

**EIGHTH PROGRESS REPORT  
NORFOLK SOUTHERN RAILWAY COMPANY  
OLD ATHENS TURNPIKE LEAD SITE  
OLD ATHENS ROAD  
PRINCETON, WEST VIRGINIA  
NSRC FILE NO. SA08-253-001**

**November 12, 2009**

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## **1.0 INTRODUCTION**

This Progress Report was prepared on behalf of Norfolk Southern Railway Company (NSRC) by Marshall Miller & Associates (MM&A). The Progress Report describes response actions in accordance with Section 8.7 of the Administrative Settlement and Order on Consent for Removal Response Action, hereafter referred to as the Settlement Agreement (SA), between the United States Environmental Protection Agency (USEPA) and NSRC. The effective date of the SA was July 2, 2009. Response actions are being performed in the Old Athens Turnpike right-of-way in accordance with the Response Action Plan (RAP) submitted to USEPA on July 6, 2009, as amended on July 16, 2009. NSRC received USEPA's July 29, 2009 approval of the RAP, as well as notification of access to the portion of the Site not owned by NSRC, on July 31, 2009. In accordance with the SA, NSRC commenced on-site implementation of the RAP on August 5, 2009, within seven business days of receipt of the RAP approval and access notification. NSRC submitted the First Progress Report on August 6, 2009, the Second Progress Report on August 20, 2009, the Third Progress Report on September 3, 2009, the Fourth Progress Report on September 17, 2009, the Fifth Progress Report on October 1, 2009, the Sixth Progress Report on October 15, 2009, and the Seventh Progress Report on October 29, 2009, each providing information on activities performed during the fourteen days following the respective prior progress report. In accordance with the SA, this Eighth Progress Report provides information on activities performed during the fourteen days following the Seventh Progress Report.

The Old Athens Turnpike right-of-way (hereafter referred to as the R-O-W) is located in Princeton, Mercer County, West Virginia. For purposes of the RAP, the Site consists of (1) a portion of the R-O-W (approximately 50 feet wide by 300 feet long) adjacent to the former salvage facility (referred to herein as the S.S. Belcher property) that was operated by S.S. Belcher & Company (S.S. Belcher) on NSRC property, and (2) a small overwash area (approximately 30 feet wide by 50 feet long) located on NSRC's property formerly leased to S.S. Belcher. NSRC owns Parcel Number 9 in Princeton, Mercer County, West Virginia, which extends southwestward to the centerline of the former R-O-W. Access to the portion of the Site not owned by NSRC was granted to USEPA by a warrant issued on July 23,

2009. USEPA notified NSRC of the issuance of the warrant granting NSRC access, as USEPA's agent for that purpose, by letter dated July 29, 2009. Lead-impacted surface soil is being assessed and remediated at the R-O-W in accordance with the approved RAP.

## 2.0 RESPONSE ACTIONS COMPLETED DURING REPORTING PERIOD

In accordance with the SA and RAP, MM&A has completed the following activities during this reporting period:

1. Maintained high visibility security fencing and keep out signs around the R-O-W to deter access by persons not conducting or overseeing the response actions, to preclude interference with the performance of the response activities and to provide for safety of the public during non-working hours.
2. Post-excavation confirmation soil samples were collected on October 27, 2009. The same grid system that was used for delineation and excavation was used for confirmation soil sampling. In situ XRF screening of soil was conducted at the center and nodes of each 625 ft<sup>2</sup> grid square. One prepared XRF sample was collected from the location having the highest in situ screening reading within each 625 ft<sup>2</sup> grid square (**Map 1, Appendix A**). Where screening results are within 60 percent of the cleanup goal of 400 mg/kg ( $\geq 240$  mg/kg), a soil sample was submitted to Lancaster Laboratories for analysis of total lead in accordance with USEPA Method 6010C. More than 10 percent (1:10) of the prepared XRF confirmation samples were submitted for laboratory analysis of total lead using USEPA Method 6010C.
3. The average dry weight XRF total lead concentration was calculated from all of the prepared post-excavation confirmation soil samples. Since the average dry weight total lead concentration was 123 mg/kg and this is less than Site cleanup goal of 400 mg/kg for average total lead, the excavation can be backfilled using clean material without a fabric filter or liner.
4. Soil samples were collected from a possible borrow material location, the Cherry Hollow borrow site. Borrow materials at the Cherry Hollow site are comprised of silty clay or clayey silt. Five point composite soil samples were collected from each 300 tons of possible borrow material. The composite soil samples were submitted to Lancaster for analyses of target compound list (TCL) volatile organic compounds (VOCs) per USEPA Method 8260B, polychlorinated biphenyls (PCB) per USEPA Method 8082, total petroleum hydrocarbons (TPH)-diesel range organics (DRO)/oil range organics (ORO) in accordance with USEPA Method 8015B, TCL semi-volatile organic compounds (SVOCs) per USEPA 8270C, organochloride pesticides per USEPA Method 8081A, chlorinated herbicides per USEPA Method 8151A, target analyte list (TAL) metals per USEPA Methods 6010C/7470A, pH per USEPA Method 9045C Modified, ammonia

nitrogen per USEPA Method 4500 NH<sub>3</sub> B-C Modified and phosphorous per USEPA Method 365.1. VOC samples were collected using Terracore<sup>®</sup> samplers in accordance with USEPA Method 5035.

### **3.0 PROBLEMS ENCOUNTERED OR ANTICIPATED**

Backfilling of the Site excavation was to be completed using clean fill material from the Green Valley Site. However, the borrow material from the Green Valley Site is no longer available.

### **4.0 ACTIONS TO PREVENT OR MITIGATE PROBLEMS**

A new borrow material site was located at Cherry Hollow and composite soil samples are being tested for waste characterization parameters to verify that this soil is suitable as “clean” backfill.

### **5.0 SCHEDULE FOR COMPLETING PROBLEM MITIGATION**

As soon as waste characterization results are evaluated and determined to be acceptable, the Cherry Hollow Borrow material will be available. Weather permitting, it is anticipated that backfilling of the excavation can be completed by November 20, 2009.

### **6.0 COPIES OF ANALYTICAL DATA**

Copies of preliminary XRF and laboratory analytical data are included in **Table 1**, **Appendix B** and a copy of the certificate-of-analysis and chain-of-custody are included in **Appendix C**.

### **7.0 RESPONSE ACTION PLAN MODIFICATIONS**

No other modifications were made to the response action, the RAP or the schedule.

### **8.0 REMEDIAL ACTIONS OVER NEXT FOURTEEN DAYS**

The following response actions are anticipated to be completed in the next fourteen days in accordance with the schedule included in the RAP:

1. Backfilling will be conducted in accordance with Item 14 of Section 2.1 of the RAP, including sampling requirements, and ground cover will be placed in accordance with Item 15 of Section 2.1 of the RAP. Since the average dry weight XRF total lead concentration for post-excavation soil samples is below 400 mg/kg, the excavation will be backfilled using clean material without a fabric filter or liner.

