

GROUNDWATER MONITORING AND REMEDIATION SYSTEM  
OPERATIONS AND MAINTENANCE REPORT  
AVIS / NATIONAL / PAYLESS COMMINGLED PLUME  
FOURTH QUARTER 2007

AVIS RENT A CAR SYSTEM, INC.  
5164 RENT-A-CAR ROAD  
LAS VEGAS, NEVADA  
Facility I.D. #8-000217

*Prepared for:*

Avis Budget Car Rental, LLC  
6 Sylvan Way  
Parsippany, New Jersey 07054

*Prepared by:*



8 West Pacific Avenue  
Henderson, Nevada 89015  
(702) 563-0600

February 2008

## Certified Environmental Manager Statement

The following statement is required by the Nevada Division of Environmental Protection (NDEP) by way of Nevada Administrative Code (NAC) 459.97285 for Environmental Managers who practice in the State of Nevada:

*I, Jason Hoffman, 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.*



Jason Hoffman, CEM #1904 (expires 1/26/09)

Project Geologist

The following statement is required by the Nevada Division of Environmental Protection (NDEP) by way of Nevada Administrative Code (NAC) 459.97285 for laboratories that analyze environmental samples from sites in the State of Nevada:

*I, Jason Hoffman, hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.*

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**GROUNDWATER MONITORING AND REMEDIATION SYSTEM  
OPERATIONS AND MAINTENANCE REPORT  
AVIS / NATIONAL / PAYLESS COMMINGLED PLUME  
FOURTH QUARTER 2007**

**Avis Rent A Car System, Inc.**

Facility Address: 5164 Rent-A-Car Road, Henderson, NV

Facility ID No./Petroleum Fund No.: 8-000217 / 199400065

ATC / OP Permit No.: A-700 and A-1618

Responsible Party Contact: Ms. Rose Pelino

Regulatory Agency and Contact: Nevada Division of Environmental Protection /  
Ms. Sara Arav-Piper

Consultant/Project Manager: Broadbent & Associates, Inc. / Jason Hoffman

BAI Project No: 95-01-150

**Work Performed Fourth Quarter, 2007**

Current Phase of Project:	<u>Remediation</u>
Frequency of Sampling:	<u>Quarterly</u>
Frequency of Monitoring:	<u>Quarterly</u>
Is Free Product Present On-site:	<u>No</u>
Current Remediation Techniques:	<u>VE/AS Systems</u>
Groundwater Analytical Methods:	<u>BTEX/MTBE 8260, Oxygenates by EPA Method 8260B</u>
MTBE Action Level:	<u>200 µg/L</u>
Benzene Action Level:	<u>5 µg/L</u>
Toluene Action Level:	<u>1,000 µg/L</u>
Ethylbenzene Action Level:	<u>700 µg/L</u>
Xylenes Action Level:	<u>10,000 µg/L</u>

## Introduction

This quarterly groundwater monitoring and remediation system operations and maintenance report has been prepared at the request of the Nevada Division of Environmental Protection (NDEP) and is intended to present Fourth Quarter, 2007, groundwater conditions and remedial activities as they relate to the Avis / National / Payless dissolved BTEX and MTBE commingled plume in Las Vegas, Nevada.

## Groundwater Monitoring Activities

Depths to groundwater and water quality data were collected from the Avis, Payless, and offsite groundwater monitoring wells on December 19 and 20, 2007. In addition, each monitoring well was inspected for the presence of free product. The locations of these monitoring wells are depicted on Drawing 1. BAI coordinated the Avis sampling event with those of the former Payless and National Car Rental sites. Further discussion of the Payless site and the National site activities this quarter are provided later in this report. Please note that monitoring wells AVMW-7 and AVMW-11 were not able to be located and are assumed to have been destroyed by demolition activities at the Avis property. Please note that clustered wells AVMW-45 and OMW-48, along with monitoring wells AVMW-44, AVMW-46, AMVW-47, and HJMW-49, are not currently incorporated into the quarterly groundwater monitoring protocol.

In a letter to the NDEP dated December 17, 2007, a request was made for a one-time reduction of the number of monitoring wells required to be sampled on a quarterly basis. The request was made because Payless did not support the joint monitoring and remediation effort. The request was granted by the NDEP in an e-mail dated December 17, and in a letter dated December 20, 2007. Subsequently, offsite monitoring wells HJMW-23, HJMW-24, HJMW-29, HJMW-31a, OMW-35, OMW-37, OMW-38, OMW-39, OMW-40, and OMW-41 were not monitored or sampled during the Fourth Quarter, 2007, groundwater monitoring event.

Groundwater purging was performed in accordance with ASTM Standard D6452-99, Section 7.1, during the Fourth Quarter, 2007, groundwater monitoring event. Prior to purging the groundwater from each monitoring well, the water column in each well was calculated. In accordance with BAI groundwater sampling protocol, a minimum of three groundwater well volumes were removed prior to collecting groundwater samples. Copies of the BAI Groundwater Sampling Data Sheets depicting the volume of water purged from each monitoring well sampled during the Fourth Quarter, 2007, monitoring event are attached as Appendix A.

Groundwater sampling was performed from the Avis onsite and offsite groundwater monitoring wells on December 19 and 20, 2007. Groundwater sampling was performed in accordance with BAI's standard operating procedure for groundwater sampling. Groundwater samples were submitted to Test America in Phoenix, Arizona. The wells analyzed, analyses performed, frequency of analyses, and any notes are summarized in the following table:

Avis (AVMW)			
Wells	Analyses	Frequency	Notes
AVMW-7 through AVMW-21	BTEX*/MTBE**	Quarterly	
	Oxygenates**	Semi-annually	2nd and 4th quarters
AVMW-44 through AVMW-47	Not sampled on a quarterly basis		

Offsite (HJMW & OMW)			
Wells	Analyses	Frequency	Notes
HJMW-22 through HJMW-31a/b	BTEX*/MTBE**	Quarterly	
	Oxygenates**	Semi-annually	2nd and 4th quarters
HJMW-49	Not sampled on a quarterly basis		
OMW-32 through OMW-43	BTEX*/MTBE**	Quarterly	
	Oxygenates**	Semi-annually	2nd and 4th quarters
OMW-48	Not sampled on a quarterly basis		

\*BTEX = benzene, toluene, ethylbenzene, and total xylenes

\*\*Oxygenates = methyl tertiary-butyl ether (MTBE), tertiary-amyl methyl ether (TAME), di-isopropyl ether (DIPE), ethyl tertiary-butyl ether (ETBE), and tertiary-butyl alcohol (TBA)

## Groundwater Monitoring Results

Groundwater elevation data are presented in Table 1. Groundwater elevation contours and flow direction on December 19, 2007 are shown on Drawing 2. Included in Drawing 3 are the last four quarters of groundwater elevation data, which show interpreted groundwater surfaces and flow directions. Free product was not detected in any of the monitored wells during the fourth quarter of 2007.

Water quality data collected on December 19 and 20, 2007 from the Avis onsite and offsite groundwater monitoring wells are presented in Table 2. The results of the laboratory analyses for BTEX and MTBE are summarized in Table 3. The historical data for oxygenates is presented in Table 4.

Laboratory analysis of groundwater samples collected during the fourth quarter of 2007 from the Avis onsite and offsite groundwater monitoring wells indicated that benzene and MTBE were detected in groundwater samples at concentrations that are greater than their respective Nevada state action levels. Interpretations of the benzene and MTBE plumes on December 19 and 20, 2007 are included as Drawings 4 and 5, respectively. Interpretations of the lateral extent of the dissolved benzene and MTBE plumes during the last four quarters are included as Drawings 6 and 7, respectively.

Benzene exceeding the state action level of 5 µg/L was detected in groundwater samples collected from the following 3 monitoring wells:

Monitoring Well	Benzene Concentration (µg/L)	Monitoring Well	Benzene Concentration (µg/L)
AVMW-9	730	AVMW-20	49
AVMW-10	62		

MTBE concentrations at or exceeding the site-specific action level of 200 µg/L were detected in groundwater samples collected from the following 10 monitoring wells:

Monitoring Well	MTBE Concentration (µg/L)	Monitoring Well	MTBE Concentration (µg/L)	Monitoring Well	MTBE Concentration (µg/L)
AVMW-9	1,500	HJMW-22	370	OMW-42	1,200
AVMW-14	1,600	HJMW-25	670	OMW-43	1,600
AVMW-19	200	OMW-34	1,400		
AVMW-20	1,500	OMW-36	2,400		

The results of the laboratory's internal QA/QC tests are presented with the laboratory report included in Appendix B.

### **Avis Remediation Activities**

In a meeting on November 20, 2007, the NDEP agreed not to require a restart of the air sparge / vapor extraction system on the Avis property. The air sparge / vapor extraction remediation system at the Avis location was shut down on June 19, 2007 due to demolition of the Avis facility. The NDEP has requested the submittal of a draft revised corrective actions plan (CAP) by March 31, 2008. The CAP is anticipated to propose an alternate remediation technology for the Avis property. Drawing 8a depicts the location of the Avis VE, AS, and monitoring wells on the Avis property.

### **Offsite Remediation Activities (Howard Johnson Property)**

The air sparge / vapor extraction remediation systems were in operation at the Howard Johnson property during the fourth quarter of 2007. Drawing 8b depicts the location of the offsite VE, AS, and monitoring wells on the Howard Johnson property.

Three effluent vapor samples were collected from the Howard Johnson remediation system during the fourth quarter of 2007. The analytical results for these samples are listed in Table 5b. Compliance with the ATC and OP continues to be demonstrated through documentation that the effluent does not exceed the Potential to Emit values specified in the permit.

### **Future Activities and Schedule**

Operation and monitoring of offsite VE and AS remedial systems will continue during the first quarter of 2008. The next quarterly monitoring event will be performed in March of 2008.

