

**3R – 322**

**2009 AGWMR**

**09 / 03 / 2010**

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2009 SEP 13 AM 9:27



Environmental Services  
188 CR 4900  
Bloomfield, NM 87413

September 3, 2010

Mr. Glen Von Gonten  
Hydrologist  
Oil Conservation Division  
1220 S. St. Francis Dr.  
Santa Fe, NM 87505

**RE: 2009 GROUND WATER SUMMARY REPORT**

Dear Mr. Von Gonten:

Enclosed for your review is the Williams 2009 Ground Water Summary Report. The report presents monitoring data for eight sites having petroleum hydrocarbon impacted ground water resulting from past use of unlined surface impoundments. The sites included in the report are identified in separate sections.

Four of the eight sites have known or suspected up-gradient contaminant sources which continue to influence conditions affecting the rate of natural attenuation. These conditions have been previously mentioned in project correspondence and suggest producer or third party responsibility. Until such time as the other responsible parties address these sources, efforts by Williams are invariably extended.

Two sites (Florence 47X and Davis #1) have regular accumulations of LNAPL in one monitoring well at each location. Since 2002, passive collection devices have been deployed in all wells containing measurable accumulations of LNAPL. Periodic emptying of the collection devices along with active bailing of LNAPL during the quarterly sampling events continues at the aforementioned sites and at times if observed at any other site.

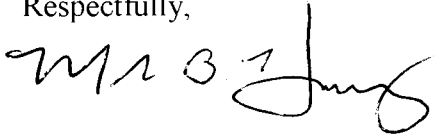
One site previously monitored (Patterson A COM #1A) met closure criteria in 2008 and a closure request was submitted in 2009. Williams plans to close the Patterson A COM #1A and abandon the monitoring wells there unless the NMOCD objects to that action in the next 60 days. Williams will also abandon monitoring wells at five other sites where closure requests were made based on meeting closure criteria. The closure notices for these sites were submitted on two occasions with no response from the NMOCD. Again, closure is assumed to be approved unless there is documented objection.

September 3, 2010  
Mr. Glen Von Gonten  
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As noted in the site summaries, laboratory reports have not been included in the annual report. Lab results reports are retained in project files until such time as a site closure report is developed, but are available anytime upon request.

Thank you for your time to review this submittal. If you have any questions regarding the content of the report, or about specific conditions at any site, you may call me at (801) 232-8985 or Aaron Dailey at (505) 634-4708.

Respectfully,

A handwritten signature in black ink, appearing to read "Mr B. Harvey", with a stylized flourish at the end.

Mark B. Harvey  
Project Manager

Enclosure

*Note: Report previously submitted electronically April 4, 2010*

3R-322

ICE CANYON DRIP

# Site Summary Report

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**Site Name:** Ice Canyon Drip

**Reporting Period:** 2009

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**Location:** Unit B, Sec 15, Twn 26N, Rng 6W

