**ENVIRONMENTAL
RESTORATION
PROGRAM**

**Field Grouting Summary Report
on the WAG 4 Seeps 4 and 6
Removal Action Project,
Oak Ridge National Laboratory,
Oak Ridge, Tennessee**

Volume 2. Appendixes A—D

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LOCKHEED MARTIN ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

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Environmental Management Activities at the
OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37831
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LOCKHEED MARTIN ENERGY SYSTEMS, INC.
for the
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under contract DE-AC05-84OR21400

EXECUTIVE SUMMARY

During the summer of 1996, a unique multi-phase, multi-stage, low-pressure permeation grouting pilot program was performed inside portions of four unlined waste disposal trenches at Waste Area Grouping (WAG) 4 at Oak Ridge National Laboratory (ORNL) in Oak Ridge, Tennessee. The project was deemed a non-time-critical removal action under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA); however, due to a history of heavy precipitation in the fall, the schedule was fast-tracked to meet an October 31, 1996 grouting completion date.

The technical objective of the removal action was to reduce the off-site transport of Strontium 90 (^{90}Sr) by grouting portions of four waste disposal trenches believed to be responsible for over 70 percent of the ^{90}Sr leaving the site. A goal of the grouting operation was to reduce the average in situ hydraulic conductivity of the grouted waste materials to a value equal to or less than 1×10^{-6} cm/sec. This target hydraulic conductivity value was established to be at least two orders of magnitude lower than that of the surrounding natural ground.

Field grouting activities started in July 1996 and were completed October 21, 1996. Sleeve pipes (driven semi-remotely) were injected at least four times with multiple formulae of regular portland cement based grouts, ultrafine cement based grouts, and acrylamide grouts. Multiple-hole grout injection was monitored using real-time monitoring equipment allowing apparent Lugeon values to be continuously calculated by treating the entire grouting operation as an extended hydraulic conductivity test using grout as the test fluid. By comparing the in situ permeability of the formation to the apparent Lugeon values, the grout formulae were continually adjusted to ensure injection of the grout formulation containing the maximum possible solids content without limiting its ability to permeate the formation. Regular portland and ultrafine cement based grouts had delayed set-times and contained up to eight different ingredients.

Approximately 137,600 gallons of grout were injected. At the completion of production grouting, the effectiveness of the grout spread and the residual in situ hydraulic conductivity of the grouted mass were assessed. The results of hydraulic conductivity tests performed through check pipes after grouting indicate that the average in situ hydraulic conductivity of the waste materials was reduced to a value less than 1×10^{-6} cm/sec. The success of this project demonstrates the potential of low pressure permeation grouting as a predictable engineered containment technology for the treatment of low level nuclear waste burial sites.

This report describes brief background to the project, describes and analyzes the grouting operations, draws conclusions from the work performed, and presents some of the "lessons learned."

APPENDIX A
PIPE DRIVING RECORDS

PIPE DRIVING SUMMARY
TRENCH I

New	Old	Depth	Date	Full	Partial	BLOWS PER FOOT PER SPECIFIC MEASURE																				Total	
Hole No.	Hole No.	Driven	Driven	Depth	Depth	0 - 1'	1 - 2'	2 - 3'	3 - 4'	4 - 5'	5 - 6'	6 - 7'	7 - 8'	8 - 9'	9 - 10'	10 - 11'	11 - 12'	12 - 13'	13 - 14'	14 - 15'	15 - 16'	16 - 17'	17 - 18'	18 - 19'	19 - 20'	Blows	Comments
1001	1001	12.3	23 July 1996	X																						0	
1002	1002	12.5	23 July 1996	X																						0	
1003	1003	13.8	23 July 1996	X																						0	
1004	1004	14.7	23 July 1996	X																						0	
1005	1005	12.1	24 July 1996	X																						0	
1006	1006	13.8	24 July 1996	X																						0	
RW107	RW107	10.0	7 August 1996	X		4	4	4	6	6	2	2	2	3	3											36	Well 107 finally completed on third attempt screen installed
1008	1008	14.0	24 July 1996	X																						0	
1009	1009	12.7	24 July 1996	X																						0	
1010	1010	14.0	24 July 1996	X																						0	
1011	1011	14.8	8 August 1996	X																						0	Note Re-drill 4" at elev's request. No charge for record only
1012	1012	14.7	24 July 1996	X																						0	
1013	1013	14.3	24 July 1996	X																						0	
1014	1014	14.8	1 August 1996	X		»			21	blows				< 10	11	10	3	4	3	7						59	0.9' Off to assess blows
1015	1015	14.7	1 August 1996	X		4	9	6	8	9	7	10	9	7	12	11	8	7	8	6						121	Fairly soft
1016	1016	15.5	1 August 1996	X		9	10	8 >				11	blows			< 1	1	1	1	1	5					39	> Very soft <
1017	1017	14.6	1 August 1996	X		5	6	5	4	4	4	3	3 >	8	7	6	7	6	9	< 8						74	Fairly soft
1018	1018	13.8	1 August 1996	X		6	7	6	5	4	9	7	6	12	11	9	14	15	13							124	Fairly soft
1019	1019	14.8	1 August 1996	X		4	5	4	3	6	4	5	5	1	2	2	1	1	3	5						51	Fairly soft
1020	1020	13.0	1 August 1996	X		1	2	3	7	6	9	8	7	8	7	9	28	29								124	Fairly hard towards bottom of trench
1021	1021	14.7	1 August 1996	X		6	7	3	10	5	6	7	13	17	15	15	14	16	13	17						164	Fairly hard compare to adjacent holes
1022	1022	14.9	1 August 1996	X		>		14	blows				< >		11	blows					<					25	4" Hard to count (very soft) 11" Hard to count (very soft)
1023	1023	14.8	1 August 1996	X		3	4	2	6	5	4	3	7	4	5	6	3	2	7	6						67	Fairly soft
1024	1024	14.8	1 August 1996	X		3	4	2	1	2	3	7	6	1	1	1	2	3	2	6						44	Soft
1025	1025	11.0	1 August 1996	X		3	4	3	2	6	7	3	4	7	6	42										87	Refusal at 11' (very hard) poss steel?
1026	1026	14.6	1 August 1996	X		4	3	4	5	3	6	2	4	5	3	4	3	1	2	6						55	Fairly soft
1027	1027	13.7	1 August 1996	X		4	3	5	4	5	2	1	2	3	2	1	1	2	4							39	Fairly soft
1028	1028	14.0	1 August 1996	X		3	4	4	2	2	1	1	6	7	11	13	14	17	21							106	Fairly hard towards bottom

PIPE DRIVING SUMMARY
TRENCH 1

New	Old	Depth	Date	Full	Partial	BLOWS PER FOOT PER SPECIFIC MEASURE																				Total		
Hole No.	Hole No.	Driven	Driven	Depth	Depth	0 - 1'	1 - 2'	2 - 3'	3 - 4'	4 - 5'	5 - 6'	6 - 7'	7 - 8'	8 - 9'	9 - 10'	10 - 11'	11 - 12'	12 - 13'	13 - 14'	14 - 15'	15 - 16'	16 - 17'	17 - 18'	18 - 19'	19 - 20'	Blows	Comments	
1029	1029	14.7	1 August 1996	X		4	5	4	6	3	3	4	5	7	11	14	10	9	13	7							105	Fairly hard towards bottom
1030	1030	14.7	1 August 1996	X		3	4	6	4	5	3	4	5	4	6	2	7	3	4	7							67	Fairly soft
1031	1031	13.2	1 August 1996	X		3	3	4	2	2	4	8	3	5	7	9	30	21	23								124	Fairly sot
1032	1032	14.3	1 August 1996	X		3	2	2	1	2	2	2	1	1	1	3	6	5	3	4							38	Very soft
1033	1033	14.7	1 August 1996	X		3	4	1	1	4	3	4	4	2	4	4	4	4	5	4							51	Very soft
1034	1034	14.7	5 August 1996	X		2	5	4	5	4	4	2	2	2	2	3	1	1	1	1							39	Very soft - Now complete seeNote Aug 1
1035	1035	14.5	1 August 1996	X		2	6	6	3	3	3	2	1	2	2	7	10	10	35	34							126	Fairly soft
1036	1036	14.5	1 August 1996	X		2	5	4	3	2	2	1	1	2	2	3	2	3	2	5							39	Very soft
1037	1037	14.5	1 August 1996	X		2	3	4	4	4	4	3	4	4	3	3	2	2	2								44	
1038	1038	13.3	5 August 1996	X		3	4	5	5	5	5	4	4	5	5	5	6	7	8								71	Med/W/soft
1039	1039	14.2	5 August 1996	X		5	6	7	4	3	4	3	3	3	3	2	3	3	3	30							82	Fairly soft
1040	1040	11.3	5 August 1996	X		5	4	4	3	3	3	4	4	5	6	28	27										96	
1041	1041	11.3	5 August 1996	X		7	8	8	6	5	3	2	6	20	28	30	32										155	
1042	1042	11.3	5 August 1996	X		6	7	6	6	5	4	3	6	8	18	25	32										126	
1043	1043	14.2	5 August 1996	X		3	4	4	4	4	4	4	6	8	13	14	8	6	10	19							111	
1044	1044	14.9	5 August 1996	X		8	8	8	12	6	4	4	3	3	2	2	2	3	3	21							89	
1045	1045	16.4	5 August 1996	X		7	5	5	4	4	3	2	5	6	7	7	8	8	9	12	20	26					138	Note: A 25' piece was added to reach final depth should go under the 20' item for payment
1046	1046	16.3	5 August 1996	X		4	4	4	4	4	3	3	3	5	5	5	5	6	6	6	6	20					93	Note: A 25' was added to reach final depth. Should go under the 20' item for payment
1047	1047	16.3	5 August 1996	X		4	4	4	5	4	3	3	3	2	2	3	4	4	4	4	6	12					71	Note: A 25 ft. piece was added to reach final depth. should go under the 20' item for payment
1048	1048	16.5	5 August 1996	X		4	5	5	5	5	6	6	6	8	9	12	25	27	14	19	32	30					218	Note: to be charged under item 20'
1049	1049	16.5	5 August 1996	X		4	4	4	4	3	3	3	2	6	8	3	2	2	2	20	20	25						Note: A 25' pipe was added to reach final depth should go under item 20' for payment
1050	1050	16.7	5 August 1996	X		11	11	11	11	11	11	11	11	11	11	11	4	4	4	4	4	21					162	Note: A 25' piece pipe was added to reach final depth. should go under the 20' item for payment
1051	1051	14.9	5 August 1996	X		4	4	4	4	3	3	3	3	4	3	3	4	8	6	4							60	
1052	1052	14.3	5 August 1996	X		8	10	10	8	6	6	5	5	5	4	4	4	4	4	14							97	
1053	1053	14.6	5 August 1996	X		10	6	6	6	6	7	8	8	8	6	4	4	4	4	14							101	
1054	1054	14.8	5 August 1996	X		4	4	4	4	4	6	6	6	6	4	4	4	4	4	4	17						85	
1055	1055	15.0	5 August 1996	X		6	6	6	7	7	7	7	6	6	6	7	7	7	7	17							109	
1056	1056	1.5	5 August 1996		X																							
R1056	R1056	14.9	7 August 1996	X		5	5	6	6	6	6	5	6	5	6	5	5	5	6	16							93	Refusal at 14' 11"
1057	1057	15.0	7 August 1996	X		6	8	8	10	80	30	10	10	7	10	10	15	15	17	17							253	Refusal at 15' 0"
1058	1058	15.0	7 August 1996	X		4	6	8	16	30	5	5	5	4	4	4	5	6	6	16							124	Refusal at 15' 0"
1059	1059	15.0	7 August 1996	X		4	4	4	5	8	12	8	6	7	5	5	5	4	4	15							96	Refusal at 15' 0"
1060	1060	14.9	7 August 1996	X		5	5	7	14	12	8	6	5	6	6	9	9	12	15	18							137	Refusal at 14' 11"
1061	1061	14.9	6 August 1996	X		6	5	5	4	4	4	4	3	4	4	5	5	5	5	15							78	
1062	1062	15.0	6 August 1996	X		5	6	6	6	6	6	6	5	5	6	7	7	7	9	16							103	
1063	1063	15.0	6 August 1996	X		8	8	8	7	6	5	4	3	5	7	7	8	10	12	13							111	
1064	1064	15.2	7 August 1996	X		5	5	5	5	5	5	5	5	6	8	12	8	7	6	5	12						104	This hole previously driven to 7'. Today driven from 8' to 15' 2". Now completed

PIPE DRIVING SUMMARY
TRENCH

New	Old	Depth	Date	Full	Partial	BLOWS PER FOOT PER SPECIFIC MEASURE																				Total		
Hole No.	Hole No.	Driven	Driven	Depth	Depth	0 - 1'	1 - 2'	2 - 3'	3 - 4'	4 - 5'	5 - 6'	6 - 7'	7 - 8'	8 - 9'	9 - 10'	10 - 11'	11 - 12'	12 - 13'	13 - 14'	14 - 15'	15 - 16'	16 - 17'	17 - 18'	18 - 19'	19 - 20'	Blows	Comments	
1065	1065	15.0	6 August 1996	X		5	5	5	5	13	6	5	4	3	6	7	8	12	9	20							113	
1066	1066	14.8	6 August 1996	X		4	3	5	6	6	6	5	6	8	8	9	10	11	11	18							116	
1067	1067	14.9	6 August 1996	X		5	5	4	7	7	6	6	5	6	7	7	7	7	7	16							102	
1068	1068	14.0	6 August 1996	X		4	4	4	6	5	4	4	4	3	10	25	26	28	30								157	
1069	1069	15.0	6 August 1996	X		3	3	3	4	5	5	5	4	4	4	4	4	5	16								69	
1070	1070	14.9	6 August 1996	X		5	5	6	7	7	6	6	5	8	10	12	15	15	16	16							139	
1071	1071	13.3	6 August 1996	X		4	4	6	5	6	5	4	4	6	6	8	15	20	45								138	
1072	1072	2.5	6 August 1996		X																							
R1072	R1072	15.0	7 August 1996	X		4	4	4	5	8	5	5	4	4	5	5	4	6	6	15							84	Refusal at 15' 0"
1073	1073	15.0	6 August 1996	X		4	5	6	13	14	10	9	8	5	5	8	10	10	10	18							135	
1074	1074	14.9	6 August 1996	X		4	7	6	10	8	8	4	4	4	4	5	5	6	6	16							97	
1075	1075	15.0	6 August 1996	X		6	6	9	9	8	7	6	6	8	10	15	13	9	8	17							137	
1076	1076	15.0	6 August 1996	X		4	4	4	4	4	3	4	5	6	7	7	7	8	8	16							91	
1077	1077	2.3	6 August 1996		X																							
R1077	R1077	14.9	7 August 1996	X		6	6	6	6	6	5	4	4	5	5	5	5	6	6	17							92	Refusal at 14' 11"
1078	1078	14.9	6 August 1996	X		4	4	5	7	9	8	6	5	6	6	12	6	6	6	15							105	
1079	1079	15.1	6 August 1996	X		5	6	8	20	6	7	6	6	8	8	13	12	10	10	8	15						148	
1080	1080	10.0	6 August 1996	X		6	18	38	36	32	6	6	6	8	60												216	
1081	1081	15.0	6 August 1996	X		4	4	5	5	5	4	4	3	5	5	6	8	5	5	16							84	
1082	1082	15.1	6 August 1996	X		6	6	10	8	8	4	4	4	5	5	33	30	8	7	7	11						156	
1083	1083	15.0	6 August 1996	X		5	5	5	6	4	4	4	3	5	6	16	20	26	30	33							172	
1201	1201	14.9	7 August 1996	X		4	4	4	4	3	2	2	3	10	18	29	56	4	4	33							180	Refusal at 14' 10"
1202	1202	15.0	7 August 1996	X		3	2	2	2	3	4	4	5	5	5	6	6	7	6	6							66	Refusal at 15' 0"
1203	1203	14.9	7 August 1996	X		4	5	4	6	3	2	2	2	5	6	8	10	10	8								75	Refusal at 14' 10"
1204	1204	16.1	7 August 1996	X		4	4	4	4	4	5	5	4	3	3	3	4	4	4	4	11	96					166	Note 26" piece added extra. Refusal at 16' 1"
1205	1205	9.3	8 August 1996	X		3	1	1	1	3	7	8	11	11	12												58	Refusal at 9' 4"
1206	1206	16.8	7 August 1996	X		3	3	4	3	3	2	2	2	2	2	4	1	2	4	4	3	8	18				68	Note 26" piece added extra. Refusal at 16' 10"
1207	1207	14.8	7 August 1996	X		6	6	6	8	202	4	6	5	4	5	5	5	6	6	15							289	Refusal at 14' 10"
1208	1208	14.8	7 August 1996	X		8	8	8	8	9	10	10	10	8	8	8	7	7	7	16							132	Refusal at 14' 10"
1209	1209	16.5	7 August 1996	X		5	5	5	5	6	6	5	5	7	7	7	7	7	8	8	8	10					111	Note 17' 4" of pipe on hole. Refusal at 16' 8"
1210	1210	20.0	7 August 1996	X		3	3	3	2	2	2	3	2	2	2	2	3	2	2	2	3	4	10	23	24	99	rock at 17' 8" Continue driving to 20' at engineer's request. Complete refusal	
1211	1211	17.2	8 August 1996	X		4	4	5	5	4	5	6	6	4	4	4	3	3	3	2	8	8	11				89	Refusal at 17' 2"
1212	1212	18.0	8 August 1996	X		4	4	4	3	2	2	3	3	1	1	1	1	2	3	3	6	18	22				83	Refusal at 18'
1213	1213	17.4	8 August 1996	X		3	3	3	3	2	2	2	3	2	2	2	2	1	1	1	5	10					47	Refusal at 17' 5"
1214	1214	9.7	8 August 1996	X		3	2	1	1	1	1	4	5	6	22												46	Refusal at 9' 8"
W101	W101	10.0	24 July 1996	X																								
W102	W102	10.0	24 July 1996	X																								
W103	W103	10.0	24 July 1996	X																								
W104	W104	10.0	24 July 1996	X																								
W105	W105	10.0	24 July 1996	X																								
W106	W106	10.0	24 July 1996	X																								
W107A	W107A	1.5	24 July 1996		X																							
W107B	W107B	1.5	24 July 1996		X																							
RW107	RW107	10.0	7 August 1996	X																								
W108	W108	10.0	24 July 1996	X																								
W109	W109	10.0	24 July 1996	X																								
W110	W110	10.0	24 July 1996	X																								

PIPE DRIVING SUMMARY
TRENCH II

New	Old	Depth	Date	Full	Partial	BLOWS PER FOOT PER SPECIFIC MEASURE																				Total		
Hole No.	Hole No.	Driven (ft)	Driven	Depth	Depth	0 - 1'	1 - 2'	2 - 3'	3 - 4'	4 - 5'	5 - 6'	6 - 7'	7 - 8'	8 - 9'	9 - 10'	10 - 11'	11 - 12'	12 - 13'	13 - 14'	14 - 15'	15 - 16'	16 - 17'	17 - 16'	18 - 19'	19 - 20'	Blows	Comments	
2001	2001	13.6	22 July 1996	X		3		2		1		1		1		2		7	12								29	
2002	2002	14.3	22 July 1996	X		2		2		1		1		1		3	3	4	7	11							35	
2003	2003	14.3	22 July 1996	X		2		2		3		1		1		3	6	11	13								42	
2004	2004	15.3	22 July 1996	X		3		2		2		1		1		1	3	4	3	6							26	
2005	2005	14.7	13 August 1996	X		0	0	0	0	0	0	0	1	1	1	1	1	1	6	14							26	Weight of hammer. End of hole at 14' 8"
2006	2006	14.5	23 July 1996	X		2	3	4	6	5	7	8	11	6	5	7	11	13	6	11							105	
2007	2007	15.3	23 July 1996	X		1	2	3	5	4	6	8	9	10	3	4	2	11	6	11	14						99	
2008	2008	13.1	23 July 1996	X																							0	
2009	2009	14.2	13 August 1996	X		0	0	0	0	0	0	0	0	0	1	1	1	1	4	6							14	Weight of hammer 5' Refusal at 14' 2"
2010	2010	15.4	13 August 1996	X		0	0	0	0	0	0	0	0	0	1	1	1	2	3	6	14						28	Weight of hammer 4' Refusal at 15' 5"
2011	2011	14.8	13 August 1996	X		0	0	0	0	0	0	0	1	1	4	5	6	8	18	51							94	Weight of hammer 4' Refusal at 14' 10"
2012	2012	14.8	13 August 1996	X		1	1	0	0	0	0	0	0	1	1	1	2	2	6	41							56	Weight of hammer 5' Refusal at 14' 10"
2013	2013	14.5	13 August 1996	X		0	0	0	0	0	0	0	0	0	1	1	1	2	3	12							20	Weight of hammer 5' Refusal at 14' 5"
2014	2014	14.7	13 August 1996	X		0	0	0	0	0	0	0	0	1	1	2	2	2	4	22							34	Weight of hammer 5' Refusal at 14' 8"
2015	2015	21.5	13 August 1996	X		0	0	0	0	0	0	0	0	0	1	2	2	3	4	4	3	3	3	3	17+16+1 9	***80	Weight of hammer 5' Refusal at 21' 5"	
2016	2016	16.1	13 August 1996	X		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	15					17	Weight of hammer 5' & 13' Refusal at 15' 11"
2017	2017	14.6	13 August 1996	X		0	0	0	0	0	0	0	0	0	0	1	1	1	4	16							23	Weight of hammer 6' Refusal at 14' 7"
2018	2018	15.5	13 August 1996	X		0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	8						16	Weight of hammer 5' Refusal at 15' 5"
2019	2019	15.0	13 August 1996	X		0	0	0	0	0	0	0	0	1	2	4	4	6	6	16							39	Weight of hammer 6' Refusal at 15' 0"
2020	2020	15.0	13 August 1996	X		0	0	0	0	0	0	0	2	2	3	3	4	6	6	6							32	Weight of hammer 4' Refusal at 15' 0"
2021	2021	15.1	13 August 1996	X		0	0	0	0	0	0	2	1	1	1	1	1	1	1	1	8						18	Weight of hammer 3' Refusal at 15' 1"
2022	2022	15.8	13 August 1996	X		0	0	0	0	0	0	0	0	2	1	1	1	1	1	1	8						16	Weight of hammer 4' Refusal at 15' 9"
2023	2023	15.5	13 August 1996	X		0	0	0	0	0	0	0	0	0	2	1	1	1	2	20							27	Weight of hammer 5' Refusal at 15' 5"
2024	2024	16.0	13 August 1996	X		0	0	0	0	0	0	0	0	2	1	1	1	1	1	1	30						38	Weight of hammer 5' Refusal at 16' 0"
2025	2025	15.0	13 August 1996	X		0	0	0	0	0	0	0	0	60	208												268	Weight of hammer 5' Refusal ??
2026	2027	15.0	13 August 1996	X		0	0	0	0	0	0	0	0	1	1	2	4	10	15	16							49	Weight of hammer 5' Refusal at 15' 0"
2027	2028	16.8	13 August 1996	X		0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	15	17					38	Weight of hammer 5' Refusal at 16' 10"

