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CSX Transportation, Inc.

Initial Abatement Report

April 30, 2014 Crude Oil Train Derailment
4 9th Street, Lynchburg, Virginia
PC 2014-2395
DEQ Case Manager: Mr. Joey A. Daniel

Y: 043014-K08227
Lynchburg, Virginia
CSXT Project # R129445

July 1, 2014

ARCADIS

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Initial Abatement Report
April 30, 2014 Crude Oil Train Derailment

Y: 043014-K08227
Lynchburg, Virginia
CSXT Project # R129445

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MD001217.0001.00001

Date:
July 1, 2014

2.3 Surface Water Containment

Harbor containment booms (hard booms) were deployed around the three cars located in the James River and near the Mt Athos boat ramp, located approximately 10 miles downstream of the Site. Due to the strong river current, deployment of the harbor containment booms occurred from May 1 through May 3, 2014. Additionally, approximately 1,750 feet of oil snare on a rope was deployed approximately 130 miles from the incident location (Route 288 Bridge – Powhatan County), and 800 feet of oil snare on a rope was installed at Mt. Athos boat ramp. Absorbent boom and pads were also installed within the containment boom around the incident location to absorb any recoverable oil, if present, contained within the boom. Only oil sheen was detected within the containment boom, and there was no evidence of recoverable crude oil throughout the response efforts.

The booms and snares located downstream of incident location were removed after crude oil product transfers were completed on May 8, 2014. The boom located at the incident area will remain in place at least through July 2014. Inspections of the incident area boom were completed daily through May 12, 2014, and on a weekly basis through the end of May 2014. Boom inspections will continue to be completed on a monthly basis through the end of July 2014. Supplemental boom inspections will also be completed following any significant rain events (greater than 0.5 inches of rain). Boom inspections are completed to ensure that all booms remain secured and are functioning as intended. Visual inspections for sheen both inside and outside the boom areas are completed during each inspection, and recovered via absorbent materials as needed. Oil sheen attributed to the derailment has not been observed outside the containment boom since May 3, 2014 at Buzzards Island, approximately 10 miles downstream of the incident location, which is discussed in Section 2.4.

2.4 Aerial Reconnaissance Surveys

Aerial reconnaissance surveys were conducted from May 1 through May 3, 2014 via helicopter to document the location(s) and extent of sheen on the James River, and covered approximately 240 river miles from Lynchburg, VA to Jamestown Island, VA. The extent of sheen observations is illustrated on **Figure 4**. Boat surveys were conducted to verify the sheen locations.

The main sheen body on the James River was observed near Scottsville, VA at 1204 hours on May 1, 2014, between approximately 63 and 80 miles downstream of the incident location. The only sheen subsequently observed on May 2 and 3, 2014, was

at Buzzards Island, approximately 10 miles downstream of the incident location. Oily debris causing the sheen on Buzzards Island was removed on May 4, 2014. Throughout response efforts no separate phase crude oil was observed.

Sheen was not observed on any other waterways besides the James River during the aerial surveys. Separate phase crude oil was not identified during the helicopter or boat surveys.

2.5 Railcar Staging, Transfer, and Removal

Inspection and removal of the 16 derailed cars occurred between April 30 and May 8, 2014. CBTX741712 was estimated to be a total car loss and a leak in the liquid line valve connection to a pressure plate was identified in CTCX743023. Approximately one gallon of crude was released onto the side of CTCX743023. The leak was cleaned up and addressed by CSXT on April 30, 2014. No other leaks or breaches were observed on any of the other derailed Railcars.

CSXT and their contractors developed a transfer plan to safely transfer crude oil from the derailed Railcars and remove the derailed cars from the James River. The transfer operations were completed between May 2 and May 8, 2014, and the transfer summary is included as **Table 2**. Upon completion of the crude oil transfers, the empty Railcars were removed from the James River and the downtown Lynchburg area, and staged at the Lynchburg Rail Yard until May 19, 2014, when they were transferred to the CSXT Gladstone Yard for further evaluation, decontamination, and preparation for removal. Railcar cleaning activities were completed between May 19, 2014 and June 11, 2014.

