Appendix B

Grout Containment Unit Layouts and Drill Logs

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Grout Containment Unit Layouts and Drill Logs

This appendix contains schematics showing the orientation of the GCUs on the various locations grouted and the drilling pattern of the holes. Also in this appendix are the drill logs kept by the subcontractor giving the detailed record for each hole drilled, including start and finish times for jetting, temperatures, and so forth.

Trench 54

The orientation of the GCU placed over the Trench 54 disposal location is shown below.

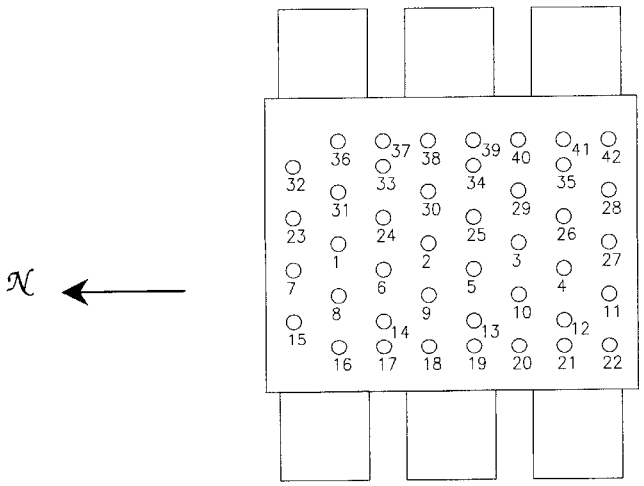

Figure B-1. Orientation of Grout Containment Unit 54-1.

INEEL Contract No. 23378 - InSitu Grouting of Be Blocks in the SDA
Jet Grout Installation Log - Be Block No. Trench 54 1 of 2

Jet Grouting Method - Single Fluid

Injection Nozzle Arrangement - 2 & 4 nozzle

Sequential Column No.	Jet Grout Column No.	Installation Date	Start Injection Time	End Injection Time	Drilled Length (ft)	Jetted Length (ft)	Grout Injection Pressure (bars)	Retraction/Step Rate (in/sec)	Rotation Rate (rpm)	Grout Temp. (deg F)	Strokes per minute	Grout Volume (Gal)	Grout batch # (ticket)	Observations / Remarks
1	1	7/13/04	1:39:00 PM	1:42:30 PM	24	21	500	4" / 5 sec	25	199	59	189.0	1	Retraction rate moved up with RPM?, 4 no:
2	2	7/14/04	10:18:00 AM	10:24:30 AM	22	19	500	4" / 5 sec	25	199	59	383.5	1	4 nozzle
3	3	7/14/04			2	0								hit refusal
4	4	7/15/04	9:30:00 AM	9:35:30 AM	13	10	500	2.75" / 5 sec	25	202	31	170.5	1	Retraction rate min about 2.25-3, 2 nozzle
5	5	7/15/04	9:46:00 AM	9:52:40 AM	18	15	500	2.75" / 5 sec	25	202	32	213.4	1	have no more 4 nozzle monitors chg
6	6	7/15/04			2	0								to 2 noz.
7	1	7/15/04	10:27:00 AM	10:35:30 AM	23	20	500	2.75" / 5 sec	25	202	33	280.5	1	redo col last time retraction rate off! 2 nozz
8	7	7/15/04			2	0								
9	8	7/15/04	11:03:30 AM	11:14:00 AM	22	19	500	2.75" / 5 sec	25	202	33	346.5	1	2 nozzle
10	9	7/15/04	11:41:30 AM	11:44:50 AM	19	16	500	2.75" / 3 sec	40	202	33	109.9	1	GCU filling up Bill asked to chg step rate, 2
11	15	7/15/04	11:56:40 AM	12:00:40 PM	19	16	500	2.75" / 3 sec	40	200	33	132.0	1	2 nozzle
12	14	7/15/04	12:13:10 PM	12:16:10 PM	18	15	500	2.75" / 3 sec	40	200	33	99.0	1	2 nozzle
13	16	7/15/04	12:29:00 PM	12:32:30 PM	21	18	500	2.75" / 3 sec	40	200	34	119.0	1	2 nozzle
14	17	7/15/04	12:40:30 PM	12:44:00 PM	20	17	500	2.75" / 3 sec	40	200	34	119.0	1	filled up GCU after this col (shut down), 2 n
489	27	8/30/04	1:58:20 PM	1:59:50 PM	12.5	7.5	500	3" / 2.5 sec	25	206	33	49.5	3	2 nozzle
490	26	8/30/04	2:07:50 PM	2:09:10 PM	12	7	500	3" / 2.5 sec	25	206	33	43.9	3	2 nozzle
491	28	8/30/04	2:17:10 PM	2:19:00 PM	12.5	7.5	500	3" / 2.5 sec	25	206	33	60.4	3	2 nozzle
492	42	8/30/04	2:28:10 PM	2:29:30 PM	12.5	7.5	500	3" / 2.5 sec	25	206	33	43.9	3	2 nozzle
493	41	8/30/04	2:36:50 PM	2:38:40 PM	13.5	8.5	500	3" / 2.5 sec	25	206	33	60.4	3	2 nozzle
494	40	8/30/04			3	0							3	
495	29	8/30/04	2:52:20 PM	2:54:30 PM	15	10	500	3" / 2.5 sec	25	206	33	71.6	3	2 nozzle
496	25	8/30/04	3:01:50 PM	3:03:30 PM	12.5	7.5	500	3" / 2.5 sec	25	206	33	55.1	3	2 nozzle
497	30	8/30/04	3:10:50 PM	3:13:00 PM	16	11	500	3" / 2.5 sec	25	206	33	71.6	3	2 nozzle
498	39	8/30/04			4	0							3	
499	38	8/30/04	3:30:20 PM	3:33:30 PM	22	17	500	3" / 2.5 sec	25	206	33	104.6	3	2 nozzle
500	37	8/30/04	3:42:20 PM	3:45:30 PM	21	16	500	3" / 2.5 sec	25	206	33	104.6	3	stop for the day GCU full of wax, 2 nozzle
501	35	8/31/04	1:19:30 PM	1:21:10 PM	13	8	500	3" / 2.5 sec	25	208	33	55.1	3	2 nozzle
502	34	8/31/04	1:27:10 PM	1:30:00 PM	22	17	500	3" / 2.5 sec	25	208	33	93.4	3	2 nozzle
503	33	8/31/04	1:37:10 PM	1:40:00 PM	22	17	500	3" / 2.5 sec	25	208	33	93.4	3	2 nozzle

