Appendix D
A-9 Toe & WDC

Appendix D

A-9 Repository Design Enhancement Quality Control Test Results:

Toe and West Diversion Channel

Table D.1 Daily Quantities, Quality Control Test Frequencies, and Sand-Cone Correlation Documentation for the A-9 Repository Toe

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (field compaction) test.
Testing Frequency Requirements: *Field Compaction Tests:* 1: 500 CY *Proctors:* 1: 5000 CY *Sand-Cones:* 1:10 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)
6/30/04	0	0	2	2	1: 0	1	1	1: 0	1	1	1: 2
7/6/04	525	525		2	1: 263		1	1: 525		1	1: 2
7/7/04	1,890	2,415		2	1: 1208		1	1: 2415		1	1: 2
7/8/04	1,029	3,444	2	4	1: 861		1	1: 3444		1	1: 4
7/9/04	630	4,074		4	1: 1019		1	1: 4074		1	1: 4
7/14/04	1,407	5,481	6	10	1: 548		1	1: 5481	1	2	1: 5
7/15/04	2,247	7,728	9	19	1: 407	1	2	1: 3864	1	3	1: 6

Sand-Cone Correlation Results

Date	Compaction Test ID	Nuclear Gauge Test		Sand-Cone Compaction Tests		Sand-Cone Correlation Results	
		In-Place Wet Unit Weight (pcf)	Moisture Content (%)	In-Place Wet Unit Weight (pcf)	Moisture Content (%)	Wet Unit Weight Variation (%)	Moisture Content Variation (%)
6/30/04	A9T-1	134.3	15.4	133.4	13.3	-0.7	-2.1
7/14/04	A9T-9	136.3	13.7	135.2	10.1	-0.8	-3.6
7/15/04	A9T-17A	131.9	12.0	131.8	10.2	1.4	-0.9
				Number of sand-cone tests:		3	
				average percent variation (on absolute value):		**1.0**	**2.2**
				standard deviation:		0.4	1.4

pcf - pounds per cubic foot

Note:
For the A-9 Repository toe, a sand-cone correlation test was performed for every ten nuclear gauge tests. Correlations were deemed acceptable if the average of ten nuclear test results vs. sand cone test results comparisons met the following criteria:

sand-cone method wet density: +/- 3%
sand-cone method moisture content: +/- 2%

As indicated above, these criteria were met even for discrete results (vs. running average).

Table D.2. Field Compaction Test Results for the A-9 Repository Toe

Note: R denotes Re-Test sample. * Indicates that Sand-Cone Correlation performed. SG = Subgrade (Original Ground Surface) P = Pass; F Comp = Fails Compaction

Compaction Test ID	Date	Location		Lift	Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting		Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture	Percent Compaction		
								Requirements:	NA	≥ 90		
A9T-1 *	6/30/04	789070	836825	SG	A9TT-1	119.9	11.6	116.4	15.4	97.1	P	
A9T-2	6/30/04	788985	837130	SG	A9TT-1	119.9	11.6	111.4	15.7	92.9	P	
A9T-3	7/8/04	788995	837390	SG	A9TT-1	119.9	11.6	115.5	16.1	96.3	P	
A9T-4	7/8/04	788995	837440	SG	A9TT-1	119.9	11.6	117.5	11.3	98.0	P	
								Requirements:	PM ≥ Opt. - 2	≥ 95		
A9T-5	7/14/04	788980	838940	1	A9TT-1	119.9	11.6	115.3	13.1	96.2	P	
A9T-6	7/14/04	788950	838960	2	A9TT-1	119.9	11.6	110.7	12.2	92.3	F Comp	Fails Compaction
A9T-6R	7/14/04	788950	838960	2	A9TT-1	119.9	11.6	118.6	14.7	98.9	P	Retest
A9T-7	7/14/04	788990	837330	1	A9TT-1	119.9	11.6	116.5	14.7	97.2	P	
A9T-8	7/14/04	788990	837280	2	A9TT-1	119.9	11.6	114.8	14.2	95.7	P	
A9T-9 *	7/14/04	788990	837450	3	A9TT-1	119.9	11.6	119.9	13.7	100.0	P	
A9T-10	7/14/04	788950	837560	3	A9TT-1	119.9	11.6	120.2	13.3	100.3	P	
A9T-11	7/15/04	788990	837170	3	A9TT-2	120.9	11.5	117.3	12.9	97.0	P	
A9T-12	7/15/04	789100	836720	1	A9TT-2	120.9	11.5	116.1	14.4	96.0	P	
A9T-13	7/15/04	789175	836600	2	A9TT-2	120.9	11.5	115.3	14.3	95.4	P	
A9T-14	7/15/04	789100	836720	2	A9TT-2	120.9	11.5	118.3	13.4	97.8	P	
A9T-15	7/15/04	788990	836990	4	A9TT-2	120.9	11.5	118.2	13.2	97.8	P	
A9T-16	7/15/04	788990	837275	4	A9TT-2	120.9	11.5	121.0	13.2	100.1	P	
A9T-17	7/15/04	788940	837570	4	A9TT-2	120.9	11.5	107.9	17.2	89.2	F Comp	Fails Compaction
A9T-17A *	7/15/04	788940	837570	4	A9TT-2	120.9	11.5	117.8	12.0	97.4	P	Retest
A9T-18	7/15/04	789000	837020	3	A9TT-2	120.9	11.5	114.2	12.5	94.5	P	Test passed by QC officer.
A9T-19	7/15/04	789140	836680	4	A9TT-2	120.9	11.5	114.8	15.0	95.0	P	

Note:

Field density and moisture tests were taken using a nuclear density gauge. The gauge was field standardized at each test location and was correlated by a Sand Cone Test at a frequency of one for every six nuclear gauge tests. Field rock corrections were performed at each compaction test location.

Total Number of Tests (N):	15	Note: Summary statistics are for the 15 passing tests for Toe Protection only (Lifts 1-4). Subgrade (SG) results are excluded.	
Total Quantities placed:	7,728 CY		
Frequency:	1: 515 CY		
average:	**117.2**	**13.6**	**97.3**
standard deviation:	2.1	0.9	1.9
minimum:	114.2	12.0	94.5
maximum:	121.0	15.0	100.3

Table D.3. Quantities, Quality Control Test Frequencies, and Sand-Cone Correlation Documentation for the A-9 Repository West Diversion Channel

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.
Testing Frequency Requirements: Field Compaction Tests: 1: 500 CY *Proctors:* 1: 5000 CY *Sand-Cones:* 1:10 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency			Comments
	Daily CY	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)	
7/13/06		0	2*	0	--	1	1	--		0	--	Tests on subgrade
8/11/06	130	130		0	--		1	--		0	--	
8/12/06	0	130		0	--		1	--		0	--	
8/13/06	0	130		0	--		1	--		0	--	
8/14/06	778	908	3	3	--	1	2	--	1	1	--	
8/15/06	605	1,513	1	4	--		2	--		1	--	
8/16/06	454	1,967	2	6	1: 328		2	1: 984	1	2	1: 3	
8/17/06	0	1,967		6	1: 328		2	1: 984		2	1: 3	
8/18/06	0	**1,967**		6	**1: 328**		2	**1: 984**		2	**1: 3**	

*The 2 field compaction tests on 7/13/06 were on subgrade and were not used to calculate test frequencies.

This volumes listed above correspond to the southernmost portion of the West Diversion channel beyond the limits of the existing radon barrier. All channel areas north of this section were tested as frost protection material.

Sand-Cone Correlation Test Results

Date	Compaction Test ID	Nuclear Gauge Test		Sand-Cone Compaction Tests		Sand-Cone Correlation Results	
		In-Place Wet Unit Weight (pcf)	Moisture Content (%)	In-Place Wet Unit Weight (pcf)	Moisture Content (%)	Wet Unit Weight Variation (%)	Moisture Content Variation (%)
8/14/06	WC-5	131.3	13.2	130.2	12.8	-0.8	-0.4
8/16/06	WC-8	133.3	14.7	131.2	13.2	1.4	-0.9

pcf - pounds per cubic foot

Number of sand-cone tests:	2	
average percent variation (on absolute value):	**1.1**	**0.6**
standard deviation:	0.4	0.4

Note:
For the A-9 Repository West Diversion Channel, a sand-cone correlation test was performed for every ten nuclear gauge tests. Correlations were deemed acceptable if the average of ten nuclear test results vs. sand cone test results comparisons met the following criteria:

sand-cone method wet density: +/- 3%
sand-cone method moisture content: +/- 2%

As indicated above, these criteria were met even for discrete results (vs. running average).

Table D.4. Field Compaction Test Results for the A-9 Repository West Diversion Channel

* Indicates that Sand-Cone Correlation performed. SG = Subgrade (Original Ground Surface) P = Pass (no tests failed compaction requirements)

Compaction Test ID	Date	Location		Lift	Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting		Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture	Percent Compaction		
								Requirements:	NA	≥ 90		
WC-1	7/13/06	789100	836450	SG	A9TT-1	119.9	12.7	117.5	14.8	98.0	P	
WC-2	7/13/06	789000	835410	SG	A9TT-1	119.9	12.7	115.6	14.4	96.4	P	
								Requirements:	PM ≥ Opt. - 2	≥ 95		
WC-3	8/14/06	789013	836350	1	A9TT-2	117.8	13.6	111.9	15.6	95.0	P	
WC-4	8/14/06	788970	836467	2	A9TT-2	117.8	13.6	111.9	17.6	95.0	P	
WC-5	8/14/06	789000	836410	3	A9TT-2	117.8	13.6	116.0	13.2	98.5	P	
WC-6	8/15/06	788990	836381	4	A9TT-2	117.8	13.6	112.4	16.8	95.4	P	
WC-7	8/16/06	789000	836440	5	A9TT-2	117.8	13.6	114.5	15.5	97.2	P	
WC-8 *	8/16/06	788970	836470	6	A9TT-2	117.8	13.6	116.3	14.7	98.7	P	

Note:

Field density and moisture tests were taken using a nuclear density gauge. The gauge was field standardized at each test location and was correlated by a Sand Cone Test at a frequency of one for every three nuclear gauge tests (see Table D.3). Field rock corrections were performed at each compaction test location.

Total Number of Tests (N):	6		
Total Quantities placed:	1,967 CY		
Frequency:	1: 328 CY		
average:	**113.8**	**15.6**	**96.6**
minimum:	111.9	13.2	95.0
maximum:	116.3	17.6	98.7
standard deviation:	2.0	1.6	1.7

Note: The summary statistics and calculated QC test frequency excludes the 2 subgrade tests.

Appendix E
C-18 Pit Reclamation

Table E.1. Daily Quantities and Quality Control Testing Frequencies for the C-18 Pit Backfill: 2001-2005

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.

