G2

BILLING DATE March 4,1983

TO Helen Hayes
251 Arguello
San Francisco, CA. 94118

ORDER DATE March 3,1983
CUSTOMER'S ORDER NO. Joanne Blott- 862-2309
PHONE Mr. Tovani- 991-9299 Till 9:30A. 387-1632 Evenings

WORK ORDERED BY	ORDER TAKEN BY	HOW	LOCATION OF JOB
	JHD	phone	3000 Andrade Rd. Sunol T-Bear Ranch

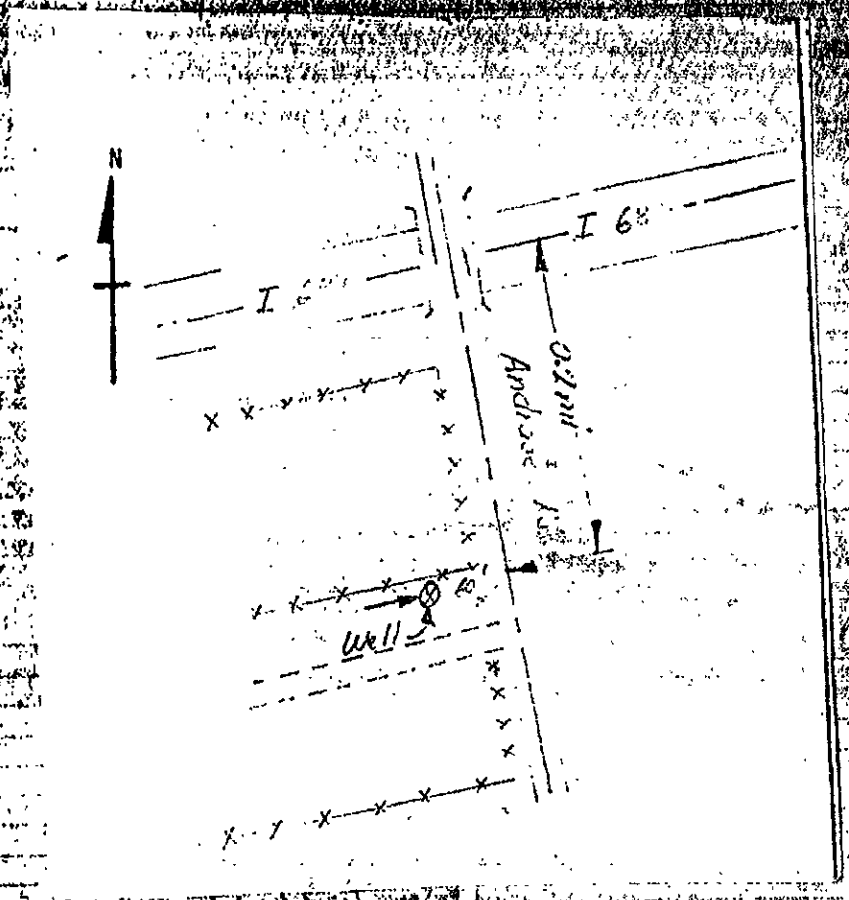
WORK TO BE DONE ▶ Run well test if pump yields more than 5 gpm.

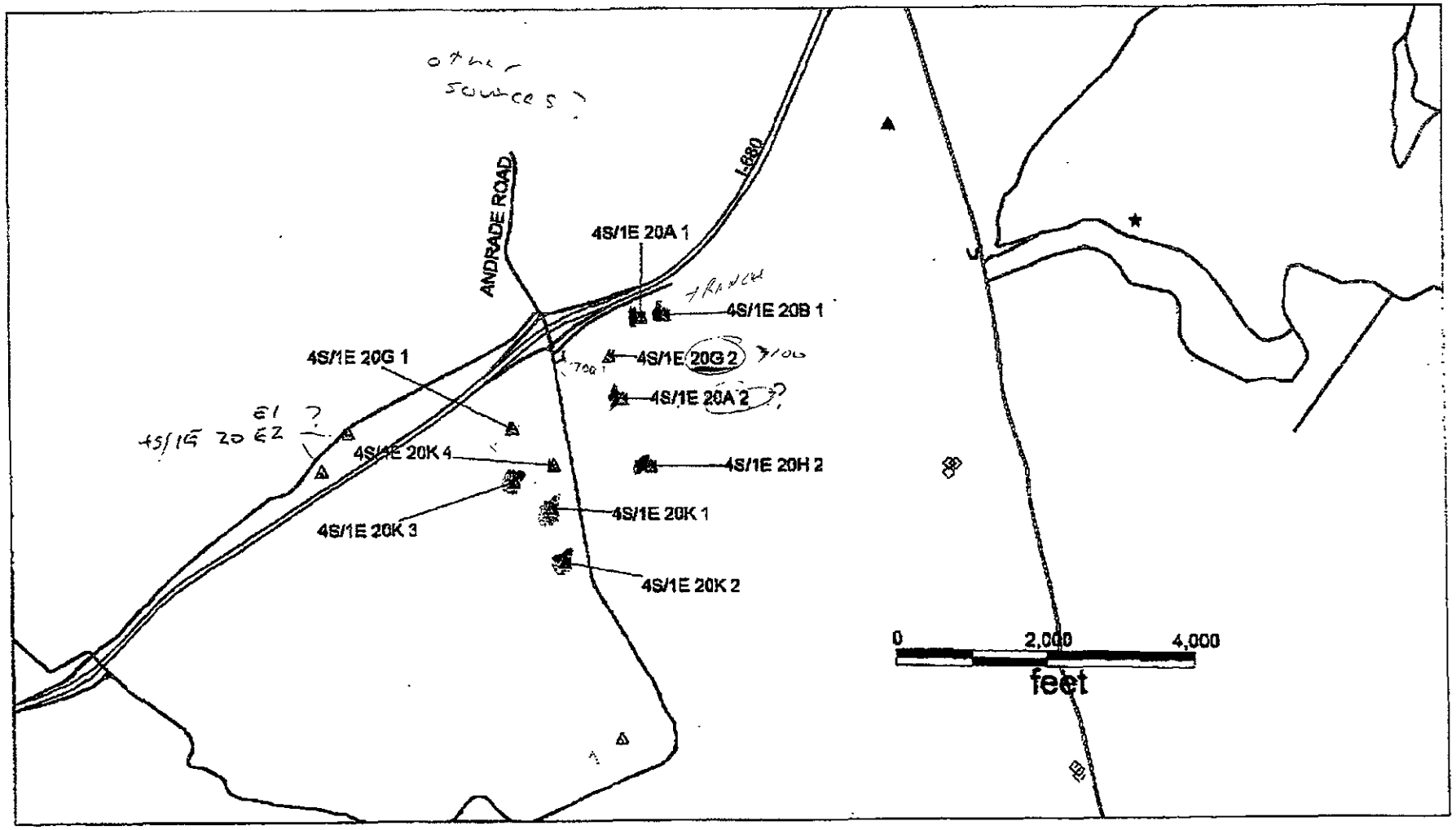
QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
	On March 4,1983 a serviceman from DeLucchi Well & Pump, Inc. conducted a well test at 3000 Andrade Rd., Sunol.		
	He began pumping at a rate of 22 gallons per minute with a static level of 1 foot above ground level. After pumping for 4 hours at that rate, the water level was 2'6" below ground level.		
	5 hrs. labor 1 man $42.00 per hr to run test on well.		$ 210.-
		TOTAL	$ 210.-

RECEIVED

TERMS: 30 DAYS – NET.

Goods delivered to the carrier in good order, and his receipt for same, constitutes delivery of merchandise covered by this invoice. All claims must be made within ten days after receipt of goods. Terms Net 30 Day. Overdue bills subject to a Finance Charge of 1½% (18% Annual Interest). All prices and quotations are subject to change without notice. Shipments and deliveries are contingent on strikes, accidents and/or delays beyond our control. If action is instituted by seller to collect a part or all of purchase price, Buyer agrees to pay such sums as the court may fix as attorneys fees and court costs.




other sources?
ANDRADE ROAD
I-680
4S/1E 20A 1
4S/1E 20B 1
4S/1E 20G 1
4S/1E 20G 2
4S/1E 20A 2
4S/1E 20K 4
4S/1E 20H 2
4S/1E 20K 1
4S/1E 20K 3
4S/1E 20K 2
0
2,000
4,000
feet

■ = from DWR

Zone 7
Alameda County Flood Control
&
Water Conservation District

6997 Parkside Drive ■ Pleasanton, California 94588-5127 ■ Phone (925) 484-2600 ■ Fax (925) 462-3914

Telefax Transmittal

Date: 2-27-03

Deliver To: Scott Seery

Name of Firm: ACEHS

Fax Number: 510-337-9335

From: Colleen Winey

Number of Pages: 5

(Including Cover Page)

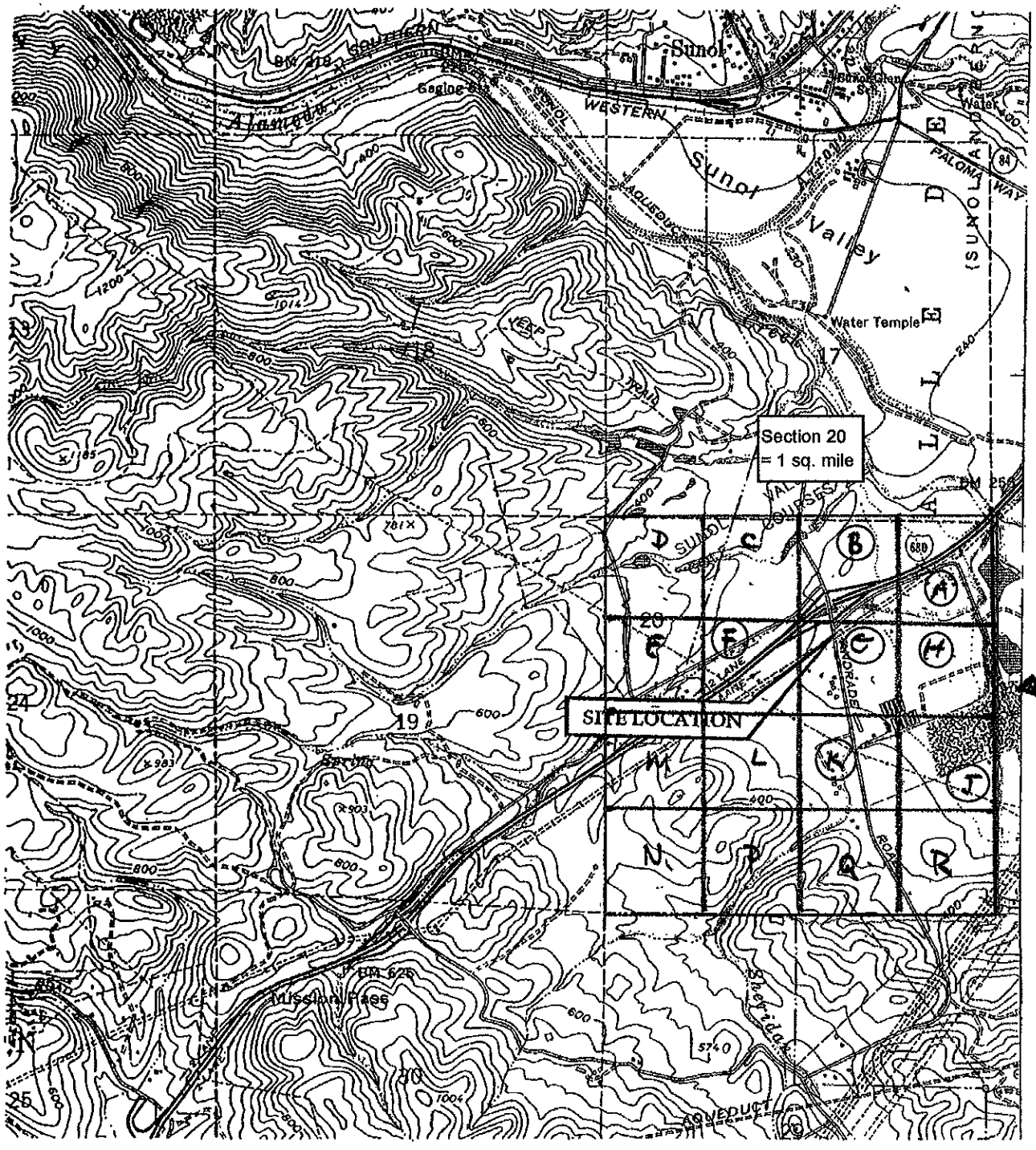
For Voice Contact Call: (925) 484-2600, Extension:

For Return Fax: (925) 462-3914

Remarks: Scott,
Here's a map. I threw in a couple more logs of nearby wells.
If you need anything else let me know.
C —

E:\SHARE\Miscellaneous\FAX TRANSMITTAL FORM.wpd

WELL LOGS



SOURCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC MAPS
NILES, CALIFORNIA, 1961, PHOTOREVISED 1980

SITE LOCATION MAP

Sunol Tree Gas Service Station
3400 Andrade Road,
Sunol, California

CLEARWATER GROUP, INC.

Project No.	Figure Date	Figure
CB021C	5/03	1

R02448

WellSpy
WATER WELL SURVEYS

December 13, 2002

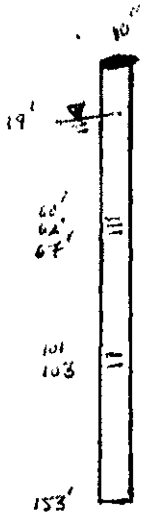
DEC 18 2002

Clear Water Group
229 Tewksbury Ave.
Richmond, CA 94801

Attn: Brian Pierskalla

VIDEO LOG OF SUNOL TREE GAS STATION WATER PRODUCTION WELL (10"-diam, domestic)

Observation report on survey performed December 12, 2002 for Sunol Tree Gasoline Station, located at 3004 Andrade rd in Alameda County.



1) Well ID on top is 10". The well is under a diamond plate cover and is 12" below the level of the surrounding concrete driveway.
2) Zero datum marked at top of the concrete driveway. All side view depths are 18" less than indicated on the monitor.
3) 19' Static water level.
4) 53' Casing appears to be slightly oblong in this area.
5) 55' Clean spot on the casing. Layer of rust was broke off the casing wall.
6) 60' First evidence of Mills knife perforations in the casing.
7) 62' One perforation is evident with water movement.
8) 67' One perforation is evident with water movement.
9) 101' One perforation is evident with water movement.
10) 103' One perforation is evident with water movement.
11) 153' Bottom of the well.
12) Note: There appears to be some biological growth on the casing walls.
13) Note: There may be more perforations in the well that are plugged or encrusted but not visible.

Thank you for choosing WellSpy for your well video service.

WellSpy

Bruce Hunter

1129 F St Reedley, CA 93654 1-800-WELL SPY 935-5779

2/27/03

PSA_R_2003-2-27

CLEARWATER
GROUP
Environmental Services

FACSIMILE TRANSMITTAL SHEET

TO: Scott Seery	FROM: Brian Pierskalla
COMPANY: ACHCSA	DATE: 2/27/2003
FAX NUMBER: 510-337-9335	TOTAL NO. OF PAGES INCLUDING COVER: 2
PHONE NUMBER: 510-567-6783	SENDER'S REFERENCE NUMBER: 510-307-9943 x 231
RE: Sunol Tree Gas Preliminary Site Assessment Well Spy Log	YOUR REFERENCE NUMBER: CP032F

☐ URGENT ☑ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

Dear Scott:

Please see attached Preliminary Site Assessment Log from Well Spy for the Sunol Tree Gas site on Andrade Road, Sunol. We also have a VCR tape of the down-well camera, which I have perused about half of the tape. The well looked very flocculated with rust/iron scaling. No evidence of vertical damage was apparent. Please call me with any questions at (510) 307-9943 x 231.

Regards,

BP

Brian Pierskalla

Project Manager

229 Tewksbury Avenue ◆ Point Richmond, California 94801 ◆ Telephone: 510-307-9943 ◆ Fax: 510-232-2823

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 40319 - 9/15/2004 4:11:53 PM

Order:	40319	**Date Collected:**	9/8/2004
Project Name:	T-Bear Ranch - Carbon Treatment System Testing	**Date Received:**	9/8/2004
Project Number:	23027.C (Pre/Mid/Post)	**P.O. Number:**	23027.C

Certificate of Analysis - Final Report

On September 08, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	
	TPH as Gasoline - GC/MS	GC-MS	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Project Number: 23027.C
Project Name: T-Bear Ranch
Date Received: 9/8/2004
P.O. Number: 23027.C
Sampled By: Client

Certificate of Analysis - Data Report

Lab # : 40319-001 **Sample ID: PRE** **Matrix:** Liquid **Sample Date:** 9/8/2004 11:58 AM

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Toluene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethyl Benzene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Xylenes, Total	ND		1	1	µg/L	N/A	N/A	09/13/2004	WMS5040913
Methyl-t-butyl Ether	14		1	1	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethyl-t-butyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
tert-Butanol (TBA)	ND		1	10	µg/L	N/A	N/A	09/13/2004	WMS5040913
Diisopropyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
tert-Amyl Methyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethanol	ND		1	100	µg/L	N/A	N/A	09/13/2004	WMS5040913

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	88.8	64 - 125
Dibromofluoromethane	89.1	23 - 172
Toluene-d8	83.8	70 - 134

Analyzed by: Jhsiang
Reviewed by: BDHABALIA

Method: GC-MS

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	µg/L	N/A	N/A	09/13/2004	WMS5040913

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	88.8	64 - 125
Dibromofluoromethane	89.1	23 - 172
Toluene-d8	83.8	70 - 134

Analyzed by: Jhsiang
Reviewed by: BDHABALIA

Detection Limit = Detection Limit for Reporting. ND = Not Detected at or above the Detection Limit. DF = Dilution and/or Prep Factor

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Project Number: 23027.C
Project Name: T-Bear Ranch
Date Received: 9/8/2004
P.O. Number: 23027.C
Sampled By: Client

Certificate of Analysis - Data Report

Lab # : 40319-002 **Sample ID: MID** **Matrix:** Liquid **Sample Date:** 9/8/2004 11:55 AM

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Toluene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethyl Benzene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Xylenes, Total	ND		1	1	µg/L	N/A	N/A	09/13/2004	WMS5040913
Methyl-t-butyl Ether	ND		1	1	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethyl-t-butyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
tert-Butanol (TBA)	ND		1	10	µg/L	N/A	N/A	09/13/2004	WMS5040913
Diisopropyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
tert-Amyl Methyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethanol	ND		1	100	µg/L	N/A	N/A	09/13/2004	WMS5040913

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	88.3	64 - 125
Dibromofluoromethane	88.5	23 - 172
Toluene-d8	83.7	70 - 134

Analyzed by: Jhsiang
Reviewed by: BDHABALIA

Method: GC-MS

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	µg/L	N/A	N/A	09/13/2004	WMS5040913

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	88.3	64 - 125
Dibromofluoromethane	88.5	23 - 172
Toluene-d8	83.7	70 - 134

Analyzed by: Jhsiang
Reviewed by: BDHABALIA

Detection Limit = Detection Limit for Reporting. ND = Not Detected at or above the Detection Limit. DF = Dilution and/or Prep Factor

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Liquid

Validated by: BDHABALIA - 09/15/04

QC Batch ID: WMS5040913

Analysis Date: 9/13/2004

Method Blank

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0.5	0.5	µg/L
Diisopropyl Ether	ND	1	5	5	µg/L
Ethanol	ND	1	100	100	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**88.5**	64 - 125
Dibromofluoromethane	**83.9**	23 - 172
Toluene-d8	**85.5**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results

Liquid

Reviewed by: BDHABALIA - 09/15/04

QC Batch ID: WMS5040913

Analysis Date: 9/13/2004

LCS **Method: EPA 8260B** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	18.7	LCS	9/13/2004	94			60 - 132
Benzene	<0 5	20.0	21.4	LCS	9/13/2004	110			77 - 154
Chlorobenzene	<0.5	20.0	21.1	LCS	9/13/2004	110			66 - 141
Methyl-t-butyl Ether	<1	20.0	21.2	LCS	9/13/2004	110			58 - 127
Toluene	<0.5	20.0	19.1	LCS	9/13/2004	96			47 - 137
Trichloroethene	<0.5	20.0	25.3	LCS	9/13/2004	130			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	95.9	64 - 125
Dibromofluoromethane	94.4	23 - 172
Toluene-d8	80.8	70 - 134

LCSD **Method: EPA 8260B** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	17.2	LCSD	9/13/2004	86	8.4	25	60 - 132
Benzene	<0.5	20.0	20.2	LCSD	9/13/2004	100	5.8	25	77 - 154
Chlorobenzene	<0.5	20.0	19.9	LCSD	9/13/2004	100	5.9	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	20.6	LCSD	9/13/2004	100	2.9	25	58 - 127
Toluene	<0.5	20.0	18.0	LCSD	9/13/2004	90	5.9	25	47 - 137
Trichloroethene	<0.5	20.0	24.0	LCSD	9/13/2004	120	5.3	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.2	64 - 125
Dibromofluoromethane	91.0	23 - 172
Toluene-d8	80.4	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Liquid

Validated by: BDHABALIA - 09/15/04

QC Batch ID: WMS5040913

Analysis Date: 9/13/2004

Method Blank

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	88.5	64 - 125
Dibromofluoromethane	83.9	23 - 172
Toluene-d8	85.5	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Liquid

Reviewed by: BDHABALIA - 09/15/04

QC Batch ID: WMS5040913

Analysis Date: 9/13/2004

LCS **Method: GC-MS** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250	265	LCS	9/13/2004	110			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	91.7	64 - 125
Dibromofluoromethane	85.0	23 - 172
Toluene-d8	82.0	70 - 134

LCSD **Method: GC-MS** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250	260	LCSD	9/13/2004	100	1.9	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	93.2	64 - 125
Dibromofluoromethane	84.6	23 - 172
Toluene-d8	85.1	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / ~~23027.pe~~ 23027.c

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman (AB)

Date: 9.8.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline + BTEX by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates + ETHANOL EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PRE	GRAB	9-8-04	11:58	H_2O	x3						HOLD			HOLD	403179-001		
MID	GRAB	9-8-04	11:55	H_2O	x3						X			X			002
POST	GRAB	9-8-04	11:50	H_2O	x3						X			X			003

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1)	Aaron Bierman	9/8/04 @ 4:30	Amadeo	9/8/04 1631
2)				
3)				
4)				
5)				

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen	
Ambient	Refrigerated	Frozen	
Ambient	Refrigerated	Frozen	
Ambient	Refrigerated	Frozen	
Ambient	Refrigerated	Frozen	

NOTES:

- If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.
- For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260
- Please use MDL (Minimum Detection Limit) for any diluted samples

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

T-BEAR WELL MONTHLY CARBON TREATMENT SAMPLES

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax (831) 722-1159

CHAIN -OF-CUSTODY RECORD

Revised COC

PAGE: 1 OF 1

PROJECT NAME AND JOB #: T-Bear Ranch / Grizzly 23027.C

LABORATORY: Entech Analytical Laboratory

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bleiman

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

GLOBAL I.D.: NA

Sampler: Aaron Bleiman (AB)

Date: 9-8-04

40319

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline T-BEAR by EPA Method 8260	Volatile Organics: VOCs EPA Method 8260B	Solvents by EPA Method 8010	Fuel Oxygenates EPA Method 8260	Additional Analysis: PNA's by EPA Method 8270 SIM	HVOCs by EPA Method 8270 SIM	LUFT 5 Metals
PRE	GRAB	9-8-04	11:38	H_2O	X3						HOLD X	9-9-04		HOLD X	9-9-04		001
MID	GRAB	9-8-04	11:35	H_2O	X3						X			X			002
POST	GRAB	9-8-04	11:30	H_2O	X3						X HOLD	9-9-04		X HOLD	9-9-04		003

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1.)	Aaron Bleiman	9/8/04 1630	[signature]	9/8/04 1631
2.)				
3.)				
4.)				
5.)				

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

☐ If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.

☐ For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method 8260.

☐ Please use MDL (Minimum Detection Limit) for any diluted samples.

Please send certified results via *.pdf to laboratory@weber-hayes.com.

T-BEAR WELL MONTHLY CARBON TREATMENT SAMPLES

Changed Order Rec'd 9/9/04

Sued 3/5

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

FAX TRANSMISSION

To: *Entech Analytical -*
Fax #: *(408) 588-0201*

Date: *September 9, 2004*

From: *Aaron Bierman*

Subject: Change In Samples for Analysis

Attached to this FAX is a **REVISED** Chain Of Custody (COC) form.

The samples listed on this COC's were transported to your lab yesterday (9/8/04). The revisions include:

1) HOLD the "post" sample
2) As per COC, analyze the "mid" sample
3) Analyze the "pre" sample

The analysis remains the same, the change is for which samples to analyze. Please see revised chain for any further details.

Please call with any comments or questions.

Aaron Bierman
Senior Staff Geologist RG #7490

Office: (831) 722-3580
Cell:(831) 334-2237

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN-OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch ~~/23027.01~~ 23027.C

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman (AB)

Date: 9.8.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS				REQUESTED ANALYSIS								
									Total Petroleum Hydrocarbons			Volatile Organics			Additional Analysis		
					40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline + BTEX by EPA Method# 8260	VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates + ETHANOL EPA Method# 8260	PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PRE	GRAB	9.8.04	11:58	H_2O	x3						HOLD			HOLD			40319-001
MID	GRAB	9.8.04	11:55	H_2O	x3						X			X			002
POST	GRAB	9.8.04	11:50	H_2O	x3						X			X			003

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1.)	Aaron Bierman	9/8/04 @ 4:30	Quadrado	9/8/04 1631
2.)				
3.)				
4.)				
5.)				

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

[ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.*

[ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*

[ ] *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via ".pdf" to laboratory@weber-hayes.com.

- T-BEAR WELL MONTHLY CARBON TREATMENT SAMPLES

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 40046 - 8/19/2004 3:25:03 PM

Order:	40046	**Date Collected:**	8/13/2004
Project Name:	T-Bear Ranch - Purge Water From Geophysical Pumping	**Date Received:**	8/13/2004
Project Number:	23027.C	**P.O. Number:**	23027.C

Certificate of Analysis - Final Report

On August 13, 2004, sample was received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	
	PDF	PDF	
	TPH as Gasoline - GC/MS	GC-MS	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/19/2004
Date Received: 8/13/2004
Project Name: T-Bear Ranch
Project Number: 23027.C
P.O. Number: 23027.C
Sampled By: Client

Certified Analytical Report

Lab # : 40046-001 **Sample ID: Purge Water** **Matrix:** Liquid **Sample Date:** 8/13/2004 12:30 PM

Method: EPA 8260B / EPA 5030B / Purge & Trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	08/18/2004	WMS1040818B
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	08/18/2004	WMS1040818B
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	08/18/2004	WMS1040818B
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	08/18/2004	WMS1040818B
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	08/18/2004	WMS1040818B

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: Xbian
4-Bromofluorobenzene	91.4	64 - 125	Reviewed by: MTU
Dibromofluoromethane	107.0	23 - 172	
Toluene-d8	102.0	70 - 134	

TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	08/18/2004	WMS1040818B

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: Xbian
4-Bromofluorobenzene	108.0	64 - 125	Reviewed by: MTU
Dibromofluoromethane	101.0	23 - 172	
Toluene-d8	109.0	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 08/19/04

QC Batch ID: WMS1040818B
Matrix: Liquid
Date of Analysis: 8/18/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0.5	0.5	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	91.7	64 - 125
Dibromofluoromethane	101.0	23 - 172
Toluene-d8	100.0	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 08/19/04

QC Batch ID: WMS1040818B
Date of Analysis: 8/18/2004

Method EPA 8260B — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	19.4	LCS	8/18/2004	97.0			60 - 132
Benzene	<0.5	20.0	22.2	LCS	8/18/2004	111.0			77 - 154
Chlorobenzene	<0.5	20.0	21.2	LCS	8/18/2004	106.0			66 - 141
Methyl-t-butyl Ether	<1	20.0	19.4	LCS	8/18/2004	97.0			58 - 127
Toluene	<0.5	20.0	19.9	LCS	8/18/2004	99.5			47 - 137
Trichloroethene	<0.5	20.0	20.9	LCS	8/18/2004	104.5			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	91.8	64 - 125
Dibromofluoromethane	99.8	23 - 172
Toluene-d8	92.5	70 - 134

1,1-Dichloroethene	<0.5	20.0	18.8	LCSD	8/18/2004	94.0	3.1	25	60 - 132
Benzene	<0.5	20.0	21.5	LCSD	8/18/2004	107.5	3.2	25	77 - 154
Chlorobenzene	<0.5	20.0	20.8	LCSD	8/18/2004	104.0	1.9	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	19.7	LCSD	8/18/2004	98.5	1.5	25	58 - 127
Toluene	<0.5	20.0	19.6	LCSD	8/18/2004	98.0	1.5	25	47 - 137
Trichloroethene	<0.5	20.0	20.5	LCSD	8/18/2004	102.5	1.9	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	90.1	64 - 125
Dibromofluoromethane	99.2	23 - 172
Toluene-d8	93.0	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Matrix Spike / Duplicate Results

Reviewed by: MTU - 08/19/04

QC Batch ID: WMS1040818B

Date of Analysis: 8/18/2004

Method EPA 8260B Liquid Conc. Units: µg/L

Parameter	Sample Result	Spike Amount	Spike Result	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
MS SampleNumber: 39956-002									
Benzene	ND	20.0	21.7464	MS	8/18/2004	**108.7**			73 - 134
Methyl-t-butyl Ether	17.1	20.0	36.4	MS	8/18/2004	**96.5**			42 - 157
Toluene	ND	20.0	20.1637	MS	8/18/2004	**100.8**			79 - 117

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**86.4**	64 - 125
Dibromofluoromethane	**105.9**	23 - 172
Toluene-d8	**98.3**	70 - 134

MSD SampleNumber: 39956-002									
Benzene	ND	20.0	21.4461	MSD	8/18/2004	**107.2**	**1.4**	25	73 - 134
Methyl-t-butyl Ether	17.1	20.0	36.6	MSD	8/18/2004	**97.5**	**1.0**	25	42 - 157
Toluene	ND	20.0	19.7234	MSD	8/18/2004	**98.6**	**2.2**	25	79 - 117

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**88.0**	64 - 125
Dibromofluoromethane	**103.4**	23 - 172
Toluene-d8	**97.0**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 08/19/04

QC Batch ID: WMS1040818B
Matrix: Liquid
Date of Analysis: 8/18/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**108.0**	64 - 125
Dibromofluoromethane	**95.1**	23 - 172
Toluene-d8	**108.0**	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 08/19/04

QC Batch ID: WMS1040818B
Date of Analysis: 8/18/2004

Method GC-MS **Liquid** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	125.0	145.3	LCS	8/18/2004	**116.2**			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**109.0**	64 - 125
Dibromofluoromethane	**93.6**	23 - 172
Toluene-d8	**108.0**	70 - 134

TPH as Gasoline	<25	125.0	140.2	LCSD	8/18/2004	**112.2**	**3.6**	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**110.0**	64 - 125
Dibromofluoromethane	**92.9**	23 - 172
Toluene-d8	**108.0**	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / ~~98027.D~~ 23027.C

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

Sampler: Aaron Bierman

Date: 8.13.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline + M-BTEX by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PURGE WATER	GRAB	8.13.04	12:30 pm	H2O	X3						X			X		40946-001	

RELEASED BY:

1) [signature] Date & Time 8/13/04 1:25 pm
2) _____ Date & Time _____
3) _____ Date & Time _____
4) _____ Date & Time _____
5) _____ Date & Time _____

RECEIVED BY:

1) [signature] Date & Time 8/13/04 1325
2) _____ Date & Time _____
3) _____ Date & Time _____
4) _____ Date & Time _____
5) _____ Date & Time _____

SAMPLE CONDITION (circle 1)

1)	Ambient	(Refrigerated)	Frozen
2)	Ambient	Refrigerated	Frozen
3)	Ambient	Refrigerated	Frozen
4)	Ambient	Refrigerated	Frozen
5)	Ambient	Refrigerated	Frozen

NOTES:

- ☐ *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*
- ☐ *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*
- ☐ *Please use MDL (Minimum Detection Limit) for any diluted samples*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / ~~03027.D~~ 23027.C

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman AB

Date: 8-13-04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	Total Petroleum Hydrocarbons: TEPH. Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline ~~+~~ M-BTEX by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PURGE WATER	GRAB	8-13-04	12:30pm	H2O	x 3						~~X~~ X			~~X~~	40046-001		

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time	SAMPLE CONDITION: (circle 1)
1.)	[signature]	8/13/04 @ 1:25pm	[signature]	8/13/04 1325	Ambient (Refrigerated) Frozen
2.)					Ambient Refrigerated Frozen
3.)					Ambient Refrigerated Frozen
4.)					Ambient Refrigerated Frozen
5.)					Ambient Refrigerated Frozen

NOTES:

- [ ] ~~If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections~~
- [ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260.*
- [ ] *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Pat Hoban
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39789 - 8/5/2004 3:18:51 PM

Order:	39789	**Date Collected:**	7/23/2004
Project Name:	T-Bear Ranch	**Date Received:**	7/26/2004
Project Number:	23027.D	**P.O. Number:**	

PZ-2 @ 20' & 24'
PZ-3 @ 16 & 44'

Certificate of Analysis - Final Report

On July 26, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	
	TPH as Gasoline - GC/MS	GC-MS	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Pat Hoban

Date: 8/5/2004
Date Received: 7/26/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number:
Sampled By:

Certified Analytical Report

Lab # : 39789-001 **Sample ID: PZ-2@20** **Matrix:** Liquid **Sample Date:** 7/23/2004

Method: EPA 8260B

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Methyl-t-butyl Ether	65		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS1040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS1040728

Comment: Ethanol analysed on GCMS#3, On 08/03/04 and Batch # WMS3040803.

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	97.6	64 - 125
Dibromofluoromethane	110.1	23 - 172
Toluene-d8	100 0	70 - 134

Analyzed by: TFulton
Reviewed by: MTU

TPH as Gasoline	66	x	1	25	25	µg/L	N/A	N/A	07/28/2004	WMS1040728

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	115.1	64 - 125
Dibromofluoromethane	103.6	23 - 172
Toluene-d8	115.1	70 - 134

Analyzed by: TFulton
Reviewed by: MTU

*** TPH as Gasoline value is due to MTBE.

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Pat Hoban

Date: 8/5/2004
Date Received: 7/26/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number:
Sampled By:

Certified Analytical Report

Lab # : 39789-002 **Sample ID:** PZ-2@24 **Matrix:** Liquid **Sample Date:** 7/23/2004

Method: EPA 8260B

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Methyl-t-butyl Ether	74		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS1040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS1040728

Comment: Ethanol analysed on GCMS#3, On 08/03/04 and Batch # WMS3040803.

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	97.4	64 - 125
Dibromofluoromethane	108.1	23 - 172
Toluene-d8	100.0	70 - 134

Analyzed by: TFulton
Reviewed by: MTU

TPH as Gasoline	73	x	1	25	25	µg/L	N/A	N/A	07/28/2004	WMS1040728

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	114.9	64 - 125
Dibromofluoromethane	101.7	23 - 172
Toluene-d8	107.5	70 - 134

Analyzed by: TFulton
Reviewed by: MTU

*** TPH as Gasoline value is due to MTBE.

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Pat Hoban

Date: 8/5/2004
Date Received: 7/26/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number:
Sampled By:

Certified Analytical Report

Lab # : 39789-003 **Sample ID: PZ-3@16** **Matrix:** Liquid **Sample Date:** 7/23/2004

Method: EPA 8260B

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS1040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS1040728

Comment: Ethanol analysed on GCMS#3, On 08/03/04 and Batch # WMS3040803.

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: TFulton
4-Bromofluorobenzene	97.0	64 - 125	Reviewed by: MTU
Dibromofluoromethane	110.3	23 - 172	
Toluene-d8	100.2	70 - 134	

TPH as Gasoline	44	x	1	25	25	µg/L	N/A	N/A	07/28/2004	WMS1040728

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: TFulton
4-Bromofluorobenzene	114.5	64 - 125	Reviewed by: MTU
Dibromofluoromethane	103.9	23 - 172	
Toluene-d8	107.7	70 - 134	

*** TPH as Gasoline value is due to MTBE.

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Pat Hoban

Date: 8/5/2004
Date Received: 7/26/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number:
Sampled By:

Certified Analytical Report

Lab # : 39789-004 **Sample ID:** PZ-3@44 **Matrix:** Liquid **Sample Date:** 7/23/2004

Method: EPA 8260B

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS1040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS1040728

Comment: Ethanol analysed on GCMS#3, On 08/03/04 and Batch # WMS3040803.

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: TFulton
4-Bromofluorobenzene	97.0	64 - 125	Reviewed by: MTU
Dibromofluoromethane	111.8	23 - 172	
Toluene-d8	100.0	70 - 134	

TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/28/2004	WMS1040728

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: TFulton
4-Bromofluorobenzene	114.4	64 - 125	Reviewed by: MTU
Dibromofluoromethane	105.3	23 - 172	
Toluene-d8	107.4	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

QC Batch ID: WMS1040728
Matrix: Liquid
Date of Analysis: 7/28/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Diisopropyl Ether	ND	1	5	5	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0 5	µg/L
Trichloroethene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**100.5**	64 - 125
Dibromofluoromethane	**107.0**	23 - 172
Toluene-d8	**99.1**	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

QC Batch ID: WMS1040728
Date of Analysis: 7/28/2004

Method EPA 8260B — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	17.87	LCS	7/28/2004	**89.4**			60 - 132
Benzene	<0.5	20.0	21.03	LCS	7/28/2004	**105.2**			77 - 154
Chlorobenzene	<0.5	20.0	19.67	LCS	7/28/2004	**98.4**			66 - 141
Methyl-t-butyl Ether	<1	20.0	21.28	LCS	7/28/2004	**106.4**			58 - 127
Toluene	<0.5	20.0	18.58	LCS	7/28/2004	**92.9**			47 - 137
Trichloroethene	<0.5	20.0	19.62	LCS	7/28/2004	**98.1**			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**97.1**	64 - 125
Dibromofluoromethane	**105.6**	23 - 172
Toluene-d8	**94.5**	70 - 134

1,1-Dichloroethene	<0.5	20.0	17.97	LCSD	7/28/2004	**89.8**	**0.6**	25	60 - 132
Benzene	<0.5	20.0	21.64	LCSD	7/28/2004	**108.2**	**2.9**	25	77 - 154
Chlorobenzene	<0.5	20.0	19.97	LCSD	7/28/2004	**99.8**	**1.5**	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	22.04	LCSD	7/28/2004	**110.2**	**3.5**	25	58 - 127
Toluene	<0.5	20.0	19.08	LCSD	7/28/2004	**95.4**	**2.7**	25	47 - 137
Trichloroethene	<0.5	20.0	20.01	LCSD	7/28/2004	**100.1**	**2.0**	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**96.7**	64 - 125
Dibromofluoromethane	**105.1**	23 - 172
Toluene-d8	**94.4**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

QC Batch ID: WMS1040728
Matrix: Liquid
Date of Analysis: 7/28/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	118.5	64 - 125
Dibromofluoromethane	100.7	23 - 172
Toluene-d8	106.4	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

QC Batch ID: WMS1040728
Date of Analysis: 7/28/2004

Method GC-MS Liquid Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250.0	242.99	LCS	7/28/2004	97.2			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	117.9	64 - 125
Dibromofluoromethane	101.7	23 - 172
Toluene-d8	105.3	70 - 134

TPH as Gasoline	<25	250.0	248.3	LCSD	7/28/2004	99.3	2.2	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	118.7	64 - 125
Dibromofluoromethane	100.2	23 - 172
Toluene-d8	105.8	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027 D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

Sampler: Aaron Bierman AB

Date: 7/23/04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: ~~Standard Five Day~~ 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

39789

Sample Identification	Sample Depth (Ft. BGS)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	SAMPLE CONTAINERS: 1 Liter Amber Jars	SAMPLE CONTAINERS: ___mL Poly Bottle	SAMPLE CONTAINERS: Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH. Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PZ-2 @ 20'	20'	7/23/04	am	H_2O	x3		-001				X			X			
PZ-2 @ 24'	24'	7-23-04	am	H_2O	x5		-002				X			X			
PZ-3 @ 16'	16'	7-23-04	am	H_2O	x5		-003				X			X			
PZ-3 @ 44'	44'	7-23-04	pm	H_2O	x5		-004				X			X			

3 DAYS

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1)	Aaron Bierman	7/23/04 @ 7:15pm		7/23 10:07 pm
2.)				
3.)				
4.)				
5.)				

SAMPLE CONDITION: (Circle 1)

Ambient	Refrigerated	Frozen	
Ambient	Refrigerated	Frozen	13.6°C
Ambient	Refrigerated	Frozen	AB
Ambient	Refrigerated	Frozen	
Ambient	Refrigerated	Frozen	

NOTES:

- ☐ *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*
- ☐ *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*
- ☐ *Please use MDL (Minimum Detection Limit) for any diluted samples.*

Please send certified results via *.pdf to laboratory@weber-hayes.com.

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: ~~Standard Five Day~~ 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sampler: Aaron Bierman AB

Date: 7/23/04

39789

Sample Identification	Sample Depth (Ft. bgs)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Methods 8270 SIM	HVOCs by EPA Methods 8270 SIM	LUFT 5 Metals
PZ-2 @ 20'	20'	7/23/04	am	H_2O	x3		-001										
PZ-2 @ 24'	24'	7-23-04	am	H_2O	x5		-002				X			X			
PZ-3 @ 16'	16'	7-23-04	am	H_2O	x5		-003				X			X			
PZ-3 @ 44'	44'	7-23-04	pm	H_2O	x5		-004				X			X			
											X			X			

3 DAYS

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1)	Aaron Dierman	7/23/04 @ 2:10 pm		
2)				
3.)				
4)				
5.)				