INEEL Contract No. 23378 - InSitu Grouting of Be Blocks in the SDA
Jet Grout Installation Log - Be Block No. Trench 54 2 of 2

Jet Grouting Method - Single Fluid

Injection Nozzle Arrangement - 2 nozzle

Sequential Column No.	Jet Grout Column No.	Installation Date	Start Injection Time	End Injection Time	Drilled Length (ft)	Jetted Length (ft)	Grout Injection Pressure (bars)	Retraction/Step Rate (in/sec)	Rotation Rate (rpm)	Grout Temp. (deg F)	Strokes per minute	Grout Volume (Gal)	Grout batch # (ticket)	Observations / Remarks
504	24	8/31/04	1:45:30 PM	1:47:40 PM	16.5	11.5	500	3" / 2.5 sec	25	208	33	71.6	3	Two nozzles used
505	23	8/31/04			3	0								refusal very hard could not get through
506	31	8/31/04			21	0								all the rods and everything broke off.
507	32	9/1/04	2:16:00 PM	2:18:30 PM	18.5	13.5	500	3" / 2.5 sec	25	207	33	82.5	3	Two nozzles used
508	36	9/1/04	2:26:30 PM	2:29:10 PM	19.5	14.5	500	3" / 2.5 sec	25	207	33	88.1	3	Two nozzles used
509	11	9/1/04	3:39:50 PM	3:42:40 PM	19	14	500	3" / 2.5 sec	25	207	33	93.4	3	Two nozzles used
510	22	9/1/04			3.5	0								refusal very hard could not get through
511	21	9/1/04			4.5	0								refusal very hard could not get through
512	12	9/1/04			7	0								refusal very hard could not get through
513	10	9/1/04	4:12:00 PM	4:13:30 PM	12.5	7.5	500	3" / 2.5 sec	25	207	33	49.5	3	Two nozzles used
514	20	9/1/04			5	0								refusal very hard could not get through
515	19	9/1/04			4	0								refusal very hard could not get through
516	13	9/1/04			7	0								refusal very hard could not get through
517	18	9/1/04	4:42:50 PM	4:43:50 PM	7	4	500	3" / 2.5 sec	25	207	33	33.0	3	Two nozzles used

Trench 52

The orientation of the GCUs placed over Trench 52 disposal locations are shown below.

