0082935

Meeting Minutes Transmittal

Low Level Burial Grounds
Project Managers Meeting
825 Jadwin/Room 340
Richland, Washington
July 23, 2009

The undersigned indicate by their signatures that these meeting minutes reflect the actual occurrences of the above dated Project Managers Meeting. Signatures denote concurrence with the content only and are not intended to imply agreement to any commitments.

Project Manager Representative, Ecology — Date: 8/27/09

Project Manager Representative, RL — Date: 27 Aug 09

Project Manager Representative, CHPRC — Date: 8.27.09

LLBG Administrative Record	H6-08
MS Collins	A6-38
DG Singleton	H0-57
BM Barnes	T4-52
LL Fritz	T3-11

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LLBG PROJECT MEETING MINUTES
Project Managers Meeting
825 Jadwin/Room 340/700 Area
Richland, Washington

July 23, 2009

I. Approval of June 25, 2009 LLBG PMM minutes (Ecology/DOE-RL/CHPRC).

A. The PMM minutes were approved by RL and CHPRC. Ecology attended the meeting via telephone, and will sign at a later date.

II. Operational Status

A. Waste Received and Transferred during June 2009 (see table below)

	Volume M^3	From	To	# Containers*
Mixed Waste Received (includes interfacility transfers)	46.58	PFNW	LLBG	13
Mixed Waste Transferred Onsite	30.00	LLBG	ETF	1
Mixed Waste Shipped Offsite	7.94	LLBG	PermaFix TN	8

*Includes containers of all sizes (55-gallon drums, 85-gallon drums, 5'x5'x9' boxes, etc.)

	# Compartments
Defueled reactor compartments received in June 2009.	0

III. Status of Previous Agreements and Commitments

A. There were no previous agreements and commitments to status.

IV. New Agreements and Commitments

A. There were no new agreements and commitments.

V. Near Term Schedules and Ongoing Activities (Milestones, TSD Unit)

A. LLBG Permit Status

Michelle Mandis (Ecology) stated that there was no change in status for the LLBG permit.

B. Groundwater Sampling

Stuart Luttrell (CHPRC) reported that all of the monitoring wells in Waste Management Area 1 (WMA) were sampled in June. There were two wells that exceeded the critical mean value on the northeast corner of the site in the BY cribs area, but that is a regular trend. WMA 2 was sampled in April, and the results are being reviewed. WMA 3 was sampled in March, and there are no unusual results. The next sampling in WMA 3 is in September. WMA 4 is

undergoing its routine sampling this month (July). The sampling and assessment evaluation report for the excedence of total organic carbon (TOC) in WMA 4 has been completed. Mr. Luttrell stated that the results indicate there are no dangerous constituents associated with the elevated TOC and no dangerous constituents in the groundwater from the burial grounds. The assessment report will be delivered to Ecology today. Michelle Mandis (Ecology) stated that she did not want to close the issue of elevated TOCs until it is determined what it is attributed to. Mr. Luttrell noted that the intent of the regulations is to identify whether there are dangerous constituents in the groundwater that cause the elevated TOCs, which is negative. The routine indicator evaluation monitoring will be reinstituted. If TOCs continue to be elevated, groundwater sampling information will identify that it exceeds the critical mean value and will state that the sampling and assessment evaluation report has already identified no dangerous constituents associated with the TOC. Mr. Luttrell added that all the organics that are in the groundwater monitoring list dangerous constituents were evaluated.

VI. Approved Changes Signed off in Accordance with TPA Section 12.2

A. There were no approved changes signed.

VII. General Discussion

A. Mike Collins (RL) stated that Greg Berlin (CHPRC) will have the procedural closure information for the un-used burial grounds within a month.

VIII. Actions

Description	Status	Date
RL/CHPRC will provide Ecology with an information package on unused areas of burial grounds.	Pending	4/23/2009
	Expected in next few weeks	7/23/2009
Ecology will provide feedback on RL/CHPRC responses to Ecology's questions on the groundwater monitoring plan.	Pending	5/28/09
	The LLWMA-4 groundwater quality assessment report will be provided to Ecology today	7/23/09

IX. Documents for Submittal to the Administrative Record

A. The LLWMA-4 groundwater quality assessment report will be submitted.

X. Next Project Managers Meeting - August 27, 2009.

LLBG PROJECT MANAGERS MEETING
825 Jadwin/Room 340
Richland, Washington
July 23, 2009
11:00 a.m. to 11:10 a.m.