PIPE DRIVING SUMMARY
TRENCH II

New	Old	Depth	Date	Full	Partial	BLOWS PER FOOT PER SPECIFIC MEASURE																			Total			
Hole No.	Hole No.	(ft)	Driven	Depth	Depth	0 - 1'	1 - 2'	2 - 3'	3 - 4'	4 - 5'	5 - 6'	6 - 7'	7 - 8'	8 - 9'	9 - 10'	10 - 11'	11 - 12'	12 - 13'	13 - 14'	14 - 15'	15 - 16'	16 - 17'	17 - 16'	18 - 19'	19 - 20'	Blows	Comments	
2028	2029	17.1	13 August 1996	X		0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	14	26	20			67	Weight of hammer 4' Refusal at 17' 1"	
2029	2030	16.5	13 August 1996	X		0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	6	18				26	Weight of hammer 7' Refusal at 16' 6"	
2030	2031	9.0	14 August 1996	X		0	1	1	0	3	3	4	120	125												257	Weight of hammer 3' Refusal at 9' 0"	
2031	2032	17.0	13 August 1996	X																						0		
2032	2033	17.3	14 August 1996	X		0	0	0	0	0	0	0	0	2	2	2	135	18	2	2	14	30	35			242	Weight of hammer Refusal at 17' 4"	
2033	2036	17.5	8 August 1996	X		3	3	4	3	3	3	2	2	2	2	2	3	2	2	2	4	18	18			75	Refusal at 17' 6"	
2034	2037	15.8	8 August 1996	X		4	3	3	3	3	3	3	3	5	10	12	15	7	7	7	20					108	Refusal at 15' 10"	
2035	2038	17.5	8 August 1996	X		1	1	1	1	1	2	2	2	1	1	1	1	2	6	6	8	8	30			75	Refusal at 17' 6"	
2036	2039	20.0	8 August 1996	X		4	4	4	6	8	16	30	18	4	4	4	4	4	4	4	3	3	3	3	3	133	Not on bottom yet at 20'	
2037	2040	14.7	8 August 1996	X		4	4	6	4	4	4	4	3	3	4	6	5	5	7	7						70	Refusal at 14' 8"	
2038	2041	20.0	8 August 1996	X		4	4	4	2	2	3	3	2	2	2	2	1	1	1	1	1	2	20	13	7	77	Refusal at 20' 0"	
2039	2042	15.0	9 August 1996	X		3	3	3	4	4	3	3	3	3	4	5	6	7	7	10						68	Refusal at 15' 0"	
2040	2043	20.0	9 August 1996	X		3	3	4	4	1	1	1	2	1	1	1	1	1	1	2	1	1	15	17	19	80	Refusal at 20' 0"	
2041	2044	19.3	9 August 1996	X		2	3	3	3	2	1	1	1	1	1	1	2	5	2	1	18	53				100	Refusal at 19' 4"	
2042	2045	14.8	9 August 1996	X		3	3	3	3	3	3	4	4	4	4	4	5	5	5	16						69	Refusal at 14' 10"	
2043	2046	15.1	9 August 1996	X		4	5	8	3	3	4	4	4	4	4	4	5	5	6							67	Refusal at 15' 1"	
A	2047	3.0	9 August 1996																									
2044	R2047	15.0	9 August 1996	X	X	2	4	4	3	3	3	3	3	5	5	6	5	5	5	11						67	Refusal at 15' 0"	
2045	2048	20.0	9 August 1996			2	4	12	2	2	2	3	2	2	1	1	1	2	2	2	5	6	7	7	11	76	Refusal at 20' 0"	
2046	2049	15.0	9 August 1996	X		2	1	1	2	2	2	2	2	3	4	4	5	5	5	9						49	Refusal at 15' 0"	
2047	2050	15.0	9 August 1996	X		2	1	1	2	2	2	2	2	3	4	4	5	5	5	5						45	Refusal at 15' 0"	
W201	W201	10.0	22 July 1996	X																								
W202	W202	5.0	22 July 1996	X																								
W203	W203	10.0	22 July 1996	X																								
W204	W204	10.0	22 July 1996		X																							
W205	W205	10.0	22 July 1996	X																								
W206	W206	10.0	13 August 1996	X		0	0	0	0	0	0	0	2	1	1											4	WELLweight of hammer 4' Note on drawings should be 2026	
D1	D1	10.0	9 August 1996	X		2	3	3	3	3	3	3	3	3	3											29	End of hole at 10' Not allowed to use anymore Pumping in tank instead	
D2	D2	10.0	9 August 1996	X		2	2	2	2	2	2	2	2	2	2											20	End of hole at 10' Not allowed to use anymore Pumping in tank instead	
D3	D3	4.0	9 August 1996		X	4	4	4	8																	20	Note: this pipe cannot be used Not allowed to use anymore	

PIPE DRIVING SUMMARY
TRENCH III

New	Old	Depth	Date	Full	Partial	BLOWS PER FOOT PER SPECIFIC MEASURE																				Total	
Hole No.	Hole No.	Driven	Driven	Depth	Depth	0 - 1'	1 - 2'	2 - 3'	3 - 4'	4 - 5'	5 - 6'	6 - 7'	7 - 8'	8 - 9'	9 - 10'	10 - 11'	11 - 12'	12 - 13'	13 - 14'	14 - 15'	15 - 16'	16 - 17'	17 - 16'	18 - 19'	19 - 20'	Blows	Comments
3001	3M	16.7	30 August 1996	X		20	17	6	6	5	3	3	3	2	1	2	2	3	4	5	5	8				95	Refusal at 15' 8"
3002	3006	15.0	30 August 1996	X		16	8	6	4	4	4	2	1	2	2	1	1	2	10	17						80	Refusal at 15' 0"
3003	3L	15.7	30 August 1996	X		17	12	5	5	5	3	1	2	4	6	5	4	4	12	17	22					124	Refusal at 15' 8"
3004	3009	14.8	30 August 1996	X		20	8	2	2	2	2	2	2	1	3	2	2	2	12	20						82	Refusal at 14' 10"
3005	3K	14.6	30 August 1996	X		12	10	8	5	4	5	1	1	2	4	4	4	4	6	15						85	Refusal at 14' 7"
3006	3012	12.3	30 August 1996	X		10	6	4	3	3	3	2	2	4	4	12	20									73	Refusal at 12' 4"
3007	3013	15.8	30 August 1996	X		24	12	6	5	4	4	4	1	1	2	2	2	2	2	2	6	20				99	Refusal at 15' 10"
3008	3014	12.2	30 August 1996	X		17	10	6	4	3	4	8	4	3	4	14	27									104	Refusal at 12' 2"
3009	3J	15.7	30 August 1996	X		20	12	5	5	5	5	5	1	1	2	1	1	2	2	6	20					93	Refusal at 15' 8"
3010	3016	15.9	30 August 1996	X		17	10	6	6	5	4	4	2	1	1	0	0	4	8	17	25					110	Refusal at 15' 11"
3011	3017	14.1	30 August 1996	X		22	10	8	4	3	2	2	1	1	1	2	4	6	16	27						109	Refusal at 14' 1"
3012	3I	16.6	30 August 1996	X		20	10	3	2	2	1	1	1	1	1	4	4	6	6	5	20	10				97	Refusal at 16' 7"
3013	3018	16.4	28 August 1996	X		4	3	2	2	1	1	1	1	1	4	6	36	42	26							130	End of hole at 13' 1"
3014	3019	16.4	28 August 1996	X		6	6	10	8	6	1	1	2	2	4	5	5	6	18	22	18	19				139	End of hole at 16' 5"
3015	3020	15.0	28 August 1996	X		6	6	5	5	3	2	2	1	1	1	3	3	3	3	14						58	End of hole at 15' 0"
3016	3H	13.1	30 August 1996	X		8	6	4	4	2	2	2	2	2	4	8	9	20								73	Refusal at 13' 1"
3017	3021	14.0	28 August 1996	X		3	2	2	1	1	1	1	1	1	1	1	2	18	84							119	End of hole at 14' 0"
3018	3022	20.0	28 August 1996	X		2	1	1	3	3	3	3	2	1	1	1	2	2	2	3	36	38	30	6	3	143	End of hole at 20' 0" Possible Rock then mud Se
3019	3023	15.8	28 August 1996	X		2	3	3	3	4	4	4	5	4	1	1	1	1	1	1	25					63	End of hole at 15' 3"
3020	3024	15.5	28 August 1996	X		4	4	5	4	3	3	1	1	1	1	1	1	1	1	1	26					58	End of hole at 15' 8"
3021	3025	13.7	28 August 1996	X		4	5	3	3	3	3	3	3	3	3	8	10	12	13							76	End of hole at 13' 8"
3022	3026	16.0	28 August 1996	X		4	5	1	1	1	1	1	1	1	1	1	1	2	5	6	18					50	End of hole at 16' 0"
3023	3027	16.0	28 August 1996	X		2	1	2	1	1	1	1	2	2	4	2	8	5	4	1	30					67	End of hole at 16' 0"
3024	3028	16.1	30 August 1996	X		6	3	3	3	3	3	2	2	2	3	3	3	4	5	7	30					82	Refusal at 16' 1"
3025	3029	15.0	28 August 1996	X		4	4	4	5	7	5	4	4	5	5	6	8	8	12	12						93	End of hole at 15' 0"
3026	3030	16.0	28 August 1996	X		6	4	2	2	5	4	4	3	3	2	1	1	1	1	1	22					62	End of hole at 16' 0"
3027	3031	16.0	30 August 1996	X		4	3	2	2	2	2	2	2	1	2	1	1	2	2	2	16					46	Refusal at 16'
3028	3032	16.1	28 August 1996	X		3	4	4	5	4	4	4	3	2	3	3	2	2	2	2	26	36				109	End of hole at 16' 1"

PIPE DRIVING SUMMARY
TRENCH III

New	Old	Depth Driven	Date Driven	Full Depth	Partial Depth	BLOWS PER FOOT PER SPECIFIC MEASURE																				Total	Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
						0 - 1'	1 - 2'	2 - 3'	3 - 4'	4 - 5'	5 - 6'	6 - 7'	7 - 8'	8 - 9'	9 - 10'	10 - 11'	11 - 12'	12 - 13'	13 - 14'	14 - 15'	15 - 16'	16 - 17'	17 - 18'	18 - 19'	19 - 20'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

PIPE DRIVING SUMMARY
TRENCH IV

New	Old	Depth	Date	Full	Partial	BLOWS PER FOOT PER SPECIFIC MEASURE																			Total		
Hole No.	Hole No.	Driven	Driven	Depth	Depth	0 - 1'	1 - 2'	2 - 3'	3 - 4'	4 - 5'	5 - 6'	6 - 7'	7 - 8'	8 - 9'	9 - 10'	10 - 11'	11 - 12'	12 - 13'	13 - 14'	14 - 15'	15 - 16'	16 - 17'	17 - 16'	18 - 19'	19 - 20'	Blows	Comments
4001	4002	14.6	16 August 1996	X		6	6	6	8	8	9	9	12	12	12	12	12	10	10	10						142	Poss soft rock Refusal at 14'7"
4002	4003	14.4	16 August 1996	X		5	5	5	5	8	9	10	10	13	20	26	28	50	30	26						250	Poss soft rock Refusal at 14'5"
4003	4004	13.3	16 August 1996	X																							
4004	4005	12.3	16 August 1996	X		6	6	5	4	3	3	3	3	2	5	6	12	13								71	Refusal at 12'4"
4005	4006	12.2	16 August 1996	X		5	4	4	3	3	2	2	2	6	8	6	8	18								71	Refusal at 12'2"
4006	4007	10.8	16 August 1996	X		4	4	4	4	5	5	5	4	4	18											57	Refusal at 10'0"
4007	4008	11.3	16 August 1996	X		20	10	8	8	8	6	4	3	1	1	1	12									82	Refusal at 11'4"
4008	4009	9.6	16 August 1996	X		5	5	5	4	4	4	3	4	4	15											53	Refusal at 9'7"
4009	4010	9.7	16 August 1996	X		4	4	4	4	5	5	5	6	6	18											61	Refusal at 9' 8"
4010	4011	11.5	16 August 1996	X		12	2	2	2	1	1	1	1	1	1	8	35									67	Refusal at 11' 6"
4011	4012	8.7	16 August 1996	X		6	4	4	3	3	3	5	5	16												49	Refusal at 8'8"
4012	4013	8.7	16 August 1996	X		5	4	4	4	4	4	4	6	18												53	Refusal at 8'8"
4013	4014	10.0	16 August 1996	X		6	4	4	4	2	2	2	20	48	90											182	Refusal at 10'0"
4014	4A	8.0	19 August 1996	X																						0	
4015	4016	9.3	16 August 1996	X		4	4	4	6	6	6	8	10	18	20											86	Refusal at 9'4"
4016	4B	11.5	19 August 1996	X																							
4017	4017	9.7	16 August 1996	X		4	2	2	4	4	8	8	12	9	19											72	Refusal at 9'8"
4018	4C	9.0	19 August 1996	X																							
4019	4E	11.3	20 August 1996	X																							
4020	4019	9.2	16 August 1996	X		4	4	5	6	6	6	8	8	12	20											79	Refusal at 9'2"
4021	4D	12.2	19 August 1996	X																							
4022	4020	9.2	16 August 1996	X		4	4	4	4	4	4	4	4	6	18											56	Refusal at 9'2"
4023	4047	12.8	19 August 1996	X		20	15	10	6	6	6	6	10	6	6	6	7	17								121	Refusal at 12' 9"
4024	4022	9.2	16 August 1996	X		4	4	4	4	5	5	6	8	8	12											60	Refusal at 9'2"
4025	4023	9.1	16 August 1996	X		5	5	6	6	6	6	8	8	6	16											72	Refusal at 9'1"
4026	4048	12.3	19 August 1996	X		6	4	4	4	2	2	2	2	3	2	4	7	17								59	Refusal at 12'4"
4027	4024	9.7	16 August 1996	X		4	4	4	6	6	8	12	12	15	16											87	Refusal at 9'8"
4028	4049	12.3	19 August 1996	X		20	18	6	5	4	3	4	4	4	4	4	6	16								98	Refusal at 12' 4"

PIPE DRIVING SUMMARY
TRENCH IV

New	Old	Depth	Date	Full	Partial	BLOWS PER FOOT PER SPECIFIC MEASURE																				Total	
Hole No.	Hole No.	Driven	Driven	Depth	Depth	0 - 1'	1 - 2'	2 - 3'	3 - 4'	4 - 5'	5 - 6'	6 - 7'	7 - 8'	8 - 9'	9 - 10'	10 - 11'	11 - 12'	12 - 13'	13 - 14'	14 - 15'	15 - 16'	16 - 17'	17 - 18'	18 - 19'	19 - 20'	Blows	Comments
4029	4F	9.3	20 August 1996	X																							
4030	4026	8.5	16 August 1996	X		4	4	4	5	5	5	6	7	17												57	Refusal at 8'6"
4031	4050	12.4	19 August 1996	X		20	20	8	8	3	3	3	3	3	3	3	5	15								97	Refusal at 12'5"
4032	4027	9.8	16 August 1996	X		4	4	4	4	3	10	12	12	14												67	Refusal at 9'10"
4033	4051	12.5	19 August 1996	X		12	12	10	6	4	4	4	4	6	6	6	16									90	Refusal at 12'6"
4034	4029	8.6	16 August 1996	X		4	4	4	4	8	12	12	12	25												85	Refusal at 8'7"
4035	4052	12.8	19 August 1996	X		30	12	8	5	5	4	4	4	3	3	5	5	16								104	Refusal at 12'10"
4036	4030	9.7	19 August 1996	X		5	5	5	5	5	8	12	15	20	40											120	Refusal at 9'8"
4037	4053	12.8	19 August 1996	X		12	8	6	3	3	3	4	3	3	2	2	2	15								66	Refusal at 12'10"
4038	4G	8.9	20 August 1996	X																							
4039	4032	9.7	19 August 1996	X		5	5	5	5	6	6	12	12	18	25											99	Refusal at 9'8"
4040	4033	13.5	19 August 1996	X		12	12	8	4	4	4	4	4	4	4	4	10	12	15							101	Refusal at 13'0"
4041	4054	13	19 August 1996	X		12	8	5	3	3	3	3	3	3	2	2	2	15								64	Refusal at 13'0"
4042	4055	12.9	19 August 1996	X		6	6	4	4	4	4	4	4	4	5	5	8	10								68	Refusal at 12'11"
4043	4034	9.7	19 August 1996	X		4	4	4	5	6	8	12	12	15	20											90	Refusal at 9'8"
4044	4036	13	19 August 1996	X		5	5	5	5	5	5	5	5	4	3	4	6	15								72	Refusal at 13'0"
4045	4056	10.0	19 August 1996	X																							
4046	4037	8.2	19 August 1996	X		4	3	3	4	5	10	12	12	29												82	
4047	4057	12.8	19 August 1996	X																							
4048	4H	15.0	20 August 1996	X																							
4049	4039	13.3	19 August 1996	X		4	4	5	6	6	6	4	3	3	3	2	12	12	26							96	Refusal at 13'4"
4050	4058	8.7	19 August 1996	X																							
4051	4040	9.8	19 August 1996	X		6	8	10	12	12	10	10	12	14	16											110	Refusal at 9'10"
4052	4059	14.2	19 August 1996	X																						0	
4053	4042	13.2	19 August 1996	X		12	6	4	5	4	4	3	3	3	6	8	8	10	15							91	Refusal at 13'2"
4054	4043	12.9	19 August 1996	X		30	18	6	6	4	4	4	4	4	8	8	10	20								126	Refusal at 12'11"
4055	4044	12.7	19 August 1996	X		60	30	15	8	6	4	4	3	4	3	3	3	14								157	Refusal at 12'8"
4056	4046	12.9	16 August 1996	X		5	5	5	4	4	3	3	4	2	1	8	8	26								78	Refusal at 12'11"
W401	W401	10.0	16 August 1996	X																							
W402	W402	10.0	16 August 1996	X																							
W403	W403	10.0	16 August 1996	X		5	5	5	5	8	9	10	10	13	20	26	28	50	30	26						250	Poss soft rock. Refusal at 15'5"
W404	W404	9.0	16 August 1996	X		18	20	22	20	15	2	2	2	10	8	8	8	8	16							159	End at 13'4"
W405	W405	8.0	16 August 1996	X																							
W406	W406	10.0	16 August 1996	X																							
W403B	W403B	10.0	27 August 1996	X																							
W404B	W404B	10.0	27 August 1996	X																							
W405B	W405B	10.0	27 August 1996	X																							

APPENDIX B

CASING GROUT INJECTION RECORDS

Casing Grout Table

[illegible]

Page 1

Casing Grout Table

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Page 1

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 02, 1996

Hole No.	Trench No.	Sleeve No.	Depth of Injection From Ground Sur. (Feet)	Casing Grout Quantity Injected (Litres)	Comments
1004	1	5		25	30 psi average injection pressure
1004	1	6		25	30 psi average injection pressure
1005	1	2		25	30 psi average injection pressure
1004	1	7		25	30 psi average injection pressure
1005	1	3		25	30 psi average injection pressure
1007	1	2		25	30 psi average injection pressure
1007	1	3		25	30 psi average injection pressure
1007	1	4		25	30 psi average injection pressure
1007	1	5		25	30 psi average injection pressure
1007	1	6		25	30 psi average injection pressure
1007	1	7		25	30 psi average injection pressure
1005	1	4		25	30 psi average injection pressure
1005	1	5		25	30 psi average injection pressure
1006	1	4		50	30 psi average injection pressure
1006	1	5		25	30 psi average injection pressure
1006	1	6		25	30 psi average injection pressure
1006	1	7		25	30 psi average injection pressure
1008	1	3		25	30 psi average injection pressure
1008	1	4		25	30 psi average injection pressure
1008	1	5		25	30 psi average injection pressure
1008	1	6		25	30 psi average injection pressure
1008	1	7		25	30 psi average injection pressure
1009	1	2		25	30 psi average injection pressure
1009	1	3		25	30 psi average injection pressure
1009	1	4		25	30 psi average injection pressure
1009	1	5		25	30 psi average injection pressure
1009	1	6		25	30 psi average injection pressure
1010	1	3		25	30 psi average injection pressure
1010	1	4		25	30 psi average injection pressure
1010	1	5		25	30 psi average injection pressure
1010	1	6		25	30 psi average injection pressure
1010	1	7		25	30 psi average injection pressure
1011	1	2		25	30 psi average injection pressure
1011	1	3		25	30 psi average injection pressure
1011	1	4		25	30 psi average injection pressure
1011	1	5		25	30 psi average injection pressure
1011	1	6		25	30 psi average injection pressure
1011	1	7		25	30 psi average injection pressure
1011	1	8		25	30 psi average injection pressure
1012	1	2		25	30 psi average injection pressure
1012	1	3		25	30 psi average injection pressure
1012	1	4		25	30 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 02, 1996