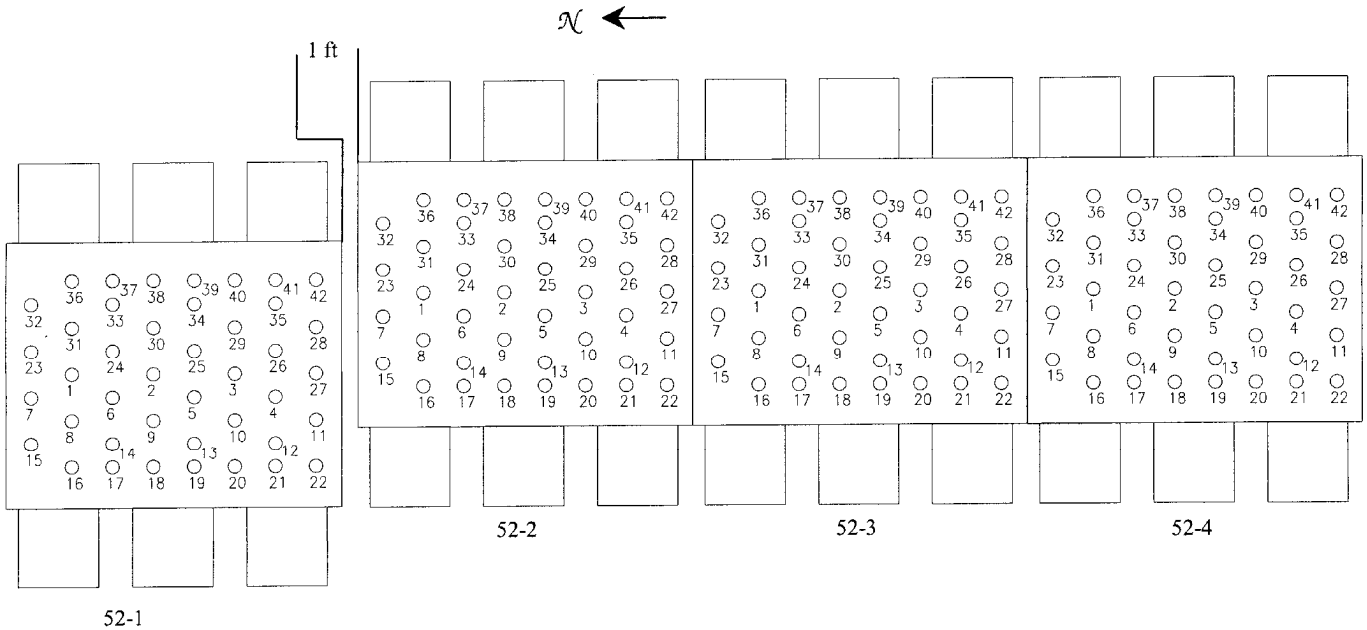

Figure B-2. Orientation of grout containment units at Trench 52 disposal locations.

INEEL Contract No. 23378 - InSitu Grouting of Be Blocks in the SDA
Jet Grout Installation Log - Be Block No. Trench 52-1 1of 2

Jet Grouting Method - Single Fluid
Injection Nozzle Arrangement - 2 nozzels

Sequential Column No.	Jet Grout Column No.	Installation Date	Start Injection Time	End Injection Time	Drilled Length (ft)	Jetted Length (ft)	Grout Injection Pressure (bars)	Retraction/Step Rate (in/sec)	Rotation Rate (rpm)	Grout Temp. (deg F)	Strokes per minute	Grout Volume (Gal)	Grout batch # (ticket)	Observations / Remarks
15	1	7/17/04	4:07:00 PM	4:09:10 PM	18	12	500	2.5" / 3 sec	20	193	34	73.8	1	Retraction rate moved up With RPM
16	2	7/17/04			4.5	0								hit refusal per Bill L
17	7	7/19/04			3	0								Bill L said stop the col - 6' from top c
18	6	7/19/04			3.5	0								Refusal per Bill & Karl
19	9	7/19/04	1:12:50 PM	1:24:00 PM	16	11	500	2.75"/ 3 sec	20	200	34	90.0	1	Broke rubsher disk
20	8	7/19/04	1:37:30 PM	1:39:30 PM	16	11	500	2.75"/ 3 sec	20	200	34	68.0	1	
21	15	7/19/04			5	0								Refusal per Bill & Karl
22	14	7/19/04			4	0								Refusal per Bill & Karl
23	16	7/19/04			2	0								Refusal per Bill & Karl
24	17	7/19/04	2:25:30 PM	2:28:40 PM	17.5	12.5	500	2.75"/ 3 sec	20	200	34	107.8	1	
25	3	7/20/04	9:03:30 AM	9:07:10 AM	17	12	500	2.75"/ 3 sec	20	204	33	121.1	1	Bill L said stop the col - 5' from top c
26	5	7/20/04			2	0								Refusal per Bill & Karl
27	4	7/20/04	9:32:40 AM	9:36:30 AM	17	12	500	2.75"/ 3 sec	20	204	34	130.2	1	
28	11	7/20/04	9:52:10 AM	9:54:30 AM	13	8	500	2.75"/ 3 sec	20	204	34	79.2	1	
29	10	7/20/04	10:06:10 AM	10:08:10 AM	12	7	500	2.75"/ 3 sec	20	204	36	72.0	1	
30	13	7/20/04	10:22:20 AM	10:24:40 AM	15	10	500	2.75"/ 3 sec	20	204	36	83.9	1	
31	12	7/20/04	10:39:10 AM	10:41:10 AM	11	6	500	2.75"/ 3 sec	20	204	35	70.0	1	
32	18	7/20/04	10:53:30 AM	10:56:30 AM	16	11	500	2.75"/ 3 sec	20	204	35	105.0	1	
33	19	7/20/04	11:07:30 AM	11:12:30 AM	16	11	500	2.75"/ 3 sec	20	204	35	175.0	1	
34	20	7/20/04	11:24:00 AM	11:27:50 AM	14	9	500	2.75"/ 3 sec	20	204	35	134.1	1	
35	21	7/20/04	11:38:50 AM	11:42:10 AM	13.5	8.5	500	2.75"/ 3 sec	20	204	35	116.6	1	
36	22	7/20/04	11:53:50 AM	11:56:30 AM	13	8	500	2.75"/ 3 sec	20	204	35	93.5	1	
446	27	8/28/04			3	0								
447	28	8/28/04			3.5	0								
448	42	8/28/04	10:57:30 AM	10:59:30 AM	17.5	12.5	500	3.25"-+ / 2.5 sec	25	200	33	66.0	3	
449	41	8/28/04	11:07:10 AM	11:09:30 AM	17.5	12.5	500	3.25"-+ / 2.5 sec	25	200	33	76.9	3	
450	26	8/28/04	11:18:10 AM	11:19:50 AM	14	9	500	3.25"-+ / 2.5 sec	25	200	33	55.1	3	