*Appendix A*  
*Maps*

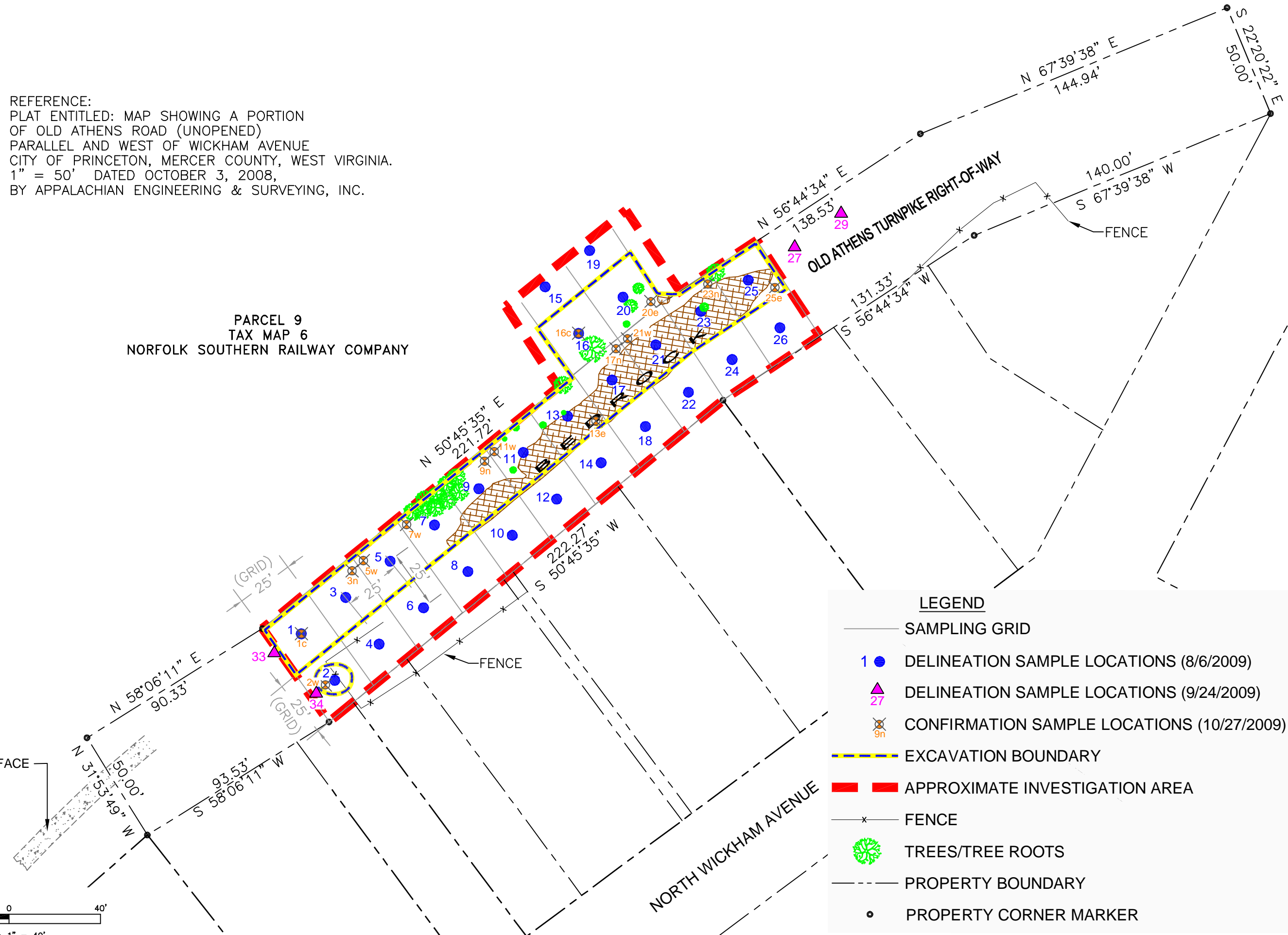
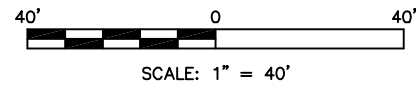




REFERENCE:  
 PLAT ENTITLED: MAP SHOWING A PORTION  
 OF OLD ATHENS ROAD (UNOPENED)  
 PARALLEL AND WEST OF WICKHAM AVENUE  
 CITY OF PRINCETON, MERCER COUNTY, WEST VIRGINIA.  
 1" = 50' DATED OCTOBER 3, 2008,  
 BY APPALACHIAN ENGINEERING & SURVEYING, INC.

PARCEL 9  
 TAX MAP 6  
 NORFOLK SOUTHERN RAILWAY COMPANY

GRAVEL SURFACE



**LEGEND**

- SAMPLING GRID
- 1 ● DELINEATION SAMPLE LOCATIONS (8/6/2009)
- 27 ▲ DELINEATION SAMPLE LOCATIONS (9/24/2009)
- 9n ⊗ CONFIRMATION SAMPLE LOCATIONS (10/27/2009)
- EXCAVATION BOUNDARY
- APPROXIMATE INVESTIGATION AREA
- FENCE
- TREES/TREE ROOTS
- PROPERTY BOUNDARY
- PROPERTY CORNER MARKER