### **Summary and Discussion of the Former National Car Rental Facility Results**

Converse Consultants provided BAI with the *Groundwater Monitoring Report, Fourth Quarter 2007*, dated January 29, 2008, detailing activities they performed at the former National Car Rental facility during the fourth quarter of 2007. Converse detected up to 3,300 ug/L of MTBE in onsite monitoring well MW-2 and up to 2,600 ug/L of MTBE in downgradient well MW-9. Monitoring well MW-4 was damaged during on-site demolition activities and was not sampled this quarter.

According to the report, "two and one half" monitoring well over-purge events were performed during the fourth quarter of 2007 resulting in the removal of approximately 4,015 gallons of impacted groundwater.

The report also stated Converse's intent to prepare a work plan for additional onsite and offsite characterization activities, including an evaluation of the vertical extent of petroleum hydrocarbon impacts. No time table was set for work plan submittal or implementation.

Historic groundwater elevation measurements and analytical results for the former National Car Rental facility are included in Tables 1, 2, and 3.

### **Summary and Discussion of the Former Payless Car Rental Facility Results**

OGI Environmental, LLC monitored the onsite wells at the former Payless Car Rental facility and provided BAI with summaries of the Fourth Quarter, 2007, activities and results. OGI detected up to 14,600 ug/L of MTBE in onsite monitoring well PMW-1. Monitoring well PMW-5 was damaged during onsite demolition activities and was not sampled this quarter.

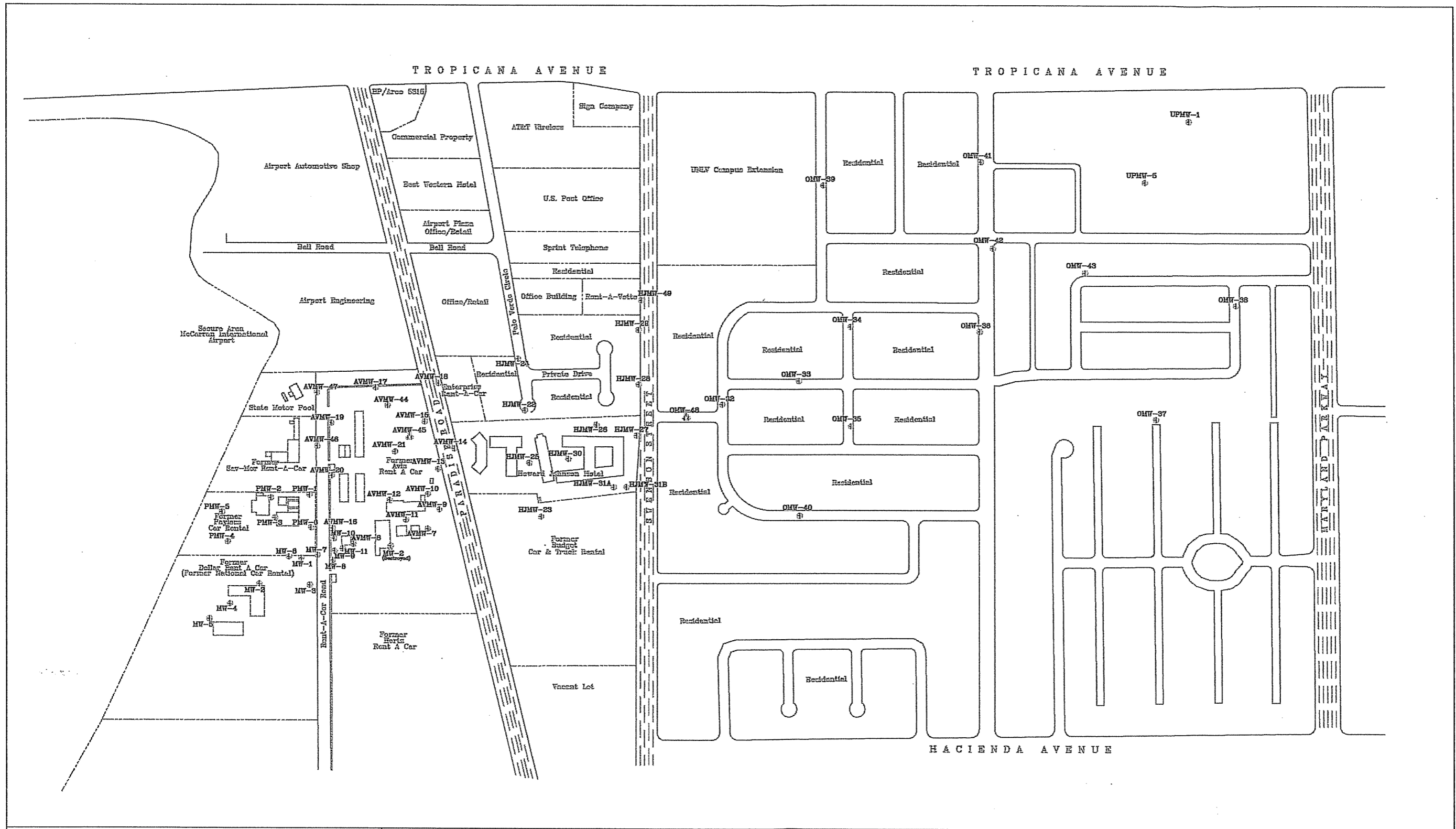
Historic groundwater elevation measurements and analytical results for the former Payless Car Rental facility are included in Tables 1, 2, and 3.

### **Summary and Discussion of the University Plaza (Steiner's Cleaners) Results**

As requested by the NDEP in a letter dated November 22, 2006, data for monitoring wells (UP) MW-1 and (UP) MW-5 have been added to the drawings associated with the Avis/National/Payless commingled plume report. BAI has been notified by Converse that passive diffusion sampler bags are now being utilized at the property. Passive diffusion sampler bags are not a reliable method for sampling groundwater for MTBE. Consequently, BAI is coordinating with the property owner to set up an access agreement to sample monitoring wells (UP) MW-1 and (UP) MW-5. An access agreement has been presented to lawyers representing the property owner and is currently being reviewed.

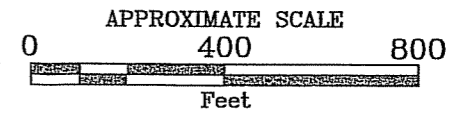


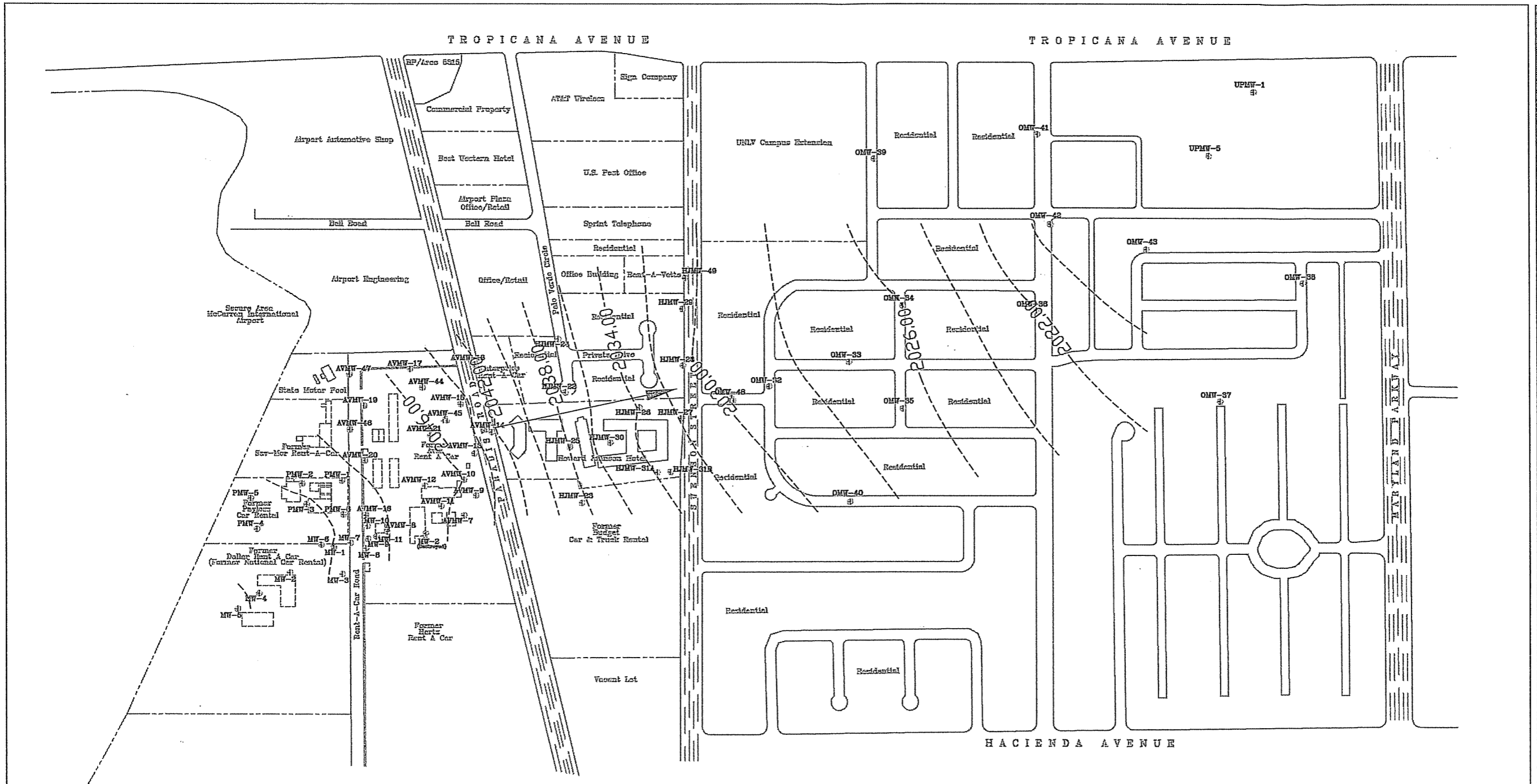
DRAWINGS



**LEGEND**

- |        |  |         |                                     |
|--------|--|---------|-------------------------------------|
| AVMW-7 | Monitoring Well on Avis Site           | OMW-33  | Off-site Monitoring Well            |
| MW-1   | Monitoring Well on National Site       | AVMW-45 | Clustered Monitoring Well Locations |
| PMW-1  | Monitoring Well on Payless Site        |         |                                     |
| HJM-24 | Monitoring Well on Howard Johnson Site |         |                                     |





