



# Converse Consultants

Over 50 Years of Dedication in Geotechnical Engineering and Environmental Sciences

June 27, 2003

00-43367-05

Maryland Square Shopping Center Limited  
Liability Company/Herman Kishner Trust  
c/o Mr. Paul Lal  
Dickerson, Dickerson, Consul & Pocker  
Rainbow Corporate Center, Suite 350  
777 North Rainbow Boulevard  
Las Vegas, NV 89107



Subject: **Preliminary Corrective Action Plan (CAP)**

Maryland Square Shopping Center  
3661 South Maryland Parkway  
Las Vegas, Nevada  
Facility ID: H-000086 (the Site)

Dear Mr. Lal:

Converse Consultants (Converse) is pleased to submit this *Preliminary Corrective Action Plan (CAP)* for the Site. The purpose of the CAP is to present a plan for addressing tetrachloroethylene (aka perchlorethylene) (PCE) impacts to groundwater. The information presented in this CAP is based on data presented in previous investigation reports for the Site. As addressed below, however, additional assessment of Site conditions is required before a final corrective action plan can be proposed.

## Site Description

The Site is located at 3661 South Maryland Parkway at the northwest corner of Maryland Parkway and Twain Avenue in Las Vegas, Nevada. It is located in the Southeast  $\frac{1}{4}$  of the Northeast  $\frac{1}{4}$  of Section 15, Township 21 South, Range 61 East. One portion of the Site is currently developed as a strip shopping center and another portion of the Site is being developed as a school. A dry cleaning facility was located on the

portion of the Site which contains the strip shopping center. Please refer to Drawing No. 1 for the Site location.

The surrounding area is commercial and residential. Directly north of the Site is a strip shopping center. East of the Site, across Maryland Parkway, is the Boulevard Mall. Farther east are residential housing developments. South of the Site, across Twain Avenue, are commercial buildings. A school and residential housing developments are located to the west of the strip shopping center on the Site.

## **Generalized Geologic and Hydrogeologic Conditions**

### **Geologic Conditions**

The Site is located in the Las Vegas Valley, which is a structural basin of late Mesozoic and Tertiary age block-faulting origin. Deposits in the Valley are mainly Tertiary and Quaternary Age unconsolidated sediments derived from the surrounding mountain ranges, which are composed of sedimentary and igneous rocks. The mountains to the north, east, and west are mostly sedimentary rocks, predominately limestone, and dolomite of Paleozoic and Mesozoic age. The southern and southeastern ranges are mostly volcanic rocks - primarily Tertiary-age andesite lava flows.

### **Hydrogeologic Conditions**

The groundwater aquifer system within Las Vegas Valley consists of coarse-grained alluvial sands and gravels inter-bedded with finer-grained valley-fill deposits. In general, two separate aquifers exist in Las Vegas Valley — a series of deep, confined water-bearing zones and a shallow, relatively unconfined aquifer. The majority of the groundwater withdrawn in the Valley is from the deeper aquifer zones and is at depths estimated to be greater than 200 feet for most Valley locations. Extensive development of the groundwater resources in Las Vegas Valley has resulted in the lowering of regional water levels.

In contrast, the shallow groundwater table in portions of the Valley has been rising steadily, due primarily to the over watering of lawns. Water tables have been found 10 feet or less below ground surface (bgs) in parts of the Valley. The near-surface groundwater has relatively poor water quality and is occasionally withdrawn in the Valley, principally for irrigation and industrial uses.

### **Background**

On August 9, 2000, subsurface soil and water conditions were investigated along the eastern boundary of the Site by drilling one (1) soil boring and converting it into a monitoring well (MW-1). Water samples collected from MW-1 on August 14, 2000 revealed that PCE concentrations in the groundwater at the Site exceeded the established United States Environmental Protection Agency (EPA) maximum contamination level (MCL) for PCE in drinking water of 5 micrograms per liter (ug/l) or parts per billion (ppb).

On October 2 and 3, 2000, downgradient subsurface soil and water conditions were investigated by drilling five (5) additional soil borings the vicinity of the Boulevard Mall parking garage and converting the borings into monitoring wells (MW-2 through MW-6). Water samples collected from these wells on October 5, 2000 revealed concentrations of PCE in excess of its MCL and concentrations of trichloroethene (TCE) in excess of its MCL of 5 ppb.

On August 22, 2001, Converse completed a well search for the area of the Site. This search revealed twenty (20) potential sources of potable water in the area (Section 15) where the Site is located. Thirty-four (34) potential sources of potable water exist in Section 14, which is down-gradient of the Site.

In November 2002, Converse completed an additional soil and groundwater investigation and an investigation of the soil beneath the strip shopping center building located on the Site. Five soil samples were collected from beneath the suite previously occupied by the dry cleaning facility in the strip shopping center building. The samples were collected by coring through the concrete floor and and-augering to refusal.

PCE was detected in four of the five soil samples collected at depths ranging from approximately two and one-half feet to four feet bgs and at concentrations of 110 ppb (in two samples), at 170 ppb and at 15,000 ppb. EPA's current Preliminary Remedial Goal (PRG) for PCE in industrial soil is 3,400 ppb. Additionally, six (6) groundwater monitoring wells were installed (MW-7 through MW-12) on the Site and on the Boulevard Mall property. The results of this additional investigation indicated that there was PCE in the soil beneath the facility, that the lateral extent of PCE was defined upgradient on the Site, and that the lateral extent of PCE impacted groundwater was defined to the southeast beneath the Boulevard Mall.

In May 2003, one (1) additional well (MW-13) was installed on the Boulevard Mall property, at NDEP's direction, to assess the extent of PCE impacts to the northeast. The results revealed that MW-13 exhibited a higher PCE concentration, during the most recent monitoring event, than the previously installed monitoring wells.

## **Site Specific Soil and Groundwater Conditions**

### **Subsurface Soil Profile**

Site soils consist of inter-bedded heterogeneous mixtures of silt, sand, and clay. In general, sandy or clayey silt was encountered at the surface with an underlying clay layer to a depth of approximately 32 feet. Caliche lenses were encountered generally at depths of 6 feet, 13 feet, and 18 feet, with a predominantly silty or clayey sand underlying it to the boring depth of approximately 32 feet, and in particular, on the Boulevard Mall property. Caliche was not encountered in MW-1, MW-2, MW-3, MW-4, MW-5, and MW-11. The boring logs illustrating the soil profiles are included for reference in Appendix A.

### **Site Groundwater**

The shallow groundwater flow direction at the Site appears to vary from northeast to southeast. The regional trend and the off-site groundwater flow is to the east/southeast. The calculated hydraulic gradient is approximately 0.019 feet per foot. The general depth to groundwater is 15

to 24 feet bgs. In general, groundwater was encountered in a sandy clay-rich unit below the caliche.

The most recent sampling event reveals an overall decrease in PCE concentrations. It is premature to determine if this is anomalous or represents a trend in the data. The decrease in concentration levels may impact the corrective action proposed for the Site.

Please refer to Drawing No. 2 for the monitoring well locations and a gradient map. The following table presents the most recent groundwater analytical results. Historical analytical data is presented in Table 1 at the end of this report. A copy of the laboratory report for the most recent sampling event is included in Appendix B.

**Groundwater Sample Analysis – May 7, 2003**

Well No.	PCE	TCE	Cis-1,2-Dichloroethene	Vinyl Chloride
MW-1	870	ND	ND	ND
MW-2	1,400	ND	ND	ND
MW-3	6.9	ND	ND	ND
MW-4	24	ND	ND	ND
MW-5	240	ND	ND	ND
MW-6	710	22	ND	ND
MW-7	1.7	ND	ND	ND
MW-8	3.2	ND	ND	ND
MW-9	59	ND	ND	ND
MW-10	ND	ND	ND	ND
MW-11	ND	ND	ND	ND
MW-12	1.3	ND	ND	ND
MW-13	2,100	ND	ND	ND
MCL	5	5	70	2

ND – No detectable levels  
 Contaminants reported as micrograms per liter (ug/L) or parts per billion (ppb)  
 MCL – Maximum Contamination Level in ppb

## **Soil/Groundwater Remediation Technologies and Approach**

Below is a brief overview of soil and groundwater technologies that could be utilized in connection with the Site. The overview is followed by a discussion of the steps that Converse proposes to take to identify an approach and technologies to be utilized in addressing soil and groundwater conditions at the Site.

### **Soil Remediation**

The impacted soil is located beneath the strip shopping center building located on the Site. Impacted soil can continue to act as a residual source of PCE in groundwater if it is not addressed. The precise location(s) of the PCE releases in the soil are not known. However, the data indicates that the releases occurred through the trench style floor drain inside of the dry cleaning facility. The purpose of the soil remediation will be to mitigate PCE concentrations in the soil that can continue to impact groundwater.

Soil vapor extraction (SVE) is a process in which vapor-phase constituents within the soil will be recovered using negative pressure created through a vacuum blower connected to vapor wells, and are then treated (using carbon) before release to the atmosphere. A flow diagram of a sample vapor well point through the carbon treatment system is enclosed as Drawing 3. SVE may be an appropriate technology to address impacted soil at the Site. However, the soil conditions should be evaluated to determine whether SVE could be effectively utilized to address the impacted soil. Converse therefore proposes to conduct an SVE pilot test to assess the effectiveness of an SVE system in addressing impacted soil. Based on the results of the SVE pilot test, Converse will evaluate what remedial steps may be appropriate to address impacted soils. Further details regarding the proposed SVE pilot test are provided below.

### **Groundwater**

There are a number of different approaches or technologies that can be utilized to address impacted groundwater. These approaches and tech-



nologies are briefly outlined below. The presence of structures and the nature of the activities on the Boulevard Mall property limit the groundwater approaches and technologies that can be utilized to address groundwater contamination beneath the Boulevard Mall property. Except as to the corrective action proposed on the Boulevard Mall property utilizing Hydrogen Release Compound (HRC), testing is recommend to evaluate which of these approaches and technologies will provide an appropriate means of addressing impacted groundwater

The potential remedial approaches and technologies are as follows:

### **Natural Attenuation**

Natural attenuation is a passive approach that depends on natural processes to degrade contaminants in the subsurface. However, significant reductions in contaminant levels will take many years. A monitoring program is normally implemented to confirm that natural attenuation is occurring which includes groundwater sampling and reporting.

### **Bioremediation**

Bioremediation is an approach that involves adding nutrients to the groundwater via injection wells to aid in degradation of contaminants in the subsurface. A monitoring program is normally implemented to confirm that the bioremediation is occurring which includes groundwater sampling and reporting.

### **Reactive Iron Wells**

This passive approach involves placing granular iron in in-situ permeable zones across the path of the groundwater containing PCE. As the groundwater flows through the permeable zones, the PCE reacts with the granular iron.

### **Groundwater Pump and Treat**

This type of remediation involves constructing groundwater recovery wells in the contaminant plume and pumping the groundwater to an

aboveground treatment system. The treated groundwater is then discharged into a storm drain or re-injected back into the aquifer. This type of treatment requires permits through various governmental agencies and requires extensive maintenance and reporting requirements. It also requires considerable space for the placement of equipment, ruling out its consideration with respect to the Boulevard Mall property.

### **Hydrogen Release Compound**

HRC is a product that enhances in situ biodegradation rates for chlorinated compounds. Naturally occurring microorganisms use hydrogen to progressively remove chlorine atoms from chlorinated compounds such as PCE. HRC is used for source treatment or to control plume migration into off-site areas. The material is applied into the groundwater using borings or monitoring wells. It can be utilized in locations in which there is limited space, such as the area on the downgradient Boulevard Mall property.