SAMPLE CONDITION: (circle 1)

Ambient	Refrigerated	Frozen	13.6°C
Ambient	Refrigerated	Frozen	AR
Ambient	Refrigerated	Frozen	
Ambient	Refrigerated	Frozen	
Ambient	Refrigerated	Frozen	

NOTES:

- [ ] If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.
- [ ] For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260.
- [ ] Please use MDL (Minimum Detection Limit) for any diluted samples.

Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

CHANGE ORDER FORM

Date Requested: 7-29-04
Date Needed: 5-Day
Client: Weber

Workorder #: 39751, 39770, 39789
Project Name or #: Davidson
Ordered by: Pat Holden

Laboratory ID#	Client ID#	Matrix	Change Requested
			Add BTEX to all samples previously analyzed

Comments: Thank You SI

Date Test Added:

Test Added By:

Distribution:
Original in the Workorder Folder. Accounting and all involved departments must get a copy of this form.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39770 - 8/5/2004 3:38:43 PM

Order:	39770	**Date Collected:**	7/22/2004
Project Name:	T-Bear Ranch - Pz-2 @ 44'	**Date Received:**	7/23/2004
Project Number:	23027.D - Pz-10 @ 20'	**P.O. Number:**	23027.D

Certificate of Analysis - Final Report

On July 23, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	8260Petroleum=Oxy's ONLY. No ethanol
	PDF	PDF	
	TPH as Gasoline - GC/MS	GC-MS	Gas by GCMS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/23/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39770-001 **Sample ID: PZ-1 @ 20'** **Matrix:** Liquid **Sample Date:** 7/22/2004

Method: EPA 8260B / EPA 5030B / Purge & Trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS5040728
Methyl-t-butyl Ether	13		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS5040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS5040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS5040728

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94.0	64 - 125
Dibromofluoromethane	93.8	23 - 172
Toluene-d8	98.7	70 - 134

Analyzed by: JHsiang
Reviewed by: MTU

TPH as Gasoline	34	x	1	25	25	µg/L	N/A	N/A	07/28/2004	WMS5040728

Comment: TPH as Gasoline reported value is a result of Acetone and MTBE which are within the TPH as Gasoline quantitation range.

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94.0	64 - 125
Dibromofluoromethane	93.8	23 - 172
Toluene-d8	98.7	70 - 134

Analyzed by: JHsiang
Reviewed by: MTU

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/23/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39770-002 **Sample ID: PZ-2 @ 44'** **Matrix:** Liquid **Sample Date:** 7/22/2004

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS5040728
Methyl-t-butyl Ether	90		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS5040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS5040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS5040728

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	94.5	64 - 125	Reviewed by: MTU
Dibromofluoromethane	95.3	23 - 172	
Toluene-d8	98.2	70 - 134	

[redacted]s Gasoline	65	x	1	25	25	µg/L	N/A	N/A	07/28/2004	WMS5040728

Comment: TPH as Gasoline reported value due to high concentration of MTBE present in the TPH as Gasoline quantitation range.

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	94.5	64 - 125	Reviewed by: MTU
Dibromofluoromethane	95.3	23 - 172	
Toluene-d8	98.2	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/28/04

QC Batch ID: WMS5040728
Matrix: Liquid
Date of Analysis: 7/28/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Diisopropyl Ether	ND	1	5	5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**91.8**	64 - 125
Dibromofluoromethane	**98.3**	23 - 172
Toluene-d8	**99.3**	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/28/04

QC Batch ID: WMS5040728
Date of Analysis: 7/28/2004

Method EPA 8260B — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.5	20.0	22.13	LCS	7/28/2004	**110.6**			77 - 154
Chlorobenzene	<0.5	20.0	23.5	LCS	7/28/2004	**117.5**			66 - 141
Methyl-t-butyl Ether	<1	20.0	18.4	LCS	7/28/2004	**92.0**			58 - 127
Toluene	<0.5	20.0	23.5	LCS	7/28/2004	**117.5**			47 - 137
Trichloroethene	<0.5	20.0	25.2	LCS	7/28/2004	**126.0**			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**99.1**	64 - 125
Dibromofluoromethane	**107.3**	23 - 172
Toluene-d8	**94.8**	70 - 134

1,1-Dichloroethene	<0.5	20.0	19.2	LCSD	7/28/2004	**96.0**	**14.2**	25	60 - 132
Benzene	<0.5	20.0	19.4	LCSD	7/28/2004	**97.0**	**13.1**	25	77 - 154
Chlorobenzene	<0.5	20.0	21.1	LCSD	7/28/2004	**105.5**	**10.8**	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	15.8	LCSD	7/28/2004	**79.0**	**15.2**	25	58 - 127
Toluene	<0.5	20.0	20.6	LCSD	7/28/2004	**103.0**	**13.2**	25	47 - 137
Trichloroethene	<0.5	20.0	21.9	LCSD	7/28/2004	**109.5**	**14.0**	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.9**	64 - 125
Dibromofluoromethane	**87.7**	23 - 172
Toluene-d8	**96.9**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/28/04

QC Batch ID: WMS5040728
Matrix: Liquid
Date of Analysis: 7/28/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	91.8	64 - 125
Dibromofluoromethane	98.3	23 - 172
Toluene-d8	99.3	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/28/04

QC Batch ID: WMS5040728
Date of Analysis: 7/28/2004

Method GC-MS **Liquid** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	125.0	133.6	LCS	7/28/2004	106.9			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.1	64 - 125
Dibromofluoromethane	90.7	23 - 172
Toluene-d8	99.1	70 - 134

TPH as Gasoline	<25	125.0	136.	LCSD	7/28/2004	108.8	1.8	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	92.5	64 - 125
Dibromofluoromethane	90.7	23 - 172
Toluene-d8	99.8	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027 D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman

Date: 7-22-04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: ~~Normal (5 Days)~~ 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth (Ft, BGS)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PZ-1 @ 20'	20'	7.22.04	AM	H2O	x2	39770-001					X			X	7.8 9.3 Temp.		
PZ-2 @ 44'	44'	7.22.04	PM	H2O	x5		-002				X			X	7.7		

3 DAYS

	RELEASED BY:	Date & Time		RECEIVED BY:	Date & Time	SAMPLE CONDITION: (circle 1)		
1.)	Aaron Bierman	7/22/04 @ 845pm	→	Entech	7-22-04 8:45PM	Ambient	Refrigerated	Frozen
2.)			→	Entech	7/23/04 900	Ambient	Refrigerated	Frozen
3.)			→			Ambient	Refrigerated	Frozen
4.)			→			Ambient	Refrigerated	Frozen
5.)			→			Ambient	Refrigerated	Frozen

NOTES:

- [ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*
- [ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260.*
- [ ] *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering

120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: ~~Normal~~ 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sampler: Aaron Bierman

Date: 7.22.04

Sample Identification	Sample Depth (Ft, bgs)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PZ-1 @ 20'	20'	7.22.04	AM	H_2O	x2	39770-001					X			X	7.8	7.3 Temp.	
PZ-2 @ 44'	44'	7.22.04	PM	H_2O	x5		-002				X			X	7.7		

3 DAYS

RELEASED BY:

1.) Aaron Bierman — Date & Time: 7/22/04 @ 845pm

2.)

3.)

4.)

5.)

RECEIVED BY:

Date & Time: 7-22-04 8:45PM

7/23/04 900

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

- [ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.*
- [ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260.*
- [ ] *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

CHANGE ORDER FORM

Date Requested: 7-29-04
Date Needed: 5-Day
Client: Weber

Workorder #: 39751, 39770, 39789
Project Name or #: Various
Ordered by: Pat Holden

Laboratory ID#	Client ID#	Matrix	Change Requested
			Add BTEX to all Samples previously analyzed
			5 Day TAT

Comments: Thank you!

Date Test Added:
Test Added By:

Distribution:
Original in the Workorder Folder. Accounting and all involved departments must get a copy of this form.

F:\Change Order Form.xls

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39751 - 8/5/2004 1:23:37 PM

Order:	39751	**Date Collected:**	7/21/2004
Project Name:	T-Bear Ranch - PZ-1 @ 12' & 42'	**Date Received:**	7/22/2004
Project Number:	23027.D - DO-1 @ 16' & 41'	**P.O. Number:**	23027.D

Certificate of Analysis - Revision

Note: This is a revision of the original 7/23/2004 issue to include additional analytes on all samples.

On July 22, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	
	PDF	PDF	Gas by GCMS
	TPH as Gasoline - GC/MS	GC-MS	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/22/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39751-001 **Sample ID: PZ-1 @ 12'** **Matrix:** Liquid **Sample Date:** 7/21/2004

Method: EPA 8260B / EPA 5030B / Purge & Trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		2	0.5	1	µg/L	N/A	N/A	07/23/2004	WMS5040723
Toluene	ND		2	0.5	1	µg/L	N/A	N/A	07/23/2004	WMS5040723
Ethyl Benzene	ND		2	0.5	1	µg/L	N/A	N/A	07/23/2004	WMS5040723
Xylenes, Total	ND		2	1	2	µg/L	N/A	N/A	07/23/2004	WMS5040723
Methyl-t-butyl Ether	230		2	1	2	µg/L	N/A	N/A	07/23/2004	WMS5040723
Ethyl-t-butyl Ether	ND		2	5	10	µg/L	N/A	N/A	07/23/2004	WMS5040723
tert-Amyl Methyl Ether	ND		2	5	10	µg/L	N/A	N/A	07/23/2004	WMS5040723
tert-Butanol (TBA)	ND		2	10	20	µg/L	N/A	N/A	07/23/2004	WMS5040723
Diisopropyl Ether	ND		2	5	10	µg/L	N/A	N/A	07/23/2004	WMS5040723
Ethanol	ND		2	100	200	µg/L	N/A	N/A	07/23/2004	WMS5040723

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	90.2	64 - 125	Reviewed by: MTU
Dibromofluoromethane	94.3	23 - 172	
Toluene-d8	98.8	70 - 134	

TPH as Gasoline	130	x	2	25	50	µg/L	N/A	N/A	07/23/2004	WMS5040723

Comment: TPH as Gasoline reported value due to high concentration of MTBE present in the TPH as Gasoline quantitation range.

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	90.2	64 - 125	Reviewed by: MTU
Dibromofluoromethane	94.3	23 - 172	
Toluene-d8	98.8	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/22/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39751-002 **Sample ID: PZ-1 @ 42'** **Matrix:** Liquid **Sample Date:** 7/21/2004

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/22/2004	WMS5040722
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	97.9	64 - 125	Reviewed by: MTU
Dibromofluoromethane	99.2	23 - 172	
Toluene-d8	97.9	70 - 134	

TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	97.9	64 - 125	Reviewed by: MTU
Dibromofluoromethane	99.2	23 - 172	
Toluene-d8	97.9	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/22/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39751-003 **Sample ID: DP-1 @ 16'** **Matrix:** Liquid **Sample Date:** 7/21/2004

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Methyl-t-butyl Ether	9.2		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/22/2004	WMS5040722
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.8	64 - 125
Dibromofluoromethane	97.0	23 - 172
Toluene-d8	98.7	70 - 134

Analyzed by: JHsiang
Reviewed by: MTU

TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.8	64 - 125
Dibromofluoromethane	97.0	23 - 172
Toluene-d8	98.7	70 - 134

Analyzed by: JHsiang
Reviewed by: MTU

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/22/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39751-004 **Sample ID: DP-1 @ 41'** **Matrix:** Liquid **Sample Date:** 7/21/2004

Method: EPA 8260B / EPA 5030B / Soil direct purge & trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/22/2004	WMS5040722
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	97.7	64 - 125	Reviewed by: MTU
Dibromofluoromethane	95.9	23 - 172	
Toluene-d8	100.1	70 - 134	

TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	97.7	64 - 125	Reviewed by: MTU
Dibromofluoromethane	95.9	23 - 172	
Toluene-d8	100.1	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/23/04

QC Batch ID: WMS5040722
Matrix: Liquid
Date of Analysis: 7/22/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0.5	0.5	µg/L
Diisopropyl Ether	ND	1	5	5	µg/L
Ethanol	ND	1	100	100	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**92.0**	64 - 125
Dibromofluoromethane	**93.4**	23 - 172
Toluene-d8	**98.4**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/23/04

QC Batch ID: WMS5040722
Matrix: Liquid
Date of Analysis: 7/22/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	92.0	64 - 125
Dibromofluoromethane	93.4	23 - 172
Toluene-d8	98.4	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/23/04

QC Batch ID: WMS5040723
Matrix: Liquid
Date of Analysis: 7/23/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0.5	0.5	µg/L
Diisopropyl Ether	ND	1	5	5	µg/L
Ethanol	ND	1	100	100	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	89.4	64 - 125
Dibromofluoromethane	96.4	23 - 172
Toluene-d8	97.0	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/23/04

QC Batch ID: WMS5040723
Matrix: Liquid
Date of Analysis: 7/23/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	89.4	64 - 125
Dibromofluoromethane	96.4	23 - 172
Toluene-d8	97.0	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/23/04

QC Batch ID: WMS5040722

Date of Analysis: 7/22/2004

Method EPA 8260B — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20 0	23.63	LCS	7/22/2004	118.1			60 - 132
Benzene	<0.5	20.0	20.82	LCS	7/22/2004	104.1			77 - 154
Chlorobenzene	<0.5	20.0	23.49	LCS	7/22/2004	117.4			66 - 141
Methyl-t-butyl Ether	<1	20.0	15.47	LCS	7/22/2004	77.4			58 - 127
Toluene	<0.5	20.0	23.91	LCS	7/22/2004	119.6			47 - 137
Trichloroethene	<0.5	20.0	22.91	LCS	7/22/2004	114.6			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	100.0	64 - 125
Dibromofluoromethane	102.3	23 - 172
Toluene-d8	99.1	70 - 134

1,1-Dichloroethene	<0.5	20 0	20.67	LCSD	7/22/2004	103.4	13.4	25	60 - 132
Benzene	<0.5	20.0	18.85	LCSD	7/22/2004	94.3	9.9	25	77 - 154
Chlorobenzene	<0.5	20.0	21.27	LCSD	7/22/2004	106.3	9.9	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	15.61	LCSD	7/22/2004	78.0	0.9	25	58 - 127
Toluene	<0 5	20.0	20.82	LCSD	7/22/2004	104.1	13.8	25	47 - 137
Trichloroethene	<0.5	20.0	23.54	LCSD	7/22/2004	117.7	2.7	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	97.0	64 - 125
Dibromofluoromethane	88.4	23 - 172
Toluene-d8	95.7	70 - 134

Method GC-MS — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	125.0	152.6	LCS	7/22/2004	122.1			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	97.2	64 - 125
Dibromofluoromethane	88.7	23 - 172
Toluene-d8	100.6	70 - 134

TPH as Gasoline	<25	125.0	144.3	LCSD	7/22/2004	115.4	5.6	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	91.2	64 - 125
Dibromofluoromethane	94.5	23 - 172
Toluene-d8	98.7	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/23/04

QC Batch ID: WMS5040723

Date of Analysis: 7/23/2004

Method EPA 8260B — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	21.85	LCS	7/23/2004	**109.3**			60 - 132
Benzene	<0.5	20.0	20.65	LCS	7/23/2004	**103.2**			77 - 154
Chlorobenzene	<0.5	20.0	23.12	LCS	7/23/2004	**115.6**			66 - 141
Methyl-t-butyl Ether	<1	20.0	17.8	LCS	7/23/2004	**89.0**			58 - 127
Toluene	<0.5	20.0	22.81	LCS	7/23/2004	**114.1**			47 - 137
Trichloroethene	<0.5	20.0	24.53	LCS	7/23/2004	**122.7**			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.4**	64 - 125
Dibromofluoromethane	**110.6**	23 - 172
Toluene-d8	**97.8**	70 - 134

1,1-Dichloroethene	<0.5	20.0	22.76	LCSD	7/23/2004	**113.8**		25	60 - 132
Benzene	<0.5	20.0	21.02	LCSD	7/23/2004	**105.1**		25	77 - 154
Chlorobenzene	<0.5	20.0	23.52	LCSD	7/23/2004	**117.6**		25	66 - 141
Methyl-t-butyl Ether	<1	20.0	16.49	LCSD	7/23/2004	**82.4**		25	58 - 127
Toluene	<0.5	20.0	23.3	LCSD	7/23/2004	**116.5**		25	47 - 137
Trichloroethene	<0.5	20.0	25.26	LCSD	7/23/2004	**126.3**		25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**97.6**	64 - 125
Dibromofluoromethane	**87.6**	23 - 172
Toluene-d8	**98.4**	70 - 134

Method GC-MS — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	125.0	155.3	LCS	7/23/2004	**124.2**			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**93.7**	64 - 125
Dibromofluoromethane	**90.6**	23 - 172
Toluene-d8	**98.1**	70 - 134

TPH as Gasoline	<25	125.0	149.	LCSD	7/23/2004	**119.2**	**4.1**	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**93.7**	64 - 125
Dibromofluoromethane	**92.9**	23 - 172
Toluene-d8	**98.4**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Matrix Spike / Duplicate Results

Reviewed by: MTU - 07/27/04

QC Batch ID: WMS5040723

Date of Analysis: 7/23/2004

Method EPA 8260B — Liquid — Conc. Units: µg/L

Parameter	Sample Result	Spike Amount	Spike Result	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
MS SampleNumber: 39773-001									
1,1-Dichloroethene	ND	20.0	21.35	MS	7/23/2004	**106.8**			59 - 133
Benzene	ND	20.0	22.51	MS	7/23/2004	**112.6**			73 - 134
Chlorobenzene	ND	20.0	23.07	MS	7/23/2004	**115.4**			86 - 121
Methyl-t-butyl Ether	ND	20.0	16.89	MS	7/23/2004	**84.5**			42 - 157
Toluene	ND	20.0	23.06	MS	7/23/2004	**115.3**			79 - 117
Trichloroethene	ND	20.0	26.01	MS	7/23/2004	**130.1*** **			71 - 119

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**99.5**	64 - 125
Dibromofluoromethane	**94.5**	23 - 172
Toluene-d8	**94.8**	70 - 134

MSD SampleNumber: 39773-001									
1,1-Dichloroethene	ND	20.0	20.58	MSD	7/23/2004	**102.9**	**3.7**	25	59 - 133
Benzene	ND	20.0	20.76	MSD	7/23/2004	**103.8**	**8.1**	25	73 - 134
Chlorobenzene	ND	20.0	22.52	MSD	7/23/2004	**112.6**	**2.4**	25	86 - 121
Methyl-t-butyl Ether	ND	20.0	16.74	MSD	7/23/2004	**83.7**	**0.9**	25	42 - 157
Toluene	ND	20.0	21.74	MSD	7/23/2004	**108.7**	**5.9**	25	79 - 117
Trichloroethene	ND	20.0	24.09	MSD	7/23/2004	**120.5*** **	**7.7**	25	71 - 119

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.6**	64 - 125
Dibromofluoromethane	**94.5**	23 - 172
Toluene-d8	**95.1**	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering

120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

2 DAYS

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.D

LABORATORY: Entech Analytical Laboratory

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

TURNAROUND TIME: ~~Standard Five Day~~ 24hr Rush (48hr Rush) 72hr Rush

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

GLOBAL I.D.: NA

CHARGE FOR 72 Hr per Simon

Sampler: Aaron Bierman (AB)

Date: 7-21-04

Sample Identification	Sample Depth (Ft, BGS)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PZ-1 @ 12'	12'	7-21-04	PM	H_2O	x2	~~3751~~-001					X			X			
PZ-1 @ 42'	42'	7-21-04	PM	H_2O	x5			002			X			X			
DP-1 @ 16'	16'	7-21-04	PM	H_2O	x5			003			X			X			
DP-1 @ 41'	41'	7-21-04	PM	H_2O	x5			004			X			X			

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1.)	Aaron Bierman	7/21/04 @ 8:30	[signature]	7/21/04 @ 8:20
2.)			[signature]	7/22/04 900
3.)				
4.)				
5.)				

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

- If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections
- For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260.
- Please use MDL (Minimum Detection Limit) for any diluted samples.

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

- Bill @ 3 day rate per Simon

Synod xls

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

CHANGE ORDER FORM

Date Requested: 7-29-04

Date Needed: 5-Day

Client: Weber

Workorder #: 39751, 39770, 39789

Project Name or #: Valvidos

Ordered by: Pat Holden

Laboratory ID#	Client ID#	Matrix	Change Requested
			Add BTEX to all samples
			previously analyzed
			5 Day
			TAT

Comments: Thank You!

Date Test Added:

Test Added By:

Distribution:
Original in the Workorder Folder. Accounting and all involved departments must get a copy of this form.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39742 - 7/22/2004 2:48:44 PM

Order:	39742	**Date Collected:**	7/21/2004
Project Name:	T-Bear Ranch - Water Well G1	**Date Received:**	7/21/2004
Project Number:	23027.D (3111 Andrade Rd, Residence)	**P.O. Number:**	23027.D

Certificate of Analysis - Final Report

On July 21, 2004, sample was received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	8260Petroleum=Oxy's ONLY. No Ethanol
	PDF	PDF	
	TPH as Gasoline - GC/MS	GC-MS	Gas by GCMS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 7/22/2004
Date Received: 7/21/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39742-001 **Sample ID:** **Well G1** **Matrix:** Liquid **Sample Date:** 7/21/2004 7:45 AM

Method: EPA 8260B / EPA 5030B / Soil direct purge & trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/21/2004	WMS2040721
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/21/2004	WMS2040721
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/21/2004	WMS2040721
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/21/2004	WMS2040721
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/21/2004	WMS2040721

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	95.0	64 - 125
Dibromofluoromethane	108.6	23 - 172
Toluene-d8	99.2	70 - 134

Analyzed by: TFulton - 07/21/2004
Reviewed by: MTU - 07/22/04

Method: GC-MS

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/21/2004	WMS2040721

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94.4	64 - 125
Dibromofluoromethane	117.5	23 - 172
Toluene-d8	97.1	70 - 134

Analyzed by: TFulton - 07/21/2004
Reviewed by: MTU - 07/22/04

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/22/04

QC Batch ID: WMS2040721
Matrix: Liquid
Date of Analysis: 7/21/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Diisopropyl Ether	ND	1	5	5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	97.6	64 - 125
Dibromofluoromethane	109.3	23 - 172
Toluene-d8	103.3	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/22/04

QC Batch ID: WMS2040721
Date of Analysis: 7/21/2004

Method EPA 8260B — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	20.878	LCS	7/21/2004	104.4			60 - 132
Benzene	<0.5	20.0	22.311	LCS	7/21/2004	111.6			77 - 154
Chlorobenzene	<0.5	20.0	20.313	LCS	7/21/2004	101.6			66 - 141
Methyl-t-butyl Ether	<1	20.0	22.371	LCS	7/21/2004	111.9			58 - 127
Toluene	<0.5	20.0	20.136	LCS	7/21/2004	100.7			47 - 137
Trichloroethene	<0.5	20.0	22.156	LCS	7/21/2004	110.8			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	104.0	64 - 125
Dibromofluoromethane	112.9	23 - 172
Toluene-d8	99.6	70 - 134

1,1-Dichloroethene	<0.5	20.0	19.583	LCSD	7/21/2004	97.9	6.4	25	60 - 132
Benzene	<0.5	20.0	21.565	LCSD	7/21/2004	107.8	3.4	25	77 - 154
Chlorobenzene	<0.5	20.0	19.206	LCSD	7/21/2004	96.0	5.6	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	21.622	LCSD	7/21/2004	108.1	3.4	25	58 - 127
Toluene	<0.5	20.0	19.395	LCSD	7/21/2004	97.0	3.7	25	47 - 137
Trichloroethene	<0.5	20.0	21.747	LCSD	7/21/2004	108.7	1.9	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	100.5	64 - 125
Dibromofluoromethane	112.6	23 - 172
Toluene-d8	100.5	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/22/04

QC Batch ID: WMS2040721
Matrix: Liquid
Date of Analysis: 7/21/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	97.7	64 - 125
Dibromofluoromethane	118.3	23 - 172
Toluene-d8	101.2	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/22/04

QC Batch ID: WMS2040721
Date of Analysis: 7/21/2004

Method GC-MS **Liquid** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250.0	259.6	LCS	7/21/2004	103.8			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	98.1	64 - 125
Dibromofluoromethane	117.4	23 - 172
Toluene-d8	100.8	70 - 134

TPH as Gasoline	<25	250.0	267.8	LCSD	7/21/2004	107.1	3.1	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	99.0	64 - 125
Dibromofluoromethane	113.4	23 - 172
Toluene-d8	101.8	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027 D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sampler: Aaron Bierman

Date: 7.21.04

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates & MTBE EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
WELL G1	GRAB	7-21-04	7:45 am	H2O	x5						X			X			394742-001

1 DAY

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time	SAMPLE CONDITION: (circle 1)		
1)	Aaron Bierman	7/21/04 @ 10:00		7/21/04	Ambient	(Refrigerated)	Frozen
2.)	[illegible]	7/21/04 @ 12:30	[illegible]	7/21/04 1230	Ambient	Refrigerated	Frozen
3)					Ambient	Refrigerated	Frozen
4)					Ambient	Refrigerated	Frozen
5)					Ambient	Refrigerated	Frozen

NOTES:

- [ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*
- [ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*
- [ ] *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

24-hr rush

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering

120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027 D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention. Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman

Date: 7.21.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH. Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates & MTBE EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
WELL G1	GRAB	7.21.04	745 am	H_2O	x5						X			X			34742-001

1 DAY

RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1.) Aaron Bierman	7/21/04 @ 10:00		
2.) Pat Hahn	7/21/04 @ 12:30		7/21/04 1230
3.)			
4.)			
5.)			

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

- [ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.*
- [ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*
- [ ] *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

24-hr rush

Sunoi xls

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39710 - 7/29/2004 9:43:17 PM

Order:	39710	**Date Collected:**	7/19/2004
Project Name:	T-Bear Ranch - Water Well #2 - MDL Reporting - (3220 Andrade Rd, Range Well)	**Date Received:**	7/19/2004
Project Number:	23027	**P.O. Number:**	23027

Certificate of Analysis - Revision

Note: This is a revision of the original 7/21/2004 issue to report the re-analysis and report to the MDL.

On July 19, 2004, sample was received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date Received: 7/19/2004
Project Name: T-Bear Ranch
Project Number: 23027
P.O. Number: 23027
Sampled By: Client

Certified Analytical Report

Laboratory ID: 39710-001 **Sample ID:** Well A2 **Matrix:** Liquid **Sample Date:** 7/19/2004 8:35 AM

Method: EPA 8260B / EPA 5030B

Parameter	Result	Flag	DF	MDL	MDLR	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.2	0.2	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Toluene	ND		1	0.2	0.2	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Ethyl Benzene	ND		1	0.2	0.2	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Xylenes, Total	ND		1	0.6	0.6	1	µg/L	N/A	N/A	07/20/2004	WMS2040720
Methyl-t-butyl Ether	ND		1	0.3	0.3	1	µg/L	N/A	N/A	07/20/2004	WMS2040720
Ethyl-t-butyl Ether	ND		1	0.2	0.2	5	µg/L	N/A	N/A	07/20/2004	WMS2040720
tert-Butanol (TBA)	ND		1	3	3	10	µg/L	N/A	N/A	07/20/2004	WMS2040720
Diisopropyl Ether	ND		1	0.2	0.2	5	µg/L	N/A	N/A	07/20/2004	WMS2040720
tert-Amyl Methyl Ether	ND		1	0.2	0.2	5	µg/L	N/A	N/A	07/20/2004	WMS2040720

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.5	64 - 125
Dibromofluoromethane	107.1	23 - 172
Toluene-d8	103.5	70 - 134

Analyzed by: Tfulton - 07/20/2004
Reviewed by. MTU - 07/21/04

MDL = Method Detection Limit as defined by the EPA, is the minimum concentration of a substance that can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero. This minimum concentration is statistically determined by the laboratory.

J = Estimated value greater the the MDLR but less that the PQLR. Use this value with caution particularly if B or L flags are present for this analyte.

MDLR = MDL for reporting which includes sample dilution in the calculation.

PQLR = Practical Quantitation Limit for reporting which includes sample dilution in the calculation.

B = Analyte was also found in the Method Blank associated with this sample.

DF = Dilution Factor

ND = Not Detected at or above the PQL

L = Possible laboratory contaminant.

Entech Analytical Labs, Inc.

1334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/21/04

QC Batch ID WMS2040720

Date of Analysis: 7/20/2004

Method: EPA 8260B

Matrix: Liquid

Parameter	Result	DF	PQL	MDL	Units
1,2-Dibromoethane (EDB)	<0.2	1	0.5	0.2	µg/L
1,2-Dichloroethane	<0.2	1	0.5	0.2	µg/L
Benzene	<0.2	1	0.5	0.2	µg/L
Diisopropyl Ether	<0.2	1	5	0.2	µg/L
Ethanol	<40	1	100	40	µg/L
Ethyl Benzene	<0.2	1	0.5	0.2	µg/L
Ethyl-t-butyl Ether	<0.2	1	5	0.2	µg/L
Methyl-t-butyl Ether	<0.3	1	1	0.3	µg/L
tert-Amyl Methyl Ether	<0.2	1	5	0.2	µg/L
tert-Butanol (TBA)	<3	1	10	3	µg/L
Toluene	<0.2	1	0.5	0.2	µg/L
Xylenes, Total	<0.6	1	1	0.6	µg/L

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**99.8**	64 - 125
Dibromofluoromethane	**108.4**	23 - 172
Toluene-d8	**101.7**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/22/04

QC Batch ID: WMS2040720
Date of Analysis: 7/20/2004

Method EPA 624 — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Bromoform	<0 5	20.0	16.4	LCS	7/20/2004	**82.0**			65 - 135
Chloroform	<0.5	20.0	21.9	LCS	7/20/2004	**109.5**			65 - 135
Bromoform	<0.5	20.0	16.1	LCSD	7/20/2004	**80.4**	**1.9**	25	65 - 135
Chloroform	<0.5	20.0	21.5	LCSD	7/20/2004	**107.7**	**1.6**	25	65 - 135

Method EPA 8260B — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	19.5	LCS	7/20/2004	**97.7**			60 - 132
Benzene	<0.5	20.0	20.4	LCS	7/20/2004	**101.9**			77 - 154
Chlorobenzene	<0.5	20.0	19.8	LCS	7/20/2004	**98.9**			66 - 141
Methyl-t-butyl Ether	<1	20.0	17.1	LCS	7/20/2004	**85.3**			58 - 127
Toluene	<0.5	20.0	19.4	LCS	7/20/2004	**97.0**			47 - 137
Trichloroethene	<0.5	20.0	19.9	LCS	7/20/2004	**99.5**			57 - 159
1,1-Dichloroethene	<0.5	20.0	19.4	LCSD	7/20/2004	**97.0**	**0.7**	25	60 - 132
Benzene	<0.5	20.0	20.6	LCSD	7/20/2004	**102.9**	**1.0**	25	77 - 154
Chlorobenzene	<0.5	20.0	18.9	LCSD	7/20/2004	**94.6**	**4.4**	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	19.8	LCSD	7/20/2004	**99.1**	**15.0**	25	58 - 127
Toluene	<0.5	20.0	19.1	LCSD	7/20/2004	**95.3**	**1.8**	25	47 - 137
Trichloroethene	<0.5	20.0	20.7	LCSD	7/20/2004	**103.4**	**3.9**	25	57 - 159

Method GC-MS — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250.0	247	LCS	7/20/2004	**98.8**			65 - 135
TPH as Gasoline	<25	250.0	263	LCSD	7/20/2004	**105.3**	**6.3**	25	65 - 135

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Matrix Spike / Duplicate Results

Reviewed by: MTU - 06/28/04

QC Batch ID: WMS2040720

Date of Analysis: 7/20/2004

Method EPA 8260B Liquid **Conc. Units:** µg/L

Parameter	Sample Result	Spike Amount	Spike Result	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
MS **SampleNumber: 39710-001**									
Benzene	<0.5	20.0	22.0323	MS	7/20/2004	**110.2**			73 - 134
Methyl-t-butyl Ether	<1	20.0	15.0368	MS	7/20/2004	**75.2**			42 - 157
Toluene	<0.5	20.0	24.4	MS	7/20/2004	**118.3*** **			79 - 117
MSD **SampleNumber: 39710-001**									
Benzene	<0.5	20.0	19.8	MSD	7/20/2004	**99.0**	**1.0**	25	73 - 134
Methyl-t-butyl Ether	<1	20.0	23.2755	MSD	7/20/2004	**116.4**	**3.2**	25	42 - 157
Toluene	<0.5	20.0	20.4	MSD	7/20/2004	**102.0**	**0.0**	25	79 - 117

***The % recovery for the MS for Toluene is outside of laboratory control but within % RPD limits. No corrective action required.

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PAGE 1 OF 1

PROJECT NAME AND JOB #: [redacted] T. BEAR RANCH / 23027

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

Sampler: Aaron Bierman AB

Date: 7.19.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: Standard Five-Day (circled) | 24hr Rush | 48hr Rush (circled) | 72hr Rush

GLOBAL I.D.: NA

Field Point Name (GeoTracker) NA	Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS – Total Petroleum Hydrocarbons: TEPH, Diesel with Standard Silica Gel Cleanup	Total Recoverable Petroleum Hydrocarbons	TPH-gasoline, BTEX & MTBE 8260 by EPA Method# ~~8015M & 8020~~	Volatile Organics: 1,2-DCA by EPA Method# 8010	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: Total Suspended Solids	Total Dissolved Solids	Metals: Al, Ar, Cd, Cr, Cu, Pb, Ni, Se, Zn, Hg, Nitrate as N
	WELL A2	AT PROP PIPE	7.19.04	8:35am	H_2O	x4		39710-001				X			X			

Change TAT to 48 HR From 7-20
Due 7-22
SNH 7-20-04
Per A Bierman

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time	SAMPLE CONDITION: (circle 1)
1)	Aaron Bierman (signature)	7/19/04 @ 5:00pm	(signature)	7/19/04 1705	Ambient / **Refrigerated** (circled) / Frozen
2)					Ambient / Refrigerated / Frozen
3)					Ambient / Refrigerated / Frozen
4.)					Ambient / Refrigerated / Frozen
5.)					Ambient / Refrigerated / Frozen

NOTES:

☐ *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*

☐ *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*

☐ *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39710 - 7/21/2004 2:16:33 PM

Order: 39710
Project Name: T-Bear Ranch - Water Well #2 (3220 Alvarado, Range Well)
Project Number: 23027

Date Collected: 7/19/2004
Date Received: 7/19/2004
P.O. Number: 23027

Certificate of Analysis - Final Report

On July 19, 2004, sample was received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	8260Petroleum=Btex+Oxy's ONLY. No Ethanol
	PDF	PDF	
	TPH as Gasoline - GC/MS	GC-MS	Gas by GCMS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 7/21/2004
Date Received: 7/19/2004
Project Name: T-Bear Ranch
Project Number: 23027
P.O. Number: 23027
Sampled By: Client

Certified Analytical Report

Lab # : 39710-001 **Sample ID:** Well A2 **Matrix:** Liquid **Sample Date:** 7/19/2004 8:35 AM

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/20/2004	WMS2040720
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/20/2004	WMS2040720
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/20/2004	WMS2040720
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/20/2004	WMS2040720
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/20/2004	WMS2040720
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/20/2004	WMS2040720

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.5	64 - 125
Dibromofluoromethane	107.1	23 - 172
Toluene-d8	103.5	70 - 134

Analyzed by: Tfulton - 07/20/2004
Reviewed by: MTU - 07/21/04

Method: GC-MS

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/20/2004	WMS2040720

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.5	64 - 125
Dibromofluoromethane	115 8	23 - 172
Toluene-d8	101.3	70 - 134

Analyzed by: Tfulton - 07/20/2004
Reviewed by: MTU - 07/21/04

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/21/04

QC Batch ID: WMS2040720
Matrix: Liquid
Date of Analysis: 7/20/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0 5	0.5	µg/L
Diisopropyl Ether	ND	1	5	5	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**99.8**	64 - 125
Dibromofluoromethane	**108.4**	23 - 172
Toluene-d8	**101.7**	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/21/04

QC Batch ID: WMS2040720
Date of Analysis: 7/20/2004

Method EPA 8260B — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	19.534	LCS	7/20/2004	**97.7**			60 - 132
Benzene	<0.5	20.0	20.387	LCS	7/20/2004	**101.9**			77 - 154
Chlorobenzene	<0.5	20.0	19.775	LCS	7/20/2004	**98.9**			66 - 141
Methyl-t-butyl Ether	<1	20.0	17.052	LCS	7/20/2004	**85.3**			58 - 127
Toluene	<0.5	20.0	19.401	LCS	7/20/2004	**97.0**			47 - 137
Trichloroethene	<0.5	20.0	19.9	LCS	7/20/2004	**99.5**			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**101.2**	64 - 125
Dibromofluoromethane	**109.5**	23 - 172
Toluene-d8	**101.7**	70 - 134

1,1-Dichloroethene	<0.5	20.0	19.397	LCSD	7/20/2004	**97.0**	**0.7**	25	60 - 132
Benzene	<0.5	20.0	20 584	LCSD	7/20/2004	**102.9**	**1.0**	25	77 - 154
Chlorobenzene	<0.5	20.0	18.918	LCSD	7/20/2004	**94.6**	**4.4**	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	19.825	LCSD	7/20/2004	**99.1**	**15.0**	25	58 - 127
Toluene	<0.5	20.0	19.058	LCSD	7/20/2004	**95.3**	**1.8**	25	47 - 137
Trichloroethene	<0.5	20.0	20.688	LCSD	7/20/2004	**103.4**	**3.9**	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**100.1**	64 - 125
Dibromofluoromethane	**111.1**	23 - 172
Toluene-d8	**100.9**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/21/04

QC Batch ID: WMS2040720
Matrix: Liquid
Date of Analysis: 7/20/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**98.8**	64 - 125
Dibromofluoromethane	**117.3**	23 - 172
Toluene-d8	**99.4**	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/21/04

QC Batch ID: WMS2040720
Date of Analysis: 7/20/2004

Method GC-MS — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250.0	247.1	LCS	7/20/2004	**98.8**			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.4**	64 - 125
Dibromofluoromethane	**118.9**	23 - 172
Toluene-d8	**100.1**	70 - 134

TPH as Gasoline	<25	250.0	263.3	LCSD	7/20/2004	**105.3**	**6.3**	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.7**	64 - 125
Dibromofluoromethane	**115.7**	23 - 172
Toluene-d8	**100.3**	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering

120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: [redacted] T. BEAR RANCH / 23027

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman AB

Date: 7.19.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Field Point Name (GeoTracker)	Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel with Standard Silica Gel Cleanup	Total Recoverable Petroleum Hydrocarbons	TPH-gasoline, BTEX & MTBE 8260 by EPA Method# ~~8015M & 8020~~	Volatile Organics: 1,2-DCA by EPA Method# 8010	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: Total Suspended Solids	Total Dissolved Solids	Metals: Al, Ar, Cd, Cr, Cu, Pb, Ni, Se, Zn, Hg, Nitrate as N
NA	WELL A2	AT TOP PIPE	7-19-04	8:35am	H_2O	x4		39710-001				X			X			

Change TAT to 48 HR From 7-20 Due 7-22 Sent 7-20-04 per A. Bierman

RELEASED BY: Aaron Bierman — Date & Time: 7/19/04 @ 5:00 pm

RECEIVED BY: [signature] — Date & Time: 7/19/04 1705

SAMPLE CONDITION: (circle 1)

1)	Ambient	(Refrigerated)	Frozen
2)	Ambient	Refrigerated	Frozen
3)	Ambient	Refrigerated	Frozen
4.)	Ambient	Refrigerated	Frozen
5)	Ambient	Refrigerated	Frozen

NOTES:

- [ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*
- [ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*
- [ ] *Please use MDL (Minimum Detection Limit) for any diluted samples*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

CHANGE ORDER FORM

Date Requested: 7-20-04
Date Needed: 7-22-04
Client: WHT

Workorder #: 3971O
Project Name or #: T-Beach
Ordered by: Aaron

Laboratory ID#	Client ID#	Matrix	Change Requested
~~39~~ 3971O-01	well A2		change TAT to 48 Hr's Due 7-22-04
			8260 Petroleum = Btex + Oxy's ONLY Can by GCMS

2 DAYS

Due: 7/22/04

Comments:

Date Test Added: 7/20/04

Test Added By: JGradias

Distribution:
Original in the Workorder Folder. Accounting and all involved departments must get a copy of this form.