Hole No.	Trench No.	Sleeve No.	Depth of Injection From Ground Sur. (Feet)	Casing Grout Quantity Injected (Litres)	Comments
1012	1	5		25	30 psi average injection pressure
1012	1	6		25	30 psi average injection pressure
1012	1	7		25	30 psi average injection pressure
1013	1	2		25	30 psi average injection pressure
1013	1	3		25	30 psi average injection pressure
1013	1	4		25	30 psi average injection pressure
1013	1	5		25	30 psi average injection pressure
1013	1	6		25	30 psi average injection pressure
1013	1	7		25	30 psi average injection pressure
1013	1	8		25	30 psi average injection pressure
1014	1	1		25	60 psi average injection pressure
1015	1	1,2,3		75	60 psi average injection pressure
1016	1	1		25	60 psi average injection pressure
1017	1	1		25	60 psi average injection pressure
1018	1	1		25	60 psi average injection pressure
1021	1	1		25	60 psi average injection pressure
1022	1	1		25	60 psi average injection pressure
1023	1	1 & 2		50	60 psi average injection pressure
1024	1	1		25	60 psi average injection pressure
1026	1	1		25	60 psi average injection pressure
1027	1	1 & 2		50	60 psi average injection pressure
1028	1	1 & 2		50	60 psi average injection pressure
1029	1	1		25	60 psi average injection pressure
1032	1	1 & 2		50	60 psi average injection pressure
1033	1	1		25	60 psi average injection pressure
1035	1	1		25	60 psi average injection pressure
1036	1	1		25	60 psi average injection pressure
1037	1	1		25	60 psi average injection pressure
1019	1	1		25	60 psi average injection pressure
1020	1	1		25	60 psi average injection pressure
1025	1	1 & 2		50	60 psi average injection pressure
1030	1	1		25	60 psi average injection pressure
1031	1	1		25	60 psi average injection pressure
1014	1	2		25	60 psi average injection pressure
1014	1	3		25	60 psi average injection pressure
1014	1	4		25	60 psi average injection pressure
1014	1	5		25	60 psi average injection pressure
1014	1	6		25	60 psi average injection pressure
1014	1	7		25	60 psi average injection pressure
1014	1	8		25	60 psi average injection pressure
1015	1	4		25	60 psi average injection pressure
1015	1	5		25	60 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 02, 1996

Hole No.	Trench No.	Sleeve No.	Depth of Injection From Ground Sur. (Feet)	Casing Grout Quantity Injected (Litres)	Comments
1015	1	6		25	60 psi average injection pressure
1015	1	7		25	60 psi average injection pressure
1015	1	8		25	60 psi average injection pressure
1016	1	2		25	60 psi average injection pressure
1016	1	3		25	60 psi average injection pressure
1016	1	4		25	60 psi average injection pressure
1016	1	5		25	60 psi average injection pressure
1016	1	6		25	60 psi average injection pressure
1016	1	7		25	60 psi average injection pressure
1016	1	8		25	60 psi average injection pressure
1017	1	2		25	60 psi average injection pressure
1017	1	3		25	60 psi average injection pressure
1017	1	4		25	60 psi average injection pressure
1017	1	5		25	60 psi average injection pressure
1017	1	6		25	60 psi average injection pressure
1017	1	7		25	60 psi average injection pressure
1017	1	8		25	60 psi average injection pressure
1018	1	2		25	60 psi average injection pressure
1018	1	3		25	60 psi average injection pressure
1018	1	4		25	60 psi average injection pressure
1018	1	5		25	60 psi average injection pressure
1018	1	6		25	60 psi average injection pressure
1018	1	7		25	60 psi average injection pressure
1021	1	2		25	60 psi average injection pressure
1021	1	3		25	60 psi average injection pressure
1021	1	4		25	60 psi average injection pressure
1021	1	5		25	60 psi average injection pressure
1021	1	6		25	60 psi average injection pressure
1021	1	7		25	60 psi average injection pressure
1022	1	2		25	60 psi average injection pressure
1022	1	3		25	60 psi average injection pressure
1022	1	4		25	60 psi average injection pressure
1022	1	5		25	60 psi average injection pressure
1022	1	6		25	60 psi average injection pressure
1022	1	7		25	60 psi average injection pressure
1023	1	3 & 4		50	60 psi average injection pressure
1023	1	5		25	60 psi average injection pressure
1023	1	6		25	60 psi average injection pressure
1023	1	7		25	60 psi average injection pressure
1024	1	2		25	60 psi average injection pressure
1024	1	3		25	60 psi average injection pressure
1024	1	4		25	60 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 02, 1996

Hole No.	Trench No.	Sleeve No.	Depth of Injection From Ground Sur. (Feet)	Casing Grout Quantity Injected (Litres)	Comments
1024	1	5		25	60 psi average injection pressure
1024	1	6		25	60 psi average injection pressure
1024	1	7		25	60 psi average injection pressure
1026	1	2		25	60 psi average injection pressure
1026	1	3		25	60 psi average injection pressure
1026	1	4		25	60 psi average injection pressure
1026	1	5		25	60 psi average injection pressure
1026	1	6		25	60 psi average injection pressure
1026	1	7		25	60 psi average injection pressure
1026	1	8		25	60 psi average injection pressure

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Omni Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 06, 1996

Hole No.	Trench No.	Sleeve No.	Depth of Injection From Ground Sur. (Feet)	Casing Grout Quantity Injected (Litres)	Comments
1019	1	2		25	65 psi average injection pressure
1020	1	2		25	65 psi average injection pressure
1019	1	3		25	65 psi average injection pressure
1020	1	3		25	65 psi average injection pressure
1019	1	4		25	65 psi average injection pressure
1020	1	4		25	65 psi average injection pressure
1019	1	5		25	65 psi average injection pressure
1020	1	5		25	65 psi average injection pressure
1019	1	6		25	65 psi average injection pressure
1020	1	6		25	65 psi average injection pressure
1019	1	7		25	65 psi average injection pressure
1025	1	3		25	65 psi average injection pressure
1027	1	3		25	65 psi average injection pressure
1025	1	4		25	65 psi average injection pressure
1027	1	4		25	65 psi average injection pressure
1025	1	5		25	65 psi average injection pressure
1027	1	5		25	65 psi average injection pressure
1025	1	6		25	65 psi average injection pressure
1027	1	6		25	65 psi average injection pressure
1028	1	3		25	65 psi average injection pressure
1030	1	2		25	65 psi average injection pressure
1028	1	4		25	65 psi average injection pressure
1030	1	3		25	65 psi average injection pressure
1028	1	5		25	65 psi average injection pressure
1030	1	4		25	65 psi average injection pressure
1028	1	6		25	65 psi average injection pressure
1030	1	5		25	65 psi average injection pressure
1028	1	7		25	65 psi average injection pressure
1030	1	6		25	65 psi average injection pressure
1030	1	7		25	65 psi average injection pressure
1031	1	2		25	65 psi average injection pressure
1032	1	3		25	65 psi average injection pressure
1031	1	3		25	65 psi average injection pressure
1032	1	4		25	65 psi average injection pressure
1031	1	4		25	65 psi average injection pressure
1032	1	5		25	65 psi average injection pressure
1031	1	5		25	65 psi average injection pressure
1032	1	6		25	65 psi average injection pressure
1031	1	6		25	65 psi average injection pressure
1032	1	7		25	65 psi average injection pressure
1033	1	2		25	65 psi average injection pressure
1034	1	2		25	65 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 06, 1996

Hole No.	Trench No.	Sleeve No.	Depth of Injection From Ground Sur. (Feet)	Casing Grout Quantity Injected (Litres)	Comments
1033	1	3		25	65 psi average injection pressure
1034	1	3		25	65 psi average injection pressure
1033	1	4		25	65 psi average injection pressure
1034	1	4		25	65 psi average injection pressure
1033	1	5		25	65 psi average injection pressure
1034	1	5		25	65 psi average injection pressure
1033	1	6		25	65 psi average injection pressure
1034	1	6		25	65 psi average injection pressure
1033	1	7		25	65 psi average injection pressure
1034	1	7		25	65 psi average injection pressure
1035	1	2		25	65 psi average injection pressure
1036	1	2		25	65 psi average injection pressure
1035	1	3		25	65 psi average injection pressure
1036	1	3		25	65 psi average injection pressure
1035	1	4		25	65 psi average injection pressure
1036	1	4		25	65 psi average injection pressure
1035	1	5		25	65 psi average injection pressure
1036	1	5		25	65 psi average injection pressure
1035	1	6		25	65 psi average injection pressure
1036	1	6		25	65 psi average injection pressure
1035	1	7		25	65 psi average injection pressure
1036	1	7		25	65 psi average injection pressure
1037	1	2		25	65 psi average injection pressure
1038	1	2		25	65 psi average injection pressure
1037	1	3		25	65 psi average injection pressure
1038	1	3		25	65 psi average injection pressure
1037	1	4		25	65 psi average injection pressure
1038	1	4		25	65 psi average injection pressure
1037	1	5		25	65 psi average injection pressure
1038	1	5		25	65 psi average injection pressure
1037	1	6		25	65 psi average injection pressure
1038	1	6		25	65 psi average injection pressure
1037	1	7		25	65 psi average injection pressure

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 07, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
1039	1	2	25	50 psi average injection pressure
1040	1	2	25	50 psi average injection pressure
1039	1	3	25	50 psi average injection pressure
1040	1	3	25	50 psi average injection pressure
1039	1	4	25	50 psi average injection pressure
1040	1	4	25	50 psi average injection pressure
1039	1	5	25	50 psi average injection pressure
1040	1	5	25	50 psi average injection pressure
1039	1	6	25	50 psi average injection pressure
1040	1	6	25	50 psi average injection pressure
1039	1	7	25	50 psi average injection pressure
1041	1	2	25	50 psi average injection pressure
1042	1	2	25	50 psi average injection pressure
1041	1	3	25	50 psi average injection pressure
1042	1	3	25	50 psi average injection pressure
1041	1	4	25	50 psi average injection pressure
1042	1	4	25	50 psi average injection pressure
1041	1	5	25	50 psi average injection pressure
1042	1	5	25	50 psi average injection pressure
1043	1	2	25	50 psi average injection pressure
1044	1	2	25	50 psi average injection pressure
1043	1	3	25	50 psi average injection pressure
1044	1	3	25	50 psi average injection pressure
1043	1	4	25	50 psi average injection pressure
1044	1	4	25	50 psi average injection pressure
1043	1	5	25	50 psi average injection pressure
1044	1	5	25	50 psi average injection pressure
1043	1	6	25	50 psi average injection pressure
1044	1	6	25	50 psi average injection pressure
1043	1	7	25	50 psi average injection pressure
1044	1	7	25	50 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 07, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
1045	1	2	25	50 psi average injection pressure
1046	1	2	25	50 psi average injection pressure
1045	1	3	25	50 psi average injection pressure
1046	1	3	25	50 psi average injection pressure
1045	1	4	25	50 psi average injection pressure
1046	1	4	25	50 psi average injection pressure
1045	1	5	25	50 psi average injection pressure
1046	1	5	25	50 psi average injection pressure
1045	1	6	25	50 psi average injection pressure
1046	1	6	25	50 psi average injection pressure
1045	1	7	25	50 psi average injection pressure
1046	1	7	25	50 psi average injection pressure
1047	1	2	25	50 psi average injection pressure
1049	1	2	25	50 psi average injection pressure
1047	1	3	25	50 psi average injection pressure
1049	1	3	25	50 psi average injection pressure
1047	1	4	25	50 psi average injection pressure
1049	1	4	25	50 psi average injection pressure
1047	1	5	25	50 psi average injection pressure
1049	1	5	25	50 psi average injection pressure
1047	1	6	25	50 psi average injection pressure
1049	1	6	25	50 psi average injection pressure
1049	1	7	25	50 psi average injection pressure
1048	1	2	25	55 psi average injection pressure
1050	1	2	25	55 psi average injection pressure
1048	1	3	25	55 psi average injection pressure
1050	1	3	25	55 psi average injection pressure
1048	1	4	25	55 psi average injection pressure
1050	1	4	25	55 psi average injection pressure
1048	1	5	25	55 psi average injection pressure
1050	1	5	25	55 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 07, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
1048	1	6	25	55 psi average injection pressure
1050	1	6	25	55 psi average injection pressure
1048	1	7	25	55 psi average injection pressure
1050	1	7	25	55 psi average injection pressure
1051	1	2	25	55 psi average injection pressure
1052	1	2	25	55 psi average injection pressure
1051	1	3	25	55 psi average injection pressure
1052	1	3	25	55 psi average injection pressure
1051	1	4	25	55 psi average injection pressure
1052	1	4	25	55 psi average injection pressure
1051	1	5	25	55 psi average injection pressure
1052	1	5	25	55 psi average injection pressure
1051	1	6	25	55 psi average injection pressure
1052	1	6	25	55 psi average injection pressure
1051	1	7	25	55 psi average injection pressure
1052	1	7	25	55 psi average injection pressure
1053	1	2	25	55 psi average injection pressure
1054	1	2	25	55 psi average injection pressure
1053	1	3	25	55 psi average injection pressure
1054	1	3	25	55 psi average injection pressure
1053	1	4	25	55 psi average injection pressure
1054	1	4	25	55 psi average injection pressure
1053	1	5	25	55 psi average injection pressure
1054	1	5	25	55 psi average injection pressure
1053	1	6	25	55 psi average injection pressure
1054	1	6	25	55 psi average injection pressure
1053	1	7	25	55 psi average injection pressure
1054	1	7	25	55 psi average injection pressure
1055	1	2	25	55 psi average injection pressure
1057	1	2	25	55 psi average injection pressure
1055	1	3	25	55 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 07, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
1057	1	3	25	55 psi average injection pressure
1055	1	4	25	55 psi average injection pressure
1057	1	4	25	55 psi average injection pressure
1055	1	5	25	55 psi average injection pressure
1057	1	5	25	55 psi average injection pressure
1055	1	6	25	55 psi average injection pressure
1057	1	6	25	55 psi average injection pressure
1055	1	7	25	55 psi average injection pressure
1057	1	7	25	55 psi average injection pressure
1062	1	2	25	55 psi average injection pressure
1063	1	2	25	55 psi average injection pressure
1062	1	3	25	55 psi average injection pressure
1063	1	3	25	55 psi average injection pressure
1062	1	4	25	55 psi average injection pressure
1063	1	4	25	55 psi average injection pressure
1062	1	5	25	55 psi average injection pressure
1063	1	5	25	55 psi average injection pressure
1062	1	6	25	55 psi average injection pressure
1063	1	6	25	55 psi average injection pressure
1062	1	7	25	55 psi average injection pressure
1063	1	7	25	55 psi average injection pressure
1065	1	2	25	55 psi average injection pressure
1066	1	2	25	55 psi average injection pressure
1065	1	3	25	55 psi average injection pressure
1066	1	3	25	55 psi average injection pressure
1065	1	4	25	55 psi average injection pressure
1066	1	4	25	55 psi average injection pressure
1065	1	5	25	55 psi average injection pressure
1066	1	5	25	55 psi average injection pressure
1065	1	6	25	55 psi average injection pressure
1066	1	6	25	55 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 07, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
1065	1	7	25	55 psi average injection pressure
1066	1	7	25	55 psi average injection pressure
1067	1	2	25	55 psi average injection pressure
1068	1	2	25	55 psi average injection pressure
1067	1	3	25	55 psi average injection pressure
1068	1	3	25	55 psi average injection pressure
1067	1	4	25	55 psi average injection pressure
1068	1	4	25	55 psi average injection pressure
1067	1	5	25	55 psi average injection pressure
1068	1	5	25	55 psi average injection pressure
1067	1	6	25	55 psi average injection pressure
1068	1	6	25	55 psi average injection pressure
1067	1	7	25	55 psi average injection pressure
1068	1	7	25	55 psi average injection pressure
1069	1	2	25	65 psi average injection pressure
1070	1	2	25	65 psi average injection pressure
1069	1	3	25	65 psi average injection pressure
1070	1	3	25	65 psi average injection pressure
1069	1	4	25	65 psi average injection pressure
1070	1	4	25	65 psi average injection pressure
1069	1	5	25	65 psi average injection pressure
1070	1	5	25	65 psi average injection pressure
1069	1	6	25	65 psi average injection pressure
1070	1	6	25	65 psi average injection pressure
1069	1	7	25	65 psi average injection pressure
1070	1	7	25	65 psi average injection pressure
1060	1	2	25	65 psi average injection pressure
1061	1	2	25	65 psi average injection pressure
1060	1	3	25	65 psi average injection pressure
1061	1	3	25	65 psi average injection pressure
1060	1	4	25	65 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

Date: August 07, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
1061	1	4	25	65 psi average injection pressure
1060	1	5	25	65 psi average injection pressure
1061	1	5	25	65 psi average injection pressure
1060	1	6	25	65 psi average injection pressure
1061	1	6	25	65 psi average injection pressure
1060	1	7	25	65 psi average injection pressure
1061	1	7	25	65 psi average injection pressure
1058	1	2	25	65 psi average injection pressure
1059	1	2	25	65 psi average injection pressure
1058	1	3	25	65 psi average injection pressure
1059	1	3	25	65 psi average injection pressure
1058	1	4	25	65 psi average injection pressure
1059	1	4	25	65 psi average injection pressure
1058	1	5	25	65 psi average injection pressure
1059	1	5	25	65 psi average injection pressure
1058	1	6	25	65 psi average injection pressure
1059	1	6	25	65 psi average injection pressure
1058	1	7	25	65 psi average injection pressure
1059	1	7	25	65 psi average injection pressure
1056	1	2	25	65 psi average injection pressure
1056	1	3	25	65 psi average injection pressure
1056	1	4	25	65 psi average injection pressure
1056	1	5	25	65 psi average injection pressure
1056	1	6	25	65 psi average injection pressure
1056	1	7	25	65 psi average injection pressure

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

August 09, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
1210	1	1,2	50	75 psi average injection pressure
1210	1	3	25	75 psi average injection pressure
1210	1	4	25	75 psi average injection pressure
1210	1	5	25	75 psi average injection pressure
1210	1	6	25	75 psi average injection pressure
1210	1	7	25	75 psi average injection pressure
1213	1	1,2	50	75 psi average injection pressure
1213	1	3	25	75 psi average injection pressure
1213	1	4	25	75 psi average injection pressure
1213	1	5	25	75 psi average injection pressure
1213	1	6	25	75 psi average injection pressure
1213	1	7	25	75 psi average injection pressure
1213	1	8	25	75 psi average injection pressure
1213	1	9	25	75 psi average injection pressure
1206	1	1,2	50	75 psi average injection pressure
1206	1	3	25	75 psi average injection pressure
1206	1	4	25	75 psi average injection pressure
1206	1	5	25	75 psi average injection pressure
1206	1	6	25	75 psi average injection pressure
1206	1	7	25	75 psi average injection pressure
1206	1	8	25	75 psi average injection pressure
1211	1	1,2	50	75 psi average injection pressure
1211	1	3	25	75 psi average injection pressure
1211	1	4	25	75 psi average injection pressure
1211	1	5	25	75 psi average injection pressure
1211	1	6	25	75 psi average injection pressure
1211	1	7	25	75 psi average injection pressure
1211	1	8	25	75 psi average injection pressure
1211	1	9	25	75 psi average injection pressure
1214	1	1,2	50	75 psi average injection pressure
1214	1	3	25	75 psi average injection pressure
1214	1	4	25	75 psi average injection pressure
1214	1	5	25	75 psi average injection pressure
1205	1	1,2	50	75 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

August 09, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
1205	1	3	25	75 psi average injection pressure
1205	1	4	25	75 psi average injection pressure
1212	1	1,2	50	75 psi average injection pressure
1212	1	3	25	75 psi average injection pressure
1212	1	4	25	75 psi average injection pressure
1212	1	5	25	75 psi average injection pressure
1212	1	6	25	75 psi average injection pressure
1212	1	7	25	75 psi average injection pressure
1212	1	8	25	75 psi average injection pressure
1212	1	9	25	75 psi average injection pressure
1212	1	10	25	75 psi average injection pressure

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

September 06, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
1071	1	1-7	140	60 psi average injection pressure
1072	1	1-7	140	60 psi average injection pressure
1073	1	1-7	140	60 psi average injection pressure
1074	1	1-7	140	60 psi average injection pressure
1075	1	1-7	140	60 psi average injection pressure
1076	1	1-7	140	60 psi average injection pressure
1077	1	1-7	140	60 psi average injection pressure
1078	1	1-7	140	60 psi average injection pressure
1079	1	1-7	140	60 psi average injection pressure
1081	1	1-7	140	60 psi average injection pressure
1082	1	1-7	140	60 psi average injection pressure
1083	1	1-7	140	60 psi average injection pressure
2001	2	1-7	140	60 psi average injection pressure
2002	2	1-7	140	60 psi average injection pressure
2003	2	1-7	140	60 psi average injection pressure
2004	2	1-7	140	60 psi average injection pressure
2005	2	1-7	140	60 psi average injection pressure
2006	2	1-7	140	60 psi average injection pressure
2007	2	1-7	140	60 psi average injection pressure
2034	2	1-7	140	60 psi average injection pressure
2035	2	1-7	140	60 psi average injection pressure
2036	2	1-7	140	60 psi average injection pressure
2037	2	1-7	140	60 psi average injection pressure
2038	2	1-7	140	60 psi average injection pressure
2039	2	1-7	140	60 psi average injection pressure