Testing Frequency Requirements: Field Compaction Tests: 1: 1000 CY Proctors: 1: 5000 CY Sand-Cones: 1:5 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)
5/18/01	6,939	6,939		0	NA		0	NA		0	NA
5/21/01	6,038	12,977		0	NA		0	NA		0	NA
5/22/01	6,559	19,536								0	NA
5/25/01	3,446	22,982								0	NA
5/29/01	3,746	26,728								0	NA
5/30/01	512	27,240								0	NA
5/31/01	5,362	32,602								0	NA
6/1/01	4,576	37,178		0	NA		0	NA		0	NA
6/4/01	596	37,774		0	NA		0	NA		0	NA
6/5/01	5,983	43,757		0	NA		0	NA		0	NA
6/6/01	4,174	47,931		0	NA		0	NA		0	NA
6/7/01	5,505	53,436	1	1	NA		0	NA		0	NA
6/8/01	2,406	55,842	3	4	NA		0	NA		0	NA
6/11/01	2,509	2,509	2	2	1: 1255	2	2	1: 1255		0	--
6/12/01	4,965	7,474	1	3	1: 2491		2	1: 3737		0	--
6/13/01	7,040	14,514		3	1: 4838		2	1: 7257		0	--
6/15/01	0	14,514	6	9	1: 1613	2	4	1: 3629	2	2	1: 5
6/17/01	0	14,514	7	16	1: 907		4	1: 3629	1	3	1: 5
6/26/01	2,967	17,481	2	18	1: 971		4	1: 4370		3	1: 6
6/27/01	2,956	20,437		18	1: 1135	1	5	1: 4087		3	1: 6
6/28/01	2,075	22,512		18	1: 1251		5	1: 4502	1	4	1: 5
6/29/01	1,882	24,394	3	21	1: 1162		5	1: 4879	1	5	1: 4
7/1/01	1,142	25,536		21	1: 1216		5	1: 5107		5	1: 4
7/2/01	705	26,241	2	23	1: 1141		5	1: 5248		5	1: 5
7/3/01	2,871	29,112	2	25	1: 1164	1	6	1: 4852	1	6	1: 4
7/9/01	2,546	31,658		25	1: 1266		6	1: 5276		6	1: 4
7/10/01	3,241	34,899		25	1: 1396	1	7	1: 4986		6	1: 4
7/11/01	3,241	38,140		25	1: 1526		7	1: 5449		6	1: 4

Note: All material placed in the C-18 Pit between 5/18/01 and 6/8/01 was bridge fill soil over the existing saturated soils, as it was necessary to place about 10 feet of soil to solidify the water at the base of the pit and saturated soils. As such, QC testing did not apply. The initial four compaction tests were preliminary tests and are not included in the total testing frequency.

Table E.1. Daily Quantities and Quality Control Testing Frequencies for the C-18 Pit Backfill: 2001-2005

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.

Testing Frequency Requirements: Field Compaction Tests: 1: 1000 CY Proctors: 1: 5000 CY Sand-Cones: 1:5 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)
7/12/01	874	39,014	6	31	1: 1259		7	1: 5573	2	8	1: 4
7/13/01	0	39,014	4	35	1: 1115		7	1: 5573		8	1: 4
7/16/01	42	39,056		35	1: 1116		7	1: 5579		8	1: 4
7/18/01	0	39,056	4	39	1: 1001	1	8	1: 4882	1	9	1: 4
7/19/01	3,717	42,773		39	1: 1097	1	9	1: 4753		9	1: 4
7/20/01	4,158	46,931	4	43	1: 1091	1	10	1: 4693		9	1: 5
7/23/01	5,155	52,086	7	50	1: 1042	1	11	1: 4735		9	1: 6
7/24/01	913	52,999	4	54	1: 981	1	12	1: 4417	1	10	1: 5
7/25/01	3,327	56,326		54	1: 1043		12	1: 4694		10	1: 5
7/26/01	3,373	59,699		54	1: 1106		12	1: 4975		10	1: 5
7/27/01	5,028	64,727	5	59	1: 1097		12	1: 5394		10	1: 6
7/30/01	3,509	68,236	6	65	1: 1050	1	13	1: 5249		10	1: 7
7/31/01	6,734	74,970	5	70	1: 1071	1	14	1: 5355		10	1: 7
8/1/01	1,437	76,407	7	77	1: 992	2	16	1: 4775	2	12	1: 6
8/2/01	6,237	82,644		77	1: 1073	2	18	1: 4591		12	1: 6
8/3/01	6,656	89,300	9	86	1: 1038		18	1: 4961		12	1: 7
8/6/01	9,300	98,600	8	94	1: 1049	3	21	1: 4695	3	15	1: 6
8/7/01	4,272	102,872	9	103	1: 999		21	1: 4899	2	17	1: 6
8/8/01	3,085	105,957	3	106	1: 1000	1	22	1: 4816	1	18	1: 6
8/9/01	4,871	110,828	6	112	1: 990		22	1: 5038		18	1: 6
8/10/01	6,507	117,335	4	116	1: 1012		22	1: 5333		18	1: 6
8/13/01	6,087	123,422	8	124	1: 995	2	24	1: 5143	1	19	1: 7
8/14/01	4,817	128,239	7	131	1: 979	2	26	1: 4932	1	20	1: 7
8/15/01	5,127	133,366	5	136	1: 981	2	28	1: 4763		20	1: 7
8/16/01	10,459	143,825	11	147	1: 978	3	31	1: 4640	1	21	1: 7
8/17/01	10,088	153,913	12	159	1: 968	1	32	1: 4810		21	1: 8
8/20/01	9,883	163,796	10	169	1: 969		32	1: 5119	1	22	1: 8
8/21/01	11,481	175,277	9	178	1: 985	4	36	1: 4869	6	28	1: 6

Table E.1. Daily Quantities and Quality Control Testing Frequencies for the C-18 Pit Backfill: 2001-2005

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.

Testing Frequency Requirements: Field Compaction Tests: 1: 1000 CY Proctors: 1: 5000 CY Sand-Cones: 1:5 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)
8/22/01	11,274	186,551	9	187	1: 998	3	39	1: 4783	1	29	1: 6
8/23/01	8,891	195,442	9	196	1: 997	1	40	1: 4886	4	33	1: 6
8/24/01	10,150	205,592	6	202	1: 1018	2	42	1: 4895	1	34	1: 6
8/27/01	11,549	217,141	9	211	1: 1029	3	45	1: 4825	3	37	1: 6
8/28/01	13,690	230,831	14	225	1: 1026	1	46	1: 5018	11	48	1: 5
8/29/01	294	231,125	6	231	1: 1001	1	47	1: 4918	2	50	1: 5
8/30/01	609	231,734		231	1: 1003		47	1: 4931		50	1: 5
8/31/01	420	232,154		231	1: 1005		47	1: 4939		50	1: 5
9/4/01	1,923	234,077		231	1: 1013		47	1: 4980		50	1: 5
9/5/01	483	234,560		231	1: 1015		47	1: 4991		50	1: 5
9/7/01	680	235,240		231	1: 1018		47	1: 5005		50	1: 5
9/10/01	2,108	237,348		231	1: 1027		47	1: 5050		50	1: 5
9/18/01	0	237,348	5	236	1: 1006	1	48	1: 4945	1	51	1: 5
10/10/01	1,380	238,728	10/10/01 - 10/11/01: Fill placed but not compacted until 2002; see 5/30/02 records below.							51	1: 5
10/11/01	2,748	241,476								51	1: 5
5/30/02	0	241,476	10	246	1: 982	2	50	1: 4830	1	52	1: 5
5/31/02	2,498	243,974	5	251	1: 972	1	51	1: 4784	1	53	1: 5
6/3/02	6,474	250,448	5	256	1: 978	1	52	1: 4816	1	54	1: 5
6/5/02	5,710	256,158	8	264	1: 970	2	54	1: 4744	3	57	1: 5
6/6/02	5,363	261,521	6	270	1: 969	1	55	1: 4755	2	59	1: 5
6/18/02	489	262,010		270	1: 970		55	1: 4764		59	1: 5
6/19/02	483	262,493		270	1: 972		55	1: 4773		59	1: 5
6/20/02	1,575	264,068		270	1: 978		55	1: 4801		59	1: 5
6/21/02	1,323	265,391		270	1: 983		55	1: 4825		59	1: 5
6/24/02	1,407	266,798	3	273	1: 977	1	56	1: 4764	1	60	1: 5
6/25/02	4,930	271,728		273	1: 995		56	1: 4852		60	1: 5
6/26/02	861	272,589		273	1: 998		56	1: 4868		60	1: 5
6/27/02	586	273,175		273	1: 1001		56	1: 4878		60	1: 5

Table E.1. Daily Quantities and Quality Control Testing Frequencies for the C-18 Pit Backfill: 2001-2005

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.

Testing Frequency Requirements: Field Compaction Tests: 1: 1000 CY Proctors: 1: 5000 CY Sand-Cones: 1:5 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)
6/28/02	1,953	275,128	6	279	1: 986	1	57	1: 4827	1	61	1: 5
7/1/02	6,087	281,215	3	282	1: 997	1	58	1: 4849		61	1: 5
7/2/02	6,846	288,061	4	286	1: 1007		58	1: 4967	1	62	1: 5
7/3/02	1,860	289,921	4	290	1: 1000	1	59	1: 4914		62	1: 5
7/8/02	5,983	295,904	3	293	1: 1010	1	60	1: 4932		62	1: 5
7/9/02	3,732	299,636	7	300	1: 999	1	61	1: 4912	2	64	1: 5
7/10/02	336	299,972								64	1: 5
8/21/02	3,948	303,920								64	1: 5
8/23/02	2,478	306,398		300	1: 1021		61	1: 5023		64	1: 5
6/10/03	0	306,398	10	310	1: 988	2	63	1: 4863	1	65	1: 5
7/8/03	336	306,734		310	1: 989		63	1: 4869		65	1: 5
7/14/03	342	307,076		310	1: 991		63	1: 4874		65	1: 5
7/15/03	252	307,328		310	1: 991		63	1: 4878		65	1: 5
7/23/03	798	308,126		310	1: 994		63	1: 4891		65	1: 5
7/24/03	1,029	309,155		310	1: 997		63	1: 4907		65	1: 5
8/4/03	84	309,239		310	1: 998		63	1: 4909		65	1: 5
8/8/03	1,302	310,541		310	1: 1002		63	1: 4929		65	1: 5
8/11/03	6,960	317,501	7	317	1: 1002	2	65	1: 4885	2	67	1: 5
8/12/03	5,670	323,171		317	1: 1019		65	1: 4972		67	1: 5
6/9/04	147	323,318	5	322	1: 1004	1	66	1: 4899	1	68	1: 5
6/15/04	420	323,738		322	1: 1005		66	1: 4905		68	1: 5
6/16/04	0	323,738	2	324	1: 999		66	1: 4905		68	1: 5
6/22/04	987	324,725		324	1: 1002		66	1: 4920		68	1: 5
6/23/04	0	324,725	1	325	1: 999		66	1: 4920		68	1: 5
6/24/04	735	325,460		325	1: 1001		66	1: 4931		68	1: 5
6/25/04	63	325,523	1	326	1: 999		66	1: 4932	1	69	1: 5
6/28/04	903	326,426	1	327	1: 998		66	1: 4946		69	1: 5
7/6/04	525	326,951	1	328	1: 997	1	67	1: 4880		69	1: 5

7/10/02 - 8/23/02: Fill placed but not tested until 2003; see 6/10/03 records below.

Table E.1. Daily Quantities and Quality Control Testing Frequencies for the C-18 Pit Backfill: 2001-2005

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.

Testing Frequency Requirements: Field Compaction Tests: 1: 1000 CY Proctors: 1: 5000 CY Sand-Cones: 1:5 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)
7/7/04	1,890	328,841	1	329	1: 1000		67	1: 4908		69	1: 5
7/8/04	1,029	329,870	1	330	1: 1000		67	1: 4923		69	1: 5
7/9/04	630	330,500	3	333	1: 992		67	1: 4933	1	70	1: 5
7/12/04	588	331,088	3	336	1: 985		67	1: 4942	1	71	1: 5
7/13/04	567	331,655	3	339	1: 978	1	68	1: 4877	1	72	1: 5
7/14/04	210	331,865	1	340	1: 976		68	1: 4880		72	1: 5
5/23/05	3,780	335,645		340	1: 987		68	1: 4936		72	1: 5
5/24/05	735	336,380	4	344	1: 978	1	69	1: 4875		72	1: 5
5/25/05	3,087	339,467	3	347	1: 978	1	70	1: 4850	1	73	1: 5
5/26/05	5,313	344,780	9	356	1: 968	2	72	1: 4789	2	75	1: 5
5/27/05	1,932	346,712	3	359	1: 966		72	1: 4815	1	76	1: 5
5/31/05	2,415	349,127	5	364	1: 959	1	73	1: 4783	1	77	1: 5
6/1/05	5,733	354,860	8	372	1: 954	2	75	1: 4731	1	78	1: 5
6/2/05	7,035	361,895	8	380	1: 952	1	76	1: 4762	1	79	1: 5
6/3/05	6,741	368,636	6	386	1: 955	2	78	1: 4726	2	81	1: 5
6/6/05	6,804	375,440	3	389	1: 965		78	1: 4813	1	82	1: 5
6/7/05	0	375,440	2	391	1: 960	1	79	1: 4752		82	1: 5
6/9/05	630	376,070	2	393	1: 957		79	1: 4760	1	83	1: 5
6/10/05	1,617	377,687	3	396	1: 954	1	80	1: 4721	1	84	1: 5
6/13/05	3,024	380,711	6	402	1: 947	1	81	1: 4700	1	85	1: 5
6/14/05	3,003	383,714	2	404	1: 950		81	1: 4737		85	1: 5
6/15/05	1,764	385,478	3	407	1: 947	1	82	1: 4701	1	86	1: 5
6/16/05	4,473	389,951	5	412	1: 946	1	83	1: 4698		86	1: 5
6/20/05	2,163	392,114	2	414	1: 947		83	1: 4724		86	1: 5
6/26/05	0	392,114	2	416	1: 943	1	84	1: 4668	1	87	1: 5
8/10/05	1,869	393,983	2	418	1: 943	1	85	1: 4635		87	1: 5
8/11/05	3,339	397,322		418	1: 951		85	1: 4674		87	1: 5
8/18/05	3,465	400,787		418	1: 959		85	1: 4715		87	1: 5

Table E.1. Daily Quantities and Quality Control Testing Frequencies for the C-18 Pit Backfill: 2001-2005

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.