INEEL Contract No. 23378 - InSitu Grouting of Be Blocks in the SDA
Jet Grout Installation Log - Be Block No. Trench 52-1 2of 2

Jet Grouting Method - Single Fluid
Injection Nozzle Arrangement - 2 nozzels

Sequential Column No.	Jet Grout Column No.	Installation Date	Start Injection Time	End Injection Time	Drilled Length (ft)	Jetted Length (ft)	Grout Injection Pressure (bars)	Retraction/Step Rate (in/sec)	Rotation Rate (rpm)	Grout Temp. (deg F)	Strokes per minute	Grout Volume (Gal)	Grout batch # (ticket)	Observations / Remarks
451	29	8/28/04	11:28:20 AM	11:29:50 AM	12	7	500	3.25"-+ / 2.5 sec	25	200	33	49.5	3	
452	40	8/28/04	11:36:00 AM	11:37:20 AM	12	7	500	3.25"-+ / 2.5 sec	25	200	33	43.9	3	
453	39	8/28/04	11:43:00 AM	11:44:50 AM	13	8	500	3.25"-+ / 2.5 sec	25	200	33	60.4	3	
454	25	8/28/04	11:50:50 AM	11:52:30 AM	14	9	500	3.25"-+ / 2.5 sec	25	200	33	55.1	3	
455	30	8/28/04	11:59:50 AM	12:02:30 PM	18	13	500	3.25"-+ / 2.5 sec	25	200	33	88.1	3	
456	38	8/28/04	12:09:00 PM	12:11:20 PM	18.5	13.5	500	3.25"-+ / 2.5 sec	25	200	33	76.9	3	
457	37	8/28/04	12:17:10 PM	12:19:50 PM	18.5	13.5	500	3.25"-+ / 2.5 sec	25	200	33	88.1	3	
458	24	8/28/04	12:27:20 PM	12:30:00 PM	18.5	13.5	500	3.25"-+ / 2.5 sec	25	200	33	88.1	3	
459	31	8/28/04	12:35:10 PM	12:37:30 PM	14	9	500	3.25"-+ / 2.5 sec	25	200	33	76.9	3	
460	23	8/28/04	12:46:50 PM	12:48:30 PM	13.5	8.5	500	3.25"-+ / 2.5 sec	25	200	33	55.1	3	
461	32	8/28/04	12:58:20 PM	1:00:30 PM	15.5	10.5	500	3.25"-+ / 2.5 sec	25	200	33	71.6	3	
462	36	8/28/04	1:07:10 PM	1:08:40 PM	13	8	500	3.25"-+ / 2.5 sec	25	200	33	49.5	3	
463	33	8/28/04	1:14:00 PM	1:16:30 PM	18.5	13.5	500	3.25"-+ / 2.5 sec	25	200	33	82.5	3	
464	34	8/28/04	1:21:40 PM	1:23:30 PM	13.5	8.5	500	3.25"-+ / 2.5 sec	25	200	33	60.4	3	
465	35	8/28/04	1:29:30 PM	1:31:20 PM	13	8	500	3.25"-+ / 2.5 sec	25	200	33	60.4	3	

total wax
1006.5

INEEL Contract No. 23378 - InSitu Grouting of Be Blocks in the SDA
Jet Grout Installation Log - Be Block No. Trench 52-2 1 of 2

Jet Grouting Method - Single Fluid
Injection Nozzle Arrangement - 2 nozzels

Sequential Column No.	Jet Grout Column No.	Installation Date	Start Injection Time	End Injection Time	Drilled Length (ft)	Jetted Length (ft)	Grout Injection Pressure (bars)	Retraction/Step Rate (in/sec)	Rotation Rate (rpm)	Grout Temp. (deg F)	Strokes per minute	Grout Volume (Gal)	Grout batch # (ticket)	Observations / Remarks
37	1	7/21/04			1	0								Refusal could not penetrate
38	3	7/21/04	9:45:50 AM	9:48:20 AM	13	8	500	2.75" / 3 sec	20	209	35	87.5	1	
39	1	7/21/04			3	0								Refusal could not penetrate(redo)
40	2	7/21/04			3	0								Refusal could not penetrate
41	7	7/21/04			3.5	0								Refusal could not penetrate
42	6	7/21/04			3	0								Refusal could not penetrate
43	8	7/21/04			3.5	0								Refusal could not penetrate
44	9	7/21/04			3.5	0								Refusal could not penetrate
45	13	7/21/04			2.5	0								Refusal could not penetrate
46	5	7/21/04			2	0								Refusal could not penetrate
47	10	7/21/04	12:41:40 PM	12:44:30 PM	16.5	11.5	500	2.75" / 3 sec	20	200	38	107.5	1	
48	20	7/21/04	12:57:20 PM	1:01:10 PM	16.5	11.5	500	2.75" / 3 sec	20	200	38	145.5	1	
49	19	7/21/04			3	0								Refusal could not penetrate
50	18	7/21/04			2.5	0								Refusal could not penetrate
51	17	7/21/04			2	0								Refusal could not penetrate
52	14	7/21/04			2	0								Refusal could not penetrate
53	15	7/21/04			2	0								Refusal could not penetrate
54	16	7/21/04			2	0								Refusal could not penetrate
55	4	7/21/04	1:55:40 PM	1:59:00 PM	16	11	500	2.75" / 3 sec	20	200	38	126.5	1	
56	27	7/22/04	9:59:30 AM	10:03:10 AM	16	11	500	2.75" / 3 sec	20	204	36	132.1	1	
57	11	7/22/04	10:18:00 AM	10:22:00 AM	16.5	11.5	500	2.75" / 3 sec	20	204	36	144.0	1	
58	12	7/22/04			3	0								Refusal could not penetrate
59	21	7/22/04	10:48:30 AM	10:53:40 AM	17	12	500	2.75" / 3 sec	20	204	35	181.0	1	
60	22	7/22/04	11:07:20 AM	11:11:40 AM	16.5	11.5	500	2.75" / 3 sec	20	204	37	160.2	1	
430	26	8/26/04	3:03:40 PM	3:05:10 PM	13.5	8.5	500	2.75" / 3 sec	25	200	33	49.5	3	
431	25	8/26/04	3:11:40 PM	3:14:20 PM	17.5	12.5	500	2.75" / 3 sec	25	200	33	81.8	3	
432	24	8/26/04	3:21:10 PM	3:23:40 PM	18.5	13.5	500	2.75" / 3 sec	25	195	33	82.5	3	