**LEGEND**

AVMW-7	⊕	Monitoring Well on Avis Site
MW-1	⊕	Monitoring Well on National Site
PMW-1	⊕	Monitoring Well on Payless Site
HJMW-24	⊕	Monitoring Well on Howard Johnson Site
OMW-33	⊕	Off-site Monitoring Well
UPMW-1	⊕	University Plaza Monitoring Well

-2028.00- Potentiometric Surface Contour In Feet

Contour Interval = 2 feet

↗ Approximate Groundwater Flow Direction

APPROXIMATE SCALE

0 400 800

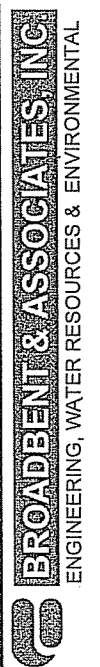
Feet

Groundwater Surface Contour Map (December 19, 2007)  
 Avis/National/Payless Commingled Plume  
 Las Vegas, Nevada

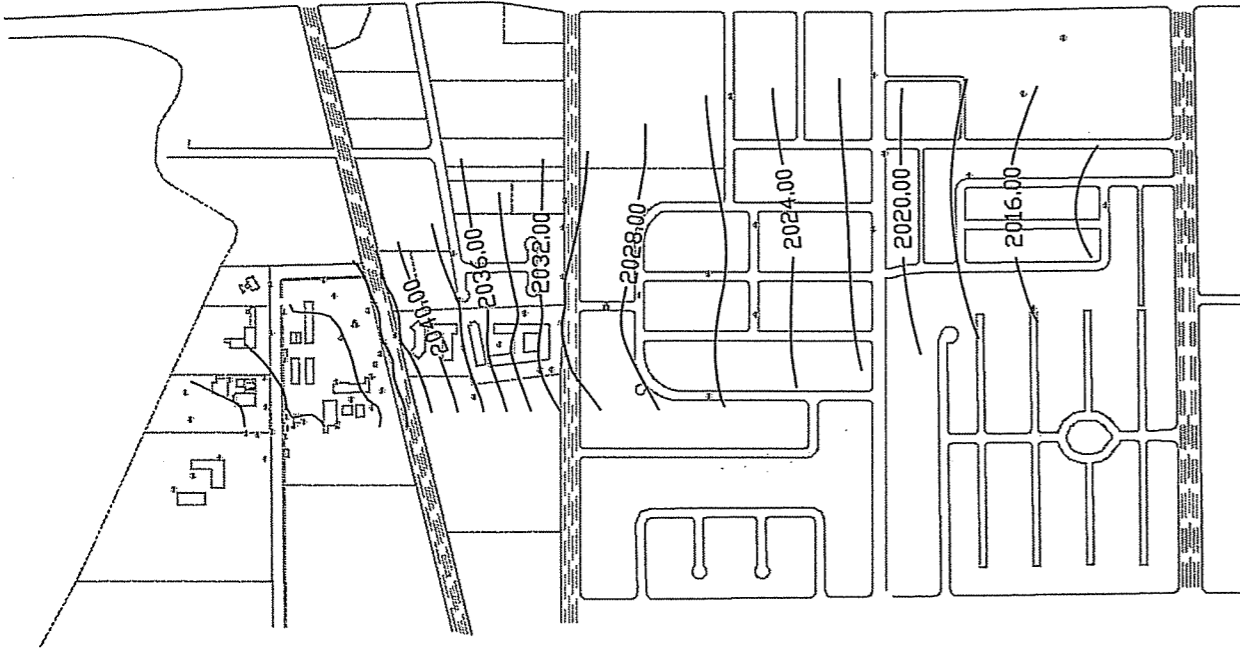
Project No. 95-01-150 and 03-01-287

Drawing No. 2

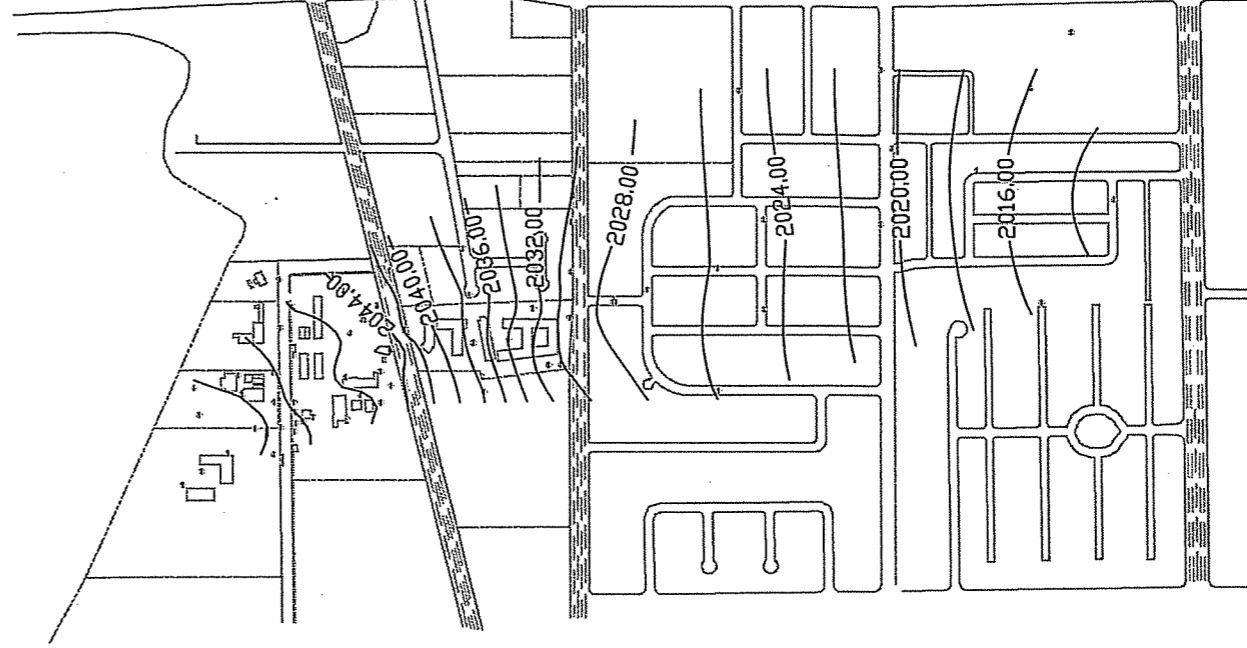
Prepared by SCR Approved By JEH Date: 1/24/08