Environmental Analysis Since 1983

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: [redacted] T. BEAR RANCH / 23027

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sampler: Aaron Bierman AB

Date: 7.19.04

144

Field Point Name (GeoTracker)	Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS				REQUESTED ANALYSIS								
										Total Petroleum Hydrocarbons			Volatile Organics			Additional Analysis		
						40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	TEPH: Diesel with Standard Silica Gel Cleanup	Total Recoverable Petroleum Hydrocarbons	TPH-gasoline, BTEX & MTBE 8260 by EPA Method# ~~8015M & 8020~~	1,2-DCA by EPA Method# 8010	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Total Suspended Solids	Total Dissolved Solids	Metals: Al, Ar, Cd, Cr, Cu, Pb, Ni, Se, Zn, Hg, Nitrate as N
NA	WELL A2	AT DEEP PIPE	7.19.04	8:35am	H_2O	x4		39710-001				X			X			

RELEASED BY:

1.) [signature] Date & Time 7/19/04 @ 5:00pm

2.) _____

3.) _____

4.) _____

5.) _____

RECEIVED BY:

1.) [signature] Date & Time 7/19/04 1705

2.) _____

3.) _____

4.) _____

5.) _____

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

- [ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.*
- [ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*
- [ ] *Please use MDL (Minimum Detection Limit) for any diluted samples*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

CHANGE ORDER FORM

Date Requested: 7-20-04
Date Needed: 7-22-04
Client: WET
Workorder #: 3971O
Project Name or #: T-Beck
Ordered by: Advon

Laboratory ID#	Client ID#	Matrix	Change Requested
3971O-01	Well A2		change TAT to 48 Hr's Due 7-22-04
			8260 Petroleum = Btex + Oxy's ONLY Gas by GCMS

2 DAYS

Due: 7/22/04

Comments:

Date Test Added: 7/20/04
Test Added By: JGradick

Distribution:
Original in the Workorder Folder. Accounting and all involved departments must get a copy of this form.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39709 - 7/23/2004 1:12:35 PM

Order:	39709	**Date Collected:**	7/19/2004
Project Name:	T-Bear Ranch - Franco Well - 351 Andrade Rd (Well K-__)	**Date Received:**	7/19/2004
Project Number:	23027	**P.O. Number:**	23027

Certificate of Analysis - Final Report

On July 19, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	8260Petroleum=Btex+Oxy's ONLY. No Ethanol
	PDF	PDF	
	TPH as Gasoline - GC/MS	GC-MS	Gas by GCMS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 7/23/2004
Date Received: 7/19/2004
Project Name: T-Bear Ranch
Project Number: 23027
P.O. Number: 23027
Sampled By: Client

Certified Analytical Report

Lab # : 39709-001 **Sample ID:** **Franco #1** **Matrix:** Liquid **Sample Date:** 7/19/2004 9:30 AM

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS2040721
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS2040721
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS2040721
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS2040721
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS2040721
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS2040721
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/22/2004	WMS2040721
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS2040721
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS2040721

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.7	64 - 125
Dibromofluoromethane	113.3	23 - 172
Toluene-d8	103.5	70 - 134

Analyzed by: TFulton - 07/22/2004
Reviewed by: MTU - 07/23/04

Method: GC-MS

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/22/2004	WMS2040721

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.4	64 - 125
Dibromofluoromethane	122.3	23 - 172
Toluene-d8	101.2	70 - 134

Analyzed by: TFulton - 07/22/2004
Reviewed by: MTU - 07/23/04

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/22/04

QC Batch ID: WMS2040721
Matrix: Liquid
Date of Analysis: 7/21/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0.5	0.5	µg/L
Diisopropyl Ether	ND	1	5	5	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	97.6	64 - 125
Dibromofluoromethane	109.3	23 - 172
Toluene-d8	103.3	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/22/04

QC Batch ID: WMS2040721
Date of Analysis: 7/21/2004

Method EPA 8260B — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	20.878	LCS	7/21/2004	104.4			60 - 132
Benzene	<0.5	20.0	22.311	LCS	7/21/2004	111.6			77 - 154
Chlorobenzene	<0.5	20.0	20.313	LCS	7/21/2004	101.6			66 - 141
Methyl-t-butyl Ether	<1	20.0	22.371	LCS	7/21/2004	111.9			58 - 127
Toluene	<0.5	20.0	20.136	LCS	7/21/2004	100.7			47 - 137
Trichloroethene	<0.5	20.0	22.156	LCS	7/21/2004	110.8			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	104.0	64 - 125
Dibromofluoromethane	112.9	23 - 172
Toluene-d8	99.6	70 - 134

1,1-Dichloroethene	<0.5	20.0	19.583	LCSD	7/21/2004	97.9	6.4	25	60 - 132
Benzene	<0.5	20.0	21.565	LCSD	7/21/2004	107.8	3.4	25	77 - 154
Chlorobenzene	<0.5	20.0	19.206	LCSD	7/21/2004	96.0	5.6	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	21.622	LCSD	7/21/2004	108.1	3.4	25	58 - 127
Toluene	<0.5	20.0	19.395	LCSD	7/21/2004	97.0	3.7	25	47 - 137
Trichloroethene	<0.5	20.0	21.747	LCSD	7/21/2004	108.7	1.9	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	100.5	64 - 125
Dibromofluoromethane	112.6	23 - 172
Toluene-d8	100.5	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/22/04

QC Batch ID: WMS2040721
Matrix: Liquid
Date of Analysis: 7/21/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	97.7	64 - 125
Dibromofluoromethane	118.3	23 - 172
Toluene-d8	101.2	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by. MTU - 07/22/04

QC Batch ID: WMS2040721
Date of Analysis: 7/21/2004

Method GC-MS — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250.0	259.6	LCS	7/21/2004	103.8			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	98.1	64 - 125
Dibromofluoromethane	117.4	23 - 172
Toluene-d8	100.8	70 - 134

TPH as Gasoline	<25	250.0	267.8	LCSD	7/21/2004	107.1	3.1	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	99.0	64 - 125
Dibromofluoromethane	113.4	23 - 172
Toluene-d8	101.8	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: [redacted] T-BEAR RANCH / 23027

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

Sampler: Aaron Bierman (AB)

Date: 7.19.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Field Point Name (GeoTracker)	Sample Identification	Sample Depth (Ft, BTOC)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH. Diesel with Standard Silica Gel Cleanup	Total Recoverable Petroleum Hydrocarbons	TPH-gasoline, BTEX & MTBE 8260 by EPA Method# ~~8015M & 8020~~	Volatile Organics: 1,2-DCA by EPA Method# 8010	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: ~~Total Suspended Solids~~ HOLD	Total Dissolved Solids	Metals: Al, Ar, Cd, Cr, Cu, Pb, Ni, Se, Zn, Hg, Nitrate as N
NA	FRANCO #1	13.25'	7.19.04	9:30am	H_2O	x 5				24709-001		X			X			
	FRANCO #2	~68'	7.19.04	9:50	H_2O	x5				002						X		

RELEASED BY: / Date & Time / RECEIVED BY: / Date & Time

1.) [redacted] 7/19/04 @ 5:00pm → [redacted] 7/19/04 1705

2.)

3.)

4.)

5.)

SAMPLE CONDITION: (circle 1)

Ambient (Refrigerated) Frozen

Ambient Refrigerated Frozen

Ambient Refrigerated Frozen

Ambient Refrigerated Frozen

Ambient Refrigerated Frozen

NOTES:

☐ If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections

☐ For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260

☐ Please use MDL (Minimum Detection Limit) for any diluted samples.

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

FRANCO #1 : 90' DEEP IRRIGATION WELL

FRANCO #2: 245' DEEP IRRIGATION WELL

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering

120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: [redacted] T-BEAR RANCH / 23027

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

Sampler: Aaron Bierman

Date: 7.19.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Field Point Name (GeoTracker)	Sample Identification	Sample Depth (Ft, BTOC)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel with Standard Silica Gel Cleanup	Total Recoverable Petroleum Hydrocarbons	TPH-gasoline, BTEX & MTBE 8260 by EPA Method#	Volatile Organics: 1,2-DCA by EPA Method# 8010	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: ~~Total Suspended Solids~~ HOLD	Total Dissolved Solids	Metals: Al, Ar, Cd, Cr, Cu, Pb, Ni, Se, Zn, Hg, Nitrate as N
NA	FRANCO #1	13.25'	7.19.04	9:30am	H_2O	x5				24709-001		X			X			
	FRANCO #2	~66'	7.19.04	9:50	H_2O	x5				002						X		

RELEASED BY: / Date & Time / RECEIVED BY: / Date & Time

1.) [signature] 7/19/04 @ 5:40pm [signature] 7/19/04 1705

2.)

3.)

4.)

5.)

SAMPLE CONDITION: (circle 1)

Ambient (Refrigerated) Frozen

Ambient Refrigerated Frozen

Ambient Refrigerated Frozen

Ambient Refrigerated Frozen

Ambient Refrigerated Frozen

NOTES:

☐ If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.

☐ For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260.

☐ Please use MDL (Minimum Detection Limit) for any diluted samples

Please send certified results via *.pdf to laboratory@weber-hayes.com.

FRANCO #1 : 90' DEEP IRRIGATION WELL

FRANCO #2: 245' DEEP IRRIGATION WELL

Documents (Group Documents)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders **Search:** [redacted] Advanced Search

1 document

All Folders | Group Documents

	Title	File	Size	Posted By	Modified
☐	**ACEH Directive Letters**		5 items		
☐	**Boring Logs**		5 items		
☐	**FIGURES**		14 items		
☐	**PHOTOS**		4 items		
☐	**REPORTS**		10 items		
☐	**SCM-docs**		5 items		
☐	**TABLES-&-LAB**		7 items		
☐	Site Conceptual Model (SCM) rev. Nov-04	Sunol-Tree-Gas-SCM-rev-Nov-04.doc	255.0 kb	Pat Hoban	Nov 15, 2004 *3:35 PM*

1 document

[redacted]

Documents (ACEH Directive Letters)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders **Search:** [redacted] Advanced Search

5 documents

All Folders | Group Documents / ACEH Directive Letters

	Title	File	Size	Posted By	Modified
☐	2002-06-27_DIR_L	2002-06-27_DIR_L.pdf	86.8 kb	Robert Schultz	Jun 21, 2004 *10:23 AM*
☐	2002-08-29_DIR_L	2002-08-29_DIR_L.pdf	34.8 kb	Robert Schultz	Jun 21, 2004 *10:23 AM*
☐	2003-03-20_DIR_L	2003-03-20_DIR_L.pdf	253.1 kb	Robert Schultz	Jun 21, 2004 *10:24 AM*
☐	2003-06-13_DIR_L	2003-06-13_DIR_L.pdf	134.5 kb	Robert Schultz	Jun 21, 2004 *10:24 AM*
☐	2003-10-31_DIR_L	2003-10-31_DIR_L.pdf	122.4 kb	Robert Schultz	Jun 21, 2004 *10:25 AM*

5 documents

[redacted]

Documents (Boring Logs)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders **Search:** [redacted] Advanced Search

5 documents

All Folders | Group Documents / Boring Logs

	Title	File	Size	Posted By	Modified
☐	Cross-Section Well Logs & Zone 7 Map	Cross-Section Well Logs & Zone 7 Map.pdf	1.9 MB	Pat Hoban	Jun 25, 2004 *1:55 AM*
☐	DWR LOGS-Vicinity	DWR LOGS-Vicinity.pdf	2.7 MB	Pat Hoban	Jun 25, 2004 *1:57 AM*
☐	Sunol Tree Gas Station - ON-SITE BORING LOGS	ON-SITE BORING LOGS.pdf	434.2 kb	Pat Hoban	Oct 15, 2004 *4:03 AM*
☐	T Bear Piezometer & DPs	Logs for PZ's & DP-1.pdf	437.2 kb	Pat Hoban	Oct 15, 2004 *4:10 AM*
☐	Video-Log Kelsoe property-2003-2-27	Video-Log Kelsoe property-2003-2-27 .pdf	183.7 kb	Pat Hoban	Jun 25, 2004 *2:01 AM*

5 documents

[redacted]

Documents (FIGURES)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders Search: [redacted] Advanced Search

11 documents

All Folders | Group Documents / FIGURES

	Title	File	Size	Posted By	Modified
☐	**Folder Settings**		8 items		
☐	**Gas-Station**		9 items		
☐	**Piezometer Install & Transducer Data**		14 items		
☐	1-Locate	1-Locate.pdf	528.5 kb	Pat Hoban	Jun 25, 2004 *2:01 AM*
☐	2-Topograph-3D	2-Topograph-3D.pdf	337.8 kb	Pat Hoban	Jun 25, 2004 *2:02 AM*
☐	3-gw-basins	3-gw-basins.pdf	321.3 kb	Pat Hoban	Jun 25, 2004 *2:02 AM*
☐	4-aerial-vicinity	4-aerial-vicinity.pdf	428.2 kb	Pat Hoban	Jun 25, 2004 *2:02 AM*
☐	5-Cross-Section - Local, Geologic (rev)	5-cross-Section.pdf	428.2 kb	Pat Hoban	Nov 15, 2004 *8:36 AM*
☐	6-Site-Map	6-Site-Map.pdf	547.8 kb	Pat Hoban	Jun 25, 2004 *2:03 AM*
☐	desktop	desktop.ini	481 bytes	Pat Hoban	Jun 25, 2004 *2:04 AM*
☐	Geologic X-Section (Bulletin 118-2)	Geologic X-Section (Bulletin 118-2).pdf	641.7 kb	Pat Hoban	Jun 25, 2004 *2:05 AM*
☐	street map	street map.pdf	49.8 kb	Pat Hoban	Jun 25, 2004 *2:06 AM*
☐	Survey map of PZ elevations	survey-map_8-13-2004.pdf	142.1 kb	Pat Hoban	Nov 15, 2004 *8:37 AM*
☐	Tax-assessors map	Tax-assessors map.pdf	225.9 kb	Pat Hoban	Jun 25, 2004 *2:06 AM*

11 documents

Documents (Gas-Station)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title show folders Search: Advanced Search

8 documents

All Folders | Group Documents / FIGURES / Gas-Station

	Title	File	Size	Posted By	Modified
☐	**Folder Settings**		7 items		
☐	2002-04-16 Geoprobe Sampling-Site Map	2002-04-16 Geoprobe Sampling-Site Map.pdf	97.1 kb	Pat Hoban	Jun 25, 2004 *2:04 AM*
☐	2002-04-16 UST Removal Report-Site Map	2002-04-16 UST Removal Report-Site Map.pdf	66.4 kb	Pat Hoban	Jun 25, 2004 *2:04 AM*
☐	2002-05-09 UST Removal & Interim S & GW Remediation Report-FIGUR	2002-05-09 UST Removal & Interim S & GW Remediation Report-FIGURES.pdf	217.2 kb	Pat Hoban	Jun 25, 2004 *2:04 AM*
☐	2002-08-27 Workplan for Preliminary Site Assessment-FIGURE	2002-08-27 Workplan for Preliminary Site Assessment-FIGURE.pdf	41.1 kb	Pat Hoban	Jun 25, 2004 *2:04 AM*
☐	2003-05-06 Well Sampling Report-FIGURE	2003-05-06 Well Sampling Report-FIGURE.pdf	69.9 kb	Pat Hoban	Jun 25, 2004 *2:04 AM*
☐	2003-05-08 Work Plan for Soil & Water Investigation-FIGURE	2003-05-08 Work Plan for Soil & Water Investigation-FIGURE.pdf	222.7 kb	Pat Hoban	Jun 25, 2004 *2:04 AM*
☐	2003-3-14 Preliminary Site Assessment Report-FIGURE	2003-3-14 Preliminary Site Assessment Report-FIGURE.pdf	432.2 kb	Pat Hoban	Jun 25, 2004 *2:05 AM*
☐	desktop	desktop.ini	273 bytes	Pat Hoban	Jun 25, 2004 *2:05 AM*

8 documents

Documents (Piezometer Install & Transducer Data)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders Search: Advanced Search

14 documents

All Folders | Group Documents / FIGURES / Piezometer Install & Transducer Data

	Title	File	Size	Posted By	Modified
☐	Fig 10: CHART - PZ-2a recovery following a Pumping Cycle	Fig-10- Chart of PZ-2a-drrawdown and T Bear flow.pdf	15.9 kb	Pat Hoban	Oct 15, 2004 *3:52 AM*
☐	Fig 12: CHART - PZ-2b influence during Pumping Cycles	Fig-12- Chart of PZ-2b-drrawdown and T Bear flow.pdf	42.1 kb	Pat Hoban	Oct 15, 2004 *3:53 AM*
☐	Fig 13: Pump Test Analysis - Shallow zone (PZ-2a)	Fig--13-Shallow Aquifer Characteristics (PZ-2a).pdf	212.2 kb	Pat Hoban	Oct 15, 2004 *3:55 AM*
☐	Fig 14: Pump Test Analysis - Deeper zone (PZ-2b)	Fig--14-Deeper Aquifer Characteristics (PZ-2b).pdf	198.4 kb	Pat Hoban	Oct 15, 2004 *3:56 AM*
☐	Fig 15: Pump Test Analysis - T Bear Pumping Well	Fig--15- T Bear Well -Aquifer Characteristics.pdf	197.3 kb	Pat Hoban	Oct 15, 2004 *3:57 AM*
☐	Fig 2: CHART - MTBE Concentrations in T Bear Well	Fig-2-Chart-Carbon-System Results.pdf	15.0 kb	Pat Hoban	Oct 15, 2004 *3:38 AM*
☐	Fig 3: CHART- GW Fluctuations in PZs	Fig-3-Chart-Piezometer-GW-Level-Data.pdf	14.6 kb	Pat Hoban	Oct 15, 2004 *3:40 AM*
☐	Fig 6: 3-D Topo Map of Regional Gradient Map	Fig-6-Topographic-3D-Map.pdf	341.5 kb	Pat Hoban	Oct 15, 2004 *3:45 AM*
☐	Fig 7: CHART - T Bear Recorded Flow - Pumping Cycles	Fig-7- Chart of PZ-2a influence by T Bear Pumpiing.pdf	24.0 kb	Pat Hoban	Oct 15, 2004 *3:47 AM*
☐	Fig 8: CHART - T Bear Recorded Flow - One 4 hr Pumping Cycle	Fig-8- Chart of T Bear Flow v Drawdown.pdf	13.9 kb	Pat Hoban	Oct 15, 2004 *3:48 AM*
☐	Fig 9: CHART - Effects of T Bear	Fig-9- Chart of T Bear Pumpiing	24.1 kb	Pat Hoban	Oct 15, 2004 *3:50 AM*

	Pumping Cycles on PZ-2a	Flow Rate.pdf			
☐	Figure: GW-Gradient, Deeper Saturated Zone	Deeper-GW-Gradient w tbear_8-5-04.pdf	318.0 kb	Pat Hoban	Nov 15, 2004 *8:31 AM*
☐	Figure: GW-Gradient, Shallow Zone	ShallowGW-Gradient w tbear_8-5-04.pdf	343.6 kb	Pat Hoban	Nov 15, 2004 *8:30 AM*
☐	Figure: Site Map and MTBE Results	PZ-Groundwater-Results.pdf	685.1 kb	Pat Hoban	Nov 15, 2004 *8:29 AM*

14 documents

Documents (PHOTOS)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders **Search:** [redacted] Advanced Search

4 documents

All Folders | Group Documents / PHOTOS

	Title	File	Size	Posted By	Modified
☐	2002-05-09 UST Removal Report-PHOTOS	2002-05-09 UST Removal Report-PHOTOS.pdf	86.8 kb	Pat Hoban	Jun 25, 2004 *2:07 AM*
☐	2004-July Driven Probe Coring & Piezometer Installation	2004-July-Piezometers.pdf	762.6 kb	Pat Hoban	Aug 11, 2004 *6:02 PM*
☐	Aug-2003 T-Bear Ranch Inspection.	Aug-2003 T-Bear Ranch Inspection..pdf	1.7 MB	Pat Hoban	Jun 25, 2004 *2:07 AM*
☐	Carbon System	Carbon System.pdf	661.6 kb	Pat Hoban	Jun 25, 2004 *2:08 AM*

4 documents

[redacted]

Documents (REPORTS)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders Search: [redacted] Advanced Search

7 documents

All Folders | Group Documents / REPORTS

	Title	File	Size	Posted By	Modified
☐	**Folder Settings**		7 items		
☐	**Research and Guidance**		6 items		
☐	**Sunol Tree Gas Station Reports**		10 items		
☐	Carbon System Monitoring Rpt	2004-Sept-Carbon-O&M Report.pdf	2.6 MB	Pat Hoban	Sep 3, 2004 *8:37 AM*
☐	desktop	desktop.ini	273 bytes	Pat Hoban	Jun 25, 2004 *2:09 AM*
☐	FINAL - Diagnosis of T-Bear Well (Geophysical+Sampling)	2004-08_Geophysical Report-Final.pdf	1.4 MB	Pat Hoban	Aug 25, 2004 *9:42 AM*
☐	GW Velocity Calc Sheet	GW-velocity calcs.pdf	11.9 kb	Pat Hoban	Oct 15, 2004 *4:00 AM*
☐	Lab Sheets for Carbon System Monitoring Report	2004-Sept-Appendix A -Lab Results.pdf	1.9 MB	Pat Hoban	Sep 3, 2004 *8:42 AM*
☐	Summary of Aquifer Test Data	Summary Aqifer Characteiristics.pdf	15.0 kb	Pat Hoban	Oct 15, 2004 *3:59 AM*
☐	Workplan: Preliminary Subsurface Assessment of Contaminant Plume	Workplan-DPs_3-rev_.pdf	978.1 kb	Pat Hoban	Aug 11, 2004 *5:53 PM*

7 documents

[redacted]

Documents (Research and Guidance)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders **Search:** [redacted] Advanced Search

5 documents

All Folders | Group Documents / REPORTS / Research and Guidance

	Title	File	Size	Posted By	Modified
☐	**Folder Settings**		8 items		
☐	Cal-EPA-Guidelines for Investigation & Cleanup of MTBE-&-Ether-	Cal-EPA-Guidelines for Investigation & Cleanup of MTBE-&-Ether-.pdf	71.9 kb	Pat Hoban	Jun 25, 2004 *2:09 AM*
☐	Charaterizing MTBE Sites (Einarson, API-2000)	Charaterizing MTBE Sites (Einarson, API-2000).pdf	1.8 MB	Pat Hoban	Jun 25, 2004 *2:10 AM*
☐	desktop	desktop.ini	481 bytes	Pat Hoban	Jun 25, 2004 *2:12 AM*
☐	GW-Remediation Strategies Tool-API	GW-Remediation Strategies Tool-API.pdf	1.3 MB	Pat Hoban	Jun 25, 2004 *2:12 AM*
☐	Sunol GW-Basin Description	Sunol GW-Basin Description.pdf	298.5 kb	Pat Hoban	Jun 25, 2004 *2:13 AM*

5 documents

[redacted]

Documents (Sunol Tree Gas Station Reports)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders **Search:** [redacted] Advanced Search

9 documents

All Folders | Group Documents / REPORTS / Sunol Tree Gas Station Reports

	Title	File	Size	Posted By	Modified
☐	**Folder Settings**		8 items		
☐	2002-04-16 Geoprobe Sampling	2002-04-16 Geoprobe Sampling.pdf	353.0 kb	Pat Hoban	Jun 25, 2004 *2:14 AM*
☐	2002-04-16 Sample of Tanks	2002-04-16 Sample of Tanks.pdf	362.8 kb	Pat Hoban	Jun 25, 2004 *2:14 AM*
☐	2002-04-16 UST Removal Report	2002-04-16 UST Removal Report.pdf	519.5 kb	Pat Hoban	Jun 25, 2004 *2:14 AM*
☐	2002-05-09 UST Removal & Interim S & GW Remediation Report	2002-05-09 UST Removal & Interim S & GW Remediation Report.pdf	3.9 MB	Pat Hoban	Jun 25, 2004 *2:15 AM*
☐	2002-08-27 Workplan for Preliminary Site Assessment	2002-08-27 Workplan for Preliminary Site Assessment.pdf	742.0 kb	Pat Hoban	Jun 25, 2004 *2:19 AM*
☐	2003-03-14 Preliminary Site Assessment Report	2003-03-14 Preliminary Site Assessment Report.pdf	13.6 MB	Pat Hoban	Jun 25, 2004 *2:20 AM*
☐	2003-05-08 Work Plan for Soil & Water Investigation	2003-05-08 Work Plan for Soil & Water Investigation.pdf	1.1 MB	Pat Hoban	Jun 25, 2004 *2:35 AM*
☐	desktop	desktop.ini	481 bytes	Pat Hoban	Jun 25, 2004 *2:36 AM*
☐	Water Well Sampling Report	2003-05-06 Well Sampling Report.pdf	637.1 kb	Pat Hoban	Jun 27, 2004 *7:47 PM*

9 documents

Documents (SCM-docs)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders **Search:** [redacted] Advanced Search

5 documents

All Folders | Group Documents / SCM-docs

	Title	File	Size	Posted By	Modified
☐	Chronology	Chronology.pdf	33.2 kb	Pat Hoban	Jun 28, 2004 *2:03 AM*
☐	GeoTracker LUFT Sites	Mission-Valley Rock-GeoTracker LUFT INFO.pdf	170.0 kb	Pat Hoban	Jun 28, 2004 *1:44 AM*
☐	Groundwater Basin Description	REGIONAL DESCRIPTION OF GROUNDWATER BASIN.pdf	93.7 kb	Pat Hoban	Jun 28, 2004 *1:40 AM*
☐	References	REFERENCES.pdf	9.0 kb	Pat Hoban	Jun 28, 2004 *2:02 AM*
☐	Regional Geology	REGIONAL Geology.pdf	29.0 kb	Pat Hoban	Jun 28, 2004 *2:04 AM*

5 documents

[redacted]

Documents (TABLES-&-LAB)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders Search: [redacted] Advanced Search

4 documents

All Folders | Group Documents / TABLES-&-LAB

	Title	File	Size	Posted By	Modified
☐	**Folder Settings**		7 items		
☐	**Lab-Sheets**		20 items		
☐	**Piezometer Monitoring**		3 items		
☐	desktop	desktop.ini	266 bytes	Pat Hoban	Jun 25, 2004 *2:36 AM*
☐	TABLE-Carbon-System-&-TBear-Well-Testing	TABLE-Carbon-System-&-TBear-Well-Testing.pdf	24.0 kb	Pat Hoban	Jun 25, 2004 *2:46 AM*
☐	TABLES-Sunol Tree Gas Station	TABLES-Sunol Tree Gas Station.pdf	398.8 kb	Pat Hoban	Jun 25, 2004 *2:46 AM*
☐	TABLES-Water Supply Well Sampling Report-2003-05-06	TABLES-Water Supply Well Sampling Report-2003-05-06 .pdf	382.3 kb	Pat Hoban	Oct 19, 2004 *3:31 PM*

4 documents

[redacted]

Documents (Lab-Sheets)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title [redacted] ☑ show folders Search: [redacted] Advanced Search

19 documents

All Folders | Group Documents / TABLES-&-LAB / Lab-Sheets

	Title	File	Size	Posted By	Modified
☐	**Folder Settings**		7 items		
☐	2002-04-16 Geoprobe Sampling-LAB	2002-04-16 Geoprobe Sampling-LAB.pdf	154.8 kb	Pat Hoban	Jun 25, 2004 *2:36 AM*
☐	2002-04-16 Sample of Tanks-LAB	2002-04-16 Sample of Tanks-LAB.pdf	330.7 kb	Pat Hoban	Jun 25, 2004 *2:37 AM*
☐	2002-04-16 UST Removal Report-LAB	2002-04-16 UST Removal Report-LAB.pdf	423.8 kb	Pat Hoban	Jun 25, 2004 *2:37 AM*
☐	2002-05-09 UST Removal & Interim S & GW Remediation Report-LAB	2002-05-09 UST Removal & Interim S & GW Remediation Report-LAB.pdf	1.8 MB	Pat Hoban	Jun 25, 2004 *2:38 AM*
☐	2002-08-27 Water Sample Collected on 8-20-02	2002-08-27 Water Sample Collected on 8-20-02.pdf	148.4 kb	Pat Hoban	Jun 25, 2004 *2:40 AM*
☐	2003-02-13 Domestic Well Sampled 2-23-03	2003-02-13 Domestic Well Sampled 2-23-03.pdf	42.0 kb	Pat Hoban	Jun 25, 2004 *2:40 AM*
☐	2003-03-10 VOC Analysis- T Bear & Golf Course 3-3-03	2003-03-10 VOC Analysis- T Bear & Golf Course 3-3-03.pdf	89.4 kb	Pat Hoban	Jun 25, 2004 *2:40 AM*
☐	2003-03-14 Preliminary Site Assessment Report-LAB	2003-03-14 Preliminary Site Assessment Report-LAB.pdf	1.5 MB	Pat Hoban	Jun 25, 2004 *2:40 AM*
☐	2003-05-06 Well Sampling Report-LAB	2003-05-06 Well Sampling Report-LAB.pdf	479.6 kb	Pat Hoban	Jun 25, 2004 *2:42 AM*
	2003-11-04 Water Sampling		215.1 kb	Pat Hoban	Jun 25, 2004 *2:42 AM*

☐	Results of 10-24-03	2003-11-04 Water Sampling Results of 10-24-03.pdf			
☐	2003-12-09 Analytical Data of Treatment System for 12-02-03	2003-12-09 Analytical Data of Treatment System for 12-02-03.pdf	284.9 kb	Pat Hoban	Jun 25, 2004 *2:42 AM*
☐	2004-01-14 Analytical Data of Treatment System for 1-6-04	2004-01-14 Analytical Data of Treatment System for 1-6-04.pdf	641.5 kb	Pat Hoban	Jun 25, 2004 *2:43 AM*
☐	2004-02-13 Analytical Data of Treatment Systemfor 1-27-04	2004-02-13 Analytical Data of Treatment Systemfor 1-27-04.pdf	664.8 kb	Pat Hoban	Jun 25, 2004 *2:43 AM*
☐	2004-03-01 Analytical Data of Treatment System for 2-17-04	2004-03-01 Analytical Data of Treatment System for 2-17-04.pdf	617.2 kb	Pat Hoban	Jun 25, 2004 *2:44 AM*
☐	2004-03-18 Analytical Data for Treatment System for 3-9-04	2004-03-18 Analytical Data for Treatment System for 3-9-04.pdf	600.9 kb	Pat Hoban	Jun 25, 2004 *2:44 AM*
☐	2004-05-21 Analytical Data for Treatment System-for 5-21-04	2004-05-21 Analytical Data for Treatment System-for 5-21-04.pdf	142.5 kb	Pat Hoban	Jun 25, 2004 *2:45 AM*
☐	2004-10-14 system analytical	101404 system analytical rpt.pdf	393.6 kb	Robert Schultz	Nov 3, 2004 *8:41 AM*
☐	desktop	desktop.ini	273 bytes	Pat Hoban	Jun 25, 2004 *2:45 AM*
☐	Water Supply Well Testing (Local)	Water Well Testing (G1 & A2 & K-_)).pdf	1.8 MB	Pat Hoban	Jul 23, 2004 *5:06 PM*

19 documents

Documents (Piezometer Monitoring)

Exchange files of all types in the Document Manager. Upload, edit, and manage these files directly from Windows Explorer when you set up a Web Folder for your intranet. Learn more

Send Link | Refresh

[redacted]

Sort By: Title ☑ show folders **Search:** [redacted] Advanced Search

3 documents

All Folders | Group Documents / TABLES-&-LAB / Piezometer Monitoring

	Title	File	Size	Posted By	Modified
☐	PZ-Water Levels & Construction Specs	Table 2-Piezometer-Data.pdf	11.4 kb	Pat Hoban	Oct 15, 2004 *4:15 AM*
☐	Table 1: Groundwater Results (PZs+T Bear Well)	Table 1-GWResults.pdf	16.0 kb	Pat Hoban	Oct 15, 2004 *4:15 AM*
☐	Table 3: Carbon Treatment System Test Results	Table 3-Carbon-System Test Results.pdf	17.8 kb	Pat Hoban	Oct 15, 2004 *4:17 AM*

3 documents

[redacted]

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100

AERIAL VICINITY MAP
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

Summary of Aquifer Test Data
Sunol Tree Gas Station
Alameda County Environmental Health

The following is a summary of pumping well, and observation well data for quantifying aquifer characteristics. Data provide insight on the pumping well (T-Bear Well), and the shallow and deeper aquifers beneath T-Bear Ranch and Sunol Tree Gas Station.

T-Bear Well:

Average pumping rate is 7 5 gpm.

Average daily water consumption is approximately 6,000 gallons per day

The T-Bear well does not have a consistent pumping cycle The pumping is sporadic, with different duration cycles.

The T-Bear well casing storage effects become negligible after 3.6 minutes after pump on.

The T-Bear well generally has limited drawdown during its pumping cycles, on the order of 1.7 feet.

The T-Bear well recovers quickly (although it likely due in partl to the lack of a check value on the pump column.

Testing indicates the T-Bear well is screened across more than one aquifer.

T-Bear well Transmissivity was calculated to be 2.81×10^{2} ft ^{2}/day (equivalent to a gravel soil type)

T-Bear well Hydraulic conductivity was calculated to be 111 ft/day.

Shallow Aquifer:

Collected data indicates the shallow aquifer is unconfined to semiconfined (based on recovery data and calculation of storage coefficient at PZ-2a[1]).

[1] :It should be noted that the data set may be limited (I.e. the pumping test not run for long enough to reveal actual aquifer characteristics)

Total drawdown in PZ-2a during one pumping cycle was 0.24 feet.

Recovery of the shallow aquifer is relatively slow compared to the deeper aquifer (but consistent with a gravel).

The shallow aquifer Transmissivity was calculated to be 9.97×10^{2} ft ^{2}/day

The shallow aquifer Hydraulic Conductivity was calculated to be 30.6 ft/day (equivalent to a gravel soil type).

The shallow aquifer storage coefficient was calculated to be $3\ 73 \times 10^{3}$ (indicative of an unconfined aquifer).

The hydraulic gradient of the shallow aquifer was calculated to be 0.008 ft per ft in a southeasterly direction (based on 8/2/04 data set).

The groundwater flow velocity for the shallow aquifer was calculated to be 1.08 ft/day equivalent to 394.80 ft/yr.

Deep Aquifer:

The deep aquifer appears to be confined, receives recharge (leakage from the above aquifer) based on recovery data and calculation of storage coefficient from PZ-2b.

Total drawdown in PZ-2b during one pumping cycle was 0.66 feet

Recovery of the deeper aquifer is fairly rapid, recovering in 24 minutes after pump off.

The deep aquifer Transmissivity was calculated to be 2.02×10^{3} ft^{2}/day

The deep aquifer Hydraulic Conductivity was calculated to be 62 1 ft/day (also equivalent to a gravel soil type) .

The deep aquifer storage coefficient was calculated to be 2.83×10^{-2}.(indicative of a confined aquifer)

The hydraulic gradient of the deeper aquifer (based on 8/2/04 data set) was calculated to be 0.0006 ft per ft in a south to southeasterly direction. This is an order of magnitude flatter than the shallow aquifer

The groundwater flow velocity for the deeper aquifer was calculated to be 0.05 ft/day equivalent to 20 03 ft/yr.

It should be noted that this analysis is based on a limited data set with short duration, sporadic pumping cycles.

The data was analyzed in part using Waterloo Hydrogeologic AquiferTest Method Analysis version 3.5.

References include: **Groundwater and Wells, Second Edition, Driscol, 1985**

Groundwater, Frezze and Cherry, 1979

Velocity of Groundwater Flow
Sunol Tree Gas Station
Alameda County Environmental Health

$$V = \frac{K\,(h_1 - h_2)}{\frac{L}{n}}$$

Where:

V = Actual velocity of groundwater flow through the pore space of material being investigated.

K = Hydraulic conductivity (ft/day).
Hydraulic conductivity determined by analyzing pumping data (T-Bear Well) and use of observation wells (PZ-2a, PZ-2b) at T-Bear Ranch.

WELL AND PIEZOMETER CHARACTERISTICS:

T-Bear Well: Total Depth @ 40' bgs; Mills Knife Perforations @ 4-39' bgs; Average Flow Rate @ 7.5 gpm
PZ-2a: Total Depth @ 29' bgs; Factory Slotted Perforations (0 010) @ 24-29' bgs.
PZ-2b: Total Depth @ 49' bgs; Factory Slotted Perforations (0 010) @ 44-49' bgs.

HYDRAULIC CONDUCTIVITY VALUES:

Hydraulic Conductivity Values Determined by Using AquiferTest Method Analysis Version 3.5. See supporting documentation - attached.
Two Analysis Methods Used: Cooper-Jacob Method Analysis and Theis Recovery Method Analysis

	Cooper-Jacob		Theis Recovery	
	ft/day	cm/sec	ft/day	cm/sec
T-Bear Well.	111 ft/day	3.9×10^{-2} cm/sec	Inconclusive data	NA
PZ-2a.	30 6 ft/day	1.1×10^{-2} cm/sec	42.6 ft/day	$1\ 5 \times 10^{-2}$ cm/sec
PZ-2b.	62 1 ft/day	$2\ 2 \times 10^{-2}$ cm/sec	41.1 ft/day	1.4×10^{-2} cm/sec

K values calculated are consistent with a Gravel Groundwater, Freeze and Cherry, 1979).
For this analysis, Cooper-Jacob K values will be used because observation well data is not affected by minor changes in pumping discharge caused by variations in pump speed, or by uncertain measurements of the true groundwater level because of turbulence in the well bore, and because PZ-2a recovery data was incomplete prior to the next pumping cycle.

Hydraulic Gradient Data:

Groundwater elevation data measured on August 2, 2004
Sitemap surveyed by McGregor Surveying on 7/23/04

$h_{1shallow}$ = head (in feet) at PZ-3a is 90.46 ft (site datum) - Upgradient piezometer
$h_{2shallow}$ = head (in feet) at PZ-2a is 88 46 ft (site datum) - Downgradient piezometer

h_{1deep} = head (in feet) at PZ-3b is 86.92 ft (site datum) - Upgradient piezometer
h_{2deep} = head (in feet) at PZ-2b is 86.87 ft (site datum) - Downgradient piezometer

$L_{shallow}$ = Distance between shallow piezeomters (PZ-3a and PZ-2a) h_1-h_2 is 246 ft as measured from upgradient to downgradient in the direction of groundwater flow.
L_{deep} = Distance between deep piezeomters (PZ-3b and PZ-2b) h_1-h_2 is 245 ft as measured from upgradient to downgradient in the direction of groundwater flow.

Estimation of Soil Porosity:

n = Soil porosity is based on a sand and gravel mixture of fluvial deposition
n = sand and gravel mixture within the range of 10% to 35% or 0.1 to 0.35 (Groundwater and Wells, Second Edition, Driscol, 1995, pg. 67).
For this analysis, an average soil porosity of 0.23 will be used.