2.6 Soil Excavation and Sampling

Three phases of soil excavation were completed at the incident location, on May 2, 3, and 20, 2014 in accordance with plans approved by USEPA and VDEQ. Soil excavation was performed to remove as much impacted material as possible from the track bed and slope without de-stabilizing the embankment, and to mitigate the potential for a continued source of sheen. Approximately 260 tons of soil and ballast were removed during the excavations. Post-excavation soil confirmation samples were collected, and a summary of the soil sample results is discussed in Section 2.6.1.

Upon completion of excavation activities at the base of the embankment on May 20, 2014, BioMatrix was applied to the bottom of the excavation, which will act as an

absorbent barrier for any residual crude oil present in that portion of the slope, as well as enhance the biodegradation of crude oil constituents in that area. The material safety data sheet (MSDS) for BioMatrix is included as **Appendix G**. A geotextile fabric was placed over the entire embankment excavation area, and was covered with riprap to stabilize the bank on May 22, 2014.

2.6.1 Soil Sample Results

A total of sixteen soil samples were collected during soil and ballast excavation activities:

- 13 samples were collected from the excavation areas,
- one sample was collected on the right descending bank (RDB) approximately 500 feet downstream of the incident location, and
- two background soil samples (SO-16 and SO-17) were collected from locations approximately 80 and 150 yards upstream of the incident location, respectively.

Figure 5 shows the sample locations. All soil samples were analyzed for the following parameters:

- DRO (M81015D/Modified SW8015)
- GRO (M8015D/Modified SW8015)
- VOCs (SW8260B)
- SVOCs (SW8270C)

All analytical data has gone through level II data validation. Soil analytical data was screened against the VRP 25 TIER II SOIL criteria. Validated soil analytical results are presented in **Table 3.** Laboratory analytical reports for soil samples are presented in **Appendix H,** and data validation reports are presented in **Appendix I**. Of the constituents detected in the soil samples collected from the excavation area, the following were observed in exceedance of the screening criteria:

- Benzo(a)anthracene

- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Benzene

Only two soil sample locations, SO-6 and SO-14 contained benzene in exceedance of the VRP 25 Tier II SOIL criteria. SO-6 was collected after initial slope excavation efforts were completed on May 3, 2014. Based upon the analytical results at SO-6 a second attempt was made to excavate soils from that area and SO-14 was collected from approximately the same location as SO-6. This location is in close proximity to the final location of CBTX741712 after the derailment, however, only a small volume of soil could be excavated from that area without compromising the stability of the slope, and the analytical results from SO-14 indicate that a limited area of residual crude oil remains in the soil in the vicinity of SO-14.

SO-16 and SO-17 are background sample locations which were collected from the west bank and upriver of the incident. The following constituents exceeded the screening criteria in these background samples:

- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Naphthalene

Based upon the occurrence of poly aromatic hydrocarbons (PAHs) in the majority of samples, the PAHs appear to be the consistent with pre-incident site conditions.

2.7 Shoreline Assessments

Tri-State Bird Rescue & Research, Inc. performed foot surveys, vehicle surveys, boat surveys, and inspection of bald eagle nests from May 1 through May 3, 2014. No concerns were identified by Tri-State Bird Rescue & Research, Inc. The Tri-State Bird Rescue & Research Inc. report is included in **Appendix J**.

EnviroScience conducted shoreline assessments on both the right and left descending shorelines (right or left bank as viewed when facing downstream), as well as islands and/or mid-stream trees, for approximately three miles downstream of the Site. Oiled vegetation was observed on the RDB in a thin band of shoreline, where the rivers high water mark level was on May 1, 2014. The oiled vegetation was observed from the incident location to approximately 300 yards downstream. Approximately 10 cubic yards of oiled vegetation and surface soils was recovered from this area on May 6 and 7, 2014. A few small areas of oiled vegetation were observed and removed on May 14, 2014. Absorbent booms were put in place and bio-matrix applied to the soil and surface water as needed. No oil impacts have been observed on the left descending bank (LDB) of the James River in the shoreline assessment area.

Sheen emanating from the bank in the immediate vicinity of the derailment was contained with harbor booms, and recovered using absorbent materials. This sheen was visible at various times throughout the response effort. Shoreline monitoring and assessment was initiated on May 1 and is ongoing. Discussion of ongoing activities is included in Section 4 (Recovery and Monitoring Plan).