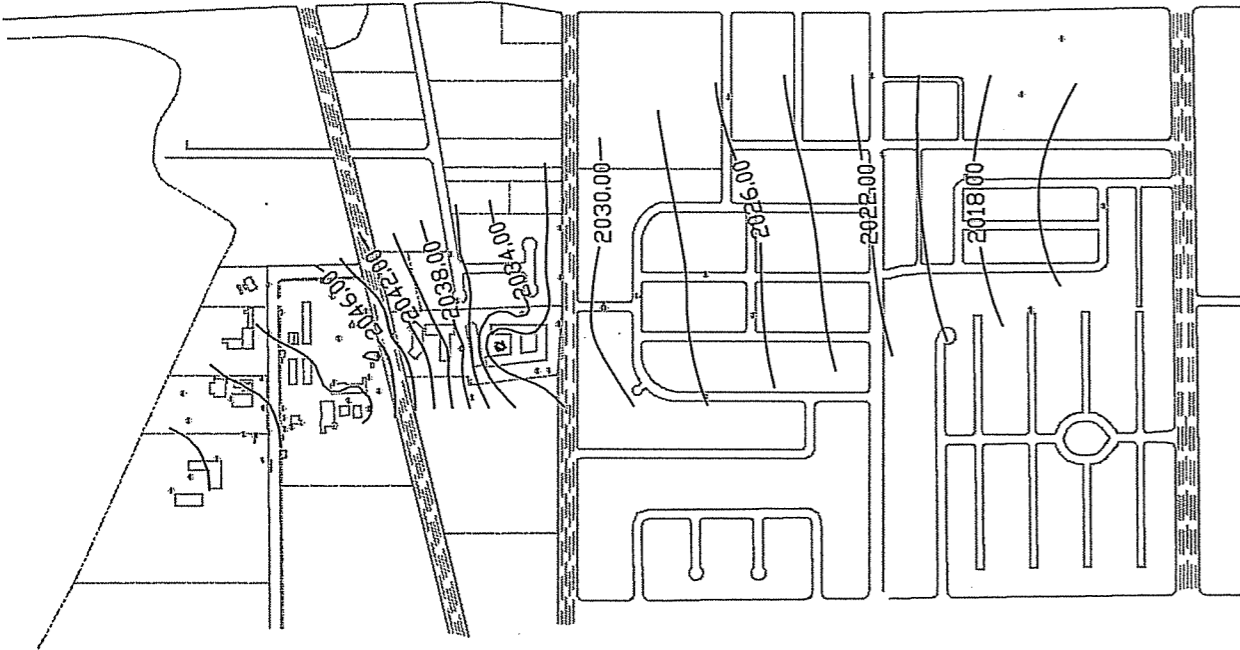
1st Quarter, 2007



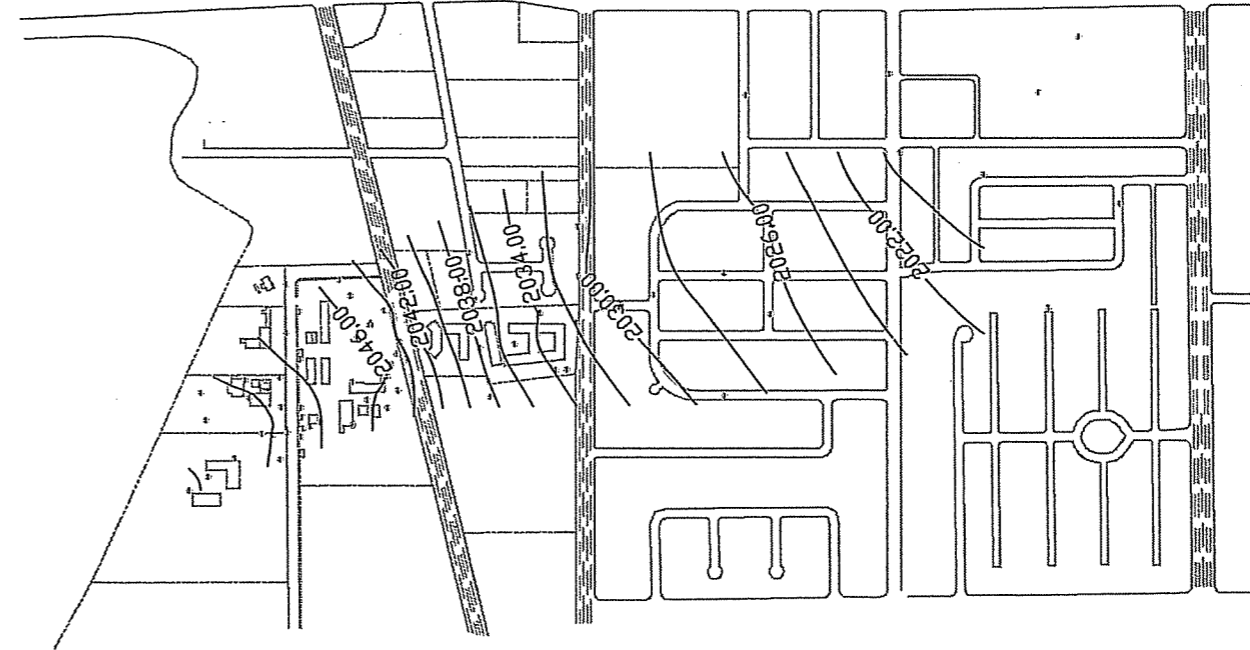
2nd Quarter, 2007





3rd Quarter, 2007

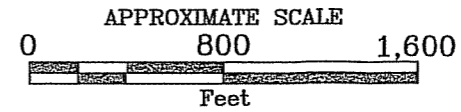


4th Quarter, 2007



**LEGEND:**

-  Potentiometric Surface Contour  
In Feet
- Contour Interval = 2 feet
-  Approximate Location of  
Project Monitoring Well

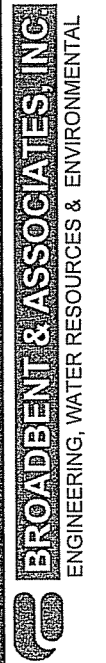


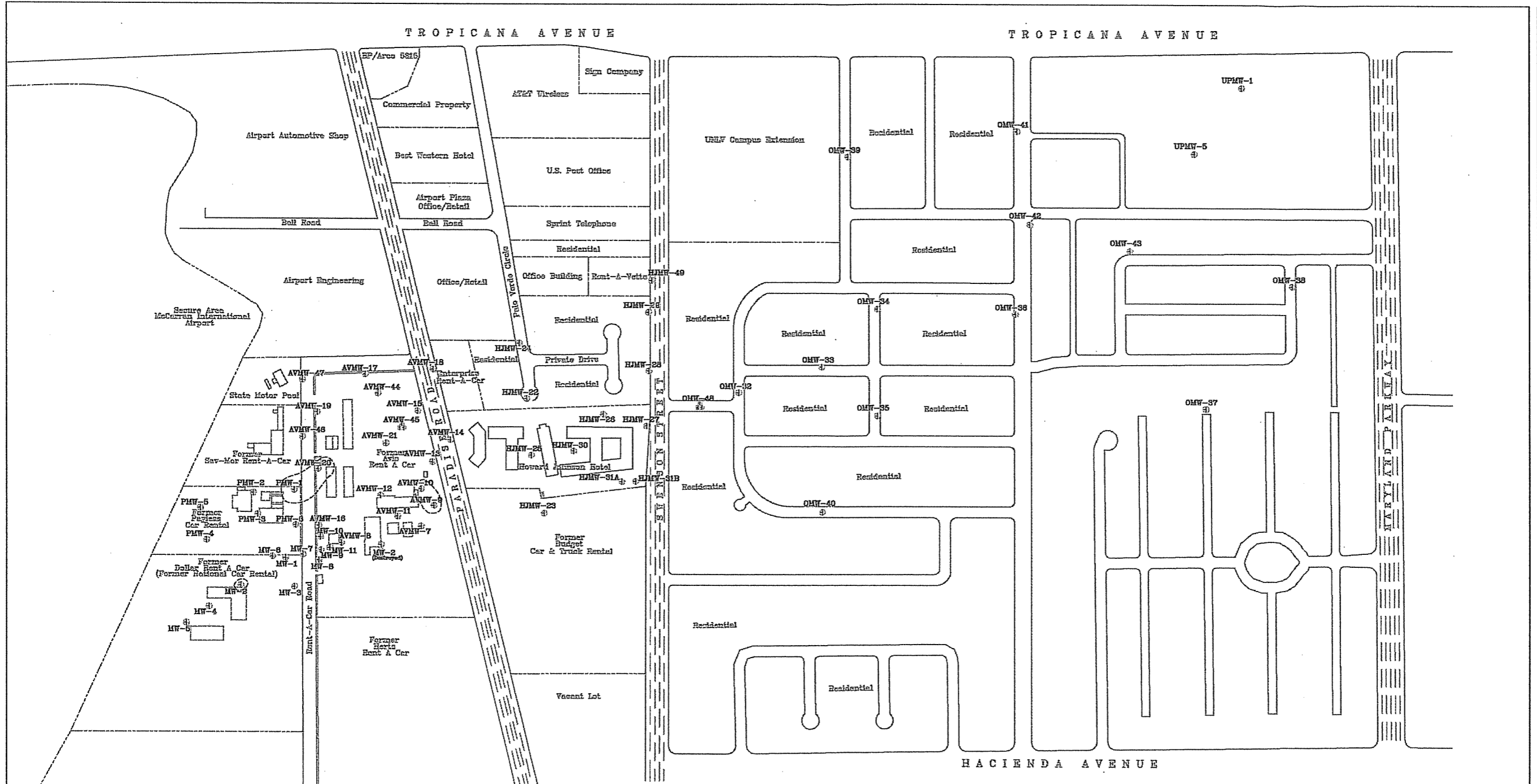
Groundwater Surface Contour Maps for 2007  
Avis/National/Payless Commingled Plume  
Las Vegas, Nevada

Drawing No. 3

Prepared by SCR Approved By JEH Date: 1/24/08

Project Nos. 95-01-150 and 03-01-287



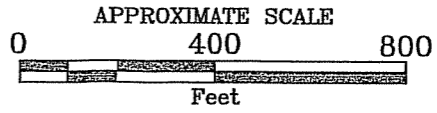


**LEGEND**

- AVMW-7 ⊕ Monitoring Well on Avis Site
- MW-1 ⊕ Monitoring Well on National Site
- PMW-1 ⊕ Monitoring Well on Payless Site
- EJMW-24 ⊕ Monitoring Well on Howard Johnson Site
- OMW-33 ⊕ Off-site Monitoring Well
- UPMW-1 ⊕ University Plaza Monitoring Well

Approximate Benzene Action Level Plume (5 ug/L) in Shallow Groundwater (i.e., <30 feet below ground surface)\*

\*Locally or at deeper elevations, there may be concentrations above or below 5 ug/L



Shallow Groundwater Surface Benzene Plume Map - December 19, 2007  
 Avis/National/Payless Commingled Plume  
 Las Vegas, Nevada