### **Ozone Sparging (C-Sparging)**

Ozone sparging involves injecting ozone into the groundwater aquifer much like air sparging techniques. The ozone destroys the chlorinated compounds by direct oxidation, which breaks down complex organic chemical bonds into other compounds that are more easily remediated by natural biodegradation. The ozone treatment process utilizes sparge points to introduce the ozone into the groundwater.

C-sparging is a form of ozone sparging. Traditional air sparging technology consists of injecting air into the soil formation below the groundwater table. As the air travels toward the surface, it removes the volatile compounds from the groundwater and transfers them to the vadose zone above the groundwater.

C-Sparge technology uses the same principal but enhances the effectiveness of air sparging in several areas. C-Sparging uses diffuse nodes to provide very fine "micro" bubbles. These bubbles create a greater surface area contact and more even distribution from the discharge point throughout the formation. Traditional air sparging can result in

large bubbles that create preferential pathways to the surface. A second difference is that C-Sparge uses ozone in the sparge air, which helps to degrade the VOCs. By breaking down the PCE upon contact, the use of ozone reduces or eliminates the need for subsequent vapor recovery.

To address impacted groundwater beneath the Site and the downgradient Boulevard Mall property, Converse proposes the following:

1. Install two additional monitoring wells on the Boulevard Mall property to assess the terminal extent of PCE impacts;
2. Conduct a pilot test of one potential technology, C-sparging. The pilot test would be conducted at a location on the Site immediately downgradient of the source area. Based on the results of the pilot test, Converse will assess its potential effectiveness as compared to other approaches or technologies in remediating groundwater beneath the Site. C-sparging was selected for pilot testing in this area due to the higher levels of groundwater contamination in the wells in the source area and immediately downgradient of the source area. In addition, as part of the pilot test and for purposes of evaluating the results of the C-sparging pilot test and the HRC injection, the following analytical tests of the aquifer matrix will be conducted: total or fraction organic carbon, particle size distribution, saturated hydraulic conductivity, soil air permeability, and dry bulk density. However, it should be noted that sediments in the Las Vegas Valley can change multiple times within five to ten feet bgs, and this may impact the usefulness of information regarding the aquifer matrix.
3. Address impacted groundwater under the downgradient Boulevard Mall property and its further migration using HRC injection. HRC injection was selected for this area, which is located several hundred feet from the source area on-Site in which the C-sparge pilot test is to be conducted, because limited access precludes the use of other technologies (such as C-sparging) and because it is an effective technology for addressing VOCs in groundwater.
4. Conduct periodic groundwater monitoring.

Once the above steps are completed, Converse will supplement this CAP to address further corrective action required to address impacted groundwater beneath the Site and a portion of the downgradient Boulevard Mall property.

### **Approach**

Converse recommends a series of steps or phases for identifying and implementing appropriate technologies to remediate soil at the Site and in groundwater at the Site and the downgradient Boulevard Mall property. The initial steps or phases, in the order in which they would be implemented, are detailed below.

#### **Phase I - Additional Investigation**

Converse will drill two (2) additional soil borings on the Boulevard Mall property. One soil boring will be located to the northwest of monitoring well MW-13. The second soil boring will be located to the east of MW-13 on the opposite side of the Boulevard Mall building. The borings will be drilled to an approximate depth of 25 to 30 feet. This work will aid in determining the terminal extent of PCE impacts.

The soil borings will be installed with a truck-mounted drill rig. One soil sample will be collected from each soil boring. The soil samples will be submitted to an environmental laboratory following standard chain-of-custody procedures. The soil samples collected will be submitted for analysis of volatile organic compounds (VOCs) using EPA Method 8260B.

After completion of the soil borings, Converse will install 2-inch PVC well casing in each boring that will be screened through the water table. The wells will be installed in accordance with standard industry practice and general EPA protocol. After installation, the wells will be developed to remove sediment and to establish equilibrium between the aquifer and the well materials. A licensed surveyor will conduct a survey of the new wells for horizontal and vertical control to aid in establishing the local groundwater gradient and flow direction.

Converse will perform groundwater monitoring of the two new wells. The monitoring wells will be purged and sampled in accordance with EPA protocol. The samples will be analyzed for VOCs in accordance with EPA Method 8260B. The samples will be sent under chain-of-custody to a certified laboratory in Nevada. Soil cuttings and purged groundwater generated during investigation/sampling activities will be stored on the Site. Documentation of observations, results of soil and groundwater sampling and analysis, and conclusions and recommendations will be incorporated into a periodic groundwater monitoring report.

### **Phase II - SVE/C-Sparge Pilot Testing**

Converse will perform an 8-hour pilot test at the Site to evaluate whether SVE is a viable alternative for treating the impacted soil beneath the strip shopping center building which is located on the Site. A pilot test is necessary to ensure that the soil lithology at the Site is conducive to the SVE process. Soil media with low permeability can be difficult to remediate.

Under certain circumstances, an *Authority to Construct* (ATC) permit issued by the Clark County Department of Air Quality Management is required to discharge regulated pollutants to air. The proposed SVE pilot test will treat and discharge vapors from the soil beneath the building on the Site. The untreated discharge for the pilot test will be de minimis (less than 2 tons/year) so a formal permit will not be required. The pilot testing process would involve installation of two vapor extraction wells in the vadose zone at selected locations. Portable equipment would be used to conduct the pilot test. The portable equipment will be used to measure vacuum pressure and flow rates.

Converse will also perform an 8-hour pilot test at the Site to evaluate if C-sparge is a viable alternative for treating the impacted groundwater on the Site. This aggressive technology was selected for pilot testing in these areas due to the higher levels of groundwater contamination in the wells in the source area and immediately downgradient of the source area. A pilot test is necessary to determine whether the lithology

at the Site is conducive to the C-sparge process and to evaluate the C-sparge process relative to other remedial approaches.

The pilot testing process would involve installation of one sparge well and one monitoring well and the use of one previously installed monitoring well at the Site (MW-1). The sparge well would be used to inject air into the groundwater and the monitoring wells would be used to monitor the radius of influence from the sparge well. Portable equipment would be used to conduct the pilot test.

The sparge point will be drilled with a truck-mounted drilling rig. The soil boring will be drilled to approximately 10 to 20 feet below the groundwater surface (25-45 feet bgs). A diagram of a single sparge point is enclosed as Drawing No. 4.

Converse will also, as part of the C-sparge pilot test, conduct analytical tests of the aquifer matrix for total or fraction organic carbon, particle size distribution, saturated hydraulic conductivity, soil air permeability, and dry bulk density, in order to gather information to assess the appropriate remedial alternatives for the Site. It should be noted, however, that sediments in the Las Vegas Valley can change multiple times within five to ten feet bgs. The presence of changing sediments, thus, may reduce the usefulness of the information obtained through this testing.

A pilot test for HRC will not be performed. In order to perform an HRC pilot test, a minimum time period of three to six months after installation would be necessary to evaluate if the HRC technology was working. In view of the need to address further migration of PCE, Converse proposes to proceed with HRC injection on the Boulevard Mall property.

### **Phase III - Interim Off-Site Groundwater Treatment (HRC Injection)**

As an interim measure to address the off-Site migration of PCE in groundwater, Converse proposes to utilize HRC injection on the Boulevard Mall property. HRC is a product that enhances in situ biodegradation rates for chlorinated compounds. Naturally occurring microorganisms use hydrogen to progressively remove chlorine atoms from

chlorinated compounds such as PCE. This location is approximately 300 feet from the area on-Site in which the C-spargе pilot test is to be conducted. HRC injection was selected for interim use in this area because (1) the presence of a parking structure and other limitations on access to this area and preclude the installation of a remedial system; and (2) the need to employ an effective technology for addressing and preventing further migration of VOCs in groundwater at this location. As noted above, Converse does not propose any pilot testing of the effectiveness of HRC injection at the Site, because of the lengthy time period (a minimum of three to six months after installation) that would be required to assess its effectiveness. If it proves to be effective in this location, it may be selected for use in areas on the Site of lower groundwater concentrations.

The HRC product lasts for approximately 1-2 years (depending on subsurface conditions). This work plan includes one injection event.

Eight to ten soil borings will be drilled on the Boulevard Mall property between the parking garage and the Boulevard Mall building. The borings will be drilled to approximately 35 feet bgs. Upon completion of the soil borings, HRC will be pressure injected into 4-inch 0.10 slotted piping in the ground. The annular space around the slotted piping will be filled with 3/8" to 3/4" gravel up to 15 feet below surface grade. Bentonite and concrete will be placed above the gravel. The piping will then be capped and the boring covered with a flush mount monitoring well cover. PVC pipe would be used in the soil borings so that the pipe can be steam cleaned and the injection points can be reused if necessary. This will eliminate the need to re-drill and will extend the life of the injection points. The direct push method of injecting HRC on the Boulevard Mall property is not viable due to the amount of caliche in the subsurface. After the HRC product is depleted, the injection points can be steam cleaned and reused. A diagram of an HRC injection point is enclosed as Drawing No. 5.

### **Permitting for HRC Injection**

An *Underground Injection Control* (UIC) permit, issued by the NDEP - Bureau of Water Pollution Control is required to inject a compound into

the aquifer. Therefore, for the HRC technology to meet the requirements in NAC 445A.810 to .925, Converse will apply for a UIC permit. Because the permit can require up to 6 months for approval, Converse will apply for a temporary permit that is valid for 90 days. During this interim period, Converse will request a permanent UIC permit. Periodic reports that are generated for the Site will also be submitted to NDEP - Bureau of Water Pollution Control.

#### **Phase IV - Groundwater Monitoring**

Converse proposes, pending further evaluation of the results of the pilot tests and other assessment activities contemplated by this CAP, to conduct periodic groundwater sampling. The most recent sampling event revealed an overall decrease in PCE concentrations. However, Converse does not know if this is a trend in the groundwater concentrations or an anomaly. If an overall decreasing trend continues, our remediation approach may be modified. Converse therefore proposes to conduct quarterly sampling for the next two quarters on monitoring wells MW-1 through MW-15 (13 existing and 2 new) to assess concentration trends. After this additional monitoring, Converse anticipates that it will evaluate the need for additional sampling and/or reduction in the number of wells and frequency of sampling.

Disposable bailers will be used to sample the monitoring wells. The monitoring wells will be sampled in accordance with EPA protocol. The water samples will be collected in sterilized 40-ml glass vials, capped with Teflon lined lids, labeled, and placed in an insulated container. Samples will be sent under chain-of-custody to a certified laboratory in Nevada. The samples will be analyzed in accordance with EPA Method 8260 for VOCs during every sampling event. In addition, the following parameters will be analyzed on an annual basis: oxygen reduction potential, alkalinity, nitrate, sulfate, dissolved iron, dissolved manganese, chloride, and total organic carbon. In addition, Converse will field monitor for dissolved oxygen (DO), conductivity, and pH during every sampling event. DO, conductivity, and pH are routine parameters to monitor when sampling. The DO will monitor the oxygen content in the groundwater to evaluate the sparging/HRC effect.

### **Schedule Information**

We estimate that the installation of the additional well can be completed within 60 days from NDEP approval, that the SVE/C-Sparge pilot tests can be completed within 90 from NDEP approval, and that the installation of the HRC injection system can be completed within 180 days from NDEP approval (due to the need to obtain a UIC permit).