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ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

September 07, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
1080	1	1-5	100	60 psi average injection pressure
2008	2	1-7	140	60 psi average injection pressure
2009	2	1-7	140	60 psi average injection pressure
2010	2	1-3	60	60 psi average injection pressure
2011	2	1-3	60	60 psi average injection pressure
2012	2	1-3	60	60 psi average injection pressure
2013	2	1-7	140	60 psi average injection pressure
2018	2	1-7	140	60 psi average injection pressure
2022	2	1-7	140	60 psi average injection pressure
2023	2	1-7	140	60 psi average injection pressure
2024	2	1-7	140	60 psi average injection pressure
2025	2	1-5	100	60 psi average injection pressure
2026	2	1-7	140	60 psi average injection pressure
2029	2	1-9	180	60 psi average injection pressure
2030	2	1-3	60	55 psi average injection pressure
2031	2	1-9	180	55 psi average injection pressure
2040	2	1-9	180	55 psi average injection pressure
2041	2	1-9	180	55 psi average injection pressure
2042	2	1-7	140	55 psi average injection pressure
2043	2	1-7	140	55 psi average injection pressure
2044	2	1-7	140	55 psi average injection pressure
2045	2	1-9	180	55 psi average injection pressure
2046	2	1-7	140	55 psi average injection pressure
2047	2	1-7	140	55 psi average injection pressure

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

September 11, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
4001	4	1-7	140	70 psi average injection pressure
4002	4	1-7	140	70 psi average injection pressure
4003	4	1-7	140	70 psi average injection pressure
4004	4	1-5	100	70 psi average injection pressure
4005	4	1-5	100	70 psi average injection pressure
4006	4	1-5	100	70 psi average injection pressure
4007	4	1-5	100	70 psi average injection pressure
4008	4	1-5	100	70 psi average injection pressure
4009	4	1-5	100	70 psi average injection pressure
4010	4	1-5	100	70 psi average injection pressure
4011	4	1-3	60	70 psi average injection pressure
4012	4	1-3	60	70 psi average injection pressure
4013	4	1-5	100	70 psi average injection pressure
4014	4	1-3	60	70 psi average injection pressure
4015	4	1-3	60	70 psi average injection pressure
4016	4	1-5	100	70 psi average injection pressure
4017	4	1-5	100	70 psi average injection pressure
4018	4	1-5	100	70 psi average injection pressure
4019	4	1-5	100	70 psi average injection pressure
4020	4	1-3	60	70 psi average injection pressure
4021	4	1-5	100	70 psi average injection pressure
4022	4	1-3	60	70 psi average injection pressure
4023	4	1-5	100	70 psi average injection pressure
4025	4	1-3	60	70 psi average injection pressure
4026	4	1-5	100	70 psi average injection pressure
4028	4	1-5	100	70 psi average injection pressure
4031	4	1-5	100	70 psi average injection pressure
4032	4	1-3	60	70 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

September 11, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
4033	4	1-3	100	70 psi average injection pressure
4034	4	1-3	60	70 psi average injection pressure
4036	4	1-5	100	70 psi average injection pressure
4038	4	1-3	60	70 psi average injection pressure
4040	4	1-7	140	70 psi average injection pressure
4042	4	1-7	140	70 psi average injection pressure
4046	4	1-3	60	70 psi average injection pressure

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

September 12, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
4044	4	1-7	140	70 psi average injection pressure
4045	4	1-5	100	70 psi average injection pressure
4047	4	1-5	100	70 psi average injection pressure
4048	4	1-7	140	70 psi average injection pressure
4050	4	1-3	60	70 psi average injection pressure
4051	4	1-5	100	70 psi average injection pressure
4052	4	1-7	140	70 psi average injection pressure
4053	4	1-7	140	70 psi average injection pressure
4054	4	1-7	140	70 psi average injection pressure
4055	4	1-5	100	70 psi average injection pressure
3001	3	1-9	180	70 psi average injection pressure
3002	3	1-7	140	70 psi average injection pressure
3003	3	1-7	140	70 psi average injection pressure
3004	3	1-7	140	70 psi average injection pressure
3005	3	1-7	140	70 psi average injection pressure
3006	3	1-5	100	70 psi average injection pressure
3007	3	1-7	140	70 psi average injection pressure
3008	3	1-5	100	70 psi average injection pressure
3009	3	1-7	140	70 psi average injection pressure
3010	3	1-7	140	70 psi average injection pressure
3011	3	1-7	140	70 psi average injection pressure
3012	3	1-9	180	70 psi average injection pressure
3013	3	1-7	140	70 psi average injection pressure
3014	3	1-7	140	70 psi average injection pressure
3015	3	1-7	140	70 psi average injection pressure
3016	3	1-7	140	70 psi average injection pressure
3017	3	1-7	140	70 psi average injection pressure
3018	3	1-11	220	70 psi average injection pressure

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

September 12, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
3020	3	1-7	140	70 psi average injection pressure
3022	3	1-7	140	70 psi average injection pressure
3023	3	1-7	140	70 psi average injection pressure
3024	3	1-7	140	70 psi average injection pressure
3025	3	1-7	140	70 psi average injection pressure
3026	3	1-7	140	70 psi average injection pressure
3027	3	1-7	140	70 psi average injection pressure
3028	3	1-7	140	70 psi average injection pressure
3029	3	1-7	140	70 psi average injection pressure
3030	3	1-7	180	70 psi average injection pressure
3031	3	1-9	180	70 psi average injection pressure
3032	3	1-9	180	70 psi average injection pressure
3033	3	1-7	140	70 psi average injection pressure
3034	3	1-9	180	70 psi average injection pressure

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Casing Grout Table

September 13, 1996

Hole No.	Trench No.	Sleeve No.	Casing Grout Quantity Injected (Litres)	Comments
4029	4	1-3	60	60 psi average injection pressure
4030	4	1-3	60	60 psi average injection pressure
4035	4	1-5	100	60 psi average injection pressure
4037	4	1-5	100	60 psi average injection pressure
4039	4	1-5	100	60 psi average injection pressure
4041	4	1-7	140	60 psi average injection pressure
4043	4	1-5	100	60 psi average injection pressure
4049	4	1-7	140	60 psi average injection pressure
4056	4	1-7	140	60 psi average injection pressure
3019	3	1-7	140	60 psi average injection pressure
3021	3	1-7	140	60 psi average injection pressure
3035	3	1-7	140	60 psi average injection pressure
3036	3	1-7	140	60 psi average injection pressure
3037	3	1-7	140	60 psi average injection pressure
3038	3	1-7	140	60 psi average injection pressure
3039	3	1-7	140	60 psi average injection pressure
3040	3	1-5	100	60 psi average injection pressure
3041	3	1-7	140	60 psi average injection pressure
3042	3	1-5	100	60 psi average injection pressure
3043	3	1-7	140	60 psi average injection pressure
3044	3	1-7	140	60 psi average injection pressure
3045	3	1-5	100	60 psi average injection pressure
3046	3	1-7	140	60 psi average injection pressure
3047	3	1-9	180	60 psi average injection pressure
3048	3	1-5	100	60 psi average injection pressure
3049	3	1-7	140	60 psi average injection pressure
3050	3	1-5	100	60 psi average injection pressure

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APPENDIX C
IN SITU HYDRAULIC CONDUCTIVITY TESTING RECORDS

SUMMARY OF RESIDUAL IN SITU HYDRAULIC CONDUCTIVITY CALCULATIONS														
WAG 4 SEEPS 4 AND 6 REMOVAL ACTION														
Test Date: October 28 & 29, 1996														
	Depth	Depth		Corr.		Approx.						Total	Total	
	Stick	to	to Top	Stage	Stage	Avg. Corr.	Depth	Grav. Hd.	Grav. Hd.	Press.	Head	Effec.	Effec.	Hydraulic
Hole	Up	Tip	Packer	Length	Length	Flow Rate	to Water	Abv. Grnd.	Bel. Grnd.	Head	Losses	Head	Head	Conductivity
No.	(ft)	(ft)	(ft)	(ft)	(m)	(cc/min)	(ft)*	(m)	(m)	(m)	(m)	(m)	(psi)	(cm/s)
1002	1.04	12.50	6	1.899	2.04	1.0	5.2	2.53	1.585	1.76	1.42	4.455	6.337	1.45905E-07
1012	0.71	14.67	6	2.460	2.54	60.7	5.5	2.38	1.676	3.52	1.42	6.156	8.757	5.14721E-06
1022	0.64	14.92	6	2.515	2.54	34.0	5.8	2.13	1.768	3.52	1.42	5.998	8.532	2.95933E-06
1032	0.81	14.33	6	2.387	2.54	16.1	6.1	2.01	1.859	3.52	1.42	5.969	8.491	1.40804E-06
1042	0.90	11.33	6	1.500	1.52	3.0	6.4	1.83	1.951	3.52	1.42	5.881	8.365	4.45031E-07
1055	0.67	15.00	6	2.548	2.54	10.7	6.9	1.58	2.103	3.52	1.42	5.783	8.226	9.65898E-07
1075	0.64	15.00	6	2.539	2.54	3.0	7.5	1.40	2.286	3.52	1.42	5.786	8.230	2.70678E-07
2002	0.67	14.33	6	2.344	2.54	47.7	3.8	2.13	1.158	3.52	1.42	5.388	7.665	4.62148E-06
2013	0.92	14.50	6	2.472	2.54	3.0	4.4	1.98	1.341	3.52	1.42	5.421	7.711	2.88896E-07
2024	0.75	16.00	6	2.877	3.05	1.38	5.2	1.86	1.585	3.52	1.42	5.545	7.888	1.08199E-07
2031	0.50	9.00	6	0.668	0.50	31.1	5.6	1.62	1.707	3.52	1.42	5.427	7.720	1.51979E-05
2036	0.50	20.00	6	4.020	4.06	37.8	6	1.52	1.829	3.52	1.42	5.449	7.751	2.26573E-06
2046	0.25	15.00	6	2.420	2.54	13.6	6.5	1.22	1.981	3.52	1.42	5.301	7.541	1.33929E-06
3007	0.71	12.33	6	1.747	2.04	23.8	7.6	2.68	2.316	3.52	1.42	7.096	10.095	2.17995E-06
3013	0.88	16.58	6	3.094	3.05	11.6	8.2	2.47	2.499	3.52	1.42	7.069	10.056	7.13381E-07
3019	0.64	20.00	6	4.063	4.06	3.0	8.5	2.19	2.591	3.52	1.42	6.881	9.788	1.42397E-07
3029	0.81	16.10	6	2.926	3.05	42.1	9.3	2.26	2.835	3.52	1.42	7.195	10.234	2.544E-06
3040	1.10	16.10	8	2.405	2.54	34.3	10	1.77	3.048	3.52	1.42	6.918	9.841	2.58835E-06
3049	0.50	12.00	6	1.582	1.52	1.0	10.5	1.22	3.200	3.52	1.42	6.520	9.275	1.33791E-07
4023	0.88	12.75	6	1.926	2.04	5.6	7.5	2.62	2.286	3.52	1.42	7.006	9.966	5.19555E-07
4033	0.85	12.50	6	1.841	2.04	9.0	8.0	2.25	2.438	3.52	1.42	6.788	9.656	8.61764E-07
4042	0.79	12.90	6	1.945	2.04	45.5	8.5	2.01	2.591	3.52	1.42	6.701	9.532	4.41365E-06
4053	0.58	13.20	6	1.972	2.04	1.0	9.0	1.46	2.743	3.52	1.42	6.303	8.966	1.03122E-07
		*Measured below ground surface.												

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

In-Situ Hydraulic Conductivity Testing Record

August 05, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1001	1	20.0	80.0	Negative	0.5	Infinity
1001	4	30.0	54.0	Negative	0.5	Infinity
1001	2	24.0	44.0	Negative	0.5	Infinity
1001	5	25.0	50.0	Negative	0.5	Infinity
1001	6	30.0	55.0	Negative	0.5	Infinity
1001	3	25.0	80.0	Negative	0.5	Infinity
1002	3	31.0	54.0	Negative	0.5	Infinity
1002	4	30.0	55.0	Negative	0.5	Infinity
1002	6	27.0	35.0	Negative	0.5	Infinity
1002	5	27.0	32.0	Negative	0.5	Infinity
1002	2	28.0	52.0	Negative	0.5	Infinity
1002	1	24.0	84.0	Negative	0.5	Infinity
1003	1	25.0	38.0	Negative	0.5	Infinity
1003	3	26.0	30.0	Negative	0.5	Infinity
1003	4	23.0	28.0	Negative	0.5	Infinity
1003	5	22.0	30.0	Negative	0.5	Infinity
1003	6	23.0	30.0	Negative	0.5	Infinity
1003	7	25.0	34.0	Negative	0.5	Infinity
1003	2	24.0	30.0	Negative	0.5	Infinity
1004	3	25.0	35.0	Negative	0.5	Infinity
1004	7	26.0	35.0	Negative	0.5	Infinity
1004	6	25.0	36.0	Negative	0.5	Infinity
1004	5	27.0	40.0	Negative	0.5	Infinity
1004	4	26.0	40.0	Negative	0.5	Infinity
1004	2	26.0	34.0	Negative	0.5	Infinity
1004	1	25.0	50.0	Negative	0.5	Infinity
1005	1	24.0	36.0	Negative	0.5	Infinity
1005	6	19.0	40.0	Negative	0.5	Infinity
1005	5	20.0	27.0	Negative	0.5	Infinity
1005	4	25.0	35.0	Negative	0.5	Infinity
1005	3	27.0	38.0	Negative	0.5	Infinity
1005	2	27.0	36.0	Negative	0.5	Infinity
1006	3	24.0	30.0	Negative	0.5	Infinity

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

In-Situ Hydraulic Conductivity Testing Record

August 05, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1006	6	25.0	30.0	Negative	0.5	Infinity
1006	5	25.0	32.0	Negative	0.5	Infinity
1006	4	26.0	34.0	Negative	0.5	Infinity
1006	1,2	24.0	34.0	Negative	1	Infinity
1007	4	27.0	32.0	Negative	0.5	Infinity
1007	1	24.0	34.0	Negative	0.5	Infinity
1007	3	25.0	25.0	Negative	0.5	Infinity
1007	2	26.0	33.0	Negative	0.5	Infinity
1007	5	24.0	23.0	Negative	0.5	Infinity
1007	7	15.0	34.0	Negative	0.5	Infinity
1007	6	26.0	29.0	Negative	0.5	Infinity
1008	4	27.0	27.0	Negative	0.5	Infinity
1008	1,2	24.0	30.0	Negative	1	Infinity
1008	8	25.0	33.0	Negative	0.5	Infinity
1008	5	26.0	28.0	Negative	0.5	Infinity
1008	6	28.0	32.0	Negative	0.5	Infinity
1008	3	30.0	30.0	Negative	0.5	Infinity
1008	7	25.0	35.0	Negative	0.5	Infinity
1009	5	25.0	28.0	Negative	0.5	Infinity
1009	6	28.0	34.0	Negative	0.5	Infinity
1009	2	28.0	28.0	Negative	0.5	Infinity
1009	3	24.0	24.0	Negative	0.5	Infinity
1009	1	23.0	48.0	Negative	0.5	Infinity
1009	4	26.0	27.0	Negative	0.5	Infinity
1010	7	26.0	26.0	Negative	0.5	Infinity
1010	5	32.0	36.0	Negative	0.5	Infinity
1010	6	33.0	38.0	Negative	0.5	Infinity
1010	4	30.0	35.0	Negative	0.5	Infinity
1011	7	28.0	31.0	Negative	0.5	Infinity
1011	4	31.0	35.0	Negative	0.5	Infinity
1011	2	31.0	35.0	Negative	0.5	Infinity
1011	3	30.0	35.0	Negative	0.5	Infinity
1011	1	20.0	50.0	Negative	0.5	Infinity

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

In-Situ Hydraulic Conductivity Testing Record

August 05, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1011	5	33.0	40.0	Negative	0.5	Infinity
1011	6	33.0	41.0	Negative	0.5	Infinity
1012	4	28.0	26.0	Negative	0.5	Infinity
1012	2	26.0	28.0	Negative	0.5	Infinity
1012	1	22.0	50.0	Negative	0.5	Infinity
1012	3	28.0	28.0	Negative	0.5	Infinity
1012	5	30.0	30.0	Negative	0.5	Infinity
1012	7	26.0	32.0	Negative	0.5	Infinity
1012	6	29.0	30.0	Negative	0.5	Infinity
1013	3	29.0	31.0	Negative	0.5	Infinity
1013	2	30.0	31.0	Negative	0.5	Infinity
1013	6	28.0	31.0	Negative	0.5	Infinity
1013	4	29.0	30.0	Negative	0.5	Infinity
1013	5	28.0	30.0	Negative	0.5	Infinity
1013	7	26.0	32.0	Negative	0.5	Infinity
1013	1	22.0	45.0	Negative	0.5	Infinity
1014	5	27.0	24.0	Negative	0.5	Infinity
1014	4	30.0	30.0	Negative	0.5	Infinity
1014	8	14.0	40.0	Negative	0.5	Infinity
1014	6	28.0	30.0	Negative	0.5	Infinity
1014	7	27.0	32.0	Negative	0.5	Infinity
1014	3	31.0	32.0	Negative	0.5	Infinity
1014	2	31.0	31.0	Negative	0.5	Infinity
1014	1	20.0	45.0	Negative	0.5	Infinity
1015	5	27.0	35.0	Negative	0.5	Infinity
1015	7	25.0	35.0	Negative	0.5	Infinity
1015	6	28.0	36.0	Negative	0.5	Infinity
1015	3	30.0	34.0	Negative	0.5	Infinity
1015	4	32.0	38.0	Negative	0.5	Infinity
1015	2	25.0	22.0	Negative	0.5	Infinity
1016	3	27.0	31.0	Negative	0.5	Infinity
1016	2	29.0	34.0	Negative	0.5	Infinity
1016	4	26.0	28.0	Negative	0.5	Infinity

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

In-Situ Hydraulic Conductivity Testing Record

August 05, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1016	5	24.0	26.0	Negative	0.5	Infinity
1016	6	24.0	33.0	Negative	0.5	Infinity
1016	7	24.0	30.0	Negative	0.5	Infinity
1026	1	22.0	49.0	Negative	0.5	Infinity

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

In-Situ Hydraulic Conductivity Testing Record

August 13, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1205	2,3,4	28.0	33.0	Negative	1.5	Infinity
1205	1	20.0	35.0	Negative	0.5	Infinity
1206	1	29.0	30.0	Negative	0.5	Infinity
1206	3,4,5	32.0	30.0	Negative	1.5	Infinity
1210	1	29.0	28.0	Negative	0.5	Infinity
1210	2,3,4	30.0	30.0	Negative	1.5	Infinity
1211	4,5,6	33.0	30.0	Negative	1.5	Infinity
1211	1	30.0	30.0	Negative	0.5	Infinity
1212	1	30.0	29.0	Negative	0.5	Infinity
1212	4,5,6	32.0	30.0	Negative	1.5	Infinity
1213	2,3,4	34.0	29.0	Negative	1.5	Infinity
1213	1	19.0	30.0	Negative	0.5	Infinity
1214	2,3,4	28.0	32.0	Negative	1.5	Infinity
1214	1	23.0	35.0	Negative	0.5	Infinity

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ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

In-Situ Hydraulic Conductivity Testing Record

August 15, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1017	1	24.0	23.0	(-)	0.5	Infinity
1017	4	26.0	32.0	(-)	0.5	Infinity
1017	2	30.0	28.0	(-)	0.5	Infinity
1017	6	28.0	30.0	(-)	0.5	Infinity
1017	5	29.0	29.0	(-)	0.5	Infinity
1017	7	28.0	30.0	(-)	0.5	Infinity
1017	3	24.0	37.0	(-)	0.5	Infinity
1018	7	26.0	32.0	(-)	0.5	Infinity
1018	5	29.0	31.0	(-)	0.5	Infinity
1018	2	26.0	36.0	(-)	0.5	Infinity
1018	6	28.0	38.0	(-)	0.5	Infinity
1018	1	26.0	35.0	(-)	0.5	Infinity
1018	3	28.0	31.0	(-)	0.5	Infinity
1018	4	29.0	32.0	(-)	0.5	Infinity
1019	4	29.0	30.0	(-)	0.5	Infinity
1019	3	30.0	28.0	(-)	0.5	Infinity
1019	6	27.0	32.0	(-)	0.5	Infinity
1019	5	29.0	32.0	(-)	0.5	Infinity
1019	7	27.0	33.0	(-)	0.5	Infinity
1019	2	29.0	29.0	(-)	0.5	Infinity
1019	1	26.0	30.0	(-)	0.5	Infinity
1020	4	25.0	38.0	(-)	0.5	Infinity
1020	2	24.0	38.0	(-)	0.5	Infinity
1020	3	12.5	26.0	(-)	0.5	Infinity
1020	5	28.0	42.0	(-)	0.5	Infinity
1020	6	26.0	45.0	(-)	0.5	Infinity
1020	1	25.0	32.0	(-)	0.5	Infinity
1021	1	24.0	38.0	(-)	0.5	Infinity
1022	1	28.0	29.0	(-)	0.5	Infinity
1023	1	26.0	35.0	(-)	0.5	Infinity
1024	1	29.0	29.0	(-)	0.5	Infinity
1025	1	26.0	34.0	(-)	0.5	Infinity
1026	1	27.0	34.0	(-)	0.5	Infinity