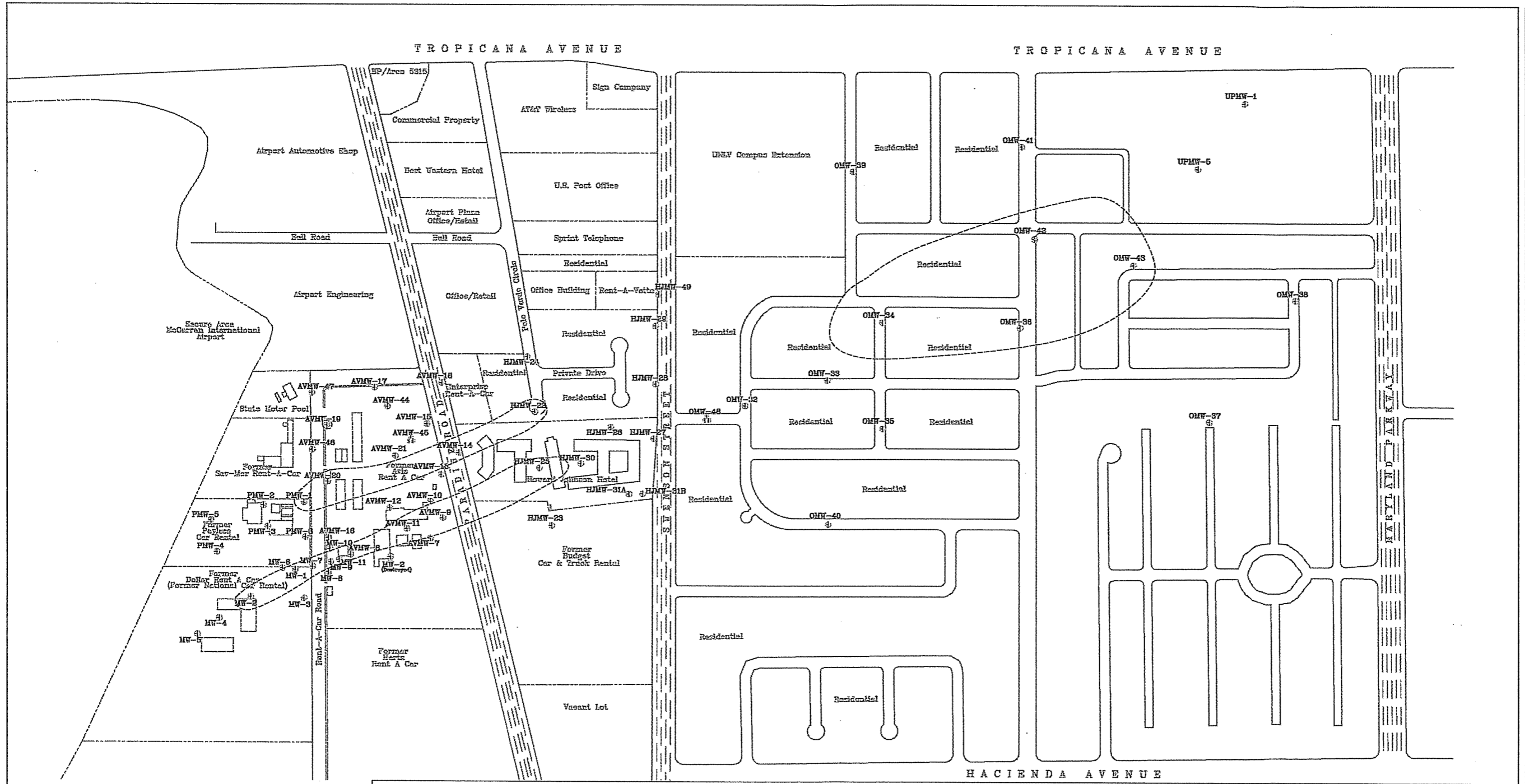
Project Nos. 95-01-150 and 03-01-287

Drawing No. 4



**BROADBENT & ASSOCIATES, INC.**  
 ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

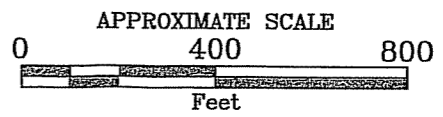
Prepared by SCR Approved By JEH Date: 1/24/08



**LEGEND**

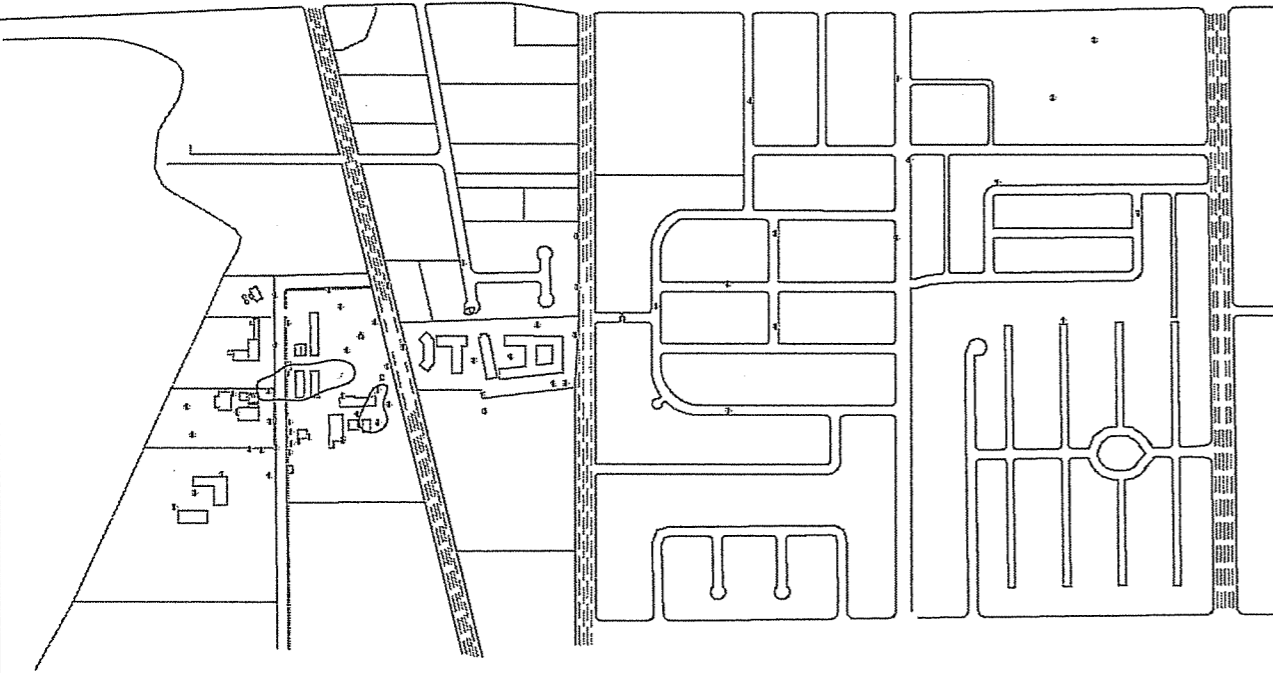
- ⊕ AVMW-7 Monitoring Well on Avis Site
- ⊕ MW-1 Monitoring Well on National Site
- ⊕ PMW-1 Monitoring Well on Payless Site
- ⊕ HJMW-24 Monitoring Well on Howard Johnson Site
- ⊕ OMW-33 Off-site Monitoring Well
- ⊕ UPMW-1 University Plaza Monitoring Well

Estimated Outward Boundary of MTBE Action Level Plume (200 ug/L) in Shallow Groundwater (i.e., <30 feet below ground surface)\*  
 \*Locally or at deeper elevations, there may be concentrations above or below 200 ug/L

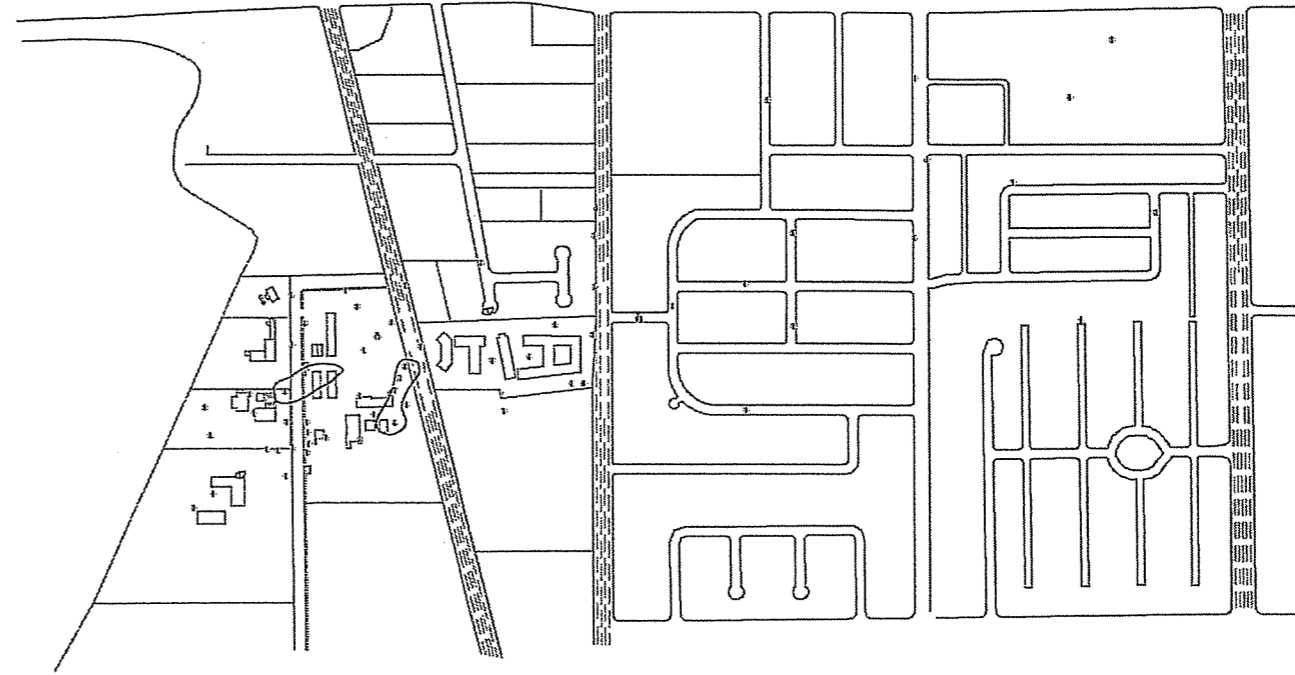


Shallow Groundwater Surface MTBE Plume Map - December 19, 2007  
 Avis/National/Payless Commingled Plume  
 Las Vegas, Nevada