2.8 Surface Water Monitoring and Sampling

Surface water monitoring and sampling was conducted daily from May 2 through May 7, 2014 in accordance with USEPA and VDEQ approved Surface Water Sampling and Analysis Plan, submitted on May 1, 2014. Weekly surface water sampling was completed at three sampling transects through the end of May 2014, and will continue at the same three sampling transects on a monthly basis through at least July 2014 in accordance with the Surface Water Sampling and Analysis Plan Addendum submitted on May 7, 2014.

Through May 2014, a total of 263 surface water samples have been collected (including field duplicates) from four transects listed below. Each transect consists of three sample locations (RDB, center, and LDB), and two to three sample depths at each location in the transect (based on river column depth at the time of sample collection). In cases of lower river depths, the middle sample was eliminated) at each location. The sample transects and locations are illustrated on **Figure 6** and are as follows.

- HWY163 – located approximately 0.2 miles upstream of the incident, at the Highway 163 bridge.
- Near-Field (NF) – located approximately 0.2 miles downstream of the incident.
- HWY60 – located approximately 28 miles downstream of the incident, at the Highway 60 bridge.
- Watkins – located approximately 130 miles downstream of the incident and upstream of the Watkins Landing boat launch. This location was dropped after the May 7, 2014 sampling event with USEPA and VDEQ approval.

Table 4 provides a summary of the surface water samples collected through May 2014. Surface water samples were analyzed for the following parameters:

- DRO (M8015C/Modified SW8015)
- Gasoline range organics (GRO) (M8015C/Modified SW8015) (samples collected May 2 through May 5, 2014)
- Total suspended solids (TSS) (SM2540D) (samples collected May 2 through May 5, 2014)
- Biochemical oxygen demand (BOD) (SM5210B)
- Chemical oxygen demand (COD) (SM5220D)
- Metals (SW6010C)
- VOCs (SW8260B)

- SVOCS (SW8270D)
- pH (SW9040) (Watkins samples collected on May 5, 2014)

Field parameters (conductivity, dissolved oxygen, pH, and temperature) were collected and documented at all sampling locations.

2.8.1 Surface Water Sample Results

All samples collected to-date have gone through a level II validation. Analytical data was screened against the VRP 27B TIER II SW-FRESH criteria. Of the detected constituents to-date only aluminum, iron, and chrysene (all J flagged) have been observed in exceedance of the screening values. All three constituents are present at similarly elevated concentrations in samples collected from the upstream sampling locations. No evidence of crude oil constituents has been detected. **Table 5** presents the validated surface water analytical results. Surface water sample laboratory analytical reports are presented in **Appendix K** and data validation reports are included as **Appendix L**.

4. Ongoing/Future Activities

CSXT will continue to maintain and monitor the harbor and sorbent booms which will remain in place through the end of July 2014. Supplemental boom inspections have been and will continue to be completed during heavy rain events (greater than 0.5 inches of rain). Boom inspections include ensuring that the booms remain secure and in place, inspecting for occurrences of sheen both inside and outside of the booms, and replacing spent sorbent materials. Boom inspections will continue monthly through the end of July 2014, at which time the need for continued inspections will be evaluated.

Surface water sampling at the three transects will continue on a monthly basis through July 2014. Analytical results will be evaluated, and a recommendation to continue or discontinue surface water sampling will be presented to the VDEQ after the results of the July surface water sampling event are received.

CSXT was issued a NOV from the VDEQ on May 22, 2014, NOV No. NOV-14-05-BRRO-003. CSXT met with VDEQ to discuss the NOV on June 19, 2014, and CSXT looks forward to continuing to work in cooperation with the VDEQ to ensure that the Site is appropriately restored. CSXT and their consultants will continue to evaluate and address environmental impacts to ensure compliance with the requirements of the VDEQ, including submittal of this Initial Abatement Report, and development of a Site Characterization Report (SCR), which will be submitted to the VDEQ on or before August 3, 2014.