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

In-Situ Hydraulic Conductivity Testing Record

August 15, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1027	1	30.0	29.0	(-)	0.5	Infinity
1028	1	29.0	50.0	(-)	0.5	Infinity
1030	1	30.0	30.0	(-)	0.5	Infinity
1031	1	28.0	34.0	(-)	0.5	Infinity
1032	1	29.0	30.0	(-)	0.5	Infinity
1033	1	27.0	33.0	(-)	0.5	Infinity
1035	1	27.0	49.0	(-)	0.5	Infinity
1036	1	29.0	30.0	(-)	0.5	Infinity
1037	1	27.0	32.0	(-)	0.5	Infinity
1038	1	28.0	30.0	(-)	0.5	Infinity
1039	1	27.0	29.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

August 16, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1021	2	25.0	68.0	(-)	0.5	Infinity
1021	5	30.0	42.0	(-)	0.5	Infinity
1021	8	31.0	48.0	(-)	0.5	Infinity
1021	7	32.0	45.0	(-)	0.5	Infinity
1021	6	28.0	30.0	(-)	0.5	Infinity
1021	4	30.0	41.0	(-)	0.5	Infinity
1021	3	30.0	40.0	(-)	0.5	Infinity
1022	4	26.0	40.0	(-)	0.5	Infinity
1022	2	25.0	35.0	(-)	0.5	Infinity
1022	8	26.0	37.0	(-)	0.5	Infinity
1022	3	27.0	38.0	(-)	0.5	Infinity
1022	7	28.0	40.0	(-)	0.5	Infinity
1022	6	28.0	40.0	(-)	0.5	Infinity
1022	5	28.0	42.0	(-)	0.5	Infinity
1023	4	26.0	28.0	(-)	0.5	Infinity
1023	6	24.0	30.0	(-)	0.5	Infinity
1023	5	25.0	28.0	(-)	0.5	Infinity
1023	7	24.0	30.0	(-)	0.5	Infinity
1023	2	26.0	37.0	(-)	0.5	Infinity
1023	3	32.0	28.0	(-)	0.5	Infinity
1024	5	29.0	29.0	(-)	0.5	Infinity
1024	3	29.0	29.0	(-)	0.5	Infinity
1024	6	28.0	28.0	(-)	0.5	Infinity
1024	7	27.0	27.0	(-)	0.5	Infinity
1024	2	30.0	30.0	(-)	0.5	Infinity
1024	8	28.0	28.0	(-)	0.5	Infinity
1024	4	30.0	27.0	(-)	0.5	Infinity
1027	5	26.0	47.0	(-)	0.5	Infinity
1027	4	28.0	42.0	(-)	0.5	Infinity
1027	7	30.0	65.0	(-)	0.5	Infinity
1027	6	25.0	51.0	(-)	0.5	Infinity
1027	2	25.0	46.0	(-)	0.5	Infinity
1027	3	25.0	38.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

August 16, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1030	5	30.0	40.0	(-)	0.5	Infinity
1030	6	28.0	40.0	(-)	0.5	Infinity
1030	4	27.0	35.0	(-)	0.5	Infinity
1030	2	25.0	30.0	(-)	0.5	Infinity
1030	7	35.0	50.0	(-)	0.5	Infinity
1030	3	26.0	35.0	(-)	0.5	Infinity
1030	8	35.0	50.0	(-)	0.5	Infinity
1032	3	25.0	52.0	(-)	0.5	Infinity
1032	8	27.0	54.0	(-)	0.5	Infinity
1032	4	27.0	46.0	(-)	0.5	Infinity
1032	5	24.0	48.0	(-)	0.5	Infinity
1032	6	25.0	50.0	(-)	0.5	Infinity
1032	2	29.0	52.0	(-)	0.5	Infinity
1032	7	25.0	50.0	(-)	0.5	Infinity
1037	7	25.0	53.0	(-)	0.5	Infinity
1037	5	29.0	40.0	(-)	0.5	Infinity
1037	6	27.0	46.0	(-)	0.5	Infinity
1037	2	28.0	37.0	(-)	0.5	Infinity
1037	4	28.0	38.0	(-)	0.5	Infinity
1037	3	27.0	36.0	(-)	0.5	Infinity
1040	6	27.0	70.0	(-)	0.5	Infinity
1040	4	27.0	54.0	(-)	0.5	Infinity
1040	2	26.0	49.0	(-)	0.5	Infinity
1040	1	20.0	68.0	(-)	0.5	Infinity
1040	3	27.0	53.0	(-)	0.5	Infinity
1040	5	28.0	58.0	(-)	0.5	Infinity
1041	1	23.0	70.0	(-)	0.5	Infinity
1042	3	27.0	62.0	(-)	0.5	Infinity
1042	6	29.0	73.0	(-)	0.5	Infinity
1042	5	28.0	70.0	(-)	0.5	Infinity
1042	4	27.0	62.0	(-)	0.5	Infinity
1042	1	20.0	68.0	(-)	0.5	Infinity
1042	2	26.0	60.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

August 16, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1043	1	27.0	71.0	(-)	0.5	Infinity
1044	3	27.0	80.0	(-)	0.5	Infinity
1044	2	25.0	55.0	(-)	0.5	Infinity
1044	4	29.0	80.0	(-)	0.5	Infinity
1044	5	27.0	90.0	10	0.5	1.02E-04
1044	7	24.0	93.0	15	0.5	6.07E-05
1044	8	26.0	80.0	(-)	0.5	Infinity
1044	6	26.0	93.0	13	0.5	Infinity
1046	1	25.0	68.0	(-)	0.5	Infinity
1047	4	28.0	66.0	(-)	0.5	Infinity
1047	5	28.0	70.0	(-)	0.5	Infinity
1047	6	28.0	83.0	3	0.5	3.54E-04
1047	3	29.0	61.0	(-)	0.5	Infinity
1047	2	27.0	57.0	(-)	0.5	Infinity
1050	6	28.0	63.0	(-)	0.5	Infinity
1050	7	28.0	68.0	(-)	0.5	Infinity
1050	3	27.0	65.0	(-)	0.5	Infinity
1050	8	26.0	71.0	(-)	0.5	Infinity
1050	9	20.0	75.0	(-)	0.5	Infinity
1050	5	23.0	60.0	(-)	0.5	Infinity
1050	4	29.0	65.0	(-)	0.5	Infinity
1050	2	28.0	64.0	(-)	0.5	Infinity
1053	4	28.0	54.0	(-)	0.5	Infinity
1053	5	26.0	58.0	(-)	0.5	Infinity
1053	6	32.0	69.0	(-)	0.5	Infinity
1053	2	25.0	55.0	(-)	0.5	Infinity
1053	7	25.0	64.0	(-)	0.5	Infinity
1053	8	23.0	74.0	(-)	0.5	Infinity
1053	3	31.0	56.0	(-)	0.5	Infinity
1055	2,3	20.0	56.0	(-)	1	Infinity
1055	4,5	19.0	56.0	(-)	1	Infinity
1055	6,7	25.0	55.0	(-)	1	Infinity
1057	1	22.0	69.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

August 16, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1057	2,3	20.0	56.0	(-)	1	Infinity
1057	4,5	20.0	55.0	(-)	1	Infinity
1057	6,7	25.0	56.0	(-)	1	Infinity
1210	7	30.0	45.0	(-)	0.5	Infinity
1210	6	22.0	142.0	72	0.5	1.16E-05
1210	5	6.5	175.0	157	0.5	1.57E-06
1211	5	11.0	165.0	125	0.5	3.34E-06
1211	6	9.0	152.0	117	0.5	2.92E-06
1211	4	25.0	35.0	(-)	0.5	Infinity
1212	6	27.0	30.0	(-)	0.5	Infinity
1212	5	27.0	35.0	(-)	0.5	Infinity
1212	4	30.0	30.0	(-)	0.5	Infinity
1213	5	29.0	29.0	(-)	0.5	Infinity
1213	4	27.0	50.0	(-)	0.5	Infinity
1213	3	28.0	85.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

August 19, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1062	1	27.0	90.0	10	0.5	1.02E-04
1063	2,3	26.0	20.0	(-)	1	Infinity
1063	6,7	23.0	20.0	(-)	1	Infinity
1063	4,5	23.0	23.0	(-)	1	Infinity
1063	1	28.0	26.0	(-)	1	Infinity
1065	4,5	23.0	27.0	(-)	1	Infinity
1065	6,7	22.0	28.0	(-)	1	Infinity
1065	2,3	21.0	28.0	(-)	1	Infinity
1067	4,5	23.0	27.0	(-)	0.5	Infinity
1067	6,7	22.0	28.0	(-)	0.5	Infinity
1067	2,3	27.0	23.0	(-)	0.5	Infinity
1070	2,3	27.0	24.0	(-)	0.5	Infinity
1070	4,5	28.0	30.0	(-)	0.5	Infinity
1070	6,7	22.0	29.0	(-)	0.5	Infinity
1070	8,9	26.0	35.0	(-)	0.5	Infinity

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

In-Situ Hydraulic Conductivity Testing Record

August 19, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1047	1	22.0	17.0	(-)	0.5	Infinity
1048	1	21.0	19.0	(-)	0.5	Infinity
1049	1	22.0	35.0	(-)	0.5	Infinity
1050	1	27.0	27.0	(-)	0.5	Infinity
1052	1	24.0	21.0	(-)	0.5	Infinity
1053	1	25.0	20.0	(-)	0.5	Infinity
1054	1	23.0	23.0	(-)	0.5	Infinity
1055	1	26.0	24.0	(-)	0.5	Infinity
1056	1	27.0	24.0	(-)	0.5	Infinity
1057	1	27.0	23.0	(-)	0.5	Infinity
1059	1	27.0	24.0	(-)	0.5	Infinity
1060	2,3	26.0	17.0	(-)	1	Infinity
1060	6,7	25.0	30.0	(-)	1	Infinity
1060	1	26.0	23.0	(-)	0.5	Infinity
1060	4,5	22.0	24.0	(-)	1	Infinity
1061	1	27.0	24.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

September 09, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1075	1	4.0	90.0	75	0.5	2.02E-06
1080	2,3	24.0	25.0	(-)	0.5	Infinity
1083	1	24.0	20.0	(-)	0.5	Infinity
1080	4,5	24.0	30.0	(-)	0.5	Infinity
1080	1	22.0	26.0	(-)	0.5	Infinity
1083	2,3	26.0	20.0	(-)	0.5	Infinity
1083	4,5	21.0	16.0	(-)	0.5	Infinity
1083	6,7	17.0	23.0	(-)	0.5	Infinity
1075	2,3	20.0	22.0	(-)	0.5	Infinity
1075	4,5	22.0	21.0	(-)	0.5	Infinity
1075	6,7	21.0	21.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

September 13, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
2001	1	17.0	68.0	(-)	0.5	Infinity
2001	6	16.0	25.0	(-)	0.5	Infinity
2002	4	20.0	19.0	(-)	0.5	Infinity
2002	5	18.0	21.0	(-)	0.5	Infinity
2002	2	5.5	88.0	75	0.5	2.78E-06
2002	3	28.0	47.0	(-)	0.5	Infinity
2006	4	18.0	23.0	(-)	0.5	Infinity
2006	5	19.0	19.0	(-)	0.5	Infinity
2006	1	33.0	42.0	(-)	0.5	Infinity
2006	2	18.0	21.0	(-)	0.5	Infinity
2006	3	10.0	36.0	(-)	0.5	Infinity
2013	4	20.0	19.0	(-)	0.5	Infinity
2013	3	16.0	25.0	(-)	0.5	Infinity
2013	2	23.0	15.0	(-)	0.5	Infinity
2013	1	23.0	17.0	(-)	0.5	Infinity
2013	5	18.0	23.0	(-)	0.5	Infinity
2018	4	22.0	16.0	(-)	0.5	Infinity
2018	3	23.0	17.0	(-)	0.5	Infinity
2018	5	24.0	15.0	(-)	0.5	Infinity
2018	2	23.0	16.0	(-)	0.5	Infinity
2018	6	23.0	16.0	(-)	0.5	Infinity
2018	1	23.0	18.0	(-)	0.5	Infinity
2022	2	22.0	18.0	(-)	0.5	Infinity
2022	5	23.0	18.0	(-)	0.5	Infinity
2022	6	20.0	22.0	(-)	0.5	Infinity
2022	3	22.0	19.0	(-)	0.5	Infinity
2022	4	20.0	20.0	(-)	0.5	Infinity
2022	1	22.0	16.0	(-)	0.5	Infinity
2024	3	24.0	15.0	(-)	0.5	Infinity
2024	1	22.0	17.0	(-)	0.5	Infinity
2024	2	21.0	21.0	(-)	0.5	Infinity
2025	1	22.5	17.0	(-)	0.5	Infinity
2025	3	8.0	44.0	14	0.5	2.17E-05

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In-Situ Hydraulic Conductivity Testing Record

September 13, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
2025	2	0.5	58.0	58	0.5	3.27E-07
2026	1	23.0	16.0	(-)	0.5	Infinity
2026	3	23.0	20.0	(-)	0.5	Infinity
2026	4	22.0	22.0	(-)	0.5	Infinity
2026	5	24.0	15.0	(-)	0.5	Infinity
2026	2	4.0	50.0	40	0.5	3.80E-06
2027	1	18.0	24.0	(-)	0.5	Infinity
2029	2	15.0	28.0	(-)	0.5	Infinity
2029	3	23.0	16.0	(-)	0.5	Infinity
2029	5	20.0	21.0	(-)	0.5	Infinity
2029	6	12.0	32.0	(-)	0.5	Infinity
2029	4	21.0	20.0	(-)	0.5	Infinity
2029	1	22.0	19.0	(-)	0.5	Infinity
2030	2	18.0	28.0	(-)	0.5	Infinity
2030	1	23.0	17.0	(-)	0.5	Infinity
2031	2	21.0	24.0	(-)	0.5	Infinity
2031	3	23.0	20.0	(-)	0.5	Infinity
2031	4	24.0	20.0	(-)	0.5	Infinity
2031	5	23.0	20.0	(-)	0.5	Infinity
2031	1	23.0	18.0	(-)	0.5	Infinity
2031	6	24.0	20.0	(-)	0.5	Infinity
2036	9	18.0	23.0	(-)	0.5	Infinity
2036	10	19.0	23.0	(-)	0.5	Infinity
2036	1	23.0	17.0	(-)	0.5	Infinity
2037	3	21.0	24.0	(-)	0.5	Infinity
2037	4	22.0	24.0	(-)	0.5	Infinity
2037	5	20.0	25.0	(-)	0.5	Infinity
2037	2	20.0	26.0	(-)	0.5	Infinity
2038	5	14.0	31.0	(-)	0.5	Infinity
2038	10	20.0	22.0	(-)	0.5	Infinity
2038	8	20.0	20.0	(-)	0.5	Infinity
2038	1	23.0	18.0	(-)	0.5	Infinity
2038	7	24.0	15.0	(-)	0.5	Infinity

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

In-Situ Hydraulic Conductivity Testing Record

September 13, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
2039	1	23.0	19.0	(-)	0.5	Infinity
2043	1	20.0	23.0	(-)	0.5	Infinity
2043	3	21.0	26.0	(-)	0.5	Infinity
2043	5	19.0	27.0	(-)	0.5	Infinity
2043	4	19.0	28.0	(-)	0.5	Infinity
2043	2	21.0	26.0	(-)	0.5	Infinity
2045	1	19.0	25.0	(-)	0.5	Infinity
2046	5	24.0	27.0	(-)	0.5	Infinity
2046	4	20.0	21.0	(-)	0.5	Infinity
2046	1	20.0	21.0	(-)	0.5	Infinity
2046	3	20.0	20.0	(-)	0.5	Infinity
2046	2	21.0	20.0	(-)	0.5	Infinity
2047	1	13.0	34.0	(-)	0.5	Infinity
2047	2	22.0	35.0	(-)	0.5	Infinity
2047	3	24.0	31.0	(-)	0.5	Infinity
2047	4	20.0	33.0	(-)	0.5	Infinity
2047	5	18.0	29.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

September 19, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1012	1	0.3	13.0	12.0	0.5	9.49E-07
1012	2	0.9	24.8	23.8	0.5	1.44E-06
1012	2	3.0	35.8	33.8	0.5	3.37E-06
1012	2	0.6	12.2	11.2	0.5	2.03E-06
1012	3	0.7	15.0	14.0	0.5	1.90E-06
1012	4	1.5	15.0	14.0	0.5	4.07E-06
1012	5	0.4	16.0	15.0	0.5	1.01E-06
1012	6	0.4	14.6	13.6	0.5	1.12E-06
1012	7	2.0	15.0	14.0	0.5	5.42E-06
1022	1	0.3	11.3	10.3	0.5	1.11E-06
1022	2	0.1	10.0	9.0	0.5	4.22E-07
1022	3	0.0	11.0	10.0	0.5	0.00E+00
1022	4	2.4	13.7	12.7	0.5	7.17E-06
1022	4	0.0	25.0	25.0	0.5	0.00E+00
1022	5	0.2	16.5	15.5	0.5	4.90E-07
1022	6	0.0	16.0	16.0	0.5	0.00E+00
1022	7	0.0	14.5	14.5	0.5	0.00E+00

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In-Situ Hydraulic Conductivity Testing Record

September 21, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1005	1, 2	0.2	18.5	17.5	1	2.17E-07
1005	3, 4	0.1	21.0	20.0	1	9.49E-08
1011	1, 2	0.1	24.5	23.5	1	8.07E-08
1011	3, 4	0.2	22.1	21.1	1	1.80E-07
1013	3, 4	0.1	23.5	22.5	1	8.43E-08
1013	1, 2	0.1	24.5	23.5	1	8.07E-08
1013	1 - 4	0.1	26.2	25.2	2	3.76E-08
1017	3, 4	0.4	23.5	22.5	1	3.37E-07
1017	1, 2	0.2	23.0	22.0	1	1.73E-07
1021	1, 2	0.1	25.0	24.0	1	7.91E-08
1021	3, 4	0.2	24.5	23.5	1	1.61E-07
1038	1, 2	0.2	13.9	12.9	1	2.94E-07
1038	3, 4	0.4	11.8	10.8	1	7.03E-07
1039	1, 2	0.2	13.3	12.3	1	3.09E-07
1039	3, 4	0.1	18.5	17.5	1	1.08E-07
1039	5, 6	0.1	9.5	8.5	1	2.23E-07
1042	3, 4	1.7	9.8	8.8	1	3.67E-06
1042	1, 2	3.3	17.4	15.4	1	4.07E-06
1049	3, 4	0.6	19.5	18.5	1	6.15E-07
1049	1, 2	0.2	12.8	11.8	1	3.22E-07
1049	5, 6	0.6	17.3	16.3	1	6.98E-07
1055	3, 4	5.7	10.0	8.0	1	1.35E-05
1055	1, 2	0.3	13.4	12.4	1	4.59E-07
1061	3, 4	2.5	12.5	11.5	1	4.13E-06
1061	1, 2	0.5	20.6	19.6	1	4.84E-07

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In-Situ Hydraulic Conductivity Testing Record

September 21, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1075	1, 2	2.5	18.5	17.5	1	2.71E-06
1075	3, 4	2.0	14.0	13.0	1	2.92E-06
1078	3, 4	0.4	18.5	17.5	1	4.34E-07
1078	1, 2	0.2	21.5	20.5	1	1.85E-07
1080	1, 2	0.2	21.5	20.5	1	1.85E-07

ACT Rembco Representative

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In-Situ Hydraulic Conductivity Testing Record

October 02, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
3001	1	22.0	17.0	(-)	0.5	Infinity
3001	2	19.0	13.0	(-)	0.5	Infinity
3001	3	13.0	8.0	(-)	0.5	Infinity
3001	4	13.0	8.0	(-)	0.5	Infinity
3001	5	30.0	25.0	(-)	0.5	Infinity
3001	6	26.0	40.0	(-)	0.5	Infinity
3003	4	24.0	24.0	(-)	0.5	Infinity
3003	6	17.0	13.0	(-)	0.5	Infinity
3003	5	15.0	12.0	(-)	0.5	Infinity
3003	3	13.0	6.0	(-)	0.5	Infinity
3003	2	16.0	24.0	(-)	0.5	Infinity
3003	1	20.0	14.0	(-)	0.5	Infinity
3007	1	11.0	24.0	(-)	0.5	Infinity
3007	2	21.0	35.0	(-)	0.5	Infinity
3007	3	15.0	20.0	(-)	0.5	Infinity
3007	4	18.0	20.0	(-)	0.5	Infinity
3007	5	23.0	32.0	(-)	0.5	Infinity
3009	4	18.0	23.0	(-)	0.5	Infinity
3009	2	19.0	18.0	(-)	0.5	Infinity
3009	3	25.0	30.0	(-)	0.5	Infinity
3009	5	17.0	24.0	(-)	0.5	Infinity
3009	1	19.0	14.0	(-)	0.5	Infinity
3011	3	29.0	32.0	(-)	0.5	Infinity
3011	1	20.0	16.0	(-)	0.5	Infinity
3011	2	32.0	32.0	(-)	0.5	Infinity
3011	4	27.0	21.0	(-)	0.5	Infinity
3014	4	8.0	15.0	(-)	0.5	Infinity
3014	3	18.0	18.0	(-)	0.5	Infinity
3014	6	1.5	66.0	65	0.5	8.76E-07
3014	1	8.0	34.0	4	0.5	7.59E-05
3014	2	17.0	17.0	(-)	0.5	Infinity
3014	5	1.5	50.0	49	0.5	1.16E-06
3018	4	14.0	22.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

