

Summary of New LANL Groundwater Data Loaded in October 2006

November 9, 2006

Executive Summary

Key findings include:

- **dichloroethene[1,1-] found at alluvial well LAO-1.6g at a concentration that is 62% of the EPA MCL and 87% of the NM GW Standard- this is the only detection;**

Introduction

This report provides preliminary information to NMED concerning recent groundwater data. This report highlights constituents that exceed 50% of an applicable regulatory standard in groundwater samples taken from several wells or springs (listed on four accompanying tables), which provide surveillance of the groundwater zones indicated in the tables.

In the tables, information is given for sample date, detection limits, values for regulatory standards, analytical and secondary validation qualifiers, and comments on the observations. All data have been through secondary validation, as indicated on the tables by a preliminary flag of N.

The following discussion provides information on prior occurrence of the constituents at the given locations.

Metals Results

Several wells and springs had dissolved concentrations of aluminum, iron, or manganese that were more than 50% of groundwater standards. These metals are derived from soil or aquifer materials or related to well-drilling impact on sample quality. Except for the R-32 sample, the unfiltered concentrations were greater than the dissolved (unfiltered) values.



In R-32 the higher metals concentrations result from the change in redox conditions near the well. Drilling fluid decomposition by bacteria results in increased metal solubility, dissolving metals from well and aquifer material.

A J-flagged (estimated) filtered arsenic result at R-32 at 976 ft was 67% of the EPA MCL of 10 µg/L and is at the high end of results for the port. This result was just above the MDL of 6 µg/L and arsenic was not found in the unfiltered sample. From a geochemical perspective the total arsenic should be higher than the dissolved arsenic. The result is unreliable due as it is close to the detection limit. The analytical method used for future analyses will have a lower MDL.

Organic Results

Dichloroethene[1,1-] found at alluvial well LAO-1.6g at a concentration that is 62% of the EPA MCL and 87% of the NM GW Standard. The result is probably from analytical laboratory or sampling cross-contamination; this compound has only been detected once at this location, once in a port at regional well R-19, and by several analyses of a June sample from 03-B-13 at TA-3 where it is associated with known chlorinated organic solvent groundwater contamination. This well will continue to be sampled as part of the approved Interim Facility-Wide Groundwater Monitoring Plan and the data will be reviewed to identify trends.

<p>This report contains all LC/MS/MS results and all IC detections (Note lower IC MDL for EES-6)</p> <p>Sample with result > 24.5 (EPA Drinking Water Equivalent Level)</p> <p>Sample with result > 4 CO Screening Level)</p> <p>Sample with 0.6 < result < 4 (NMED background upper limit and CO Screening Level)</p>																											
Fl	H	U	Hdr	Zor	Location Name	Well Class	Port Depth	Start Date	Fid C	Fid P	Lab S	Anal	Any1 Meth Code	Symbol	Std Result	Std Mdl	Std L Diluti	Lab C	Conc	Conc Prelir	Load Date	Lab Code	Source Or	Comments	Sample Id	Any1 Suite	Uri
					no results																						

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Flt	U	Hdr	Zor	Location Name	Well Class	Port Depth	Start Date	Fid C	Fid P	Lab S	Analy	Anyl Meth Code	Symbol	Std Result	Std Mdl	Std L	Diluti	Lab	Conc	Conc	Prelit	Load Date	Lab Code	Source Ori	Comments	Sample Id	Anyl Suite	Uri	
W	#	Upper	Inte	LAOI-3.2a	SINGLE	181	10/13/06	F	CS	CIO4	EPA:314.0			4.09	4	ug/L	1	J		N		11/17/06	GELC	ESH-18HDRO		GF06100GI32A01	GENINOR	13963481	
W	#	Upper	Inte	LAOI-3.2a	SINGLE	181	10/13/06	F	CS	CIO4	SW846 6850 Modified			4.26	0.5	ug/L	10			N		11/17/06	GELC	ESH-18HDRO		GF06100GI32A01	GENINOR	13963441	
W	#	Mortar	Alli	MCO-4B	SINGLE	9	10/19/06	F	CS	CIO4	EPA:314.0			29.8	4	ug/L	1			N		11/22/06	GELC	ESH-18HDRO		GF060900G4BM01	GENINOR	14027561	
W	#	Mortar	Alli	MCO-4B	SINGLE	9	10/19/06	F	CS	CIO4	SW846 6850 Modified			30.5	5	ug/L	100		J	LMS	N	11/22/06	GELC	ESH-18HDRO		GF060900G4BM01	GENINOR	14027511	
W	#	Mortar	Alli	MCO-4B	SINGLE	9	10/19/06	FD	F	CS	CIO4	EPA:314.0			30.6	4	ug/L	1			N		11/22/06	GELC	ESH-18HDRO		GF060900G4BM90	GENINOR	14027781
W	#	Mortar	Alli	MCO-4B	SINGLE	9	10/19/06	FD	F	CS	CIO4	SW846 6850 Modified			30.1	5	ug/L	100		J	LMS	N	11/22/06	GELC	ESH-18HDRO		GF060900G4BM90	GENINOR	14027691
W	#	Mortar	Inte	MCOI-5	SINGLE	689	10/19/06	F	CS	CIO4	EPA:314.0			116	8	ug/L	2			N		11/22/06	GELC	ESH-18HDRO		GF061000GMC501	GENINOR	13993001	
W	#	Mortar	Inte	MCOI-5	SINGLE	689	10/19/06	F	CS	CIO4	SW846 6850 Modified			132	10	ug/L	200		J	LMS	N	11/22/06	GELC	ESH-18HDRO		GF061000GMC501	GENINOR	13992961	
W	#	Mortar	Inte	MCOI-5	SINGLE	689	10/19/06	FD	F	CS	CIO4	EPA:314.0			115	8	ug/L	2			N		11/22/06	GELC	ESH-18HDRO		GF061000GMC520	GENINOR	13993461
W	#	Mortar	Inte	MCOI-5	SINGLE	689	10/19/06	FD	F	CS	CIO4	SW846 6850 Modified			131	10	ug/L	200		J	LMS	N	11/22/06	GELC	ESH-18HDRO		GF061000GMC520	GENINOR	13993421