**Canyon:** Largo

**Operator:** Williams

## Status Narrative

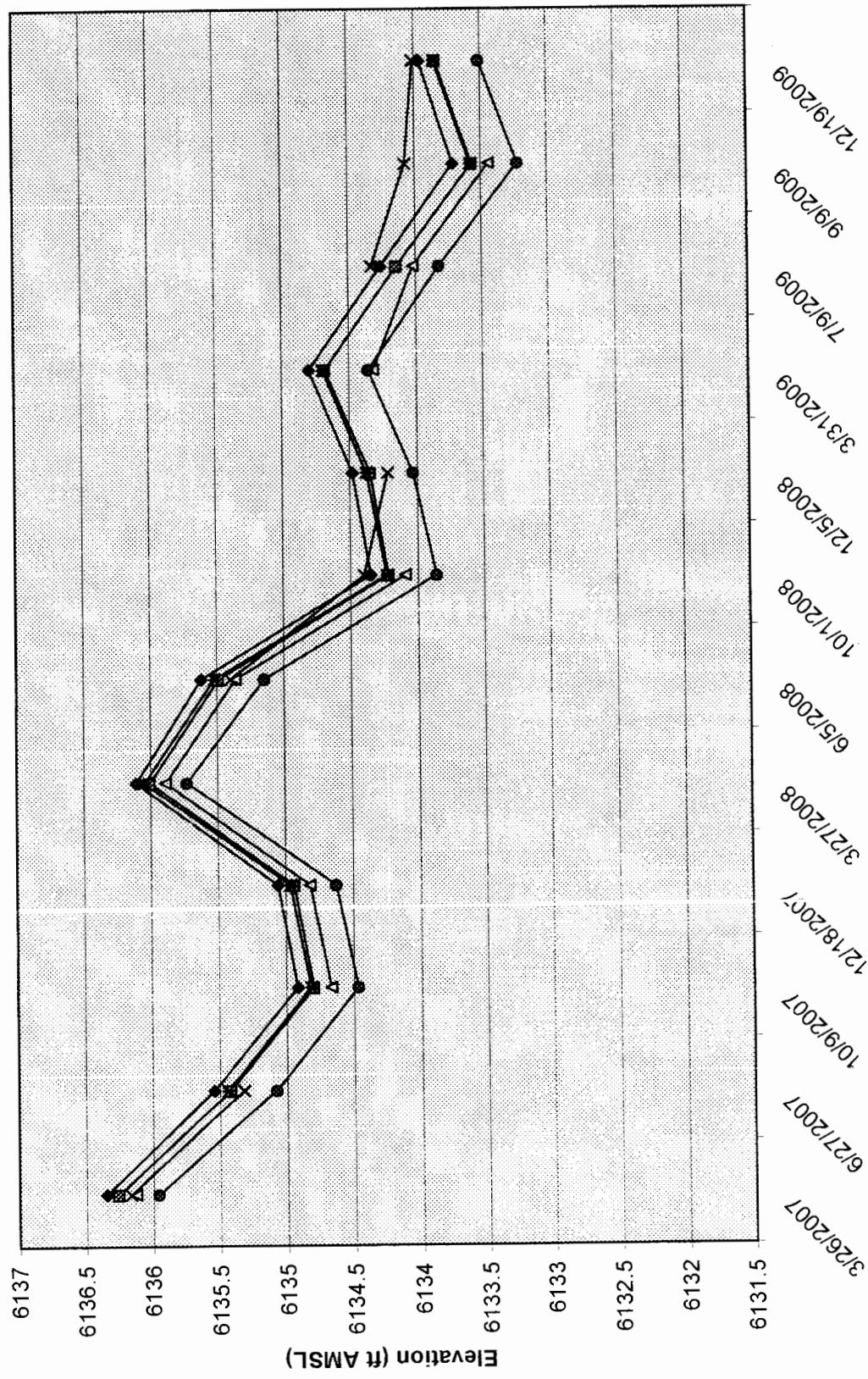
This site has eight monitoring wells and one 4-inch well installed as part of a soil-vapor extraction pilot study conducted by PNM. To date, forty-five quarters of monitoring have been completed. Accumulations of LNAPL in the 4-inch well are no longer observed.