### **Limitations**

The data presented in this report are professional opinions based on the data described in this report. They are intended only for the purpose of the Site location and project indicated. The data are based on the assumption that conditions do not deviate from those observed during our study, as described in this report. No other warranty is either expressed or implied.

Conclusions and recommendations in this report are based on the sampling and testing completed for the stated scope of work. Sampling and testing locations are intended to confirm the presence or absence of target contaminants at selected locations. Contaminant levels observed may not be the highest levels present at the Site. It is not the intent of this study to perform exploration to detect other contaminants. Observed contaminants may change with relation to time, on-Site activities, and activities at adjacent properties. This report represents information only to the specific time in which it was collected.

### **Certified Environmental Manager (CEM) Statement**

For the services provided and described in this document, the following language is from NAC 459.

*I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state, and local statutes, regulations, and ordinances.*

We appreciate the opportunity to continue providing our environmental services for you. Should you have any questions regarding this report, please contact us at your earliest convenience.

Respectfully submitted,

CONVERSE CONSULTANTS

*Andrea L. Moericke*

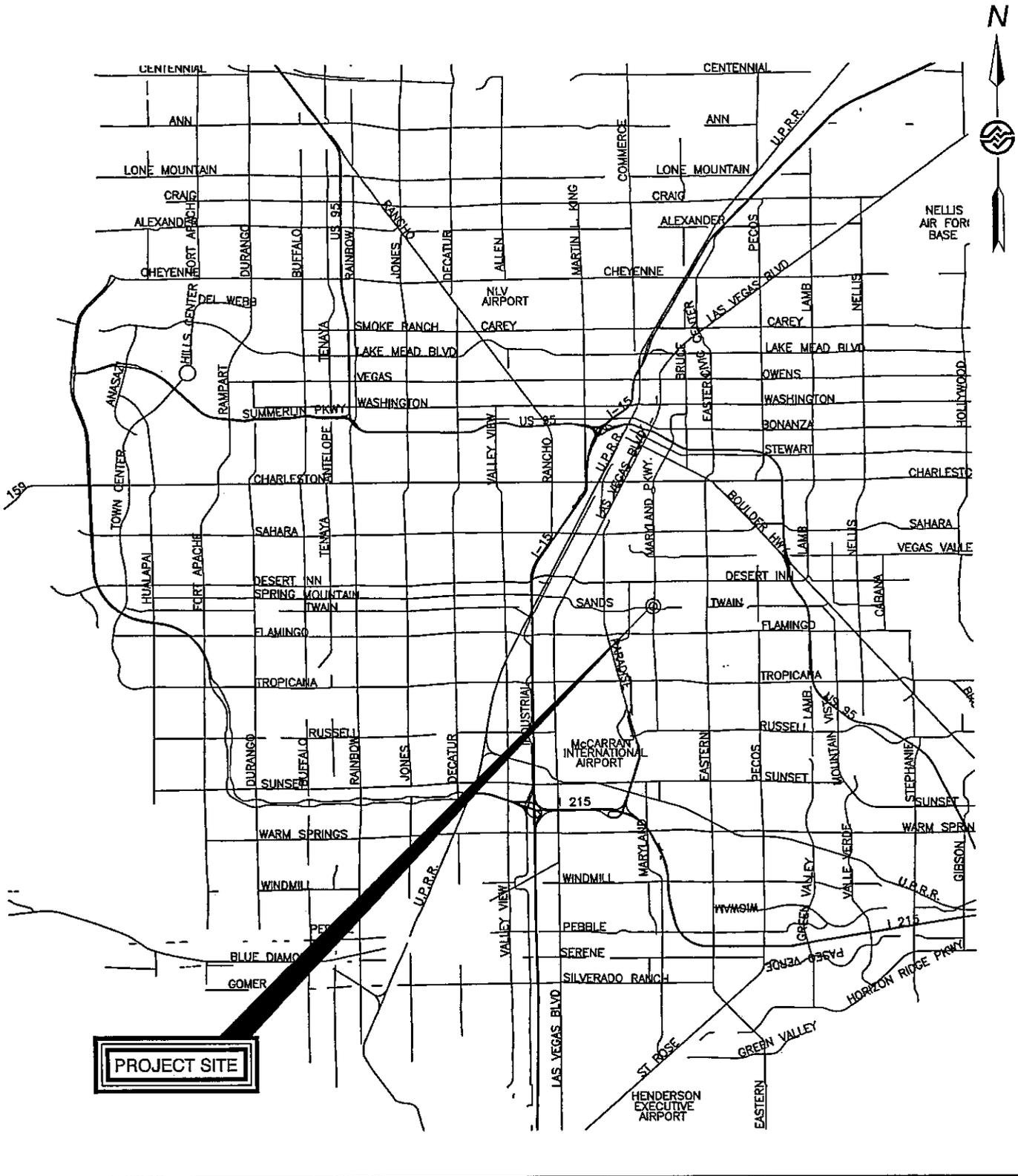
Andrea L. Moericke  
Senior Project Manager  
Nevada CEM 1754 (Exp. 3/1/05)  
Dated 6/27/03

*John A. Goebel*  
Kurt A. Goebel, CEM, PG  
Vice President  
Environmental Division Manager

KAG:ALM:sc  
31/42CS

Encl: Drawings 1 through 5  
Table 1  
Appendix A - Boring Logs  
Appendix B - Laboratory Reports

Dist: 3/Addressee  
1/Nevada Division of Environmental Protection - Las Vegas  
Attn: Ms. Shannon Harbour  
1/The Boulevard Mall  
Attn: Mr. Timothy Biedinger  
3/Jenkins & Gilchrist  
Attn: Mr. John Cermak



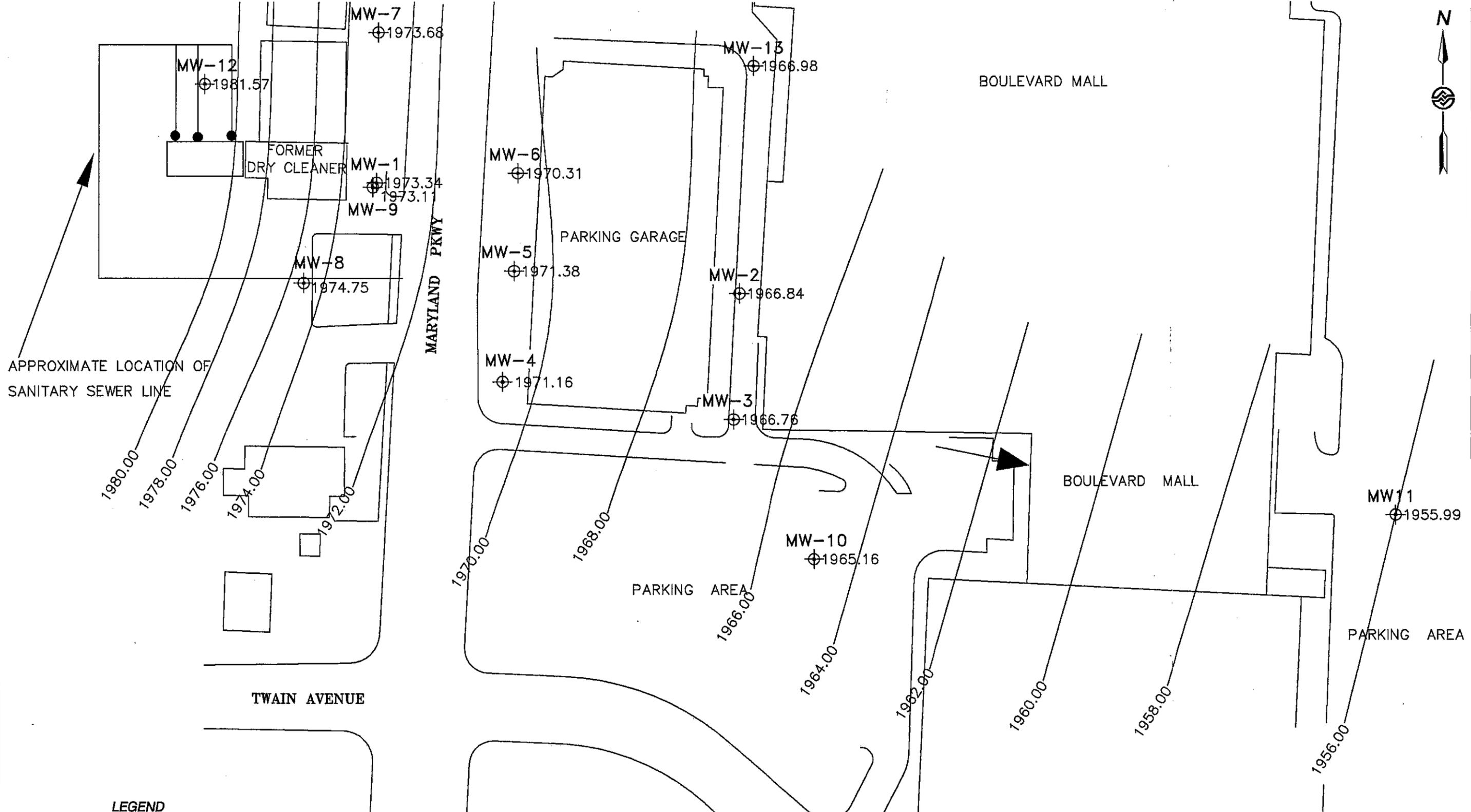
**LAS VEGAS VICINITY**

Maryland Square Shopping Center LLC/Herman Kishner Trust  
 3661 South Maryland Parkway  
 Las Vegas, Nevada

Scale	1" = 15,000'	File No.	36705V01
Date	5/29/03	Project No.	00-43367-05
Drafted By	ESB	Drawing No.	
Checked By	ALM		
Approved By			