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No.	Date	Revision

DRAWN:	DJD	GR
CHECKED:	NOVEMBER 2009	
DATE:	1" = 40'	
SCALE:	PROJECT NO.:	NS1691
	FILE NO.:	NS1691

OLD ATHENS TURNPIKE  
 PRINCETON, WEST VIRGINIA  
 EXCAVATION AND SAMPLE LOCATIONS

*Appendix B*  
*Tables*

**TABLE 1**  
**SOIL ANALYSIS LOG**  
**OLD ATHENS TURNPIKE SITE, PRINCETON, WEST VIRGINIA**

Sample Identification	Sample Date	Sample Time	Depth Interval (Feet)	Samplers	In Situ Results		Prepared Results		Laboratory Results ppm	Notes
					XRF ppm	Error ppm	XRF ppm	Error +/- ppm		
G-1A	8/6/2009	1145	0-0.5	JK/GR	3308	74	3288	77	NA	none
G-1B	8/6/2009	1145	0.5-1	JK/GR	1484	16	1727	54	1550	XRF to Lab Split for G-1B
G-1E (G-1B Split)	8/6/2009	1145	0.5-1	JK/GR	1459	56	1741	55	NA	XRF to XRF Split for G-1B
G-1C	8/6/2009	1145	1-2	JK/GR	17	8	19	9	NA	none
G-1D	8/6/2009	1145	2-3	JK/GR	<11.6	NA	<12.8	NA	NA	none
G-2A	8/6/2009	1153	0-0.5	JK/GR	61	12	56	10	NA	none
G-2B	8/6/2009	1153	0.5-1	JK/GR	171	13	271	21	NA	none
G-2C	8/6/2009	1153	1-2	JK/GR	336	24	463	29	NA	none
G-2D	8/6/2009	1153	2-3	JK/GR	<10.2	NA	19	10	NA	none
G-3A	8/6/2009	1202	0-0.5	JK/GR	3506	77	9727	146	NA	none
G-3B	8/6/2009	1202	0.5-1	JK/GR	280	22	381	26	NA	none
G-4A	8/6/2009	1210	0-0.5	JK/GR	416	26	368	25	383	XRF to Lab Split for G-4A
G-4E (G-4A Split)	8/6/2009	1210	0-0.5	JK/GR	383	25	395	26	NA	XRF to XRF Split for G-4A
G-4B	8/6/2009	1210	0.5-1	JK/GR	<13.0	NA	31	11	NA	none
G-4C	8/6/2009	1210	1-2	JK/GR	<11.7	NA	16	10	NA	none
G-4D	8/6/2009	1210	2-3	JK/GR	<9.2	NA	<13.4	NA	NA	none
G-5A	8/6/2009	1218	0-0.5	JK/GR	5448	92	11500	200	NA	none
G-5B	8/6/2009	1218	0.5-1	JK/GR	82	13	112	16	NA	none
G-5C	8/6/2009	1218	1-2	JK/GR	37	11	23	10	NA	none
G-5D	8/6/2009	1218	2-3	JK/GR	<11.0	NA	22	10	NA	none
G-6A	8/6/2009	1350	0-0.5	JK/GR	53	13	96	14	NA	none
G-6B	8/6/2009	1350	0.5-1	JK/GR	42	12	55	12	NA	none
G-6C	8/6/2009	1350	1-2	JK/GR	22	10	32	11	NA	none
G-7A	8/6/2009	1225	0-0.5	JK/GR	24600	300	107400	900	NA	none
G-7B	8/6/2009	1225	0.5-1	JK/GR	2144	64	4759	114	NA	none
G-7C	8/6/2009	1225	1-2	JK/GR	6816	111	15600	200	9290	XRF to Lab Split for G-7C
G-7E (G7C Split)	8/6/2009	1225	1-2	JK/GR	7169	116	12500	200	9100	XRF-XRF/Lab-Lab Split for G-7C
G-7D	8/6/2009	1225	2-3	JK/GR	74	13	154	17	NA	none
G-8A	8/6/2009	1358	0-0.5	JK/GR	112	14	215	20	NA	none

**TABLE 1**  
**SOIL ANALYSIS LOG**  
**OLD ATHENS TURNPIKE SITE, PRINCETON, WEST VIRGINIA**

Sample Identification	Sample Date	Sample Time	Depth Interval (Feet)	Samplers	In Situ Results		Prepared Results		Laboratory Results ppm	Notes
					XRF ppm	Error ppm	XRF ppm	Error +/- ppm		
G-8B	8/6/2009	1358	0.5-1	JK/GR	86	13	93	14	NA	none
G-8C	8/6/2009	1358	1-2	JK/GR	<9.8	NA	<11.5	NA	NA	none
G-8D	8/6/2009	1358	2-2.5	JK/GR	23	9	36	11	NA	Direct-push refusal on bedrock.
G-9A	8/6/2009	1233	0-0.5	JK/GR	<b>7040</b>	115	<b>16600</b>	200	NA	none
G-9B	8/6/2009	1233	0.5-1	JK/GR	<b>47600</b>	400	<b>78300</b>	800	NA	none
G-9C	8/6/2009	1233	1-2	JK/GR	135	17	146	18	NA	none
G-9D	8/6/2009	1233	2-3	JK/GR	93	14	217	23	NA	none
G-10A	8/6/2009	1405	0-0.5	JK/GR	58	11	139	17	NA	none
G-10B	8/6/2009	1405	0.5-1	JK/GR	34	10	202	19	NA	none
G-10C	8/6/2009	1405	1-2	JK/GR	<13.0	NA	21	10	NA	none
G-10D	8/6/2009	1405	2-3	JK/GR	<12.1	NA	18	10	NA	none
G-11A	8/6/2009	1415	0-0.5	JK/GR	281	25	979	40	NA	none
G-11B	8/6/2009	1415	0.5-1	JK/GR	<11.3	NA	25	11	NA	none
G-11C	8/6/2009	1415	1-2	JK/GR	<8.1	NA	<12.8	NA	NA	none
G-12A	8/6/2009	1425	0-0.5	JK/GR	51	10	82	14	NA	none
G-12B	8/6/2009	1425	0.5-1	JK/GR	29	9	31	11	NA	none
G-12C	8/6/2009	1425	1-2	JK/GR	<9.9	NA	20	9	NA	none
G-12D	8/6/2009	1425	2-2.75	JK/GR	<7.4	NA	<10.6	NA	NA	none
G-13A	8/6/2009	1432	0-0.5	JK/GR	<b>716</b>	33	<b>771</b>	37	NA	none
G-13B	8/6/2009	1432	0.5-1	JK/GR	18	9	39	11	NA	none
G-13C	8/6/2009	1432	1-2	JK/GR	12	8	45	12	NA	Direct-puch refusal on bedrock
G-14A	8/6/2009	1440	0-0.5	JK/GR	66	11	124	15	NA	none
G-14B	8/6/2009	1440	0.5-1	JK/GR	67	13	106	15	NA	none
G-14C	8/6/2009	1440	1-2	JK/GR	<9.9	NA	<11.4	NA	NA	none
G-14D	8/6/2009	1440	2-2.2	JK/GR	<8.4	NA	14	9	NA	Direct-push refusal on bedrock
G-15A	8/6/2009	1446	0-0.5	JK/GR	<b>624</b>	29	370	25	NA	none
G-15B	8/6/2009	1446	0.5-1	JK/GR	67	14	78	13	NA	none
G-15C	8/6/2009	1446	1-2	JK/GR	26	11	70	13	NA	none
G-15D	8/6/2009	1446	2-3	JK/GR	16	10	76	14	NA	none
G-16A	8/6/2009	1453	0-0.5	JK/GR	<b>718</b>	32	<b>971</b>	39	NA	none
G-16B	8/6/2009	1453	0.5-1	JK/GR	<10.7	NA	17	9	NA	none
G-16C	8/6/2009	1453	1-2	JK/GR	<10.6	NA	15	9	NA	none