Agenda

I. Approval of June 25, 2009, LLBG PMM Minutes (Ecology/DOE-RL/CHPRC)

II. Operational Status

Waste Received and Transferred during June 2009 (see tables)

	Volume M^3	From	To	# Containers*
Mixed Waste Received (includes interfacility transfers)	46.58	PFNW	LLBG	13
Mixed Waste Transferred Onsite	30.00	LLBG	ETF	1
Mixed Waste Shipped Offsite	7.94	LLBG	PermaFix TN	8

* Includes containers of all sizes (55-gallon drums, 85-gallon drums, 5'x5'x9' boxes, etc.)

	# Compartments
Defueled reactor compartments received in June 2009.	0

III. Status of Previous Agreements and Commitments

IV. New Agreements and Commitments

V. Near Term Schedules and Ongoing Activities (Milestones, TSD Unit)
   A. LLBG Permit Status
   B. Groundwater Sampling

VI. Approved Changes signed off in Accordance with TPA Section 12.2

VII. General Discussion

VIII. Actions

Description	Status	Date
RL/CHPRC will provide Ecology with an information package on unused areas of burial grounds by July 23, 2009	Pending	4/23/2009
Ecology will provide feedback to RL/CHPRC comments on the groundwater monitoring plan by April 7, 2009	Pending	4/23/2009
	This action was deleted. The 5/28/09 action below addresses this action	6/25/09
Ecology will provide feedback on RL/CHPRC responses to Ecology's questions on the groundwater monitoring plan. Note revision of this action from comments to responses to questions.	Pending	5/28/09

IX. Documents for Submittal to the Administrative Record

X. Next Project Managers Meeting – 11:00 a.m. August 27, 2009

LLBG Sign Up Sheet

name	company	phone	signature
K. CLOUSE	CHPRC	376-2377	K. Clouse
Kathy Knox	Knox Court Reporting	946-5535	Kathy Knox
PAUL W. MARTIN	CHPRC	376-6620	Paul W. Martin
Brian Dixon	CHPRC	376-7053	B Dixon
LINDA Petersen	CHPRC	373-4200	L Petersen
Doel William J.	CHPRC/ER	376-4706	[illegible]
Stuart Luttrell	CHPRC/SGRP	376-4531	[illegible]
Michael Collins	DOE-RL	376-6536	[illegible]
Steve Szendre	Ecology	372-7911	Steve Szendre
Michelle Mandis	Ecy	2-7970	Michelle Mandis
LORI FRITZ	CHPRC	373.0350	[illegible]
Tony Mislchs	CHPRC	6-7313	
Jim Rasmussen	YAHSGS	376-0304	Jim Rasmussen

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Washington State Department of Ecology
Nuclear Waste Program
Hanford Project

Document Receipt Verification

ADDRESSEE: MICHELLE MANDIS
RECEIVER SIGNATURE:
DATE/TIME DELIVERED: Thursday, July 23, 2009 2:34 PM
DOCUMENT TITLE: **SGW-41903 REVISION 0 REISSUE** **GROUNDWATER QUALITY ASSESSMENT FOR THE LOW-LEVEL WASTE MANAGEMENT AREA-4**

SGW-41903
Revision 0 Reissue

Groundwater Quality Assessment for the Low-Level Waste Management Area-4

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

United States Department of Energy
P.O. Box 550
Richland, Washington 99352

Approved for Public Release;
Further Dissemination Unlimited

SGW-41903
Revision 0 Reissue

Groundwater Quality Assessment for the Low-Level Waste Management Area-4

Date Published
July 2009

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

United States Department of Energy
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1 Introduction and Background

Groundwater beneath Low-Level Waste Management Area-4 (LLWMA-4) has been monitored under the *Resource Conservation and Recovery Act of 1976* (RCRA) in interim status under a groundwater indicator parameters evaluation program in accordance with WAC 173-303-400, "Dangerous Waste Regulations; Interim Status Facility Standards" (and by reference, 40 CFR 265.92, "Sampling and Analysis"), as stated in PNNL-14859, *Interim Status Groundwater Monitoring Plan for Low-Level Waste Management Areas 1 to 4, RCRA Facilities, Hanford, Washington*, and related interim change notice (ICN)-1 and ICN-2.