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 Environmental Sciences



APPROXIMATE LOCATION OF  
SANITARY SEWER LINE

**LEGEND**

- ⊕ MONITOR WELL LOCATION
- GROUNDWATER GRADIENT DIRECTION
- 1978.00 GROUNDWATER ELEVATION
- SEWER CLEANOUT

REF: AutoCAD drawing file "511326", supplied by client

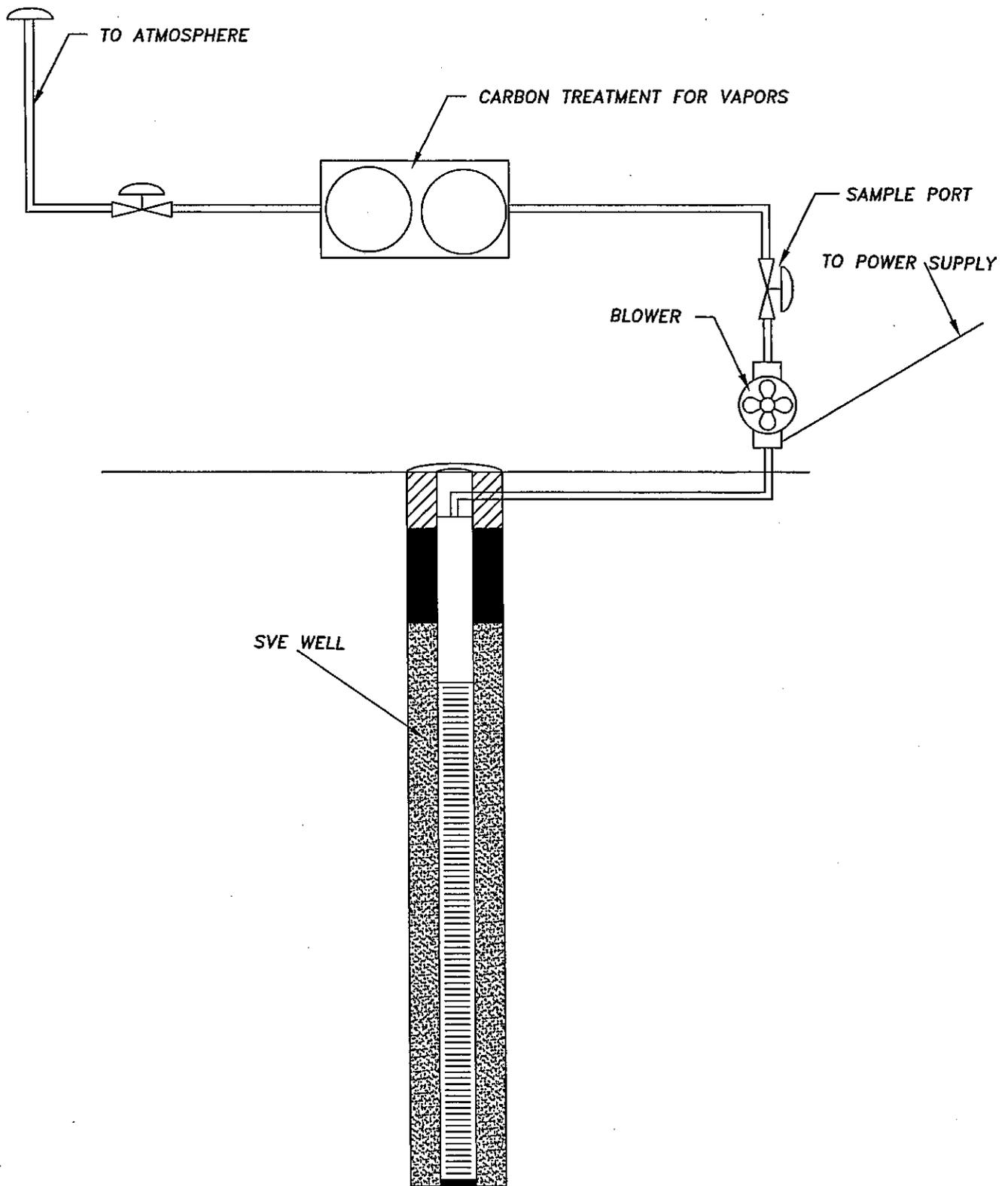
**MONITORING WELL ELEVATIONS**

Maryland Square Shopping Center LLC/Herman Kishner Trust  
3661 South Maryland Parkway  
Las Vegas, Nevada

Scale	1"=100'	File No.	36705002
Date	5/29/03	Project No.	00-43367-05
Drafted By	ESB	Drawing No.	
Checked By	ALM		
Approved By			



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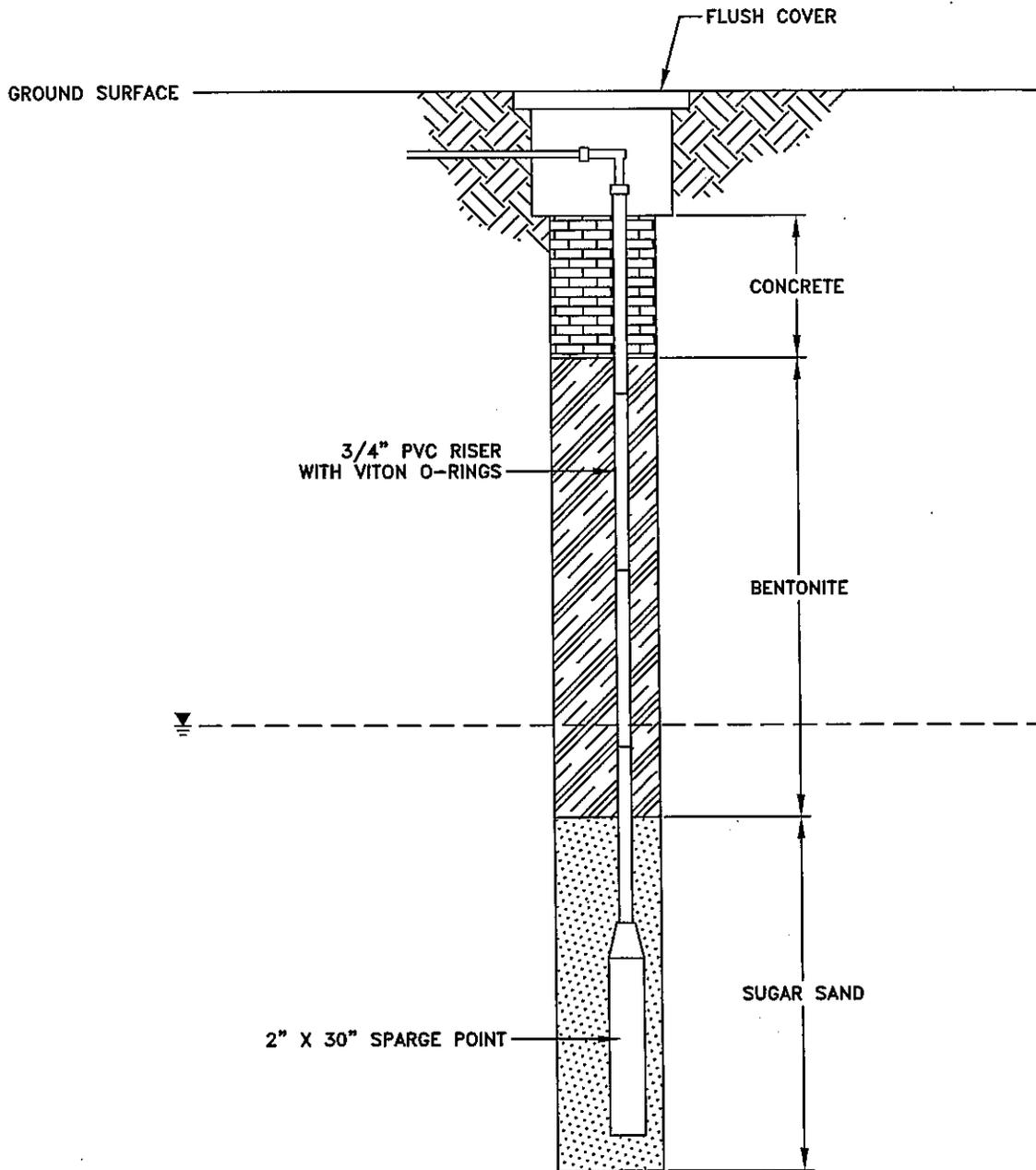
**SVE SYSTEM FLOW DIAGRAM**

Maryland Square Shopping Center LLC/Herman Kishner trust  
 3661 South Maryland Parkway  
 Las Vegas, Nevada

Scale	N.T.S	File No.	36705F06
Date	06/10/03	Project No.	00-43367-05
Drafted By	ESB	Figure No.	
Checked By	ALM		
Approved By			



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**SINGLE SPARGE POINT CONSTRUCTION**

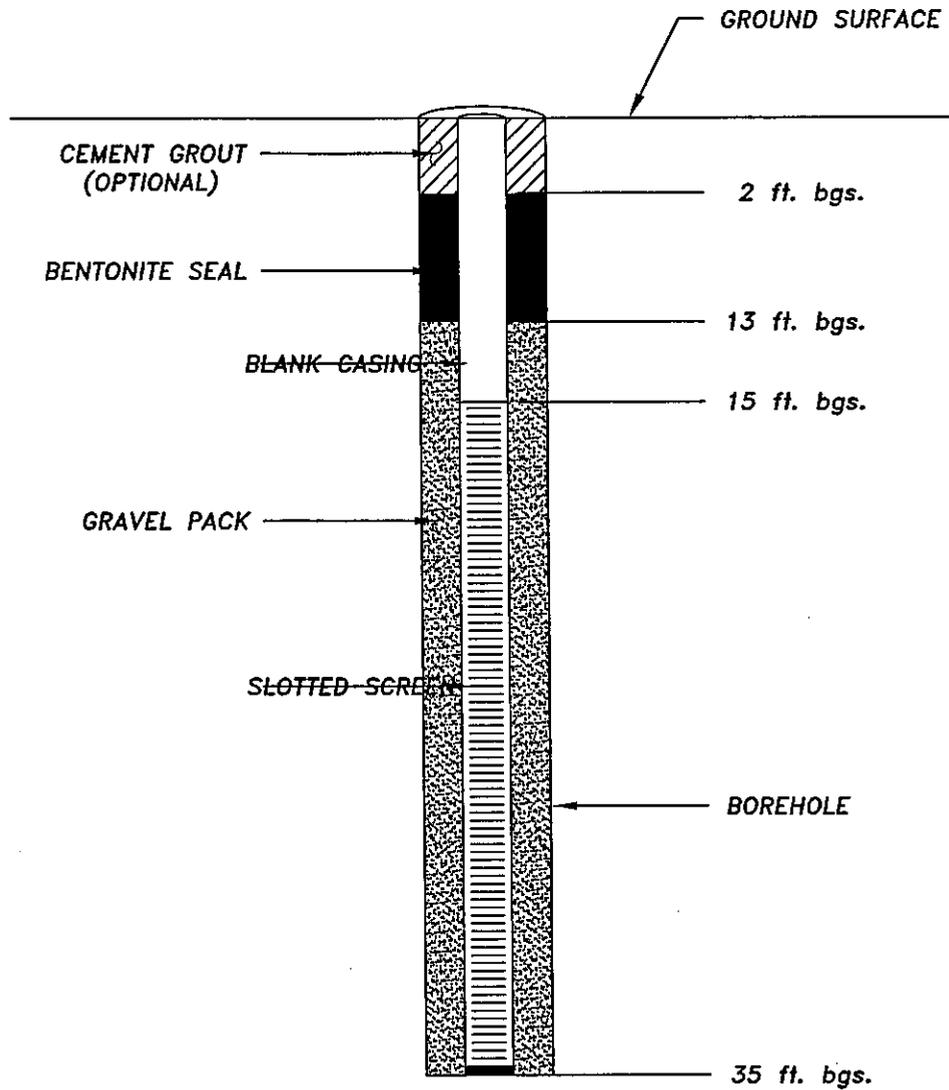
Maryland Square Shopping Center LLC/Herman Kishner Trust  
 3661 South Maryland Parkway  
 Las Vegas, Nevada

Scale	N.T.S.	File No.	36705F01
Date	6/10/03	Project No.	00-43367-05
Drafted By	ESB	Drawing No.	
Checked By	ALM		
Approved By			



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**HRC INJECTION POINT**

Maryland Square Shopping Center LLC/Herman Kishner trust  
 3661 South Maryland Parkway  
 Las Vegas, Nevada

Scale N.T.S  
 Date 06/10/03  
 Drafted By ESB  
 Checked By ALM  
 Approved By

File No. 36705F05  
 Project No. 00-43367-05  
 Figure No.