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Tables

Table 2
Completed Railcar Transfer Information
Initial Abatement Report
043014-K08227, Lynchburg, VA

Car	Date	Time	Degrees (F)	PSI	Transfer Date	Transferred to	Notes
CTCX735749	5/3/14	1730	78.0	9	No transfer needed		
CBTX741720	5/1/14	1210	83.2	8	5/7/14	UTLX206456	*~2000 gallons in vac to UTLX206416
	5/4/04	N/A	N/A	10			
CBTX743221	5/3/14	1445	80.8	15	5/6/14	UTLX207592	*~1700 gallons in vac to UTLX206416
GATX286291	5/3/14	1350	84.4	12	5/3/14 and 5/5/14	Frac tanks FVP4001L and SV22715L and Rail car TCBX193348	~50% of car contents on 5/3/14 to Frac tanks. Frac tanks transferred to UTLX205161 on 5/8/14
	5/4/14	N/A	N/A	10			
CBTX741725	5/1/14	1110	85.7	7	5/6/14	UTLX207474	*~1700 gallons in vac to UTLX206416
	5/4/14	N/A	N/A	9			
CBTX743197	5/3/14	1325	74.2	12	5/7/14	TILX192173	*~2000 gallons in vac to UTLX206416
	5/4/14	N/A	N/A	8			
CBTX741925	5/1/14	1042	76.3	6	5/7/14	TILX192133	*~2000 gallons in vac to UTLX206416
	5/4/14	N/A	N/A	9			
CBTX736244	5/1/14	1054	81.5	7	5/6/14	SHPX208361	*~1700 gallons in vac to UTLX206416
	5/4/14	N/A	N/A	9			
CBTX741864	5/1/14	1158	81.5	9	5/7/14	UTLX205119	*~2000 gallons in vac to UTLX206416
	5/4/14	N/A	N/A	9			
CTCX743023		0824	62.5	4	5/7/14	TILX193506	*~2000 gallons in vac to UTLX206416
	5/4/14	N/A	N/A	8			
CBTX741712	5/2/14	Breached Car				SV26405L	Oily Water ~6,205 gallons
CBTX742045	5/1/14	0934	71.5	2	5/7/14	TCBX193361	*~2000 gallons in vac to UTLX206416
	5/4/14	N/A	N/A	10			
CTCX735779	5/1/14	0953	79.3	4	5/7/14	UTLX209599	*~2000 gallons in vac to UTLX206416
	5/4/14	N/A	N/A	10			
CTCX743047	5/1/14	1005	79.3	4	5/8/14	UTLX206504	*~2000 gallons in vac to UTLX206416
	5/4/14	N/A	N/A	10			
CTCX735774	5/1/04	1023	79.1	6	5/7/14	TILX192176	*~2000 gallons in vac to UTLX206416
	5/4/14	N/A	N/A	11			
CBTX743190	5/3/14	1400	85.4	14	5/5/14	UTLX205143, SHPX208335	
	5/4/14	N/A	N/A	8			
CBTX741672		1433	77.2	11	5/2/14 and 5/5/14	Frac Tanks SV22715L and FVP4001L and Rail Car SHPX208335	~50% of car contents on 5/2/14 to Frac tanks. Frac tanks transferred to UTLX205161 on 5/8/14
	5/4/14	N/A	N/A	8			
CBTX743147		1453	85.5	15	5/5/14	UTLX207092, TCBX193348, SHPX208335	Overfilled SHPX208335, extra transferred to TCBX193348
	5/4/14	N/A	N/A	8			