Total organic carbon, an indicator parameter, exceeded the critical mean of 790 µg/L in well 299-W15-224 on August 11, 2008, with a concentration between 1,090 and 1,300 µg/L among the quadruplicate analyses. The well was resampled on October 21, 2008, and the new results became available in November 2008. The new results were 2,100 and 2,200 µg/L, again exceeding the critical mean. A request was submitted to resample the well again and analyze for an extensive list of volatile organic compounds, semivolatile organic compounds, and total petroleum hydrocarbons in an attempt to identify the cause of elevated total organic carbon. That sampling took place in December 2008, and the sampling results were received in January 2009. No organic compounds were identified to account for the elevated total organic carbon.

In January 2009, the Soil and Groundwater Remediation Project notified the U.S. Department of Energy (DOE) and other CH2M HILL Plateau Remediation Company organizations regarding the situation at LLWMA-4. DOE then notified the Washington State Department of Ecology (09-AMCP-0058, "Notification of Exceedance of Critical Mean Values for an Indicator Parameter at Non-Radioactive Dangerous Waste Landfill and Low-Level Burial Grounds, Low-Level Waste Management Area 4"). The Soil and Groundwater Remediation Project also prepared a groundwater quality assessment plan to evaluate the elevated total organic carbon (SGW-40211, *First Determination RCRA Groundwater Quality Assessment Plan for the Low-Level Burial Grounds Low-Level Waste Management Area-4*). The plan proposed sampling wells 299-W15-224, 299-W15-30, and 299-W15-83 for analysis of 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Appendix IX, "Ground-Water Monitoring List," organic constituents and other constituents potentially responsible for elevated total organic carbon. Wells 299-W15-30 and 299-W15-83 are adjacent to and on either side of well 299-W15-224.

2 Results of First Determination Sampling

Prior to collecting the first determination samples, the pump was removed from well 299-W15-224, and a camera survey was completed to determine if there were any anomalies in the well. No anomalies were noted; the pump was replaced and the first determination samples were collected on March 15 and 16, 2009. The samples were analyzed for the 40 CFR 264, Appendix IX, list of volatile and semivolatile organic compounds, total organic carbon, chemical oxygen demand, oil and grease, phenols, pesticides, herbicides, polychlorinated biphenyls, dioxins, dissolved oxygen, total petroleum hydrocarbons (diesel, gasoline, and kerosene ranges), and coliform bacteria. Dissolved oxygen, total petroleum hydrocarbons, coliform bacteria, chemical oxygen demand, oil, and grease were analyzed to evaluate potential causes for the elevated total organic compounds, in addition to dangerous constituents in the 40 CFR 264, Appendix IX, list of volatile and semivolatile organic compounds.

Of the approximate 750 analytical results received from the March 2009 first determination, only 15 compounds were present at a detectable quantity. The detectable compounds are listed in Table 1. The associated field parameters are shown in Table 2. No data were received for diphenylamine. The laboratory reported that N-nitrosodiphenylamine decomposes in the gas chromatograph inlet and cannot be distinguished from diphenylamine. Results were reported only for N-nitrosodiphenylamine. All N-nitrosodiphenylamine results were considered non-detect.