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 Environmental Sciences

**Table 1 - Historical Groundwater Analytical Results**

Well ID	Date	EPA Method 8260B					Chloroform (mg/L)
		PCE (µg/l)	TCE (µg/l)	Cis-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Acetone (µg/l)	
MW-1	8/14/00	2,300	ND	ND	ND	ND	ND
	10/5/00	NS	NS	NS	NS	NS	NS
	9/24/02	2,000	ND	ND	ND	ND	6.7
	5/7/03	870	ND	ND	ND	NA	ND
MW-2	8/14/00	NI	NI	NI	NI	NI	NI
	10/5/00	3,000	18	18	ND	ND	ND
	9/24/02	3,000	13	13	ND	ND	ND
	5/7/03	1,400	ND	ND	ND	NA	ND
MW-3	8/14/00	NI	NI	NI	NI	NI	NI
	10/5/00	98	ND	ND	ND	ND	8.3
	9/24/02	ND	ND	ND	ND	ND	13
	5/7/03	6.9	ND	ND	ND	NA	6.3
MW-4	8/14/00	NI	NI	NI	NI	NI	NI
	10/5/00	14	ND	ND	ND	ND	ND
	9/24/02	25	ND	ND	ND	ND	ND
	5/7/03	24	ND	ND	ND	NA	3
MW-5	8/14/00	NI	NI	NI	NI	NI	NI
	10/5/00	100	ND	ND	ND	ND	ND
	9/24/02	110	ND	ND	ND	ND	5.6
	5/7/03	240	ND	ND	ND	NA	ND
MW-6	8/14/00	NI	NI	NI	NI	NI	NI
	10/5/00	2,200	13	8.1	ND	ND	ND
	9/24/02	1,000	41	14	14	ND	ND
	5/7/03	710	22	ND	ND	NA	ND
MW-7	8/14/00	NI	NI	NI	NI	NI	NI
	10/5/00	NI	NI	NI	NI	NI	NI
	9/24/02	ND	ND	ND	ND	ND	ND
	5/7/03	1.7	ND	ND	ND	NA	2.8
MW-8	8/14/00	NI	NI	NI	NI	NI	NI
	10/5/00	NI	NI	NI	NI	NI	NI
	9/24/02	5.4	ND	ND	ND	ND	6.4
	5/7/03	3.2	ND	ND	ND	NA	4.5
MW-9	8/114/00	NI	NI	NI	NI	NI	NI
	10/5/00	NI	NI	NI	NI	NI	NI
	9/24/02	670	ND	ND	ND	43	ND
	5/7/03	59	ND	ND	ND	NA	ND
MW-10	8/14/00	NI	NI	NI	NI	NI	NI

Well ID	Date	EPA Method 8260B					Chloroform (mg/L)
		PCE (µg/l)	TCE (µg/l)	Cis-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Acetone (µg/l)	
	10/5/00	NI	NI	NI	NI	NI	NI
	9/24/02	ND	ND	ND	ND	ND	ND
	5/7/03	ND	ND	ND	ND	NA	ND
MW-11	8/14/00	NI	NI	NI	NI	NI	NI
	10/5/00	NI	NI	NI	NI	NI	NI
	9/24/02	ND	ND	ND	ND	58	ND
	5/7/03	ND	ND	ND	ND	NA	ND
MW-12	8/14/00	NI	NI	NI	NI	NI	NI
	10/5/00	NI	NI	NI	NI	NI	NI
	9/24/02	ND	ND	ND	ND	ND	ND
	5/7/03	1.3	ND	ND	ND	NA	3
Mw-13	8/14/00	NI	NI	NI	NI	NI	NI
	10/5/00	NI	NI	NI	NI	NI	NI
	9/24/02	NI	NI	NI	NI	NI	NI
	5/7/04	2,100	ND	ND	ND	NA	ND

ND = Not Detected  
NI = Not Installed

NS = Not Sampled  
NA = Not Analyzed



# Appendix A

# Log No. MW-1

**Date of Drilling:** 08/09/00  
**Driller:** Converse  
**Logged By:** ALM

**Location:**  
**Borehole Diameter:**  
**Groundwater Depth (ft):**

**Ground Surface Elevation (ft):**  
**Equipment:** Air Rotary  
**Driving Wt. and Drop:**

## SUMMARY OF SUBSURFACE CONDITIONS

This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.

Depth (ft)	Graphic Log	Summary of Subsurface Conditions	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT				
2		SILTY SAND; dry, tan				
4						
6						
8						
10						
12						
14						
16						
18						
20						

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Drawing No.

# Log No. MW-1

Date of Drilling: 08/09/00  
 Driller: Converse  
 Logged By: ALM

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
		<p>This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.</p>				
22		<p>SANDY CLAY; very moist, light brown</p>				
24						
26						
28						
30						
32						
34						
36						
38						
40						

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End of Exploration at 30.0'

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Drawing No.

# Log No. MW-2

**Date of Drilling:** 10/02/00  
**Driller:** Converse  
**Logged By:** JMW

**Location:**  
**Borehole Diameter:**  
**Groundwater Depth (ft):**

**Ground Surface Elevation (ft):**  
**Equipment:** Air Rotary  
**Driving Wt. and Drop:**

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT				
0 - 2		CLAYEY SILT; white				
2 - 4		SILTY CLAY; moist, brown				
4 - 6		...slightly moist				
6 - 8		...light brown				
8 - 14		CLAY w/Silt; dark brown				
14 - 16		...moist				
16 - 18		...very wet				
18 - 20						

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**Drawing No.**

# Log No. MW-2

**Date of Drilling:** 10/02/00  
**Driller:** Converse  
**Logged By:** JMW

**Location:**  
**Borehole Diameter:**  
**Groundwater Depth (ft):**

**Ground Surface Elevation (ft):**  
**Equipment:** Air Rotary  
**Driving Wt. and Drop:**

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.						
22 24 26 28 30 32 34 36 38 40		CLAY; very wet, dark brown  ...wet				
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End of Exploration at 32.0'

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# Log No. MW-3

Date of Drilling: 10/02/00  
 Driller: Converse  
 Logged By: JMW

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS  This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT				
2		SILTY CLAY; dry, light brown				
4						
6		CLAY w/Silt; slightly moist, medium brown				
8						
10		SILTY CLAY; slightly moist, light brown				
12						
14		... medium brown				
16						
18		...moist, dark brown				
20						

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# Log No. MW-3

Date of Drilling: 10/02/00  
 Driller: Converse  
 Logged By: JMW

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
		This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.				
22	/ / / / /	CLAY w/Silt; moist, dark brown				
24	/ / / / /					
26	/ / / / /					
28	/ / / / /					
30	/ / / / /					
32	/ / / / /					
34						
36						
38						
40						

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End of Exploration at 32.0'

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Drawing No.

# Log No. MW-4

Date of Drilling: 10/02/00  
 Driller: Converse  
 Logged By: JMW

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT Type II Fill				
2		SILTY CLAY; dry, light brown				
4						
6		CLAY w/Silt; slightly moist, medium brown				
8						
10						
12						
14						
16						
18						
20						

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# Log No. MW-4

**Date of Drilling:** 10/02/00  
**Driller:** Converse  
**Logged By:** JMW

**Location:**  
**Borehole Diameter:**  
**Groundwater Depth (ft):**

**Ground Surface Elevation (ft):**  
**Equipment:** Air Rotary  
**Driving Wt. and Drop:**

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
		<p><b>This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.</b></p>				
22		CLAY w/Silt; slightly moist, medium brown				
24						
26		...very moist				
28						
30						
32						
34						
36						
38						
40						

End of Exploration at 32.0'

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**Drawing No.**

# Log No. MW-5

Date of Drilling: 10/03/00  
 Driller: Converse  
 Logged By: JMW

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT Type II Fill				
2		SILTY CLAY; dry, light brown				
4						
6						
8		CLAY w/Silt; slightly moist, light brown				
10						
12		CLAY w/Silt; slightly moist, medium brown				
14						
16						
18						
20						

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# Log No. MW-5

Date of Drilling: 10/03/00  
 Driller: Converse  
 Logged By: JMW

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
<p>This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.</p>						
22						
24						
26						
28						
30						
32						
34						
36						
38						
40						

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End of Exploration at 32.0'

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Drawing No.

# Log No. MW-6

Date of Drilling: 10/03/00  
 Driller: Converse  
 Logged By: JMW

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT Type II Fill				
2						
4		CLAY w/Silt; dry, medium brown				
6						
8						
10		slightly moist, light brown				
12		CLAY w/Silt; slightly moist, white/brown				
14						
16		CLAY w/Silt; hard, light brown				
18						
20		CALICHE; hard				

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# Log No. MW-6

Date of Drilling: 10/03/00  
 Driller: Converse  
 Logged By: JMW

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
		<p>This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.</p>				
22		CLAY w/Silt; slightly moist, light brown				
24		...wet				
26						
28						
30						
32						
34						
36						
38						
40						

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Drawing No.

# Log No. MW-7

Date of Drilling: 09/19/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS  This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT				
2		SAND; dry, grey and brown				
4						
6						
8						
10						
12		CALICHE; dry, white				
14		SAND; dry, light brown				
16		CALICHE; dry, white				
18		SAND; dry, white				
20						

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Drawing No.

# Log No. MW-7

Date of Drilling: 09/19/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
		This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.				
-22		SILTY CLAY; wet, brown				
-24		CLAY; wet, brown				
-26						
-28						
-30						
-32						
-34						
-36						
-38						
-40						

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End of Exploration at 30.0'

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Drawing No.

# Log No. MW-8

Date of Drilling: 09/19/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS  This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT				
2		SAND; dry, white				
4		CALICHE; dry, white				
6		SAND; dry, light brown				
8						
10						
12		CALICHE; dry, white				
14		SAND w/Silt; dry, light brown				
16		SAND w/Silt; dry, white and grey				
18						
20						

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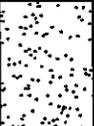
Drawing No.

# Log No. MW-8

Date of Drilling: 09/19/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
		<p>This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.</p>				
22						
		CALICHE; dry, white				
24		CLAY w/Silt; wet, brown				
26		CLAY; wet, brown				
28						
30						
32						
34						
36						
38						
40						

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End of Exploration at 30.0'

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Drawing No.

# Log No. MW-9

Date of Drilling: 09/19/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT				
2		SAND; dry, brown				
6		CALICHE; dry, white				
8		SAND w/Silt; dry, white				
10		CALICHE; hard				
12		SAND w/Silt; dry, white				
14						
16						
18						
20		CALICHE; dry, white				

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Drawing No.

# Log No. MW-9

Date of Drilling: 09/19/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
		This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.				
22		SANDY SILT; dry, brown				
24		CLAY; wet, brown				
26						
28						
30						
32						
34						
36						
38						
40						

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Drawing No.

# Log No. MW-9

Date of Drilling: 09/19/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.						
42						
44						
46						
48						
50						
52						
54						
56						
58						
60						

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End of Exploration at 50.0'

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Drawing No.

# Log No. MW-10

Date of Drilling: 09/20/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT				
2		SAND; dry, grey				
4		CALICHE; dry, white				
6		SAND; dry, brownish grey				
8						
10						
12						
14						
16						
18						
20						

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Drawing No.

# Log No. MW-10

Date of Drilling: 09/20/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
22 24 26 28 30 32 34 36 38 40		<p style="text-align: center;">This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.</p> <p style="text-align: center;">SILTY CLAY; wet, brown</p>				

End of Exploration at 30.0'

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Drawing No.