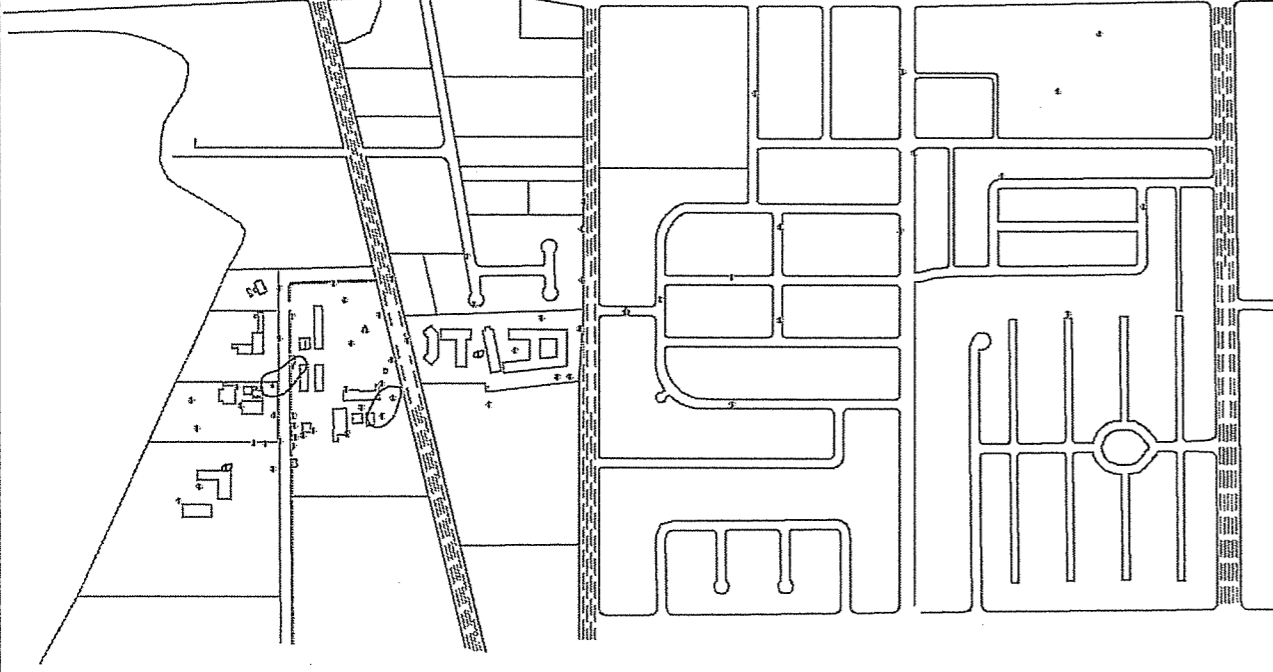
1st Quarter, 2007



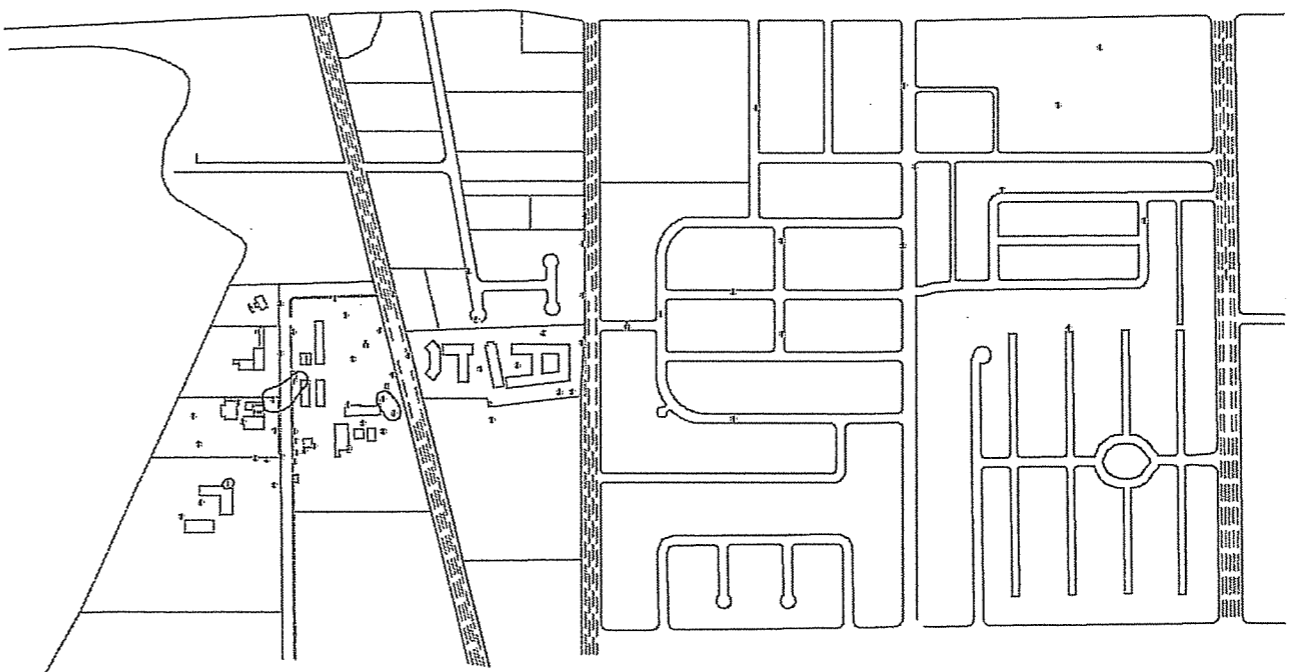
2nd Quarter, 2007



3rd Quarter, 2007



4th Quarter, 2007

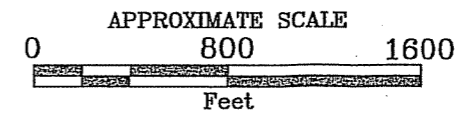


**LEGEND**

⊕ Approximate Location of Project Monitoring Well

— Approximate Benzene Action Level Plume (5 ug/L in Shallow Groundwater (i.e., <30 feet below ground surface))\*

\*Locally or at deeper elevations, there may be concentrations above or below 5 ug/L



Shallow Groundwater Surface Benzene Plume Maps for 2007  
Avis/National/Payless Commingled Plume  
Las Vegas, Nevada

Drawing No. 6

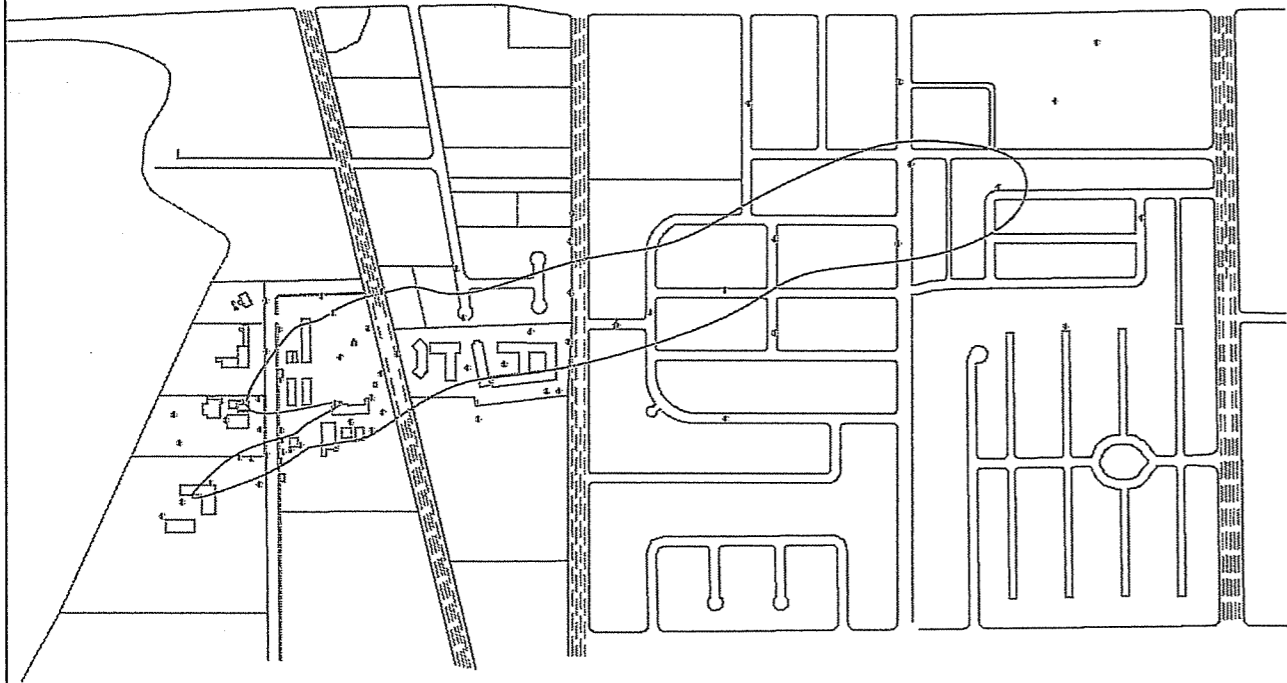
Prepared by: SCR Approved By: JEH Date: 1/24/09

