

TA 36
offsite



2002

Risk Reduction & Environmental Stewardship Division
Water Quality & Hydrology Group (RRES-WQH)
PO Box 1663, MS K497
Los Alamos, New Mexico 87545
(505) 667-7969 / Fax: (505) 665-9344

Date: December 3, 2002
Refer to: ~~RRES-WQH~~: 02-444

Mr. John Young
Hazardous Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502

Mr. Curt Frischkorn
Ground Water Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502

SUBJECT: NOTICE OF INTENT TO DISCHARGE, HYDROGEOLOGIC WORKPLAN WELL R-16, DRILLING WATER

Dear Mr. Young and Mr. Frischkorn:

On November 26-27, 2002, your agency concurred with Los Alamos National Laboratory's proposal to land apply water produced during the drilling of Hydrogeologic Workplan Well R-16 (November 26, 2002, personal communication, Mr. Curt Frischkorn, NMED, and Mr. Bob Beers, LANL; and November 27, 2002, voicemail, Mr. John Young, NMED, to Mr. David Broxton, LANL). The Laboratory's proposal to discharge drilling water from Workplan Well R-16 was made in accordance with the requirements of the Hydrogeologic Workplan Notice of Intent (NOI) submitted to your agency on August 2, 2001, and subsequently revised on July 16, 2002. Under the Hydrogeologic Workplan NOI, when drilling water produced from a Hydrogeologic Workplan Well exceeds a New Mexico Water Quality Control Commission (NM WQCC) Regulation 3103 ground water standard or a RCRA regulatory limit the Laboratory will coordinate disposal with the NMED. Since the drilling water produced from Workplan Well R-16 exceeds the NM WQCC Regulation 3103 ground water standard for manganese (Mn), your agency's concurrence was requested.

The Laboratory has containerized approximately 60,000 gallons of water produced during the drilling of Workplan Well R-16. Workplan Well R-16 is located in White Rock near Los Alamos County's White Rock WWTP. Candidate sites for the land application of R-16 drilling water are as follows:

- The road to Mortandad Canyon from TA-52. Depth to ground water: regional = 1260 ft.
- The road to the R-14 drill site: Depth to ground water: regional = 1180 ft.
- The roads at TA-49: Depth to ground water: regional = 1180 ft.



Because current weather conditions are not conducive to evaporation (lower temperatures, higher humidity) and recent precipitation has increased soil moisture, it is necessary for the Laboratory to utilize a variety of land application sites. The conditions at each site will be carefully evaluated before use. In accordance the Workplan NOI, no ponding, pooling, or run-off of the discharged water will be permitted. Information regarding the quality of the Workplan Well R-16 drilling water is provided below.

Water Quality Data

Attachment 1.0 contains analytical reports (metals, general chemistry, perchlorate, nitrate, total Hg, and tritium) from the sampling of containerized drilling water from Workplan Well R-16. All samples were filtered prior to analysis (with the exception of total Hg). Sample results were compliant with all NM WQCC Regulation 3103 ground water standards with the exception of the following contaminant:

Contaminant	Screening Result (mg/L)	NM WQCC ground water standard (mg/L)
Mn	0.61	0.2
Mn	1.29	0.2
Mn	0.18	0.2

No perchlorate or tritium were detected in the Workplan Well R-16 drilling water at concentrations greater than the analytical laboratory's Method Detection Limits (MDLs).

Please call me at (505) 667-6969 or Roy Bohn of the Laboratory's Environmental Restoration Project (RRES-R) at (505) 665-5138 if additional information is required.

Sincerely,



Bob Beers
Water Quality & Hydrology Group

BB/tml

Attachments: a/s

- Cy: M. Leavitt, NMED/GWQB, Santa Fe, NM, w/att.
J. Davis, NMED/SWQB, Santa Fe, NM, w/att.
J. Bearzi, NMED/HWB, Santa Fe, NM, w/att.
J. Vozella, DOE/OLASO, w/o att., MS A316
G. Turner, DOE/OLASO, w/att., MS A316
M. Johansen, DOE/OLASO, w/att., MS A316
J. Holt, ADO, w/att., MS A104

Cy (continued):

B. Ramsey, RRES-DO, w/o att., MS J591
K. Hargis, RRES-DO, w/o att., MS J591
D. Stavert, RRES-EP, w/att., MS J591
C. Nylander, RRES-GP, w/o att., MS M992
S. Rae, RRES-WQH, w/att., MS K497
D. Rogers, RRES-WQH, w/o att., MS K497
M. Saladen, RRES-WQH, w/o att., MS K497
J. McCann, RRES-WQH, w/o att., MS M992
R. Bohn, RRES-R, w/att., MS M992
D. Volkman, FWO-UI, w/o att., MS K718
RRES-WQH File, w/att., MS K497
IM-5, w/att., MS A150

ATTACHMENT 1.0

HYDROGEOLOGIC WORKPLAN
WELL R-16

CONTAINERIZED DRILLING WATER

ANALYTICAL REPORTS:

- GENERAL CHEMISTRY
 - METALS
 - PERCHLORATE
- NITRATE/NITRITE
 - TOTAL HG
 - TRITIUM

SAMPLE DATES:

SEPTEMBER 9, 2002
SEPTEMBER 12, 2002
OCTOBER 1, 2002

Workplan Well R-16 Drilling Water
 Screening Data

ER WATER SAMPLES

SAMPLE ID	DESCRIPTION	DATE MM/DD/YY	ER Req#	Ag ppm	Al Std.D.		As Std.D.		B Std.D.		Ba ppm
					ppm +/-	ppm +/-	ppm +/-	ppm +/-			
GW16-02-49356	R-16 mud, analyzed after filtering	09/09/02	1188S	<0.0003	0.57	0.01	0.033	0.001	0.064	0.002	0.30
GW16-02-49357	R-16 mud, analyzed after filtering	09/09/02	1188S	<0.0003	0.84	0.01	0.021	0.001	0.077	0.001	0.70
GW16-02-49358	R-16 mud, analyzed after filtering	09/09/02	1188S	<0.0003	0.22	0.01	0.023	0.001	0.074	0.001	0.094

Workplan Well R-16 Drilling Water
Screening Data

SAMPLE ID	Std.D. +/-	Be ppm	Br ppm	Ca ppm	Std.D. +/-	Cd ppm	Cl ppm	Cl03 ppm	Cl04 ppm	Co ppm	Std.D. +/-	Cr ppm	Std.D. +/-	Cs ppm	Cu ppm
GW16-02-49356	0.01	<0.002	<0.1	103	1	<0.001	7.15	<0.1	<0.01	0.0018	0.0001	0.010	0.001	<0.003	0.010
GW16-02-49357	0.01	<0.002	0.08	144	4	<0.001	7.50	<0.1	<0.01	0.0022	0.0001	0.013	0.001	<0.003	0.0078
GW16-02-49358	0.001	<0.002	<0.1	20.3	0.6	<0.001	10.9	<0.1	<0.01	0.0013	0.0001	0.0093	0.0006	<0.003	0.0095

Workplan Well R-16 Drilling Water
Screening Data

SAMPLE ID	Std.D.	F	Fe Std.D.	Hardness	Hg Std.D.	K Std.D.	Li Std.D.	Mg Std.D.	Mn Std.D.
	+/-	ppm	ppm +/-	CaCO3 ppm	ppm +/-	ppm +/-	ppm +/-	ppm +/-	ppm +/-
GW16-02-49356	0.001	0.28	0.28 0.01	305	0.0018 0.0002	7.87 0.03	0.14 0.01	11.7 0.1	0.61 0.01
GW16-02-49357	0.0002	0.41	0.73 0.01	439	0.0015 0.0001	10.7 0.1	0.13 0.01	19.3 0.2	1.29 0.08
GW16-02-49358	0.0002	0.40	0.24 0.01	62.5	0.0009 0.0001	4.27 0.05	0.12 0.01	2.86 0.03	0.18 0.01

Workplan Well R-16 Drilling Water
Screening Data

SAMPLE ID	Mo Std.D.		Na Std.D.		Ni Std.D.		NO2 ppm	NO3 ppm	N total ppm	Oxalate ppm	Pb Std.D.		PO4 ppm	Rb Std.D.	
	ppm	+/-	ppm	+/-	ppm	+/-					ppm	+/-		ppm	+/-
GW16-02-49356	0.057	0.001	296	1	0.010	0.001	0.51	0.75	0.32	<0.1	0.0015	0.0001	1.29	0.011	0.001
GW16-02-49357	0.066	0.002	265	2	0.012	0.001	0.44	0.21	0.18	0.41	0.0015	0.0001	1.20	0.019	0.001
GW16-02-49358	0.068	0.003	237	2	0.0042	0.0001	0.27	3.52	0.88	0.49	0.0021	0.0001	1.56	0.006	0.001

Workplan Well R-16 Drilling Water
 Screening Data

SAMPLE ID	Sb Std.D.		Se Std.D.		Si Std.D.		SiO2 ppm calc	SO4 ppm	Sn ppm	Sr Std.D.		Th Std.D.		Ti Std.D.	
	ppm	+/-	ppm	+/-	ppm	+/-				ppm	+/-	ppm	+/-	ppm	+/-
GW16-02-49356	0.0011	0.0001	0.004	0.001	21.5	0.1	46.0	177	<0.002	1.46	0.01	<0.001		0.004	0.001
GW16-02-49357	<0.001		0.004	0.001	24.3	0.3	52.0	224	<0.002	1.69	0.01	0.0016	0.0001	0.009	0.001
GW16-02-49358	<0.001		0.002	0.001	21.5	0.1	46.0	141	<0.002	0.44	0.01	<0.001		<0.001	

Workplan Well R-16 Drilling Water
 Screening Data

SAMPLE ID	Tl	U Std.D.		V std.D.		Zn Std.D.		Acetate ppm	Formate ppm	comments
	ppm	ppm	+/-	ppm	+/-	ppm	+/-			
GW16-02-49356	<0.002	0.0082	0.0001	0.022	0.001	0.008	0.001	+	+	unknown peak before NO3
GW16-02-49357	<0.002	0.0092	0.0001	0.030	0.002	0.006	0.001	+	+	unknown peak before NO3
GW16-02-49358	<0.002	0.0066	0.0001	0.013	0.001	0.002	0.001	+	+	unknown peak before NO3