# Log No. MW-11

Date of Drilling: 09/20/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS  This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT				
2		SAND; dry, brown				
4						
6						
8		SAND; dry, brownish grey				
10						
12	SAND; dry, light brown					
14	FINE SAND; dry, white					
16						
18						
20						

Maryland Square  
 3661 South Maryland Parkway  
 Las Vegas, NV

Project No.  
 00-43367-05



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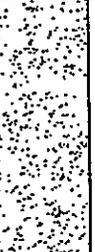
Drawing No.

# Log No. MW-11

Date of Drilling: 09/20/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

SUMMARY OF SUBSURFACE CONDITIONS		Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
Depth (ft)	Graphic Log				
<p>This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.</p>					
22					
24	SAND; dry, brown				
26					
28	SILTY CLAY; wet, brown				
30					
32					
34					
36					
38					
40					

APPROVED BY ON

End of Exploration at 33.5'

Maryland Square  
 3661 South Maryland Parkway  
 Las Vegas, NV

Project No.  
 00-43367-05



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Drawing No.

# Log No. MW-12

Date of Drilling: 09/20/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT				
2		SAND; dry, brown				
4						
6		FINE SAND; dry, brown				
8						
10						
12						
14		CALICHE; dry, white				
16						
18						
20						

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Drawing No.

# Log No. MW-12

Date of Drilling: 09/20/02  
 Driller: Converse  
 Logged By: AMK

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS  This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
22	[Dotted pattern]	SAND; dry, brown				
24	[Vertical lines pattern]	SANDY SILT; dry, brown				
26	[Dotted pattern]	SAND; dry, brown				
28	[Dotted pattern]					
30	[Dotted pattern]					
32	[Dotted pattern]					
34	[Dotted pattern]					
36	[Dotted pattern]					
38	[Dotted pattern]					
40	[Dotted pattern]					

APPROVED BY: ON

End of Exploration at 33.5'

Maryland Square  
 3661 South Maryland Parkway  
 Las Vegas, NV

Project No.  
 00-43367-05



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Drawing No.

# Log No. MW-13

Date of Drilling: 05/06/03  
 Driller: Converse  
 Logged By: ALM

Location:  
 Borehole Diameter:  
 Groundwater Depth (ft):

Ground Surface Elevation (ft):  
 Equipment: Air Rotary  
 Driving Wt. and Drop:

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
0		ASPHALT Type II Fill				
2						
4		CALICHE				
6		SANDY SILT w/gravel; moist, tan				
8						
10						
12						
14						
16						
18		CLAYEY SAND; moist, tan				
20		SANDY CLAY; very moist, red				

APPROVED BY: ON

Maryland Square  
 3661 South Maryland Parkway  
 Las Vegas, NV

Project No.  
 00-43367-05



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Drawing No.

# Log No. MW-13

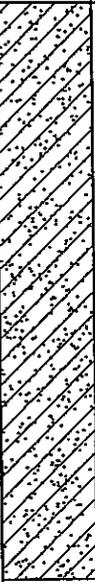
**Date of Drilling:** 05/06/03  
**Driller:** Converse  
**Logged By:** ALM

**Location:**  
**Borehole Diameter:**  
**Groundwater Depth (ft):**

**Ground Surface Elevation (ft):**  
**Equipment:** Air Rotary  
**Driving Wt. and Drop:**

## SUMMARY OF SUBSURFACE CONDITIONS

This log is part of the report prepared by Converse for this project and should be read with the report. This summary applies only at the location and time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplified model of the actual conditions encountered.

Depth (ft)	Graphic Log		Blow Count	PID/OVA Reading (ppm)	Hydrocarbon Odor/Staining	Well Design
22 24 26 28 30 32 34 36 38 40						

APPROVED BY ON

End of Exploration at 29.0'

**Maryland Square**  
**3661 South Maryland Parkway**  
**Las Vegas, NV**

**Project No.**  
**00-43367-05**



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**Drawing No.**



# Appendix B



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilon Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-01A  
Client I.D. Number: MW1

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatiles Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	40 µg/L	26 Ethylbenzene	ND	5.0 µg/L
2 Vinyl chloride	ND	10 µg/L	27 m,p-Xylene	ND	5.0 µg/L
3 Chloroethane	ND	10 µg/L	28 Bromoform	ND	10 µg/L
4 Bromomethane	ND	10 µg/L	29 o-Xylene	ND	5.0 µg/L
5 Trichlorofluoromethane	ND	10 µg/L	30 1,1,2,2-Tetrachloroethane	ND	10 µg/L
6 1,1-Dichloroethane	ND	10 µg/L	31 1,3-Dichlorobenzene	ND	10 µg/L
7 Dichloromethane	ND	40 µg/L	32 1,4-Dichlorobenzene	ND	10 µg/L
8 trans-1,2-Dichloroethane	ND	10 µg/L	33 1,2-Dichlorobenzene	ND	10 µg/L
9 1,1-Dichloroethane	ND	10 µg/L			
10 cis-1,2-Dichloroethane	ND	10 µg/L			
11 Chloroform	ND	10 µg/L			
12 1,2-Dichloroethane	ND	10 µg/L			
13 1,1,1-Trichloroethane	ND	10 µg/L			
14 Carbon tetrachloride	ND	10 µg/L			
15 Benzene	ND	5.0 µg/L			
16 1,2-Dichloropropane	ND	10 µg/L			
17 Trichloroethene	ND	10 µg/L			
18 Bromodichloromethane	ND	10 µg/L			
19 cis-1,3-Dichloropropene	ND	10 µg/L			
20 trans-1,3-Dichloropropene	ND	10 µg/L			
21 1,1,2-Trichloroethane	ND	10 µg/L			
22 Toluene	ND	5.0 µg/L			
23 Dibromochloromethane	ND	10 µg/L			
24 Tetrachloroethene	870	10 µg/L			
25 Chlorobenzene	ND	10 µg/L			

Reporting Limits were increased due to high concentrations of target analytes.

ND = Not Detected

*R Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Wichita, KS • (316) 722-5890 / info@alpha-analytical.com

*[Signature]*  
5/14/03  
Report Date



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-02A  
Client I.D. Number: MW2

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatile Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	80 µg/L	26 Ethylbenzene	ND	10 µg/L
2 Vinyl chloride	ND	20 µg/L	27 m,p-Xylene	ND	10 µg/L
3 Chloroethane	ND	20 µg/L	28 Bromoform	ND	20 µg/L
4 Bromomethane	ND	20 µg/L	29 o-Xylene	ND	10 µg/L
5 Trichlorofluoromethane	ND	20 µg/L	30 1,1,2,2-Tetrachloroethane	ND	20 µg/L
6 1,1-Dichloroethane	ND	20 µg/L	31 1,3-Dichlorobenzene	ND	20 µg/L
7 Dichloromethane	ND	80 µg/L	32 1,4-Dichlorobenzene	ND	20 µg/L
8 trans-1,2-Dichloroethane	ND	20 µg/L	33 1,2-Dichlorobenzene	ND	20 µg/L
9 1,1-Dichloroethane	ND	20 µg/L			
10 cis-1,2-Dichloroethane	ND	20 µg/L			
11 Chloroform	ND	20 µg/L			
12 1,2-Dichloroethane	ND	20 µg/L			
13 1,1,1-Trichloroethane	ND	20 µg/L			
14 Carbon tetrachloride	ND	20 µg/L			
15 Benzene	ND	10 µg/L			
16 1,2-Dichloropropane	ND	20 µg/L			
17 Trichloroethane	ND	20 µg/L			
18 Bromodichloromethane	ND	20 µg/L			
19 cis-1,3-Dichloropropene	ND	20 µg/L			
20 trans-1,3-Dichloropropene	ND	20 µg/L			
21 1,1,2-Trichloroethane	ND	20 µg/L			
22 Toluene	ND	10 µg/L			
23 Dibromochloromethane	ND	20 µg/L			
24 Tetrachloroethane	1,400	20 µg/L			
25 Chlorobenzene	ND	20 µg/L			

Reporting Limits were increased due to high concentrations of target analytes.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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5/14/03

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-03A  
Client I.D. Number: MW3

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatile Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	2.0 µg/L	26 Ethylbenzene	ND	1.0 µg/L
2 Vinyl chloride	ND	1.0 µg/L	27 m,p-Xylene	ND	1.0 µg/L
3 Chloroethane	ND	1.0 µg/L	28 Bromoform	ND	1.0 µg/L
4 Bromomethane	ND	1.0 µg/L	29 o-Xylene	ND	1.0 µg/L
5 Trichlorofluoromethane	ND	1.0 µg/L	30 1,1,2,2-Tetrachloroethane	ND	1.0 µg/L
6 1,1-Dichloroethane	ND	1.0 µg/L	31 1,3-Dichlorobenzene	ND	1.0 µg/L
7 Dichloromethane	ND	2.0 µg/L	32 1,4-Dichlorobenzene	ND	1.0 µg/L
8 trans-1,2-Dichloroethane	ND	1.0 µg/L	33 1,2-Dichlorobenzene	ND	1.0 µg/L
9 1,1-Dichloroethane	ND	1.0 µg/L			
10 cis-1,2-Dichloroethane	ND	1.0 µg/L			
11 Chloroform	6.3	1.0 µg/L			
12 1,2-Dichloroethane	ND	1.0 µg/L			
13 1,1,1-Trichloroethane	ND	1.0 µg/L			
14 Carbon tetrachloride	ND	1.0 µg/L			
15 Benzene	ND	1.0 µg/L			
16 1,2-Dichloropropane	ND	1.0 µg/L			
17 Trichloroethane	ND	1.0 µg/L			
18 Bromodichloromethane	ND	1.0 µg/L			
19 cis-1,3-Dichloropropene	ND	1.0 µg/L			
20 trans-1,3-Dichloropropene	ND	1.0 µg/L			
21 1,1,2-Trichloroethane	ND	1.0 µg/L			
22 Toluene	ND	1.0 µg/L			
23 Dibromochloromethane	ND	1.0 µg/L			
24 Tetrachloroethane	6.9	1.0 µg/L			
25 Chlorobenzene	ND	1.0 µg/L			

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Wichita, KS • (316) 722-5890 / info@alpha-analytical.com

5/14/03

Report Date



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
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## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-04A  
Client I.D. Number: MW4

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatile Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	2.0 µg/L	26 Ethylbenzene	ND	1.0 µg/L
2 Vinyl chloride	ND	1.0 µg/L	27 m,p-Xylene	ND	1.0 µg/L
3 Chloroethane	ND	1.0 µg/L	28 Bromoform	ND	1.0 µg/L
4 Bromomethane	ND	1.0 µg/L	29 o-Xylene	ND	1.0 µg/L
5 Trichlorofluoromethane	ND	1.0 µg/L	30 1,1,2,2-Tetrachloroethane	ND	1.0 µg/L
6 1,1-Dichloroethene	ND	1.0 µg/L	31 1,3-Dichlorobenzene	ND	1.0 µg/L
7 Dichloromethane	ND	2.0 µg/L	32 1,4-Dichlorobenzene	ND	1.0 µg/L
8 trans-1,2-Dichloroethane	ND	1.0 µg/L	33 1,2-Dichlorobenzene	ND	1.0 µg/L
9 1,1-Dichloroethane	ND	1.0 µg/L			
10 cis-1,2-Dichloroethane	ND	1.0 µg/L			
11 Chloroform	3.0	1.0 µg/L			
12 1,2-Dichloroethane	ND	1.0 µg/L			
13 1,1,1-Trichloroethane	ND	1.0 µg/L			
14 Carbon tetrachloride	ND	1.0 µg/L			
15 Benzene	ND	1.0 µg/L			
16 1,2-Dichloropropane	ND	1.0 µg/L			
17 Trichloroethene	ND	1.0 µg/L			
18 Bromodichloromethane	ND	1.0 µg/L			
19 cis-1,3-Dichloropropene	ND	1.0 µg/L			
20 trans-1,3-Dichloropropene	ND	1.0 µg/L			
21 1,1,2-Trichloroethane	ND	1.0 µg/L			
22 Toluene	ND	1.0 µg/L			
23 Dibromochloromethane	ND	1.0 µg/L			
24 Tetrachloroethane	24	1.0 µg/L			
25 Chlorobenzene	ND	1.0 µg/L			