Testing Frequency Requirements: Field Compaction Tests: 1: 1000 CY Proctors: 1: 5000 CY Sand-Cones: 1:5 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)
8/22/05	1,722	402,509	3	421	1: 956		85	1: 4735		87	1: 5
10/24/05	0	402,509	9	430	1: 936	2	87	1: 4627	3	90	1: 5
10/25/05	3,822	406,331		430	1: 945		87	1: 4670		90	1: 5
10/26/05	2,184	408,515		430	1: 950		87	1: 4696		90	1: 5
10/27/05	5,523	414,038	2	432	1: 958	1	88	1: 4705		90	1: 5
10/28/05	0	414,038	4	436	1: 950		88	1: 4705	2	92	1: 5

Total Quantities of Backfill Placed in the C-18 Pit, Summary by Year

Year	Cubic Yards	
2001	55,842	*Preliminary bridge fill over saturated soils - not included in total summary.*
2001	241,476	
2002	64,922	
2003	16,773	
2004	8,694	
2005	82,173	
TOTAL:	**414,038**	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
							Requirements:		PM ≥ Opt. - 2	≥ 95		
							Requirements for S1 through S4 only:		NA	≥ 90		
S1	6/7/01	788100	837800	6844	SG-1	116.5	13.0	104.8	10.0	90.0		
S2	6/8/01	788200	837500	6844	SG-1	116.5	13.0	113.1	11.5	97.1		
S3	6/8/01	788100	837600	6844	SG-1	116.5	13.0	111.9	10.9	96.1		
S4	6/8/01	788300	837800	6844	SG-1	116.5	13.0	112.7	11.7	96.7		
B1	6/8/01	788200	837750	6845	BF-1	117.8	11.8	109.3	11.4	92.8	F Comp	Fails Compaction
B1R	6/12/01	788200	837750	6845	BF-1	117.8	11.8	114.7	12.0	97.4	P	Retest
B2	6/8/01	788200	837550	6845	BF-1	117.8	11.8	111.4	13.7	94.6	F Comp	Fails Compaction
B2R	6/12/01	788200	837550	6845	BF-1	117.8	11.8	115.3	14.0	97.9	P	Retest
B3	6/12/01	788200	837850	6845	BF-1	117.8	11.8	114.3	14.2	97.0	P	
B4 *	6/15/01	788190	837500	6845	BF-2	118.3	12.0	117.1	12.7	99.0	P	
B5	6/15/01	788130	837650	6845	BF-2	118.3	12.0	112.1	14.3	94.8	P	Passed at discretion of QC officer.
B6	6/15/01	788180	837790	6845	BF-2	118.3	12.0	112.7	13.4	95.3	P	
B7	6/15/01	788280	837480	6845	BF-2	118.3	12.0	112.4	15.1	95.0	P	
B8	6/15/01	788270	837670	6845	BF-2	118.3	12.0	112.5	14.8	95.1	P	
B9 *	6/15/01	788240	837870	6845	BF-2	118.3	12.0	116.4	13.2	98.4	P	
B10	6/19/01	788330	837490	6846	BF-2	118.3	12.0	114.5	13.0	96.8	P	
B11	6/19/01	788244	837480	6846	BF-3	115.2	13.8	110.4	15.0	95.8	P	
B12	6/19/01	788110	837470	6846	BF-3	115.2	13.8	109.4	15.3	95.0	P	
B13	6/19/01	788280	837820	6846	BF-3	115.2	13.8	112.4	13.0	97.6	P	
B14	6/19/01	788270	837660	6846	BF-3	115.2	13.8	110.8	17.4	96.2	P	
B15 *	6/19/01	788120	837670	6846	BF-3	115.2	13.8	117.7	14.5	102.2	P	
B16	6/19/01	788140	837800	6846	BF-4	117.7	12.3	116.2	10.9	98.7	P	
B17	6/26/01	788150	837650	6846	BF-4	117.7	12.3	116.4	13.8	98.9	P	
B18	6/26/01	788150	837850	6846	BF-4	117.7	12.3	110.7	12.2	94.1	F Comp	Fails Compaction
B18R *	6/28/01	788150	837850	6846	BF-4	117.7	12.3	117.6	13.5	99.9	P	Retest
B19 *	6/29/01	788150	837750	6847	BF-4	117.7	12.3	113.3	14.7	96.3	P	
B20	6/29/01	788170	837600	6847	BF-5	115.5	13.5	112.7	13.9	97.6	P	
B21	6/29/01	788200	837450	6847	BF-5	115.5	13.5	116.5	11.0	100.9	F Moist	Fails Moisture
B21R	7/1/01	788200	837450	6847	BF-5	115.5	13.5	113.9	13.3	98.6	P	Retest
B22	7/2/01	788200	837550	6847	BF-5	115.5	13.5	110.2	18.7	95.4	P	

These initial tests - although not required - were performed to ensure that there was sufficient compaction, as it was necessary to put about 10 feet of soil to adsorb the water at the base of the pit.

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
								Requirements:	PM ≥ Opt. - 2	≥ 95		
B23	7/2/01	788250	837750	6847	BF-5	115.5	13.5	112.9	14.3	97.7	P	
B24	7/3/01	788150	837550	6847	BF-5	115.5	13.5	109.6	18.2	94.9	F Comp	Fails Compaction
B24R	7/11/01	788150	837550	6847	BF-5	115.5	13.5	115.1	12.1	99.7	P	Retest
B25 *	7/3/01	788300	837450	6847	BF-5	115.5	13.5	116.2	12.1	100.6	P	
B26 *	7/12/01	788100	837550	6848	BF-6	115.6	13.7	113.6	15.8	98.3	P	
B27	7/12/01	788150	837600	6848	BF-6	115.6	13.7	112.5	12.3	97.3	P	
B28	7/12/01	788200	837800	6848	BF-6	115.6	13.7	110.4	14.0	95.5	P	
B29	7/12/01	788250	837750	6848	BF-6	115.6	13.7	111.6	11.7	96.5	P	
B30	7/12/01	788200	837880	6848	BF-6	115.6	13.7	110.1	16.1	95.2	P	
B31 *	7/12/01	788350	837550	6848	BF-7	116.5	13.7	117.0	13.1	100.4	P	
B32	7/13/01	788300	837600	6849	BF-7	116.5	13.7	114.3	13.8	98.1	P	
B33	7/13/01	788256	837650	6849	BF-7	116.5	13.7	112.7	15.1	96.7	P	
B34	7/13/01	788200	837800	6849	BF-7	116.5	13.7	111.1	13.8	95.4	P	
B35	7/13/01	788300	837750	6849	BF-7	116.5	13.7	118.8	13.1	102.0	P	
B36	7/18/01	788200	837700	6849	BF-8	118.5	11.9	117.2	14.2	98.9	P	
B37 *	7/18/01	788100	837800	6849	BF-8	118.5	11.9	114.5	10.6	96.6	P	
B38	7/18/01	788150	837500	6849	BF-8	118.5	11.9	115.6	14.2	97.6	P	
B39	7/18/01	788300	837500	6849	BF-8	118.5	11.9	114.6	12.3	96.7	P	
B40	7/20/01	788250	837450	6850	BF-8	118.5	11.9	115.4	13.1	97.4	P	
B41	7/20/01	788200	837500	6850	BF-9	119.8	11.5	115.9	13.9	96.7	P	
B42	7/20/01	788150	837600	6850	BF-9	119.8	11.5	115.4	12.5	96.3	P	
B43	7/20/01	788150	837550	6850	BF-9	119.8	11.5	117.7	13.5	98.2	P	
B44	7/23/01	788100	837700	6850	BF-9	119.8	11.5	116.7	13.9	97.4	P	
B45	7/23/01	788150	837500	6851	BF-9	119.8	11.5	118.3	13.7	98.7	P	
B46	7/23/01	788200	837600	6851	BF-10	119.4	12.4	115.1	12.6	96.4	P	
B47	7/23/01	788300	837750	6851	BF-10	119.4	12.4	118.1	13.6	98.9	P	
B48	7/23/01	788250	837650	6851	BF-10	119.4	12.4	115.2	12.9	96.5	P	
B49	7/23/01	788200	837600	6850	BF-10	119.4	12.4	115.7	11.2	96.9	P	
B50	7/23/01	788300	837700	6850	BF-10	119.4	12.4	116.5	15.0	97.6	P	
B51	7/24/01	788250	837500	6851	BF-11	120.3	12.0	118.2	12.3	98.3	P	
B52 *	7/24/01	788200	837550	6851	BF-11	120.3	12.0	117.1	13.5	97.3	P	
B53	7/24/01	788100	837650	6851	BF-11	120.3	12.0	116.5	12.2	96.8	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
							Requirements:		PM ≥ Opt. - 2	≥ 95		
B54	7/24/01	788150	837700	6851	BF-11	120.3	12.0	118.7	10.3	98.7	P	
B55	7/27/01	788250	837450	6852	BF-11	120.3	12.0	114.3	10.7	95.0	P	
B56	7/27/01	788100	837600	6852	BF-12	119.2	10.9	115.6	10.9	97.0	P	
B57	7/27/01	788200	837800	6852	BF-12	119.2	10.9	115.8	10.5	97.1	P	
B58	7/27/01	788100	837700	6852	BF-12	119.2	10.9	115.5	13.5	96.9	P	
B59	7/27/01	788150	837750	6852	BF-12	119.2	10.9	118.0	12.0	99.0	P	
B60	7/30/01	788250	837450	6853	BF-12	119.2	10.9	114.9	13.1	96.4	P	
B61	7/30/01	788200	837500	6853	BF-13	119.5	11.4	115.0	13.4	96.2	P	
B62	7/30/01	788100	837600	6853	BF-13	119.5	11.4	121.2	9.6	101.4	P	
B63	7/30/01	788150	837550	6853	BF-13	119.5	11.4	114.6	13.9	95.9	P	
B64	7/30/01	788200	837850	6853	BF-13	119.5	11.4	113.6	14.2	95.1	P	
B65	7/30/01	788250	837750	6853	BF-13	119.5	11.4	114.1	10.6	95.5	P	
B66	7/31/01	788300	837600	6854	BF-14	118.2	12.3	119.5	10.6	101.1	P	
B67	7/31/01	788300	837550	6854	BF-14	118.2	12.3	112.9	15.9	95.5	P	
B68	7/31/01	788200	837500	6854	BF-14	118.2	12.3	113.7	13.7	96.2	P	
B69	7/31/01	788200	837900	6854	BF-14	118.2	12.3	115.6	14.4	97.8	P	
B70	7/31/01	788100	837700	6854	BF-14	118.2	12.3	115.8	11.4	98.0	P	
B71 *	8/1/01	788400	837500	6855	BF-15	118.1	13.0	114.0	13.8	96.5	P	
B72 *	8/1/01	788300	837450	6855	BF-15	118.1	13.0	113.4	14.4	96.0	P	
B73	8/1/01	788200	837550	6855	BF-15	118.1	13.0	118.2	13.3	100.1	P	
B74	8/1/01	788100	837600	6855	BF-15	118.1	13.0	113.9	14.6	96.4	P	
B75	8/1/01	788300	837600	6855	BF-15	118.1	13.0	114.6	11.6	97.0	P	
B76	8/1/01	788150	837650	6855	BF-16	117.6	12.8	112.9	13.1	96.0	P	
B77	8/1/01	788200	837650	6855	BF-16	117.6	12.8	115.3	14.1	98.0	P	
B78	8/3/01	788200	837700	6855	BF-16	117.6	12.8	118.0	11.4	100.3	P	
B79	8/3/01	788200	837750	6855	BF-16	117.6	12.8	112.5	15.9	95.7	P	
B80	8/3/01	788250	837750	6855	BF-16	117.6	12.8	115.3	11.4	98.0	P	
B81	8/3/01	788250	837800	6855	BF-17	119.3	11.7	114.8	11.4	96.2	P	
B82	8/3/01	788300	837800	6855	BF-17	119.3	11.7	113.6	12.4	95.2	P	
B83	8/3/01	788100	837500	6855	BF-17	119.3	11.7	116.2	11.5	97.4	P	
B84	8/3/01	788100	837550	6855	BF-17	119.3	11.7	110.9	10.0	93.0	F Comp	Fails Compaction
B84R *	8/3/01	788100	837550	6855	BF-17	119.3	11.7	117.5	10.2	98.5	P	Retest