CALCULATE GROUNDWATER FLOW VELOCITY IN THE SHALLOW AND DEEP AQUIFER ZONE:

Shallow Aquifer Zone	Deep Aquifer Zone
$V = \frac{30.6\ \text{ft/day}\ (90.46\ \text{ft} - 88.46\ \text{ft})}{\frac{246\ \text{ft}}{0.23}}$	$V = \frac{62.1\ \text{ft/day}\ (86.92\ \text{ft} - 86.87\ \text{ft})}{\frac{245\ \text{ft}}{0.23}}$
$V = \frac{30.6\ \text{ft/day}\ (2\ \text{ft})}{\frac{246\ \text{ft}}{0\ 23}}$	$V = \frac{62.1\ \text{ft/day}\ (0\ 05\ \text{ft})}{\frac{245\ \text{ft}}{0.23}}$
$V = \frac{61.2\ \text{ft}^2\text{/day}}{\frac{246\ \text{ft}}{0.23}}$	$V = \frac{3\ 105\ \text{ft}^2\text{/day}}{\frac{245\ \text{ft}}{0.23}}$
$V = \frac{0.24878\ \text{ft/day}}{0.23}$	$V = \frac{0.01262\ \text{ft/day}}{0\ 23}$
V = 1.08 ft/day equivalent to 394.80 ft/yr	V = 0.05 ft/day or 20 03 ft/yr

TABLE 1

Groundwater Results

Sunol Tree Gas Station Fuel Release
3004 Andrade Road, Sunol

All water results in parts per billion (ug/kg)

Investigation	*Date*	*Sample Identification*	*Sample Location (feet)*	*Total Petroleum Hydrocarbons as GASOLINE*	*Volatile Organic Compounds*										*COMMENTS*
					Benzene	*Toluene*	*Ethylbenzene*	*Xylenes*	FUEL OXYGENATES						
									MTBE (2)	*TBA*	*ETBE*	*DIPE*	*TAME*	*Ethanol*	
PIEZOMETER INSTALLATION	7/21/2004	PZ-1	12	130	< 1	< 1	< 1	< 2	230	< 20	< 10	< 10	< 10	< 200	
	7/22/2004		20	34	ND	ND	ND	ND	13	ND	ND	ND	ND	ND	
	7/21/2004		42	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	7/23/2004	PZ-2	20	66	ND	ND	ND	ND	65	ND	ND	ND	ND	ND	
	7/23/2004		24	73	ND	ND	ND	ND	74	ND	ND	ND	ND	ND	
	7/22/2004		44	65	ND	ND	ND	ND	60	ND	ND	ND	ND	ND	
	7/23/2004	PZ-3	16	44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	7/23/2004		44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	7/21/2004	DP-1	16	ND	ND	ND	ND	ND	9.2	ND	ND	ND	ND	ND	
	7/21/2004		41	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
T-BEAR WELL -Discrete Sampling-	7/19/2004	T-Bear Well	8	ND	ND	ND	ND	ND	15	ND	ND	ND	ND		
	6/29/2004	T-Bear Well	15	ND	ND	ND	ND	ND	11	ND	ND	ND	ND		
	6/29/2004	T-Bear Well	22	ND	ND	ND	ND	ND	17	ND	ND	ND	ND		
	6/29/2004	T-Bear Well	30	ND	ND	ND	ND	ND	19	ND	ND	ND	ND		
	6/29/2004	T-Bear Well	38	ND	ND	ND	ND	ND	20	ND	ND	ND	ND		
NEARBY WATER PRODUCTION WELLS	7/21/2004	G-1	3111 Andrade Rd	ND	---	---	---	---	ND	ND	ND	ND	ND		
	7/19/2004	A-2	3220 Andrade Rd	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	7/19/2004	K-?	3511 Andrade Rd	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Regulatory Limits for Groundwater (AIs or MCLs) (1) :				Not Established	1	150	300	1750	13	12	Not Established				
Laboratory's Practical Quantitation Limits (PQL's) (2):				50	0.5	0.5	0.5	0.5	0.5	5	0.5	0.5		0.5	

NOTES:

Bold Print = *Bold Print indicates concentrations are above regulatory Action Levels.*
< # = *Detection limit elevated due to sample dilution and compound not detected at or above detection limit reported.*
ND = *Not detected at or above the lab's practical quantitation limit.*
--- = *Sample not analyzed for this compound(s).*
1 = Water quality goals for groundwater are based on State DHS-established Maximum Contaminant
2 = MTBE detections are confirmed by EPA Method #8260.
3 = The Certified lab reported the TPH as gasoline value is the result of high concentrations of MTBE

MTBE = Methyl-tert-Butyl Ether
TAME = Tert-amyl methyl ether
ETBE = Ethyl tert-butyl ether

DIPE = Di-isopropyl ether
TBA = Tert-butyl alcohol

TABLE 2

Piezometer Water Levels and Construction Specifications

Sunol Tree Gas Station Fuel Release
3004 Andrade Road, Sunol

All measurements are in feet

Monitoring Point Information			*Measured Groundwater*		
Sample Identification	*Well Screen Interval (feet below TOC)*	*Surveyed Top-of-Casing (TOC) Measurement (in Feet)*	*Date*	*Depth below TOC (feet, bgs)*	*Elevation (relative to site datum)*
PZ-1a	12 - 17	101.25	8-Sep-04	11 93	89 32
			13-Aug-04	10 95	90 30
			5-Aug-04	10 65	90.60
			2-Aug-04	10 41	90 84
			25-Jul-04	10 22	91 03
PZ-1b	41.5 - 46.5	101.37	8-Sep-04	15 69	85.68
			13-Aug-04	14.79	86.58
			5-Aug-04	14 68	86 69
			2-Aug-04	14 56	86.81
			25-Jul-04	14 84	86 53
PZ-2a	24 - 29	94 69	8-Sep-04	7 58	87 11
			13-Aug-04	6 53	88 16
			5-Aug-04	6 21	88.48
			2-Aug-04	6 05	88 64
			25-Jul-04	6.10	88 59
PZ-2b	44 - 49	94.69	8-Sep-04	8.95	85 74
			13-Aug-04	7 95	86.74
			5-Aug-04	7 95	86 74
			2-Aug-04	7 82	86 87
			25-Jul-04	8 25	86 44
PZ-3a	16 - 21'	98.15	8-Sep-04	9 64	88 51
			13-Aug-04	8.64	89 51
			5-Aug-04	8 00	90 15
			2-Aug-04	7 69	90 46
			25-Jul-04	6 57	91 58
PZ-3b	44 - 49	97.91	8-Sep-04	12 25	85 66
			13-Aug-04	11.31	86 60
			5-Aug-04	11 18	86 73
			2-Aug-04	10 99	86 92
			25-Jul-04	11 02	86 89

file: 23027/tables/piezometer-data

Table 3

Carbon Treatment System Sample Results

T Bear Ranch Domestic Well
3000 Andrade Road, Sunol
All water results in parts per billion (ug/kg)

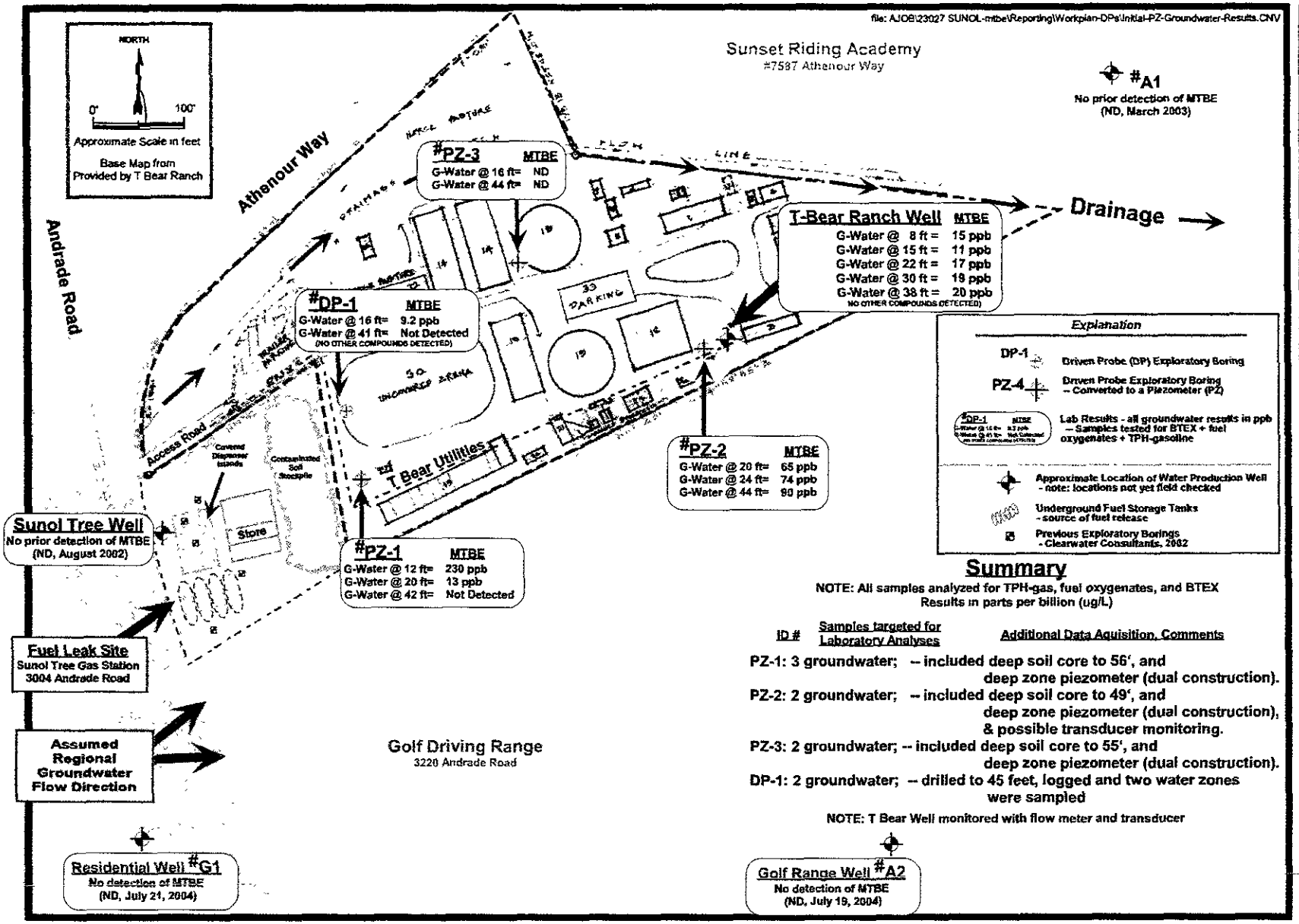
Investigation	Date	Extracted Groundwater (gallons)	Sample Location (ID#)	Total Petroleum Hydrocarbons as GASOLINE	Volatile Organic Compounds										COMMENTS
					Benzene	Toluene	Ethylbenzene	Xylenes	FUEL OXYGENATES: MTBE (7)	TBA	ETBE	DIPE	TAME	Ethanol	
On-going Carbon Treatment System Testing(1)	Sept-8, 2004 (+36 days after changeout)	2,783,174	Influent (Pre)	—	ND	ND	ND	<1	14	< 10	<5	<5	<5	<100	Residual Chlorine = 0 15 ppm (at Retention Tank)
			Mid	—	ND	ND	ND	<1	<1	< 10	<5	<5	<5	<100	
	Jul-19, 2004 (+76 days after changeout)		Influent	—	ND	ND	ND	ND	25	<10	<5	<5	<5	—	Initial breakthrough of MTBE at "mid" following changeout (between 35-76 days)
			Mid	<25	0.59	ND	ND	<1	17	<10	<5	<5	<5	—	
			Effluent (Post)	<25	ND	ND	ND	<1	<1	<10	<5	<5	<5	—	
	Jun-22, 2004 (+35 days after changeout)	2,315,310	Influent (Pre)	—	ND	ND	ND	<1	48	< 10	<5	<5	<5	—	Residual Chlorine = 0 15 ppm (at Retention Tank)
			Mid	—	ND	ND	ND	<1	<1	< 10	<5	<5	<5	—	
	May-21, 2004 (+217 days)	2,146,759	Influent	ND	ND	ND	ND	<1	43	<10	<5	<5	<5	—	
			Mid	ND	ND	ND	ND	<1	3	<10	<5	<5	<5	—	
			Effluent (Post)	ND	ND	ND	ND	<1	<1	<10	<5	<5	<5	—	
	May-5, 2004 (+202 days)		Influent	ND	ND	ND	ND	ND	44	13	ND	ND	ND	<50	Initial breakthrough of MTBE at effluent end of carbon system (between 138-202 days)
			Mid	ND	ND	ND	ND	ND	6	ND	ND	ND	ND	<50	
			Effluent	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	<50	
	Mar-9, 2004 (+138 days)		Influent	ND - Sample obtained from incorrect sampling port											
			Mid	ND	ND	ND	ND	ND	3	<20	ND	ND	ND	<100	
			Effluent	ND	ND	ND	ND	ND	ND	<20	ND	ND	ND	<100	
	Feb-17, 2004 (+119 days)		Influent	ND - Sample obtained from incorrect sampling port											
			Mid	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	<50	
			Effluent	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<50	
	Jan-27, 2004 (+89 days)		Influent	ND - Sample obtained from incorrect sampling port											Initial breakthrough of MTBE at "mid" following changeout (between 68-89 days)
			Mid	ND	ND	ND	ND	ND	4	<20	ND	ND	ND	<100	
	Jan-6, 2004 (+68 days)		Influent	ND - Sample obtained from incorrect sampling port											
			Mid	ND	ND	ND	ND	ND	ND	<20	ND	ND	ND	<100	
	Dec-2, 2003 (+26 days)		"Hose Bib"	ND	ND	ND	ND	<1	ND	ND	ND	<1 0	ND	—	
	Aug-21-02	1,293,740		—	—	—	—	—	—	—	—	—	—	—	
Regulatory Limits for Groundwater (AIs or MCLs)(2):				Not Established	1	150	300	1,750	13	12	Not Established				
Laboratory's Practical Quantitation Limits (PQL's)(3):				50	0.5	0.5	0.5	0.5	0.5	5	0.5	0.5	0.5	0.5	

NOTES:

Bold Print = *Bold Print indicates concentrations are above regulatory Action Levels*
< # = *Detection limit elevated due to sample dilution and compound not detected at or above detection*
ND = *Not detected at or above the lab's practical quantitation limit.*
—- = *Sample not analyzed for this compound(s)*

MTBE = Methyl-tert-Butyl Ether
TAME = Tert-amyl methyl ether
ETBE = Ethyl tert-butyl ether
DIPE= Di-isopropyl ether
TBA = Tert-butyl alcohol
EtOH = Ethanol

1 = Samples obained on July 19, and June 12, 2004 were sampled by Weber, Hayes and Associates Remaining samples obtaind by Sequoia Analytical or Cerco Labs.
2 = *Water quality goals for groundwater are based on State DHS-established Maximum Contaminant*
3 = *MTBE detections are confirmed by EPA Method #8260*
4 = *The Certified lab reported the TPH as gasoline value is the result of high concentrations of MTBE within the TPH as gasoline quantitation range*



Summary

NOTE: All samples analyzed for TPH-gas, fuel oxygenates, and BTEX
Results in parts per billion (ug/L)

ID #	Samples targeted for Laboratory Analyses	Additional Data Aquisition, Comments
PZ-1:	3 groundwater;	-- included deep soil core to 56', and deep zone piezometer (dual construction).
PZ-2:	2 groundwater;	-- included deep soil core to 49', and deep zone piezometer (dual construction), & possible transducer monitoring.
PZ-3:	2 groundwater;	-- included deep soil core to 55', and deep zone piezometer (dual construction).
DP-1:	2 groundwater;	-- drilled to 45 feet, logged and two water zones were sampled

NOTE: T Bear Well monitored with flow meter and transducer

FIGURE 1
Job # 23027

PIEZOMETER & DRIVEN PROBE LOCATION MAP
&
July 21-23, 2004
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100

Figure 2
T Bear Well
MTBE Concentrations & Cumulative Flow Volume

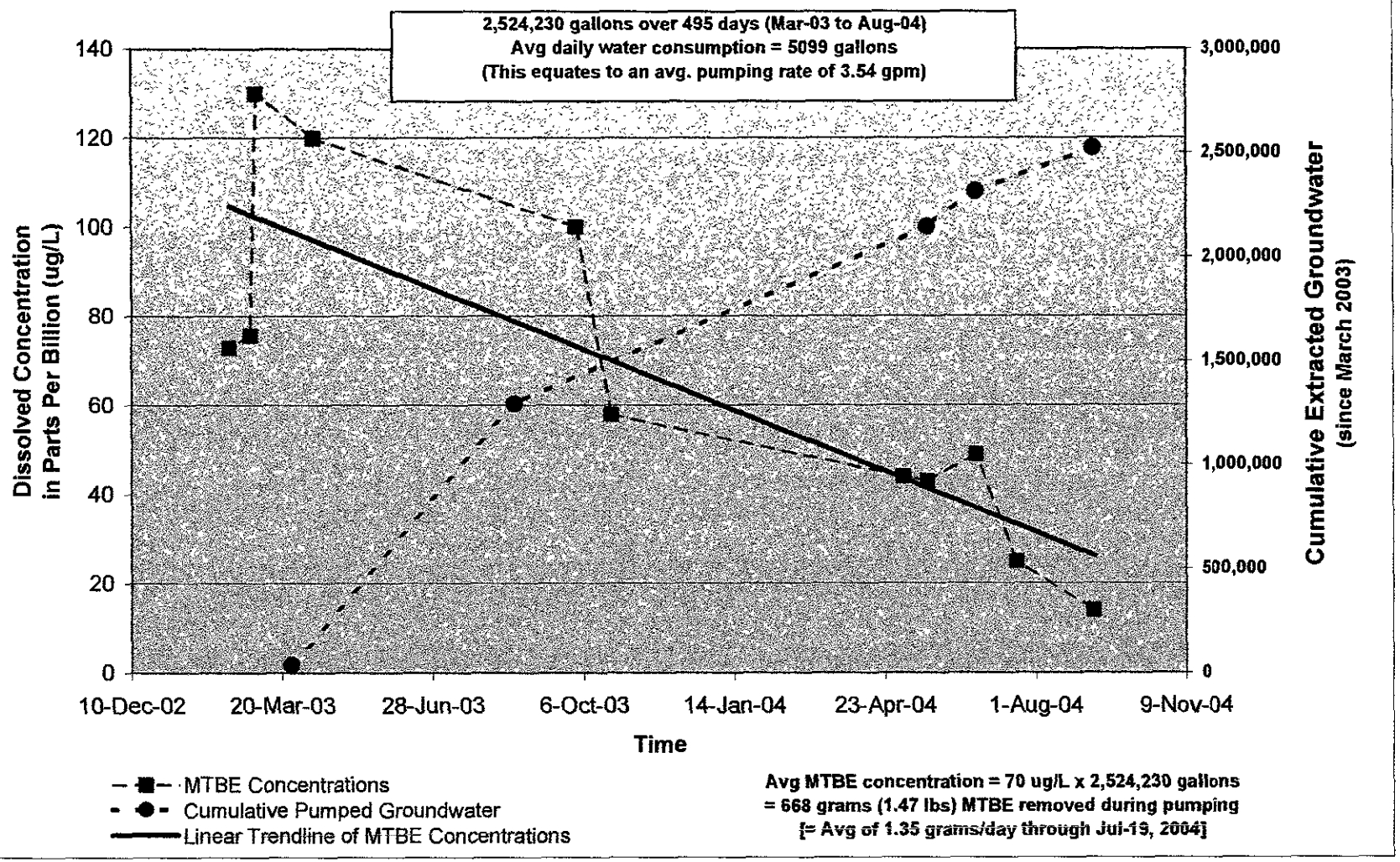
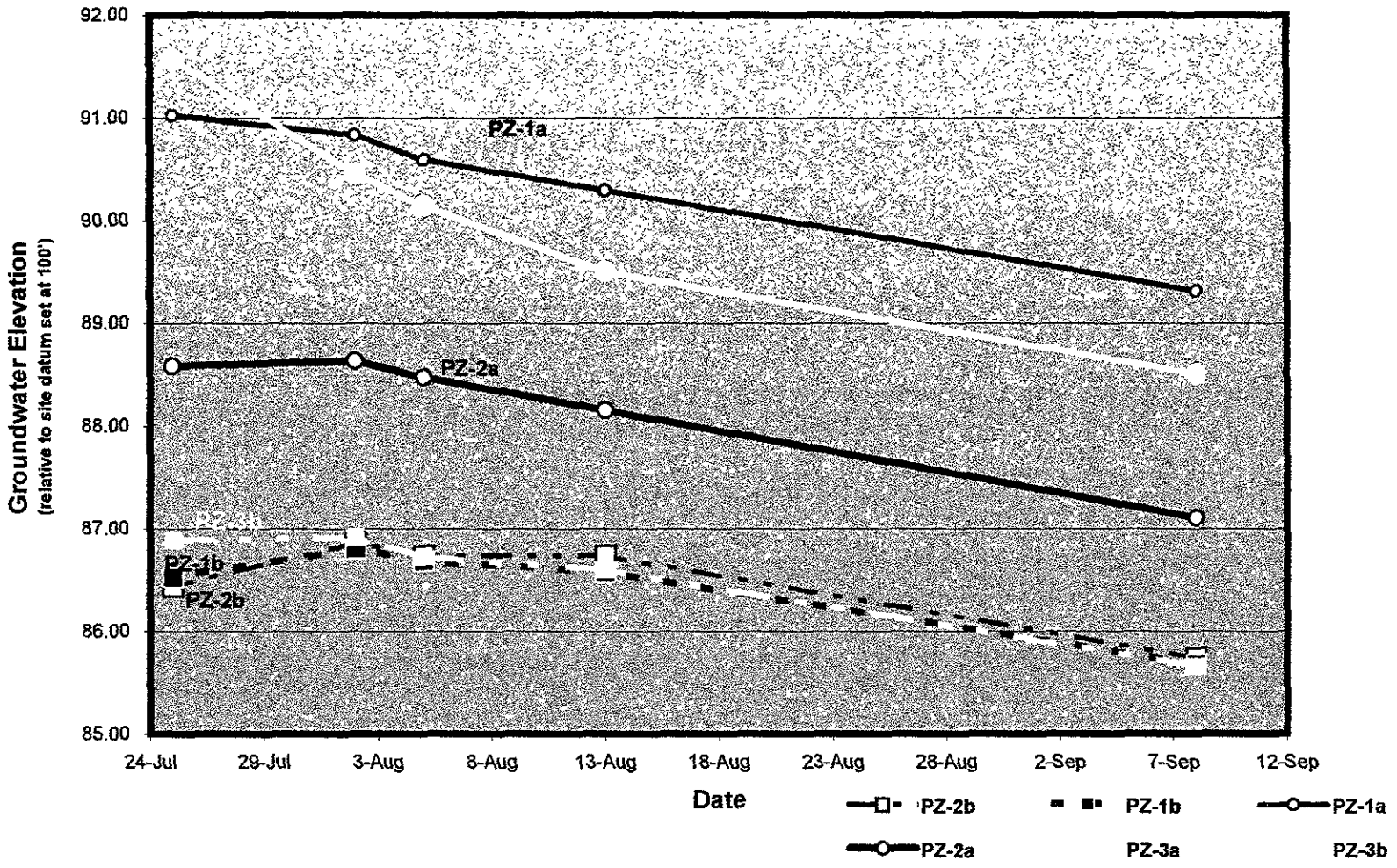


Figure 3

Piezometer Groundwater Fluctuations

July 25 - September 8, 2004



Weber, Hayes and Associates

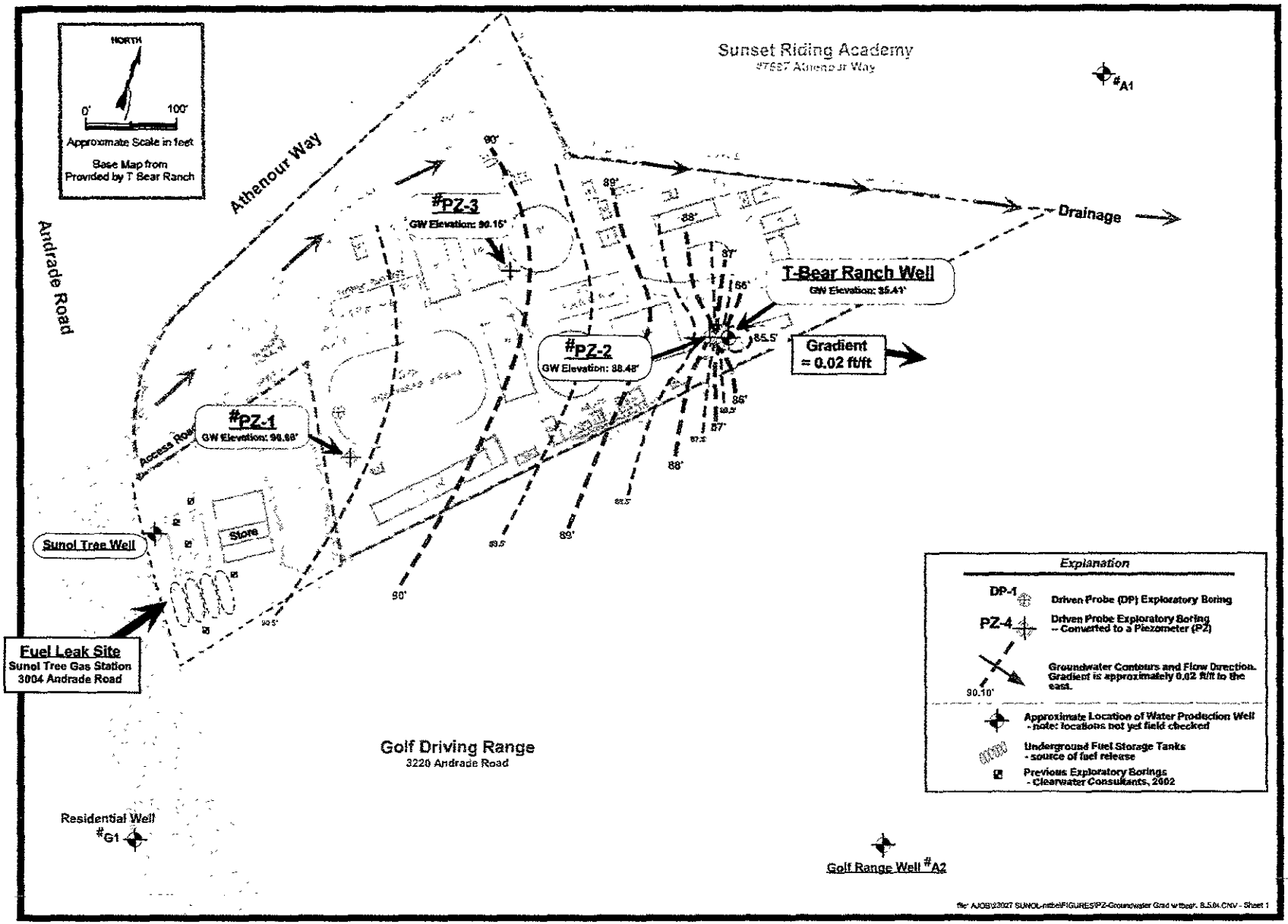


FIGURE 4
Job # 23027

Potentiometric Map
SHALLOW Water Bearing Zone
August 5, 2004
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100

file: AJOB\23027 SUNOL-mtbe\FIGURES\PZ-Groundwater Grad w'bear, 8.5.04.CNV - Sheet 1

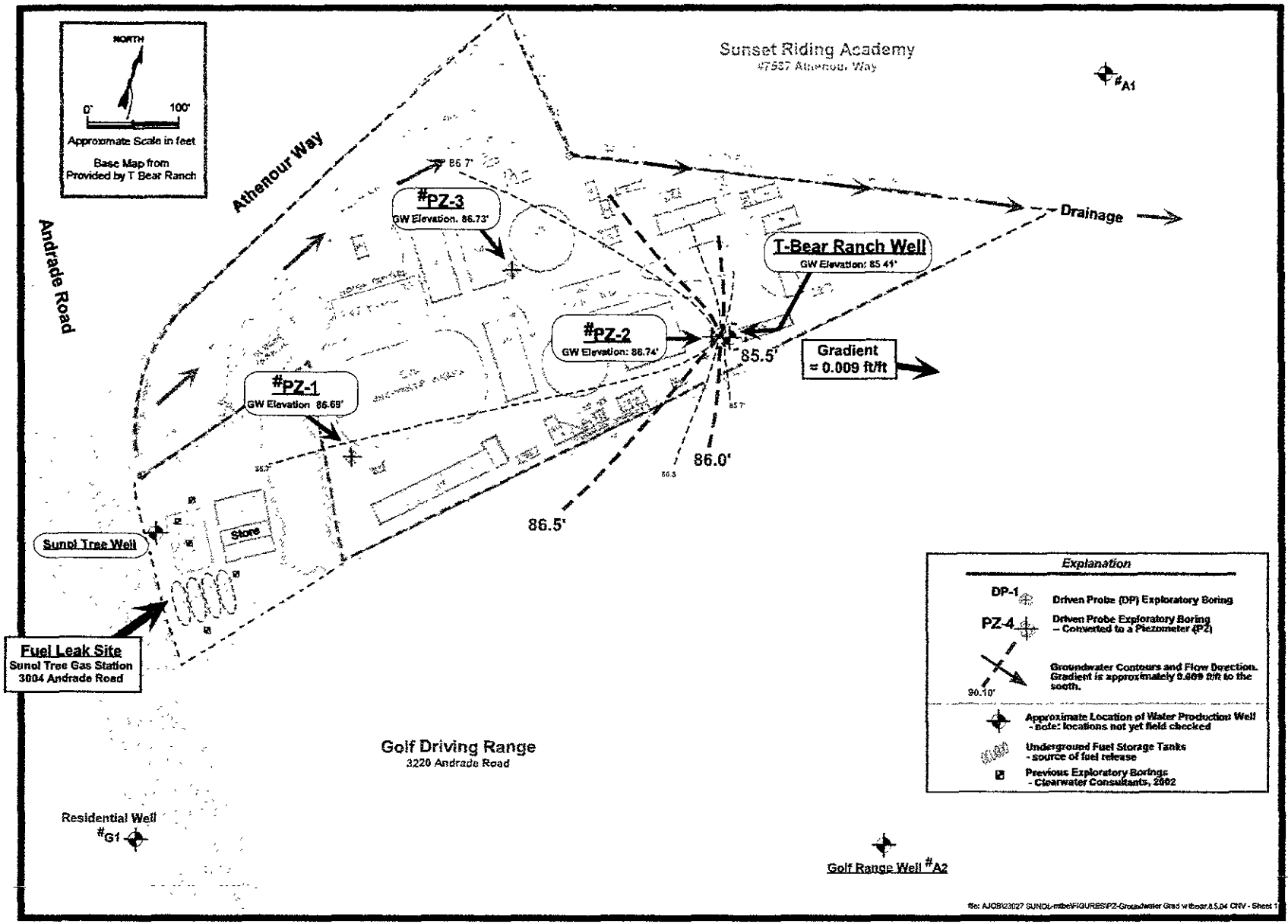
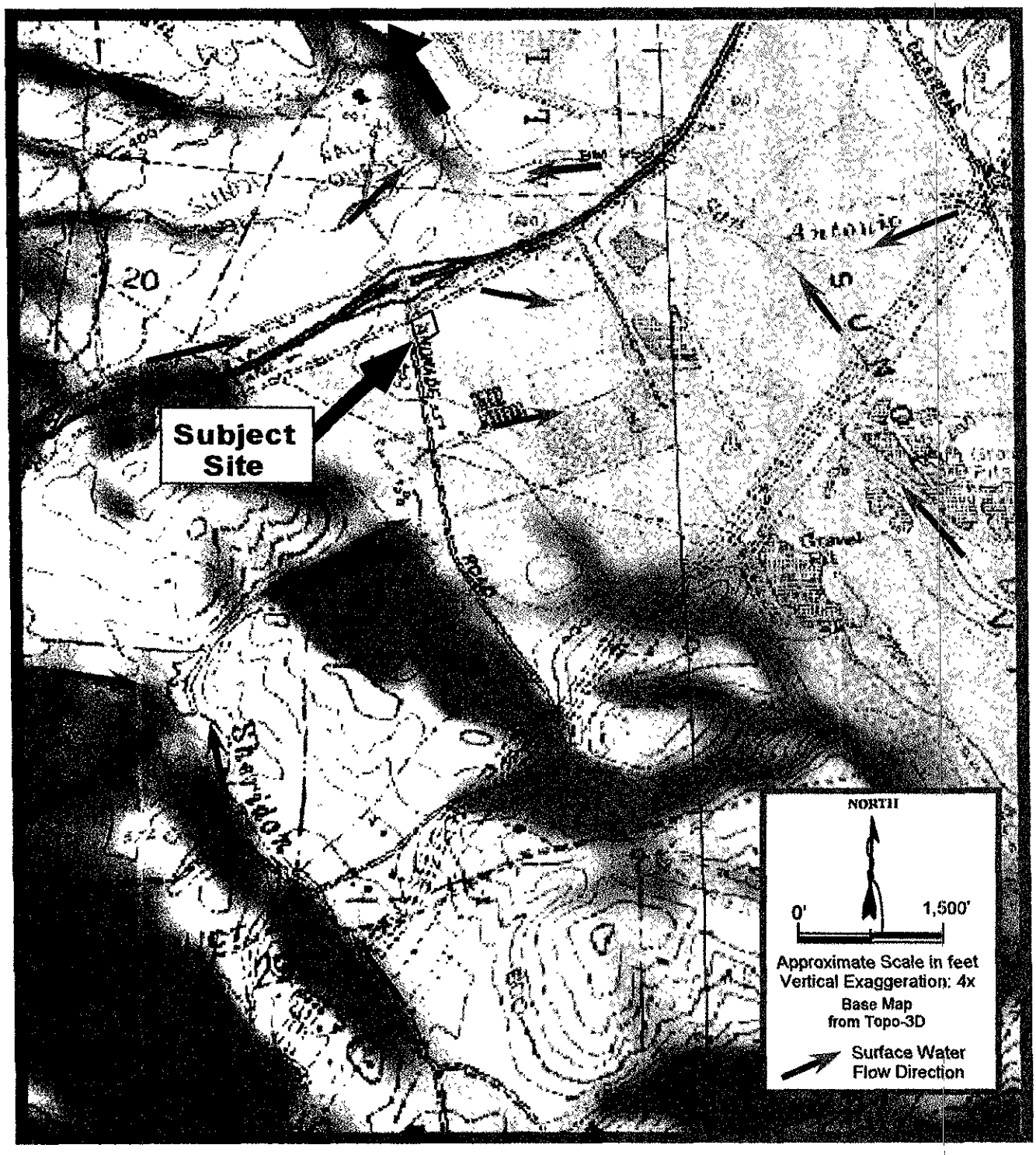


FIGURE 5
Job # 23027

Potentiometric Map
DEEPER Water Bearing Zone
August 5, 2004
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100



file:\AJOB\23027\figures\2-Topograph-3D

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100

3-Dimension Topographic Map
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

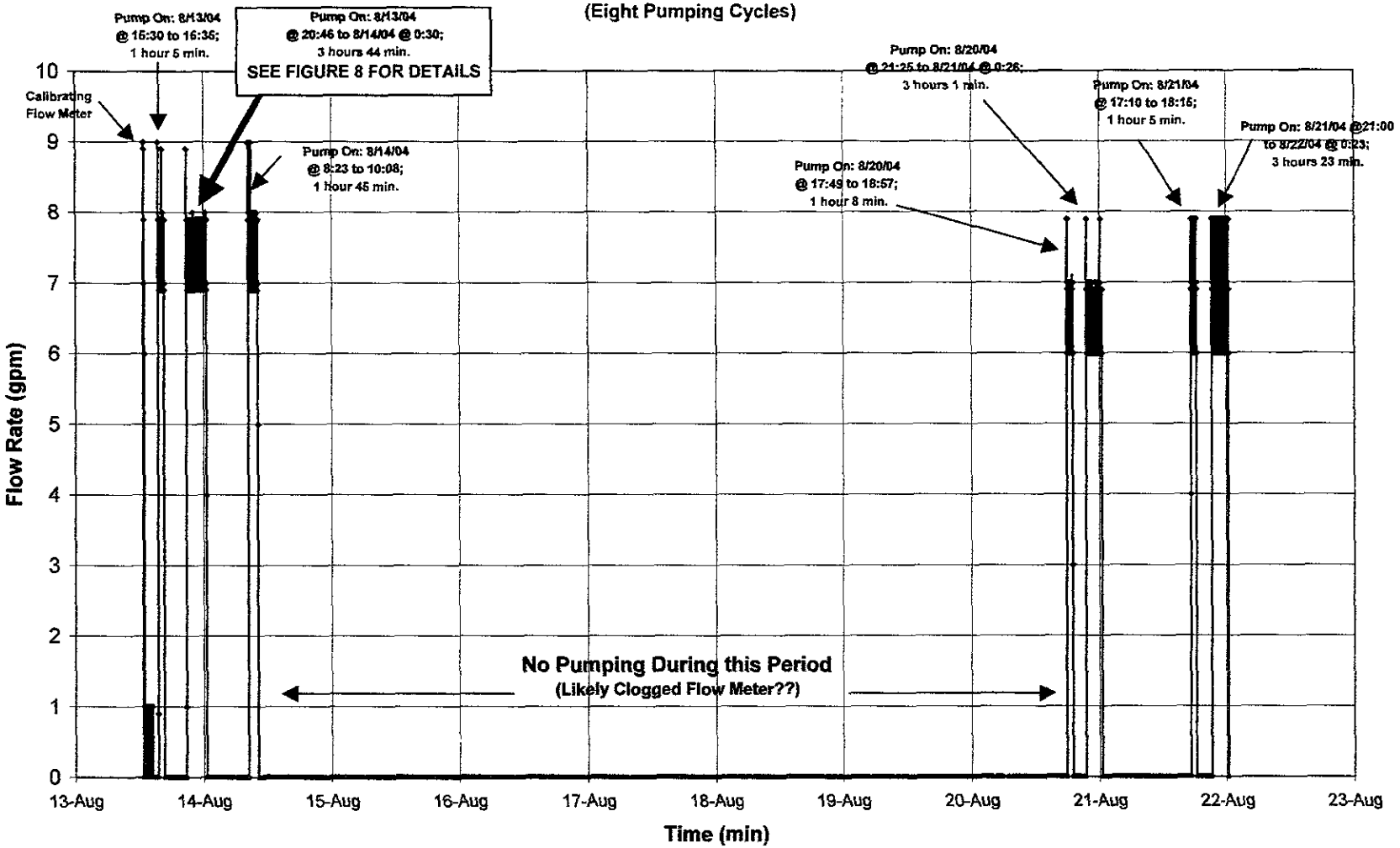
FIGURE 6
Job # 23027

Figure 7

T-Bear Well Flow Rate vs Time

Digital Flow Recorded from Aug-13 through Aug 22, 2004

(Eight Pumping Cycles)



Weber, Hayes and Associates

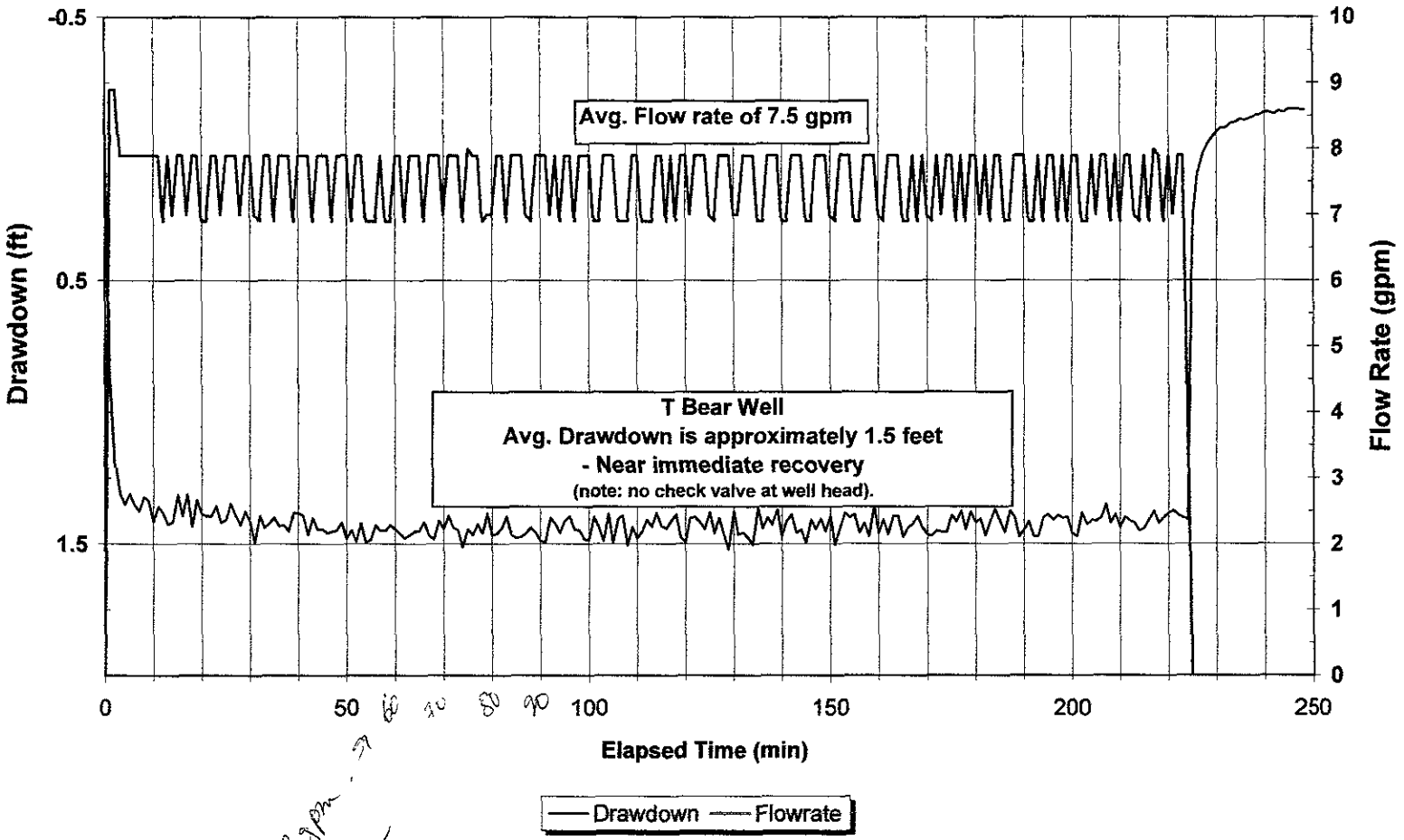
Figure 8

Comparison of T-Bear Pumping Well Flow Rate and Drawdown over One Pumping Cycle

Digital Recorded Flow Rate & Transducer Recorded Water Groundwater Levels

Aug-13 @ 20:46 through Aug 14, 2004 @ 0:55

(One Pumping Cycle + Recovery)



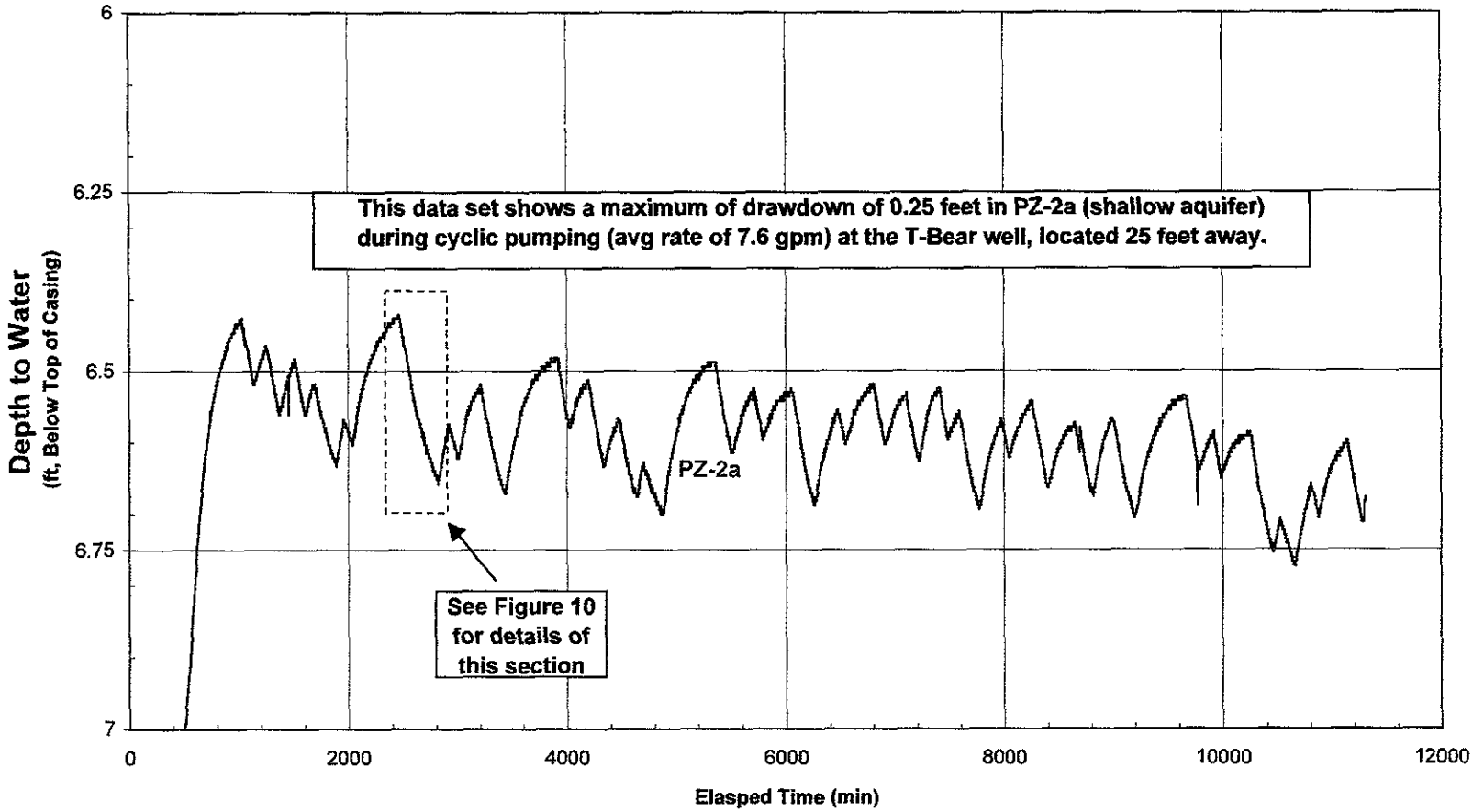
Weber, Hayes and Associates

Figure 9

SHALLOW AQUIFER ANALYSIS (PZ-2a)