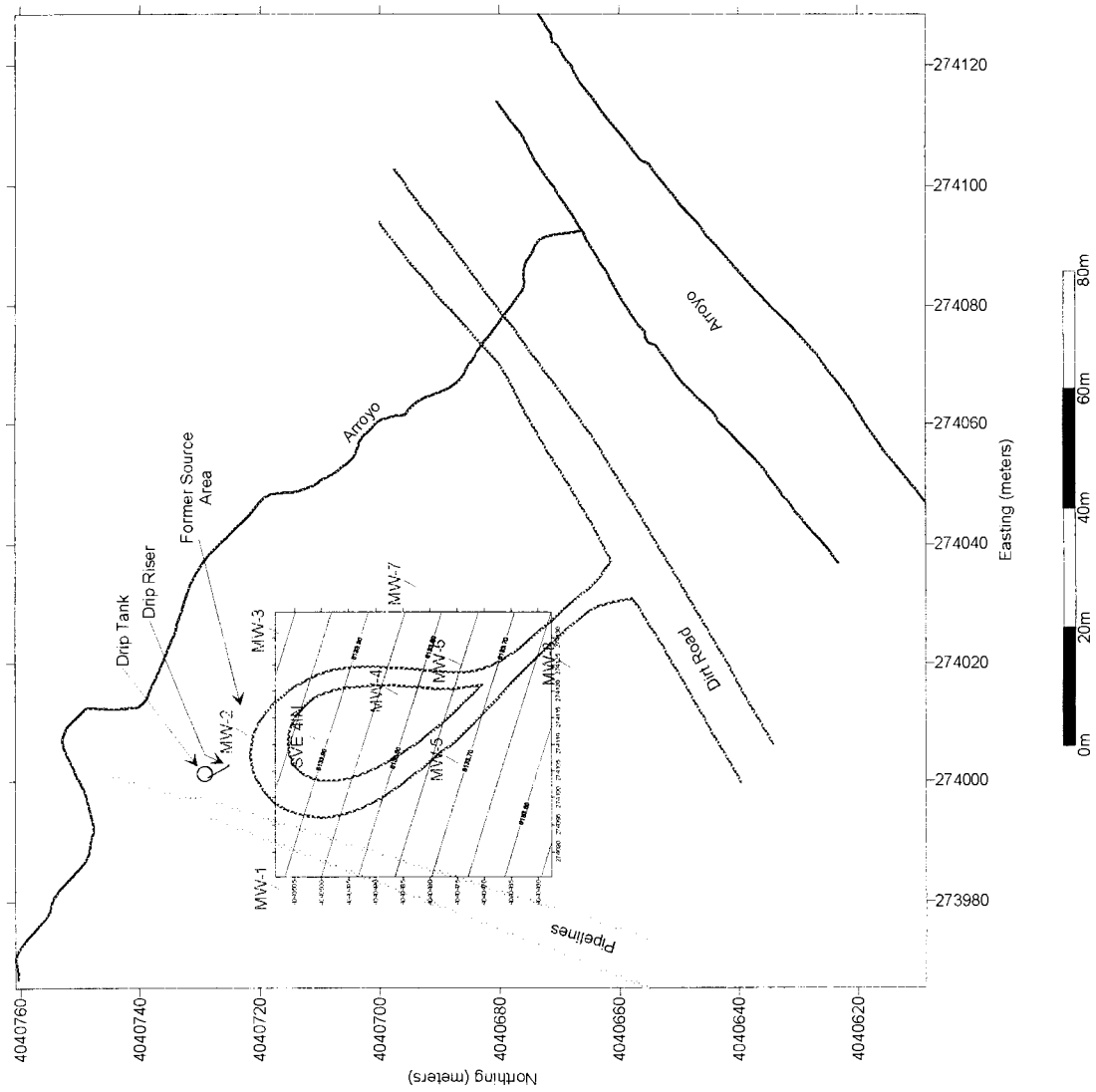
Source area well MW-2 was again not sampled due to a restriction in the well. Previously, measured concentrations showed a decline from earlier monitoring events. Measured concentrations of BTEX in down gradient well MW-5 continue a declining trend and are now the only levels exceeding WQCC standards. Down gradient well MW-4, which had benzene concentrations ranging from 12 ppb to 20 ppb in 2005, again had no detectable BTEX in 2009. Sentinel well MW-8 continues to show no measurable BTEX as it has for several years.