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Wichita, KS • (316) 722-5890 / info@alpha-analytical.com

5/14/03  
Report Date



# Alpha Analytical, Inc.

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## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-05A  
Client I.D. Number: MW5

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatile Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	20 µg/L	26 Ethylbenzene	ND	2.5 µg/L
2 Vinyl chloride	ND	5.0 µg/L	27 m,p-Xylene	ND	2.5 µg/L
3 Chloroethane	ND	5.0 µg/L	28 Bromoform	ND	5.0 µg/L
4 Bromomethane	ND	5.0 µg/L	29 o-Xylene	ND	2.5 µg/L
5 Trichlorofluoromethane	ND	5.0 µg/L	30 1,1,2,2-Tetrachloroethane	ND	5.0 µg/L
6 1,1-Dichloroethene	ND	5.0 µg/L	31 1,3-Dichlorobenzene	ND	5.0 µg/L
7 Dichloromethane	ND	20 µg/L	32 1,4-Dichlorobenzene	ND	5.0 µg/L
8 trans-1,2-Dichloroethane	ND	5.0 µg/L	33 1,2-Dichlorobenzene	ND	5.0 µg/L
9 1,1-Dichloroethane	ND	5.0 µg/L			
10 cis-1,2-Dichloroethane	ND	5.0 µg/L			
11 Chloroform	ND	5.0 µg/L			
12 1,2-Dichloroethane	ND	5.0 µg/L			
13 1,1,1-Trichloroethane	ND	5.0 µg/L			
14 Carbon tetrachloride	ND	5.0 µg/L			
15 Benzene	ND	2.5 µg/L			
16 1,2-Dichloropropane	ND	5.0 µg/L			
17 Trichloroethene	ND	5.0 µg/L			
18 Bromodichloromethane	ND	5.0 µg/L			
19 cis-1,3-Dichloropropene	ND	5.0 µg/L			
20 trans-1,3-Dichloropropene	ND	5.0 µg/L			
21 1,1,2-Trichloroethane	ND	5.0 µg/L			
22 Toluene	ND	2.5 µg/L			
23 Dibromochloromethane	ND	5.0 µg/L			
24 Tetrachloroethene	240	5.0 µg/L			
25 Chlorobenzene	ND	5.0 µg/L			

Reporting Limits were increased due to high concentrations of target analytes.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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5/14/03

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-06A  
Client I.D. Number: MW6

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatile Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	40 µg/L	26 Ethylbenzene	ND	5.0 µg/L
2 Vinyl chloride	ND	10 µg/L	27 m,p-Xylene	ND	5.0 µg/L
3 Chloroethane	ND	10 µg/L	28 Bromoform	ND	10 µg/L
4 Bromomethane	ND	10 µg/L	29 o-Xylene	ND	5.0 µg/L
5 Trichlorofluoromethane	ND	10 µg/L	30 1,1,2,2-Tetrachloroethane	ND	10 µg/L
6 1,1-Dichloroethane	ND	10 µg/L	31 1,3-Dichlorobenzene	ND	10 µg/L
7 Dichloromethane	ND	40 µg/L	32 1,4-Dichlorobenzene	ND	10 µg/L
8 trans-1,2-Dichloroethane	ND	10 µg/L	33 1,2-Dichlorobenzene	ND	10 µg/L
9 1,1-Dichloroethane	ND	10 µg/L			
10 cis-1,2-Dichloroethane	ND	10 µg/L			
11 Chloroform	ND	10 µg/L			
12 1,2-Dichloroethane	ND	10 µg/L			
13 1,1,1-Trichloroethane	ND	10 µg/L			
14 Carbon tetrachloride	ND	10 µg/L			
15 Benzene	ND	5.0 µg/L			
16 1,2-Dichloropropane	ND	10 µg/L			
17 Trichloroethene	22	10 µg/L			
18 Bromodichloromethane	ND	10 µg/L			
19 cis-1,3-Dichloropropene	ND	10 µg/L			
20 trans-1,3-Dichloropropene	ND	10 µg/L			
21 1,1,2-Trichloroethane	ND	10 µg/L			
22 Toluene	ND	5.0 µg/L			
23 Dibromochloromethane	ND	10 µg/L			
24 Tetrachloroethene	710	10 µg/L			
25 Chlorobenzene	ND	10 µg/L			

Reporting Limits were increased due to high concentrations of target analytes.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Wichita, KS • (316) 722-5890 / info@alpha-analytical.com

5/14/03  
Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-07A  
Client I.D. Number: MW7

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatiles Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	2.0 µg/L	26 Ethylbenzene	ND	1.0 µg/L
2 Vinyl chloride	ND	1.0 µg/L	27 m,p-Xylene	ND	1.0 µg/L
3 Chloroethane	ND	1.0 µg/L	28 Bromoform	ND	1.0 µg/L
4 Bromomethane	ND	1.0 µg/L	29 o-Xylene	ND	1.0 µg/L
5 Trichlorofluoromethane	ND	1.0 µg/L	30 1,1,2,2-Tetrachloroethane	ND	1.0 µg/L
6 1,1-Dichloroethene	ND	1.0 µg/L	31 1,3-Dichlorobenzene	ND	1.0 µg/L
7 Dichloromethane	ND	2.0 µg/L	32 1,4-Dichlorobenzene	ND	1.0 µg/L
8 trans-1,2-Dichloroethene	ND	1.0 µg/L	33 1,2-Dichlorobenzene	ND	1.0 µg/L
9 1,1-Dichloroethane	ND	1.0 µg/L			
10 cis-1,2-Dichloroethane	ND	1.0 µg/L			
11 Chloroform	2.8	1.0 µg/L			
12 1,2-Dichloroethane	ND	1.0 µg/L			
13 1,1,1-Trichloroethane	ND	1.0 µg/L			
14 Carbon tetrachloride	ND	1.0 µg/L			
15 Benzene	ND	1.0 µg/L			
16 1,2-Dichloropropane	ND	1.0 µg/L			
17 Trichloroethene	ND	1.0 µg/L			
18 Bromodichloromethane	ND	1.0 µg/L			
19 cis-1,3-Dichloropropene	ND	1.0 µg/L			
20 trans-1,3-Dichloropropene	ND	1.0 µg/L			
21 1,1,2-Trichloroethane	ND	1.0 µg/L			
22 Toluene	ND	1.0 µg/L			
23 Dibromochloromethane	ND	1.0 µg/L			
24 Tetrachloroethene	1.7	1.0 µg/L			
25 Chlorobenzene	ND	1.0 µg/L			

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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5/14/03

Report Date



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilon Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-08A  
Client I.D. Number: MW8

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatiles Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	2.0 µg/L	26 Ethylbenzene	ND	1.0 µg/L
2 Vinyl chloride	ND	1.0 µg/L	27 m,p-Xylene	ND	1.0 µg/L
3 Chloroethane	ND	1.0 µg/L	28 Bromoform	ND	1.0 µg/L
4 Bromomethane	ND	1.0 µg/L	29 o-Xylene	ND	1.0 µg/L
5 Trichlorofluoromethane	ND	1.0 µg/L	30 1,1,2,2-Tetrachloroethane	ND	1.0 µg/L
6 1,1-Dichloroethane	ND	1.0 µg/L	31 1,3-Dichlorobenzene	ND	1.0 µg/L
7 Dichloromethane	ND	2.0 µg/L	32 1,4-Dichlorobenzene	ND	1.0 µg/L
8 trans-1,2-Dichloroethane	ND	1.0 µg/L	33 1,2-Dichlorobenzene	ND	1.0 µg/L
9 1,1-Dichloroethane	ND	1.0 µg/L			
10 cis-1,2-Dichloroethane	ND	1.0 µg/L			
11 Chloroform	4.5	1.0 µg/L			
12 1,2-Dichloroethane	ND	1.0 µg/L			
13 1,1,1-Trichloroethane	ND	1.0 µg/L			
14 Carbon tetrachloride	ND	1.0 µg/L			
15 Benzene	ND	1.0 µg/L			
16 1,2-Dichloropropane	ND	1.0 µg/L			
17 Trichloroethene	ND	1.0 µg/L			
18 Bromodichloromethane	ND	1.0 µg/L			
19 cis-1,3-Dichloropropene	ND	1.0 µg/L			
20 trans-1,3-Dichloropropene	ND	1.0 µg/L			
21 1,1,2-Trichloroethane	ND	1.0 µg/L			
22 Toluene	ND	1.0 µg/L			
23 Dibromochloromethane	ND	1.0 µg/L			
24 Tetrachloroethene	3.2	1.0 µg/L			
25 Chlorobenzene	ND	1.0 µg/L			

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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5/14/03

Report Date



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-09A  
Client I.D. Number: MW9

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatiles Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	4.0 µg/L	26 Ethylbenzene	ND	1.0 µg/L
2 Vinyl chloride	ND	1.0 µg/L	27 m,p-Xylene	1.1	1.0 µg/L
3 Chloroethane	ND	1.0 µg/L	28 Bromoform	ND	1.0 µg/L
4 Bromomethane	ND	1.0 µg/L	29 o-Xylene	ND	1.0 µg/L
5 Trichlorofluoromethane	ND	1.0 µg/L	30 1,1,2,2-Tetrachloroethane	ND	1.0 µg/L
6 1,1-Dichloroethane	ND	1.0 µg/L	31 1,3-Dichlorobenzene	ND	1.0 µg/L
7 Dichloromethane	ND	4.0 µg/L	32 1,4-Dichlorobenzene	ND	1.0 µg/L
8 trans-1,2-Dichloroethane	ND	1.0 µg/L	33 1,2-Dichlorobenzene	ND	1.0 µg/L
9 1,1-Dichloroethane	ND	1.0 µg/L			
10 cis-1,2-Dichloroethane	ND	1.0 µg/L			
11 Chloroform	ND	1.0 µg/L			
12 1,2-Dichloroethane	ND	1.0 µg/L			
13 1,1,1-Trichloroethane	ND	1.0 µg/L			
14 Carbon tetrachloride	ND	1.0 µg/L			
15 Benzene	ND	1.0 µg/L			
16 1,2-Dichloropropane	ND	1.0 µg/L			
17 Trichloroethane	ND	1.0 µg/L			
18 Bromodichloromethane	ND	1.0 µg/L			
19 cis-1,3-Dichloropropane	ND	1.0 µg/L			
20 trans-1,3-Dichloropropane	ND	1.0 µg/L			
21 1,1,2-Trichloroethane	ND	1.0 µg/L			
22 Toluene	ND	1.0 µg/L			
23 Dibromochloromethane	ND	1.0 µg/L			
24 Tetrachloroethene	59	1.0 µg/L			
25 Chlorobenzene	ND	1.0 µg/L			

Some Reporting Limits were increased due to high concentrations of target analytes.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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5/14/03

Report Date



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-10A  
Client I.D. Number: MW10