Table 1. Organic Compounds Detected in the March 2009 First Determination Sampling at LLWMA-4

Well	Constituent	Analytical Method[a]	Concentration (µg/ L)	Associated Laboratory Flag[b]
299-W15-224	Dibenz[a,h]anthracene	8270 SVOA GCMS	2.3	J
299-W15-224	Carbon tetrachloride	8260 VOA GCMS	42	D
299-W15-224	Chloroform	8260 VOA GCMS	0.41	J
299-W15-224	Total organic carbon	9060 TOC	1190	
299-W15-30	Bis(2-ethylhexyl) phthalate	8270 SVOA GCMS	2.3	J
299-W15-30	Dibenz[a,h]anthracene	8270 SVOA GCMS	1.6	J
299-W15-30	Carbon tetrachloride	8260 VOA GCMS	120, 130[c]	D, D
299-W15-30	Chloroform	8260 VOA GCMS	1.1, 1.2[c]	
299-W15-30	Methylene chloride	8260 VOA GCMS	7.8	
299-W15-30	Trichloroethene	8260 VOA GCMS	0.19, 0.16[c]	J, J
299-W15-30	Total organic carbon	9060 TOC	351, 343[c]	B, B
299-W15-30	Octachlorodibenzo-p-dioxin	8020 DIOXIN GCMS	0.0000034	Q, J
299-W15-83	Carbon tetrachloride	8260 VOA GCMS	41	
299-W15-83	Chloroform	8260 VOA GCMS	0.34	J
299-W15-83	Total organic carbon	9060 TOC	465	B

a. Analytical Methods (method numbers are from EPA, 1986, *Test Methods for Evaluating Solid Waste – Physical/Chemical Methods*, 3rd ed., SW-846)

b. Laboratory Flags:

B = Analyte was detected in both the associated quality control (QC) blank and the sample

D = Analyte was identified in an analysis at a secondary dilution factor (i.e., dilution factor different than 1.0)

J = Estimated value; constituent detected at a level less than the required detection limit or practical quantitation limit and greater than or equal to the minimum detection limit

Q = Estimated maximum concentration; one of the qualitative identification criterion is not met

c. Two concentrations represent duplicate analyses

SVOA GCMS = semivolatile organic analysis gas chromatograph mass spectrometer

TOC = total organic carbon

VOA GCMS = volatile organic analysis gas chromatograph mass spectrometer

Table 2. Field Parameters Associated with the March 2009 First Determination Sampling at LLWMA-4

Field Parameter	Well 299-W15-224	Well 299-W15-30	Well 299-W15-83
pH (unitless)	7.73	7.98	7.8
Temperature (°C)	18.9	19.5	19.7
Specific conductance (µS/cm)	509	520	544
Turbidity (NTU)*	1.67	0.33	3.42
Dissolved oxygen (µg/L)	8,320	7,930	7,730

*Nephelometric turbidity unit

Six volatile or semivolatile compounds were identified in the first determination sampling (Table 1). Of those, only some of the chloroform, carbon tetrachloride, and methylene chloride results do not have associated laboratory qualifiers. All of the other analyses results reported in Table 1 have laboratory qualifier flags associated with estimated values (J), constituent detected in QC blank (B), and/or estimated concentration (Q). Also, a duplicate sample was collected from well 299-W15-30 and analyzed for all constituents. The results from the duplicate analyses for methylene chloride, dibenz[a,h]antyhracene, and bis(2-ethylhexyl) phthalate were considered non-detect.

Chloroform is a possible biodegradation product of carbon tetrachloride and sanitary sewer discharges (DOE/RL-2008-66, *Hanford Site Groundwater Monitoring for Fiscal Year 2008*). Carbon tetrachloride is a widespread contaminant in the 200 West Area and is found in the groundwater downgradient of LLWMA-4 in the 200 West Area. Carbon tetrachloride is attributed to discharges associated with the Plutonium Finishing Plant and not to LLWMA-4. Trichloroethene is a regional contaminant in the 200 West Area and is also attributed to Plutonium Finishing Plant discharges. Methylene chloride was used as a solvent in the laboratory and detection of methylene chloride has been attributed to laboratory contamination.