Depth to Groundwater vs Time

(Aug-5 @ 15:10 through Aug-13, 2004 @ 11:35)



Weber, Hayes and Associates

Figure 10

Shallow Aquifer Analysis (PZ-2a)

Comparison of Water Level Drawdown in the T Bear Pumping Well & PZ-2a

Aug-7, 2004 (One Pumping Cycle from 8:16 through 15:47)

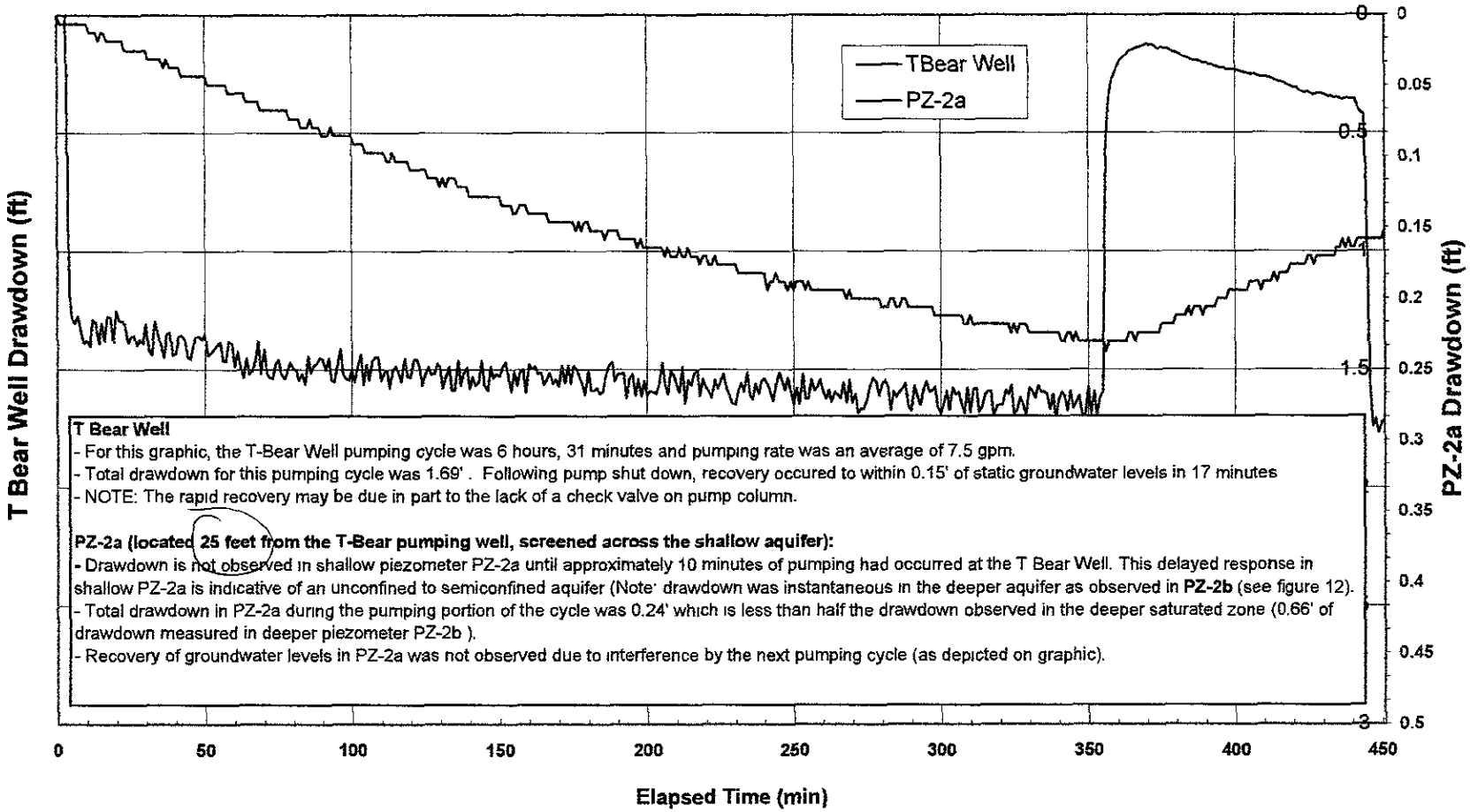


Figure 12

Deeper Aquifer Analysis (PZ-2b)

Comparison of Water Level Drawdown in the T Bear Pumping Well & PZ-2b

Aug-13 @ 20:46 through Aug-14, 2004 @ 0:55 hours (One Pumping Cycle)

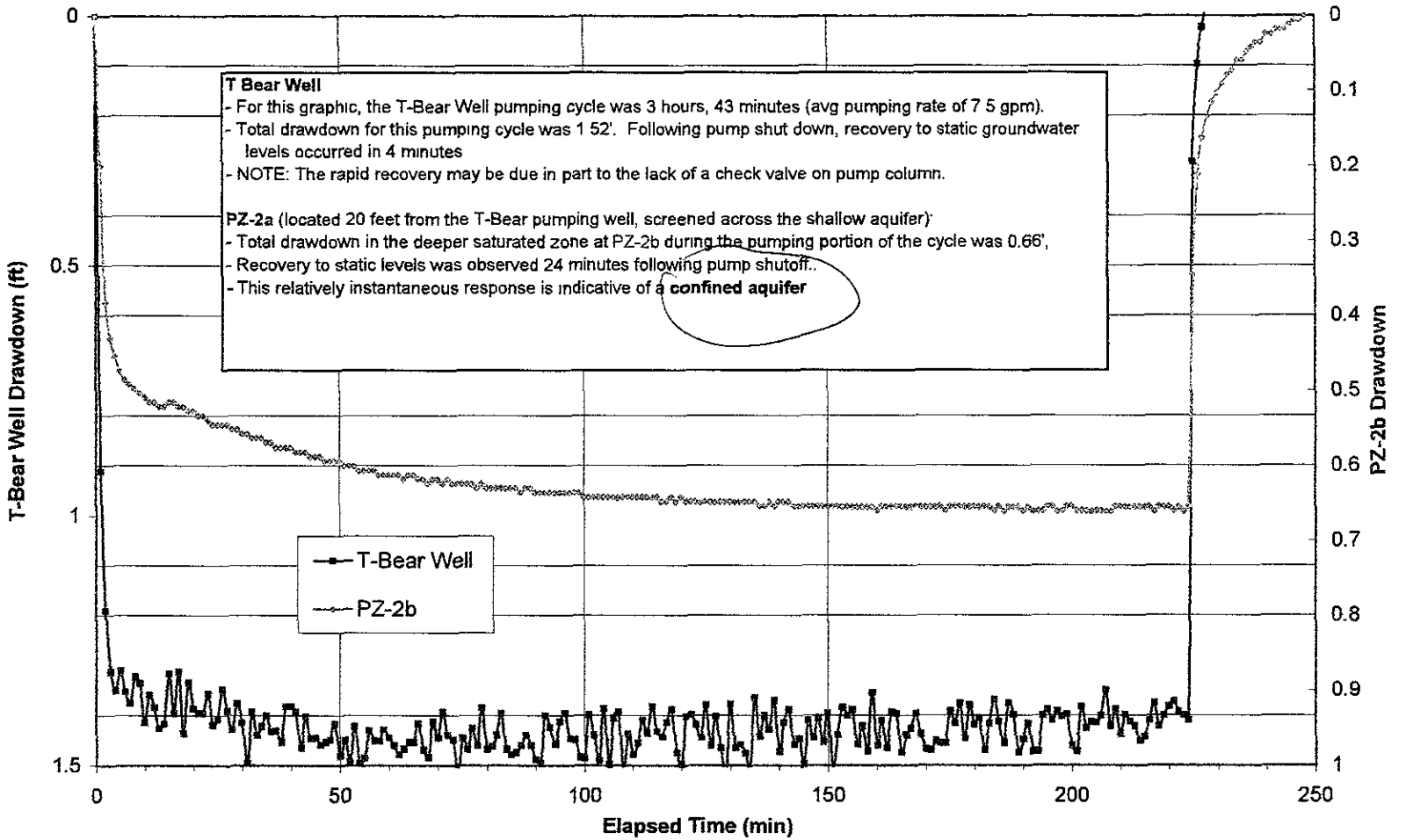
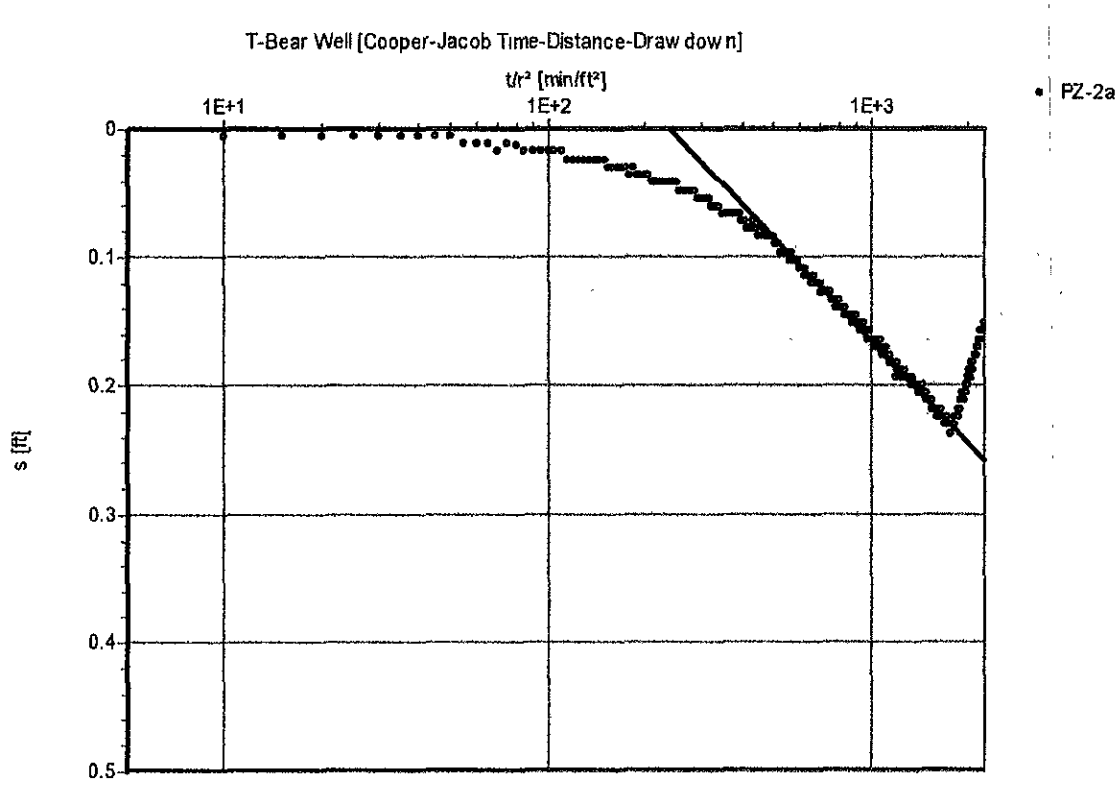


Figure 13 - Pump Test Analysis (PZ-2a)

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, California
(831) 722-3580

Pumping Test Analysis Report

Job Name:	Sunol Tree Gas Station
Job Number:	23027
Client:	Alameda County Environmental Health



Pumping Test: **T-Bear Well**

Analysis Method: **Cooper-Jacob Time-Distance-Drawdown**

Evaluated by: A Bierman

Evaluation Date: 9/21/2004

Analysis Results:				
	Transmissivity:	9.97E+2 [ft²/d]	Conductivity:	3.06E+1 [ft/d]
	Storativity:	3.73E+2		

Test parameters:				
	Pumping Well:	T-Bear Well2	Aquifer Thickness:	32.61 [ft]
	Casing radius:	0.25 [ft]	Confined Aquifer	
	Screen length:	36 [ft]		
	Boring radius:	0.5 [ft]		
	Discharge Rate:	7.5 [U.S. gal/min]		

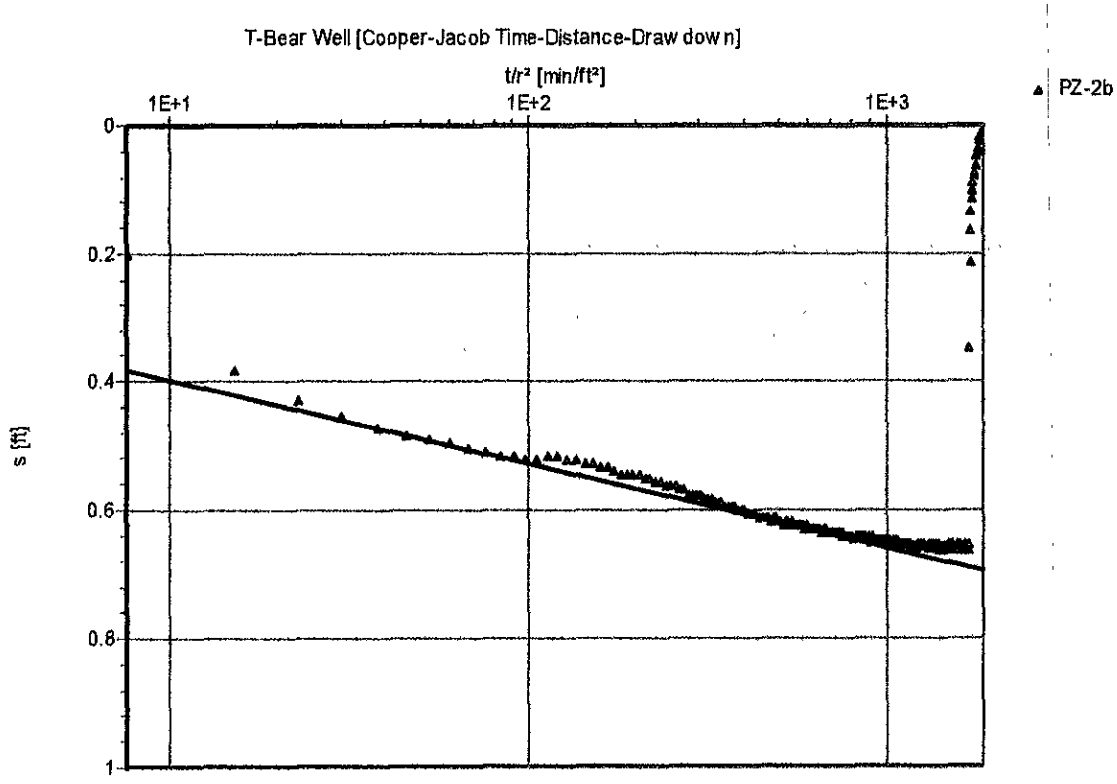
Comments: T-Bear Well is the pumping well, PZ-2a is the observation well (25 feet away) and the data is from 8/7/04 @ 8:16 through 8/7/04 @ 15:47 at an flow rate of 7.5 gpm.
Drawdown was observed after approximately 10 minutes into the test,

Figure 14 - Pump Test Analysis (PZ-2b)

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, California
(831) 722-3580

Pumping Test Analysis Report

Job Name:	Sunol Tree Gas Station
Job Number:	23027
Client:	Alameda County Environmental Health



Pumping Test: **T-Bear Well**

Analysis Method: **Cooper-Jacob Time-Distance-Drawdown**

Evaluated by: A. Bierman

Evaluation Date: 9/21/2004

Analysis Results:				
	Transmissivity:	2.02E+3 [ft²/d]	Conductivity:	6.21E+1 [ft/d]
	Storativity:	2.83E-2		

Test parameters:				
	Pumping Well:	T-Bear Well	Aquifer Thickness:	32.61 [ft]
	Casing radius:	0.25 [ft]	Confined Aquifer	
	Screen length:	36 [ft]		
	Boring radius:	0.5 [ft]		
	Discharge Rate:	7.4984375 [U.S. gal/min]		

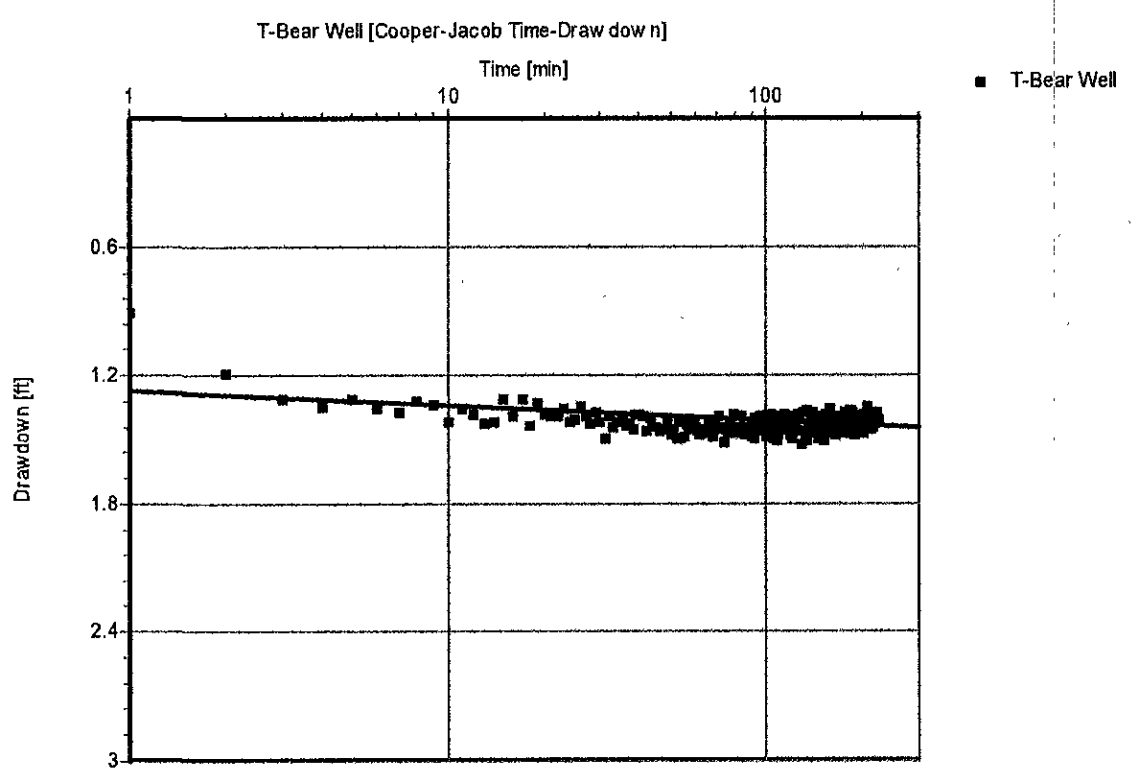
Comments: T-Bear Well is the pumping Well, PZ-2b is the observation well, (20 feet away) and the data is from 8/13/04 @ 20:46 through 8/14/04 @ 0:28 at an flow rate of 7.5 gpm.
Drawdown in PZ-2b was observed instantaneously after pump-on, representing a confined aquifer setting.
A delayed recharge was observed at about 12 minutes into the test as depicted in hump in drawdown curve, with later time recharge again appearing toward the end of the test.

Figure 15 - Pump Test Analysis (T Bear Well)

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, California
(831) 722-3580

Pumping Test Analysis Report

Job Name:	Sunol Tree Gas Station
Job Number:	23027
Client:	Alameda County Environmental Health



Pumping Test: **T-Bear Well**

Analysis Method: **Cooper-Jacob Time-Drawdown**

Evaluated by: A. Bierman

Evaluation Date: 9/15/2004

Analysis Results: Transmissivity: 3.61E+3 [ft²/d] Conductivity: 1.11E+2 [ft/d]

Test parameters:

Pumping Well:	T-Bear Well	Aquifer Thickness:	32.61 [ft]
Casing radius:	0.25 [ft]	Confined Aquifer	
Screen length:	36 [ft]		
Boring radius:	0.5 [ft]		
Discharge Rate:	7.4984375 [U.S. gal/min]		

Comments: Maximum drawdown was 1.52 feet.
Later time data was used to obtain T and K values.
Due to the sporadic pumping cycle of the T-Bear well, a longer duration pumping cycle (224 min) was chosen to optimize the accuracy of this analysis. Data for this test is from: 8/13/04 @ 20:46 through 8/14/04 @ 0:28 hours.
Casing storage effects calculated to expire at 3.6 minutes into a pumping cycle.
The data is scattered due to cascading water into the pumping well.

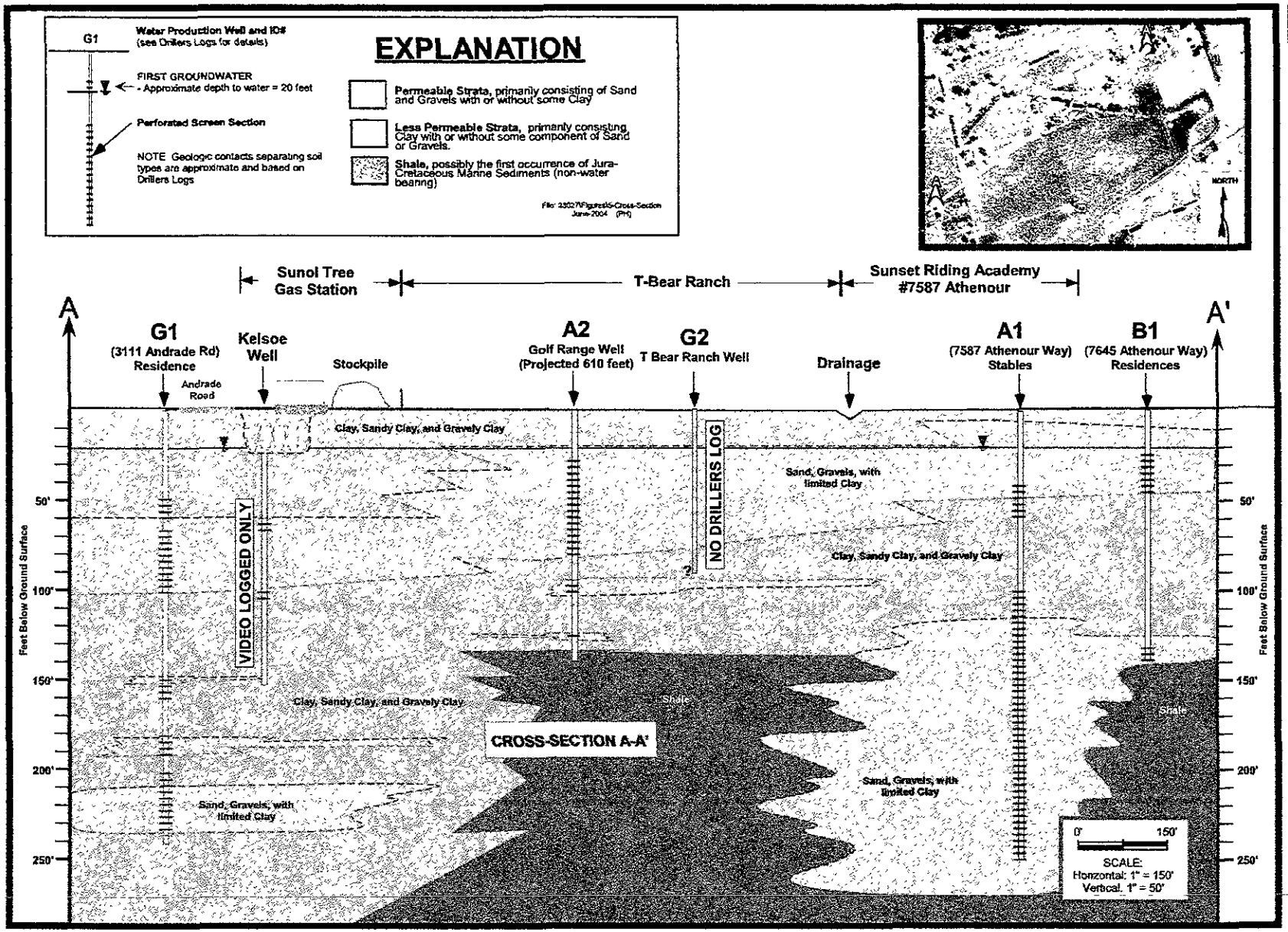


FIGURE 4
Job # 23027

SIMPLIFIED GEOLOGIC CROSS SECTION
SUNOL TREE GAS STATION
3004 Andrade Road
Sunol, Alameda County

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 862 - 3100

GEOLOGIC LOG
PIEZOMETER
Hydraulic Driven Geo-Probe Boring

JOB NO.: 23027 DATE: July 21, 2004
CLIENT: Alameda County Environmental Health Services (ACEHS)
LOCATION: 3000, Andrade Road, Sunol, CA.
LOGGED BY: A. Bierman, RG #7490
DRILLER: Enprob Environmental Inc., C-57: 777007
DRILL METHOD: Hydraulic Driven Dual Tube, Large-Bore & Macro-Core ProbeS

BORING # **PZ-1**
Sheet 1 of 1

Depth (feet) | Sample Interval | Sample Analyzed | Sample Identification & OVA Data (ppmV) | Groundwater Depth | Lithologic Pattern & Well Construction | USCS symbol

SOIL DESCRIPTION & CLASSIFICATION
(Lithologic name, color, moisture, density/consistency, grain size%, other descriptors, HC odor.)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56

No Soil Samples Analyzed

PZ-1-d4 @ 0 ppm
PZ-1-d8 @ 0 ppm
PZ-1-d12 @ 0 ppm
PZ-1-d16 @ 0 ppm
First GW DP-1 @ 15' bgs
PZ-1-d20 @ 0 ppm
Hydro-Punch PZ-1 @ 20' bgs
PZ-1-d24 @ 0 ppm
PZ-1-d28 @ 0 ppm
PZ-1-d32 @ 0 ppm
PZ-1-d36 @ 0 ppm
PZ-1-d40 @ 0 ppm
PZ-1-d44 @ 0 ppm
PZ-1-d48 @ 0 ppm GW DP-1 @ 41.8' bgs
PZ-1-d52 @ 0 ppm
PZ-1-d56 @ 0 ppm

CL **CLAY, gray (10YR 4/1) to black (10YR 2/1) at 0.5' bgs, dry, hard, friable, non plastic,** 90% silt and clay fines, 10% fine sand clasts within clay, no odor no discoloration.
-Color change at 4.4' just below 0.4' thick fine subrounded gravel stringer, very dark grayish brown (10YR 3/2), damp at 7.5' bgs, and becoming very stiff vs hard, low plasticity, no odor, no discoloration.

-Gradational contact at 9.2' bgs.

SC **Sandy Gravelly CLAY,** yellowish brown (10YR 5/4), dry to damp, stiff, friable, low to no plasticity, non sticky, 70% clay binder, 20% medium to coarse subrounded gravel clasts, 10% fine sands, with 0.5" thick fine sand at upper contact, no odor, no discoloration, abrupt contact at 10.3' bgs.

CL to CH **CLAY,** dark yellowish brown (10YR 4/4), damp to moist at 11' bgs, stiff, moderate plasticity, 90% clay binder with 10% fine subrounded mudstone and sandstone clasts, with fine to medium subrounded gravel stringer from 14.5 to 15' bgs, gradational contact at 15' bgs (sandy silt stringer at 12-13 feet interbedded in clay for at shallow well location).

MH **Sandy Clayey SILT,** yellowish brown (10YR 4/4), very moist to wet, soft to very soft, moderate to high plasticity, slightly to non sticky, 70% silts, 20% clays, 10% fine subrounded gravels, gradational contact 18' bgs.

SC **Sandy Gravelly CLAY,** yellowish brown (10YR 5/4), damp, medium stiff, slightly friable, low to no plasticity, slightly sticky, 70% clay binder, 20% medium to coarse subrounded gravel clasts, trace fine subrounded cobble, 10% fine sands, coarsening downward, no odor, no discoloration, abrupt contact at 20' bgs.

MH **Sandy Clayey SILT,** dark yellowish brown (10YR 4/4), very moist, very soft to soft, moderate to high plasticity, non sticky, 70% silts, 20% clays, 10% coarse subrounded sands, gradational contact at 21.3' bgs.

GC **Gravelly CLAY,** dark yellowish brown (10YR 4/4), dry, hard, low to no plasticity, non sticky, 90% clay binder, 10% fine subrounded gravel clasts decreasing and fining to coarse sands with depth. slightly moist at 26-27' bgs, and at 29-29.5' bgs.
-Slightly moist from 36-39.5' bgs, with medium to coarse sand stringer in clayey matrix at 39-39.5' bgs, with yellowish brown (10YR 5/4) mottling.
-Abrupt contact at 39.5' bgs.

CL **CLAY,** dark grayish brown (10YR 4/2), dry, hard, low to no plasticity, friable, 95% clay binder with 5% medium subrounded sand clasts, abrupt contact at 40' bgs.

SC **Sandy Gravelly CLAY,** dark grayish brown (10YR 4/2), dry to very moist at 41.2' bgs (cap fringe), medium stiff, low to no plasticity, friable, 70% clay binder, 20% medium to coarse subrounded gravel clasts, trace fine subrounded cobbles, 10% fine to medium sands, abrupt contact at 41.8' bgs.

SC **Clayey GRAVEL with Sandy Gravelly Clay,** dark yellowish brown (10YR 4/2), saturated, loose, 80% medium to coarse subrounded to rounded gravels, 15% clay fines, 5% fine sands with sandy gravelly clay interbeds (as logged above), at 42.4-43.5, 43.7-44, and 44.2-44.6', wet between gravel grain contacts, otherwise moist. Abrupt contact at 44.6' bgs.

SP **Gravelly SAND,** yellowish brown (10YR 5/4), saturated, loose, 90% fine sands, 10% fine to medium subrounded gravels, abrupt contact at 47.9' bgs.

GW **Well Graded GRAVEL,** dark yellowish brown (10YR 4/2), saturated, loose, 80% coarse subrounded gravels, 20% fine to coarse sands.
-Gradational contact at 54.8' bgs.

GC **Sandy Gravelly CLAY,** dark grayish brown (10YR 4/2), with thin lens of dark greenish gray (5BG 3/1) from 55.2-55.4' bgs, moist, to very moist between gravel grain contact, very stiff, low to no plasticity, friable, 70% clay binder, 20% medium to coarse subrounded clasts, trace fine subrounded cobbles, 10% fine to medium sands.

Low Permeability, Non-Saturated

Higher Permeability, Saturated/wet

Terminate boring at 56 feet bgs. Backfill boring with TR-30 bentonite pellets from 56-to 46.5' bgs, thereafter set Piezometer PZ-1.
Move five feet west and set Shallow Piezometer PZ-1.

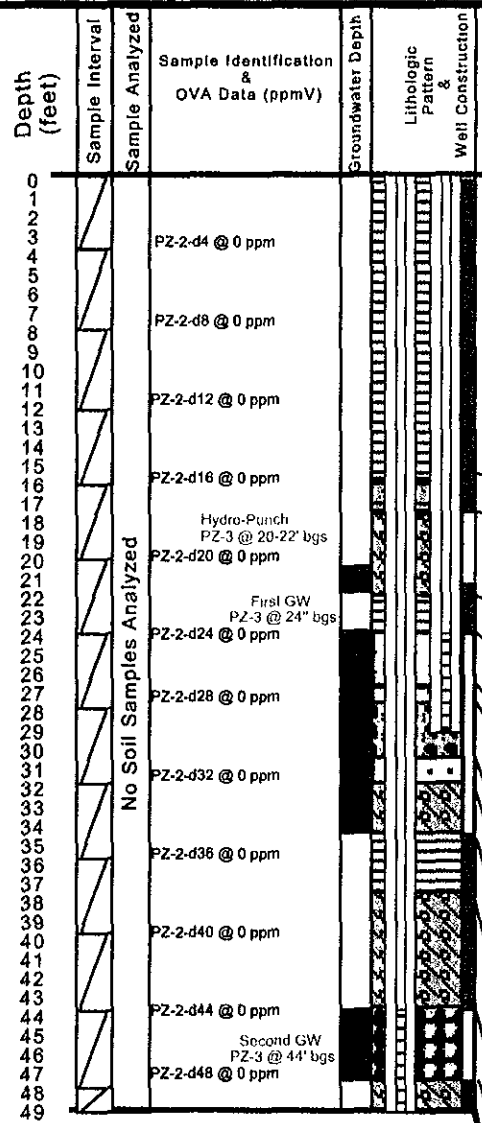
Deep Piezometer Construction Details:
Screen: 41-5 to 46.5' bgs
Sand: #3 RMC Lonestar from 40.5 to 46.5' bgs.
Bentonite: TR-30 from 38.5 to 40.5' bgs
Cement: Portland cement from ground surface to 38.5' bgs.

Shallow Piezometer Construction Details:
Screen: 12 to 17' bgs
Sand: #3 RMC Lonestar from 11 to 17' bgs.
Bentonite: TR-30 from 9 to 11' bgs
Cement: Portland cement from ground surface to 9' bgs.

GEOLOGIC LOG
PIEZOMETER
Hydraulic Driven Geo-Probe Boring

JOB NO.: 23027 DATE: July 22, 2004
CLIENT: Alameda County Environmental Health Services (ACEHS)
LOCATION: 3000, Andrade Road, Sunol, CA.
LOGGED BY: A. Bierman, RG #7490
DRILLER: Enprob Environmental Inc., C-57: 777007
DRILL METHOD: Hydraulic Driven Dual Tube, Large-Bore & Macro-Core ProbeS

BORING # **PZ-2**
Sheet 1 of 1



USCS	SOIL DESCRIPTION & CLASSIFICATION (Lithologic name, color, moisture, density/consistency, grain size%, other descriptors, HC odor.)
CL	**CLAY,** black (10YR 2/1), dry, hard, non plastic, friable, 90% silt and clay fines, 10% coarse sand clasts within clay dissipating at 5.3' bgs to 5% clasts, no odor no discoloration.
	-At 7.5' bgs, 0.2' thick fine subrounded gravel stringer, -Color change to very dark grayish brown (10YR 3/2), becoming very stiff vs hard, low plasticity, no odor, no discoloration. -At 10.5' bgs clasts increase to 10%. -At 12' bgs color changes to brown (10YR 4/3), clasts decrease to 0-5%, medium stiff becoming very stiff at 14' bgs, low plasticity, friable.
CL	-Abrupt contact.
ML	**Sandy Silty CLAY**, brown (10YR 5/3), with gray (10YR 5/1), motling, dry, medium stiff, moderate plasticity, 70% clay fines, 30 % silts and fine sands.
GC	**Sandy Gravelly CLAY,** yellowish brown (10YR 5/4), damp to moist at 20' bgs, medium stiff, soft from 21' to 22' bgs, low plasticity, friable, non sticky, 70% clay binder, 20% medium to coarse subrounded gravel clasts, 10% fine to medium sands.
CL	**CLAY**, dark yellowish brown (10YR 4/4), damp, stiff, moderate plasticity, 90% clay binder with 10% fine subrounded mudstone and sandstone clasts. -Gradational contact at 24' bgs.
SM SC	**Sandy Clayey SILT,** yellowish brown (10YR 4/4), with gray (10YR 6/1) mottling, very moist to wet, soft to very soft, moderate to high plasticity, non sticky, 70% silts, 20% clay binder, 10% fine sands, abrupt contact at 26.5' bgs.
SP	**Poorly Graded SAND**, dark brown (10YR 3/3), saturated, loose, 95% medium to fine sand, 5% silts and fines, gradational contact at 27.5' bgs
GC	**Clayey Sandy GRAVEL,** dark yellowish brown (10YR 4/2), wet, medium dense to loose, friable, 70% medium to coarse subrounded to rounded gravels, 20% medium to fine sands, 10% clay fines with thin lens of dark greenish gray (5BG 3/1) from 28.5-29' bgs with increase in fine rounded cobbles at 29' bgs to 5%, and decrease in sands to 15%
SP	**Poorly Graded SAND**, dark brown (10YR 3/3), saturated, loose, 90% sands, 5% silts and fines, 5% coarse subrounded gravels, abrupt contact at 31.7' bgs.
GC	**Sandy Gravelly CLAY,** yellowish brown (10YR 5/4), moist in upper 0.5' becoming damp, dry at 34' bgs, medium stiff, slightly friable, low to no plasticity, slightly sticky, 70% clay binder, 20% medium to coarse subrounded gravels, trace fine subrounded cobble, 10% fine to medium sands, abrupt contact at 34.2' bgs.
CL	**CLAY,** yellowish brown (10YR 5/4), damp to dry, very stiff, high plasticity, non sticky, 95% fines, 5% fine sands to silt, gradational contact at 37.5' bgs.
GC	**Sandy Gravelly CLAY,** dark grayish brown (10YR 4/2), damp to very moist to wet between gravel grain contact, medium stiff, low to no plasticity, friable, 70% clay binder, 20% medium to coarse subrounded gravels, 10% fine to coarse sands, trace fine subrounded cobbles.
GW	**Well Graded GRAVEL,** dark yellowish brown (10YR 4/2), saturated, loose, 80% fine to coarse subrounded gravels, 15% medium to coarse sands, 5% fines. -Gradational contact at 47.5' bgs.
GC	**Sandy Gravelly CLAY,** dark grayish brown (10YR 4/2), damp to very moist to wet between gravel grain contact, medium stiff, low to no plasticity, friable, 70% clay binder, 20% medium to coarse subrounded gravels, 10% fine to coarse sands, trace fine subrounded cobbles.

Terminate boring at 49 feet bgs.
Construct Deep Piezometer PZ-2.
Move five feet west and construct Shallow Piezometer PZ-2.

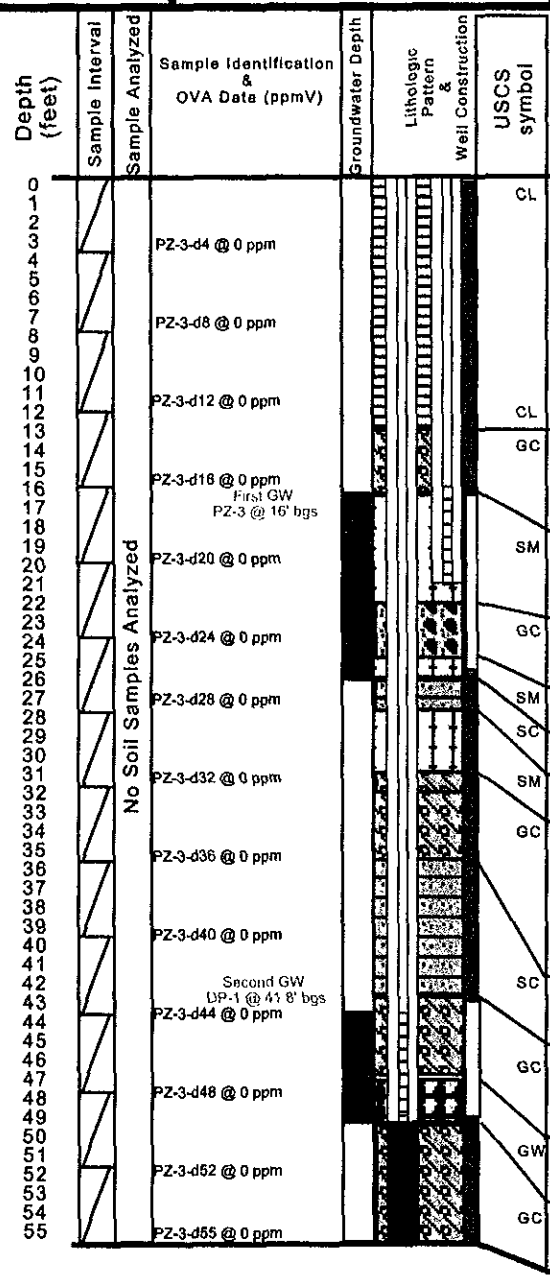
Deep Piezometer Construction Details:
Screen: 44 to 49' bgs
Sand: #3 RMC Lonestar from 42 to 49' bgs.
Bentonite: TR-30 from 39 to 42' bgs
Cement: Portland cement from ground surface to 39' bgs.

Shallow Piezometer Construction Details:
Screen: 24 to 29' bgs
Sand: #3 RMC Lonestar from 23 to 29' bgs.
Bentonite: TR-30 from 21 to 23' bgs
Cement: Portland cement from ground surface to 21' bgs.