INEEL Contract No. 23378 - InSitu Grouting of Be Blocks in the SDA
Jet Grout Installation Log - Be Block No. Trench 52-2 2 of 2

Jet Grouting Method - Single Fluid
Injection Nozzle Arrangement - 2 nozzels

Sequential Column No.	Jet Grout Column No.	Installation Date	Start Injection Time	End Injection Time	Drilled Length (ft)	Jetted Length (ft)	Grout Injection Pressure (bars)	Retraction/Step Rate (in/sec)	Rotation Rate (rpm)	Grout Temp. (deg F)	Strokes per minute	Grout Volume (Gal)	Grout batch # (ticket)	Observations / Remarks
433	23	8/26/04	3:32:20 PM	3:34:40 PM	18	13	500	3" / 2.5 sec	25	195	33	76.9	3	
434	31	8/26/04	3:41:50 PM	3:44:30 PM	17.5	12.5	500	3" / 2.5 sec	25	195	33	88.1	3	
435	30	8/26/04	3:51:00 PM	3:53:20 PM	17.5	12.5	500	3" / 2.5 sec	25	190	33	76.9	3	
436	29	8/26/04	4:00:00 PM	4:02:40 PM	17.5	12.5	500	3" / 2.5 sec	25	190	33	88.1	3	
437	28	8/27/04	9:14:00 AM	9:16:10 AM	17	12	500	3" / 2.5 sec	25	200	32	69.4	3	hard layer of soil first few feet
438	42	8/27/04	9:25:50 AM	9:27:40 AM	15	10	500	3" / 2.5 sec	25	200	33	60.4	3	hard layer of soil first few feet
439	41	8/27/04	9:34:50 AM	9:36:10 AM	13	8	500	3" / 2.5 sec	25	200	33	43.9	3	hard layer of soil first few feet
440	40	8/27/04	9:43:30 AM	9:45:10 AM	13.5	8.5	500	3" / 2.5 sec	25	200	33	55.1	3	hard layer of soil first few feet
441	39	8/27/04	9:50:50 AM	9:52:30 AM	14	9	500	3" / 2.5 sec	25	200	33	55.1	3	hard layer of soil first few feet
442	38	8/27/04	9:59:20 AM	10:00:40 AM	13.5	8.5	500	3" / 2.5 sec	25	200	33	43.9	3	hard layer of soil first few feet
443	37	8/27/04	10:08:50 AM	10:10:20 AM	13.5	8.5	500	3" / 2.5 sec	25	200	33	49.5	3	hard layer of soil first few feet
444	36	8/27/04	10:17:20 AM	10:18:50 AM	13.5	8.5	500	3" / 2.5 sec	25	200	33	49.5	3	hard layer of soil first few feet
445	32	8/27/04			15									pipe broke off in ground
466	33	8/28/04	1:42:30 PM	1:44:50 PM	17.5	12.5	500	3.25"-+ / 2.5 sec	25	200	33	76.9	3	
467	34	8/28/04	1:50:30 PM	1:52:10 PM	13.5	8.5	500	3.25"-+ / 2.5 sec	25	200	33	55.1	3	
468	35	8/28/04	1:57:30 PM	1:59:10 PM	13.5	8.5	500	3.25"-+ / 2.5 sec	25	200	33	55.1	3	

INEEL Contract No. 23378 - InSitu Grouting of Be Blocks in the SDA
Jet Grout Installation Log - Be Block No. Trench 52-3 1 of 2