**TABLE 1**  
**SOIL ANALYSIS LOG**  
**OLD ATHENS TURNPIKE SITE, PRINCETON, WEST VIRGINIA**

Sample Identification	Sample Date	Sample Time	Depth Interval (Feet)	Samplers	In Situ Results		Prepared Results		Laboratory Results ppm	Notes
					XRF ppm	Error ppm	XRF ppm	Error +/- ppm		
G-16D	8/6/2009	1453	2-3	JK/GR	318	33	229	19	231	XRF to Lab Split for G-16D
G-16E (G-16D Split)	8/6/2009	1453	2-3	JK/GR	213	19	224	19	NA	XRF to XRF Split for G-16D
G-17A	8/6/2009	1500	0.25	JK/GR	24700	200	30900	300	NA	none
G-18A	8/6/2009	1505	0-0.5	JK/GR	54	10	162	17	NA	none
G-18B	8/6/2009	1505	0.5-1	JK/GR	56	11	57	12	NA	Direct-push refusal on bedrock
G-19A	8/6/2009	1510	0-0.5	JK/GR	139	15	259	21	NA	none
G-19B	8/6/2009	1510	0.5-1	JK/GR	<11.3	NA	<11.7	NA	NA	none
G-19C	8/6/2009	1510	1-2	JK/GR	<10.5	NA	<12.8	NA	NA	none
G-19D	8/6/2009	1510	2-3	JK/GR	<9.9	NA	<12.8	NA	NA	none
G-20A	8/6/2009	1518	0-0.5	JK/GR	16900	200	101100	900	NA	none
G-20B	8/6/2009	1518	0.5-1	JK/GR	208	19	90	17	NA	none
G-20C	8/6/2009	1518	1-2	JK/GR	13	8	21	9	NA	none
G-20D	8/6/2009	1518	2-2.75	JK/GR	4638	87	1228	44	NA	Direct-push refusal on bedrock
G-21A	8/6/2009	1525	0-0.5	JK/GR	7062	112	14500	200	NA	none
G-21B	8/6/2009	1525	0.5-1	JK/GR	49	10	747	38	NA	Direct-push refusal on bedrock
G-22A	8/6/2009	1532	0-0.5	JK/GR	54	8	75	13	67.0	XRF to Lab Split for G-22A
G-22E (G-22A Split)	8/6/2009	1532	0-0.5	JK/GR	45	11	80	13	NA	XRF to XRF Split for G-22A
G-22B	8/6/2009	1532	0.5-1	JK/GR	34	11	47	12	NA	none
G-22C	8/6/2009	1532	1-2	JK/GR	<10.2	NA	<12.1	NA	NA	none
G-22D	8/6/2009	1532	2-3	JK/GR	<11.2	NA	<11.5	NA	NA	none
G-23A	8/6/2009	1538	0-0.5	JK/GR	768	33	1582	53	NA	none
G-23B	8/6/2009	1538	0.5-1	JK/GR	475	28	799	40	NA	none
G-23C	8/6/2009	1538	1-1.5	JK/GR	612	31	553	32	NA	Direct-push refusal on bedrock
G-24A	8/6/2009	1545	0-0.5	JK/GR	85	12	228	30	NA	none
G-24B	8/6/2009	1545	0.5-1	JK/GR	38	10	62	14	NA	none
G-24C	8/6/2009	1545	1-2	JK/GR	23	9	<13.3	NA	NA	Direct-push refusal on bedrock
G-25A	8/6/2009	1552	0-0.25	JK/GR	764	31	1676	53	NA	Direct-push refusal on bedrock
G-26A	8/6/2009	1556	0-0.5	JK/GR	35	9	71	12	NA	none
G-26B	8/6/2009	1556	0.5-1	JK/GR	<12.3	NA	15	9	NA	none
G-26C	8/6/2009	1556	1-2	JK/GR	<12.3	NA	<13.6	NA	NA	none
G-26D	8/6/2009	1556	2-3	JK/GR	<10.8	NA	7	9	NA	none
G-27A	9/24/2009	1415	0-0.5	GR	238	27	380	50	NA	none

**TABLE 1**  
**SOIL ANALYSIS LOG**  
**OLD ATHENS TURNPIKE SITE, PRINCETON, WEST VIRGINIA**

Sample Identification	Sample Date	Sample Time	Depth Interval (Feet)	Samplers	In Situ Results		Prepared Results		Laboratory Results ppm	Notes
					XRF ppm	Error ppm	XRF ppm	Error +/- ppm		
G-27B	9/24/2009	1421	0.5-0.75	GR	147	29	253	43	NA	refusal on rock
G-29A	9/24/2009	1445	0-0.5	GR	228	33	364	44	NA	none
G-29B	9/24/2009	1449	0.5-1	GR	208	34	263	37	NA	none
G-29C	9/24/2009	1456	1-2	GR	71	21	153	32	NA	refusal on rock
G-33A	9/24/2009	1547	0-0.5	GR	94	28	146	31	NA	refusal on rock
G-34A	9/24/2009	1632	0-0.5	GR	50	18	66	23	NA	none
G-34B	9/24/2009	1639	0.5-1	GR	32	16	47	20	NA	none
G-34C	9/24/2009	1648	1-2	GR	57	19	34	17	28.1	XRF to Lab Split for G-34C
G-34E (G-34C Split)	9/24/2009	1648	1-2	GR	39	18	26	16	NA	XRF to XRF Split for G-34C
G-34D	9/24/2009	1656	2-3	GR	37	18	63	22	NA	none
G-34D2	9/24/2009	1702	3-4	GR	33	18	71	23	NA	none
G-34D3	9/24/2009	1710	4-4.7	GR	38	16	62	22	NA	none
G-1c	10/27/2009	0956	surface*	CC	147	31	NA	NA	NA	collected this screening location
G-1n	10/27/2009	0958	surface*	CC	131	32	NA	NA	NA	in situ unprepared confirmation
G-1e	10/27/2009	0946	surface*	CC	97	29	NA	NA	NA	in situ unprepared confirmation
G-1s	10/27/2009	0958	surface*	CC	131	34	NA	NA	NA	in situ unprepared confirmation
G-1w	10/27/2009	1000	surface*	CC	146	57	NA	NA	NA	in situ unprepared confirmation
G-2c	10/27/2009	1004	surface*	CC	85	30	NA	NA	NA	in situ unprepared confirmation
G-2n	10/27/2009	1007	surface*	CC	111	32	NA	NA	NA	in situ unprepared confirmation
G-2e	10/27/2009	1008	surface*	CC	111	28	NA	NA	NA	in situ unprepared confirmation
G-2s	10/27/2009	1009	surface*	CC	140	39	NA	NA	NA	in situ unprepared confirmation
G-2w	10/27/2009	1010	surface*	CC	197	37	NA	NA	NA	collected this screening location
G-3c	10/27/2009	0945	surface*	CC	110	25	NA	NA	NA	in situ unprepared confirmation
G-3n	10/27/2009	0944	surface*	CC	228	39	NA	NA	NA	collected this screening location
G-3e	10/27/2009	0943	surface*	CC	150	31	NA	NA	NA	in situ unprepared confirmation
G-3s	10/27/2009	0946	surface*	CC	97	29	NA	NA	NA	in situ unprepared confirmation
G-3w	10/27/2009	0948	surface*	CC	131	32	NA	NA	NA	in situ unprepared confirmation
G-5c	10/27/2009	0942	surface*	CC	117	28	NA	NA	NA	in situ unprepared confirmation
G-5n	10/27/2009	0940	surface*	CC	168	31	NA	NA	NA	in situ unprepared confirmation
G-5e	10/27/2009	0934	surface*	CC	99	24	NA	NA	NA	in situ unprepared confirmation
G-5s	10/27/2009	0943	surface*	CC	150	31	NA	NA	NA	in situ unprepared confirmation
G-5w	10/27/2009	0944	surface*	CC	288	39	NA	NA	NA	collected this screening location