Project Nos. 95-01-150 and 03-01-287

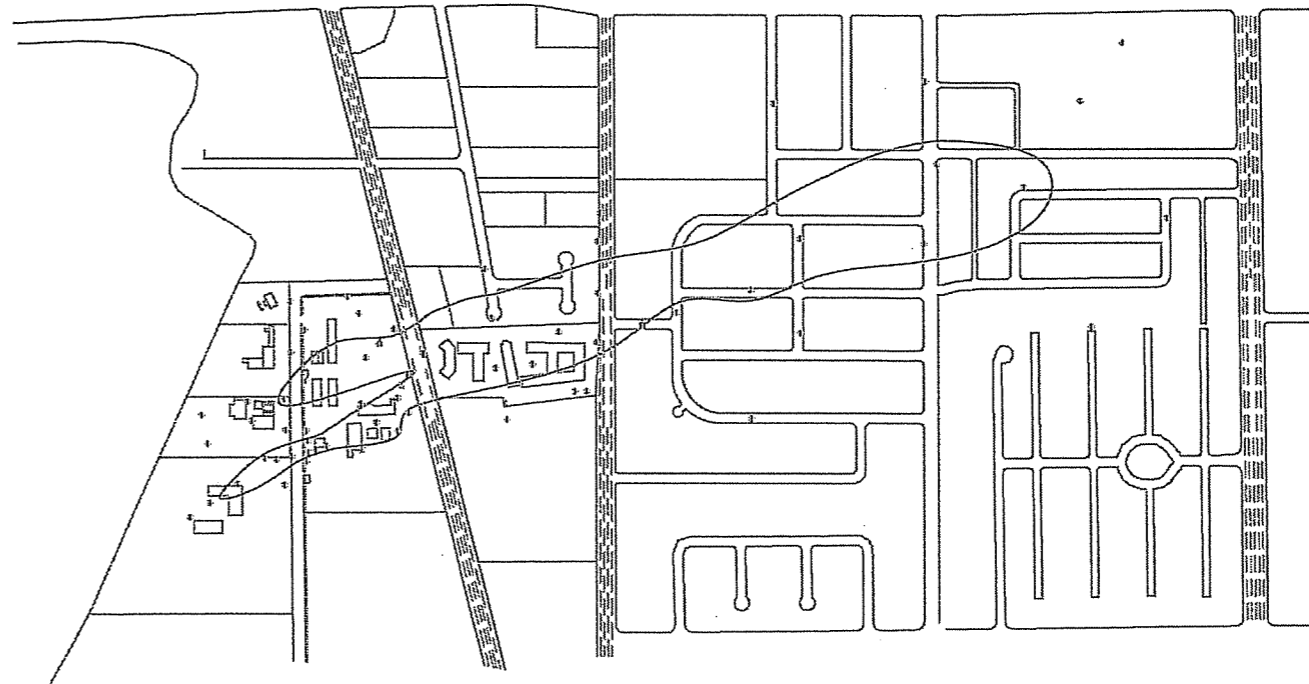




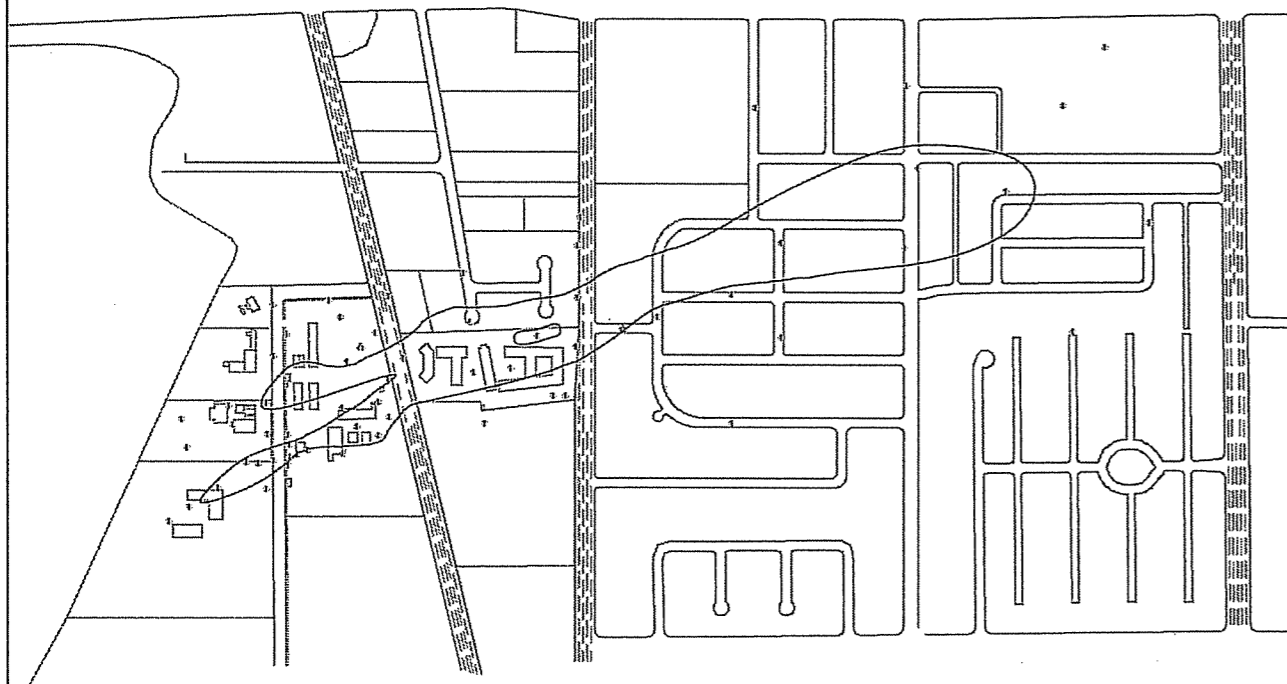
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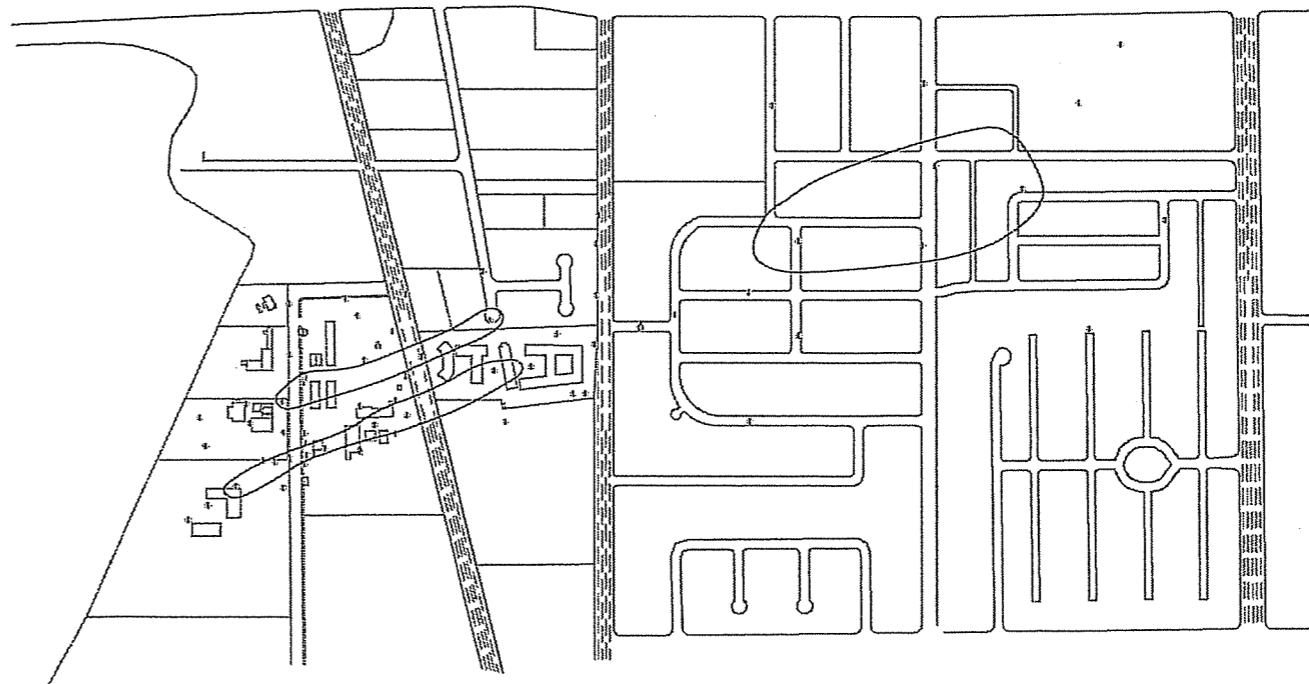
2nd Quarter, 2007



3rd Quarter, 2007



4th Quarter, 2007

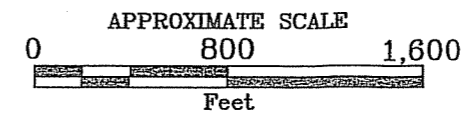


**LEGEND**

⊕ Approximate Location of Project Monitoring Well

— Estimated Outward Boundary of MTBE Action Level Plume (200 ug/L) in Shallow Groundwater (i.e., <30 feet below ground surface)\*

\*Locally or at deeper elevations, there may be concentrations above or below 200 ug/L

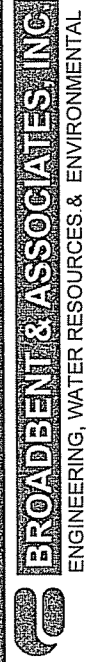


Shallow Groundwater Surface MTBE Plume Maps for 2007  
 Avis/National/Payless Commingled Plume  
 Las Vegas, Nevada