Jet Grouting Method - Single Fluid
Injection Nozzle Arrangement - 2 nozzels

Sequential Column No.	Jet Grout Column No.	Installation Date	Start Injection Time	End Injection Time	Drilled Length (ft)	Jetted Length (ft)	Grout Injection Pressure (bars)	Retraction/Step Rate (in/sec)	Rotation Rate (rpm)	Grout Temp. (deg F)	Strokes per minute	Grout Volume (Gal)	Grout batch # (ticket)	Observations / Remarks
61	1	7/22/04	11:36:10 AM	11:40:30 AM	15.5	10.5	500	2.75" / 3 sec	20	204	35	151.6	1	
62	2	7/22/04			3	0								Refusal could not penetrate
63	5	7/22/04			3.5	0								Refusal could not penetrate
64	7	7/22/04	12:15:30 PM	12:19:50 PM	16	11	500	2.75" / 3 sec	20	203	37	160.2	1	
65	6	7/22/04			3	0								Refusal could not penetrate
66	9	7/26/04	11:23:30 AM	11:28:00 AM	15	10	500	2.75" / 3 sec	20	202	30	135.0	1	
67	8	7/26/04	11:39:50 AM	11:42:00 AM	12.5	7.5	500	2.75" / 3 sec	20	202	33	71.6	1	
68	15	7/26/04	12:04:00 PM	12:07:00 PM	16	11	500	2.75" / 3 sec	20	202	33	99.0	1	
69	14	7/26/04	12:18:00 PM	12:22:00 PM	16	11	500	2.75" / 3 sec	20	202	36	144.0	1	
70	13	7/26/04	12:32:10 PM	12:36:40 PM	15.5	10.5	500	2.75" / 3 sec	20	202	38	171.0	1	shut down swivel leaking we think
411	27	8/26/04	12:05:10 PM	12:07:10 PM	15	10	500	2.75" / 3 sec	25	210	33	66.0	3	
412	3	8/26/04	12:13:30 PM	12:15:40 PM	15.5	10.5	500	2.75" / 3 sec	25	210	33	71.6	3	
413	26	8/26/04	12:23 PM	12:25:00 PM	15	10	500	2.75" / 3 sec	25	210	33	66.0	3	
414	25	8/26/04	12:32:10 PM	12:34:20 PM	15	10	500	2.75" / 3 sec	25	210	33	71.6	3	
415	24	8/26/04	12:40:50 PM	12:43:00 PM	16	11	500	2.75" / 3 sec	25	210	33	71.6	3	
416	31	8/26/04	12:49:40 PM	12:51:50 PM	16	11	500	2.75" / 3 sec	25	210	33	71.6	3	
417	23	8/26/04	12:59:00 PM	1:01:00 PM	16	11	500	2.75" / 3 sec	25	210	33	66.0	3	
418	30	8/26/04	1:08:10 PM	1:10:20 PM	16	11	500	2.75" / 3 sec	25	210	33	71.6	3	
419	29	8/26/04	1:15:50 PM	1:17:40 PM	14.5	9.5	500	2.75" / 3 sec	25	210	33	60.4	3	
420	28	8/26/04	1:24:30 PM	1:26:20 PM	15	10	500	2.75" / 3 sec	25	210	33	60.4	3	
421	35	8/26/04	1:32:00 PM	1:33:50 PM	14	9	500	2.75" / 3 sec	25	210	33	60.4	3	
422	34	8/26/04	1:40:10 PM	1:42:20 PM	16	11	500	2.75" / 3 sec	25	210	33	71.6	3	
423	33	8/26/04	1:49:40 PM	1:51:40 PM	16	11	500	2.75" / 3 sec	25	210	33	66.0	3	
424	32	8/26/04	1:59:00 PM	2:00:50 PM	16	11	500	2.75" / 3 sec	25	210	33	60.4	3	
425	36	8/26/04	2:09:00 PM	2:10:30 PM	13.5	8.5	500	2.75" / 3 sec	25	210	33	49.5	3	
426	37	8/26/04	2:16:20 PM	2:18:30 PM	14.5	9.5	500	2.75" / 3 sec	25	210	33	71.6	3	
427	38	8/26/04	2:26:50 PM	2:28:40 PM	13	8	500	2.75" / 3 sec	25	210	33	60.4	3	

INEEL Contract No. 23378 - InSitu Grouting of Be Blocks in the SDA
Jet Grout Installation Log - Be Block No. Trench 52-3 2 of 2

Jet Grouting Method - Single Fluid
Injection Nozzle Arrangement - 2 nozzels

Sequential Column No.	Jet Grout Column No.	Installation Date	Start Injection Time	End Injection Time	Drilled Length (ft)	Jetted Length (ft)	Grout Injection Pressure (bars)	Retraction/Step Rate (in/sec)	Rotation Rate (rpm)	Grout Temp. (deg F)	Strokes per minute	Grout Volume (Gal)	Grout batch # (ticket)	Observations / Remarks
428	39	8/26/04	2:35:00 PM	2:37:10 PM	14.5	9.5	500	3" / 2.5 sec	25	204	33	71.6	3	
429	40	8/26/04	2:45:00 PM	2:46:50 PM	14.5	9.5	500	3" / 2.5 sec	25	204	33	60.4	3	
469	41	8/28/04	2:14:10 PM	2:15:50 PM	13.5	8.5	500	3.25"-+ / 2.5 sec	25	200	33	48.8	3	
470	42	8/28/04	2:21:10 PM	2:23:10 PM	14	9	500	3.25"-+ / 2.5 sec	25	200	33	66.0	3	
471	16	8/30/04			2.5	0								
472	17	8/30/04	9:17:00 AM	9:19:30 AM	16.5	11.5	500	3"-+ / 2.5 sec	25	208	33	82.5	3	hard upper layer again from 0-6'
473	18	8/30/04	9:25:30 AM	9:27:40 AM	16.5	11.5	500	3"-+ / 2.5 sec	25	208	33	71.6	3	
474	19	8/30/04	9:34:00 AM	9:36:20 AM	16	11	500	3"-+ / 2.5 sec	25	208	33	76.9	3	
475	20	8/30/04	9:43:30 AM	9:45:50 AM	16	11	500	3"-+ / 2.5 sec	25	208	33	76.9	3	
476	10	8/30/04	9:53:00 AM	9:55:10 AM	15.5	10.5	500	3"-+ / 2.5 sec	25	208	33	71.6	3	
477	4	8/30/04	10:00:40 AM	10:03:00 AM	15.5	10.5	500	3"-+ / 2.5 sec	25	208	33	76.9	3	
478	12	8/30/04	10:08:40 AM	10:11:00 AM	15.5	10.5	500	3"-+ / 2.5 sec	25	208	33	76.9	3	
479	21	8/30/04	10:16:10 AM	10:18:20 AM	15.5	10.5	500	3"-+ / 2.5 sec	25	208	33	71.6	3	
480	22	8/30/04	10:26:30 AM	10:28:40 AM	18	13	500	3"-+ / 2.5 sec	25	208	33	71.6	3	
481	11	8/30/04	10:35:00 AM	10:37:20 AM	15	10	500	3"-+ / 2.5 sec	25	208	33	76.9	3	