Certificate of Analysis

Company : Los Alamos National Lab
 Address : PO Box 1663
 TA-3, Bldg. 271, Drop Pt. 01U
 Los Alamos, New Mexico 87545
 Contact: Keith Greene
 Project: Groundwater Project

Report Date: October 24, 2002

Page 1 of 1

Client Sample ID: GW16-02-49614 05 Project: LANL00401
 Sample ID: 68194001 Client ID: LANL004
 Matrix: Ground Water
 Collect Date: 01-OCT-02 00:00
 Receive Date: 03-OCT-02
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis Federal											
<i>7470 Cold Vapor Hg Liquid</i>											
Mercury	U	ND	0.943	4.00	ug/L	20	NOR1	10/23/02	1818	210028	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep Liquid	KHN	10/22/02	1500	210025

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Stacy Griffin.

Reviewed by _____

R-16

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Company : Los Alamos National Lab
 Address : PO Box 1663
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 Los Alamos, New Mexico 87545
 Contact: Keith Greene
 Project: Groundwater Project

Report Date: October 24, 2002

Page 1 of 1

Client Sample ID: GW16-02-49615 05
 Sample ID: 68194002
 Matrix: Ground Water
 Collect Date: 01-OCT-02 00:00
 Receive Date: 03-OCT-02
 Collector: Client

Project: LANL00401
 Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Mercury Analysis Federal										
<i>7470 Cold Vapor Hg Liquid</i>										
Mercury	U	ND	0.943	4.00	ug/L	20	NOR1 10/23/02	1824	210028	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep Liquid	KHN	10/22/02	1500	210025

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	

Notes:

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- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Contact: Keith Greene
Project: Groundwater Project

Report Date: October 24, 2002

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Client Sample ID: GW16-02-49616 05
Sample ID: 68194003
Matrix: Ground Water
Collect Date: 01-OCT-02 00:00
Receive Date: 03-OCT-02
Collector: Client

Project: LANL00401
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Mercury Analysis Federal										
<i>7470 Cold Vapor Hg Liquid</i>										
Mercury	U	ND	0.0472	0.200	ug/L	1	NOR1 10/22/02	1212	207403	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep Liquid	KHN	10/21/02	1630	207402

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	

Notes:

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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Reviewed by _____

R-16

Certificate of Analysis

Company: Los Alamos National Lab
 Address: PO Box 1663
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 Los Alamos, New Mexico 87545
 Contact: Keith Greene
 Project: Groundwater Project

Report Date: September 23, 2002

Page 1 of 1

Client Sample ID: GW16-02-49356 13/14
 Sample ID: 67047001
 Matrix: Misc Liquid
 Collect Date: 12-SEP-02
 Receive Date: 13-SEP-02
 Collector: Client
 Project: LANL00401
 Client ID: LANL004

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Liquid Scint												
<i>LSC, Tritium Dist, Liquid</i>												
Tritium		-55.3	252	68.0	250	pCi/L		CAF1	09/23/02	1102	202687	1

The following Analytical Methods were performed

Method	Description
1	EPA 906.0

Notes:

- TPU is calculated at the 67% confidence level (1-sigma).
- The Qualifiers in this report are defined as follows :
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- B Analyte found in the sample as well as the associated blank.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
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- X Lab-specific qualifier - must be fully described in case narrative and data summary package

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R-16

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 Contact: Keith Greene
 Project: Groundwater Project

Report Date: September 23, 2002

Page 1 of 1

Client Sample ID: GW16-02-49357 13/14
 Sample ID: 67047002
 Matrix: Misc Liquid
 Collect Date: 09-SEP-02
 Receive Date: 13-SEP-02
 Collector: Client

Project: LANL00401
 Client ID: LANL004

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst/Date	Time	Batch	Mtd.
Rad Liquid Scint											
<i>LSC, Tritium Dist, Liquid</i>											
Tritium		-27.3	170	50.7	250	pCi/L		CAF1 09/20/02	1157	202687	1

The following Analytical Methods were performed

Method	Description
1	EPA 906.0

Notes:

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Reviewed by _____

R-16

Certificate of Analysis

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 Los Alamos, New Mexico 87545
 Contact: Keith Greene
 Project: Groundwater Project

Report Date: September 23, 2002

Page 1 of 1

Client Sample ID: GW16-02-49358 13/14
 Sample ID: 67047003
 Matrix: Misc Liquid
 Collect Date: 09-SEP-02
 Receive Date: 13-SEP-02
 Collector: Client

Project: LANL00401
 Client ID: LANL004

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst/Date	Time	Batch Mtd.
Rad Liquid Scint										
LSC, Tritium Dist, Liquid										
Tritium		-53.1	165	48.5	250	pCi/L		CAPI 09/20/02	1327	202687 1

The following Analytical Methods were performed

Method	Description
	EPA 906.0

Notes:

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