October 02, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
3018	3	16.0	18.0	(-)	0.5	Infinity
3018	1	11.0	33.0	(-)	0.5	Infinity
3018	6	16.0	46.0	(-)	0.5	Infinity
3018	2	11.0	13.0	(-)	0.5	Infinity
3018	5	13.0	17.0	(-)	0.5	Infinity
3020	5	2.0	120.0	119	0.5	6.38E-07
3020	2	0.6	100.0	99	0.5	2.30E-07
3020	4	1.5	65.0	64	0.5	8.89E-07
3020	3	1.9	63.0	62	0.5	1.16E-06
3020	1	12.0	18.0	(-)	0.5	Infinity
3020	6	2.0	75.0	74	0.5	1.03E-06
3021	4	22.0	35.0	(-)	0.5	Infinity
3022	1	10.0	30.0	(-)	0.5	Infinity
3024	1	25.0	20.0	(-)	0.5	Infinity
3026	1	24.0	26.0	(-)	0.5	Infinity
3028	1	11.0	11.0	(-)	0.5	Infinity
3030	1	9.0	29.0	(-)	0.5	Infinity
3032	1	25.0	18.0	(-)	0.5	Infinity
3034	1	14.0	40.0	(-)	0.5	Infinity
3036	1	21.0	18.0	(-)	0.5	Infinity
3038	1	21.0	16.0	(-)	0.5	Infinity
3041	1	12.0	36.0	(-)	0.5	Infinity
3044	1	16.0	19.0	(-)	0.5	Infinity
3048	1	15.0	11.0	(-)	0.5	Infinity
3050	1	17.0	15.0	(-)	0.5	Infinity
4016	1	13.0	43.0	(-)	0.5	Infinity
4016	2	17.0	44.0	(-)	0.5	Infinity
4016	3	15.0	34.0	(-)	0.5	Infinity
4018	1	9.0	48.0	18	0.5	1.90E-05
4018	2	1.0	50.0	49	0.5	7.75E-07
4021	1	14.0	47.0	(-)	0.5	Infinity
4021	2	5.0	50.0	40	0.5	4.74E-06
4021	3	19.0	16.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

October 02, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
4026	4	13.0	30.0	(-)	0.5	Infinity
4026	2	16.0	21.0	(-)	0.5	Infinity
4026	1	22.0	22.0	(-)	0.5	Infinity
4026	3	17.0	16.0	(-)	0.5	Infinity
4030	2	18.0	23.0	(-)	0.5	Infinity
4030	1	16.0	26.0	(-)	0.5	Infinity
4033	2	12.0	8.0	(-)	0.5	Infinity
4033	3	23.0	30.0	(-)	0.5	Infinity
4033	1	16.0	26.0	(-)	0.5	Infinity
4033	4	27.0	41.0	(-)	0.5	Infinity
4037	2	8.0	26.0	(-)	0.5	Infinity
4037	1	19.0	16.0	(-)	0.5	Infinity
4037	4	28.0	30.0	(-)	0.5	Infinity
4037	3	9.0	29.0	(-)	0.5	Infinity
4042	1	4.0	50.0	40	0.5	3.80E-06
4042	3	22.0	34.0	(-)	0.5	Infinity
4042	2	20.0	33.0	(-)	0.5	Infinity
4042	4	24.0	36.0	(-)	0.5	Infinity
4049	1	17.0	17.0	(-)	0.5	Infinity
4049	2	28.0	22.0	(-)	0.5	Infinity
4049	3	24.0	40.0	(-)	0.5	Infinity
4049	4	34.0	40.0	(-)	0.5	Infinity
4052	3	25.0	21.0	(-)	0.5	Infinity
4052	2	22.0	16.0	(-)	0.5	Infinity
4052	4	22.0	13.0	(-)	0.5	Infinity
4052	1	19.0	14.0	(-)	0.5	Infinity
4053	1	16.0	16.0	(-)	0.5	Infinity
4053	4	25.0	20.0	(-)	0.5	Infinity
4054	2	24.0	16.0	(-)	0.5	Infinity
4054	1	17.0	14.0	(-)	0.5	Infinity
4054	4	25.0	23.0	(-)	0.5	Infinity
4054	3	20.0	21.0	(-)	0.5	Infinity
4056	1	15.0	16.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

October 02, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
4056	4	17.0	20.0	(-)	0.5	Infinity
4056	2	33.0	38.0	(-)	0.5	Infinity
4056	3	24.0	27.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

October 03, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
3022	6	19.0	30.0	(-)	0.5	Infinity
3022	5	11.0	36.0	(-)	0.5	Infinity
3022	2	13.0	33.0	(-)	0.5	Infinity
3022	3	8.0	44.0	14	0.5	2.17E-05
3022	4	12.0	33.0	(-)	0.5	Infinity
3024	6	4.0	80.0	77	0.5	1.97E-06
3024	2	3.0	90.0	88	0.5	1.29E-06
3024	5	3.0	80.0	78	0.5	1.46E-06
3024	3	1.0	84.0	83	0.5	4.57E-07
3024	4	1.0	83.0	82	0.5	4.63E-07
3026	5	1.0	95.0	94	0.5	4.04E-07
3026	2	2.0	55.0	49	0.5	1.55E-06
3026	6	1.0	72.0	71	0.5	5.35E-07
3026	3	4.0	75.0	72	0.5	2.11E-06
3026	4	1.0	90.0	89	0.5	4.26E-07
3028	5	10.0	17.0	(-)	0.5	Infinity
3028	3	19.0	19.0	(-)	0.5	Infinity
3028	4	18.0	19.0	(-)	0.5	Infinity
3028	2	17.0	16.0	(-)	0.5	Infinity
3028	6	16.0	20.0	(-)	0.5	Infinity
Packer plugged, tests on various holes must be performed again.						
3020	5	19.0	30.0	(-)	0.5	Infinity
3020	2	22.0	24.0	(-)	0.5	Infinity
3020	4	23.0	23.0	(-)	0.5	Infinity
3020	6	19.0	40.0	(-)	0.5	Infinity
3020	3	23.0	21.0	(-)	0.5	Infinity
3024	2	12.0	6.0	(-)	0.5	Infinity
3024	5	18.0	23.0	(-)	0.5	Infinity
3024	6	17.0	23.0	(-)	0.5	Infinity
3024	4	13.0	13.0	(-)	0.5	Infinity
3024	3	13.0	7.0	(-)	0.5	Infinity
3026	3	8.0	12.0	(-)	0.5	Infinity
3026	2	9.0	9.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

October 03, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
3026	6	14.0	32.0	(-)	0.5	Infinity
3026	5	12.0	17.0	(-)	0.5	Infinity
3026	4	13.0	14.0	(-)	0.5	Infinity
3030	4	10.0	20.0	(-)	0.5	Infinity
3030	3	16.0	25.0	(-)	0.5	Infinity
3030	2	11.0	40.0	(-)	0.5	Infinity
3030	5	12.0	30.0	(-)	0.5	Infinity
3032	3	17.0	20.0	(-)	0.5	Infinity
3032	2	12.0	13.0	(-)	0.5	Infinity
3032	6	14.0	20.0	(-)	0.5	Infinity
3032	4	19.0	26.0	(-)	0.5	Infinity
3032	5	13.0	19.0	(-)	0.5	Infinity
3034	5	12.0	6.0	(-)	0.5	Infinity
3034	4	13.0	6.0	(-)	0.5	Infinity
3034	3	14.0	25.0	(-)	0.5	Infinity
3034	6	11.0	23.0	(-)	0.5	Infinity
3034	2	13.0	20.0	(-)	0.5	Infinity
3036	5	19.0	15.0	(-)	0.5	Infinity
3036	6	15.0	11.0	(-)	0.5	Infinity
3036	4	13.0	10.0	(-)	0.5	Infinity
3036	3	14.0	11.0	(-)	0.5	Infinity
3036	2	16.0	16.0	(-)	0.5	Infinity
3038	5	20.0	23.0	(-)	0.5	Infinity
3038	2	13.0	6.0	(-)	0.5	Infinity
3038	4	18.0	26.0	(-)	0.5	Infinity
3038	3	15.0	15.0	(-)	0.5	Infinity
3040	4	18.0	13.0	(-)	0.5	Infinity
3040	3	14.0	9.0	(-)	0.5	Infinity
3040	2	17.0	11.0	(-)	0.5	Infinity
3041	5	13.0	31.0	(-)	0.5	Infinity
3041	4	16.0	42.0	(-)	0.5	Infinity
3041	2	16.0	26.0	(-)	0.5	Infinity
3041	3	15.0	35.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

October 03, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
3044	4	12.0	18.0	(-)	0.5	Infinity
3044	2	8.0	7.0	(-)	0.5	Infinity
3044	5	16.0	20.0	(-)	0.5	Infinity
3044	6	17.0	20.0	(-)	0.5	Infinity
3044	3	17.0	18.0	(-)	0.5	Infinity
3045	2	17.0	14.0	(-)	0.5	Infinity
3045	3	19.0	15.0	(-)	0.5	Infinity
3048	2	19.0	17.0	(-)	0.5	Infinity
3048	3	17.0	19.0	(-)	0.5	Infinity
3050	2	17.0	15.0	(-)	0.5	Infinity
3050	3	16.0	11.0	(-)	0.5	Infinity
4013	2	15.0	13.0	(-)	0.5	Infinity
4034	1	19.0	19.0	(-)	0.5	Infinity
4034	2	16.0	15.0	(-)	0.5	Infinity
4047	2	16.0	24.0	(-)	0.5	Infinity
4047	3	16.0	27.0	(-)	0.5	Infinity
4047	4	15.0	22.0	(-)	0.5	Infinity
4047	1	15.0	30.0	(-)	0.5	Infinity

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In-Situ Hydraulic Conductivity Testing Record

October 09, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
2046	1 - 5	0.0	10.0	10.0	6	< 1.0 E-08
2036	1 - 8	No volume recorded on flowmeter after 5 minutes.				
2024	1 - 6	0.0	11.6	11.6	5.5	< 1.0 E-08
2031	1 - 6	No volume recorded on flowmeter after 5 minutes.				
2013	1 - 5	0.0	9.7	9.7	4.5	< 1.0 E-08
2002	1 - 5	No volume recorded on flowmeter after 5 minutes.				
1002	1 - 4	0.0	9.5	9.5	4	< 1.0 E-08
1012	1 - 5	No volume recorded on flowmeter after 5 minutes.				
1022	1 - 5	0.0	9.9	9.9	4.5	< 1.0 E-08
1032	1 - 5	No volume recorded on flowmeter after 5 minutes.

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In-Situ Hydraulic Conductivity Testing Record

October 10, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
1201	1 - 5	0.0	9.8	9.8	4.5	< 1.0 E-08
1202	1 - 5	No volume recorded on flowmeter after 5 minutes.				
1042	1 - 3	0.0	9.9	9.9	3.5	< 1.0 E-08
1055	1 - 5	No volume recorded on flowmeter after 5 minutes.				
1075	1 - 5	0.0	9.8	9.8	2.25	< 1.0 E-08
		No volume recorded on flowmeter after 5 minutes.

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

In-Situ Hydraulic Conductivity Testing Record

October 23, 1996

Hole No.	Sleeve No.	Flow Rate (lpm)	Gauge Pressure (psi)	Effective Pressure (psi)	Length of Zone Tested (m)	Hydraulic Conductivity Value (m/s)
4023	1 - 4	0.0	9.5	9.5	3.5	< 1.0 E-08
4033	1 - 4	No volume recorded on flowmeter after 5 minutes.				
4042	1 - 4	0.0	9.7	9.7	3.5	< 1.0 E-08
4053	1 - 4	No volume recorded on flowmeter after 5 minutes.				
3007	1 - 4	0.0	9.0	9.0	4.5	< 1.0 E-08
3013	1 - 6	No volume recorded on flowmeter after 6 minutes.				
3019	1 - 8	0.0	9.0	9.0	6.5	< 1.0 E-08
3029	1 - 6	No volume recorded on flowmeter after 5 minutes.				
3040	1 - 6	0.00	9.5	9.5	4	< 1.0 E-08
3049	1 - 3	No volume recorded on flowmeter after 5 minutes.

ACT Rembco Representative

APPENDIX D

GROUT QUALITY CONTROL TESTING RECORDS

**CEMENTITIOUS GROUT
QUALITY CONTROL TESTING REPORTS**

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
August 13 , 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
11:00 AM	W '	1.21	52		
11:08 AM	W	1.15	35		
12:43 PM	W	1.28	37		
01:00 PM	W	1.26			
01:08 PM	V	1.34	37		
01:13 PM	V	1.35			
01:17 PM	V	1.34			
01:22 PM	X	1.36	40		
01:30 PM	X	1.36			
01:35 PM	E	1.41	44		
01:40 PM	E	1.42			
01:47 PM	E	1.47			
01:58 PM	F	1.53	88		
02:10 PM	F	1.54			
02:23 PM	F	1.54	90		
02:35 PM	F	1.53			
03:00 PM	F	1.54	82		
03:10 PM	F	1.54			
03:30 PM	F	1.54			
03:40 PM	F	1.53			
04:05 PM	F	1.52	80		
04:27 PM	F	1.53	89		
05:00 PM	F	1.53

 ACT Rembco Representative

Quality Control Report
August 14, 1996

~~ACT Rembo~~ Representative

Quality Control Report
August 15, 1996

ACT Rembo Representative

ACT Rembo Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
August 19 , 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
09:44 AM	W	1.30	40		
09:50 AM	W	1.29	39		
10:05 AM	W	1.29			
10:09 AM	W	1.29			
10:15 AM	X	1.38	48		
10:21 AM	X	1.38	48		
10:27 AM	X	1.38			
10:32 AM	X	1.38			
10:45 AM	E	1.44			
10:49 AM	E	1.44			
10:53 AM	E	1.44	55		
11:02 AM	E	1.45			
11:10 AM	E	1.44			
11:15 AM	E	1.44			
11:34 AM	E	1.45	58		
11:45 AM	E	1.45			
11:56 AM	E	1.44			
12:48 PM	E	1.44			
01:05 PM	E	1.44			
01:20 PM	E	1.44	57		
01:38 PM	E	1.44			
01:50 PM	E	1.45			
02:00 PM	E	1.44			
02:09 PM	E	1.44			
02:23 PM	E	1.46	65		
02:30 PM	X	1.38			
02:50 PM	X	1.38	44		
03:14 PM	E	1.43			
03:23 PM	E	1.44	58		
03:48 PM	E	1.44	56

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ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
August 20 , 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
12:40 PM	X	1.39	44		
12:47 PM	X	1.39			
12:50 PM	X	1.39			
12:52 PM	X	1.38			
01:20 PM	X	1.40	50		
01:26 PM	X	1.37	44		
01:34 PM	X	1.38			
01:40 PM	E	1.46			
01:45 PM	E	1.48	54		
01:52 PM	E	1.44			
01:55 PM	E	1.45			
02:00 PM	E	1.46	59		
02:05 PM	E	1.48			
02:07 PM	E	1.45			
02:14 PM	F	1.54	90		
02:18 PM	F	1.53			
02:23 PM	F	1.57	106		
02:35 PM	X	1.39			
02:39 PM	X	1.38			
02:57 PM	X	1.38			
03:07 PM	X	1.39	50		
03:13 PM	X	1.36			
03:16 PM	X	1.38			
03:23 PM	X	1.35			
03:28 PM	X	1.37	43		
03:40 PM	E	1.46			
03:47 PM	E	1.44	56		
03:51 PM	E	1.45			
03:59 PM	E	1.42			
04:18 PM	E	1.45	51		
04:27 PM	E	1.44

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ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
August 21 , 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
09:03 AM	X	1.35			
09:10 AM	X	1.37			
09:15 AM	X	1.38	46		
09:25 AM	E	1.47			
09:35 AM	E	1.44	58		
09:48 AM	E	1.46			
09:53 AM	E	1.43			
10:01 AM	E	1.45	52		
10:15 AM	F	1.55			
10:19 AM	F	1.51	80		
10:25 AM	F	1.54			
10:34 AM	F	1.53			
10:39 AM	F	1.55			
10:43 AM	F	1.54	97		
11:00 AM	E	1.44			
11:07 AM	E	1.48			
11:13 AM	E	1.45			
11:22 AM	E	1.46			
11:39 AM	E	1.43			
11:47 AM	E	1.45	53		
12:55 PM	X	1.33	41		
01:05 PM	X	1.38			
01:11 PM	X	1.37			
01:18 PM	X	1.36	46		
01:30 PM	X	1.38			
01:50 PM	X	1.39	47		
02:10 PM	E	1.44			
02:18 PM	F	1.55	108		
02:32 PM	F	1.54			
02:44 PM	F	1.52			
03:00 PM	F	1.56	118		
03:16 PM	F	1.55			
03:27 PM	F	1.53	77

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ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
August 22 , 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
07:43 AM	X	1.37			
07:49 AM	X	1.39			
08:03 AM	X	1.38			
08:12 AM	E	1.45	55		
08:28 AM	E	1.44			
08:49 AM	E	1.44	58		
09:30 AM	E	1.43	53		
09:56 AM	F	1.56	Infinite		
10:19 AM	E	1.46			
10:44 AM	E	1.44	54		
11:30 AM	E	1.43			
11:50 AM	E	1.44	55		
12:50 PM	E	1.47			
01:05 PM	E	1.45	52		
01:30 PM	E	1.44			
01:50 PM	E	1.45	55		
02:15 PM	E	1.42			
02:30 PM	F	1.54	88		
02:54 PM	F	1.58	92		
03:28 PM	F	1.53			
03:43 PM	F	1.54	101

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
August 23, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:02 AM	X	1.38	44		
08:20 AM	X	1.36			
08:50 AM	X	1.38	45		
09:15 AM	X	1.37			
09:40 AM	E	1.43	52		
09:52 AM	E	1.45			
10:18 AM	E	1.44			
10:35 AM	E	1.45	55		
10:57 AM	E	1.43			
11:16 AM	E	1.44	56		
11:20 AM	F	1.54	100		
01:10 PM	M	1.26	47		
01:35 PM	M	1.28			
02:02 PM	M	1.25			
02:28 PM	M	1.26			
02:37 PM	M	1.27	49		
03:01 PM	M	1.27			
03:27 PM	M	1.26			
03:55 PM	M	1.26	46

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
August 26, 1996

[illegible]

AC7 Rembco Representative

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
August 27, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:00 AM	X	1.39	48		
08:43 AM	X	1.36			
09:15 AM	E	1.45	56		
09:48 AM	E	1.43			
10:22 AM	F	1.55			
10:46 AM	F	1.57	116		
10:59 AM	F	1.54			
11:07 AM	F	1.52	91		
11:38 AM	F	1.55			
01:16 PM	F	1.54			
01:41 PM	F	1.59			
02:02 PM	F	1.58	Infinite		
02:22 PM	F	1.55			
02:52 PM	F	1.54			
03:11 PM	F	1.54			
03:28 PM	F	1.54			
03:49 PM	F	1.57	88		
04:01 PM	F	1.53			
04:10 PM	F	1.53

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Quality Control Report
August 28, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:10 AM	M	1.26	47		
08:26 AM	M	1.27			
08:56 AM	M	1.25			
09:14 AM	M	1.26			
09:37 AM	M	1.23	44		
10:00 AM	X	1.38			
10:36 AM	X	1.36	46		
11:14 AM	E	1.46			
11:45 AM	F	1.55			
01:07 PM	F	1.57			
01:31 PM	F	1.53	91		
01:53 PM	F	1.54			
02:18 PM	F	1.55	112		
02:49 PM	F	1.54			
03:06 PM	F	1.53	Infinite		
03:23 PM	F	1.55			
03:44 PM	F	1.58			
04:00 PM	F	1.57	88

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Quality Contol Report
August 29, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
07:40 AM	X	1.37			
07:47 AM	X	1.36	44		
07:54 AM	X	1.37			
08:10 AM	E	1.45	60		
08:15 AM	E	1.39			
08:21 AM	E	1.43	55		
09:03 AM	F	1.53	87		
09:15 AM	F	1.54			
09:29 AM	F	1.55			
09:47 AM	F	1.57	132		
10:02 AM	F	1.55			
10:17 AM	F	1.54			
10:34 AM	F	1.53	106		
10:48 AM	F	1.55			
11:17 AM	F	1.54			
11:22 AM	F	1.53	96		
01:10 PM	X	1.38			
01:30 PM	X	1.36	44		
01:42 PM	X	1.38			
02:03 PM	E	1.44			
02:15 PM	E	1.44			
02:23 PM	E	1.43	59		
02:29 PM	E	1.44

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Quality Contol Report
August 30, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
07:40 AM	X	1.32	42		
07:50 AM	X	1.36	45		
08:04 AM	X	1.38	47		
08:22 AM	X	1.38	47		
08:34 AM	E	1.44			
08:42 AM	E	1.45	59		
08:53 AM	E	1.44			
09:10 AM	F	1.55			
09:18 AM	F	1.57			
09:28 AM	F	1.54	76		
09:35 AM	F	1.54			
09:57 AM	F	1.54	92		
10:04 AM	F	1.59			
10:33 AM	F	1.53			
11:06 AM	F	1.53	112		
11:22 AM	F	1.53			
11:39 AM	F	1.53			
01:00 PM	F	1.54	81		
01:18 PM	F	1.53			
01:41 PM	F	1.53			
01:52 PM	F	1.56	96		
02:02 PM	F	1.52