INEEL Contract No. 23378 - InSitu Grouting of Be Blocks in the SDA
Jet Grout Installation Log - Be Block No. Trench 52-4 1 of 2

Jet Grouting Method - Single Fluid
Injection Nozzle Arrangement - 2 nozzels

Sequential Column No.	Jet Grout Column No.	Installation Date	Start Injection Time	End Injection Time	Drilled Length (ft)	Jetted Length (ft)	Grout Injection Pressure (bars)	Retraction/Step Rate (in/sec)	Rotation Rate (rpm)	Grout Temp. (deg F)	Strokes per minute	Grout Volume (Gal)	Grout batch # (ticket)	Observations / Remarks
71	1	7/27/04	1:09:00 PM	1:11:50 PM	14.5	9.5	500	2.75" / 3 sec	20	203	32	90.6	1	
72	2	7/27/04	1:21:50 PM	1:25:30 PM	14.5	9.5	500	2.75" / 3 sec	20	203	33	121.1	1	
73	3	7/27/04			4	0								Refusal could not penetrate
74	5	7/27/04	1:50:00 PM	1:52:30 PM	14	9	500	2.75" / 3 sec	20	103	33	82.5	1	
75	6	7/27/04			4	0								Refusal could not penetrate
76	7	7/27/04	2:14:20 PM	2:18:00 PM	15	19	500	2.75" / 3 sec	20	203	33	121.1	1	
77	8	7/27/04	2:27:40 PM	2:30:30 PM	15	10	500	2.75" / 3 sec	20	203	33	93.4	1	
78	9	7/27/04	2:41:10 PM	2:43:10 PM	16	11	500	2.75" / 3 sec	20	203	33	66.0	1	
79	10	7/27/04			4	0		2.75" / 3 sec	20				1	Refusal could not penetrate
80	13	7/27/04	2:59:40 PM	3:02:00 PM	14	0	500	2.75" / 3 sec	20	203	33	76.9	1	
81	14	7/27/04	3:12:20 PM	3:15:00 PM	14.5	9.5	500	2.75" / 3 sec	20	202	33	88.1	1	
82	15	7/27/04	3:27:00 PM	3:28:50 PM	15	10	500	2.75" / 3 sec	20	202	33	60.4	1	
83	16	7/27/04	3:39:50 PM	3:42:30 PM	15	10	500	2.75" / 3 sec	20	202	32	85.4	1	
84	17	7/27/04	3:52:20 PM	3:55:00 PM	15	10	500	2.75" / 3 sec	20	202	29	77.4	1	
85	18	7/27/04	4:02:50 PM	4:05:10 PM	14.5	9.5	500	2.75" / 3 sec	20	202	33	76.9	1	
391	27	8/25/04	11:15:30 AM	11:17:35 AM	12.5	8.5	500	2.75"+/- / 2.5 sec	25	212	28	58.2	3	very hard soil hard to drill down
392	26	8/25/04	11:24:15 AM	11:25:40 AM	12.5	8.5	500	2.75"+/- / 2.5 sec	25	212	32	45.4	3	
393	25	8/25/04	11:31:37 AM	11:33:29 AM	13.5	9.5	500	2.75"+/- / 2.5 sec	25	212	32	59.8	3	
394	30	8/25/04	11:39:00 AM	11:40:30 AM	13.5	8.5	500	2.75"+/- / 2.5 sec	25	212	32	48.0	3	-5.0
395	29	8/25/04	11:46:00 AM	11:47:40 AM	13	8	500	2.75"+/- / 2.5 sec	25	212	32	53.4	3	
396	28	8/25/04			12.5	0								very hard stiff soil broke drill pipe
397	35	8/26/04	9:57:20 AM	9:59:00 AM	13.5	8.5	500	2.75"+/- / 2.5 sec	25	210	33	55.1	3	
398	34	8/26/04	10:05:10 AM	10:07:10 AM	14	9	500	2.75"+/- / 2.5 sec	25	210	33	66.0	3	
399	33	8/26/04	10:11:00 AM	10:13:40 AM	14.5	9.5	500	2.75"+/- / 2.5 sec	25	210	33	88.1	3	
400	24	8/26/04	10:21:40 AM	10:23:30 AM	15	10	500	2.75"+/- / 2.5 sec	25	210	33	60.4	3	
401	31	8/26/04	10:29:10 AM	10:31:10 AM	15	10	500	2.75"+/- / 2.5 sec	25	210	33	66.0	3	
402	36	8/26/04	10:39:10 AM	10:41:00 AM	14.5	9.5	500	2.75"+/- / 2.5 sec	25	210	33	60.4	3	