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatile Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	2.0 µg/L	26 Ethylbenzene	ND	1.0 µg/L
2 Vinyl chloride	ND	1.0 µg/L	27 m,p-Xylene	ND	1.0 µg/L
3 Chloroethane	ND	1.0 µg/L	28 Bromoform	ND	1.0 µg/L
4 Bromomethane	ND	1.0 µg/L	29 o-Xylene	ND	1.0 µg/L
5 Trichlorofluoromethane	ND	1.0 µg/L	30 1,1,2,2-Tetrachloroethane	ND	1.0 µg/L
6 1,1-Dichloroethane	ND	1.0 µg/L	31 1,3-Dichlorobenzene	ND	1.0 µg/L
7 Dichloromethane	ND	2.0 µg/L	32 1,4-Dichlorobenzene	ND	1.0 µg/L
8 trans-1,2-Dichloroethane	ND	1.0 µg/L	33 1,2-Dichlorobenzene	ND	1.0 µg/L
9 1,1-Dichloroethane	ND	1.0 µg/L			
10 cis-1,2-Dichloroethane	ND	1.0 µg/L			
11 Chloroform	ND	1.0 µg/L			
12 1,2-Dichloroethane	ND	1.0 µg/L			
13 1,1,1-Trichloroethane	ND	1.0 µg/L			
14 Carbon tetrachloride	ND	1.0 µg/L			
15 Benzene	ND	1.0 µg/L			
16 1,2-Dichloropropane	ND	1.0 µg/L			
17 Trichloroethene	ND	1.0 µg/L			
18 Bromodichloromethane	ND	1.0 µg/L			
19 cis-1,3-Dichloropropene	ND	1.0 µg/L			
20 trans-1,3-Dichloropropene	ND	1.0 µg/L			
21 1,1,2-Trichloroethane	ND	1.0 µg/L			
22 Toluene	ND	1.0 µg/L			
23 Dibromochloromethane	ND	1.0 µg/L			
24 Tetrachloroethene	ND	1.0 µg/L			
25 Chlorobenzene	ND	1.0 µg/L			

ND = Not Detected

*R Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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*rsj*

5/14/03

Report Date



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-11A  
Client I.D. Number: MW11

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatile Organics by GC/MS EPA Method SW8260B

Reporting			Reporting		
Compound	Concentration	Limit	Compound	Concentration	Limit
1 Chloromethane	ND	40 µg/L	26 Ethylbenzene	450	5.0 µg/L
2 Vinyl chloride	ND	10 µg/L	27 m,p-Xylene	20	5.0 µg/L
3 Chloroethane	ND	10 µg/L	28 Bromoform	ND	10 µg/L
4 Bromomethane	ND	10 µg/L	29 o-Xylene	70	5.0 µg/L
5 Trichlorofluoromethane	ND	10 µg/L	30 1,1,2,2-Tetrachloroethane	ND	10 µg/L
6 1,1-Dichloroethene	ND	10 µg/L	31 1,3-Dichlorobenzene	ND	10 µg/L
7 Dichloromethane	ND	40 µg/L	32 1,4-Dichlorobenzene	ND	10 µg/L
8 trans-1,2-Dichloroethene	ND	10 µg/L	33 1,2-Dichlorobenzene	ND	10 µg/L
9 1,1-Dichloroethane	ND	10 µg/L			
10 cis-1,2-Dichloroethene	ND	10 µg/L			
11 Chloroform	ND	10 µg/L			
12 1,2-Dichloroethane	ND	10 µg/L			
13 1,1,1-Trichloroethane	ND	10 µg/L			
14 Carbon tetrachloride	ND	10 µg/L			
15 Benzene	660	5.0 µg/L			
16 1,2-Dichloropropane	ND	10 µg/L			
17 Trichloroethene	ND	10 µg/L			
18 Bromodichloromethane	ND	10 µg/L			
19 cis-1,3-Dichloropropene	ND	10 µg/L			
20 trans-1,3-Dichloropropene	ND	10 µg/L			
21 1,1,2-Trichloroethane	ND	10 µg/L			
22 Toluene	6.1	5.0 µg/L			
23 Dibromochloromethane	ND	10 µg/L			
24 Tetrachloroethane	ND	10 µg/L			
25 Chlorobenzene	ND	10 µg/L			

Reporting Limits were increased due to high concentrations of target analytes.

ND = Not Detected

Roger L. Schull, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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5/14/03

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-12A  
Client I.D. Number: MW12

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatile Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	2.0 µg/L	28 m,p-Xylene	ND	1.0 µg/L
2 Vinyl chloride	ND	1.0 µg/L	27 Bromoform	ND	1.0 µg/L
3 Chloroethane	ND	1.0 µg/L	28 o-Xylene	ND	1.0 µg/L
4 Bromomethane	ND	1.0 µg/L	29 1,1,2,2-Tetrachloroethane	ND	1.0 µg/L
5 Trichlorofluoromethane	ND	1.0 µg/L	30 1,3-Dichlorobenzene	ND	1.0 µg/L
6 Dichloromethane	ND	2.0 µg/L	31 1,4-Dichlorobenzene	ND	1.0 µg/L
7 trans-1,2-Dichloroethene	ND	1.0 µg/L	32 1,2-Dichlorobenzene	ND	1.0 µg/L
8 1,1-Dichloroethane	ND	1.0 µg/L			
9 cis-1,2-Dichloroethane	ND	1.0 µg/L			
10 Chloroform	S.D	1.0 µg/L			
11 1,2-Dichloroethane	ND	1.0 µg/L			
12 1,1,1-Trichloroethane	ND	1.0 µg/L			
13 Carbon tetrachloride	ND	1.0 µg/L			
14 Benzene	ND	1.0 µg/L			
15 1,2-Dichloropropane	ND	1.0 µg/L			
16 Trichloroethane	ND	1.0 µg/L			
17 Bromodichloromethane	ND	1.0 µg/L			
18 cis-1,3-Dichloropropene	ND	1.0 µg/L			
19 trans-1,3-Dichloropropene	ND	1.0 µg/L			
20 1,1,2-Trichloroethane	ND	1.0 µg/L			
21 Toluene	ND	1.0 µg/L			
22 Dibromochloromethane	ND	1.0 µg/L			
23 Tetrachloroethene	1.3	1.0 µg/L			
24 Chlorobenzene	ND	1.0 µg/L			
25 Ethylbenzene	ND	1.0 µg/L			

ND = Not Detected

*R Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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*MS*

5/14/03

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Converse Consultants  
731 Pilot Road, Suite H  
Las Vegas, Nevada 89119  
Job#: 00-43367-04

Attn: Andrea Moericke  
Phone: (702) 263-7600  
Fax: (702) 269-8353

Alpha Analytical Number: CON03050850-13A  
Client I.D. Number: MW13

Sampled: 05/07/03  
Received: 05/08/03  
Analyzed: 05/12/03

### Volatile Organics by GC/MS EPA Method SW8260B

Compound	Concentration	Reporting Limit	Compound	Concentration	Reporting Limit
1 Chloromethane	ND	120 µg/L	26 Ethylbenzene	ND	15 µg/L
2 Vinyl chloride	ND	30 µg/L	27 m,p-Xylene	ND	15 µg/L
3 Chloroethane	ND	30 µg/L	28 Bromoform	ND	30 µg/L
4 Bromomethane	ND	30 µg/L	29 o-Xylene	ND	15 µg/L
5 Trichlorofluoromethane	ND	30 µg/L	30 1,1,2,2-Tetrachloroethane	ND	30 µg/L
6 1,1-Dichloroethane	ND	30 µg/L	31 1,3-Dichlorobenzene	ND	30 µg/L
7 Dichloromethane	ND	120 µg/L	32 1,4-Dichlorobenzene	ND	30 µg/L
8 trans-1,2-Dichloroethane	ND	30 µg/L	33 1,2-Dichlorobenzene	ND	30 µg/L
9 1,1-Dichloroethane	ND	30 µg/L			
10 cis-1,2-Dichloroethene	ND	30 µg/L			
11 Chloroform	ND	30 µg/L			
12 1,2-Dichloroethane	ND	30 µg/L			
13 1,1,1-Trichloroethane	ND	30 µg/L			
14 Carbon tetrachloride	ND	30 µg/L			
15 Benzene	ND	15 µg/L			
16 1,2-Dichloropropane	ND	30 µg/L			
17 Trichloroethene	ND	30 µg/L			
18 Bromodichloromethane	ND	30 µg/L			
19 cis-1,3-Dichloropropene	ND	30 µg/L			
20 trans-1,3-Dichloropropene	ND	30 µg/L			
21 1,1,2-Trichloroethane	ND	30 µg/L			
22 Toluene	ND	15 µg/L			
23 Dibromochloromethane	ND	30 µg/L			
24 Tetrachloroethene	2,100	30 µg/L			
25 Chlorobenzene	ND	30 µg/L			

Reporting Limits were increased due to high concentrations of target analytes.

ND = Not Detected

*R. Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer  
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*[Signature]*

5/14/03  
Report Date



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## VOC pH Report

Work Order: CON03050850

Project: 00-43367-04

Alpha's Sample ID	Client's Sample ID	Matrix	pH
03050850-01A	MW1	Aqueous	2
03050850-02A	MW2	Aqueous	2
03050850-03A	MW3	Aqueous	2
03050850-04A	MW4	Aqueous	2
03050850-05A	MW5	Aqueous	2
03050850-06A	MW6	Aqueous	2
03050850-07A	MW7	Aqueous	2
03050850-08A	MW8	Aqueous	2
03050850-09A	MW9	Aqueous	2
03050850-10A	MW10	Aqueous	2
03050850-11A	MW11	Aqueous	2
03050850-12A	MW12	Aqueous	2
03050850-13A	MW13	Aqueous	2

5/14/03

Report Date

1 of 1

**Billing Information:**

Name Same As Below  
 Address \_\_\_\_\_  
 City, State, Zip \_\_\_\_\_  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21  
 Sparks, Nevada 89431-5778  
 Phone (775) 355-1044  
 Fax (775) 355-0406

Page # 1 of 1 NW

Client Name		Address		City, State, Zip		Phone Number		Fax		PO. #		PWS #		Phone		Fax		Total and type of containers ** See below		REMARKS		
CONCRETE INDUSTRIES		2731 ELBOR LOW SUITE H		EV NV 89117		263-7600		269-8053		43362-04												
Time Sampled	Date Sampled	Main* See Key Below	Office Use Only	Sampled by	Lab ID Number	Sample Description																
1005	5/7	AQ	CONDENSED		88500	MN1																
1020					02	MN2																
1060					03	MN3																
1070					04	MN4																
1080					05	MN5																
1085					06	MN6																
1095					07	MN7																
1095					08	MN8																
1095					09	MN9																
1095					10	MN10																
1095					11	MN11																
1095					12	MN12																
1095					13	MN13																

**ADDITIONAL INSTRUCTIONS:**

Relinquished by	Signature	Print Name	Company	Date	Time
Received by	<i>[Signature]</i>	Edward Byes	Consent	5/7/03	12:00
Relinquished by	<i>[Signature]</i>	V. SMITH	Alpha	5-7-03	14:50
Received by	<i>[Signature]</i>	V. SMITH	Alpha	5-7-03	4:00
Relinquished by	<i>[Signature]</i>	DS Baker	Alpha	5/8/03	1345
Received by					

\*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other  
 \*\*; L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other  
**NOTE:** Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount stated herein.