**TABLE 1**  
**SOIL ANALYSIS LOG**  
**OLD ATHENS TURNPIKE SITE, PRINCETON, WEST VIRGINIA**

Sample Identification	Sample Date	Sample Time	Depth Interval (Feet)	Samplers	In Situ Results		Prepared Results		Laboratory Results ppm	Notes
					XRF ppm	Error ppm	XRF ppm	Error +/- ppm		
G-7c	10/27/2009	0931	surface*	CC	161	30	NA	NA	NA	in situ unprepared confirmation
G-7n	10/27/2009	0929	surface*	CC	70	23	NA	NA	NA	in situ unprepared confirmation
G-7e	10/27/2009	0928	surface*	CC	73	25	NA	NA	NA	in situ unprepared confirmation
G-7s	10/27/2009	0934	surface*	CC	99	24	NA	NA	NA	in situ unprepared confirmation
G-7w	10/27/2009	0940	surface*	CC	168	31	NA	NA	NA	collected this screening location
G-9c	10/27/2009	0925	surface*	CC	246	41	NA	NA	NA	in situ unprepared confirmation
G-9n	10/27/2009	0922	surface*	CC	299	44	NA	NA	NA	collected this screening location
G-9e	10/27/2009	0922	surface*	CC	50	19	NA	NA	NA	in situ unprepared confirmation
G-9s	10/27/2009	0929	surface*	CC	73	25	NA	NA	NA	rock
G-9w	10/27/2009	0929	surface*	CC	70	23	NA	NA	NA	in situ unprepared confirmation
G-11c	10/27/2009	0920	surface*	CC	216	40	NA	NA	NA	in situ unprepared confirmation
G-11n	10/27/2009	0918	surface*	CC	113	29	NA	NA	NA	in situ unprepared confirmation
G-11e	10/27/2009	0916	surface*	CC	124	30	NA	NA	NA	rock
G-11s	10/27/2009	0921	surface*	CC	50	19	NA	NA	NA	in situ unprepared confirmation
G-11w	10/27/2009	0922	surface*	CC	299	44	NA	NA	NA	collected this screening location
G-13c	10/27/2009	0911	surface*	CC	132	33	NA	NA	NA	rock
G-13n	10/27/2009	0912	surface*	CC	149	31	NA	NA	NA	in situ unprepared confirmation
G-13e	10/27/2009	0852	surface*	CC	191	44	NA	NA	NA	collected this screening location
G-13s	10/27/2009	0916	surface*	CC	124	30	NA	NA	NA	rock
G-13w	10/27/2009	0918	surface*	CC	113	29	NA	NA	NA	in situ unprepared confirmation
G-16c	10/27/2009	0905	surface*	CC	205	44	NA	NA	NA	collected this screening location
G-16n	10/27/2009	0904	surface*	CC	99	25	NA	NA	NA	in situ unprepared confirmation
G-16e	10/27/2009	0838	surface*	CC	203	36	NA	NA	NA	in situ unprepared confirmation
G-16s	10/27/2009	0907	surface*	CC	191	35	NA	NA	NA	in situ unprepared confirmation
G-16w	10/27/2009	0908	surface*	CC	187	34	NA	NA	NA	in situ unprepared confirmation
G-17c	10/27/2009	0845	surface*	CC	279	43	NA	NA	NA	rock
G-17n	10/27/2009	0838	surface*	CC	203	36	NA	NA	NA	collected this screening location
G-17e	10/27/2009	0836	surface*	CC	62	21	NA	NA	NA	rock
G-17s	10/27/2009	0852	surface*	CC	191	44	NA	NA	NA	in situ unprepared confirmation
G-17w	10/27/2009	0854	surface*	CC	145	32	NA	NA	NA	in situ unprepared confirmation
G-20c	10/27/2009	0858	surface*	CC	120	29	NA	NA	NA	in situ unprepared confirmation
G-20n	10/27/2009	0900	surface*	CC	105	28	NA	NA	NA	in situ unprepared confirmation

**TABLE 1**  
**SOIL ANALYSIS LOG**  
**OLD ATHENS TURNPIKE SITE, PRINCETON, WEST VIRGINIA**

Sample Identification	Sample Date	Sample Time	Depth Interval (Feet)	Samplers	In Situ Results		Prepared Results		Laboratory Results ppm	Notes
					XRF ppm	Error ppm	XRF ppm	Error +/- ppm		
G-20e	10/27/2009	0902	surface*	CC	216	49	NA	NA	NA	collected this screening location
G-20s	10/27/2009	0838	surface*	CC	203	36	NA	NA	NA	in situ unprepared confirmation
G-20w	10/27/2009	0904	surface*	CC	99	25	NA	NA	NA	in situ unprepared confirmation
G-21c	10/27/2009	0835	surface*	CC	180	32	NA	NA	NA	rock
G-21n	10/27/2009	0831	surface*	CC	80	26	NA	NA	NA	in situ unprepared confirmation
G-21e	10/27/2009	0829	surface*	CC	122	36	NA	NA	NA	in situ unprepared confirmation
G-21s	10/27/2009	0836	surface*	CC	62	21	NA	NA	NA	rock
G-21w	10/27/2009	0838	surface*	CC	203	36	NA	NA	NA	collected this screening location
G-23c	10/27/2009	0818	surface*	CC	68	25	NA	NA	NA	rock
G-23n	10/27/2009	0820	surface*	CC	35	18	NA	NA	NA	collected this screening location
G-23e	10/27/2009	0812	surface*	CC	27	18	NA	NA	NA	in situ unprepared confirmation
G-23s	10/27/2009	0829	surface*	CC	122	36	NA	NA	NA	rock
G-23w	10/27/2009	0831	surface*	CC	80	25	NA	NA	NA	rock
G-25c	10/27/2009	0805	surface*	CC	49	21	NA	NA	NA	in situ unprepared confirmation
G-25n	10/27/2009	0810	surface*	CC	110	25	NA	NA	NA	in situ unprepared confirmation
G-25e	10/27/2009	0811	surface*	CC	131	27	NA	NA	NA	collected this screening location
G-25s	10/27/2009	0812	surface*	CC	27	18	NA	NA	NA	in situ unprepared confirmation
G-25w	10/27/2009	0814	surface*	CC	78	23	NA	NA	NA	trees
G-1c	10/27/2009	1045	0-0.5*	JS	37	15	56	21	NA	none
G-2w	10/27/2009	1047	0-0.5*	GR	121	24	202	36	193	MS/MSD collected.
G-2wDUP	10/27/2009	1047	0-0.5*	lab	121	24	202	36	162	Internal split by laboratory
G-3n	10/27/2009	1055	0-0.5*	JS	24	14	52	20	NA	none
G-5w	10/27/2009	1055	0-0.5*	GR	<123	NA	36	14	NA	none
G-7w	10/27/2009	1100	0-0.5*	GR	114	23	167	33	NA	none
G-9n	10/27/2009	1100	0-0.5*	JS	109	23	286	40	322	none
G-9p	10/27/2009	1100	0-0.5*	JS	280	36	301	40	NA	XRF split for G-9n
G-11w	10/27/2009	1105	0-0.5*	GR	521	49	486	50	404	none
G-11p	10/27/2009	1105	0-0.5*	GR	413	44	439	49	434	XRF and Lab Split for G-11w
G-13e	10/27/2009	1105	0-0.5*	JS	251	34	312	42	278	none
G-16c	10/27/2009	1110	0-0.5*	GR	<17.9	NA	21	11	NA	none
G-17n	10/27/2009	1110	0-0.5*	JS	90	22	82	23	NA	none
G-20e	10/27/2009	1115	0-0.5*	LK	28	15	48	19	NA	none