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
								Requirements:	PM ≥ Opt. - 2	≥ 95		
B85	8/3/01	788200	837450	6855	BF-17	119.3	11.7	114.6	10.2	96.1	P	
B86	8/3/01	788300	837650	6855	BF-18	118.8	11.5	115.6	12.9	97.3	P	
B87	8/6/01	788250	837850	6856	BF-18	118.8	11.5	114.6	11.1	96.5	P	
B88	8/6/01	788250	837800	6856	BF-18	118.8	11.5	114.9	11.2	96.7	P	
B89 *	8/6/01	788200	837750	6856	BF-18	118.8	11.5	116.6	12.5	98.1	P	
B90 *	8/6/01	788150	837650	6856	BF-18	118.8	11.5	114.6	13.9	96.5	P	
B91 *	8/6/01	788100	837600	6856	BF-19	118.8	11.8	118.8	10.2	100.0	P	
B92	8/6/01	788300	837500	6856	BF-19	118.8	11.8	116.6	13.0	98.1	P	
B93	8/6/01	788250	837450	6856	BF-19	118.8	11.8	116.1	13.0	97.7	P	
B94	8/6/01	788200	837550	6856	BF-19	118.8	11.8	121.3	11.5	102.1	P	
B95	8/7/01	788200	837450	6857	BF-19	118.8	11.8	117.1	11.3	98.6	P	
B96	8/7/01	788150	837500	6857	BF-20	118.8	11.2	114.6	11.1	96.5	P	
B97 *	8/7/01	788250	837600	6857	BF-20	118.8	11.2	118.3	12.7	99.6	P	
B98 *	8/7/01	788200	837700	6858	BF-20	118.8	11.2	113.5	11.5	95.5	P	
B99	8/7/01	788100	837750	6858	BF-20	118.8	11.2	116.6	9.2	98.1	P	
B100	8/7/01	788250	837850	6858	BF-20	118.8	11.2	118.9	10.6	100.1	P	
B101	8/7/01	788250	837420	6858	BF-21	119.3	11.8	120.2	10.8	100.8	P	
B102	8/7/01	788200	837500	6858	BF-21	119.3	11.8	115.2	10.6	96.6	P	
B103	8/7/01	788100	837600	6858	BF-21	119.3	11.8	117.3	12.9	98.3	P	
B104	8/8/01	788150	837700	6858	BF-21	119.3	11.8	116.5	12.3	97.7	P	
B105	8/8/01	788250	837750	6858	BF-21	119.3	11.8	115.1	12.3	96.5	P	
B106 *	8/8/01	788200	837800	6858	BF-22	119.1	12.2	114.3	10.0	96.0	P	Test passed by QC officer
B107	8/9/01	788300	837500	6859	BF-22	119.1	12.2	114.3	10.2	96.0	P	
B108	8/9/01	788250	837550	6859	BF-22	119.1	12.2	115.9	11.1	97.3	P	
B109	8/9/01	788100	837500	6859	BF-22	119.1	12.2	115.7	10.5	97.1	P	
B110	8/9/01	788100	837650	6859	BF-22	119.1	12.2	114.7	11.9	96.3	P	
B111	8/9/01	788150	837700	6859	BF-23	118.5	12.0	115.0	10.2	97.0	P	
B112	8/9/01	788100	837750	6859	BF-23	118.5	12.0	116.2	12.5	98.1	P	
B113	8/10/01	788300	837450	6860	BF-23	118.5	12.0	116.4	13.5	98.2	P	
B114	8/10/01	788200	837560	6860	BF-23	118.5	12.0	112.8	12.3	95.2	P	
B115	8/10/01	788250	837550	6860	BF-23	118.5	12.0	115.1	11.4	97.1	P	
B116	8/10/01	788200	837800	6860	BF-24	117.6	12.4	113.9	13.3	96.9	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
								Requirements:	PM ≥ Opt. - 2	≥ 95		
B117	8/13/01	788200	837500	6861	BF-24	117.6	12.4	114.7	12.7	97.5	P	
B118	8/13/01	788250	837550	6861	BF-24	117.6	12.4	113.6	15.2	96.6	P	
B119	8/13/01	788200	837600	6861	BF-24	117.6	12.4	113.0	12.0	96.1	P	
B120	8/13/01	788300	837700	6861	BF-24	117.6	12.4	113.6	11.7	96.6	P	
B121	8/13/01	788250	837750	6861	BF-25	118.8	12.4	112.9	13.7	95.0	P	
B122	8/13/01	788100	837750	6861	BF-25	118.8	12.4	113.5	14.2	95.5	P	
B123 *	8/13/01	788150	837450	6861	BF-25	118.8	12.4	114.8	12.4	96.6	P	
B124	8/13/01	788300	837500	6861	BF-25	118.8	12.4	114.2	12.2	96.1	P	
B125	8/14/01	788150	837550	6862	BF-25	118.8	12.4	114.7	12.1	96.5	P	
B126 *	8/14/01	788100	837650	6862	BF-26	117.8	12.7	117.1	14.1	99.4	P	
B127	8/14/01	788200	837750	6862	BF-26	117.8	12.7	115.6	13.6	98.1	P	
B128	8/14/01	788300	837800	6862	BF-26	117.8	12.7	115.3	11.4	97.9	P	
B129	8/14/01	788200	837400	6862	BF-26	117.8	12.7	113.6	11.1	96.4	P	
B130	8/14/01	788350	837500	6862	BF-26	117.8	12.7	116.0	11.6	98.5	P	
B131	8/14/01	788200	837550	6862	BF-27	118.4	11.5	115.1	12.1	97.2	P	
B132	8/15/01	788200	837650	6863	BF-27	118.4	11.5	117.8	11.4	99.5	P	
B133	8/15/01	788250	837700	6863	BF-27	118.4	11.5	114.6	12.5	96.8	P	
B134	8/15/01	788150	837800	6863	BF-27	118.4	11.5	116.3	11.1	98.2	P	
B135	8/15/01	788100	837450	6863	BF-27	118.4	11.5	114.9	10.7	97.0	P	
B136	8/15/01	788200	837500	6863	BF-28	119.1	11.5	115.0	11.9	96.6	P	
B137	8/16/01	788200	837550	6864	BF-28	119.1	11.5	115.7	11.4	97.1	P	
B138	8/16/01	788150	837700	6864	BF-28	119.1	11.5	115.1	14.5	96.6	P	
B139	8/16/01	788200	837750	6864	BF-28	119.1	11.5	118.0	12.1	99.1	P	
B140	8/16/01	788100	837800	6864	BF-28	119.1	11.5	118.3	11.3	99.3	P	
B141 *	8/16/01	788200	837400	6864	BF-29	118.7	12.3	114.0	13.0	96.0	P	
B142	8/16/01	788200	837450	6865	BF-29	118.7	12.3	120.9	10.9	101.9	P	
B143	8/16/01	788250	837500	6865	BF-29	118.7	12.3	115.8	14.8	97.6	P	
B144	8/16/01	788200	837650	6865	BF-29	118.7	12.3	113.2	10.7	95.4	P	
B145	8/16/01	788150	837699	6865	BF-29	118.7	12.3	116.3	14.4	98.0	P	
B146	8/16/01	788159	837749	6865	BF-30	119.0	12.0	115.2	14.1	96.8	P	
B147	8/16/01	788123	837799	6865	BF-30	119.0	12.0	113.6	13.0	95.5	P	
B148	8/17/01	788200	837440	6866	BF-30	119.0	12.0	114.7	11.4	96.4	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
								Requirements:	PM ≥ Opt. - 2	≥ 95		
B149	8/17/01	788140	837530	6866	BF-30	119.0	12.0	115.9	10.3	97.4	P	
B150	8/17/01	788250	837590	6866	BF-30	119.0	12.0	115.7	13.3	97.2	P	
B151	8/17/01	788100	837640	6866	BF-31	119.0	12.0	114.8	12.9	96.5	P	
B152	8/17/01	788230	837730	6866	BF-31	119.0	12.0	116.2	10.9	97.6	P	
B153	8/17/01	788240	837860	6866	BF-31	119.0	12.0	114.3	10.8	96.1	P	
B154	8/17/01	788100	837480	6867	BF-31	119.0	12.0	115.3	10.8	96.9	P	
B155	8/17/01	788220	837530	6867	BF-31	119.0	12.0	120.1	11.7	100.9	P	
B156	8/17/01	788280	837600	6867	BF-32	117.3	13.0	111.4	12.3	95.0	P	
B157	8/17/01	788130	837400	6867	BF-32	117.3	13.0	114.7	11.7	97.8	P	
B158	8/17/01	788080	837830	6867	BF-32	117.3	13.0	115.4	11.5	98.4	P	
B159	8/17/01	788230	837880	6867	BF-32	117.3	13.0	114.4	11.7	97.5	P	
B160	8/20/01	788130	837600	6868	BF-32	117.3	13.0	111.4	13.2	95.0	P	
B161	8/20/01	788210	837520	6868	BF-33	118.4	12.2	116.9	12.4	98.7	P	
B162	8/20/01	788280	837440	6868	BF-33	118.4	12.2	118.1	11.9	99.7	P	
B163	8/20/01	788100	837630	6868	BF-33	118.4	12.2	115.6	11.7	97.6	P	
B164 *	8/20/01	788230	837720	6868	BF-33	118.4	12.2	113.6	14.2	95.9	P	
B165	8/20/01	788260	837850	6869	BF-33	118.4	12.2	115.9	11.7	97.9	P	
B166	8/20/01	788100	837600	6869	BF-34	119.0	12.8	114.6	13.7	96.3	P	
B167	8/20/01	788220	837530	6869	BF-34	119.0	12.8	114.1	13.6	95.9	P	
B168	8/20/01	788200	837440	6869	BF-34	119.0	12.8	115.9	11.8	97.4	P	
B169	8/20/01	788130	837630	6869	BF-34	119.0	12.8	119.7	12.5	100.6	P	
B170	8/21/01	788250	837830	6870	BF-34	119.0	12.8	116.1	13.2	97.6	P	
B171 *	8/21/01	788200	837740	6870	BF-35	120.0	11.5	115.8	14.9	96.5	P	
B172 *	8/21/01	788100	837630	6870	BF-35	120.0	11.5	114.5	11.5	95.4	P	
B173 *	8/21/01	788210	837600	6870	BF-35	120.0	11.5	115.9	13.1	96.6	P	
B174 *	8/21/01	788309	837550	6870	BF-35	120.0	11.5	116.1	12.0	96.8	P	
B175	8/21/01	788150	837450	6870	BF-35	120.0	11.5	117.0	11.3	97.5	P	
B176 *	8/21/01	788300	837875	6871	BF-36	119.0	13.1	114.3	14.8	96.1	P	
B177 *	8/21/01	788200	837790	6871	BF-36	119.0	13.1	114.5	12.8	96.2	P	
B178	8/21/01	788100	837660	6871	BF-36	119.0	13.1	115.3	12.3	96.9	P	
B179	8/22/01	788220	837610	6872	BF-36	119.0	13.1	117.1	11.4	98.4	P	
B180	8/22/01	788299	837540	6872	BF-36	119.0	13.1	114.9	11.5	96.6	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID		Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
			Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
									Requirements:	PM ≥ Opt. - 2	≥ 95		
B181		8/22/01	788160	837460	6872	BF-37	116.0	14.8	113.9	14.2	98.2	P	
B182		8/22/01	788310	837865	6872	BF-37	116.0	14.8	113.6	15.7	97.9	P	
B183		8/22/01	788210	837780	6872	BF-37	116.0	14.8	114.2	13.5	98.4	P	
B184		8/22/01	788110	837670	6873	BF-37	116.0	14.8	116.6	13.7	100.5	P	
B185		8/22/01	788250	837830	6873	BF-37	116.0	14.8	115.0	13.1	99.1	P	
B186	*	8/22/01	788215	837795	6873	BF-38	118.9	12.9	114.0	12.3	95.9	P	
B187		8/22/01	788112	837433	6873	BF-38	118.9	12.9	114.4	11.6	96.2	P	
B188	*	8/23/01	788100	837550	6873	BF-38	118.9	12.9	116.4	12.5	97.9	P	
B189		8/23/01	788212	837550	6873	BF-38	118.9	12.9	115.2	11.4	96.9	P	
B190		8/23/01	788260	837620	6873	BF-38	118.9	12.9	115.3	14.7	97.0	P	
B191		8/23/01	788210	837420	6874	BF-39	117.2	13.6	116.9	12.2	99.7	P	
B192	*	8/23/01	788190	837550	6874	BF-39	117.2	13.6	114.2	12.4	97.4	P	
B193		8/23/01	788170	837600	6874	BF-39	117.2	13.6	115.0	14.7	98.1	P	
B194	*	8/23/01	788100	837640	6874	BF-39	117.2	13.6	114.4	14.8	97.6	P	
B195		8/23/01	788220	837720	6874	BF-39	117.2	13.6	114.2	12.5	97.4	P	
B196	*	8/23/01	788240	837840	6874	BF-40	118.0	12.1	112.2	15.2	95.1	P	
B197		8/24/01	788100	837600	6875	BF-40	118.0	12.1	113.7	13.0	96.4	P	
B198		8/24/01	788210	837510	6875	BF-40	118.0	12.1	115.8	11.6	98.1	P	
B199	*	8/24/01	788220	837440	6875	BF-40	118.0	12.1	116.6	13.4	98.8	P	
B200		8/24/01	788200	837630	6875	BF-40	118.0	12.1	113.3	15.1	96.0	P	
B201		8/24/01	788130	837730	6875	BF-41	118.9	11.9	117.0	14.9	98.4	P	
B202		8/24/01	788260	837840	6875	BF-41	118.9	11.9	115.5	12.6	97.1	P	
B203		8/27/01	788100	837670	6876	BF-41	118.9	11.9	114.1	12.2	96.0	P	