Lynchburg Derailment,
Milepost CAB 145.7
Lynchburg, VA

Table 3
Soil Confirmation Sample Analytical Results
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		Location	SO-1	SO-2	SO-3	SO-4	SO-5	SO-6	SO-7	SO-8
		Depth Range (ft)	3.5 ft	4 ft	6.5 ft	2 ft	0.5 ft	0.5 ft	0.5 ft	0.5 ft
		Sample Name	SO-1(3.5)/05022014	SO-2(4.0)/05022014	SO-3(6.5)/05022014	SO-4(2.0)/05022014	SO-5(0.5)/05032014	SO-6(0.5)/05032014	SO-7(0.5)/05032014	SO-8(0.5)/05032014
		Sample Date	5/2/2014 2:10:00 AM	5/2/2014 3:00:00 AM	5/2/2014 3:30:00 AM	5/2/2014 4:15:00 AM	5/3/2014 1:01:00 PM	5/3/2014 1:10:00 PM	5/3/2014 1:15:00 PM	5/3/2014 3:40:00 PM
		Matrix	SO	SO	SO	SO	SO	SO	SO	SO
		Validation Level	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
		Sample Type	N	N	N	N	N	N	N	N
		SDG	240368331	240368331	240368331	240368331	240368661	240368661	240368661	240368661
Analyte	Units	VRP_25 TIER II SOIL								
SVOCs										
Acenaphthene	ug/kg	24200	9.6 U	260	8.1 U	8.8 U	480	850 J	11	23
Acenaphthylene	ug/kg	10500	45	180	8.1 U	74	410	640 J	35	41
Anthracene	ug/kg	255000	35	350	8.1 U	22	910	1000 J	36	46
Benzo(a)anthracene	ug/kg	150	100	**520**	4.4 J	**180**	**1300**	**1600 J**	150	150
Benzo(a)pyrene	ug/kg	15	**130**	**450**	4.5 J	**160**	**1200**	**1300 J**	**160**	**140**
Benzo(b)fluoranthene	ug/kg	150	**300**	**1100**	8.8	**360**	**2800**	**2800 J**	**230**	**240**
Benzo(g,h,i)perylene	ug/kg	170000	180	320	8.1 U	120	1000	1200 J	120	110
Benzo(k)fluoranthene	ug/kg	1500	87	350	8.1 U	120	760	870 J	89	76
Chrysene	ug/kg	15000	170	660	4.9 J	200	1900	2200 J	180	170
Dibenzo(a,h)anthracene	ug/kg	15	**52**	8.1 U	8.1 U	**37**	**320**	**390 J**	**22**	**25**
Fluoranthene	ug/kg	230000	140	1100	5.6 J	250	2600	3300 J	260	300
Fluorene	ug/kg	24200	9.6 U	270	8.1 U	8.8 U	490	930 J	11	39
Indeno(1,2,3-cd)pyrene	ug/kg	150	130	**280**	8.1 U	110	**940**	**990 J**	98	97
Naphthalene	ug/kg	26.2	**240**	**320**	8.1 U	**87**	**1200**	**2500 J**	**53**	**75**
Phenanthrene	ug/kg	170000	380	1300	4.7 J	140	2800	4400 J	130	220 J
Pyrene	ug/kg	65500	150	860	4.9 J	210	2400	3000 J	240	250
TPH-DRO										
Diesel (C10-C20)	mg/kg	--	24	210	20 U	22 U	77	2200	27	15 J
Oil Range Organics (C20-C34)	mg/kg	--	51	240	20 U	35	300	2000	63	69
TPH-GRO										
Gasoline (C6-C10)	mg/kg	--	0.14 U	9.1	0.12 U	0.13 U	0.45	620	0.12 U	0.13 U
VOCs										
Benzene	ug/kg	97.7	12	7.8	4.7 U	0.36 J	2.5 J	**2300**	5.9 U	5.2 U
Ethylbenzene	ug/kg	5400	0.9 J	11	4.7 U	5.3 U	2.7 J	5300	5.9 U	5.2 U
Toluene	ug/kg	31100	4.2 J	30	4.7 U	0.7 J	7.8 J	12000	5.9 U	5.2 U
Total Xylenes	ug/kg	63000	4.3 J	70	9.5 U	11 U	14 J	33000	12 U	10 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
VRP_25 TIER II SOIL: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.5 Soil: Unrestricted
ug/kg = micrograms per Kilograms
mg/kg = milligram per Kilogram