**TABLE 1**  
**SOIL ANALYSIS LOG**  
**OLD ATHENS TURNPIKE SITE, PRINCETON, WEST VIRGINIA**

Sample Identification	Sample Date	Sample Time	Depth Interval (Feet)	Samplers	In Situ Results		Prepared Results		Laboratory Results ppm	Notes
					XRF ppm	Error ppm	XRF ppm	Error +/- ppm		
G-21w	10/27/2009	1115	0-0.5*	JS	99	22	<i>119</i>	27	NA	none
G-23n	10/27/2009	1120	0-0.5*	JS	<18.2	NA	< <i>20.8</i>	NA	NA	none
G-25e	10/27/2009	1120	0-0.5*	GR	71	20	<i>125</i>	30	NA	none
Average Confirmation Sample Lead Concentration							<i>123</i>			average is less than 400 mg/kg

XRF - X-ray fluorescence (Niton Model XL3t 500, Serial Number 30887). ppm or mg/kg - parts per million or milligrams per kilogram.

\* Surface of or depth below the bottom of the excavation.

< - not detected below the following level. NA - not applicable for error or not analyzed for lab. Levels exceeding 400 ppm are **bolded** and highlighted.

Confirmation soil sample XRF results are italicized.

DAILY QA/QC Check completed (XRF standards at beginning and end of day and replicates (low, mid and high) within 20% difference).

JK/GR - Samplers John Keczan and George Robertson. Samples were tracked on Lancaster Laboratories chain-of-custody (see certificate-of-analysis).

*Appendix C*  
*Laboratory Certificate-of-Analysis*  
*and Chain-of-Custody*



## ANALYTICAL RESULTS

Prepared for:

Norfolk Southern Railway Co  
110 Franklin Road SE  
Box 13  
Roanoke VA 24042-0013

540-981-4993

Prepared by:

Lancaster Laboratories  
2425 New Holland Pike  
Lancaster, PA 17605-2425

November 02, 2009

Project: Old Athens Turnpike, WV

Samples arrived at the laboratory on Thursday, October 29, 2009. The PO# for this group is 1-9-WV-PRTN-SA08 and the release number is SC8675#8453760. The group number for this submittal is 1168576.

<u>Client Sample Description</u>	<u>Lancaster Labs (LLI) #</u>
G-2W Grab Soil Sample	5820115
G-2WMS Matrix Spike Grab Soil Sample	5820116
G-2WMSD Matrix Spike Dup Grab Soil Sample	5820117
G-2WDUP Duplicate Grab Soil Sample	5820118
G-9N Grab Soil Sample	5820119
G-11P Grab Soil Sample	5820120
G-11W Grab Soil Sample	5820121
G-13E Grab Soil Sample	5820122

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Marshall Miller & Associates	Attn: Chuck Cline
ELECTRONIC COPY TO	Marshall Miller & Associates	Attn: George Robertson
1 COPY TO	Data Package Group	

Questions? Contact your Client Services Representative  
Megan A Moeller at (717) 656-2300

Respectfully Submitted,



Max E. Snavelly  
Senior Specialist



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** G-2W Grab Soil Sample  
Old Athens Turnpike, WV

LLI Sample # SW 5820115  
LLI Group # 1168576  
WV

**Project Name:** Old Athens Turnpike, WV

Collected: 10/27/2009 10:47 by GR

Account Number: 11716

Submitted: 10/29/2009 09:10

Norfolk Southern Railway Co

Reported: 11/02/2009 at 10:32

110 Franklin Road SE

Discard: 12/03/2009

Box 13

Roanoke VA 24042-0013

G-02W SDG#: ATH04-01BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>Metals</b>					
	SW-846 6010C		mg/kg	mg/kg	
06955	Lead	7439-92-1	193	4.02	5
<b>Wet Chemistry</b>					
	SM20 2540 G		%	%	
00111	Moisture	n.a.	25.4	0.50	1
"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	1	093020637001	10/30/2009 08:55	Joanne M Gates	5
10637	SW SW846 (IV) ICP Digest	SW-846 3050B	1	093020637001	10/29/2009 21:20	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09302820006A	10/29/2009 18:18	Scott W Freisher	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description: G-2WMS Matrix Spike Grab Soil Sample  
Old Athens Turnpike, WV**

**LLI Sample # SW 5820116  
LLI Group # 1168576  
WV**

**Project Name: Old Athens Turnpike, WV**

Collected: 10/27/2009 10:47 by GR

Account Number: 11716

Submitted: 10/29/2009 09:10

Norfolk Southern Railway Co

Reported: 11/02/2009 at 10:32

110 Franklin Road SE

Discard: 12/03/2009

Box 13

Roanoke VA 24042-0013

G-02W SDG#: ATH04-01MS

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>Metals</b>					
06955	Lead	SW-846 6010C 7439-92-1	mg/kg 219	mg/kg 4.02	5
<b>Wet Chemistry</b>					
00118	Moisture	SM20 2540 G n.a.	% 25.4	% 0.50	1

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	2	093020637001	10/30/2009 09:03	Joanne M Gates	5
10637	SW SW846 (IV) ICP Digest	SW-846 3050B	1	093020637001	10/29/2009 21:20	Annamaria Stipkovits	1
00118	Moisture	SM20 2540 G	1	09302820006A	10/29/2009 18:18	Scott W Freisher	1