B204	*	8/27/01	788250	837740	6876	BF-41	118.9	11.9	117.5	11.2	98.8	P	
B205	*	8/27/01	788260	837820	6876	BF-41	118.9	11.9	113.3	11.6	95.3	P	
B206	*	8/27/01	788140	837430	6876	BF-42	116.9	13.2	115.9	11.7	99.1	P	
B207		8/27/01	788210	837510	6876	BF-42	116.9	13.2	116.3	13.1	99.5	P	
B208		8/27/01	788220	837630	6877	BF-42	116.9	13.2	116.8	14.9	99.9	P	
B209		8/27/01	788180	837730	6877	BF-42	116.9	13.2	114.8	14.7	98.2	P	
B210		8/27/01	788140	837420	6877	BF-42	116.9	13.2	114.2	14.3	97.7	P	
B211		8/27/01	788230	837530	6877	BF-43	116.5	13.5	116.5	11.5	100.0	P	
B212	*	8/28/01	788130	837430	6877	BF-43	116.5	13.5	114.6	14.0	98.4	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
								Requirements:	PM ≥ Opt. - 2	≥ 95		
B213 *	8/28/01	788260	837510	6877	BF-43	116.5	13.5	111.1	15.5	95.4	P	
B214	8/28/01	788200	837600	6877	BF-43	116.5	13.5	111.8	14.3	96.0	P	
B215 *	8/28/01	788160	837640	6877	BF-43	116.5	13.5	114.8	12.3	98.5	P	
B216 *	8/28/01	788210	837730	6877	BF-44	117.8	12.5	113.3	13.1	96.2	P	
B217 *	8/28/01	788123	837640	6878	BF-44	117.8	12.5	114.4	14.0	97.1	P	
B218 *	8/28/01	788222	837713	6878	BF-44	117.8	12.5	114.5	14.8	97.2	P	
B219 *	8/28/01	788200	837840	6878	BF-44	117.8	12.5	118.6	12.5	100.7	P	
B220 *	8/28/01	788210	837500	6878	BF-44	117.8	12.5	114.2	13.8	96.9	P	
B221 *	8/28/01	788280	837710	6878	BF-45	119.5	11.3	116.8	13.7	97.7	P	
B222 *	8/28/01	788110	837630	6878	BF-45	119.5	11.3	114.6	13.7	95.9	P	
B223 *	8/28/01	788220	837710	6879	BF-45	119.5	11.3	117.7	11.7	98.5	P	
B224	8/28/01	788120	837500	6879	BF-45	119.5	11.3	113.7	11.0	95.1	P	
B225	8/28/01	788220	837560	6879	BF-45	119.5	11.3	115.9	12.5	97.0	P	
B226 *	8/29/01	788150	837450	6879	BF-46	118.4	12.4	114.0	12.0	96.3	P	
B227	8/29/01	788291	837604	6879	BF-46	118.4	12.4	113.4	12.3	95.8	P	
B228	8/29/01	788429	837582	6879	BF-46	118.4	12.4	113.0	11.5	95.4	P	
B229 *	8/29/01	788060	837760	6880	BF-46	118.4	12.4	113.7	14.3	96.0	P	
B230	8/29/01	788150	837880	6880	BF-46	118.4	12.4	113.5	12.0	95.9	P	
B231	8/29/01	788220	837800	6880	BF-47	118.1	11.6	115.2	12.0	97.5	P	
B232	9/18/01	788385	837525	6880	BF-47	118.1	11.6	113.1	16.3	95.8	P	
B233	9/18/01	788125	837510	6880	BF-47	118.1	11.6	112.6	13.6	95.3	P	
B234 *	9/18/01	788255	837655	6880	BF-47	118.1	11.6	113.2	13.1	95.9	P	
B235	9/18/01	788170	837850	6880	BF-47	118.1	11.6	113.6	13.8	96.2	P	
B236	9/18/01	788320	837815	6880	BF-48	116.5	14.2	114.4	15.9	98.2	P	
B237 *	5/30/02	788125	837785	6880	BF-49	117.8	12.6	114.1	16.6	96.8	P	
B238	5/30/02	788090	837845	6880	BF-49	117.8	12.6	113.1	16.6	96.0	P	
B239	5/30/02	788070	837720	6880	BF-49	117.8	12.6	112.2	14.7	95.2	P	
B240	5/30/02	788315	837710	6880	BF-49	117.8	12.6	115.7	12.2	98.2	P	
B241	5/30/02	788275	837845	6880	BF-49	117.8	12.6	112.7	13.8	95.7	P	
B242	5/30/02	788155	837440	6880	BF-50	119.0	12.4	112.0	14.6	**94.1**	F Comp	Fails Compaction
B242R	5/31/02	788155	837440	6880	BF-50	119.0	12.4	114.3	14.2	96.1	P	Retest
B243	5/30/02	788230	837580	6880	BF-50	119.0	12.4	117.2	14.6	98.5	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID		Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
			Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
									Requirements:	PM ≥ Opt. - 2	≥ 95		
B244		5/30/02	788350	837532	6880	BF-50	119.0	12.4	112.8	15.2	**94.8**	F Comp	Fails Compaction
B244R		5/31/02	788350	837532	6880	BF-50	119.0	12.4	114.7	14.3	96.4	P	Retest
B245		5/30/02	788280	837475	6880	BF-50	119.0	12.4	112.8	13.6	**94.8**	F Comp	Fails Compaction
B245R		5/31/02	788280	837475	6880	BF-50	119.0	12.4	114.5	13.3	96.2	P	Retest
B246		5/30/02	788117	837570	6880	BF-50	119.0	12.4	116.1	12.1	97.6	P	
B247		5/31/02	788435	837525	6881	BF-51	115.7	13.8	110.1	14.4	95.2	P	
B248	*	5/31/02	788160	837380	6881	BF-51	115.7	13.8	111.4	14.8	96.3	P	
B249		5/31/02	788235	837540	6881	BF-51	115.7	13.8	110.6	16.2	95.6	P	
B250		5/31/02	788337	837610	6881	BF-51	115.7	13.8	110.9	12.8	95.8	P	
B251		5/31/02	788090	837590	6881	BF-51	115.7	13.8	118.0	12.4	102.0	P	
B252		6/3/02	788135	837780	9881	BF-52	118.0	13.7	112.5	11.7	95.3	P	
B253		6/3/02	788285	837640	6881	BF-52	118.0	13.7	112.9	15.7	95.7	P	
B254	*	6/3/02	788275	837520	6882	BF-52	118.0	13.7	115.4	14.4	97.8	P	
B255		6/3/02	788115	837570	6882	BF-52	118.0	13.7	113.8	14.6	96.4	P	
B256		6/3/02	788225	837605	6882	BF-52	118.0	13.7	116.1	13.8	98.4	P	
B257		6/5/02	788185	837885	6882	BF-53	114.6	14.5	109.3	18.9	95.4	P	
B258		6/5/02	788070	837643	6882	BF-53	114.6	14.5	110.2	17.0	96.2	P	
B259	*	6/5/02	788365	837750	6882	BF-53	114.6	14.5	113.2	15.4	98.8	P	
B260		6/5/02	788360	837455	6882	BF-53	114.6	14.5	115.0	15.4	100.3	P	
B261	*	6/5/02	788125	837445	6882	BF-53	114.6	14.5	110.9	18.0	96.8	P	
B262		6/5/02	788185	837490	6882	BF-54	116.1	13.5	114.5	15.7	98.6	P	
B263		6/5/02	788335	837580	6882	BF-54	116.1	13.5	112.5	15.4	96.9	P	
B264	*	6/5/02	788290	837783	6882	BF-54	116.1	13.5	111.1	16.1	95.7	P	
B265	*	6/6/02	788230	837550	6883	BF-54	116.1	13.5	115.6	14.2	99.6	P	
B266		6/6/02	788120	837460	6883	BF-54	116.1	13.5	116.5	15.5	100.3	P	
B267		6/6/02	788300	837750	6883	BF-55	115.4	14.0	113.1	16.0	98.0	P	
B268		6/6/02	788155	837790	6883	BF-55	115.4	14.0	116.1	12.4	100.6	P	
B269		6/6/02	788340	837530	6883	BF-55	115.4	14.0	113.6	12.1	98.4	P	
B270	*	6/6/02	788100	837650	6883	BF-55	115.4	14.0	111.0	18.4	96.2	P	
B271		6/24/02	788300	837800	6883	BF-55	115.4	14.0	113.8	12.1	98.6	P	
B272	*	6/24/02	788130	837700	6883	BF-56	117.3	13.4	115.8	11.3	98.7	P	Test passed
B273		6/24/02	788160	837850	6883	BF-56	117.3	13.4	113.6	14.2	96.8	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
								Requirements:	PM ≥ Opt. - 2	≥ 95		
B274	6/28/02	788300	837800	6884	BF-56	117.3	13.4	112.4	13.5	95.8	P	
B275	6/28/02	788200	837800	6884	BF-56	117.3	13.4	112.3	12.4	95.7	P	
B276	6/28/02	788080	837770	6884	BF-56	117.3	13.4	112.2	14.4	95.7	P	
B277	6/28/02	788250	837450	6884	BF-57	116.8	12.9	111.3	12.6	95.3	P	
B278	6/28/02	788230	837540	6884	BF-57	116.8	12.9	115.5	14.4	98.9	P	
B279 *	6/28/02	788330	837590	6884	BF-57	116.8	12.9	113.7	12.5	97.3	P	
B280	7/1/02	788180	837750	6884	BF-57	116.8	12.9	115.0	12.5	98.5	P	
B281	7/1/02	788300	837750	6884	BF-57	116.8	12.9	116.5	11.2	99.7	P	
B282	7/1/02	788200	837680	6884	BF-58	114.5	13.5	116.6	11.7	101.8	P	
B283	7/2/02	788115	837520	6884	BF-58	114.5	13.5	110.5	12.2	96.5	P	
B284 *	7/2/02	788280	837580	6884	BF-58	114.5	13.5	112.8	14.6	98.5	P	
B285	7/2/02	788190	837645	6884	BF-58	114.5	13.5	115.3	13.3	100.7	P	
B286	7/2/02	788350	837460	6884	BF-58	114.5	13.5	110.6	16.5	96.6	P	
B287	7/3/02	788250	837800	6885	BF-59	116.1	13.1	118.9	13.4	102.4	P	
B288	7/3/02	788190	837840	6885	BF-59	116.1	13.1	110.9	15.4	95.5	P	
B289	7/3/02	788080	837720	6885	BF-59	116.1	13.1	112.7	12.6	97.1	P	
B290	7/3/02	788250	837680	6885	BF-59	116.1	13.1	118.1	13.9	101.7	P	
B291	7/8/02	788250	837440	6885	BF-59	116.1	13.1	114.2	12.1	98.4	P	
B292	7/8/02	788330	837480	6885	BF-60	118.1	13.1	113.5	13.7	96.1	P	
B293	7/8/02	788180	837540	6885	BF-60	118.1	13.1	114.3	12.9	96.8	P	
B294 *	7/9/02	788300	837800	6886	BF-60	118.1	13.1	112.3	15.3	95.1	P	
B295	7/9/02	788220	837710	6886	BF-60	118.1	13.1	113.0	12.5	95.7	P	
B296	7/9/02	788140	837780	6886	BF-60	118.1	13.1	114.0	15.9	96.5	P	
B297 *	7/9/02	788300	837500	6886	BF-61	114.7	13.7	112.5	11.8	98.1	P	
B298	7/9/02	788200	837440	6886	BF-61	114.7	13.7	110.8	15.0	96.6	P	
B299	7/9/02	788100	837550	6886	BF-61	114.7	13.7	110.0	15.3	95.9	P	
B300	7/9/02	788250	837560	6886	BF-61	114.7	13.7	110.0	14.0	95.9	P	
B-301	6/10/03	788120	837790	6888	BF-62	116.7	12.5	111.4	13.3	95.5	P	
B-302	6/10/03	788300	837820	6888	BF-62	116.7	12.5	113.4	11.7	97.2	P	
B-303 *	6/10/03	788420	837750	6887	BF-62	116.7	12.5	114.9	11.7	98.5	P	
B-304	6/10/03	788250	837720	6888	BF-62	116.7	12.5	111.4	14.6	95.5	P	
B-305	6/10/03	788320	837680	6888	BF-62	116.7	12.5	114.8	14.8	98.4	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
								Requirements:	PM ≥ Opt. - 2	≥ 95		
B-306	6/10/03	788090	837600	6888	BF-63	118.1	12.2	110.8	12.7	**93.8**	F Comp	Fails Compaction
B-306R	8/7/03	788090	837600	6888	BF-63	118.1	12.2	119.0	11.1	100.8	P	Retest
B-307	6/10/03	788130	837490	6886	BF-63	118.1	12.2	110.1	13.9	**93.2**	F Comp	Fails Compaction
B-307R	8/7/03	788130	837490	6886	BF-63	118.1	12.2	114.0	12.8	96.5	P	Retest
B-308	6/10/03	788220	837600	6887	BF-63	118.1	12.2	109.5	11.5	**92.7**	F Comp	Fails Compaction
B-308R *	8/11/03	788220	837600	6887	BF-63	118.1	12.2	113.9	9.8	96.4	F Moist	Retest Fails Moisture
B-308R2 *	8/11/03	788220	837600	6887	BF-63	118.1	12.2	116.6	14.2	98.7	P	Second Retest Passes
B-309	6/10/03	788410	837500	6886	BF-63	118.1	12.2	112.3	13.5	95.1	P	
B-310	6/10/03	788380	837540	6887	BF-63	118.1	12.2	111.1	15.2	**94.1**	F Comp	Fails Compaction
B-310R	8/11/03	788380	837540	6887	BF-63	118.1	12.2	120.3	11.6	101.9	P	Retest