GEOLOGIC LOG
PIEZOMETER
Hydraulic Driven Geo-Probe Boring

JOB NO.: 23027 DATE: July 23, 2004
CLIENT: Alameda County Environmental Health Services (ACEHS)
LOCATION: 3000, Andrade Road, Sunol, CA.
LOGGED BY: A. Bierman, RG #7490
DRILLER: Enprob Environmental Inc., C-57: 777007
DRILL METHOD: Hydraulic Driven Dual Tube, Large-Bore & Macro-Core ProbeS

BORING # **PZ-3**
Sheet 1 of 1



USCS	SOIL DESCRIPTION & CLASSIFICATION (Lithologic name, color, moisture, density/consistency, grain size%, other descriptors, HC odor.)
CL	**CLAY**, black (10YR 2/1), dry, hard, non plastic, friable, 90% silt and clay fines, 5% coarse sand clasts, no odor no discoloration.
	-Color change to very dark grayish brown (10YR 3/2), becoming very stiff vs hard, and clasts increase to 10%. low plasticity, no odor, no discoloration.
	-Clasts decrease to 5% from 8-9.7' bgs. -At 9.7' color changes to brown (10YR 4/3), and increase to 10%, very stiff, low plasticity, friable.
CL	-Gradational contact at 13' bgs.
GC	**Sandy Gravelly CLAY**, yellowish brown (10YR 5/4), damp to moist at 14' bgs bgs, medium stiff, low plasticity, friable, non sticky, 70% clay binder, 20% medium to coarse subrounded gravel clasts, 10% fine to medium sands, with clayey silt stringer at 14.9-15.7' bgs, moist, moderate plasticity, gradational contact.
SM	**Sandy Clayey SILT**, brown (10YR 5/3), with gray (10YR 5/1), mottling, saturated, very soft with medium stiffness from 21.2 to 21.6', moderate plasticity, 70% silts, 20% clay binder, 10% medium to coarse sands to fine subrounded gravels from 16.3-17' bgs, thereafter only fine sands, gradtional contact at 22.2' bgs.
GC	**Clayey Sandy GRAVEL**, dark yellowish brown (10YR 4/2), very moist, medium dense to loose, friable, 70% medium to coarse subrounded to rounded gravels, 20% medium to fine sands, 10% clay fines, gradational contact at 25' bgs
SM	**Sandy Clayey SILT**, brown (10YR 5/3), saturated, very soft, moderate plasticity, 70% silts, 20% clay binder, 10% fine sands, gradational contact at 26' bgs
SC	**Sandy CLAY**, dark yellowish brown (10YR 4/4), damp to dry, stiff, high plasticity, non sticky, 90% fines, 10% fine sands, gradational contact at 28'.
SM	**Sandy Clayey SILT**, brown (10 YR 5/3), very moist, very soft, moderate plasticity, 70% silts, 20% clay binder, 10% fine to medium sands, abrupt contact.
GC	**Sandy Gravelly CLAY**, yellowish brown (10YR 5/4), damp to moist, stiff, slightly friable, high plasticity, non sticky, 70% clay binder, 20% medium to coarse subrounded gravels, 10% fine to medium sands, gradational contact at 31.7' bgs, -From 34-34.8, moist, medium dense to dense otherwise medium dense to soft, slightly friable, coarsening downward to 60% clay fines, 30% medium to coarse subrounded to rounded gravels, 10% medium to fine sands. -Gradational contact at 36' bgs
SC	**Sandy CLAY**, dark yellowish brown (10 YR 4/4), damp to dry, very stiff, moderate plasticity, non sticky, 90% fines, 10% fine sands, at 41.5' bgs increasing fine sands to 20%, moist, stiff, abrupt contact at 43' bgs.
GC	**Sandy Gravelly CLAY**, dark yellowish brown (10YR 4/2), very moist to wet between gravel grain contact, saturated from 44-44.5' bgs, medium dense, friable, 60% clay fines, 20% medium to coarse subrounded gravels, 20% medium to coarse sands, trace cobbles 46'-47', gradational contact.
GW	**Well Graded GRAVEL**, dark yellowish brown (10YR 4/2), saturated, loose, 80% fine to coarse subrounded gravels, 15% medium to coarse sands, 5% fines. -Gradational contact at 49.2' bgs
GC	**Sandy Gravelly CLAY**, dark yellowish brown (10YR 4/2), moist, medium dense, friable, 60% fine to coarse subrounded gravels, 20% medium to coarse sands, 20% fines.

Terminate boring at 55 feet bgs.
Backfill with TR-30 bentonite from 55-49' bgs.
Construct Deep Piezometer PZ-3.
Move five feet west and construct Shallow Piezometer PZ-3.

Deep Piezometer Construction Details:
Screen: 44 to 49' bgs
Sand: #3 RMC Lonestar from 42 to 49' bgs.
Bentonite: TR-30 from 40 to 42' bgs
Cement: Portland cement from ground surface to 40' bgs.

Shallow Piezometer Construction Details:
Screen: 16 to 21' bgs
Sand: #3 RMC Lonestar from 15 to 21' bgs.
Bentonite: TR-30 from 13 to 15' bgs
Cement: Portland cement from ground surface to 13' bgs.

GEOLOGIC LOG

Hydraulic Driven Geo-Probe Boring

JOB NO.: 23027 DATE: July, 21, 2004
CLIENT: Alameda County Environmental Health Services (ACEHS)
LOCATION: 3000 Andrade Road, Sunol, CA.
LOGGED BY: A. Bierman, RG #7490
DRILLER: Enprob Environmental Inc., C-57: 777007
DRILL METHOD: Hydraulic Driven Dual Tube, Large-Bore & Macro-Core ProbeS

BORING # **DP-1**
Sheet 1 of 1

Depth (feet)	Sample Interval	Sample Analyzed	Sample Identification & OVA Data (ppmV)	Groundwater Depth	Lithologic Pattern & Well Construction	USCS symbol	SOIL DESCRIPTION & CLASSIFICATION (Lithologic name, color, moisture, density/consistency, grain size%, other descriptors, HC odor.)
0						SP	**Poorly Graded SAND,** (ARENA FILL SAND) light gray, (10YR 7/2), dry loose, 95% fine to medium sands, 5% fines.
1							
2							
3			DP-1-d4 @ 0 ppm			CL	**CLAY,** black (10YR 2/1), dry, hard, friable, non plastic, friable, 90% silt and clay fines, 10% fine subrounded sand clasts within clay, many medium to fine rootlets decreasing with depth, no odor no discoloration.
4							
5							
6							
7			DP-1-d8 @ 0 ppm				-Color change to very dark grayish brown (10YR 3/2) at 5.7' bgs, dry, hard, low plasticity to friable, 90% clay binder with 10% of medium to fine subrounded mudstone and sandstone clasts, damp at 8.3' bgs, very stiff, low plasticity, no odor, no discoloration, gradational contact at 9.2' bgs.
8							
9							
10							
11						SC	**Sandy Gravelly CLAY,** yellowish brown (10YR 5/4), dry to damp, stiff, friable, low to no plasticity, slightly sticky, 70% clay binder, 20% medium to coarse subrounded mudstone clasts, 10% fine sands, with 0.4' thick fine subrounded
12			DP-1-d12 @ 0 ppm				
13							
14							gravel at lower contact, no odor, no discoloration, abrupt contact at 13.7' bgs.
15			DP-1-d16 @ 0 ppm			CL	**CLAY,** dark yellowish brown (10YR 4/4), damp to moist at 15' bgs; stiff to medium stiff at 15' bgs, moderate plasticity, 90% clay binder with 10% of fine
16			First GW DP-1 @ 16' bgs				
17							subrounded sand clasts, gradational contact at 16' bgs.
18							
19			DP-1-d20 @ 0 ppm			MH	**Sandy Clayey SILT,** yellowish brown (10YR 4/4), saturated, soft to very soft, moderate to high plasticity, slightly to non sticky, 70% silts, 20% clays, 10%
20							
21							coarse subrounded sands, gradational contact at 17.5' bgs.
22							
23						SC	**Sandy CLAY,** yellowish brown (10YR 5/4), damp to moist, medium stiff, slightly friable, low to no plasticity, slightly sticky, 80% clay binder, 30% medium to
24			DP-1-d24 @ 0 ppm				
25							coarse subrounded sands, no odor, no discoloration, abrupt contact at 18.1'bgs.
26						MH	**Sandy Clayey SILT,** dark yellowish brown (10YR 4/4), moist to damp at 19.5'
27			DP-1-d28 @ 0 ppm				
28							bgs, soft to medium stiff at 19.5' bgs, moderate to high plasticity, non sticky,
29							70% silts, 20% clays, 10% fine subrounded sands, gradational at 19.5' bgs.
30						GC	**Gravelly CLAY,** dark yellowish brown (10YR 4/4), dry, hard, low to no plasticity,
31			DP-1-d32 @ 0 ppm				
32							non sticky, 90% clay binder, 10% fine subrounded gravels, gradational contact
33							at 21.4' bgs.
34						GC	**Sandy Gravelly CLAY,** dark grayish brown (10YR 4/2), damp to very moist at
35			DP-1-d36 @ 0 ppm				
36							29-29.5' bgs, thereafter damp to 30' bgs, medium stiff, low to no plasticity, friable, 70% clay binder, 20% medium to coarse subrounded gravels, trace fine
37							
38							subrounded cobbles, 10% fine to medium sands, abrupt contact at 30' bgs.
39			DP-1-d40 @ 0 ppm			GC	**Gravelly Sandy CLAY,** dark yellowish brown (10YR 4/4), dry, hard, low to no
40							
41							plasticity, non sticky, 90% clay binder, 10% fine subrounded gravel clasts decreasing at 31' bgs and fining to coarse sands from 31-36' bgs, fine sands
42			Second GW DP-1 @ 41' bgs				
43						MH	from 36-41' bgs. Gradational contact at 41' bgs.
44			DP-1-d44 @ 0 ppm				**Sandy Clayey SILT,** dark yellowish brown (10YR 4/4), saturated, very soft, low to moderate plasticity, slightly sticky, 70% silts, 20% clays, 10% fine subrounded sands.
45							

No Soil Samples Analyzed

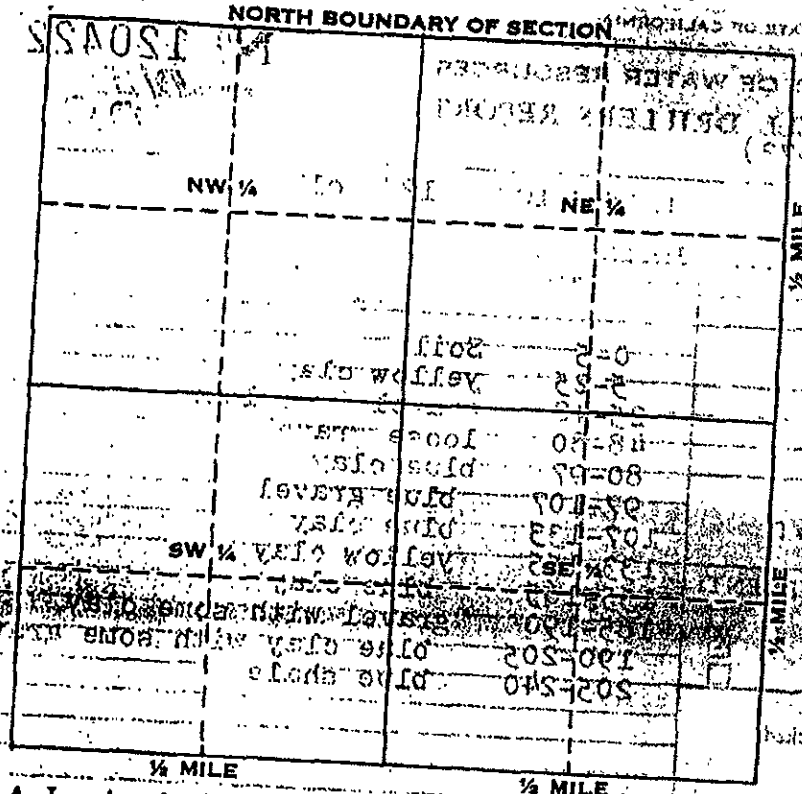
Terminate boring at 45' bgs, by grouting with portland cement to groundsuface. Move north 4 feet and hydropunch to 45' bgs, with 4' feet of screen from 41-45' bgs.

Low Permeability, Non-Saturated

Higher Permeability, Saturated/wet

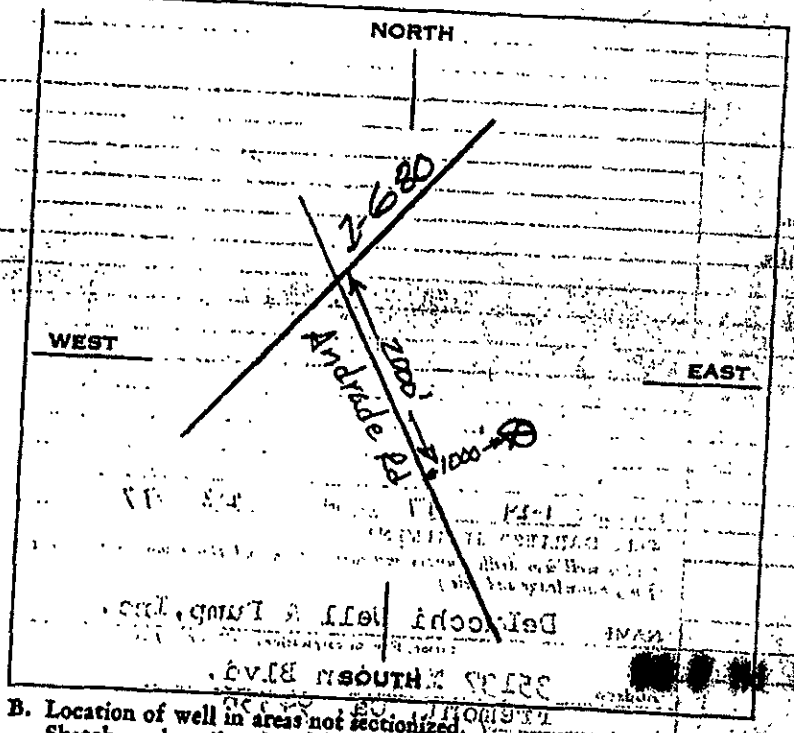
WELL LOCATION SKETCH

12042



A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.

Township
Range
Section No.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

Rec'd

WellSpy
WATER WELL SURVEYS

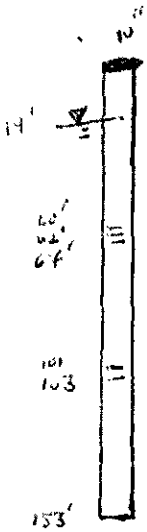
December 13, 2002

Clear Water Group
229 Tewksbury Ave.
Richmond, CA 94801

Attn: Brian Pierskalla

Video Log of Sunol Tree Gas Station Water Production Well (10" diam, diamond)

Observation report on survey performed December 12, 2002 for Sunol Tree Gasoline Station, located at 3004 Andrade rd in Alameda County.



1) Well ID on top is 10". The well is under a diamond plate cover and is 12" below the level of the surounding concrete driveway.
2) Zero datum marked at top of the concrete driveway. All side view depths are 18" less than indicated on the monitor.
3) 19' Static water level.
4) 53' Casing appears to be slightly oblong in this area.
5) 55' Clean spot on the casing. Layer of rust was broke off the casing wall.
6) 60' First evidence of Mills knife perforations in the casing.
7) 62' One perforation is evident with water movement.
8) 67' One perforation is evident with water movement.
9) 101' One perforation is evident with water movement.
10) 103' One perforation is evident with water movement.
11) 153' Bottom of the well.
12) Note: There appears to be some biological growth on the casing walls.
13) Note: There may be more perforations in the well that are plugged or encrusted but not visible.

Thank you for choosing WellSpy for your well video service.

WellSpy

Bruce Hunter

CUSTOMER COPY

DE LUCCHI WELL & PUMP, INC.

DRILLING, CLEANING & REPAIR

35137 MISSION BLVD. PHONE (415) 793-2822

SALES, SERVICE & SUPPLIES

FREMONT, CALIFORNIA 94536

COMPLETED

Invoice No. 24812

Well G2
T-Bear Pump Test 3000 Andrade Road

APN 96-0001-007-06

45/1E 20G2

BILLING DATE March 4,1983

TO Helen Hayes
251 Arguello
San Francisco, CA. 94118

ORDER DATE March 3,1983 Joanne Blott-

CUSTOMER'S ORDER NO. 862-2309

Mr. Tovani- 991-9299 Till 9:30A. 387-1632 Evenings

PHONE

WORK ORDERED BY	ORDER TAKEN BY	HOW	LOCATION OF JOB
	JHD	phone	3000 Andrade Rd. Sunol T-Bear Ranch

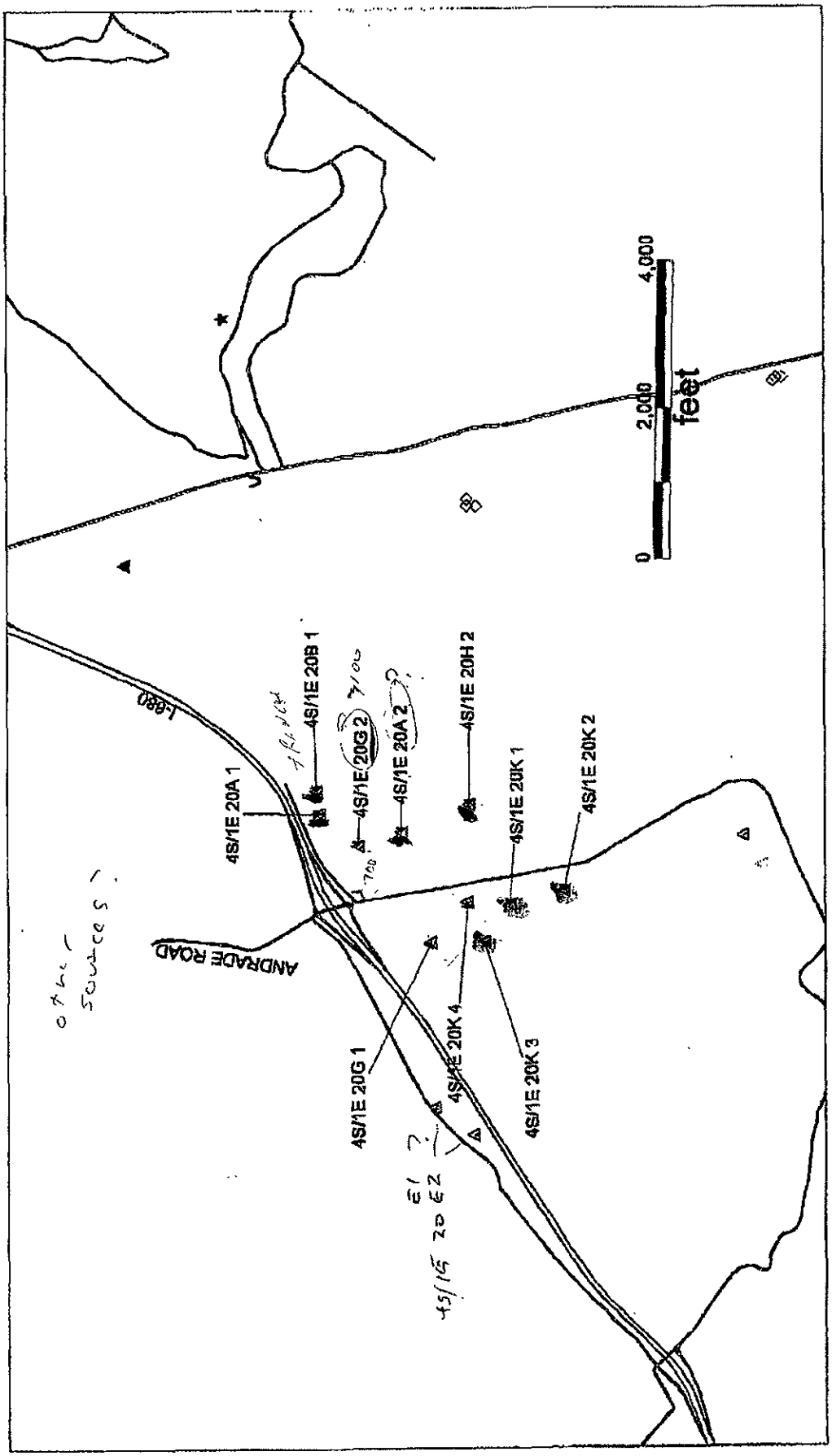
WORK TO BE DONE ▶ Run well test if pump yields more than 5 gpm.

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
	On March 4,1983 a serviceman from DeLucchi Well & Pump, Inc. conducted a well test at 3000 Andrade Rd., Sunol.		
	He began pumping at a rate of 22 gallons per minute with a static level of 1 foot above ground level. After pumping for 4 hours at that rate, the water level was 2'6" below ground level.		
	5 hrs. labor 1 man $42.00 per hr to run test on well.		$ 210.-
		TOTAL	$ 210.-

RECEIVED

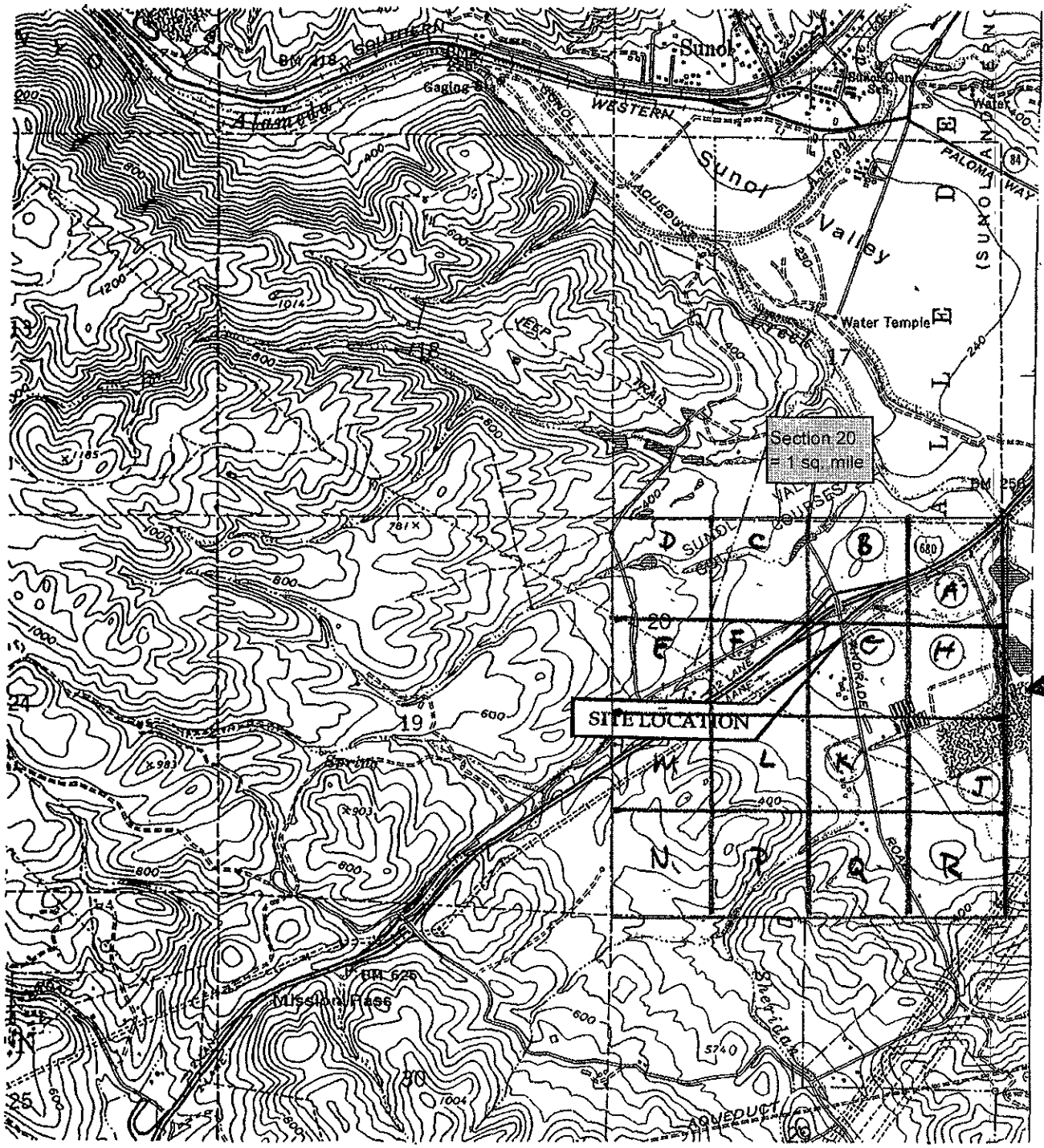
TERMS: 30 DAYS – NET.

Goods delivered to the carrier in good order, and his receipt for same, constitutes delivery of merchandise covered by this invoice. All claims must be made within ten days after receipt of goods. Terms Net 30 Day. Overdue bills subject to a Finance Charge of 1½% (18% Annual Interest). All prices and quotations are subject to change without notice. Shipments and deliveries are contingent on strikes, accidents and/or delays beyond our control. If action is instituted by seller to collect a part or all of purchase price, Buyer agrees to pay such sum as the court may fix as attorneys fees and court costs.


4,000
2,000
feet
0
I-680
4S/1E 20A 1
4S/1E 20B 1
4S/1E 20G 2
4S/1E 20A 2
4S/1E 20H 2
4S/1E 20K 1
4S/1E 20K 2
ANDRADE ROAD
4S/1E 20G 1
4S/1E 20K 4
4S/1E 20K 3

= from DWR

WELL LOGS



SOURCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC MAPS
NILES, CALIFORNIA, 1961, PHOTOREVISED 1980

APPROXIMATE SCALE IN FEET

SITE LOCATION MAP

Sunol Tree Gas Service Station
3400 Andrade Road,
Sunol, California

CLEARWATER GROUP, INC.

Project No.	Figure Date	Figure
CB021C	5/03	1

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 40319 - 9/15/2004 4:11:53 PM

Order:	40319	**Date Collected:**	9/8/2004
Project Name:	T-Bear Ranch - Carbon Treatment System Testing (Pre/Mid/Post)	**Date Received:**	9/8/2004
Project Number:	23027.C	**P.O. Number:**	23027.C

Certificate of Analysis - Final Report

On September 08, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	
	TPH as Gasoline - GC/MS	GC-MS	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Project Number: 23027.C
Project Name: T-Bear Ranch
Date Received: 9/8/2004
P.O. Number: 23027.C
Sampled By: Client

Certificate of Analysis - Data Report

Lab # : 40319-001 **Sample ID: PRE** **Matrix:** Liquid **Sample Date:** 9/8/2004 11:58 AM

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Toluene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethyl Benzene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Xylenes, Total	ND		1	1	µg/L	N/A	N/A	09/13/2004	WMS5040913
Methyl-t-butyl Ether	14		1	1	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethyl-t-butyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
tert-Butanol (TBA)	ND		1	10	µg/L	N/A	N/A	09/13/2004	WMS5040913
Diisopropyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
tert-Amyl Methyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethanol	ND		1	100	µg/L	N/A	N/A	09/13/2004	WMS5040913

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	88.8	64 - 125
Dibromofluoromethane	89.1	23 - 172
Toluene-d8	83.8	70 - 134

Analyzed by: Jhsiang
Reviewed by: BDHABALIA

Method: GC-MS

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	µg/L	N/A	N/A	09/13/2004	WMS5040913

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	88.8	64 - 125
Dibromofluoromethane	89.1	23 - 172
Toluene-d8	83.8	70 - 134

Analyzed by: Jhsiang
Reviewed by: BDHABALIA

Detection Limit = Detection Limit for Reporting. ND = Not Detected at or above the Detection Limit. DF = Dilution and/or Prep Factor

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Project Number: 23027.C
Project Name: T-Bear Ranch
Date Received: 9/8/2004
P.O. Number: 23027.C
Sampled By: Client

Certificate of Analysis - Data Report

Lab # : 40319-002 **Sample ID: MID** **Matrix:** Liquid **Sample Date:** 9/8/2004 11:55 AM

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Toluene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethyl Benzene	ND		1	0.5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Xylenes, Total	ND		1	1	µg/L	N/A	N/A	09/13/2004	WMS5040913
Methyl-t-butyl Ether	ND		1	1	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethyl-t-butyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
tert-Butanol (TBA)	ND		1	10	µg/L	N/A	N/A	09/13/2004	WMS5040913
Diisopropyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
tert-Amyl Methyl Ether	ND		1	5	µg/L	N/A	N/A	09/13/2004	WMS5040913
Ethanol	ND		1	100	µg/L	N/A	N/A	09/13/2004	WMS5040913

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	88.3	64 - 125
Dibromofluoromethane	88.5	23 - 172
Toluene-d8	83.7	70 - 134

Analyzed by: Jhsiang
Reviewed by: BDHABALIA

Method: GC-MS

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	µg/L	N/A	N/A	09/13/2004	WMS5040913

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	88.3	64 - 125
Dibromofluoromethane	88.5	23 - 172
Toluene-d8	83.7	70 - 134

Analyzed by: Jhsiang
Reviewed by: BDHABALIA

Detection Limit = Detection Limit for Reporting. ND = Not Detected at or above the Detection Limit. DF = Dilution and/or Prep Factor

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Liquid

Validated by: BDHABALIA - 09/15/04

QC Batch ID: WMS5040913

Analysis Date: 9/13/2004

Method Blank

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0.5	0.5	µg/L
Diisopropyl Ether	ND	1	5	5	µg/L
Ethanol	ND	1	100	100	µg/L
Ethyl Benzene	ND	1	0.5	0 5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
Bromofluorobenzene	**88.5**	64 - 125
Dibromofluoromethane	**83.9**	23 - 172
Toluene-d8	**85.5**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results

Liquid

Reviewed by: BDHABALIA - 09/15/04

QC Batch ID: WMS5040913

Analysis Date: 9/13/2004

LCS **Method: EPA 8260B** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	18.7	LCS	9/13/2004	94			60 - 132
Benzene	<0.5	20.0	21.4	LCS	9/13/2004	110			77 - 154
Chlorobenzene	<0.5	20.0	21.1	LCS	9/13/2004	110			66 - 141
Methyl-t-butyl Ether	<1	20.0	21.2	LCS	9/13/2004	110			58 - 127
Toluene	<0.5	20.0	19.1	LCS	9/13/2004	96			47 - 137
Trichloroethene	<0.5	20.0	25.3	LCS	9/13/2004	130			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	95.9	64 - 125
Dibromofluoromethane	94.4	23 - 172
Toluene-d8	80.8	70 - 134

LCSD **Method: EPA 8260B** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	17.2	LCSD	9/13/2004	86	8.4	25	60 - 132
Benzene	<0.5	20.0	20.2	LCSD	9/13/2004	100	5.8	25	77 - 154
Chlorobenzene	<0.5	20.0	19.9	LCSD	9/13/2004	100	5.9	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	20.6	LCSD	9/13/2004	100	2.9	25	58 - 127
Toluene	<0.5	20.0	18.0	LCSD	9/13/2004	90	5.9	25	47 - 137
Trichloroethene	<0.5	20.0	24.0	LCSD	9/13/2004	120	5.3	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.2	64 - 125
Dibromofluoromethane	91.0	23 - 172
Toluene-d8	80.4	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Liquid

Validated by: BDHABALIA - 09/15/04

QC Batch ID: WMS5040913

Analysis Date: 9/13/2004

Method Blank

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	88.5	64 - 125
Dibromofluoromethane	83.9	23 - 172
Toluene-d8	85.5	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Liquid

Reviewed by: BDHABALIA - 09/15/04

QC Batch ID: WMS5040913

Analysis Date: 9/13/2004

LCS **Method: GC-MS** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250	265	LCS	9/13/2004	110			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	91.7	64 - 125
Dibromofluoromethane	85.0	23 - 172
Toluene-d8	82.0	70 - 134

LCSD **Method: GC-MS** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250	260	LCSD	9/13/2004	100	1.9	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	93.2	64 - 125
Dibromofluoromethane	84.6	23 - 172
Toluene-d8	85.1	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / ~~23027.06~~ 23027.C

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman AB

Date: 9.8.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline + BTEX by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates + ETHANOL EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PRE	GRAB	9-8-04	11:59	H_2O	x3						HOLD			HOLD			410319-001
MID	GRAB	9-8-04	11:55	H_2O	x3						X			X			002
POST	GRAB	9-8-04	11:50	H_2O	x3						X			X			003

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1.)	Aaron Bierman	9/8/04 @ 1:30	Rmadrid	9/8/04 1631
2.)				
3.)				
4.)				
5.)				

SAMPLE CONDITION: (circle 1)

1.)	Ambient	(Refrigerated)	Frozen
2.)	Ambient	Refrigerated	Frozen
3.)	Ambient	Refrigerated	Frozen
4.)	Ambient	Refrigerated	Frozen
5.)	Ambient	Refrigerated	Frozen

NOTES:

[ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.*

[ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*

[ ] *Please use MDL (Minimum Detection Limit) for any diluted samples*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

T-BEAR WELL MONTHLY CARBON TREATMENT SAMPLES

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax (831) 722-1159

CHAIN -OF-CUSTODY RECORD

Revised COC

PAGE 1 OF 1

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.06 23027.C

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sampler: Aaron Bierman AB

Date: 9-8-04

40319

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 ml. VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline + BTEX by EPA Method 8260	Volatile Organics: VOCs EPA Method 8260B	Solvents by EPA Method 8010	Fuel Oxygenates + Ethanol EPA Method 8260	Additional Analysis: PNA's by EPA Method 8270 SIM	HVOCs by EPA Method 8270 SIM	LUFT 5 Metals
PRE	GRAB	9-8-04	11:38	H_2O	X3						HOLD X	9-9-04		9 HOLD X	9-9-04		001
MID	GRAB	9-8-04	11:35	H_2O	X3						X			X			002
POST	GRAB	9-8-04	11:30	H_2O	X3						X HOLD 9-9-04			X HOLD	9-9-04		003

	RELEASED BY:	Date & Time		RECEIVED BY:	Date & Time
1)	Aaron Bierman	9/8/04	1730	[signature]	9/8/04 1631
2)					
3)					
4)					
5)					

SAMPLE CONDITION: (circle 1)

Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

☐ If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a maximum detection limit of 5 ug/L, and report only confirmed 8260 detections.

☐ For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method 8260.

☐ Please use MDL (Minimum Detection Limit) for any diluted samples.

Please send certified results via *.pdf to laboratory@weber-hayes.com.

T-BEAR WELL MONTHLY CARBON TREATMENT SAMPLES

Changed Order Rec'd 9/9/04

Sued.xls

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

FAX TRANSMISSION

To: *Entech Analytical -*
Fax #: *(408) 588-0201*

Date: *September 9, 2004*

From: *Aaron Bierman*

Subject: Change In Samples for Analysis

Attached to this FAX is a **REVISED** Chain Of Custody (COC) form.

The samples listed on this COC's were transported to your lab yesterday (9/8/04). The revisions include:

1) HOLD the "post" sample
2) As per COC, analyze the "mid" sample
3) Analyze the "pre" sample

The analysis remains the same, the change is for which samples to analyze. Please see revised chain for any further details.

Please call with any comments or questions.

Aaron Bierman
Senior Staff Geologist RG #7490

Office: (831) 722-3580
Cell:(831) 334-2237

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN-OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / ~~23027.06~~ 23027.C

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman (AB)

Date: 9.8.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline + BTEX by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates + ETHANOL EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PRE	GRAB	9-8-04	11:58	H_2O	x3						HOLD			HOLD	40319-001		
MID	GRAB	9-8-04	11:55	H_2O	x3						X			X			002
POST	GRAB	9-8-04	11:50	H_2O	x3						X			X			003

	RELEASED BY:	Date & Time		RECEIVED BY:	Date & Time	SAMPLE CONDITION: (circle 1)		
1.)	Aaron Bierman	9/8/04 @ 4:30	→	S. Prado	9/8/04 1631	Ambient	(Refrigerated)	Frozen
2.)			→			Ambient	Refrigerated	Frozen
3.)			→			Ambient	Refrigerated	Frozen
4.)			→			Ambient	Refrigerated	Frozen
5.)			→			Ambient	Refrigerated	Frozen

NOTES:

- [ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.*
- [ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*
- [ ] *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

T-BEAR WELL MONTHLY CARBON TREATMENT SAMPLES

SumoLabs

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 40046 - 8/19/2004 3:25:03 PM

Order: 40046
Project Name: T-Bear Ranch - Purge Water From Geophysical Pumping
Project Number: 23027.C

Date Collected: 8/13/2004
Date Received: 8/13/2004
P.O. Number: 23027.C

Certificate of Analysis - Final Report

On August 13, 2004, sample was received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	
	PDF	PDF	
	TPH as Gasoline - GC/MS	GC-MS	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/19/2004
Date Received: 8/13/2004
Project Name: T-Bear Ranch
Project Number: 23027.C
P.O. Number: 23027.C
Sampled By: Client

Certified Analytical Report

Lab # : 40046-001 **Sample ID: Purge Water** **Matrix:** Liquid **Sample Date:** 8/13/2004 12:30 PM

Method: EPA 8260B / EPA 5030B / Purge & Trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	08/18/2004	WMS1040818B
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	08/18/2004	WMS1040818B
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	08/18/2004	WMS1040818B
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	08/18/2004	WMS1040818B
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	08/18/2004	WMS1040818B

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: Xbian
4-Bromofluorobenzene	91.4	64 - 125	Reviewed by: MTU
Dibromofluoromethane	107 0	23 - 172	
Toluene-d8	102.0	70 - 134	

TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	08/18/2004	WMS1040818B

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: Xbian
4-Bromofluorobenzene	108.0	64 - 125	Reviewed by: MTU
Dibromofluoromethane	101.0	23 - 172	
[redacted]ne-d8	109.0	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)

DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 08/19/04

QC Batch ID: WMS1040818B
Matrix: Liquid
Date of Analysis: 8/18/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0 5	0.5	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	91.7	64 - 125
Dibromofluoromethane	101.0	23 - 172
Toluene-d8	100.0	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 08/19/04

QC Batch ID: WMS1040818B
Date of Analysis: 8/18/2004

Method EPA 8260B — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	19.4	LCS	8/18/2004	97.0			60 - 132
Benzene	<0.5	20.0	22.2	LCS	8/18/2004	111.0			77 - 154
Chlorobenzene	<0.5	20.0	21.2	LCS	8/18/2004	106.0			66 - 141
Methyl-t-butyl Ether	<1	20.0	19.4	LCS	8/18/2004	97.0			58 - 127
Toluene	<0.5	20.0	19.9	LCS	8/18/2004	99.5			47 - 137
Trichloroethene	<0.5	20.0	20.9	LCS	8/18/2004	104.5			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	91.8	64 - 125
Dibromofluoromethane	99.8	23 - 172
Toluene-d8	92.5	70 - 134

1,1-Dichloroethene	<0.5	20.0	18.8	LCSD	8/18/2004	94.0	3.1	25	60 - 132
Benzene	<0.5	20.0	21.5	LCSD	8/18/2004	107.5	3.2	25	77 - 154
Chlorobenzene	<0.5	20.0	20.8	LCSD	8/18/2004	104.0	1.9	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	19.7	LCSD	8/18/2004	98.5	1.5	25	58 - 127
Toluene	<0.5	20.0	19.6	LCSD	8/18/2004	98.0	1.5	25	47 - 137
Trichloroethene	<0.5	20.0	20.5	LCSD	8/18/2004	102.5	1.9	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	90.1	64 - 125
Dibromofluoromethane	99.2	23 - 172
Toluene-d8	93.0	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Matrix Spike / Duplicate Results

Reviewed by. MTU - 08/19/04

QC Batch ID: WMS1040818B

Date of Analysis: 8/18/2004

Method EPA 8260B — Liquid — Conc. Units: µg/L

Parameter	Sample Result	Spike Amount	Spike Result	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
MS SampleNumber: 39956-002									
Benzene	ND	20.0	21.7464	MS	8/18/2004	**108.7**			73 - 134
Methyl-t-butyl Ether	17.1	20.0	36.4	MS	8/18/2004	**96.5**			42 - 157
Toluene	ND	20.0	20.1637	MS	8/18/2004	**100.8**			79 - 117

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**86.4**	64 - 125
Dibromofluoromethane	**105.9**	23 - 172
Toluene-d8	**98.3**	70 - 134

MSD SampleNumber: 39956-002									
Benzene	ND	20.0	21.4461	MSD	8/18/2004	**107.2**	**1.4**	25	73 - 134
Methyl-t-butyl Ether	17.1	20.0	36.6	MSD	8/18/2004	**97.5**	**1.0**	25	42 - 157
Toluene	ND	20.0	19.7234	MSD	8/18/2004	**98.6**	**2.2**	25	79 - 117

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**88.0**	64 - 125
Dibromofluoromethane	**103.4**	23 - 172
Toluene-d8	**97.0**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 08/19/04

QC Batch ID: WMS1040818B
Matrix: Liquid
Date of Analysis: 8/18/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	108.0	64 - 125
Dibromofluoromethane	95.1	23 - 172
Toluene-d8	108.0	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 08/19/04

QC Batch ID: WMS1040818B
Date of Analysis: 8/18/2004

Method GC-MS Liquid Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	125.0	145.3	LCS	8/18/2004	116.2			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	109.0	64 - 125
Dibromofluoromethane	93.6	23 - 172
Toluene-d8	108.0	70 - 134

TPH as Gasoline	<25	125.0	140.2	LCSD	8/18/2004	112.2	3.6	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	110.0	64 - 125
Dibromofluoromethane	92.9	23 - 172
Toluene-d8	108.0	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / ~~83027.0~~ 23027.C

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention, Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman

Date: 8.13.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH. Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline? M-BTEX by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PURGE WATER	GRAB	8.13.04	12:30 pm	H2O	XJ						X			X		40846-001	

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1.)		8/13/04 @ 1:25 pm		8/13/04 1325
2.)				
3.)				
4.)				
5.)				

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

- If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections
- For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260.
- Please use MDL (Minimum Detection Limit) for any diluted samples

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / ~~23027.0~~ 23027.C

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman AB

Date: 8.13.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline# M-BTEX by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PURGE WATER	GRAB	8.13.04	1230pm	H2O	X3						X			X		40946-001	

RELEASED BY:

1.) Aaron Bierman Date & Time 8/13/04 @ 1:25pm

2.) _____ _____

3.) _____ _____

4.) _____ _____

5.) _____ _____

RECEIVED BY:

1.) _____ Date & Time 8/13/04 1325

2.) _____ _____

3.) _____ _____

4.) _____ _____

5.) _____ _____

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

- [ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*
- [ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*
- [ ] *Please use MDL (Minimum Detection Limit) for any diluted samples*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Pat Hoban
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39789 - 8/5/2004 3:18:51 PM

Order:	39789		
Project Name:	T-Bear Ranch	PZ-2 @ 20' & 24'	
Project Number:	23027.D	PZ-3 @ 16 & 44'	
Date Collected:	7/23/2004		
Date Received:	7/26/2004		
P.O. Number:			

Certificate of Analysis - Final Report

On July 26, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	
	TPH as Gasoline - GC/MS	GC-MS	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Pat Hoban

Date: 8/5/2004
Date Received: 7/26/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number:
Sampled By:

Certified Analytical Report

Lab # : 39789-001 **Sample ID:** PZ-2@20 **Matrix:** Liquid **Sample Date:** 7/23/2004

Method: EPA 8260B

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Methyl-t-butyl Ether	65		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS1040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS1040728

Comment. Ethanol analysed on GCMS#3, On 08/03/04 and Batch # WMS3040803.