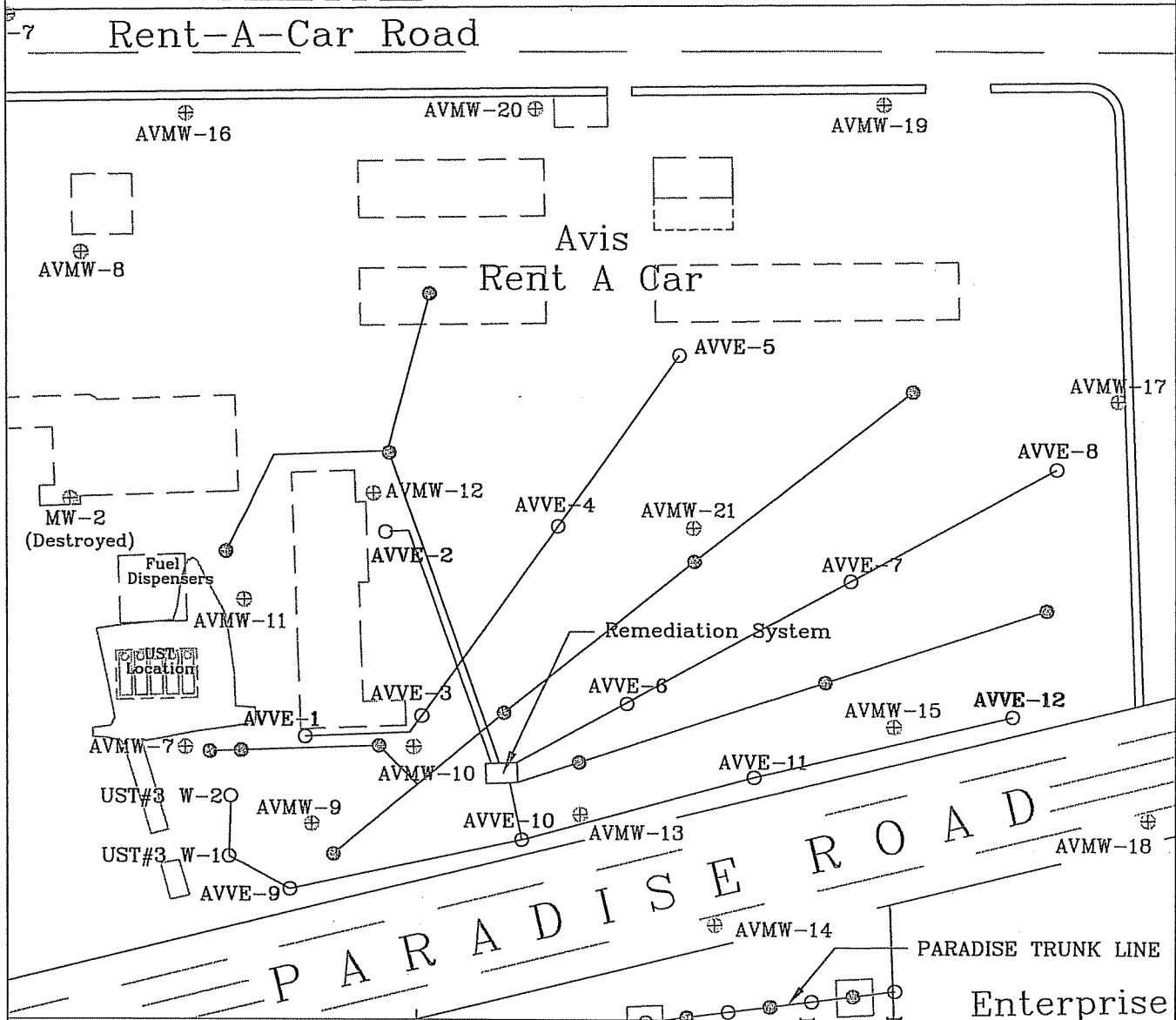
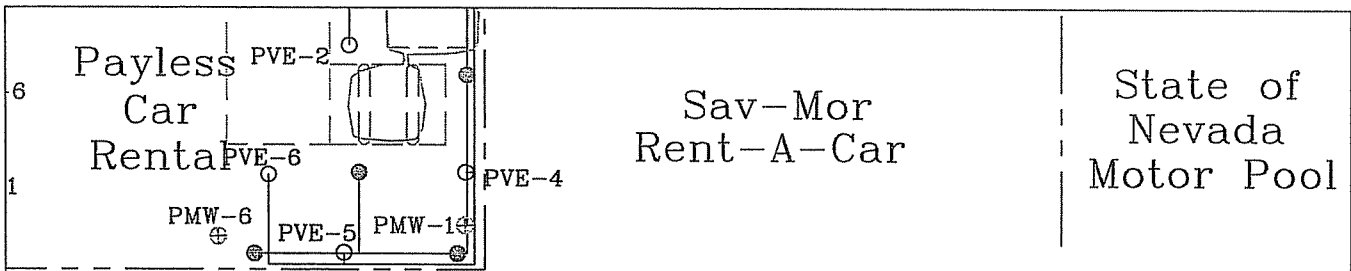
Drawing No. 7

Prepared by SCR Approved By JEH Date: 1/24/08

Project Nos. 85-01-150 and 03-01-287

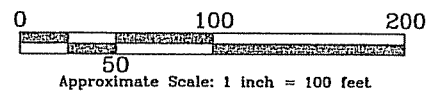
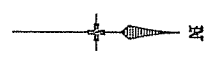






**LEGEND**

- AVMW-10 AVIS Monitoring Wells
- PMW-8 Payless Monitoring Wells
- Approximate Vapor Extraction Well Locations
- Approximate Air Sparge Well Locations



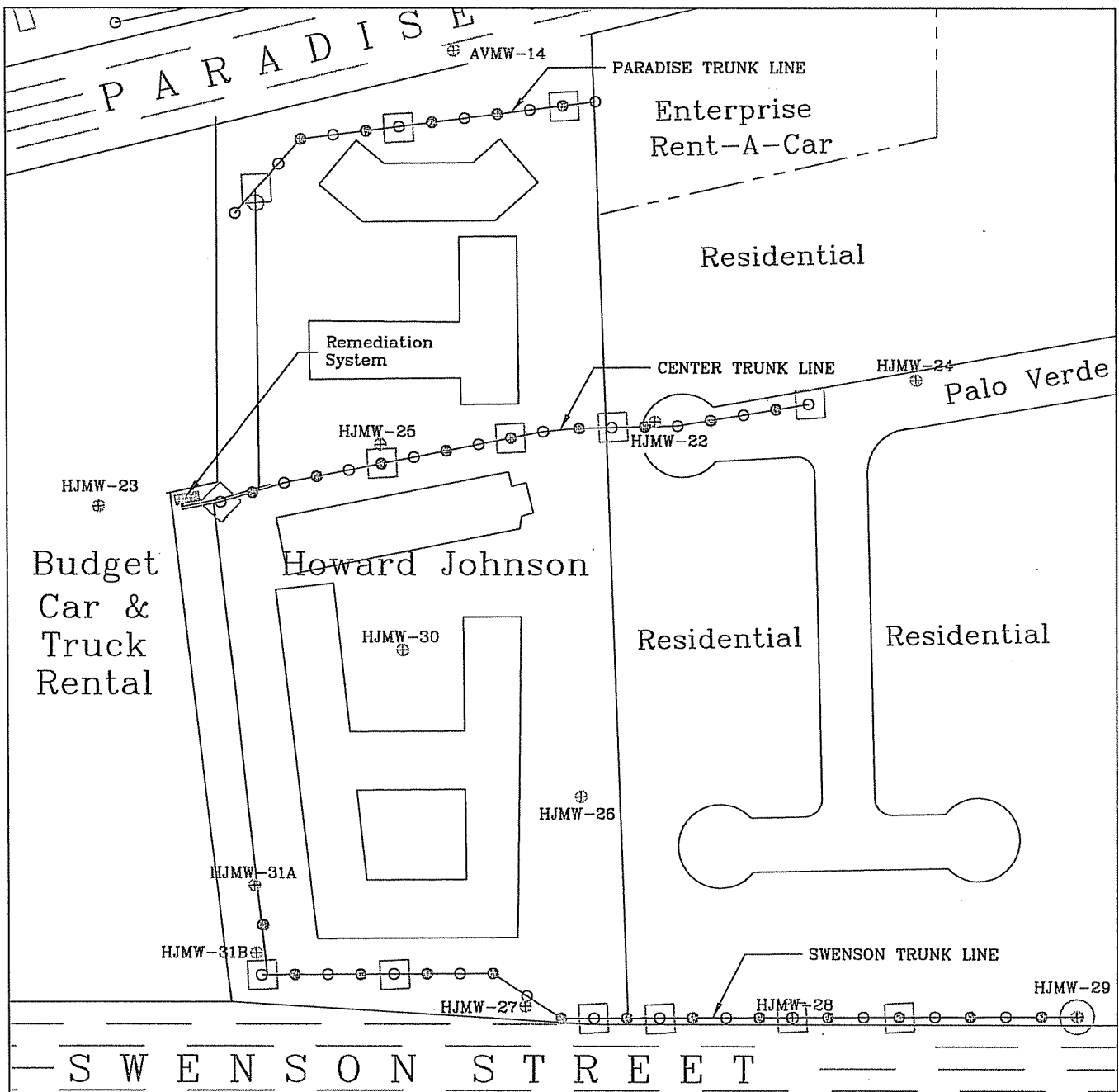
- Approximate Infrastructure Location

**Avis Onsite Remediation System**  
**Avis/National/Payless Commingled Plume**  
**Las Vegas, Nevada**

Drawing No. 8a Project Nos. 95-01-150 and 03-01-287

Prepared by: JEH Approved by: KJS Date: 11/21/07

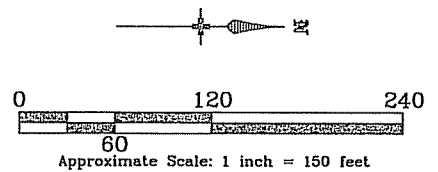




**LEGEND**

- AVMW-14 AVIS Monitoring Wells
- HJMW-27 Howard Johnson Monitoring Wells
- Approximate Vapor Extraction Well Locations
- Approximate Air Sparge Well Locations

- Well Vaults
- Well Vaults
- Approximate Infrastructure Location



Howard Johnson Remediation System  
 Avis/National/Payless Commingled Plume  
 Las Vegas, Nevada

Drawing No. 8b Project Numbers:  
95-01-150 and 03-01-287

Prepared by: TSR Approved by: KJS Date: 5/31/02



TABLES & APPENDIX

(on attached CD ROM)