B-311	8/11/03	788280	837680	6889	BF-64	118.8	12.3	113.7	15.4	95.7	P	
B-312	8/11/03	788330	837560	6888	BF-64	118.8	12.3	115.9	15.0	97.6	P	
B-313	8/11/03	788290	837420	6888	BF-64	118.8	12.3	119.1	11.2	100.3	P	
B-314	8/11/03	788100	837510	6887	BF-64	118.8	12.3	116.2	13.8	97.8	P	
B-315	8/11/03	788440	837590	6889	BF-65	115.4	12.4	119.4	11.7	103.5	P	
B-316	8/11/03	788420	837680	6890	BF-65	115.4	12.4	114.6	10.7	99.3	P	
B-317	8/11/03	788430	837730	6890	BF-65	115.4	12.4	111.8	16.0	96.9	P	
B-318	6/9/04	788328	837730	6890	BF-66	116.4	13.4	115.1	14.8	98.9	P	
B-319	6/9/04	788243	837808	6891	BF-66	116.4	13.4	111.6	16.8	95.9	P	
B-320	6/9/04	788318	837792	6891	BF-66	116.4	13.4	115.0	14.4	98.8	P	
B-321	6/9/04	788409	837707	6890	BF-66	116.4	13.4	116.3	14.2	99.9	P	
B-322 *	6/9/04	788446	837620	6890	BF-66	116.4	13.4	113.7	16.0	97.7	P	
B-323	6/16/04	788400	837650	6889	BF-66	116.4	13.4	112.8	15.6	96.9	P	
B-324	6/16/04	788360	837645	6888	BF-66	116.4	13.4	111.7	15.8	96.0	P	
B-325	6/23/04	788350	837725	6890	BF-66	116.4	13.4	113.7	12.5	97.7	P	
B-326 *	6/25/04	788444	837585	6891	BF-66	116.4	13.4	117.3	13.6	100.8	P	
B-327	6/28/04	788450	837680	6892	BF-66	116.4	13.4	117.2	12.3	100.7	P	
B-328	7/6/04	788440	837650	6893	BF-67	118.3	12.4	111.4	17.2	**94.2**	F Comp	Fails Compaction
B-328R	7/6/04	788440	837650	6893	BF-67	118.3	12.4	118.6	13.9	100.3	P	Retest
B-329	7/7/04	788430	837560	6894	BF-67	118.3	12.4	122.1	13.0	103.2	P	
B-330	7/8/04	788420	837670	6894	BF-67	118.3	12.4	119.5	10.4	101.0	P	
B-331 *	7/9/04	788440	837680	6896	BF-67	118.3	12.4	116.1	13.2	98.1	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
								Requirements:	PM ≥ Opt. - 2	≥ 95		
B-332	7/9/04	788410	837650	6897	BF-67	118.3	12.4	113.0	16.4	95.5	P	
B-333	7/9/04	788450	837610	6898	BF-67	118.3	12.4	113.4	16.2	95.9	P	
B-334	7/12/04	788460	837750	6895	BF-67	118.3	12.4	114.7	14.9	97.0	P	
B-335	7/12/04	788400	837500	6898	BF-67	118.3	12.4	116.6	14.5	98.6	P	
B-336 *	7/12/04	788440	837640	6899	BF-67	118.3	12.4	117.9	12.5	99.7	P	
B-337	7/13/04	788430	837595	6900	BF-67	118.3	12.4	112.8	12.1	95.4	P	
B-338	7/13/04	788445	837720	6898	BF-68	119.4	12.1	115.4	14.2	96.6	P	
B-339 *	7/13/04	788380	837590	6900	BF-68	119.4	12.1	115.6	13.4	96.8	P	
B-340	7/14/04	788450	837775	6897	BF-68	119.4	12.1	115.3	13.0	96.6	P	
B341	5/24/05	788390	837650	6890	BF-69	116.3	13.5	113.6	11.5	97.7	P	
B342	5/24/05	788340	837510	6890	BF-69	116.3	13.5	114.2	12.1	98.2	P	
B343	5/24/05	788060	837580	6891	BF-69	116.3	13.5	111.3	14.9	95.7	P	
B344	5/24/05	788220	837650	6890	BF-69	116.3	13.5	110.6	13.3	95.1	P	
B345	5/25/05	788170	837610	6890	BF-69	116.3	13.5	112.3	12.9	96.6	P	
B346	5/25/05	788250	837590	6890	BF-70	115.5	14.0	111.4	13.4	96.5	P	
B347 *	5/25/05	788220	837690	6890	BF-70	115.5	14.0	109.8	15.9	95.1	P	
B348	5/26/05	788060	837455	6892	BF-70	115.5	14.0	111.5	12.0	96.5	P	
B349	5/26/05	788107	837570	6892	BF-70	115.5	14.0	110.2	16.5	95.4	P	
B350	5/26/05	788159	837475	6891	BF-70	115.5	14.0	111.6	16.7	96.6	P	
B351	5/26/05	788170	837668	6891	BF-71	115.3	13.6	112.0	16.8	97.1	P	
B352 *	5/26/05	788210	837553	6891	BF-71	115.3	13.6	114.7	16.1	99.5	P	
B353	5/26/05	788272	837464	6891	BF-71	115.3	13.6	109.9	18.5	95.3	P	
B354	5/26/05	788320	837645	6891	BF-71	115.3	13.6	115.4	12.0	100.1	P	
B355 *	5/26/05	788339	837502	6891	BF-71	115.3	13.6	115.1	14.4	99.8	P	
B356	5/26/05	788390	837613	6891	BF-72	116.8	13.3	114.4	12.0	97.9	P	
B357	5/27/05	788245	837510	6892	BF-72	116.8	13.3	111.9	16.3	95.8	P	
B358	5/27/05	788295	837620	6892	BF-72	116.8	13.3	114.4	11.3	97.9	P	
B359 *	5/27/05	788385	837535	6892	BF-72	116.8	13.3	113.0	11.4	96.7	P	
B360 *	5/31/05	788056	837520	6893	BF-72	116.8	13.3	113.4	11.9	96.7	P	
B361	5/31/05	788112	837634	6893	BF-73	117.1	12.4	112.2	12.3	95.8	P	
B362	5/31/05	788180	837490	6892	BF-73	117.1	12.4	112.8	12.2	96.3	P	
B363	5/31/05	788212	837601	6892	BF-73	117.1	12.4	113.6	12.2	97.0	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID		Date	Location		Elevation	Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
			Northing	Easting		Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
									Requirements:	PM ≥ Opt. - 2	≥ 95		
B364		5/31/05	788278	837675	6892	BF-73	117.1	12.4	114.3	11.4	97.6	P	
B365	*	6/1/05	788085	837455	6894	BF-73	117.1	12.4	112.0	11.4	95.6	P	
B366		6/1/05	788110	837520	6894	BF-74	113.8	14.9	110.3	13.7	96.9	P	
B367		6/1/05	788150	837490	6893	BF-74	113.8	14.9	109.2	14.4	96.0	P	
B368		6/1/05	788180	837590	6893	BF-74	113.8	14.9	133.3	14.1	99.6	P	
B369		6/1/05	788250	837475	6893	BF-74	113.8	14.9	110.8	16.9	97.4	P	
B370		6/1/05	788270	837604	6893	BF-74	113.8	14.9	109.7	16.5	96.4	P	
B371		6/1/05	788345	837507	6893	BF-74	113.8	14.9	110.0	17.0	97.3	P	
B372		6/1/05	788380	837620	6893	BF-74	113.8	14.9	111.4	16.6	98.6	P	
B373		6/2/05	788240	837481	6894	BF-75	113.0	15.0	112.8	14.7	99.8	P	
B374		6/2/05	788358	837775	6894	BF-75	113.0	15.0	112.6	14.4	99.6	P	
B375	*	6/2/05	788181	837556	6894	BF-75	113.0	15.0	114.9	14.9	101.7	P	
B376		6/2/05	788268	837670	6894	BF-76	112.6	15.3	109.5	14.4	97.0	P	
B377		6/2/05	788361	837530	6894	BF-76	112.6	15.3	113.5	15.1	100.4	P	
B378		6/2/05	788238	837619	6894	BF-76	112.6	15.3	113.6	15.9	100.9	P	
B379		6/2/05	788345	837621	6894	BF-76	112.6	15.3	113.3	16.1	100.6	P	
B380		6/2/05	788357	837720	6894	BF-76	112.6	15.3	112.1	14.4	99.6	P	
B381		6/3/05	788385	837750	6895	BF-77	111.5	15.5	111.6	15.7	100.0	P	
B382		6/3/05	788320	837455	6895	BF-77	111.5	15.5	113.3	14.3	101.6	P	
B383		6/3/05	788280	837620	6895	BF-77	111.5	15.5	111.0	14.8	99.6	P	
B384	*	6/3/05	788160	837420	6895	BF-77	111.5	15.5	106.1	16.9	95.2	P	
B385		6/3/05	788130	837660	6895	BF-77	111.5	15.5	111.0	17.5	99.6	P	
B386	*	6/3/05	788080	837510	6895	BF-78	114.8	13.8	111.2	13.3	96.9	P	
B387		6/6/05	788414	837624	6896	BF-78	114.8	13.8	111.3	15.4	97.0	P	
B388		6/6/05	788367	837736	6896	BF-78	114.8	13.8	109.9	13.0	95.7	P	
B389	*	6/6/05	788308	837532	6896	BF-78	114.8	13.8	109.9	15.0	95.7	P	
B390		6/7/05	788356	837582	6896	BF-78	114.8	13.8	110.6	14.8	96.3	P	
B391		6/7/05	788280	837679	6896	BF-79	116.7	13.7	115.6	11.4	99.1	P	Fails Moisture
B391R		6/9/05	788280	837679	6896	BF-79	116.7	13.7	114.7	13.3	98.3	P	Retest
B392	*	6/9/05	788175	837685	6896	BF-79	116.7	13.7	115.7	13.0	99.1	P	
B393		6/9/05	788208	837592	6897	BF-79	116.7	13.7	113.9	12.1	97.6	P	
B394		6/10/05	788390	837760	6897	BF-79	116.7	13.7	112.9	14.3	96.7	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
								Requirements:	PM ≥ Opt. - 2	≥ 95		
B395 *	6/10/05	788330	837610	6897	BF-80	116.2	14.2	112.3	13.5	96.6	P	
B396	6/10/05	788265	837490	6897	BF-80	116.2	14.2	111.0	11.0	95.5	P	
B397	6/13/05	788109	837919	6896	BF-80	116.2	14.2	111.5	13.2	96.0	P	
B398	6/13/05	788069	837600	6896	BF-80	116.2	14.2	112.4	14.2	96.0	P	
B399	6/13/05	788376	837608	6898	BF-80	116.2	14.2	113.4	12.3	97.6	P	
B400	6/13/05	788313	837535	6898	BF-81	115.3	14.7	111.4	16.3	96.6	P	
B401 *	6/13/05	788162	837422	6898	BF-81	115.3	14.7	112.8	15.4	97.8	P	
B402	6/13/05	788344	837639	6898	BF-81	115.3	14.7	115.4	12.9	100.1	P	
B403	6/14/05	788380	837788	6899	BF-81	115.3	14.7	109.8	13.9	95.2	P	
B404	6/14/05	788346	837515	6899	BF-81	115.3	14.7	111.1	14.4	96.4	P	
B405	6/15/05	788405	837571	6899	BF-82	116.4	13.9	115.5	14.5	96.6	P	
B406	6/15/05	788132	837579	6899	BF-82	116.4	13.9	111.5	13.9	95.8	P	
B407 *	6/15/05	788195	837635	6900	BF-82	116.4	13.9	112.5	15.9	95.0	P	
B408	6/16/05	788333	837565	6900	BF-82	116.4	13.9	113.0	12.0	97.1	P	
B409	6/16/05	788279	837689	6900	BF-82	116.4	13.9	111.3	15.5	95.6	P	
B410	6/16/05	788159	837498	6900	BF-83	117.8	13.3	113.5	14.6	96.3	P	
B411	6/16/05	788226	837540	6900	BF-83	117.8	13.3	113.2	12.7	96.1	P	
B412	6/16/05	788415	837718	6900	BF-83	117.8	13.3	115.8	14.5	98.3	P	
B413	6/20/05	788133	837670	6898	BF-83	117.8	13.3	113.7	12.7	96.5	P	
B414	6/21/05	788324	837710	6901	BF-83	117.8	13.3	115.5	15.7	98.0	P	
B415	6/26/05	788376	837492	6901	BF-84	119.0	13.0	114.1	14.4	95.9	P	
B416 *	6/26/05	788175	837523	6901	BF-84	119.0	13.0	113.0	11.1	95.0	P	
B417	8/10/05	788070	837560	6898	BF-85	115.5	13.3	110.4	13.3	95.6	P	
B418	8/10/05	788030	837670	6898	BF-85	115.5	13.3	109.8	13.3	95.1	P	
B419	8/22/05	788162	837416	6902	BF-84	119.0	13.0	114.3	13.4	99.0	P	
B420	8/22/05	788186	837585	6902	BF-84	119.0	13.0	117.5	13.0	101.7	P	
B421	8/22/05	788159	837720	6902	BF-84	119.0	13.0	113.1	15.5	97.9	P	
B422 *	10/24/05	788255	837470	6902	BF-86	117.7	13.0	113.7	12.9	96.6	P	
B423	10/24/05	788375	837535	6902	BF-86	117.7	13.0	112.5	12.0	95.6	P	
B424	10/24/05	788385	837660	6902	BF-86	117.7	13.0	112.9	15.8	95.9	P	
B425 *	10/24/05	788250	837810	6902	BF-86	117.7	13.0	116.1	13.4	98.6	P	
B426	10/24/05	788310	837650	6902	BF-86	117.7	13.0	112.6	14.9	95.7	P	