Samples where result/screening level > 10																				Samples where 1 < result/screening level < 10																			
H	U	Hdr	1	Zone	Location Name	Well Class	Port Depth	Start Date	Source Org	Analy	Fld Pre	Lab Sa	Fld Qc	Symbo	Std Result	Std Mdl	Std U	Load Date	Lab Code	Lab C	Conc	Conc	Prelin	Samg	Uri	EPA PRIM DW STD Scr Lvl	EPA PRIM DW STD Ratio (Res	NM GW LIM Scr Lvl	NM GW LIM Ratio (Res										
																														Conc	Conc	Prelin	Samg	Uri					
#	#	Sand	Regid	R-11	SINGLE	855	02/03/06	ER	Cr(VI)	F	CS				26	0.6	ug/L	11/20/06	STLA		J+	I3	N	SF06	13976881				50	0.52									
#	#	Sand	Regid	R-11	SINGLE	855	04/20/06	ER	Cr(VI)	F	CS				27.3	0.25	ug/L	11/20/06	STLA		J	IWQ1	N	SF06	13977341				50	0.55									
#	#	Sand	Regid	R-11	SINGLE	855	10/10/06	ESH-18HC	Cr	F	CS	FD			29.3	1	ug/L	11/15/06	GELC				N	GF06	13923721				50	0.59									
#	#	Sand	Regid	R-11	SINGLE	855	10/10/06	ESH-18HC	Cr	F	CS				29.4	1	ug/L	11/15/06	GELC				N	GF06	13923151				50	0.59									
#	#	Morta	Intern	MCOI-6	SINGLE	686	01/31/06	ER	Cr(VI)	F	CS				53.2	1.5	ug/L	11/20/06	STLA				N	SF06	13977171	100	0.53		50	1.06									
#	#	Morta	Regid	R-28	SINGLE	934.3	01/26/06	ER	Cr(VI)	F	CS				405	7.5	ug/L	11/20/06	STLA				N	SF06	13977201	100	4.05		50	8.1									
#	#	Morta	Regid	R-28	SINGLE	934.3	04/19/06	ER	Cr(VI)	F	CS				417	1	ug/L	11/20/06	STLA		J	IWQ1	N	SF06	13977351	100	4.17		50	8.34									
#	#	Pajar	Regid	R-17	MULTI	1057	10/19/06	ESH-18HC	Fe	F	CS				1510	18	ug/L	11/22/06	GELC	N	J+	I3	N	GF06	14013721				1000	1.51									

Results from field QC samples																				EPA PRIM		EPA PRIM		EPA TAP		EPA TAP		EPA TAP		EPA TAP		NM GW		NM GW								
Samples where result/screening level > 10																				LV	TDW	STD	DW	STD	SCRN	LVL	SCRN	LVL	SCRN	LVL	SCRN	LVL	LIM	LIM								
Samples where 1 < result/screening level < 10																				Risk Code		C		C		N		N														
Samples with blank contamination, exceeded holding time, or rejected																				Scr Lvl	Ratio (Res	Scr Lvl	Ratio (Res	Scr Lvl	Ratio (Res	Scr Lvl	Ratio (Res	Scr Lvl	Ratio (Res	Scr Lvl	Ratio (Res	Scr Lvl	Ratio (Res	Scr Lvl	Ratio (Res							
Hd	Uti	Hd	Zone	Location Name	Well Class	Port	Depth	Start Date	Fid	C	Fid	P	Lab	S	Sample Id	Anyl	S	Analyte Desc	Analyte	Sou	Syr	Std	Result	Std	Mdl	Std	U	Dilut	Lab	S	Conc	Conc	Prelim	Lab	S	Anyl	Lab	S	Load Date	Uri		
				no results																																						