Dibenz[a,h]anthracene is a polycyclic aromatic hydrocarbon. No commercial production or use of dibenz[a,h]anthracene is known. It occurs as a component of coal tars, shale oils, and soots and has been detected in gasoline engine exhaust, coke oven emissions, cigarette smoke, charcoal broiled meats, vegetation near heavily traveled roads, and surface water and soils near hazardous waste sites (http://rais.ornl.gov/tox/profiles/dibenz_a_h_anthracene_c_V1.shtml). The main use of bis(2-ethylhexyl) phthalate is in the production of polyvinyl chloride and vinyl chloride resins, where it is added to plastics to make them flexible (http://www.epa.gov/ttn/uatw/hlthef/eth-phth.html).

No specific use for octachlorodibenzo-p-dioxin was found, but dioxins in general are produced when organic material is burned in the presence of chlorine as in coal fired plants, municipal waste incinerators, metal smelting, and diesel trucks. Dioxins are also produced during bleaching fibers for paper or textiles and in the manufacture of chlorinated phenols.

Field QC samples analyzed in addition to the duplicate samples taken from well 299-W15-30 include a field transfer blank associated with well 299-W15-224. Also, laboratory QC samples included laboratory-control samples, method (reagent) blanks, duplicate analyses, matrix spike and matrix spike duplicates, and blanks. Some of the laboratory QC samples were outside QC limits but no obvious problems were noted with the groundwater data.

The field transfer blank associated with well 299-W15-224 contained concentrations of carbon tetrachloride and chloroform very near the concentrations of those compounds in the groundwater sample. The concentration of carbon tetrachloride in the groundwater sample was 42 μg/L. The concentration in the field transfer blank was 46 μg/L. The concentration of chloroform in the groundwater sample was 0.41 μg/L and the concentration in the field transfer blank was 0.39 μg/L. The field transfer blank bottle may have been filled with well water and not with deionized water.

The field parameters associated with the first determination samples are shown in Table 2. The field parameters also give an indication that the samples were representative of groundwater. All the field parameters are within the historical range for groundwater at LLWMA-4.

Summing all the detected organic compounds for each well gives totals of 48.7 μg/L total organic compounds for well 299-W15-224, 142.9 μg/L for well 299-W15-30, and 41.3 μg/L for well 299-W15-83. (For conservatism, this assumes that "J" flagged results [see Table 1] are valid.) The amount of detectable organic compounds is not nearly large enough to account for the measured total organic carbon in any of the wells.

3 Conclusion

No identified dangerous constituent(s) is responsible for the elevated total organic carbon in well 299-W15-224. Carbon tetrachloride is attributed to 200 West Area regional contaminant plumes, not to LLWMA-4. Chloroform is a possible biodegradation product of carbon tetrachloride and sanitary sewer discharges.

It is concluded that the LLWMA-4 has not contaminated the unconfined aquifer with dangerous constituents, and the monitoring regime at LLWMA-4 will revert to detection level monitoring.

4 References

09-AMPC-0058, 2009, "Notification of Exceedance of Critical Mean Values for an Indicator Parameter at Non-Radioactive Dangerous Waste Landfill and Low-Level Burial Grounds, Low-Level Waste Management Area 4" (letter to J. A. Hedges, Washington State Department of Ecology, from M. S. McCormick), U.S. Department of Energy, Richland Operations Office, Richland, Washington, January 20.

40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Appendix IX, "Ground-Water Monitoring List," *Code of Federal Regulations*.

40 CFR 265.92, "Sampling and Analysis," *Code of Federal Regulations*.

DOE/RL-2008-66, 2009, *Hanford Site Groundwater Monitoring for Fiscal Year 2008*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

EPA, 1986, *Test Methods for Evaluating Solid Waste – Physical/Chemical Methods,* 3rd ed., SW-846, Office of Solid Waste and Energy Response, U.S. Environmental Protection Agency, Washington, D.C.

PNNL-14859, 2004, *Interim Status Groundwater Monitoring Plan for Low-Level Waste Management Areas 1 to 4, RCRA Facilities, Hanford, Washington*, Pacific Northwest National Laboratory, Richland, Washington.

SGW-40211, 2009, *First Determination RCRA Groundwater Quality Assessment Plan for the Low-Level Burial Grounds Low-Level Waste Management Area-4,* Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington.

WAC 173-303-400, "Dangerous Waste Regulations; Interim Status Facility Standards," *Washington Administrative Code.*