Table E.2. C-18 Pit Field Compaction Test Results: 2001-2005

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; SG (Subgrade) = Original Ground Surface; P = Pass; F = Fail; F Comp = Fails Compaction (no tests failed moisture). See summary statistics at the end of this table.

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Elevation	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
							Requirements:		PM ≥ Opt. - 2	≥ 95		
B427	10/24/05	788120	837450	6899	BF-87	119.0	12.2	112.2	12.0	94.3	F Comp	Fails Compaction
B427R	10/24/05	788120	837450	6899	BF-87	119.0	12.2	115.8	13.6	97.3	P	Retest
B428 *	10/24/05	788105	837830	6899	BF-87	119.0	12.2	116.6	14.5	98.0	P	
B429	10/24/05	788080	837670	6899	BF-87	119.0	12.2	113.8	13.8	95.6	P	
B430	10/24/05	788047	837470	6899	BF-87	119.0	12.2	118.5	11.3	99.6	P	
B431	10/27/05	788075	837535	6900	BF-87	119.0	12.2	115.2	14.3	96.8	P	
B432	10/27/05	788040	837765	6900	BF-88	118.6	13.6	113.9	11.7	96.0	P	
B433	10/28/05	788045	837770	6901	BF-88	118.6	13.6	115.1	12.2	97.0	P	
B434	10/28/05	788065	837460	6901	BF-88	118.6	13.6	114.1	13.5	96.2	P	
B435	10/28/05	788125	837520	6901	BF-88	118.6	13.6	116.7	12.5	98.4	P	
B436	10/28/05	788100	837690	6901	BF-88	118.6	13.6	116.1	14.5	97.9	P	

Final Elevation minus Starting Elevation: 56.0 ft

Field density and moisture tests were taken using a nuclear density gauge. The gauge was field standardized at each test location and was correlated by a Sand Cone Test at a frequency of one for every five nuclear gauge tests. Field rock corrections were performed at each compaction test location.

Total Number of Tests (N):	437	(N reflects passing tests only)	
Total Quantities placed:	414,038	cubic yards (CY)	
Frequency:	1: 947 CY	Meets the required frequency of 1:1000 CY.	
average:	**114.4**	**13.3**	**97.4**
standard deviation:	2.5	1.7	1.7
minimum:	106.1	9.2	94.8
maximum:	133.3	18.9	103.5
# Failed:	NA	2	14
# Retested:	NA	2	14

Table E.3. Laboratory Standard Proctor Test Summary for the C-18 Pit: 2001-2005

Date	Laboratory Standard Proctor		
	Proctor ID	Maximum Dry Density (lbs/cu ft)	Optimum Moisture (%)
6/8/01	BF-1	117.8	11.8
6/15/01	BF-2	118.3	12.0
6/19/01	BF-3	115.2	13.8
6/19/01	BF-4	117.7	12.3
6/29/01	BF-5	115.5	13.5
7/12/01	BF-6	115.6	13.7
7/12/01	BF-7	116.5	13.7
7/18/01	BF-8	118.5	11.9
7/20/01	BF-9	119.8	11.5
7/23/01	BF-10	119.4	12.4
7/24/01	BF-11	120.3	12.0
7/27/01	BF-12	119.2	10.9
7/30/01	BF-13	119.5	11.4
7/31/01	BF-14	118.2	12.3
8/1/01	BF-15	118.1	13.0
8/1/01	BF-16	117.6	12.8
8/3/01	BF-17	119.3	11.7
8/3/01	BF-18	118.8	11.5
8/6/01	BF-19	118.8	11.8
8/7/01	BF-20	118.8	11.2
8/7/01	BF-21	119.3	11.8
8/8/01	BF-22	119.1	12.2
8/9/01	BF-23	118.5	12.0
8/10/01	BF-24	117.6	12.4
8/13/01	BF-25	118.8	12.4
8/14/01	BF-26	117.8	12.7
8/14/01	BF-27	118.4	11.5
8/15/01	BF-28	119.1	11.5
8/16/01	BF-29	118.7	12.3
8/16/01	BF-30	119	12.0
8/17/01	BF-31	119	12.0
8/17/01	BF-32	117.3	13.0
8/20/01	BF-33	118.4	12.2
8/20/01	BF-34	119	12.8
8/21/01	BF-35	120	11.5
8/21/01	BF-36	119	13.1
8/22/01	BF-37	116	14.8
8/22/01	BF-38	118.9	12.9
8/23/01	BF-39	117.2	13.6
8/23/01	BF-40	118	12.1
8/24/01	BF-41	118.9	11.9
8/27/01	BF-42	116.9	13.2
8/27/01	BF-43	116.5	13.5
8/28/01	BF-44	117.8	12.5
8/28/01	BF-45	119.5	11.3
8/29/01	BF-46	118.4	12.4
8/29/01	BF-47	118.1	11.6
9/18/01	BF-48	116.5	14.2
5/30/02	BF-49	117.8	12.6