INEEL Contract No. 23378 - InSitu Grouting of Be Blocks in the SDA
Jet Grout Installation Log - Be Block No. Trench 52-4 2 of 2

Jet Grouting Method - Single Fluid
Injection Nozzle Arrangement - 2 nozzels

Sequential Column No.	Jet Grout Column No.	Installation Date	Start Injection Time	End Injection Time	Drilled Length (ft)	Jetted Length (ft)	Grout Injection Pressure (bars)	Retraction/Step Rate (in/sec)	Rotation Rate (rpm)	Grout Temp. (deg F)	Strokes per minute	Grout Volume (Gal)	Grout batch # (ticket)	Observations / Remarks
403	37	8/26/04	10:46:30 AM	10:48:20 AM	14.5	9.5	500	2.75"+/- / 2.5 sec	25	210	33	62.0	3	
404	38	8/26/04	10:55:30 AM	10:57:10 AM	14	9	500	2.75"+/- / 2.5 sec	25	210	33	55.1	3	
405	39	8/26/04	11:02:30 AM	11:04:10 AM	14.5	9.5	500	2.75"+/- / 2.5 sec	25	210	33	55.1	3	
406	40	8/26/04	11:10:40 AM	11:12:30 AM	14.5	9.5	500	2.75"+/- / 2.5 sec	25	210	33	60.4	3	
407	41	8/26/04	11:19:50 AM	11:21:30 AM	14	9	500	2.75"+/- / 2.5 sec	25	210	33	55.1	3	
408	42	8/26/04	11:28:30 AM	11:30:20 AM	14	9	500	2.75"+/- / 2.5 sec	25	210	33	60.4	3	
409	23	8/26/04	11:41:10 AM	11:43:20 AM	14.5	9.5	500	2.75"+/- / 2.5 sec	25	210	33	71.6	3	
410	32	8/26/04	11:51:20 AM	11:53:10 AM	14	9	500	2.75"+/- / 2.5 sec	25	210	33	60.4	3	
482	19	8/30/04	10:50:30 AM	10:53:00 AM	14.5	9.5	500	3"-+ / 2.5 sec	25	208	33	82.5	3	
483	20	8/30/04			4	0								refusal very hard could not get down
484	21	8/30/04	11:06:10 AM	11:08:00 AM	14	9	500	3"-+ / 2.5 sec	25	208	33	60.4	3	
485	12	8/30/04	11:12:40 AM	11:14:40 AM	13.5	8.5	500	3"-+ / 2.5 sec	25	208	33	66.0	3	
486	4	8/30/04	11:22:00 AM	11:23:10 AM	10.5	5.5	500	3"-+ / 2.5 sec	25	208	33	38.6	3	
487	11	8/30/04			4	0								refusal very hard could not get down
488	22	8/30/04			3.5	0								refusal very hard could not get down

Layne

Trench 58

The orientation of the GCUs placed over Trench 58 disposal locations are shown below. Two distinct groups of GCUs were arranged on a roughly east-west axis, separated by about 14 m (46 ft).

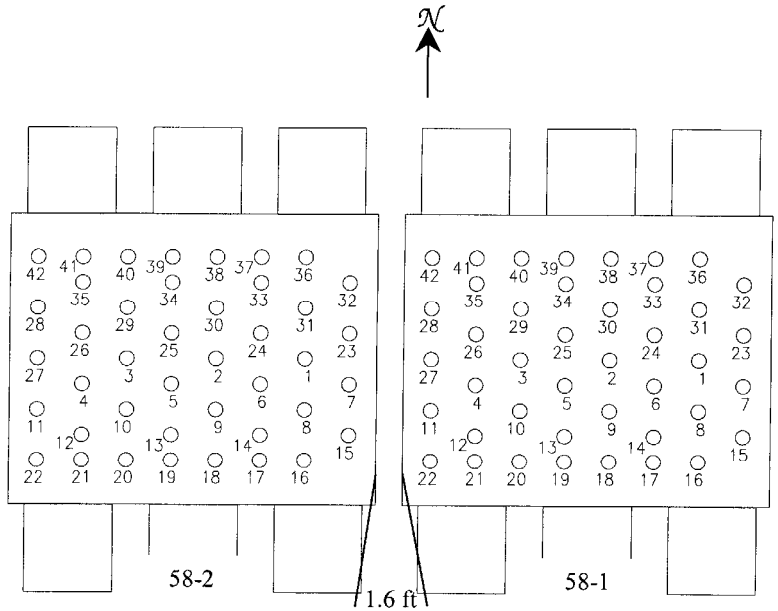

Figure B-3. Orientation of eastern group of grout containment units at Trench 58 disposal locations.