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	97.6	64 - 125
Dibromofluoromethane	110.1	23 - 172
Toluene-d8	100.0	70 - 134

Analyzed by: TFulton
Reviewed by: MTU

TPH as Gasoline	66	x	1	25	25	µg/L	N/A	N/A	07/28/2004	WMS1040728

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	115.1	64 - 125
Dibromofluoromethane	103.6	23 - 172
Toluene-d8	115.1	70 - 134

Analyzed by: TFulton
Reviewed by: MTU

*** TPH as Gasoline value is due to MTBE.

ND = Not Detected at or above the PQL

DF = Dilution and/or Prep Factor

PQL = Practical Quantitation Limit (Includes Dilution)

PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Pat Hoban

Date: 8/5/2004
Date Received: 7/26/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number:
Sampled By:

Certified Analytical Report

Lab # : 39789-002 **Sample ID:** PZ-2@24 **Matrix:** Liquid **Sample Date:** 7/23/2004

Method: EPA 8260B

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Methyl-t-butyl Ether	74		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS1040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS1040728

Comment: Ethanol analysed on GCMS#3, On 08/03/04 and Batch # WMS3040803.

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: TFulton
4-Bromofluorobenzene	97.4	64 - 125	Reviewed by: MTU
Dibromofluoromethane	108.1	23 - 172	
Toluene-d8	100.0	70 - 134	

TPH as Gasoline	73	x	1	25	25	µg/L	N/A	N/A	07/28/2004	WMS1040728

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: TFulton
4-Bromofluorobenzene	114.9	64 - 125	Reviewed by: MTU
Dibromofluoromethane	101.7	23 - 172	
Toluene-d8	107.5	70 - 134	

*** TPH as Gasoline value is due to MTBE.

ND = Not Detected at or above the PQL
DF = Dilution and/or Prep Factor
PQL = Practical Quantitation Limit (No Dilution)
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Pat Hoban

Date: 8/5/2004
Date Received: 7/26/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number:
Sampled By:

Certified Analytical Report

Lab # : 39789-003 **Sample ID: PZ-3@16** **Matrix:** Liquid **Sample Date:** 7/23/2004

Method: EPA 8260B

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS1040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS1040728

Comment: Ethanol analysed on GCMS#3, On 08/03/04 and Batch # WMS3040803.

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: TFulton
4-Bromofluorobenzene	97.0	64 - 125	Reviewed by: MTU
Dibromofluoromethane	110.3	23 - 172	
Toluene-d8	100.2	70 - 134	

TPH as Gasoline	44	x	1	25	25	µg/L	N/A	N/A	07/28/2004	WMS1040728

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: TFulton
4-Bromofluorobenzene	114.5	64 - 125	Reviewed by: MTU
Dibromofluoromethane	103.9	23 - 172	
Toluene-d8	107.7	70 - 134	

*** TPH as Gasoline value is due to MTBE.

ND = Not Detected at or above the PQL

DF = Dilution and/or Prep Factor

PQL = Practical Quantitation Limit (No Dilution)

PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Pat Hoban

Date: 8/5/2004
Date Received: 7/26/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number:
Sampled By:

Certified Analytical Report

Lab # : 39789-004 **Sample ID:** PZ-3@44 **Matrix:** Liquid **Sample Date:** 7/23/2004

Method: EPA 8260B

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS1040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS1040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS1040728

Comment: Ethanol analysed on GCMS#3, On 08/03/04 and Batch # WMS3040803.

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: TFulton
4-Bromofluorobenzene	97.0	64 - 125	Reviewed by: MTU
Dibromofluoromethane	111.8	23 - 172	
Toluene-d8	100.0	70 - 134	

TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/28/2004	WMS1040728

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: TFulton
4-Bromofluorobenzene	114 4	64 - 125	Reviewed by: MTU
Dibromofluoromethane	105.3	23 - 172	
Toluene-d8	107.4	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

QC Batch ID: WMS1040728
Matrix: Liquid
Date of Analysis: 7/28/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Diisopropyl Ether	ND	1	5	5	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Trichloroethene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	100.5	64 - 125
Dibromofluoromethane	107.0	23 - 172
Toluene-d8	99.1	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

QC Batch ID: WMS1040728
Date of Analysis: 7/28/2004

Method EPA 8260B — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	17.87	LCS	7/28/2004	89.4			60 - 132
Benzene	<0.5	20.0	21.03	LCS	7/28/2004	105.2			77 - 154
Chlorobenzene	<0.5	20.0	19.67	LCS	7/28/2004	98.4			66 - 141
Methyl-t-butyl Ether	<1	20.0	21.28	LCS	7/28/2004	106.4			58 - 127
Toluene	<0.5	20.0	18.58	LCS	7/28/2004	92.9			47 - 137
Trichloroethene	<0.5	20.0	19.62	LCS	7/28/2004	98.1			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	97.1	64 - 125
Dibromofluoromethane	105.6	23 - 172
Toluene-d8	94.5	70 - 134

1,1-Dichloroethene	<0.5	20.0	17.97	LCSD	7/28/2004	89.8	0.6	25	60 - 132
Benzene	<0.5	20.0	21 64	LCSD	7/28/2004	108.2	2.9	25	77 - 154
Chlorobenzene	<0.5	20.0	19.97	LCSD	7/28/2004	99.8	1.5	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	22.04	LCSD	7/28/2004	110.2	3.5	25	58 - 127
Toluene	<0.5	20.0	19 08	LCSD	7/28/2004	95.4	2.7	25	47 - 137
Trichloroethene	<0.5	20.0	20.01	LCSD	7/28/2004	100.1	2.0	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.7	64 - 125
Dibromofluoromethane	105.1	23 - 172
Toluene-d8	94.4	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

QC Batch ID: WMS1040728
Matrix: Liquid
Date of Analysis: 7/28/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	118.5	64 - 125
Dibromofluoromethane	100.7	23 - 172
Toluene-d8	106.4	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

QC Batch ID: WMS1040728
Date of Analysis: 7/28/2004

Method GC-MS Liquid Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250 0	242.99	LCS	7/28/2004	97.2			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	117.9	64 - 125
Dibromofluoromethane	101.7	23 - 172
Toluene-d8	105.3	70 - 134

TPH as Gasoline	<25	250.0	248.3	LCSD	7/28/2004	99.3	2.2	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	118.7	64 - 125
Dibromofluoromethane	100.2	23 - 172
Toluene-d8	105.8	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: ~~Standard Five Day~~ 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sampler: Aaron Bierman AB

Date: 7/23/04

39789

Sample Identification	Sample Depth (Ft. BGS)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PZ-2 @ 20'	20'	7/23/04	am	H_2O	x3		-001				X			X			
PZ-2 @ 24'	24'	7-23-04	am	H_2O	x5		-002				X			X			
PZ-3 @ 16'	16'	7-23-04	am	H_2O	x5		-003				X			X			
PZ-3 @ 44'	44'	7-23-04	pm	H_2O	x5		-004				X			X			

3 DAYS

	RELEASED BY:	Date & Time	RECEIVED BY	Date & Time
1.)	Aaron Bierman	7/23/04 @ 7:15 pm		07/23/04 10:07:00 pm
2.)				
3.)				
4.)				
5.)				

SAMPLE CONDITION: (circle 1)

1.)	Ambient	Refrigerated	Frozen
2.)	Ambient	Refrigerated 13.6°C	Frozen
3.)	Ambient	Refrigerated AB	Frozen
4.)	Ambient	Refrigerated	Frozen
5.)	Ambient	Refrigerated	Frozen

NOTES:

- [ ] If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.
- [ ] For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260
- [ ] Please use MDL (Minimum Detection Limit) for any diluted samples

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: ~~Standard Five Days~~ 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sampler: Aaron Bierman

Date: 7/23/04

39789

Sample Identification	Sample Depth (Ft. bgs)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PZ-2 @ 20'	20'	7/23/04	am	H_2O	x3		-001										
PZ-2 @ 24'	24'	7-23-04	am	H_2O	x5		-002				X			X			
PZ-3 @ 16'	16'	7-23-04	am	H_2O	x5		-003				X			X			
PZ-3 @ 44'	44'	7-23-04	pm	H_2O	x5		-004				X			X			
											X			X			

3 DAYS

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1.)	Aaron Bierman	7/23/04 @ 7:15pm		
2.)				
3.)				
4.)				
5.)				

SAMPLE CONDITION: (circle 1)

Ambient	Refrigerated	Frozen	12.6°C
Ambient	Refrigerated	Frozen	
Ambient	Refrigerated	Frozen	
Ambient	Refrigerated	Frozen	
Ambient	Refrigerated	Frozen	

NOTES:

- ☐ If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L and report only confirmed 8260 detections.
- ☐ For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260
- ☐ Please use MDL (Minimum Detection Limit) for any diluted samples.

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

CHANGE ORDER FORM

Date Requested: 7-29-04
Date Needed: 5-Day
Client: Weber

Workorder #: 39751, 39770, 39789
Project Name or #: Valvidos
Ordered by: Pat Holden

Laboratory ID#	Client ID#	Matrix	Change Requested
			Add BTEX to all samples previously analyzed

Comments: Thank You ST

Date Test Added:

Test Added By:

Distribution:
Original in the Workorder Folder. Accounting and all involved departments must get a copy of this form.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39770 - 8/5/2004 3:38:43 PM

Order:	39770	**Date Collected:**	7/22/2004
Project Name:	T-Bear Ranch - PZ-2 @ 44'	**Date Received:**	7/23/2004
Project Number:	23027.D - PZ-1 @ 20'	**P.O. Number:**	23027.D

Certificate of Analysis - Final Report

On July 23, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	8260Petroleum=Oxy's ONLY. No ethanol
	PDF	PDF	
	TPH as Gasoline - GC/MS	GC-MS	Gas by GCMS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/23/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39770-001 **Sample ID: PZ-1 @ 20'** **Matrix:** Liquid **Sample Date:** 7/22/2004

Method: EPA 8260B / EPA 5030B / Purge & Trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS5040728
Methyl-t-butyl Ether	13		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS5040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS5040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS5040728

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	94.0	64 - 125	Reviewed by: MTU
Dibromofluoromethane	93.8	23 - 172	
Toluene-d8	98.7	70 - 134	

[redacted] Gasoline	34	x	1	25	25	µg/L	N/A	N/A	07/28/2004	WMS5040728

Comment: TPH as Gasoline reported value is a result of Acetone and MTBE which are within the TPH as Gasoline quantitation range

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	94.0	64 - 125	Reviewed by: MTU
Dibromofluoromethane	93.8	23 - 172	
Toluene-d8	98.7	70 - 134	

ND = Not Detected at or above the PQL

DF = Dilution and/or Prep Factor

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/23/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39770-002 **Sample ID:** PZ-2 @ 44' **Matrix:** Liquid **Sample Date:** 7/22/2004

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS5040728
Methyl-t-butyl Ether	90		1	1	1	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS5040728
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/28/2004	WMS5040728
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/28/2004	WMS5040728
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/28/2004	WMS5040728

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	94.5	64 - 125	Reviewed by: MTU
Dibromofluoromethane	95.3	23 - 172	
Toluene-d8	98.2	70 - 134	

T[illegible]s Gasoline	65	x	1	25	25	µg/L	N/A	N/A	07/28/2004	WMS5040728

[illegible]omment: TPH as Gasoline reported value due to high concentration of MTBE present in the TPH as Gasoline quantitation range.

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	94.5	64 - 125	Reviewed by: MTU
Dibromofluoromethane	95.3	23 - 172	
Toluene-d8	98.2	70 - 134	

ND = Not Detected at or above the PQL

DF = Dilution and/or Prep Factor

PQL = Practical Quantitation Limit (No Dilution)

PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by. MTU - 07/28/04

QC Batch ID: WMS5040728
Matrix: Liquid
Date of Analysis: 7/28/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Diisopropyl Ether	ND	1	5	5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	91.8	64 - 125
Dibromofluoromethane	98.3	23 - 172
Toluene-d8	99.3	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/28/04

QC Batch ID: WMS5040728
Date of Analysis: 7/28/2004

Method EPA 8260B — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.5	20.0	22.13	LCS	7/28/2004	110.6			77 - 154
Chlorobenzene	<0.5	20.0	23.5	LCS	7/28/2004	117.5			66 - 141
Methyl-t-butyl Ether	<1	20.0	18 4	LCS	7/28/2004	92.0			58 - 127
Toluene	<0.5	20.0	23.5	LCS	7/28/2004	117.5			47 - 137
Trichloroethene	<0.5	20.0	25.2	LCS	7/28/2004	126.0			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	99.1	64 - 125
Dibromofluoromethane	107.3	23 - 172
Toluene-d8	94.8	70 - 134

1,1-Dichloroethene	<0.5	20.0	19 2	LCSD	7/28/2004	96.0	14.2	25	60 - 132
Benzene	<0.5	20.0	19.4	LCSD	7/28/2004	97.0	13.1	25	77 - 154
Chlorobenzene	<0.5	20.0	21.1	LCSD	7/28/2004	105.5	10.8	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	15.8	LCSD	7/28/2004	79.0	15.2	25	58 - 127
Toluene	<0.5	20.0	20.6	LCSD	7/28/2004	103.0	13.2	25	47 - 137
Trichloroethene	<0.5	20.0	21.9	LCSD	7/28/2004	109.5	14.0	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	98.9	64 - 125
Dibromofluoromethane	87.7	23 - 172
Toluene-d8	96.9	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/28/04

QC Batch ID: WMS5040728
Matrix: Liquid
Date of Analysis: 7/28/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	91.8	64 - 125
Dibromofluoromethane	98.3	23 - 172
Toluene-d8	99.3	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by. MTU - 07/28/04

QC Batch ID: WMS5040728
Date of Analysis: 7/28/2004

Method GC-MS — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	125.0	133.6	LCS	7/28/2004	106.9			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.1	64 - 125
Dibromofluoromethane	90.7	23 - 172
Toluene-d8	99.1	70 - 134

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	125.0	136.	LCSD	7/28/2004	108.8	1.8	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	92.5	64 - 125
Dibromofluoromethane	90.7	23 - 172
Toluene-d8	99.8	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: ~~[illegible]~~ 24hr Rush 48hr Rush (72hr Rush) — circled

GLOBAL I.D.: NA

Sampler: Aaron Bierman

Date: 7-22-04

Sample Identification	Sample Depth (Ft, BGS)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS — Total Petroleum Hydrocarbons: TEPH. Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PZ-1 @ 20'	20'	7-22-04	AM	H_2O	x2	39770-001					X			X	7.8 9.3 Temp.		
PZ-2 @ 44'	44'	7-22-04	PM	H_2O	x5		-002				X			X	7.7		

3 DAYS

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time	SAMPLE CONDITION: (circle 1)		
1.)	Aaron Bierman	7/22/04 @ 8:45 pm	[signature]	7-22-04 8:45 PM	Ambient	(Refrigerated)	Frozen
2.)			[signature]	7/23/04 900	Ambient	Refrigerated	Frozen
3.)					Ambient	Refrigerated	Frozen
4.)					Ambient	Refrigerated	Frozen
5.)					Ambient	Refrigerated	Frozen

NOTES:

- [ ] If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections
- [ ] For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260
- [ ] Please use MDL (Minimum Detection Limit) for any diluted samples

-Please send certified results via *.pdf to laboratory@weber-hayes.com

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

Sampler: Aaron Bierman

Date: 7-22-04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: ~~Standard~~ 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sample Identification	Sample Depth (Ft, BGS)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PZ-1 @ 20'	20'	7-22-04	AM	H2O	x2	39770-001					X			X	7.8	3 Dump.	
PZ-2 @ 44'	44'	7-22-04	PM	H2O	x5		-002				X			X	7.7		

3 DAYS

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1.)	Aaron Bierman	7/22/04 @ 845pm	Courtney Quadrado	7-22-04 8:45PM
2.)				7/23/04 900
3.)				
4.)				
5.)				

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

- If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections
- For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260
- Please use MDL (Minimum Detection Limit) for any diluted samples.

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

CHANGE ORDER FORM

Date Requested: 7-29-04
Date Needed: 5-Day
Client: Weber

Workorder #: 39751, 39770, 39789
Project Name or #: various
Ordered by: Pat Holden

Laboratory ID#	Client ID#	Matrix	Change Requested
			Add BTEX to all samples previously analyzed

5 Day TAT

Comments: Thank You

Pat

Date Test Added:

Test Added By:

Distribution:
Original in the Workorder Folder. Accounting and all involved departments must get a copy of this form.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39751 - 8/5/2004 1:23:37 PM

Order:	39751	**Date Collected:**	7/21/2004
Project Name:	T-Bear Ranch - PZ-1 @ 12' & 42'	**Date Received:**	7/22/2004
Project Number:	23027.D - DO-1 @ 16' & 41'	**P.O. Number:**	23027.D

Certificate of Analysis - Revision

Note: This is a revision of the original 7/23/2004 issue to include additional analytes on all samples.

On July 22, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	
	PDF	PDF	Gas by GCMS
	TPH as Gasoline - GC/MS	GC-MS	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/22/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39751-001 **Sample ID: PZ-1 @ 12'** **Matrix:** Liquid **Sample Date:** 7/21/2004

Method: EPA 8260B / EPA 5030B / Purge & Trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		2	0.5	1	µg/L	N/A	N/A	07/23/2004	WMS5040723
Toluene	ND		2	0.5	1	µg/L	N/A	N/A	07/23/2004	WMS5040723
Ethyl Benzene	ND		2	0.5	1	µg/L	N/A	N/A	07/23/2004	WMS5040723
Xylenes, Total	ND		2	1	2	µg/L	N/A	N/A	07/23/2004	WMS5040723
Methyl-t-butyl Ether	230		2	1	2	µg/L	N/A	N/A	07/23/2004	WMS5040723
Ethyl-t-butyl Ether	ND		2	5	10	µg/L	N/A	N/A	07/23/2004	WMS5040723
tert-Amyl Methyl Ether	ND		2	5	10	µg/L	N/A	N/A	07/23/2004	WMS5040723
tert-Butanol (TBA)	ND		2	10	20	µg/L	N/A	N/A	07/23/2004	WMS5040723
Diisopropyl Ether	ND		2	5	10	µg/L	N/A	N/A	07/23/2004	WMS5040723
Ethanol	ND		2	100	200	µg/L	N/A	N/A	07/23/2004	WMS5040723

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	90.2	64 - 125	Reviewed by: MTU
Dibromofluoromethane	94.3	23 - 172	
Toluene-d8	98.8	70 - 134	

TPH as Gasoline	130	x	2	25	50	µg/L	N/A	N/A	07/23/2004	WMS5040723

Comment: TPH as Gasoline reported value due to high concentration of MTBE present in the TPH as Gasoline quantitation range.

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	90.2	64 - 125	Reviewed by: MTU
Dibromofluoromethane	94.3	23 - 172	
Toluene-d8	98.8	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/22/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39751-002 **Sample ID: PZ-1 @ 42'** **Matrix:** Liquid **Sample Date:** 7/21/2004

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/22/2004	WMS5040722
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	97.9	64 - 125
Dibromofluoromethane	99.2	23 - 172
Toluene-d8	97.9	70 - 134

Analyzed by: JHsiang
Reviewed by: MTU

TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	97.9	64 - 125
Dibromofluoromethane	99.2	23 - 172
Toluene-d8	97.9	70 - 134

Analyzed by: JHsiang
Reviewed by: MTU

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/22/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39751-003 **Sample ID: DP-1 @ 16'** **Matrix:** Liquid **Sample Date:** 7/21/2004

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Methyl-t-butyl Ether	9.2		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/22/2004	WMS5040722
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	96.8	64 - 125	Reviewed by: MTU
Dibromofluoromethane	97.0	23 - 172	
Toluene-d8	98.7	70 - 134	

TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	96.8	64 - 125	Reviewed by: MTU
Dibromofluoromethane	97.0	23 - 172	
Toluene-d8	98.7	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 8/5/2004
Date Received: 7/22/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39751-004 **Sample ID: DP-1 @ 41'** **Matrix:** Liquid **Sample Date:** 7/21/2004

Method: EPA 8260B / EPA 5030B / Soil direct purge & trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/22/2004	WMS5040722
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS5040722
Ethanol	ND		1	100	100	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	97.7	64 - 125	Reviewed by: MTU
Dibromofluoromethane	95.9	23 - 172	
Toluene-d8	100.1	70 - 134	

TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/22/2004	WMS5040722

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: JHsiang
4-Bromofluorobenzene	97.7	64 - 125	Reviewed by: MTU
Dibromofluoromethane	95.9	23 - 172	
Toluene-d8	100.1	70 - 134	

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution and/or Prep Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/23/04

QC Batch ID: WMS5040722
Matrix: Liquid
Date of Analysis: 7/22/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0.5	0.5	µg/L
Diisopropyl Ether	ND	1	5	5	µg/L
Ethanol	ND	1	100	100	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**92.0**	64 - 125
Dibromofluoromethane	**93.4**	23 - 172
Toluene-d8	**98.4**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/23/04

QC Batch ID: WMS5040722
Matrix: Liquid
Date of Analysis: 7/22/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	92.0	64 - 125
Dibromofluoromethane	93.4	23 - 172
Toluene-d8	98.4	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/23/04

QC Batch ID: WMS5040723
Matrix: Liquid
Date of Analysis: 7/23/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0.5	0 5	µg/L
Diisopropyl Ether	ND	1	5	5	µg/L
Ethanol	ND	1	100	100	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	89.4	64 - 125
Dibromofluoromethane	96.4	23 - 172
Toluene-d8	97.0	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/23/04

QC Batch ID: WMS5040723
Matrix: Liquid
Date of Analysis: 7/23/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	89.4	64 - 125
Dibromofluoromethane	96.4	23 - 172
Toluene-d8	97.0	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/23/04

QC Batch ID: WMS5040722

Date of Analysis: 7/22/2004

Method EPA 8260B — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	23.63	LCS	7/22/2004	**118.1**			60 - 132
Benzene	<0.5	20.0	20.82	LCS	7/22/2004	**104.1**			77 - 154
Chlorobenzene	<0.5	20.0	23.49	LCS	7/22/2004	**117.4**			66 - 141
Methyl-t-butyl Ether	<1	20.0	15.47	LCS	7/22/2004	**77.4**			58 - 127
Toluene	<0.5	20.0	23.91	LCS	7/22/2004	**119.6**			47 - 137
Trichloroethene	<0.5	20.0	22.91	LCS	7/22/2004	**114.6**			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**100.0**	64 - 125
Dibromofluoromethane	**102.3**	23 - 172
Toluene-d8	**99.1**	70 - 134

1,1-Dichloroethene	<0 5	20.0	20.67	LCSD	7/22/2004	**103.4**	**13.4**	25	60 - 132
Benzene	<0.5	20.0	18.85	LCSD	7/22/2004	**94.3**	**9.9**	25	77 - 154
Chlorobenzene	<0.5	20.0	21.27	LCSD	7/22/2004	**106.3**	**9.9**	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	15.61	LCSD	7/22/2004	**78.0**	**0.9**	25	58 - 127
Toluene	<0 5	20.0	20.82	LCSD	7/22/2004	**104.1**	**13.8**	25	47 - 137
Trichloroethene	<0.5	20.0	23.54	LCSD	7/22/2004	**117.7**	**2.7**	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**97.0**	64 - 125
Dibromofluoromethane	**88.4**	23 - 172
Toluene-d8	**95.7**	70 - 134

Method GC-MS — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	125.0	152.6	LCS	7/22/2004	**122.1**			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**97.2**	64 - 125
Dibromofluoromethane	**88.7**	23 - 172
Toluene-d8	**100.6**	70 - 134

TPH as Gasoline	<25	125.0	144.3	LCSD	7/22/2004	**115.4**	**5.6**	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**91.2**	64 - 125
Dibromofluoromethane	**94.5**	23 - 172
Toluene-d8	**98.7**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/23/04

QC Batch ID: WMS5040723

Date of Analysis: 7/23/2004

Method EPA 8260B — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	21.85	LCS	7/23/2004	**109.3**			60 - 132
Benzene	<0.5	20.0	20.65	LCS	7/23/2004	**103.2**			77 - 154
Chlorobenzene	<0.5	20.0	23.12	LCS	7/23/2004	**115.6**			66 - 141
Methyl-t-butyl Ether	<1	20.0	17.8	LCS	7/23/2004	**89.0**			58 - 127
Toluene	<0.5	20.0	22.81	LCS	7/23/2004	**114.1**			47 - 137
Trichloroethene	<0.5	20.0	24.53	LCS	7/23/2004	**122.7**			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.4**	64 - 125
Dibromofluoromethane	**110.6**	23 - 172
Toluene-d8	**97.8**	70 - 134

1,1-Dichloroethene	<0.5	20.0	22.76	LCSD	7/23/2004	**113.8**		25	60 - 132
Benzene	<0.5	20.0	21.02	LCSD	7/23/2004	**105.1**		25	77 - 154
Chlorobenzene	<0 5	20.0	23.52	LCSD	7/23/2004	**117.6**		25	66 - 141
Methyl-t-butyl Ether	<1	20.0	16.49	LCSD	7/23/2004	**82.4**		25	58 - 127
Toluene	<0.5	20.0	23.3	LCSD	7/23/2004	**116.5**		25	47 - 137
Trichloroethene	<0.5	20.0	25.26	LCSD	7/23/2004	**126.3**		25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**97.6**	64 - 125
Dibromofluoromethane	**87.6**	23 - 172
Toluene-d8	**98.4**	70 - 134

Method GC-MS — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	125 0	155.3	LCS	7/23/2004	**124.2**			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**93.7**	64 - 125
Dibromofluoromethane	**90.6**	23 - 172
Toluene-d8	**98.1**	70 - 134

TPH as Gasoline	<25	125.0	149.	LCSD	7/23/2004	**119.2**	4.1	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**93.7**	64 - 125
Dibromofluoromethane	**92.9**	23 - 172
Toluene-d8	**98.4**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Matrix Spike / Duplicate Results

Reviewed by: MTU - 07/27/04

QC Batch ID: WMS5040723

Date of Analysis: 7/23/2004

Method EPA 8260B Liquid **Conc. Units:** µg/L

Parameter	Sample Result	Spike Amount	Spike Result	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
MS SampleNumber: 39773-001									
1,1-Dichloroethene	ND	20.0	21.35	MS	7/23/2004	**106.8**			59 - 133
Benzene	ND	20.0	22.51	MS	7/23/2004	**112.6**			73 - 134
Chlorobenzene	ND	20.0	23.07	MS	7/23/2004	**115.4**			86 - 121
Methyl-t-butyl Ether	ND	20.0	16.89	MS	7/23/2004	**84.5**			42 - 157
Toluene	ND	20.0	23.06	MS	7/23/2004	**115.3**			79 - 117
Trichloroethene	ND	20.0	26.01	MS	7/23/2004	**130.1*** **			71 - 119

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**99.5**	64 - 125
Dibromofluoromethane	**94.5**	23 - 172
Toluene-d8	**94.8**	70 - 134

MSD SampleNumber: 39773-001									
1,1-Dichloroethene	ND	20.0	20.58	MSD	7/23/2004	**102.9**	**3.7**	25	59 - 133
Benzene	ND	20.0	20.76	MSD	7/23/2004	**103.8**	**8.1**	25	73 - 134
Chlorobenzene	ND	20.0	22.52	MSD	7/23/2004	**112.6**	**2.4**	25	86 - 121
Methyl-t-butyl Ether	ND	20.0	16.74	MSD	7/23/2004	**83.7**	**0.9**	25	42 - 157
Toluene	ND	20.0	21.74	MSD	7/23/2004	**108.7**	**5.9**	25	79 - 117
Trichloroethene	ND	20.0	24.09	MSD	7/23/2004	**120.5*** **	7.7	25	71 - 119

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.6**	64 - 125
Dibromofluoromethane	**94.5**	23 - 172
Toluene-d8	**95.1**	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PAGE 1 OF 1

2 DAYS

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.D

LABORATORY: Entech Analytical Laboratory

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: [illegible]man

TURNAROUND TIME: ~~Standard Five Day~~ 24hr Rush 48hr Rush 72hr Rush

CHARGE FOR 72Hr Rev Simon

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

GLOBAL I.D.: NA

Sampler: Aaron Bierman (AB)

Date: 7.21.04

Sample Identification	Sample Depth (Ft, BGS)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	Volatile Organics: VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
PZ-1 @ 12'	12'	7.21.04	PM	H_2O	x2	24751-001					X			X			
PZ-1 @ 42'	42'	7.21.04	PM	H_2O	x5			002			X			X			
DP-1 @ 16'	16'	7.21.04	PM	H_2O	x5			003			X			X			
DP-1 @ 41'	41'	7.21.04	PM	H_2O	x5			004			X			X			

	RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1.	Aaron Bierman	7/21/04 @ 8:20	[signature]	7/21/04 @ 8:20
2.			[signature]	7/22/04 900
3.				
4.				
5.				

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

- ☐ If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections
- ☐ For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260.
- ☐ Please use MDL (Minimum Detection Limit) for any diluted samples.

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

- Bill @ 3day rate per Simon

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

CHANGE ORDER FORM

Date Requested: 7-29-04
Date Needed: 5-Day
Client: Weber

Workorder #: 39751, 39770, 39789
Project Name or #: Davidos
Ordered by: Pat Holden

Laboratory ID#	Client ID#	Matrix	Change Requested
			Add BTEX to all samples previously analyzed
			5 Day TAT

Comments: Thank You

Date Test Added:

Test Added By:

Distribution:
Original in the Workorder Folder. Accounting and all involved departments must get a copy of this form.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39742 - 7/22/2004 2:48:44 PM

Order:	39742	**Date Collected:**	7/21/2004
Project Name:	T-Bear Ranch - Water Well G1	**Date Received:**	7/21/2004
Project Number:	23027.D (311 Andrade Rd, Residence)	**P.O. Number:**	23027.D

Certificate of Analysis - Final Report

On July 21, 2004, sample was received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	8260Petroleum=Oxy's ONLY. No Ethanol
	PDF	PDF	
	TPH as Gasoline - GC/MS	GC-MS	Gas by GCMS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 7/22/2004
Date Received: 7/21/2004
Project Name: T-Bear Ranch
Project Number: 23027.D
P.O. Number: 23027.D
Sampled By: Client

Certified Analytical Report

Lab # : 39742-001 **Sample ID:** Well G1 **Matrix:** Liquid **Sample Date:** 7/21/2004 7:45 AM

Method: EPA 8260B / EPA 5030B / Soil direct purge & trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/21/2004	WMS2040721
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/21/2004	WMS2040721
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/21/2004	WMS2040721
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/21/2004	WMS2040721
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/21/2004	WMS2040721

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	95.0	64 - 125
Dibromofluoromethane	108.6	23 - 172
Toluene-d8	99.2	70 - 134

Analyzed by: TFulton - 07/21/2004
Reviewed by: MTU - 07/22/04

Method: GC-MS

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/21/2004	WMS2040721

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94 4	64 - 125
Dibromofluoromethane	117.5	23 - 172
Toluene-d8	97 1	70 - 134

Analyzed by: TFulton - 07/21/2004
Reviewed by: MTU - 07/22/04

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/22/04

QC Batch ID: **WMS2040721**
Matrix: Liquid
Date of Analysis: 7/21/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Diisopropyl Ether	ND	1	5	5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**97.6**	64 - 125
Dibromofluoromethane	**109.3**	23 - 172
Toluene-d8	**103.3**	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: *MTU - 07/22/04*

QC Batch ID: WMS2040721
Date of Analysis: 7/21/2004

Method EPA 8260B — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	20.878	LCS	7/21/2004	**104.4**			60 - 132
Benzene	<0.5	20.0	22.311	LCS	7/21/2004	**111.6**			77 - 154
Chlorobenzene	<0.5	20.0	20.313	LCS	7/21/2004	**101.6**			66 - 141
Methyl-t-butyl Ether	<1	20.0	22.371	LCS	7/21/2004	**111.9**			58 - 127
Toluene	<0.5	20.0	20.136	LCS	7/21/2004	**100.7**			47 - 137
Trichloroethene	<0.5	20.0	22.156	LCS	7/21/2004	**110.8**			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**104.0**	64 - 125
Dibromofluoromethane	**112.9**	23 - 172
Toluene-d8	**99.6**	70 - 134

1,1-Dichloroethene	<0.5	20.0	19.583	LCSD	7/21/2004	**97.9**	**6.4**	25	60 - 132
Benzene	<0.5	20.0	21.565	LCSD	7/21/2004	**107.8**	**3.4**	25	77 - 154
Chlorobenzene	<0.5	20.0	19.206	LCSD	7/21/2004	**96.0**	**5.6**	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	21.622	LCSD	7/21/2004	**108.1**	**3.4**	25	58 - 127
Toluene	<0.5	20.0	19.395	LCSD	7/21/2004	**97.0**	**3.7**	25	47 - 137
Trichloroethene	<0.5	20.0	21.747	LCSD	7/21/2004	**108.7**	**1.9**	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**100.5**	64 - 125
Dibromofluoromethane	**112.6**	23 - 172
Toluene-d8	**100.5**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/22/04

QC Batch ID: WMS2040721
Matrix: Liquid
Date of Analysis: 7/21/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**97.7**	64 - 125
Dibromofluoromethane	**118.3**	23 - 172
Toluene-d8	**101.2**	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/22/04

QC Batch ID: WMS2040721
Date of Analysis: 7/21/2004

Method GC-MS — **Liquid** — **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250.0	259.6	LCS	7/21/2004	**103.8**			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.1**	64 - 125
Dibromofluoromethane	**117.4**	23 - 172
Toluene-d8	**100.8**	70 - 134

TPH as Gasoline	<25	250.0	267.8	LCSD	7/21/2004	**107.1**	**3.1**	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**99.0**	64 - 125
Dibromofluoromethane	**113.4**	23 - 172
Toluene-d8	**101.8**	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sampler: Aaron Bierman

Date: 7.21.04

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates & MTBE EPA Method# 8260	PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
WELL G1	GRAB	7.21.04	7:45 am	H_2O	x5						X			X			384742-001

1 DAY

RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1)	7/21/04 @ 10:00		7/21/04 10:40
2)	7/21/04 @ 12:30		7/21/04 1230
3)			
4.)			
5.)			

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

[ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*

[ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*

[ ] *Please use MDL (Minimum Detection Limit) for any diluted samples*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

24-hr rush

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: T-Bear Ranch / 23027.D

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sampler: Aaron Bierman

Date: 7.21.04

Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS				REQUESTED ANALYSIS								
									Total Petroleum Hydrocarbons			Volatile Organics			Additional Analysis		
					40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	TEPH: Diesel, Motor Oil with Standard Silica Gel Cleanup	TRPH as TOG with Standard Silica Gel Cleanup	TPH-gasoline by EPA Method# 8260	VOCs EPA Method# 8260B	Solvents by EPA Method# 8010	Fuel Oxygenates & MTBE EPA Method# 8260	PNA's by EPA Method# 8270 SIM	HVOCs by EPA Method# 8270 SIM	LUFT 5 Metals
WELL G1	GRAB	7-21-04	745 am	H2O	x5						X			X		34742-001	

1 DAY

RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time	SAMPLE CONDITION: (circle 1)		
1.)	7/21/04 @ 10:00		7/21/04 10:40	Ambient	(Refrigerated)	Frozen
2.)	7/21/04 @ 12:30		7/21/04 1230	Ambient	Refrigerated	Frozen
3.)				Ambient	Refrigerated	Frozen
4.)				Ambient	Refrigerated	Frozen
5.)				Ambient	Refrigerated	Frozen

NOTES:

- [ ] If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.
- [ ] For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260
- [ ] Please use MDL (Minimum Detection Limit) for any diluted samples

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

24-hr rush

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39710 - 7/29/2004 9:43:17 PM

Order:	39710	**Date Collected:**	7/19/2004
Project Name:	T-Bear Ranch - Water Well #2 - MDL Reporting - (3220 Andrade Rd, Range Well)	**Date Received:**	7/19/2004
Project Number:	23027	**P.O. Number:**	23027

Certificate of Analysis - Revision

Note: This is a revision of the original 7/21/2004 issue to report the re-analysis and report to the MDL.

On July 19, 2004, sample was received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date Received: 7/19/2004
Project Name: T-Bear Ranch
Project Number: 23027
P.O. Number: 23027
Sampled By: Client

Certified Analytical Report

Laboratory ID: 39710-001 **Sample ID:** Well A2 **Matrix:** Liquid **Sample Date:** 7/19/2004 8:35 AM

Method: EPA 8260B / EPA 5030B

Parameter	Result	Flag	DF	MDL	MDLR	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.2	0.2	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Toluene	ND		1	0.2	0.2	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Ethyl Benzene	ND		1	0.2	0.2	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Xylenes, Total	ND		1	0.6	0.6	1	µg/L	N/A	N/A	07/20/2004	WMS2040720
Methyl-t-butyl Ether	ND		1	0.3	0.3	1	µg/L	N/A	N/A	07/20/2004	WMS2040720
Ethyl-t-butyl Ether	ND		1	0.2	0.2	5	µg/L	N/A	N/A	07/20/2004	WMS2040720
tert-Butanol (TBA)	ND		1	3	3	10	µg/L	N/A	N/A	07/20/2004	WMS2040720
Diisopropyl Ether	ND		1	0.2	0.2	5	µg/L	N/A	N/A	07/20/2004	WMS2040720
tert-Amyl Methyl Ether	ND		1	0.2	0.2	5	µg/L	N/A	N/A	07/20/2004	WMS2040720

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.5	64 - 125
Dibromofluoromethane	107.1	23 - 172
Toluene-d8	103.5	70 - 134

Analyzed by: Tfulton - 07/20/2004
Reviewed by: MTU - 07/21/04

MDL = Method Detection Limit as defined by the EPA, is the minimum concentration of a substance that can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero. This minimum concentration is statistically determined by the laboratory.

J = Estimated value greater the the MDLR but less that the PQLR. Use this value with caution particularly if B or L flags are present for this analyte.

MDLR = MDL for reporting which includes sample dilution in the calculation

DF = Dilution Factor

PQLR = Practical Quantitation Limit for reporting which includes sample dilution in the calculation.

ND = Not Detected at or above the PQL

B = Analyte was also found in the Method Blank associated with this sample.

L = Possible laboratory contaiminant.

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/21/04

QC Batch ID WMS2040720

Date of Analysis: 7/20/2004

Method: EPA 8260B

Matrix: Liquid

Parameter	Result	DF	PQL	MDL	Units
1,2-Dibromoethane (EDB)	<0.2	1	0.5	0.2	µg/L
1,2-Dichloroethane	<0.2	1	0.5	0.2	µg/L
Benzene	<0.2	1	0.5	0.2	µg/L
Diisopropyl Ether	<0.2	1	5	0.2	µg/L
Ethanol	<40	1	100	40	µg/L
Ethyl Benzene	<0 2	1	0.5	0.2	µg/L
Ethyl-t-butyl Ether	<0.2	1	5	0.2	µg/L
Methyl-t-butyl Ether	<0.3	1	1	0.3	µg/L
tert-Amyl Methyl Ether	<0 2	1	5	0.2	µg/L
tert-Butanol (TBA)	<3	1	10	3	µg/L
Toluene	<0.2	1	0.5	0.2	µg/L
Xylenes, Total	<0.6	1	1	0.6	µg/L

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**99.8**	64 - 125
Dibromofluoromethane	**108.4**	23 - 172
Toluene-d8	**101.7**	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/22/04

QC Batch ID: WMS2040720
Date of Analysis: 7/20/2004

Method EPA 624

Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Bromoform	<0.5	20.0	16.4	LCS	7/20/2004	**82.0**			65 - 135
Chloroform	<0.5	20.0	21.9	LCS	7/20/2004	**109.5**			65 - 135
Bromoform	<0.5	20.0	16.1	LCSD	7/20/2004	**80.4**	**1.9**	25	65 - 135
Chloroform	<0.5	20.0	21.5	LCSD	7/20/2004	**107.7**	**1.6**	25	65 - 135

Method EPA 8260B

Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	19.5	LCS	7/20/2004	**97.7**			60 - 132
Benzene	<0.5	20.0	20.4	LCS	7/20/2004	**101.9**			77 - 154
Chlorobenzene	<0.5	20.0	19.8	LCS	7/20/2004	**98.9**			66 - 141
Methyl-t-butyl Ether	<1	20.0	17.1	LCS	7/20/2004	**85.3**			58 - 127
Toluene	<0.5	20.0	19.4	LCS	7/20/2004	**97.0**			47 - 137
Trichloroethene	<0.5	20.0	19.9	LCS	7/20/2004	**99.5**			57 - 159
1,1-Dichloroethene	<0.5	20.0	19.4	LCSD	7/20/2004	**97.0**	**0.7**	25	60 - 132
Benzene	<0.5	20.0	20.6	LCSD	7/20/2004	**102.9**	**1.0**	25	77 - 154
Chlorobenzene	<0.5	20 0	18.9	LCSD	7/20/2004	**94.6**	**4.4**	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	19.8	LCSD	7/20/2004	**99.1**	**15.0**	25	58 - 127
Toluene	<0.5	20.0	19.1	LCSD	7/20/2004	**95.3**	**1.8**	25	47 - 137
Trichloroethene	<0.5	20.0	20.7	LCSD	7/20/2004	**103.4**	**3.9**	25	57 - 159

Method GC-MS

Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250.0	247	LCS	7/20/2004	**98.8**			65 - 135
TPH as Gasoline	<25	250.0	263	LCSD	7/20/2004	**105.3**	**6.3**	25	65 - 135

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Matrix Spike / Duplicate Results

Reviewed by: MTU - 06/28/04

QC Batch ID: WMS2040720

Date of Analysis: 7/20/2004

Method EPA 8260B Liquid **Conc. Units:** µg/L

Parameter	Sample Result	Spike Amount	Spike Result	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
MS **SampleNumber: 39710-001**									
Benzene	<0.5	20.0	22.0323	MS	7/20/2004	**110.2**			73 - 134
Methyl-t-butyl Ether	<1	20.0	15.0368	MS	7/20/2004	**75.2**			42 - 157
Toluene	<0.5	20.0	24.4	MS	7/20/2004	**118.3*** **			79 - 117
MSD **SampleNumber: 39710-001**									
Benzene	<0.5	20.0	19.8	MSD	7/20/2004	**99.0**	**1.0**	25	73 - 134
Methyl-t-butyl Ether	<1	20.0	23.2755	MSD	7/20/2004	**116.4**	**3.2**	25	42 - 157
Toluene	<0.5	20.0	20.4	MSD	7/20/2004	**102.0**	**0.0**	25	79 - 117

***The % recovery for the MS for Toluene is outside of laboratory control but within % RPD limits. No corrective action required.