**Sample Description: G-2WMSD Matrix Spike Dup Grab Soil Sample  
Old Athens Turnpike, WV**

**LLI Sample # SW 5820117  
LLI Group # 1168576  
WV**

**Project Name: Old Athens Turnpike, WV**

Collected: 10/27/2009 10:47 by GR

Account Number: 11716

Submitted: 10/29/2009 09:10

Norfolk Southern Railway Co

Reported: 11/02/2009 at 10:32

110 Franklin Road SE

Discard: 12/03/2009

Box 13

Roanoke VA 24042-0013

G-02W SDG#: ATH04-01MSD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>Metals</b>					
06955	Lead	SW-846 6010C 7439-92-1	mg/kg 193	mg/kg 4.02	5
<b>Wet Chemistry</b>					
00118	Moisture	SM20 2540 G n.a.	% 25.4	% 0.50	1

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	2	093020637001	10/30/2009 09:06	Joanne M Gates	5
10637	SW SW846 (IV) ICP Digest	SW-846 3050B	1	093020637001	10/29/2009 21:20	Annamaria Stipkovits	1
00118	Moisture	SM20 2540 G	1	09302820006A	10/29/2009 18:18	Scott W Freisher	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** G-2WDUP Duplicate Grab Soil Sample  
Old Athens Turnpike, WV

LLI Sample # SW 5820118  
LLI Group # 1168576  
WV

**Project Name:** Old Athens Turnpike, WV

Collected: 10/27/2009 10:47 by GR

Account Number: 11716

Submitted: 10/29/2009 09:10

Norfolk Southern Railway Co

Reported: 11/02/2009 at 10:32

110 Franklin Road SE

Discard: 12/03/2009

Box 13

Roanoke VA 24042-0013

G-02W SDG#: ATH04-01DUP

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>Metals</b>					
		<b>SW-846 6010C</b>	<b>mg/kg</b>	<b>mg/kg</b>	
06955	Lead	7439-92-1	162	4.02	5
<b>Wet Chemistry</b>					
		<b>SM20 2540 G</b>	<b>%</b>	<b>%</b>	
00118	Moisture	n.a.	25.4	0.50	1
00121	Moisture Duplicate	n.a.	24.8	0.50	1
The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.					

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	2	093020637001	10/30/2009 09:00	Joanne M Gates	5
10637	SW SW846 (IV) ICP Digest	SW-846 3050B	1	093020637001	10/29/2009 21:20	Annamaria Stipkovits	1
00118	Moisture	SM20 2540 G	1	09302820006A	10/29/2009 18:18	Scott W Freisher	1
00121	Moisture Duplicate	SM20 2540 G	1	09302820006A	10/29/2009 18:18	Scott W Freisher	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** G-9N Grab Soil Sample  
Old Athens Turnpike, WV

**LLI Sample #** SW 5820119  
**LLI Group #** 1168576  
WV

**Project Name:** Old Athens Turnpike, WV

**Collected:** 10/27/2009 11:00 by GR

**Account Number:** 11716

**Submitted:** 10/29/2009 09:10

Norfolk Southern Railway Co

**Reported:** 11/02/2009 at 10:32

110 Franklin Road SE

**Discard:** 12/03/2009

Box 13

Roanoke VA 24042-0013

G-09N SDG#: ATH04-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>Metals</b>					
	SW-846 6010C		mg/kg	mg/kg	
06955	Lead	7439-92-1	322	0.659	1
<b>Wet Chemistry</b>					
	SM20 2540 G		%	%	
00111	Moisture	n.a.	12.5	0.50	1
"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	1	093020637001	10/30/2009 05:16	John W Yanzuk II	1
10637	SW SW846 (IV) ICP Digest	SW-846 3050B	1	093020637001	10/29/2009 21:20	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09302820006A	10/29/2009 18:18	Scott W Freisher	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** G-11P Grab Soil Sample  
Old Athens Turnpike, WV

**LLI Sample #** SW 5820120  
**LLI Group #** 1168576  
WV

**Project Name:** Old Athens Turnpike, WV

**Collected:** 10/27/2009 11:05 by GR

**Account Number:** 11716

**Submitted:** 10/29/2009 09:10

Norfolk Southern Railway Co

**Reported:** 11/02/2009 at 10:32

110 Franklin Road SE

**Discard:** 12/03/2009

Box 13

Roanoke VA 24042-0013

G-11P SDG#: ATH04-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>Metals</b>					
	SW-846 6010C		mg/kg	mg/kg	
06955	Lead	7439-92-1	434	0.652	1
<b>Wet Chemistry</b>					
	SM20 2540 G		%	%	
00111	Moisture	n.a.	10.6	0.50	1
"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	1	093020637001	10/30/2009 05:20	John W Yanzuk II	1
10637	SW SW846 (IV) ICP Digest	SW-846 3050B	1	093020637001	10/29/2009 21:20	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09302820006A	10/29/2009 18:18	Scott W Freisher	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** G-11W Grab Soil Sample  
Old Athens Turnpike, WV

LLI Sample # SW 5820121  
LLI Group # 1168576  
WV

**Project Name:** Old Athens Turnpike, WV

Collected: 10/27/2009 11:05 by GR

Account Number: 11716

Submitted: 10/29/2009 09:10

Norfolk Southern Railway Co

Reported: 11/02/2009 at 10:32

110 Franklin Road SE

Discard: 12/03/2009

Box 13

Roanoke VA 24042-0013

G-11W SDG#: ATH04-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>Metals</b>					
		<b>SW-846 6010C</b>	<b>mg/kg</b>	<b>mg/kg</b>	
06955	Lead	7439-92-1	404	0.667	1
<b>Wet Chemistry</b>					
		<b>SM20 2540 G</b>	<b>%</b>	<b>%</b>	
00111	Moisture	n.a.	11.0	0.50	1
"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	1	093020637001	10/30/2009 05:29	John W Yanzuk II	1
10637	SW SW846 (IV) ICP Digest	SW-846 3050B	1	093020637001	10/29/2009 21:20	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09302820006A	10/29/2009 18:18	Scott W Freisher	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** G-13E Grab Soil Sample  
Old Athens Turnpike, WV

**LLI Sample #** SW 5820122  
**LLI Group #** 1168576  
WV

**Project Name:** Old Athens Turnpike, WV

**Collected:** 10/27/2009 11:05 by GR

**Account Number:** 11716

**Submitted:** 10/29/2009 09:10

Norfolk Southern Railway Co

**Reported:** 11/02/2009 at 10:32

110 Franklin Road SE

**Discard:** 12/03/2009

Box 13

Roanoke VA 24042-0013

G-13E SDG#: ATH04-05\*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>Metals</b>					
	SW-846 6010C		mg/kg	mg/kg	
06955	Lead	7439-92-1	278	0.737	1
<b>Wet Chemistry</b>					
	SM20 2540 G		%	%	
00111	Moisture	n.a.	21.0	0.50	1
"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	1	093020637001	10/30/2009 05:31	John W Yanzuk II	1
10637	SW SW846 (IV) ICP Digest	SW-846 3050B	1	093020637001	10/29/2009 21:20	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09302820006A	10/29/2009 18:18	Scott W Freisher	1