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
September 03, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
07:58 AM	X	1.33			
08:12 AM	X	1.37	44		
08:21 AM	X	1.38			
08:27 AM	X	1.38	46		
08:32 AM	X	1.35			
08:58 AM	E	1.44	59		
09:12 AM	E	1.44			
09:21 AM	E	1.44			
09:35 AM	E	1.42			
09:42 AM	E	1.45	56		
09:56 AM	E	1.45			
10:09 AM	E	1.44	58		
10:16 AM	E	1.45			
10:24 AM	E	1.45			
10:37 AM	E	1.45			
10:53 AM	E	1.45			
11:03 AM	E	1.47	71		
11:16 AM	E	1.46			
11:30 AM	E	1.42	52		
11:46 AM	E	1.44			
12:52 PM	E	1.45			
01:18 PM	E	1.44			
01:33 PM	E	1.45	57		
01:42 PM	E	1.45			
01:51 PM	E	1.45	57		
02:04 PM	E	1.42			
02:16 PM	E	1.44	60		
02:22 PM	E	1.44			
02:30 PM	E	1.44			
02:37 PM	E	1.45			
02:49 PM	E	1.43	66		
02:55 PM	E	1.45			
03:01 PM	E	1.44			

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
September 03, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
03:13 PM	E	1.45			
03:22 PM	E	1.45			
03:33 PM	E	1.45	64		
03:40 PM	E	1.48			
03:52 PM	E	1.45

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 04, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:10 AM	X	1.38			
08:19 AM	X	1.38	45		
08:28 AM	X	1.38			
08:33 AM	X	1.38			
08:55 AM	X	1.38	47		
09:04 AM	X	1.38			
09:12 AM	X	1.40	50		
09:22 AM	X	1.39	46		
09:33 AM	X	1.38			
09:40 AM	X	1.38			
09:52 AM	E	1.44	58		
10:10 AM	E	1.45			
10:17 AM	E	1.45			
10:22 AM	E	1.44			
10:33 AM	E	1.45	57		
10:45 AM	E	1.44			
11:15 AM	E	1.45			
11:31 AM	E	1.50	65		
12:49 PM	E	1.50			
01:07 PM	E	1.45			
01:20 PM	E	1.45			
01:58 PM	M	1.27	46		
02:22 PM	M	1.22			
02:41 PM	M	1.26			
03:10 PM	M	1.26	46		
03:37 PM	M	1.25

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ACT REMBCO JOINT VENTURE
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Quality Control Report
September 05, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
07:38 AM	X	1.38			
07:52 AM	X	1.38	44		
08:01 AM	X	1.30			
08:19 AM	X	1.38			
08:30 AM	X	1.39	46		
08:40 AM	X	1.38			
08:56 AM	X	1.38			
09:15 AM	E	1.45	54		
09:27 AM	E	1.45			
09:36 AM	E	1.45			
09:51 AM	E	1.44	56		
10:08 AM	E	1.49			
10:25 AM	E	1.45	56		
10:39 AM	E	1.50			
10:52 AM	E	1.42			
11:18 AM	E	1.43			
01:10 PM	F	1.50	75		
01:22 PM	F	1.51			
01:38 PM	F	1.53			
01:59 PM	F	1.53			
02:18 PM	F	1.57			
02:30 PM	F	1.51	91		
02:41 PM	F	1.54			
03:04 PM	F	1.55			
03:22 PM	F	1.54	111		
03:50 PM	F	1.53			
04:16 PM	F	1.53	97

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ACT REMBCO JOINT VENTURE
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Quality Control Report
September 09, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
09:13 AM	X	1.38			
09:32 AM	X	1.35	45		
09:44 AM	X	1.34			
10:12 AM	X	1.33	42		
10:26 AM	X	1.37			
10:35 AM	X	1.38	48		
10:51 AM	X	1.38	46		
11:02 AM	X	1.40			
11:17 AM	X	1.39			
11:25 AM	X	1.38			
11:32 AM	X	1.38			
01:10 PM	X	1.38	47		
01:23 PM	X	1.38			
01:48 PM	X	1.36	44		
02:15 PM	X	1.38			
02:52 PM	E	1.45			
03:05 PM	E	1.44	54		
03:22 PM	E	1.52			
03:40 PM	E	1.49	61		
03:56 PM	E	1.44

ACT Rembco Representative

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 10, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
07:40 AM	X	1.35			
08:01 AM	X	1.37			
08:22 AM	X	1.38	42		
08:38 AM	X	1.40			
08:51 AM	X	1.38	47		
09:10 AM	E	1.45			
09:19 AM	E	1.45	58		
09:33 AM	E	1.45			
09:48 AM	E	1.42	51		
10:00 AM	E	1.44			
10:22 AM	F	1.55			
10:40 AM	F	1.54	92		
10:59 AM	F	1.53	111		
11:27 AM	F	1.53			
11:43 AM	F	1.53			
01:14 PM	F	1.57	Infinite		
01:25 PM	F	1.54			
01:32 PM	F	1.55			
01:40 PM	F	1.55	85		
01:48 PM	F	1.54

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Quality Contol Report
September 11, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
07:45 AM	E	1.45	56		
08:22 AM	E	1.45			
08:39 AM	E	1.42	53		
09:01 AM	E	1.44			
09:26 AM	E	1.45	57		
09:36 AM	E	1.45			
09:51 AM	E	1.45	58		
10:15 AM	E	1.45			
10:33 AM	E	1.49			
10:58 AM	E	1.44			
11:12 AM	E	1.44			
11:25 AM	E	1.45			
11:37 AM	E	1.45	60		
01:21 PM	E	1.45			
01:30 PM	E	1.45			
01:44 PM	E	1.44			
02:08 PM	E	1.41			
02:30 PM	E	1.47	55		
02:52 PM	E	1.45			
03:45 PM	F	1.54			
03:52 PM	F	1.54	107

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 12, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
07:40 AM	M	1.27	48		
07:50 AM	M	1.25			
08:03 AM	M	1.21	42		
08:32 AM	M	1.25			
08:45 AM	M	1.28	45		
09:05 AM	M	1.28			
09:26 AM	M	1.27			
09:48 AM	M	1.30	46		
10:18 AM	M	1.28			
10:42 AM	M'	1.32	56		
10:57 AM	M'	1.33	59		
11:05 AM	M'	1.31			
11:14 AM	M'	1.29			
11:22 AM	M'	1.31			
01:30 PM	M'	1.31			
12:00 AM	M'	1.32	59		
02:00 PM	M'	1.31			
02:22 PM	M'	1.31			
02:45 PM	M'	1.30	55		
03:00 PM	M'	1.31	57		
03:25 PM	M'	1.32			
03:50 PM	M'	1.31	57

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
September 13, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
07:45 AM	M'	1.31	55		
08:30 AM	M'	1.34	62		
08:45 AM	M'	1.30	52		
09:40 AM	F	1.53	Infinite		
10:00 AM	F	1.55	90

ACT Remoco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 17, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:10 AM	G	1.62	130		
08:20 AM	G	1.62	125		
08:45 AM	F	1.53	105		
09:40 AM	F	1.53			
10:00 AM	F	1.55			
11:00 AM	G	1.64	Infinite		
01:30 AM	G	1.61	135

ACT/Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 18, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:10 AM	F	1.54	107		
08:20 AM	F	1.53			
08:45 AM	F	1.53	92		
09:13 AM	G'	1.59	120		
09:30 AM	G'	1.58			
09:45 AM	G'	1.60			
10:00 AM	G'	1.55			
10:22 AM	G'	1.58	Infinite		
10:46 AM	G'	1.58			
10:59 AM	G'	1.59	Infinite		
11:16 AM	G'	1.57			
11:29 AM	G'	1.54			
01:10 PM	G'	1.58			
01:27 PM	G'	1.58	Infinite		
01:45 PM	G'	1.59			
02:22 PM	G'	1.60			
02:49 PM	G'	1.58	140		
03:10 PM	G'	1.58			
03:47 PM	G'	1.59			
04:12 PM	G'	1.61			
04:30 PM	G'	1.58	130

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 19, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
10:22 AM	F	1.53			
10:38 AM	F	1.53	92		
10:52 AM	F	1.55			
11:10 AM	F	1.58	Infinite		
11:25 AM	F	1.53			
11:37 AM	F	1.53	122		
11:48 AM	F	1.54			
01:16 PM	F	1.54			
01:29 PM	F	1.53	110		
01:42 PM	F	1.53			
01:59 PM	F	1.56	Infinite		
02:12 PM	F	1.54			
02:30 PM	F	1.54	120		
02:43 PM	F	1.50			
02:58 PM	F	1.51			
03:07 PM	F	1.53	Infinite		
03:23 PM	F	1.55			
03:37 PM	F	1.53			
03:58 PM	F	1.51			
04:10 PM	F	1.52			
04:30 PM	F	1.55

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
September 20, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:54 AM	F	1.58	Infinite		
09:23 AM	F	1.52			
09:45 AM	F	1.54			
10:04 AM	F	1.55	123		
10:32 AM	G'	1.59			
10:46 AM	G'	1.58			
11:04 AM	G'	1.61	Infinite		
11:22 AM	G'	1.56			
11:47 AM	G'	1.58			
12:52 PM	G'	1.58			
01:19 PM	G'	1.59			
01:31 PM	G'	1.60	133		
01:48 PM	G'	1.58			
02:00 PM	G'	1.58	120		
02:36 PM	G'	1.62			
02:53 PM	G'	1.60			
03:10 PM	G'	1.58			
03:29 PM	G'	1.59	144		
03:47 PM	G'	1.59			
04:10 PM	G'	1.59			
04:22 PM	G'	1.59	155		
04:38 PM	G'	1.58

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 23, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:45 AM	M "	1.28	43		
08:56 AM	M "	1.27			
09:10 AM	M "	1.31	44		
09:24 AM	M "	1.30			
09:58 AM	M "	1.30			
10:18 AM	M "	1.29			
10:36 AM	M "	1.28	43		
11:12 AM	M "	1.30			
11:40 AM	M "	1.31	48		
01:00 PM	M "	1.30			
01:23 PM	M "	1.30			
01:42 PM	M "	1.30	43		
02:05 PM	M "	1.32			
02:18 PM	M "	1.31			
02:43 PM	M "	1.25			
03:07 PM	M "	1.30			
03:30 PM	M "	1.30	43

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 24, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:22 AM	M "	1.29	43		
08:34 AM	M "	1.31			
08:47 AM	M "	1.31	43		
09:10 AM	M "	1.30			
09:32 AM	M "	1.30			
10:12 AM	M "	1.30			
10:26 AM	M "	1.30	45		
11:05 AM	M "	1.30			
11:50 AM	M "	1.30	46	5.000E-02	
12:50 PM	M "	1.30			
01:22 PM	M "	1.30			
01:40 PM	M "	1.30	45		
02:28 PM	M	1.28			
02:52 PM	M	1.29	48		
03:16 PM	M	1.26			
03:30 PM	M	1.27			
03:58 PM	M	1.26	49		
04:17 PM	F	1.54	112

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 25, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:00 AM	F	1.54	93		
08:30 AM	F	1.53	99		
09:45 AM	F	1.55	Infinite		
11:00 AM	F	1.54	Infinite	2.400E-02	
01:30 PM	F	1.52	82		
03:00 PM	F	1.53	Infinite		
03:30 PM	F	1.53	120		
04:00 PM	F	1.54	108		
04:30 PM	F	1.53	95

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 26, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:30 AM	G'	1.59	Infinite	2.400E-02	
09:00 AM	F	1.55	85		
10:00 AM	F	1.53	100		
11:03 AM	F	1.56	Infinite		
11:11 AM	F	1.54	120		
11:33 AM	F	1.52	Infinite		
11:45 AM	F	1.57	Infinite		
12:46 PM	F	1.53	Infinite		
01:05 PM	F	1.53	Infinite		
01:25 PM	F	1.51	Infinite		
01:52 PM	F	1.53	118		
02:15 PM	F	1.57	Infinite		
02:46 PM	F	1.51	130		
03:07 PM	F	1.53	Infinite		
03:20 PM	F	1.54	113

 ACP Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
September 27, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
09:05 AM	M "	1.22	43		
09:20 AM	M "	1.24	38		
10:08 AM	M "	1.20			
10:22 AM	M "	1.23	42		
10:35 AM	M "	1.23			
10:42 AM	M "	1.24			
11:00 AM	M "	1.23	44		
11:15 AM	M "	1.24			
01:13 PM	F	1.54	110		
01:26 PM	F	1.53	Infinite		
01:40 PM	F	1.56	Infinite		
02:07 PM	F	1.55	Infinite		
02:30 PM	F	1.56	Infinite		
02:58 PM	F	1.53	Infinite

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
September 30, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:30 AM	M "	1.25	44		
08:45 AM	M "	1.26	43		
08:56 AM	M "	1.23	44		
09:16 AM	M "	1.23	41		
09:35 AM	M "	1.23	45		
09:50 AM	M "	1.24	47		
02:00 PM	E	1.44	48		
02:40 PM	E	1.45			
03:00 PM	E	1.44	51		
03:30 PM	E	1.44

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
October 01, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
07:59 AM	G'	1.61	Infinite		
08:20 AM	G'	1.55	92		
08:35 AM	G'	1.56	101		
08:44 AM	G'	1.56	115		
09:05 AM	G'	1.58	84		
09:25 AM	G'	1.58	97		
09:35 AM	G'	1.58	180		
09:55 AM	G'	1.57	171		
10:09 AM	G'	1.59	Infinite		
10:30 AM	G'	1.56	160		
10:40 AM	G'	1.58	187		
10:54 AM	G'	1.57	173		
11:10 AM	G'	1.59	179		
11:23 AM	G'	1.58	183		
01:20 PM	G'	1.59	190		
01:30 PM	G'	1.57	Infinite		
01:50 PM	G'	1.56	165

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 03, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
01:00 PM	G'	1.60	133		
01:14 PM	G'	1.61	Infinite		
01:27 PM	G'	1.59	102		
01:41 PM	G'	1.58			
01:55 PM	G'	1.59			
02:15 PM	G'	1.59	100		
02:36 PM	G'	1.59			
02:55 PM	G'	1.59			
03:10 PM	G'	1.55	Infinite		
03:22 PM	G'	1.60	Infinite		
03:30 PM	G'	1.60	Infinite		
03:37 PM	G'	1.58			
04:10 PM	G'	1.59	156

ACT Remoco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 04, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:06 AM	G'	1.59	Infinite		
08:18 AM	G'	1.54	Infinite		
08:35 AM	G'	1.58	Infinite		
08:58 AM	G'	1.60	180		
09:40 AM	F	1.51	125		
09:10 AM	M"	1.20	45		
09:55 AM	M"	1.21	46		
10:00 AM	F	1.52	95		
10:24 AM	F	1.52	99		
10:38 AM	F	1.53	100		
10:49 AM	M"	1.22	48		
10:56 AM	F	1.51	88		
11:06 AM	F	1.53	83		
11:17 AM	F	1.52	92		
11:37 AM	F	1.53	96		
12:51 PM	F	1.54	101		
01:05 PM	F	1.54	99		
01:20 PM	F	1.53	90		
01:30 PM	F	1.55	95		
01:45 PM	F	1.53	88		
02:00 PM	F	1.53	94		
02:15 PM	F	1.53	97		
02:30 PM	F	1.53	110		
02:45 PM	F	1.52	120		
03:01 PM	F	1.54	Infinite		
03:20 PM	F	1.54	129		
03:35 PM	F	1.54	140		
03:53 PM	F	1.52	162

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 07, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
08:10 AM	F	1.53	90		
08:21 AM	F	1.51	93		
08:41 AM	F	1.52	89		
09:00 AM	F	1.53	96		
09:12 AM	F	1.52	80		
09:25 AM	F	1.51	88		
09:36 AM	F	1.52	108		
09:50 AM	F	1.53			
10:02 AM	F	1.53	97		
10:13 AM	F	1.53			
10:22 AM	F	1.53	99		
10:33 AM	F	1.53			
10:50 AM	F	1.53	Infinite		
11:04 AM	F	1.54			
11:19 AM	F	1.54	Infinite		
11:33 AM	F	1.53			
11:46 AM	F	1.53	120		
12:40 PM	F	1.53			
12:55 PM	F	1.53	107		
01:05 PM	F	1.52	140		
01:23 PM	F	1.53			
01:35 PM	F	1.53	121		
01:49 PM	F	1.53			
02:10 PM	F	1.51	115		
02:20 PM	F	1.52			
02:37 PM	F	1.54	56		
02:47 PM	F	1.53			

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
October 07, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (seconds-1/2)	Static Cone Penetrometer (mm)
03:03 PM	F	1.52	76		
03:16 PM	F	1.53			
03:35 PM	F	1.53	83		
03:45 PM	F	1.53			
04:00 PM	F	1.53	79		
04:20 PM	F	1.52			
03:35 PM	F	1.51	92

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
October 08, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
08:20 AM	M "	1.19	40		
08:30 AM	M "	1.24			
08:40 AM	M "	1.22	45		
08:52 AM	M "	1.23			
09:08 AM	M "	1.20	42		
09:20 AM	M "	1.22			
09:38 AM	M "	1.25	43		
09:50 AM	M "	1.24			
10:00 AM	M "	1.23	44		
10:10 AM	M "	1.23			
10:27 AM	M "	1.23	45		
10:48 AM	M "	1.23			
10:59 AM	M "	1.23	44		
11:14 AM	M "	1.21			
11:26 AM	M "	1.22	42		
11:36 AM	M "	1.22			
11:47 AM	M "	1.22	44		
12:57 PM	M "	1.22			
01:08 PM	M "	1.22	44		
01:20 PM	M "	1.23			
01:30 PM	M "	1.23	45		
01:57 PM	M "	1.23			
02:07 PM	M "	1.26	44	4.500E-02	
02:37 PM	M "	1.22			
02:51 PM	M "	1.23	44		
03:10 PM	M "	1.23			
03:20 PM	M "	1.22	42		

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 08, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
03:34 PM	M "	1.22			
03:49 PM	M "	1.21			
04:06 PM	M "	1.23			
04:16 PM	M "	1.23	42

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
October 09, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
08:10 AM	F	1.51	84		
08:20 AM	F	1.52			
08:33 AM	F	1.50	87		
08:43 AM	F	1.53			
08:55 AM	F	1.53	91		
09:05 AM	F	1.54			
09:15 AM	F	1.54	84		
09:25 AM	F	1.53			
09:35 AM	F	1.53	92		
09:45 AM	F	1.53			
09:55 AM	F	1.53	120		
10:10 AM	F	1.53		2.500E-02	
10:20 AM	F	1.53	115		
10:30 AM	F	1.53			
10:55 AM	F	1.51	119		
11:05 AM	F	1.53			
11:15 AM	F	1.54	111		
11:30 AM	F	1.54			
11:45 AM	F	1.57	Infinite		
12:40 PM	F	1.53	Infinite		
12:50 PM	F	1.53			
01:01 PM	F	1.53	Infinite		
01:15 PM	F	1.52			
01:25 PM	F	1.53	128		
01:35 PM	F	1.53			
01:45 PM	F	1.56	121		
01:55 PM	F	1.55			

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 09, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
02:10 PM	F	1.51	Infinite		
02:20 PM	F	1.53			
02:30 PM	F	1.53	Infinite		
02:42 PM	F	1.53			
03:03 PM	F	1.54	Infinite		
03:18 PM	F	1.54			
03:29 PM	F	1.54	Infinite		
03:39 PM	F	1.53			
03:50 PM	F	1.53	128		
04:00 PM	F	1.53			
04:10 PM	F	1.53	Infinite		
04:20 PM	F	1.53	98

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
October 10, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
08:00 AM	F	1.51	91		
08:10 AM	F	1.53			
08:20 AM	F	1.54	86		
08:30 AM	F	1.54			
08:40 AM	F	1.57			
08:50 AM	F	1.53			
09:00 AM	F	1.53	95		
09:10 AM	F	1.53			
09:20 AM	F	1.52			
09:30 AM	F	1.53			
09:40 AM	F	1.53	77		
09:50 AM	F	1.56			
10:00 AM	F	1.55			
10:12 AM	F	1.51			
10:30 AM	F	1.53	120		
10:40 AM	F	1.51			
10:50 AM	F	1.53			
11:00 AM	F	1.53			
11:10 AM	F	1.53	100		
11:20 AM	F	1.56			
11:30 AM	F	1.55			
11:42 AM	F	1.51			
12:40 PM	F	1.53	Infinite		
12:50 PM	F	1.51			
01:00 PM	F	1.53			
01:10 PM	F	1.54			
01:20 PM	F	1.54	135		
01:30 PM	F	1.53			

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 10, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
01:40 PM	F	1.53			
01:50 PM	F	1.53	110	2.600E-02	
02:00 PM	F	1.53			
02:10 PM	F	1.53			
02:25 PM	F	1.53			
02:40 PM	F	1.54	Infinite		
02:50 PM	F	1.54			
03:00 PM	F	1.53			
03:20 PM	F	1.53			
03:30 PM	F	1.53	Infinite		
03:40 PM	F	1.53			
03:50 PM	F	1.53			
04:00 PM	F	1.53			
04:15 PM	F	1.53	145