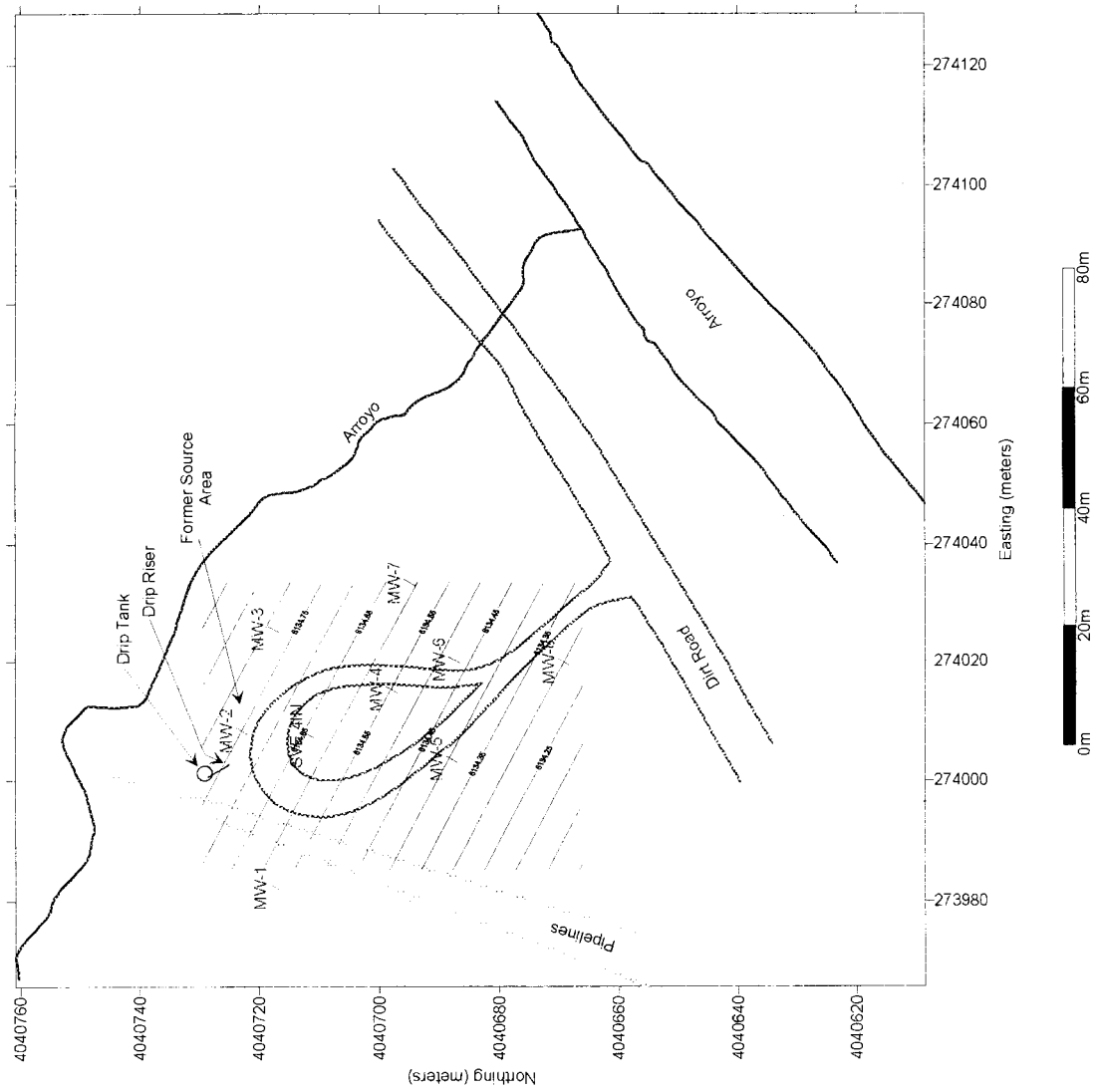
Potentiometric surface maps (Figure 2) depict a general south-southwest flow direction. The average hydraulic gradient is 0.003. The hydrograph for the monitoring period illustrates seasonal fluctuations in water-table elevations, with highs generally in the Spring. Monitored natural attenuation appears effective at this site with clean closure likely.

The graph displays the elevation of eight monitoring wells (MW-1 to MW-8) in feet above mean sea level (ft AMSL) from March 2007 to December 2009. The y-axis ranges from 6131.5 to 6137 ft AMSL. The x-axis shows dates from 3/26/2007 to 12/19/2009. All wells show a general decrease in elevation over time, with a notable sharp drop in late 2008. MW-1 and MW-8 generally maintain the highest elevations, while MW-4 and MW-7 generally maintain the lowest.

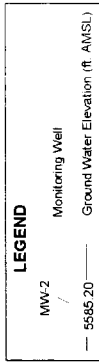
Date Gauged	MW-1	MW-4	MW-5	MW-6	MW-7	MW-8
3/26/2007	6136.2	6136.1	6136.1	6136.1	6136.1	6136.1
6/27/2007	6135.8	6135.5	6135.5	6135.5	6135.5	6135.5
10/9/2007	6135.5	6135.2	6135.2	6135.2	6135.2	6135.2
12/18/2007	6135.2	6134.8	6134.8	6134.8	6134.8	6134.8
3/27/2008	6135.0	6134.5	6134.5	6134.5	6134.5	6134.5
6/5/2008	6135.0	6134.5	6134.5	6134.5	6134.5	6134.5
10/1/2008	6134.8	6134.2	6134.2	6134.2	6134.2	6134.2
12/5/2008	6134.5	6133.8	6133.8	6133.8	6133.8	6133.8
3/3-1/2009	6134.5	6133.8	6133.8	6133.8	6133.8	6133.8
7/9/2009	6134.2	6133.5	6133.5	6133.5	6133.5	6133.5
9/9/2009	6134.0	6133.2	6133.2	6133.2	6133.2	6133.2
12/19/2009	6133.8	6133.0	6133.0	6133.0	6133.0	6133.0







**Figure 2**  
**Potentiometric**  
**Surface Map**  
**Ice Canyon Line Drip**  
**(March 2009)**





# Analytical Data Summary

Site Name:

Ice Canyon Drip

Reporting Period:

1/1/2008 To 12/31/2009

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
<b>MW-1</b>						
	3/27/2008	110527MAR08	<1.0	<1.0	<1.0	<3.0
	6/5/2008	133105JUN08	<1.0	<1.0	<1.0	<3.0
	10/1/2008	133201OCT08	<1.0	<1.0	<1.0	<3.0
	12/5/2008	141605DEC08	<1.0	<1.0	<1.0	<3.0
	3/31/2009	121931MAR09	<1.0	<1.0	<1.0	<3.0
	7/9/2009	121709JUL09	<1.0	<1.0	<1.0	<3.0
	9/9/2009	105409SEP09	<1.0	<1.0	<1.0	<3.0
	12/19/2009	125519DEC09	<1.0	<1.0	<1.0	<3.0
<b>MW-3</b>						
	3/27/2008	115727MAR08	<1.0	<1.0	<1.0	<3.0
	6/5/2008	135605JUN08	<1.0	<1.0	<1.0	<3.0
	3/31/2009	130931MAR09	<1.0	<1.0	<1.0	<3.0
	9/9/2009	110709SEP09	<1.0	<1.0	<1.0	<3.0
<b>MW-4</b>						
	3/27/2008	111727MAR08	<1.0	<1.0	<1.0	<3.0
	6/5/2008	141805JUN08	<1.0	<1.0	<1.0	<3.0
	10/1/2008	135401OCT08	<1.0	<1.0	<1.0	<3.0
	12/5/2008	144205DEC08	<1.0	<1.0	<1.0	<3.0
	3/31/2009	132831MAR09	<1.0	<1.0	<1.0	<3.0
	7/9/2009	113809JUL09	<1.0	<1.0	<1.0	<3.0
	9/9/2009	114709SEP09	<1.0	<1.0	<1.0	<3.0
	12/19/2009	132819DEC09	<1.0	<1.0	<1.0	<3.0
<b>MW-5</b>						
	3/27/2008	113027MAR08	33.0	<1.0	7.3	8.5
	6/5/2008	142805JUN08	10.3	4.6	2.6	3.3
	10/1/2008	140601OCT08	4.6	<1.0	<1.0	<3.0
	7/9/2009	112809JUL09	13.0	1.5	2.6	16.9
	9/9/2009	111709SEP09	21.3	2.5	2.8	22.3
<b>MW-6</b>						
	6/5/2008	143905JUN08	1.6	<1.0	<1.0	<3.0

## Site Name:

Ice Canyon Drip

## Reporting Period:

1/1/2008 To 12/31/2009

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
MW-7						
	3/27/2008	114227MAR08	<1.0	<1.0	<1.0	<3.0
	6/5/2008	140605JUN08	<1.0	<1.0	<1.0	<3.0
	10/1/2008	134301OCT08	<1.0	<1.0	<1.0	<3.0
	12/5/2008	142905DEC08	<1.0	<1.0	<1.0	<3.0
	3/31/2009	131931MAR09	<1.0	<1.0	<1.0	<3.0
	9/9/2009	112809SEP09	<1.0	<1.0	<1.0	<3.0
	12/19/2009	130419DEC09	<1.0	<1.0	<1.0	<3.0
MW-8						
	3/27/2008	105327MAR08	<1.0	<1.0	<1.0	<3.0
	6/5/2008	131905JUN08	<1.0	<1.0	<1.0	<3.0
	10/1/2008	132201OCT08	<1.0	<1.0	<1.0	<3.0
	12/5/2008	140505DEC08	<1.0	<1.0	<1.0	<3.0
	3/31/2009	120931MAR09	<1.0	<1.0	<1.0	<3.0
	7/9/2009	111609JUL09	<1.0	<1.0	<1.0	<3.0
	9/9/2009	104309SEP09	<1.0	<1.0	<1.0	<3.0
	12/19/2009	124519DEC09	<1.0	<1.0	<1.0	<3.0
SVE 4IN						
	12/5/2008	145605DEC08	3.2	1.1	43.8	41.7
	3/31/2009	123831MAR09	4.7	2.2	83.9	155
	7/9/2009	115609JUL09	4.1	1.8	59.7	193
	9/9/2009	120309SEP09	3.1	<1.0	41.6	125
	12/19/2009	132019DEC09	4.6	1.3	88.6	352