Table E.3. Laboratory Standard Proctor Test Summary for the C-18 Pit: 2001-2005

Date	Laboratory Standard Proctor		
	Proctor ID	Maximum Dry Density (lbs/cu ft)	Optimum Moisture (%)
5/30/02	BF-50	119	12.4
5/31/02	BF-51	115.7	13.8
6/3/02	BF-52	118	13.7
6/5/02	BF-53	114.6	14.5
6/5/02	BF-54	116.1	13.5
6/6/02	BF-55	115.4	14.0
6/24/02	BF-56	117.3	13.4
6/28/02	BF-57	116.8	12.9
7/1/02	BF-58	114.5	13.5
7/3/02	BF-59	116.1	13.1
7/8/02	BF-60	118.1	13.1
7/9/02	BF-61	114.7	13.7
6/10/03	BF-62	116.7	12.5
6/10/03	BF-63	118.1	12.2
8/11/03	BF-64	118.8	12.3
8/11/03	BF-65	115.4	12.4
6/9/04	BF-66	116.4	13.4
7/6/04	BF-67	118.3	12.4
7/14/04	BF-68	119.4	12.1
5/24/05	BF-69	116.3	13.5
5/25/05	BF-70	115.5	14.0
5/26/05	BF-71	115.3	13.6
5/26/05	BF-72	116.8	13.3
5/31/05	BF-73	117.1	12.4
6/1/05	BF-74	113.8	14.9
6/2/05	BF-75	113	15.0
6/2/05	BF-76	112.6	15.3
6/3/05	BF-77	111.5	15.5
6/3/05	BF-78	114.8	13.8
6/7/05	BF-79	116.7	13.7
6/10/05	BF-80	116.2	14.2
6/13/05	BF-81	115.3	14.7
6/15/05	BF-82	116.4	13.9
6/16/05	BF-83	117.8	13.3
6/26/05	BF-84	119	13.0
8/10/05	BF-85	115.5	13.3
10/24/05	BF-86	117.7	13.0
10/24/05	BF-87	119	12.2
10/27/05	BF-88	118.6	13.6
count:		88	88
average:		117.4	12.9
standard deviation:		1.8	1.0
minimum:		111.5	10.9
maximum:		120.3	15.5

Total cubic yards placed: 414,038 (2001-2005)
Proctor Frequency: 1: 4705 CY cubic yards

Table E.4. Sand-Cone Correlation Documentation for the C-18 Pit Backfill

Date	Compaction Test ID	Nuclear Gauge Test		Sand-Cone Compaction Tests		Sand-Cone Correlation Results	
		In-Place Wet Unit Weight (lbs/cu ft)	Moisture Content (%)	In-Place Wet Unit Weight (lbs/cu ft)	Moisture Content (%)	Wet Unit Weight Variation (%)	Moisture Content Variation (%)
6/15/01	B-4	131.9	12.7	131.5	12.2	-0.3	-0.5
6/15/01	B-9	131.7	13.2	132.9	11.3	0.9	-1.9
6/17/01	B-15	134.7	14.5	132.8	12.7	-1.4	-1.8
6/28/01	B-18R	133.5	13.5	136.4	10.8	2.2	-2.7
6/29/01	B-19	130.0	14.7	130.9	12.6	0.7	-2.1
7/3/01	B-25	130.2	12.1	134.4	10.4	3.2	-1.7
7/12/01	B-26	131.6	15.8	134.2	12.3	2.0	-3.5
7/12/01	B-31	132.3	13.1	135.2	11.8	2.2	-1.3
7/18/01	B-37	126.6	10.6	127.1	10.8	0.4	0.2
7/24/01	B-52	132.9	13.5	130.4	9.9	-1.9	-3.6
8/1/01	B-71	129.7	13.8	131.3	13.2	1.2	-0.6
8/1/01	B-72	129.7	14.4	131.0	11.5	1.0	-2.9
8/3/01	B-84R	129.6	10.2	132.7	10.4	2.4	0.2
8/6/01	B-89	131.5	12.5	134.6	14.2	2.4	1.7
8/6/01	B-90	130.5	13.9	130.0	12.0	-0.4	-1.9
8/6/01	B-91	130.9	10.2	131.3	9.1	0.3	-1.1
8/7/01	B-97	134.6	12.0	132.2	11.0	-1.8	-1.0
8/7/01	B-98	126.6	11.5	127.6	10.5	0.8	-1.0
8/8/01	B-106	125.7	10.0	124.8	9.0	-0.7	-1.0
8/13/01	B-123	130.7	11.6	130.4	12.0	-0.2	0.4
8/14/01	B-126	133.6	14.1	135.8	12.7	1.6	-1.4
8/16/01	B-141	128.7	13.0	123.8	10.1	-3.8	-2.9
8/20/01	B-164	129.8	14.2	132.4	12.9	2.0	-1.3
8/21/01	B-171	128.8	14.9	132.9	13.4	3.2	-1.5
8/21/01	B-172	127.7	11.5	129.1	17.2	1.1	5.7
8/21/01	B-173	131.0	13.1	131.0	11.4	0.0	-1.7
8/21/01	B-174	130.1	12.0	130.5	11.7	0.3	-0.3
8/21/01	B-176	131.2	14.8	129.6	13.0	-1.2	-1.8
8/21/01	B-177	129.2	12.8	124.9	11.0	-3.3	-1.8
8/22/01	B-186	128.0	12.3	128.3	11.1	0.2	-1.2
8/23/01	B-188	130.9	12.5	133.3	12.1	1.8	-0.4
8/23/01	B-192	128.4	12.4	131.1	10.2	2.1	-2.2
8/23/01	B-194	131.4	14.8	132.2	13.0	0.6	-1.8
8/23/01	B-196	129.3	15.2	129.6	13.8	0.2	-1.4
8/24/01	B-199	132.3	13.4	131.0	13.1	-1.0	-0.3
8/27/01	B-204	130.7	11.2	123.3	10.8	-5.7	-0.4
8/27/01	B-205	126.5	11.6	127.8	13.4	1.0	1.8
8/27/01	B-206	129.4	11.7	128.3	11.7	-0.9	0.0
8/28/01	B-212	130.6	14.0	128.9	12.5	-1.3	-1.5
8/28/01	B-213	128.3	15.5	130.6	12.5	1.8	-3.0
8/28/01	B-215	128.4	12.3	127.7	11.5	-0.5	-0.8
8/28/01	B-216	129.7	12.4	131.0	10.4	1.0	-2.0
8/28/01	B-217	130.5	14.0	129.9	12.7	-0.5	-1.3
8/28/01	B-218	131.5	14.8	132.2	12.7	0.5	-2.1
8/28/01	B-219	134.9	11.8	135.1	12.9	0.1	1.1
8/28/01	B-220	130.0	13.8	129.1	10.8	-0.7	-3.0
8/28/01	B-221	132.8	13.7	133.0	13.5	0.2	-0.2
8/28/01	B-222	130.4	13.7	128.3	12.7	-1.6	-1.0
8/28/01	B-223	131.5	11.7	133.4	11.4	1.4	-0.3
8/29/01	B-226	127.6	12.0	128.7	10.9	0.9	-1.1
8/29/01	B-229	130.0	14.3	132.8	12.7	2.2	-1.6
9/18/01	B-234	128.0	13.1	129.1	12.3	0.9	-0.8
5/30/02	B-237	133.0	16.6	134.6	14.3	1.2	-2.3
5/31/02	B-248	127.9	14.8	125.1	13.2	-2.2	-1.6
6/3/02	B-254	132.0	14.4	130.7	13.4	-1.0	-1.0
6/5/02	B-259	130.7	15.4	127.7	13.9	-2.3	-1.5
6/5/02	B-261	130.8	18.0	128.4	15.1	-1.8	-2.9

Table E.4. Sand-Cone Correlation Documentation for the C-18 Pit Backfill

Date	Compaction Test ID	Nuclear Gauge Test		Sand-Cone Compaction Tests		Sand-Cone Correlation Results	
		In-Place Wet Unit Weight (lbs/cu ft)	Moisture Content (%)	In-Place Wet Unit Weight (lbs/cu ft)	Moisture Content (%)	Wet Unit Weight Variation (%)	Moisture Content Variation (%)
6/5/02	B-264	128.9	16.1	125.7	14.8	-2.5	-1.3
6/6/02	B-265	132.1	14.2	126.7	14.7	-4.1	0.5
6/6/02	B-270	131.4	18.4	132.1	13.5	0.5	-4.9
6/24/02	B-272	128.8	11.3	131.6	10.7	2.2	-0.6
6/28/02	B-279	128.0	12.5	130.2	10.2	1.7	-2.3
7/2/02	B-284	132.3	13.0	128.6	12.4	-2.8	-0.6
7/9/02	B-294	129.5	15.3	132.9	15.0	2.6	-0.3
7/9/02	B-297	125.8	11.8	128.1	10.6	1.8	-1.2
6/10/03	B-303	128.4	11.7	128.8	11.1	0.3	-0.6
8/11/03	B-308R	125.1	9.8	126.4	7.6	1.0	-2.2
8/11/03	B-308R2	133.1	14.2	136.6	12.9	2.6	-1.3
6/9/04	B-322	133.6	14.9	135.5	11.9	1.4	-3.0
6/25/04	B-326	133.3	13.6	135.8	10.6	1.9	-3.0
7/9/04	B-331	131.4	13.2	133.3	10.8	1.4	-2.4
7/12/04	B-336	134.5	11.6	130.9	10.9	-2.7	-0.7
7/13/04	B-339	131.1	13.4	132.7	12.7	1.2	-0.7
5/25/05	B-347	127.2	15.9	128.7	13.8	1.2	-2.1
5/26/05	B-352	133.1	16.1	133.0	13.8	-0.1	-2.3
5/26/05	B-355	131.8	14.4	129.5	12.7	-1.7	-1.7
5/27/05	B-359	125.9	11.4	125.3	10.9	-0.5	-0.5
5/31/05	B-360	126.9	11.9	125.3	10.6	-1.3	-1.3
6/1/05	B-365	124.8	11.4	124.9	11.5	0.1	0.1
6/2/05	B-375	131.9	14.8	131.6	13.8	-0.2	-1.0
6/3/05	B-384	124.1	16.9	122.8	14.6	-1.0	-2.3
6/3/05	B-386	126.0	13.3	126.4	12.0	0.3	-1.3
6/6/05	B-389	126.4	15.0	124.7	13.7	-1.3	-1.3
6/9/05	B-392	130.8	13.0	128.7	12.1	-1.6	-0.9
6/10/05	B-395	127.4	13.5	126.6	12.0	-0.6	-1.5
6/13/05	B-401	130.2	15.4	131.0	12.6	0.6	-2.8
6/15/05	B-407	130.4	15.9	132.3	13.7	1.5	-2.2
6/26/05	B-416	125.5	11.1	128.3	8.8	2.2	-2.3
10/24/05	B-422	128.3	12.9	129.4	11.8	0.9	-1.1
10/24/05	B-425	131.7	13.4	135.3	11.3	2.7	-2.1
10/24/05	B-428	133.5	14.5	132.4	12.9	-0.8	-1.6
10/28/05	B-433	129.2	12.2	130.4	12.0	0.9	-0.2
10/28/05	B-436	132.9	14.5	131.9	13.4	-0.8	-1.1
				Number of sand-cone tests:		93	
				average (on absolute value):		**1.4**	**1.5**
				standard deviation:		1.0	1.0

pcf - pounds per cubic foot

Note:
For backfill materials, a sand-cone correlation test was performed for every five nuclear gauge tests. Correlations were deemed acceptable if the average of ten nuclear test results vs. sand cone test results comparisons met the following criteria:

sand-cone method wet density: +/- 3%
sand-cone method moisture content: +/- 2%

As shown above and in the plot below, most results closely correlated and variations were generally well below the above criteria. In cases where discrete variations exceeded these criteria (see highlighted cells above), the running averages were still well below 2% for both endpoints.