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 11, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
08:10 AM	M "	1.23	46		
08:20 AM	M "	1.22			
08:30 AM	M "	1.25	48		
08:40 AM	M "	1.26			
08:50 AM	M "	1.23	45		
09:00 AM	M "	1.24			
09:10 AM	M "	1.23	47		
09:20 AM	M "	1.22			
09:30 AM	M "	1.23	44		
09:40 AM	M "	1.24			
09:52 AM	M "	1.26	52	Start Using Microcem B	
10:02 AM	M "	1.23			
11:24 AM	F	1.54	Infinite		
11:34 AM	F	1.54			
11:45 AM	F	1.54	Infinite		
11:55 AM	F	1.53			
12:45 PM	F	1.55	Infinite		
01:00 PM	F	1.55			
01:10 PM	F	1.54	Infinite		
01:20 PM	F	1.54			
01:30 PM	F	1.54	Infinite		
01:40 PM	F	1.54			
02:00 PM	F	1.54	Infinite		
02:10 PM	F	1.53			
02:20 PM	F	1.55	Infinite		
02:30 PM	F	1.54			
02:40 PM	F	1.53	Infinite		

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Control Report
October 11, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
02:50 PM	F	1.54			
03:00 PM	F	1.54	Infinite		
03:10 PM	F	1.54

ACT Rembeo Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 14, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2) Microcem B	Static Cone Penetrometer (mm)
07:50 AM	M "	1.23	44		
08:00 AM	M "	1.22			
08:10 AM	M "	1.25	47		
08:20 AM	M "	1.26			
08:30 AM	M "	1.23	45		
08:40 AM	M "	1.24			
08:50 AM	M "	1.23	49		
09:00 AM	M "	1.22			
09:10 AM	M "	1.23	48		
09:20 AM	M "	1.24			
09:30 AM	M "	1.26	49		
09:40 AM	M "	1.23			
09:50 AM	M "	1.23	47		
10:14 AM	F	1.50	89		
10:25 AM	F	1.52			
10:35 AM	F	1.53	94		
10:45 AM	F	1.53			
11:00 AM	F	1.53	98		
11:10 AM	F	1.54			
11:20 AM	F	1.53	101		
11:30 AM	F	1.53			
11:40 AM	F	1.54	105		
12:55 PM	F	1.53			
01:10 PM	F	1.53	122		
01:20 PM	F	1.52			
01:30 PM	F	1.53	107		

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 14, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
01:40 PM	F	1.53			
01:50 PM	F	1.53	99		
02:00 PM	F	1.53			
02:10 PM	F	1.53	104		
02:20 PM	F	1.54			
02:30 PM	F	1.53	119		
02:40 PM	F	1.53			
02:50 PM	F	1.53	109		
03:00 PM	F	1.53			
03:10 PM	F	1.53	107		
03:20 PM	F	1.52			
03:30 PM	F	1.53	114		
03:40 PM	F	1.53			
03:50 PM	F	1.53	100		
04:00 PM	F	1.51			
04:10 PM	F	1.53	110		
04:20 PM	F	1.52

 ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 15, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
08:00 AM	F	1.52	Infinite		
08:10 AM	F	1.53			
08:20 AM	F	1.53	Infinite		
08:30 AM	F	1.53			
08:40 AM	F	1.53	Infinite		
08:50 AM	F	1.53			
09:00 AM	F	1.54	Infinite		
09:10 AM	F	1.54			
09:20 AM	F	1.53	Infinite		
09:30 AM	F	1.55			
09:40 AM	F	1.54	Infinite		
09:50 AM	F	1.54			
10:00 AM	F	1.54	Infinite		
10:10 AM	F	1.54			
10:20 AM	F	1.54	127		
10:30 AM	F	1.54			
10:40 AM	F	1.54	Infinite		
10:50 AM	F	1.54			
11:00 AM	F	1.55	131		
11:10 AM	F	1.54			
11:20 AM	F	1.54	Infinite		
11:30 AM	F	1.53			
11:40 AM	F	1.53	121		
11:50 AM	F	1.53			
12:45 PM	F	1.54	115		
12:55 PM	F	1.54			

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 15, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
01:05 PM	F	1.53	118		
01:15 PM	F	1.53			
01:40 PM	F	1.52	115		
01:50 PM	F	1.53			
02:00 PM	F	1.53	109		
02:10 PM	F	1.52			
02:20 PM	F	1.53	110		
02:30 PM	F	1.53	113		
02:40 PM	F	1.52			
02:50 PM	F	1.53	114		
03:00 PM	F	1.53			
03:10 PM	F	1.54	108		
03:20 PM	F	1.53			
03:30 PM	F	1.53	116		
03:40 PM	F	1.54			
03:50 PM	F	1.54	122		
04:00 PM	F	1.54			
04:10 PM	F	1.54	Infinite		
04:20 PM	F	1.54			
04:30 PM	F	1.54	Infinite

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 16, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
08:00 AM	F	1.50	105		
08:10 AM	F	1.52			
08:20 AM	F	1.53	108		
08:30 AM	F	1.53			
08:40 AM	F	1.53	107		
08:50 AM	F	1.53			
09:00 AM	F	1.53	113		
09:10 AM	F	1.53			
09:20 AM	F	1.53	112		
09:30 AM	F	1.53			
09:40 AM	F	1.53	115		
09:50 AM	F	1.53			
10:05 AM	F	1.54	125		
11:10 AM	M "	1.25	45		
11:20 AM	M "	1.24			
11:30 AM	M "	1.25	46		
11:40 AM	M "	1.24			
12:35 PM	M "	1.24	43		
12:45 PM	M "	1.24			
12:55 PM	M "	1.24	44		
01:05 PM	M "	1.23			
01:15 PM	M "	1.24	44		
01:25 PM	M "	1.24			
01:35 PM	M "	1.23	46

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Quality Contol Report
October 18, 1996

Time of Test	Mix Identificaton	Specific Gravity (Kg/Litre)	Marsh Funnel (seconds)	Coefficient Pressure Filtration (minutes-1/2)	Static Cone Penetrometer (mm)
07:48 AM	M"	1.25	48		
07:58 AM	M"	1.26	51		
08:08 AM	M"	1.33	Infinite		
08:18 AM	M"	1.34	Infinite		
08:28 AM	M"	1.33	Infinite		
09:15 AM	M"	1.24	48		
09:25 AM	M"	1.23	47		
09:35 AM	M"	1.24			
09:45 AM	M"	1.23	45		
09:55 AM	M"	1.23			
10:05 AM	M"	1.23	46		
10:15 AM	M"	1.23			
10:25 AM	M"	1.23	45		
10:35 AM	M"	1.24			
10:45 AM	M"	1.23	44		
10:55 AM	M"	1.23			
11:05 AM	M"	1.23	46		
11:15 AM	M"	1.23			
11:25 AM	M"	1.24	45		
11:35 AM	M"	1.24			
11:45 AM	M"	1.23	44		
12:40 PM	M"	1.23

 ACT Rembco Representative

**ACRYLAMIDE GROUT
QUALITY CONTROL TESTING REPORTS**

Acrylamide Testing Record For September 06, 1996

ADP Rembo Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
September 17, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1	09:00 AM	95	600	5	1.8	0.0	1	09:05 AM	7.5	25.0	14	
	09:25 AM			+ 5			2	09:28 AM	7.5	25.0	43	
2	10:30 AM	95	600	5	1.8	0.0	3	10:34 AM	7.5	25.0	14	
3	11:00 AM	95	600	0	1.8	0.0	4	11:06 AM	7.5	26.0	6	
4	11:25 AM	95	600	0	1.8	0.0	5	11:29 AM	7.5	26.0	7	
5	12:00 PM	95	600	0	1.8	0.0	6	12:03 PM	7.5	26.0	6	
6	12:35 PM	95	600	0	1.8	0.0	7	12:37 PM	7.5	26.0	6	
7	01:00 PM	95	600	0	1.8	0.0	8	01:02 PM	7.5	26.0	6	
8	01:25 PM	95	600	0	1.8	0.0	9	01:29 PM	7.5	26.0	6	
				+ 5			10	01:50 PM	7.5	26.0	13	
9	02:55 PM	95	600	0	1.8	0.0	11	02:57 PM	7.5	26.0	12	
10	03:25 PM	95	600	0	1.8	0.0	12	03:30 PM	7.5	26.0	14

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
September 18, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	0	1.8	0.0	1	08:12 AM	7.5	22.0	17	Remaining from yesterday
2		95	600	0	1.8	0.0	2	09:05 AM	7.5	22.0	17	Remaining from yesterday
				+ 10			3	09:35 AM			47	
3	10:50 AM	95	600	0	1.8	0.0	4	10:54 AM	7.5	24.0	12	
				+ 5			5				21	
4	12:00 PM	95	600	5	1.8	0.0	6	12:02 PM	7.5	25.0	28	
5	12:40 PM	95	600	5	1.8	0.0	7	12:43 PM	7.5	25.0	26	
6	01:25 PM	95	600	5	1.8	0.0	8	01:30 PM	7.5	25.0	27	
7	02:25 PM	95	600	5	1.8	0.0	9	02:27 PM	7.5	25.0	27	
8	02:55 PM	95	600	2.5	1.8	0.0	10	02:56 PM	7.5	25.0	14	
9	03:40 PM	95	600	2.5	1.8	0.0	11	03:52 PM	7.5	25.0	12	
10	04:15 PM	95	600	0.0	1.8	0.0						
11	04:50 PM	95	600	0.0	1.8	0.0

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Oml Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
September 19, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	0	1.8	0.0	1	12:25 PM	7.5	19.0	12	Remaining from yesterday
2		95	600	0	1.8	0.0	2	01:02 PM	7.5	19.0	12	Remaining from yesterday
3	01:43 PM	95	600	0	1.8	0.0	3	01:48 PM	7.5	22.0	10

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
September 25, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	25	1.8	0.0	1	07:40 AM	7.5	21.5	83	Remaining from yesterday
2	08:00 AM	95	600	10	1.8	0.0	2	08:05 AM	7.5	21.5	45	
3	09:10 AM	95	600	5	1.8	0.0	3	09:18 AM	7.5	21.5	39	
4	10:10 AM	95	600	0	1.8	0.0	4	10:25 AM	7.5	22.0	10	
				+ 10			5	10:57 AM			37	
5	01:20 PM	95	600	10	1.8	0.0	6	01:30 PM	7.5	24.0	35	
6	02:30 PM	95	600	10	1.8	0.0	7	02:43 PM	7.5	24.0	28	
7	03:30 PM	95	600	10	1.8	0.0	8	03:35 PM	7.5	24.0	48

ACT Remboo Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
September 26, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	10	1.8	0.0			7.5			Remaining from yesterday
2		95	600	10	1.8	0.0	1	07:37 AM	7.5	21.0	40	Remaining from yesterday
3	08:45 AM	95	600	10	1.8	0.0	2	08:49 AM	7.5	21.5	38	
4	09:20 AM	95	600	10	1.8	0.0	3	09:25 AM	7.5	22.0	40	
5	10:50 AM	95	600	10	1.8	0.0	4	10:54 AM	7.5	22.0	40	
6	11:30 AM	95	600	10	1.8	0.0	5	11:40 AM	7.5	22.0	42	
7	12:25 PM	95	600	10	1.8	0.0	6	12:32 PM	7.5	22.0	34	
8	01:10 PM	95	600	10	1.8	0.0	7	01:14 PM	7.5	23.0	40	
9	01:55 PM	95	600	10	1.8	0.0	8	02:06 PM	7.5	23.0	37	
10	02:55 PM	95	600	10	1.8	0.0	9	03:05 PM	7.5	24.0	42	
11	03:45 PM	95	600	10	1.8	0.0	10	04:00 PM	7.5	24.0	33	
12	04:25 PM	95	600	10	1.8	0.0	11	04:37 PM	7.5	24.0	33

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
September 27, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	10	1.8	0.0			7.5			Remaining from yesterday
2	09:05 AM	95	600	10	1.8	0.0	1	09:13 AM	7.5	22.0	42	
3	10:45 AM	95	600	10	1.8	0.0	2	10:52 AM	7.5	22.0	41	
4	11:30 AM	95	600	10	1.8	0.0	3	11:45 AM	7.5	22.0	33	
5	12:20 PM	95	600	10	1.8	0.0	4	12:25 PM	7.5	22.0	35	
6	01:00 PM	95	600	10	1.8	0.0	5	01:08 PM	7.5	22.0	35	
7	01:55 PM	95	600	10	1.8	0.0	6	01:59 PM	7.5	22.0	36	
8	02:40 PM	95	600	10	1.8	0.0	7	02:48 PM	7.5	22.0	35

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
September 30, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	10	1.8	0.0			7.5			Remaining from yesterday
2		95	600	10	1.8	0.0	1	08:43 AM	7.5	16.0	54	Remaining from yesterday
3	09:50 AM	95	600	10	1.8	0.0	2	09:56 AM	7.5	15.0	70	
4	11:00 AM	95	600	10	1.8	0.0	3	12:44 PM	7.5	18.0	48	
5	12:05 PM	95	600	10	1.8	0.0	4	12:14 PM	7.5	18.0	55	
6	01:05 PM	95	600	10	1.8	0.0	5	01:14 PM	7.5	18.0	48	
7	02:10 PM	95	600	10	1.8	0.0	6	02:22 PM	7.5	22.0	41

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
October 01, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	10	1.8	0.0			7.5			Remaining from yesterday
2		95	600	10	1.8	0.0	1	07:49 AM	7.5	20.0	44	Remaining from yesterday
3	08:25 AM	95	600	10	1.8	0.0	2	08:35 AM	7.5	20.0	38	
4	09:25 AM	95	600	10	1.8	0.0	3	09:35 AM	7.5	20.0	37	
5	10:15 AM	95	600	10	1.8	0.0	4	10:33 AM	7.5	20.0	40	
6	11:00 AM	95	600	10	1.8	0.0	5	11:10 AM	7.5	20.0	44	
7	11:55 AM	95	600	10	1.8	0.0	6	12:14 PM	7.5	20.0	36	
8	01:00 PM	95	600	10	1.8	0.0	7	01:09 PM	7.5	21.0	48	
9	01:50 PM	95	600	10	1.8	0.0	8	02:05 PM	7.5	21.0	35	
10	02:35 PM	95	600	10	1.8	0.0	9	02:44 PM	7.5	20.0	38

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ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
October 02, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	10	1.8	0.0			7.5			Remaining from yesterday
2		95	600	10	1.8	0.0			7.5			Remaining from yesterday
3	09:55 AM	95	600	10	1.8	0.0	1	10:07 AM	7.5	20.0	38	
4	10:15 AM	95	600	10	1.8	0.0	2	10:27 AM	7.5	20.0	25	
5	11:25 AM	95	600	10	1.8	0.0	3	11:40 AM	7.5	21.0	37	
6	11:45 AM	95	600	10	1.8	0.0	4	11:50 AM	7.5	22.0	48	
7	01:45 PM	95	600	10	1.8	0.0	5	02:08 PM	7.5	22.0	35	
8	02:45 PM	95	600	10	1.8	0.0	6	02:53 PM	7.5	21.0	39	
9	03:05 PM	95	600	10	1.8	0.0	7	03:13 PM	7.5	21.0	40	
10	04:10 PM	95	600	10	1.8	0.0	8	04:27 PM	7.5	22.0	35	
11	04:40 PM	95	600	10	1.8	0.0	9	04:45 PM	7.5	22.0	35

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
October 03, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	10	1.8	0.0			7.5			Remaining from yesterday
2	07:35 AM	95	600	10	1.8	0.0	1	07:50 AM	7.5	21.0	35	
3	08:45 AM	95	600	10	1.8	0.0	2	09:06 AM	7.5	21.0	34	
4	09:40 AM	95	600	10	1.8	0.0	3	09:50 AM	7.5	21.0	39	
5	10:20 AM	95	600	10	1.8	0.0	4	10:28 AM	7.5	21.0	34	
6	11:05 AM	95	600	10	1.8	0.0	5	11:08 AM	7.5	21.0	40	
7	11:35 AM	95	600	10	1.8	0.0	6	11:46 AM	7.5	22.0	25	
8	12:00 PM	95	600	10	1.8	0.0	7	12:12 PM	7.5	22.0	36	
9	12:40 PM	95	600	10	1.8	0.0	8	01:05 PM	7.5	22.0	35	
10	01:15 PM	95	600	10	1.8	0.0	9	01:22 PM	7.5	22.0	35	
11	01:45 PM	95	600	10	1.8	0.0	10	01:55 PM	7.5	23.0	40

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
October 08, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	10	1.8	0.0			7.5			Remaining from yesterday
2		95	600	10	1.8	0.0	1	07:55 AM	7.5	16.0	75	Remaining from yesterday
3	08:55 AM	95	600	10	1.8	0.0	2	09:00 AM	7.5	18.0	37	
4	09:15 AM	95	600	5	1.8	0.0	3	09:25 AM	7.5	18.0	32	
5	09:45 AM	95	600	5	1.8	0.0	4	09:57 AM	7.5	20.0	28	
6	10:15 AM	95	600	5	1.8	0.0	5	10:24 AM	7.5	20.0	22	
7	11:10 AM	95	600	5	1.8	0.0	6	11:24 AM	7.5	20.0	22	
8	11:40 AM	95	600	5	1.8	0.0	7	11:54 AM	7.5	20.0	21

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Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
October 11, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1	08:15 AM	95	600	5	1.8	0.0	1	08:25 AM	7.5	13.0	45	
2	08:40 AM	95	600	5	1.8	0.0	2	08:57 AM	7.5	13.0	38	
3	10:00 AM	95	600	0	1.8	0.0	3	10:25 AM	7.5	15.0	20	
4	10:40 AM	95	600	0	1.8	0.0	4	10:48 AM	7.5	16.0	22	
5	11:05 AM	95	600	0	1.8	0.0	5	11:17 AM	7.5	16.0	23	
6	11:55 AM	95	600	0	1.8	0.0	6	12:02 PM	7.5	16.0	23	
7	12:40 PM	95	600	0	1.8	0.0	7	12:56 PM	7.5	16.0	20	
				+ 5			8	01:35 PM		16.5	35	
				+ 5			9	02:17 PM		17.0	40	
8	03:10 PM	95	600	10	1.8	0.0	10	03:15 PM	7.5	18.0	46	
9	03:35 PM	95	600	10	1.8	0.0	11	03:41 PM	7.5	20.0	45

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornil Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
October 12, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	10	1.8	0.0			7.5			Remaining from yesterday
2	08:10 AM	95	600	5	1.8	0.0	1	08:20 AM	7.5	13.0	50	
3	08:45 AM	95	600	5	1.8	0.0	2	08:50 AM	7.5	15.0	43	
4	09:20 AM	95	600	5	1.8	0.0	3	09:29 AM	7.5	15.0	45	
5	09:50 AM	95	600	5	1.8	0.0	4	10:02 AM	7.5	16.0	43	
6	10:20 AM	95	600	5	1.8	0.0	5	10:34 AM	7.5	17.0	48	
7	10:50 AM	95	600	5	1.8	0.0	6	11:10 AM	7.5	17.0	48	
8	11:25 AM	95	600	5	1.8	0.0	7	11:37 AM	7.5	17.0	50	
9	12:00 PM	95	600	5	1.8	0.0	8	12:07 PM	7.5	18.0	45	
10	12:45 PM	95	600	5	1.8	0.0	9	12:52 PM	7.5	18.0	43	
11	01:10 PM	95	600	10	1.8	0.0	10	01:18 PM	7.5	18.0	65	
12	01:35 PM	95	600	10	1.8	0.0	11	01:55 PM	7.5	18.0	60

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Ornl Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
October 18, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	10	1.8	0.0			7.5			Remaining from yesterday
2	08:02 AM	95	600	10	1.8	0.0	1	08:03 AM	7.5	20.0	53	
3	09:30 AM	95	600	10	1.8	0.0	2	09:32 AM	7.5	20.0	60	
4	10:05 AM	95	600	10	1.8	0.0	3	10:06 AM	7.5	20.0	62	
5	10:49 AM	95	600	10	1.8	0.0	4	10:50 AM	7.5	18.0	68	
6	11:37 AM	95	600	10	1.8	0.0	5	11:38 AM	7.5	20.0	68	
7	12:43 PM	95	600	10	1.8	0.0	6	12:44 PM	7.5	15.0	70	
8	01:20 PM	95	600	5	1.8	0.0	7	01:47 PM	7.5	18.0		
9	02:13 PM	95	600	5	1.8	0.0	8	02:14 PM	7.5	18.0	70	
10	03:36 PM	95	600	5	1.8	0.0	9	03:37 PM	7.5	18.0	43	
11	04:17 PM	95	600	5	1.8	0.0	10	04:19 PM	7.5	19.0

ACT Rembco Representative

ACT REMBCO JOINT VENTURE
Omi Wag 4 Seeps 4 & 6 Removal Action Project

Acrylamide Batching Record For
October 21, 1996

Batch No.	Time of Batch	Tank A			Tank B		Sample No.	Time of Sample	pH	Sample Temp. (Deg. C)	Gel Time (min)	Comments
		AV-100 (L)	CAT-T+ (mL)	KFeCN (grams)	AP (Kg)	Buffer (Kg)						
1		95	600	10	1.8	0.0			7.5			Remaining from yesterday
2	09:00 AM	95	600	5	1.8	0.0	1	09:02 AM	7.5	10.0	65	
3	09:48 AM	95	600	5	1.8	0.0	2	09:49 AM	7.5	11.0	72	
4	10:20 AM	95	600	5	1.8	0.0	3	10:21 AM	7.5	12.0	66	
5		95	600	5	1.8	0.0						
6		95	600	5	1.8	0.0						
7	12:37 PM	95	600	5	1.8	0.0	4	12:39 PM	7.5	13.0	64	
8	01:10 PM	95	600	5	1.8	0.0	5	01:12 PM	7.5	14.0	70	
9	02:10 PM	95	600	5	1.8	0.0	6	02:24 PM	7.5	15.0	63	
10	02:38 PM	95	600	5	1.8	0.0	7	02:39 PM	7.5	16.0	61

 ACT Rembco Representative

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