## Quality Control Summary

 Client Name: Norfolk Southern Railway Co  
 Reported: 11/02/09 at 10:32 AM

Group Number: 1168576

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 093020637001	Sample number(s): 5820115-5820122							
Lead	N.D.	0.600	mg/kg	95		85-114		
Batch number: 09302820006A	Sample number(s): 5820115-5820122							
Moisture				100		99-101		
Moisture				100		99-101		
Moisture Duplicate				100		99-101		

### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike  
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 093020637001	Sample number(s): 5820115-5820122 UNSPK: 5820115 BKG: 5820115								
Lead	130 (2)	2 (2)	75-125	12	20	144	121	18	20
Batch number: 09302820006A	Sample number(s): 5820115-5820122 BKG: 5820115								
Moisture						25.4	24.8	2	15
Moisture						25.4	24.8	2	15
Moisture Duplicate						25.4	24.8	2	15

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

# Analysis Request / Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 11716 Group# 1168576 Sample # 5820115-22 **COC # 0093966**

Please print. Instructions on reverse side correspond with circled numbers.

1-9-WV-PRTN-SAD8

<p>Client: <u>NSRC / MMA</u> Acct. #: _____</p> <p>Project Name#: <u>Old Athens (NS1691)</u> PWSID #: _____</p> <p>Project Manager: <u>George Robertson</u> P.O.#: _____</p> <p>Sampler: <u>GR/JS</u> Quote #: _____</p> <p>Name of state where samples were collected: <u>West Virginia</u></p>	<p>4</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Matrix</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Soil</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Water</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Other</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Total # of Containers</p>	<p>5</p> <p style="font-size: 1.5em;">Total Pb 6010C</p>	<p>For Lab Use Only</p> <p>FSC: _____</p> <p>SCR #: _____</p>
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Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	Remarks
G-2W	10/27	10:47	X		X			1 X	
G-2W MS	↓	10:47	X		X			1 X	
G-2W MSD		10:47	X		X			1 X	
G-9N		11:00	X		X			1 X	
G-11P		11:05	X		X			1 X	
G-11W		11:05	X		X			1 X	
G-13E		11:05	X		X			1 X	

<p>7 Turnaround Time Requested (TAT) (please circle): Normal <u>(Rush)</u> (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)</p> <p>Date results are needed: <u>10/30/09</u></p> <p>Rush results requested by (please circle): Phone Fax <u>(E-mail)</u></p> <p>Phone #: <u>276-322-5467</u> Fax #: <u>276-322-1510</u></p> <p>E-mail address: <u>george.robertson@MMA2.com</u></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Relinquished by: <u>Josh Sexton</u></td> <td style="width: 10%;">Date: <u>10/28</u></td> <td style="width: 10%;">Time: <u>15:25</u></td> <td style="width: 30%;">Received by:</td> <td style="width: 10%;">Date:</td> <td style="width: 10%;">Time:</td> </tr> <tr> <td>Relinquished by: <u>Josh Sexton</u></td> <td>Date: <u>10/28</u></td> <td>Time: <u>15:25</u></td> <td>Received by:</td> <td>Date:</td> <td>Time:</td> </tr> <tr> <td>Relinquished by:</td> <td>Date:</td> <td>Time:</td> <td>Received by:</td> <td>Date:</td> <td>Time:</td> </tr> <tr> <td>Relinquished by:</td> <td>Date:</td> <td>Time:</td> <td>Received by:</td> <td>Date:</td> <td>Time:</td> </tr> <tr> <td>Relinquished by:</td> <td>Date:</td> <td>Time:</td> <td>Received by:</td> <td>Date:</td> <td>Time:</td> </tr> </table>	Relinquished by: <u>Josh Sexton</u>	Date: <u>10/28</u>	Time: <u>15:25</u>	Received by:	Date:	Time:	Relinquished by: <u>Josh Sexton</u>	Date: <u>10/28</u>	Time: <u>15:25</u>	Received by:	Date:	Time:	Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Relinquished by:	Date:	Time:	Received by:	Date:	Time:
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Relinquished by:	Date:	Time:	Received by:	Date:	Time:																										
<p>8 Data Package Options (please circle if required)</p> <p>QC Summary <u>Type I (Tier I)</u></p> <p>Type II (Tier II)</p> <p>Type III (NJ Red. Del.)</p> <p>Type IV (CLP)</p>	<p>SDG Complete? Yes No</p> <p>Site-specific QC required? Yes No</p> <p>Internal Chain of Custody required? Yes No</p>																														

## Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>N.D.</b>	none detected	<b>BMQL</b>	Below Minimum Quantitation Level
<b>TNTC</b>	Too Numerous To Count	<b>MPN</b>	Most Probable Number
<b>IU</b>	International Units	<b>CP Units</b>	cobalt-chloroplatinate units
<b>umhos/cm</b>	micromhos/cm	<b>NTU</b>	nephelometric turbidity units
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>Cal</b>	(diet) calories	<b>lb.</b>	pound(s)
<b>meq</b>	milliequivalents	<b>kg</b>	kilogram(s)
<b>g</b>	gram(s)	<b>mg</b>	milligram(s)
<b>ug</b>	microgram(s)	<b>l</b>	liter(s)
<b>ml</b>	milliliter(s)	<b>ul</b>	microliter(s)
<b>m3</b>	cubic meter(s)	<b>fib &gt;5 um/ml</b>	fibers greater than 5 microns in length per ml
<b>&lt;</b>	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
<b>&gt;</b>	greater than		
<b>ppm</b>	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

### Organic Qualifiers

<b>A</b>	TIC is a possible aldol-condensation product
<b>B</b>	Analyte was also detected in the blank
<b>C</b>	Pesticide result confirmed by GC/MS
<b>D</b>	Compound quantitated on a diluted sample
<b>E</b>	Concentration exceeds the calibration range of the instrument
<b>J</b>	Estimated value
<b>N</b>	Presumptive evidence of a compound (TICs only)
<b>P</b>	Concentration difference between primary and confirmation columns >25%
<b>U</b>	Compound was not detected
<b>X,Y,Z</b>	Defined in case narrative

### Inorganic Qualifiers

<b>B</b>	Value is <CRDL, but ≥IDL
<b>E</b>	Estimated due to interference
<b>M</b>	Duplicate injection precision not met
<b>N</b>	Spike amount not within control limits
<b>S</b>	Method of standard additions (MSA) used for calculation
<b>U</b>	Compound was not detected
<b>W</b>	Post digestion spike out of control limits
<b>*</b>	Duplicate analysis not within control limits
<b>+</b>	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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