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering

120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PAGE 1 OF 1

PROJECT NAME AND JOB #: [redacted] T. BEAR RANCH / 23027

LABORATORY: Entech Analytical Laboratory

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [X] NO

GLOBAL I.D.: NA

Sampler: Aaron Bierman AB

Date: 7.19.04

Field Point Name (GeoTracker)	Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel with Standard Silica Gel Cleanup	Total Recoverable Petroleum Hydrocarbons	TPH-gasoline, BTEX & MTBE 8260 by EPA Method# ~~8015M & 8020~~	Volatile Organics: 1,2-DCA by EPA Method# 8010	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: Total Suspended Solids	Total Dissolved Solids	Metals: Al, Ar, Cd, Cr, Cu, Pb, Ni, Se, Zn, Hg, Nitrate as N
NA	WELL A2	AT TOP PIPE	7-19-04	8:35am	H2O	x4		39710-001				X			X			

Change TAT to 48 HR From 7-20 Due 7-22 Sent 7-20-04 per A Bierman

RELEASED BY:

1.) [signature]
2.)
3.)
4.)
5.)

Date & Time: 7/19/04 @ 5:00pm

RECEIVED BY:

1.) [signature]
2.)
3.)
4.)
5.)

Date & Time: 7/19/04 1705

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

- [ ] *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*
- [ ] *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*
- [ ] *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39710 - 7/21/2004 2:16:33 PM

Order: 39710
Project Name: T-Bear Ranch - Water Well #2 (3220 Andrade, Large Well)
Project Number: 23027

Date Collected: 7/19/2004
Date Received: 7/19/2004
P.O. Number: 23027

Certificate of Analysis - Final Report

On July 19, 2004, sample was received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	8260Petroleum=Btex+Oxy's ONLY. No Ethanol
	PDF	PDF	
	TPH as Gasoline - GC/MS	GC-MS	Gas by GCMS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 7/21/2004
Date Received: 7/19/2004
Project Name: T-Bear Ranch
Project Number: 23027
P.O. Number: 23027
Sampled By: Client

Certified Analytical Report

Lab # : 39710-001 **Sample ID:** **Well A2** **Matrix:** Liquid **Sample Date:** 7/19/2004 8:35 AM

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/20/2004	WMS2040720
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/20/2004	WMS2040720
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/20/2004	WMS2040720
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/20/2004	WMS2040720
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/20/2004	WMS2040720
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/20/2004	WMS2040720
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/20/2004	WMS2040720

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.5	64 - 125
Dibromofluoromethane	107.1	23 - 172
Toluene-d8	103 5	70 - 134

Analyzed by: Tfulton - 07/20/2004
Reviewed by: MTU - 07/21/04

Method: GC-MS

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/20/2004	WMS2040720

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.5	64 - 125
Dibromofluoromethane	115.8	23 - 172
Toluene-d8	101.3	70 - 134

Analyzed by: Tfulton - 07/20/2004
Reviewed by: MTU - 07/21/04

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/21/04

QC Batch ID: WMS2040720
Matrix: Liquid
Date of Analysis: 7/20/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0.5	0.5	µg/L
Diisopropyl Ether	ND	1	5	5	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	99.8	64 - 125
Dibromofluoromethane	108.4	23 - 172
Toluene-d8	101.7	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/21/04

QC Batch ID: WMS2040720
Date of Analysis: 7/20/2004

Method EPA 8260B — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	19.534	LCS	7/20/2004	97.7			60 - 132
Benzene	<0.5	20.0	20.387	LCS	7/20/2004	101.9			77 - 154
Chlorobenzene	<0.5	20.0	19.775	LCS	7/20/2004	98.9			66 - 141
Methyl-t-butyl Ether	<1	20.0	17.052	LCS	7/20/2004	85.3			58 - 127
Toluene	<0.5	20.0	19.401	LCS	7/20/2004	97.0			47 - 137
Trichloroethene	<0.5	20.0	19.9	LCS	7/20/2004	99.5			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	101.2	64 - 125
Dibromofluoromethane	109.5	23 - 172
Toluene-d8	101.7	70 - 134

1,1-Dichloroethene	<0.5	20.0	19.397	LCSD	7/20/2004	97.0	0.7	25	60 - 132
Benzene	<0.5	20.0	20.584	LCSD	7/20/2004	102.9	1.0	25	77 - 154
Chlorobenzene	<0.5	20.0	18.918	LCSD	7/20/2004	94.6	4.4	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	19.825	LCSD	7/20/2004	99.1	15.0	25	58 - 127
Toluene	<0.5	20.0	19.058	LCSD	7/20/2004	95.3	1.8	25	47 - 137
Trichloroethene	<0.5	20.0	20.688	LCSD	7/20/2004	103.4	3.9	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	100.1	64 - 125
Dibromofluoromethane	111.1	23 - 172
Toluene-d8	100.9	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/21/04

QC Batch ID: WMS2040720
Matrix: Liquid
Date of Analysis: 7/20/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**98.8**	64 - 125
Dibromofluoromethane	**117.3**	23 - 172
Toluene-d8	**99.4**	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/21/04

QC Batch ID: WMS2040720
Date of Analysis: 7/20/2004

Method GC-MS **Liquid** **Conc. Units: µg/L**

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250.0	247.1	LCS	7/20/2004	**98.8**			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.4**	64 - 125
Dibromofluoromethane	**118.9**	23 - 172
Toluene-d8	**100.1**	70 - 134

TPH as Gasoline	<25	250.0	263.3	LCSD	7/20/2004	**105.3**	**6.3**	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.7**	64 - 125
Dibromofluoromethane	**115.7**	23 - 172
Toluene-d8	**100.3**	70 - 134

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: [redacted] T. BEAR RANCH / 23027

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

Sampler: Aaron Bierman

Date: 7.19.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Field Point Name (GeoTracker)	Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH Diesel with Standard Silica Gel Cleanup	Total Recoverable Petroleum Hydrocarbons	TPH-gasoline, BTEX & MTBE 8260 by EPA Method# ~~8015M & 8020~~	Volatile Organics: 1,2-DCA by EPA Method# 8010	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: Total Suspended Solids	Total Dissolved Solids	Metals: Al, Ar, Cd, Cr, Cu, Pb, Ni, Se, Zn, Hg, Nitrate as N
NA	WELL A2	[redacted]	7.19.04	8:35am	H_2O	x4		39710-001				X			X			

Change TAT to 48 HR From 7-20 Due 7-22 Sent 7-20-04 per A Bierman

RELEASED BY:

1) [signature] Date & Time 7/19/04 @ 5:00pm → RECEIVED BY: [signature] Date & Time 7/19/04 1705

2) ____ Date & Time ____ → RECEIVED BY: ____ Date & Time ____

3) ____ Date & Time ____ → RECEIVED BY: ____ Date & Time ____

4) ____ Date & Time ____ → RECEIVED BY: ____ Date & Time ____

5) ____ Date & Time ____ → RECEIVED BY: ____ Date & Time ____

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

- ☐ *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*
- ☐ *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*
- ☐ *Please use MDL (Minimum Detection Limit) for any diluted samples*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

CHANGE ORDER FORM

Date Requested: 7-20-04
Workorder #: 39710
Date Needed: 7-22-04
Project Name or #: T-Beck
Client: WHA
Ordered by: Aaron

Laboratory ID#	Client ID#	Matrix	Change Requested
~~00~~ 39710-001	Well A2		change TAT to 48 Hr's
			Due 7-22-04
			8260 Petroleum = Btex + Oxy's ONLY
			Gas by GCMS

2 DAYS

Comments: Due: 7/22/04

Date Test Added: 7/20/04 **Test Added By:** [signature]

Distribution:
Original in the Workorder Folder. Accounting and all involved departments must get a copy of this form.

Environmental Analysis Since 1983

F:\Change Order Form.xls

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: [redacted] T. BEAR RANCH / 23027

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention. Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Sampler: Aaron Bierman

Date: 7.19.04

144

Field Point Name (GeoTracker)	Sample Identification	Sample Depth	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel with Standard Silica Gel Cleanup	Total Recoverable Petroleum Hydrocarbons	TPH-gasoline, BTEX & MTBE 8260 by EPA Method# ~~8015M & 8020~~	Volatile Organics: 1,2-DCA by EPA Method# 8010	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: Total Suspended Solids	Total Dissolved Solids	Metals: Al, Ar, Cd, Cr, Cu, Pb, Ni, Se, Zn, Hg, Nitrate as N
NA	WELL A2	At Drop Pipe	7.19.04	8:35am	H_2O	x4		32710-001				X			X			

RELEASED BY:

1.) [signature]
2.)
3.)
4.)
5.)

Date & Time: 7/19/04 @ 5:00 pm

RECEIVED BY:

1.) [signature]
2.)
3.)
4.)
5.)

Date & Time: 7/19/04 1705

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

☐ *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections*

☐ *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260.*

☐ *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

CHANGE ORDER FORM

Date Requested: 7-20-04 **Workorder #:** 39710

Date Needed: 7-22-04 **Project Name or #:** T-Beck

Client: WET **Ordered by:** Adrian

Laboratory ID#	Client ID#	Matrix	Change Requested
~~39710-01~~	Well A2		change TAT to 48 Hr's Due 7-22-04
			8260 Petroleum = Btex + Oxy's ONLY Gas by GCMS

2 DAYS

Due: 7/22/04

Comments:

Date Test Added: 7/20/04 **Test Added By:** JMadrid

Distribution:

Original in the Workorder Folder. Accounting and all involved departments must get a copy of this form.

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Aaron Bierman
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Certificate ID: 39709 - 7/23/2004 1:12:35 PM

Order:	39709	**Date Collected:**	7/19/2004
Project Name:	T-Bear Ranch - Franco Well - 3511 Andrade Rd (Well K-__)	**Date Received:**	7/19/2004
Project Number:	23027	**P.O. Number:**	23027

Certificate of Analysis - Final Report

On July 19, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Liquid	8260Petroleum	EPA 8260B	8260Petroleum=Btex+Oxy's ONLY. No Ethanol
	PDF	PDF	
	TPH as Gasoline - GC/MS	GC-MS	Gas by GCMS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Aaron Bierman

Date: 7/23/2004
Date Received: 7/19/2004
Project Name: T-Bear Ranch
Project Number: 23027
P.O. Number: 23027
Sampled By: Client

Certified Analytical Report

Lab # : 39709-001 **Sample ID:** Franco #1 **Matrix:** Liquid **Sample Date:** 7/19/2004 9:30 AM

Method: EPA 8260B / EPA 5030B / Purge-and-trap

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS2040721
Toluene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS2040721
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	N/A	07/22/2004	WMS2040721
Xylenes, Total	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS2040721
Methyl-t-butyl Ether	ND		1	1	1	µg/L	N/A	N/A	07/22/2004	WMS2040721
Ethyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS2040721
tert-Butanol (TBA)	ND		1	10	10	µg/L	N/A	N/A	07/22/2004	WMS2040721
Diisopropyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS2040721
tert-Amyl Methyl Ether	ND		1	5	5	µg/L	N/A	N/A	07/22/2004	WMS2040721

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.7	64 - 125
Dibromofluoromethane	113.3	23 - 172
Toluene-d8	103.5	70 - 134

Analyzed by: TFulton - 07/22/2004
Reviewed by: MTU - 07/23/04

Method: GC-MS

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	25	µg/L	N/A	N/A	07/22/2004	WMS2040721

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.4	64 - 125
Dibromofluoromethane	122.3	23 - 172
Toluene-d8	101.2	70 - 134

Analyzed by: TFulton - 07/22/2004
Reviewed by: MTU - 07/23/04

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/22/04

QC Batch ID: WMS2040721
Matrix: Liquid
Date of Analysis: 7/21/2004

Method: EPA 8260B

Parameter	Result	DF	PQL	PQLR	Units
Benzene	ND	1	0.5	0.5	µg/L
Diisopropyl Ether	ND	1	5	5	µg/L
Ethyl Benzene	ND	1	0.5	0.5	µg/L
Ethyl-t-butyl Ether	ND	1	5	5	µg/L
Methyl-t-butyl Ether	ND	1	1	1	µg/L
tert-Amyl Methyl Ether	ND	1	5	5	µg/L
tert-Butanol (TBA)	ND	1	10	10	µg/L
Toluene	ND	1	0.5	0.5	µg/L
Xylene, m+p	ND	1	1	1	µg/L
Xylene, o	ND	1	0.5	0.5	µg/L
Xylenes, Total	ND	1	1	1	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	97.6	64 - 125
Dibromofluoromethane	109.3	23 - 172
Toluene-d8	103.3	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/22/04

QC Batch ID: WMS2040721
Date of Analysis: 7/21/2004

Method EPA 8260B — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	<0.5	20.0	20.878	LCS	7/21/2004	104.4			60 - 132
Benzene	<0.5	20.0	22.311	LCS	7/21/2004	111.6			77 - 154
Chlorobenzene	<0.5	20.0	20.313	LCS	7/21/2004	101.6			66 - 141
Methyl-t-butyl Ether	<1	20.0	22.371	LCS	7/21/2004	111.9			58 - 127
Toluene	<0.5	20.0	20.136	LCS	7/21/2004	100.7			47 - 137
Trichloroethene	<0.5	20.0	22.156	LCS	7/21/2004	110.8			57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	104.0	64 - 125
Dibromofluoromethane	112.9	23 - 172
Toluene-d8	99.6	70 - 134

1,1-Dichloroethene	<0.5	20.0	19.583	LCSD	7/21/2004	97.9	6.4	25	60 - 132
Benzene	<0.5	20.0	21.565	LCSD	7/21/2004	107.8	3.4	25	77 - 154
Chlorobenzene	<0.5	20.0	19.206	LCSD	7/21/2004	96.0	5.6	25	66 - 141
Methyl-t-butyl Ether	<1	20.0	21.622	LCSD	7/21/2004	108.1	3.4	25	58 - 127
Toluene	<0.5	20.0	19.395	LCSD	7/21/2004	97.0	3.7	25	47 - 137
Trichloroethene	<0.5	20.0	21.747	LCSD	7/21/2004	108.7	1.9	25	57 - 159

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	100.5	64 - 125
Dibromofluoromethane	112.6	23 - 172
Toluene-d8	100.5	70 - 134

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Validated by: MTU - 07/22/04

QC Batch ID: WMS2040721
Matrix: Liquid
Date of Analysis: 7/21/2004

Method: GC-MS

Parameter	Result	DF	PQL	PQLR	Units
TPH as Gasoline	ND	1	25	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	97.7	64 - 125
Dibromofluoromethane	118.3	23 - 172
Toluene-d8	101.2	70 - 134

Quality Control - Laboratory Control Spike / Duplicate Results

Reviewed by: MTU - 07/22/04

QC Batch ID: WMS2040721
Date of Analysis: 7/21/2004

Method GC-MS — Liquid — Conc. Units: µg/L

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	250.0	259.6	LCS	7/21/2004	103.8			65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	98.1	64 - 125
Dibromofluoromethane	117.4	23 - 172
Toluene-d8	100.8	70 - 134

TPH as Gasoline	<25	250.0	267.8	LCSD	7/21/2004	107.1	3.1	25	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	99.0	64 - 125
Dibromofluoromethane	113.4	23 - 172
Toluene-d8	101.8	70 - 134

Weber, Hayes & Associates

Hydrogeology and Environmental Engineering

120 Westgate Dr , Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: [redacted] T-BEAR RANCH / 23027

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

Sampler: Aaron Bierman (AB)

Date: 7.19.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Field Point Name (GeoTracker)	Sample Identification	Sample Depth (Ft, BTOC)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS — Total Petroleum Hydrocarbons: TEPH. Diesel with Standard Silica Gel Cleanup	Total Recoverable Petroleum Hydrocarbons	TPH-gasoline, BTEX & MTBE 8260 by EPA Method# ~~8015M & 8020~~	Volatile Organics: 1,2-DCA by EPA Method# 8010	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: ~~Total Suspended Solids~~ HOLD	Total Dissolved Solids	Metals: Al, Ar, Cd, Cr, Cu, Pb, Ni, Se, Zn, Hg, Nitrate as N
NA	FRANCO #1	13.25'	7.19.04	9:30am	H_2O	x5				41709-001		X			X			
	FRANCO #2	~66'	7.19.04	9:50	H_2O	x5				002						X		

RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time	SAMPLE CONDITION: (circle 1)
1.) [signature]	7/19/04 @ 5:00pm	[signature]	7/19/04 1705	Ambient (Refrigerated) Frozen
2.)				Ambient Refrigerated Frozen
3.)				Ambient Refrigerated Frozen
4.)				Ambient Refrigerated Frozen
5.)				Ambient Refrigerated Frozen

NOTES:

☐ *If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.*

☐ *For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260*

☐ *Please use MDL (Minimum Detection Limit) for any diluted samples.*

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

FRANCO #1 : 90' DEEP IRRIGATION WELL

FRANCO #2: 245' DEEP IRRIGATION WELL

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

PROJECT NAME AND JOB #: [redacted] T-BEAR RANCH / 23027

SEND CERTIFIED RESULTS TO: Weber, Hayes and Associates - Attention: Aaron Bierman

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

Sampler: Aaron Bierman (AB)

Date: 7.19.04

LABORATORY: Entech Analytical Laboratory

TURNAROUND TIME: (Standard Five-Day) 24hr Rush 48hr Rush 72hr Rush

GLOBAL I.D.: NA

Field Point Name (GeoTracker)	Sample Identification	Sample Depth (Ft, BTOC)	Date Sampled	Time Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: TEPH: Diesel with Standard Silica Gel Cleanup	Total Recoverable Petroleum Hydrocarbons	TPH-gasoline, BTEX & MTBE 8260 by EPA Method#	Volatile Organics: 1,2-DCA by EPA Method# 8010	Solvents by EPA Method# 8010	Fuel Oxygenates EPA Method# 8260	Additional Analysis: ~~Total Suspended Solids~~ HOLD	Total Dissolved Solids	Metals: Al, Ar, Cd, Cr, Cu, Pb, Ni, Se, Zn, Hg, Nitrate as N
NA	FRANCO #1	13.25'	7.19.04	9:30am	H_2O	X5				24709-001		X			X			
	FRANCO #2	~68'	7.19.04	9:50	H_2O	X5				002						X		

RELEASED BY:

1.) [signature]
2.)
3.)
4.)
5.)

Date & Time: 7/19/04 @ 5:04pm

RECEIVED BY:

1.) [signature]
2.)
3.)
4.)
5.)

Date & Time: 7/19/04 1705

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

☐ If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections.

☐ For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260.

☐ Please use MDL (Minimum Detection Limit) for any diluted samples.

-Please send certified results via *.pdf to laboratory@weber-hayes.com.

FRANCO #1 : 90' DEEP IRRIGATION WELL

FRANCO #2: 245' DEEP IRRIGATION WELL

Proposed Phase II Work Tasks

Emergency Chacterization Work Tasks for Replacement of MTBE-Impacted Domesting Water Well

Sunol Tree Gas Station Fuel Release, 3004 Andrade Road, Sunol

13-Sep-04

Proposed Work Tasks (Work to be completed upon review and approval of the workplan by Alameda County)	Number of Samples & Type of Lab Testing	ACEH Comments
Task 1: **Diagnosing Potential MTBE-Impact to the Existing Water Well** (Sunol Tree Gas Station, 3004 Andrade Road, Sunol)		
• Steel, 10-inch diameter, 153' deep (need to review existing video log for perforation elevations)		Reduce to 4 depth-discrete samples: water table, 60-67', 101-103' and 150'
• Review existing video log If inadequate, complete video logging the Kelsoe well after the submersible pump is removed, to determine well screen locations and well integrity.		
• A geophysical assessment of the well which will include the following standard procedures:		TPHg, BTEX, OXYs
□ Ambient and dynamic (pumping) evaluation of preferential fluid entry zones for determining inflow variation over the length of the screened interval (production logging) as well as vertical flow (heat pulse flow-meter)	At least 10 stations (heat pulse/FEC-T measurements)	
□ Evaluation of different characteristics in fluid entry zones (Fluid electrical conductivity (FEC) and temperature logs).		
• Discrete water sampling will be conducted under low flow pumping conditions to determine at what depth(s) contaminants are entering the well A stainless steel sample tube (Solinst discrete water sampling system) will be lowered to selected sampling depths based on the results of the flow meter logging described above. Up to ten samples will be collected and analyzed for TPH-gasoline, BTEX, and fuel oxygenates (MTBE, TBA)	8 to 10 (fuel water testing)	
• Install digital flow meter on water supply line from Kelsoe's well to accurately gauge water consumption, pumping periods and rates, and potential connection to shallow water bearing zones (integration of transducer data collected in PZ-1).	Ongoing monitoring (data download)	
Task 2. **Drilling of Two Deep Exploratory Borings** to Determine Whether there is a Continuous Clay Barrier at depth and an Underlying Production Aquifer (see attached Figure 1 for boring locations)		What is planned total depth of the two borings for budget purposes? Do you propose not to sample groundwater beneath the 80-100' clay strata? I would feel more comfortable having a sample from the future production zone If you just want to demonstrate the presence of a clay, how deep into the clay do you propose drilling? As part of thus effort, it would be inefficient not to collect water samples from depth For budgetary purposes, I would suggest drilling 2 borings to 150', collecting 3 depth-discrete gw samples in appropriate wbz in the following general depths 50-75', 75-100' and 150' (or less if a likely aquiclude is identified and pierced)
• Drillers logs of nearby wells have variable lithology but a potential thick, continuous clay strata may be found at depths of approximately 80 to 100 feet These two deep exploratary borings will provide the data needed to determine whether a replacement well's sanitary seal will adequately seal off the impacted shallow aquifers from an underlying water production aquifer.	5-6 (for soil sieve analysis)	
Task 3: **On-site Plume Definition** (see attached Figure 1 for boring locations)		what is proposed total depth for budgetary purposes?
• We plan to obtain continuous cores from two on-site boring locations which address the dispesnser area and the underground tanks	5 to 10 soil samples/boring (fuel water testing)	4 soil samples per boring for TPHg/BTEX/oxys
• If possible, we will install 3-channel multi-level system wells in these borings during this mobilization or following CPT assessment (see Task 4 below) The multi-level monitoring points will provide source area information on vertical groundwater gradients, potential MTBE transport pathways, and time-series sampling at multiple depths.	• 2 Multi-Level Well locations (up to 6 sample intervals)	
□ We will permit, drill, install, survey, and develop the monitoring points. Following purging of individual chambers, we will collect representative water samples from all available monitoring zones and analyze for BTEX and fuel oxygenates (including MTBE and TBA)	Initial Water Quality Testing (Monitoring & Reporting Program to be developed following initial test results)	(OXYs = MTBE, TBA, TAME, ETBE, DIPE, ETBE - confirm that all lab detection limits are below lower of CA & EPA MCLs)
Task 4. **CPT Logging and Multi-Level Well Installation** (see attached Figure 1 for locations)		
• We plan to initially characterize the well locations using Cone Penetrometer Testing. We will obtain continuous CPT descriptions of soil lithology from each, off-site Multi-Level Well location	• 12 to 14 CPT Locations • 12 to 14 Multi-Level Well locations (up to 36-42 sample intervals)	first phase 3 to 4 temp borings, discrete depth sampling at ~16' and ~41' (or as dictated by lithology), no wells, run all samples for TPHg, BTEX, OXYs
□ Transect A - 10 well locations on 25' centers.		
□ Downgradient: 2 well locations addressing T Bear well plume capture and to target dissolved concentrations along northern lateral flank of the plume NOTE: If golf driving range access is granted (3220 Andrade Road), we would propose installation of 2 additional multi level well locations to target dissolved concentrations along the southern lateral flank of the plume	Initial Water Quality Testing (Monitoring & Reporting Program to be developed following initial test results)	second phase: install transect We do not have enough data to scope the transect

Task 5	**Current Assessment Upload and Subsequent Ongoing Monitoring Tasks**		
	• Initially, we plan to confirm preliminary aquifer parmeters calculations by assessing the combination of gradient and transducer data acquired. Data to include water level measurements, water consumption volumes, pumping periods and rates, and measurable transducer-recorded influence in screened water bearing zones We will integrate the measurements and transducer data to calculate flow velocity and aquifer parameters. The SCM will be updated, data uploaded to the Intranet site, and a stamped cover forwarded to ACEH		Provide one task for reporting/SCM update of investigation tasks. Put analysis of T-Bear well measurements in a separate task.
	• Subsequently, we plan to monitor water level, water quality, and pumping data in accordance with a Monitoring & Reporting Program (to be developed based on initial test results). The site-specific program will target groundwater water fluctuations and water quality data to monitor plume stability, plume capture, and changes in mass discharge over time.	Monthly, Quarterly & Annual Monitoring (A site-specific Monitoring & Reporting Program to be developed following initial test results)	Recommendations for monitoring should be included in the report/SCM update above
Task 6:	**Carbon System Operations and Maintenance**		
	• We will provide Operations and Maintenance service on the treatment system as it is the drinking water source for residences and a horse stabling business at the site. This work task includes providing carbon drum backup for immediate change-out following carbon breakthrough, testing and proper disposal of spent carbon, and troubleshooting any system failures		budget for 6 mos.: carbon changeout every 6 wks., monthly sampling of influent, midf, eff, per WHA recommendations
	• We will conduct regularly-scheduled water quality monitoring sampling of water from the production well and treatment system for State-certified analysis (TPH-gas, BTEX, MTBE, TAME, DIPE, TBA AND EtOH), interpretation of those results, and make corrections to the system to prevent system breakthrough and ensure residents of T-Bear Ranch receive uncontaminated water. Laboratory testing of carbon treatment system samples will be run on a 2-day turnaround for effective monitoring		
	• We will provide milestone and monitoring reports required by Alameda County Environmental Health Services to include:		
	☐ A monthly, System Operation and Sampling Report, to include State-certified laboratory data, chronological tabulation of water quality results, operations and maintenance information (datalogger flow record, carbon usage, MTBE mass removed, system update).	*Monthly*	
	☐ System Re-evaluation Report, addressing any carbon breakthrough and providing details of follow-up actions and any additional assessment – submitted 1 week from any carbon breakthrough	Following Carbon Breakthrough	

Notes:

Unless stated otherwise, all analysis is for TPH-gas, BTEX, and oxygenates (MTBE, TAME, DIPE, TBA AND EtOH); analyzed by EPA Method 8260.

Cost Estimate for Phase II Work Tasks

Emergency Characterization Work Tasks for the Replacement of a MTBE-Impacted Groundwater Production Well

Sunol Tree Gas Station Fuel Release, 3004 Andrade Road, Sunol

Sept-2004

ITEM / DESCRIPTION	UNIT		QUANTITY	COST	TOTAL ITEM COST
Task 3: <u>On-Site Plume Definition</u> (Sunol Tree Gas Station)					
• 60-ft deep continuous cores from two on-site boring locations which address the dispenser area and the USTs					
• Discrete water sampling (3 intervals per boring). If possible install Multi-Level wells during this mobilization.					
• Soil cuttings handling/disposal					
• Access-planning, permitting, assessment, & reporting					
Planning/documentation: permits, utility location, and project coordination, submittals.					
Staff Geologist	$75	hr	12	$900	
					$900
Field Operations - logging, sampling, oversight, cuttings containment.					
Staff Geologist	$75	hr	30	$2,250	
Drilling field equipment truck, Ionization-meter, materials	$250	unit	1	$250	
					$2,500
Subcontractors (Cost + 15%)					
Rhino-Driven Probe/Auger Rig (Gregg Drilling) – Two, 60-ft deep borings	$24	ft	120	$2,880	
- Hydropunch ($170/hr standby x 1.5 hr/sample - avg) – Two samples/boring	$255	sample	4	$1,020	
Storage Bin/Hopper/Forklift/Utility Survey (Combine with Task 2)	$0	ea.	0	$0	
Concrete Coring	$250	ea	1	$250	
Lab- (72-hr turnaround) (4 soil & 3 water per boring)					
- TPH-gas + BTEX + Fuel Oxygenates by 8260	$140	ea	14	$1,960	
- EDF upload (per work order)	$25	ea	1	$25	
					$6,135
				Estimated Budget for TASK 3:	**$9,535**

CONTINUED ON NEXT PAGE

Cost Estimate for Phase II Work Tasks

Emergency Characterization Work Tasks for the Replacement of a MTBE-Impacted Groundwater Production Well

Sunol Tree Gas Station Fuel Release, 3004 Andrade Road, Sunol

Sept-2004

ITEM / DESCRIPTION	UNIT		QUANTITY	COST	TOTAL ITEM COST
Task 4: CPT Logging and Multi-Level Well Installation					
• Phase I: 3-4 exploratory borings for determining lateral edge of transect.					
• Phase II: Continuous CPT descriptions of soil lithology from 12 off-site multi-level well location;					
• Phase III: Install Multi-Level wells at 14 locations.					
• Soil cuttings handling/disposal					
• Access-planning, permitting, assessment, & reporting					
Planning/documentation: permits, utility location, and project coordination, submittals.					
Staff Geologist	$75	hr	10	$750	
Administrative Assistance	$45	hr	4	$180	
					$930
Field Operations - logging, sampling, oversight, cuttings containment.					
Phase I. Lateral Edge of Plume (Borings) - Staff Geologist	$75	hr	20	$1,500	
Phase II CPT Investigation - Staff Geologist	$75	hr	24	$1,800	
Phase III Multi-Level Well Installation - Staff Geologist	$75	hr	60	$4,500	
- Multi-Level Well Construction & delivery (14 Wells) – Two x Staff Geologists	$150	hr	20	$3,000	
- Drilling field equipment truck, ionization-meter, materials	$175	unit	4	$700	
Well Development & Sampling (42 sample ports) - Staff Geologist	$75	hr	40	$3,000	
- Field equipment, truck, water quality meters, disposable materials	$175	unit	4	$700	
- Mini-bladder pump/controller	$500	event	1	$500	
					$15,700
Subcontractors (Cost + 15%)					
PHASE 1. Rhino-Driven Probe/Auger Rig (Gregg Drilling) - Three, 50-ft borings	$24	ft	150	$3,600	
- 2 Hydropunch per boring ($170/hr standby x 1.5 hr/sample - avg)	$255	sample	6	$1,530	
PHASE 2 CPT Rig (Gregg Drilling) - Twelve, 60-ft borings	$10 35	ft	720	$7,452	
- Mob-Demob, travel - based on 2 days of field work	$575	unit	6	$3,450	
PHASE 3 Multi-level Well Installation (Gregg Drilling) - Fourteen, 50-ft borings	$20 70	ft	700	$14,490	
- Mob-Demob, travel - based on 5 days of field work	$700	unit	1	$700	
- Installation 2 hrs/well x 170/hr rig standby time per well (estimate)	$340	well	14	$4,760	
- Multi-level well materials: 3-channel tubing, screen port assembly, support clamp and centralizers, well head, and christy box	$750	well	14	$10,500	
- Annulus per well (9-ft sand, 25 ft TR-30 bentonite, 16-ft cement)	$740	well	14	$10,360	
- Dedicated Tubing, 3 check-valves/well	$125	well	14	$1,750	
Storage Bin (Delivery/rental/Off-haul/cleaning)	$1,500	ea	1	$1,500	
- Hopper	$750	ea	1	$750	
- Forklift	$800	ea	1	$800	
- Soil Disposal (Class III Landfill Transport-Disposal)	$600	bin	1	$600	
- Professional Location-Elevation Survey (for EDF submittal)	$1,500	ea	1	$1,500	
- Water containment and disposal	$350	ea	1	$350	
Lab- (72-hr turnaround) (6 Hydropunch + 42 multi-level ports +1 purge water)					
- TPH-gas + BTEX + Fuel Oxygenates by 8260	$140	ea	49	$6,860	
- EDF upload	$150	ea	1	$150	
					$71,102
				Estimated Budget for TASK 4:	**$87,732**

CONTINUED ON NEXT PAGE

Cost Estimate for Phase II Work Tasks

Emergency Characterization Work Tasks for the Replacement of a MTBE-Impacted Groundwater Production Well

Sunol Tree Gas Station Fuel Release, 3004 Andrade Road, Sunol

Sept-2004

ITEM / DESCRIPTION	UNIT	QUANTITY	COST	TOTAL ITEM COST
Task 5: Current Assessment Upload and Subsequent Ongoing Monitoring Tasks				
• Workplan, vendor-subcontractor costing.				
• Review of historical land use/aerials to check for abandoned wells.				
• Confirm preliminary aquifer parameters calculations (gradient and transducer data), calculate flow velocity and mass discharge across the transect, CPT analysis and well design.				
• The SCM will be updated, data uploaded to the Intranet site, and a stamped cover forwarded to ACEH.				
• Meetings, client-regulatory coordination, project coordination.				
Workplan, historical review, aquifer analysis, CPT analysis upload.				
Staff Geologist	$75 hr.	30	$2,250	
Senior Geologist	$105 hr	20	$2,100	
Principal Geologist	$125 hr	8	$1,000	
				$5,350
SCM Update - Analysis of mass discharge, changes to model, data gaps, recommendations.				
Staff Geologist	$75 hr.	10	$750	
Senior Geologist	$105 hr	40	$4,200	
Senior Geologist	$105 hr.	6	$630	
Administrative Assistance	$45 hr	6	$270	
				$5,850
Overall Project Coordination- meetings, correspondence, FUND-Alameda County contracting support.				
Senior Geologist	$105 hr.	14	$1,470	
Administrative Assistance	$45 hr	4	$180	
				$1,650
			Estimated Budget for TASK 5:	**$12,850**
Task 6: Carbon System Operations and Maintenance				
• We will provide Operations and Maintenance service for 6 months based on change-outs every 6 weeks (4 change-outs total).				
• Monthly water quality monitoring sampling of water from the production well and treatment system (influent, mid, post samples) for State-certified testing of TPH-gas, BTEX, and fuel oxygenates (6 monthly tests),				
• Includes proper disposal of spent carbon, and troubleshooting any system failures.				
• A monthly, System Operation and Sampling Letter Report, to include State-certified laboratory data, chronological tabulation of water quality results, operations and maintenance information (datalogger flow record, carbon usage, MTBE mass removed, system update).				
Carbon Change Out				
Staff Engineer/Technician	$70 hr	6	$420	
Carbon Change-out & Disposal	$1,400 event	1	$1,400	
		4 Events x	$1,820	$7,280
Field Operations - Groundwater collection- system maintenance - transducer download (per event)				
Staff Engineer/Technician	$70 hr	6	$420	
Water Quality meters/ laptop-data logger/field equip/truck	$125 unit	1	$125	
Lab- (72-hr turnaround) (3 water - event)				
- TPH-gas + BTEX + Fuel Oxygenates by 8260	$140 ea	3	$420	
		6 Events x	$965	$5,790
Monthly Letter Report (pumping data/lab results) -Project Management, Drafting (per event)				
Staff Engineer/Technician	$70 hr	6	$420	
Senior Engineer/Geologist	$105 hr	4	$420	
Administrative Assistance	$45 hr.	3	$135	
		6 Events x	$975	$5,850
			Estimated Budget for TASK 6:	**$18,920**
			Total Project Budget:	***$172,357***

ASSUMPTIONS:

Time & Materials estimate based on hours shown - actual billing will be based on hours worked

Impacted Groundwater Source:

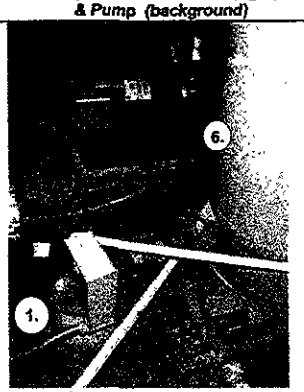
1. *T Bear Ranch Well*
   3000 Andrade Road, Sunol
   - 6-inch diameter, PVC, 40 feet deep
   - Screened from 3-to-40 feet bgs
   - Average Groundwater Pumping: 5,099 gallons per day
   - Submersible pump rate (during pumping): approx. 7-9 gpm

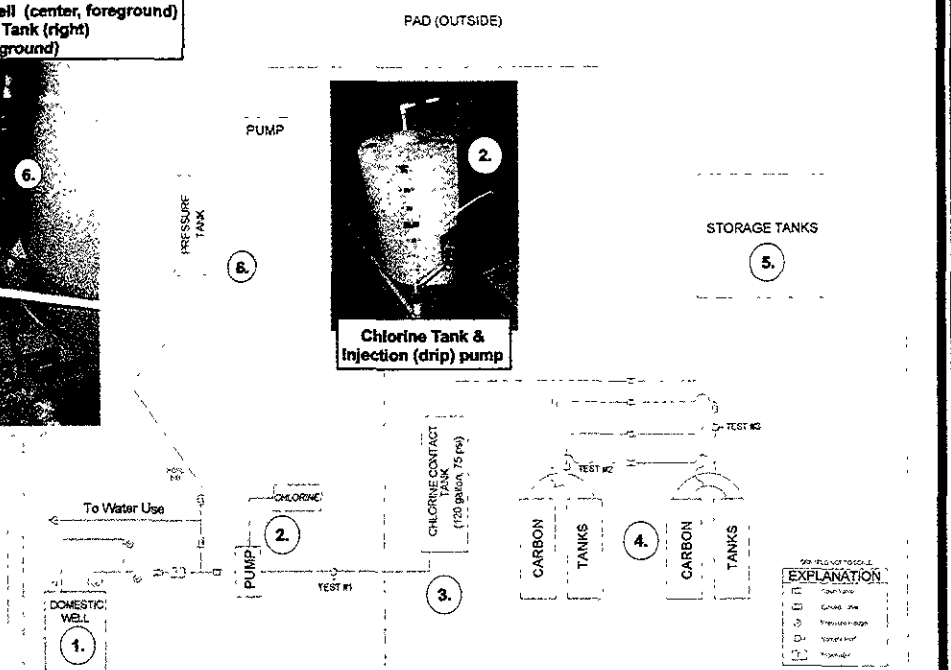
Carbon Treatment System Specification

System Design: Ising's Culligan
Livermore, California

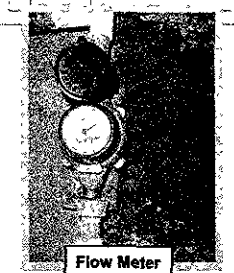
2. Chlorine dilution tank and injection pump
3. Chlorine Retention Tank (120 gal.)
4. Twin fiberglass tanks in series.
   - 1 set has 7 cu ft. carbon capacity
   - 1 set has 5 cu ft. carbon capacity
   + bypass valving for changeouts
5. Two, 3,000 gallon Storage Tanks (poly) with high-low switch to trigger groundwater pumping.
6. Re pressurization System for the Ranch's water distribution system which includes a booster pump and pressure tank.

Well Head
6-inch diameter, PVC Water Well (center, foreground)
Re-pressurization Tank (right)
& Pump (background)

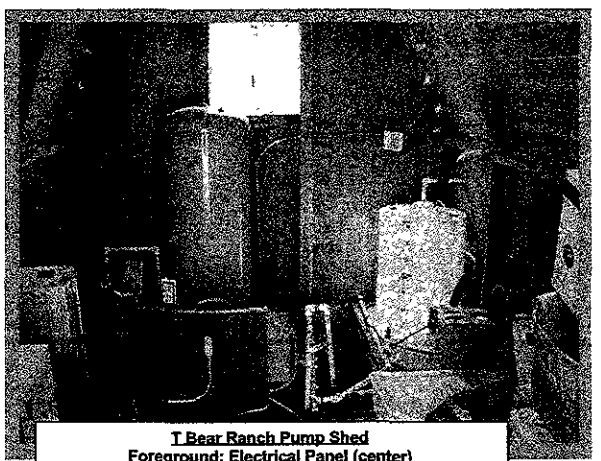




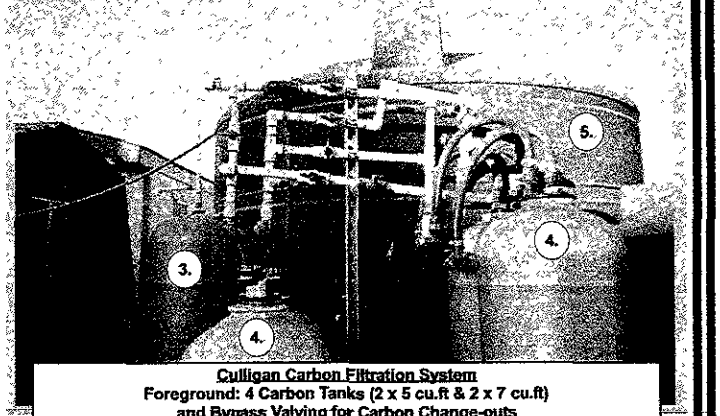
Chlorine Tank & Injection (drip) pump



Flow Meter (totalizing)



T Bear Ranch Pump Shed
Foreground: Electrical Panel (center)
Background: Pressure Tank (center) & Chlorine Tank (right)



Culligan Carbon Filtration System
Foreground: 4 Carbon Tanks (2 x 5 cu.ft & 2 x 7 cu.ft)
and Bypass Valving for Carbon Change-outs
Background: 3,000-gallon storage tank (grey) & Chlorine Retention Tank (blue)

FIGURE 1
Job # 23003

WELLHEAD TREATMENT SYSTEM
Carbon Filtration System Schematic
T BEAR RANCH WATER WELL
SUNOL TREE GAS STATION FUEL RELEASE
3004 Andrade Road
Sunol, California

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, Ca. 95076
(831) 722 - 3580 (831) 662 - 3100