Table 3
Soil Confirmation Sample Analytical Results
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	Location		SO-9	SO-10	SO-11	SO-12	SO-13	SO-14	SO-16	SO-17
	Depth Range (ft)		0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft
	Sample Name		SO-9(0.5)/050614	SO-10(0-0.5)/052014	SO-11(0-0.5)/052014	SO-12(0-0.5)/052014	SO-13(0-0.5)/052014	SO-14(0-0.5)/052014	SO-16(0-0.5)/052014	SO-17(0-0.5)/052014
	Sample Date		5/6/2014 4:00:00 PM	5/20/2014 1:30:00 PM	5/20/2014 1:45:00 PM	5/20/2014 1:55:00 PM	5/20/2014 2:10:00 PM	5/20/2014 2:20:00 PM	5/20/2014 4:00:00 PM	5/20/2014 4:25:00 PM
	Matrix		SO	SO	SO	SO	SO	SO	SO	SO
	Validation Level		Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
	Sample Type		N	N	N	N	N	N	N	N
	SDG		240369331	240376101	240376101	240376101	240376101	240376101	240376101	240376101
Analyte	Units	VRP_25 TIER II SOIL								
SVOCs										
Acenaphthene	ug/kg	24200	8 J	210	24	20	11 U	680 J	11 U	13
Acenaphthylene	ug/kg	10500	27	2800	30	30	25	530 J	11 U	20
Anthracene	ug/kg	255000	28	2900	78	57	34	610 J	19	37
Benzo(a)anthracene	ug/kg	150	99	**19000**	**240**	**190**	**160**	**1400 J**	130	**180**
Benzo(a)pyrene	ug/kg	15	**110**	**19000**	**200**	**180**	**160**	**1300 J**	**150**	**190**
Benzo(b)fluoranthene	ug/kg	150	**190**	**35000**	**380**	**320**	**220**	**3400 J**	**250**	**350**
Benzo(g,h,i)perylene	ug/kg	170000	56	7000	150	100	81	580 J	70	84
Benzo(k)fluoranthene	ug/kg	1500	80	**12000**	170	130	94	1500 J	90	120
Chrysene	ug/kg	15000	160	**20000**	310	220	180	2100 J	180	290
Dibenzo(a,h)anthracene	ug/kg	15	10 U	190 U	9.3 U	10 U	11 U	180 UJ	11 U	9.2 U
Fluoranthene	ug/kg	230000	220	20000	470	330	280	3700 J	310	320
Fluorene	ug/kg	24200	19	410	22	18	17	620 J	11 U	16
Indeno(1,2,3-cd)pyrene	ug/kg	150	55	**6700**	130	96	72	**730 J**	71	72
Naphthalene	ug/kg	26.2	8.8 J	**470**	**100**	**87**	**45**	**1300 J**	10 J	**110**
Phenanthrene	ug/kg	170000	120	3700	300	210	140	3000 J	93	320
Pyrene	ug/kg	65500	190	25000	410	300	350	3000 J	270	300
TPH-DRO										
Diesel (C10-C20)	mg/kg	--	35	220	220	47	45	2600 J	16 J	21 J
Oil Range Organics (C20-C34)	mg/kg	--	230	290	280	95	180	2000 J	160	170
TPH-GRO										
Gasoline (C6-C10)	mg/kg	--	0.15 U	310	1.6	0.13 J	0.16 UJ	1200	0.17 U	0.14 U
VOCs										
Benzene	ug/kg	97.7	6.7 U	77 J	4.9 J	42 J	3.9 UJ	**1400**	5.1 U	3.4 U
Ethylbenzene	ug/kg	5400	6.7 U	33 J	1.1 J	52 J	3.9 UJ	1800	5.1 U	3.4 U
Toluene	ug/kg	31100	6.7 U	140 J	5 J	120 J	3.9 UJ	3800	5.1 U	3.4 U
Total Xylenes	ug/kg	63000	13 U	650	13 J	510 J	7.8 UJ	17000	10 U	6.7 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
VRP_25 TIER II SOIL: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.5 Soil: Unrestricted
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Table 4
Surface Water Sampling Summary
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Surface Water Sampling Summary

Date	Upstream Transect			Near Field Transect (0.2 miles downstream)			HWY 60 Transect (28 miles downstream)			Watkins Transect (130 miles downstream)			Sample Total
	Surface	Middle	Bottom	Surface	Middle	Bottom	Surface	Middle	Bottom	Surface	Middle	Bottom	
5/2/2014	1	1	1	NS	NS	NS	1	NS	NS	NS	NS	NS	4
5/3/2014	3	3	3	3	3	3	1	1	1	3	3	3	30
5/4/2014	3	3	3	3	3	3	3	3	3	3	3	3	36
5/5/2014	3	3	3	3	3	3	3	3	3	3	3	3	36
5/6/2014	3	3	3	3	3	3	3	3	3	3	3	3	36
5/7/2014	3	3	3	3	3	3	3	3	3	3	3	3	36
5/13/2014	NS	NS	NS	3	1	3	3	NS	3	NS	NS	NS	13
5/14/2014	3	2	3	NS	NS	NS	NS	NS	NS	NS	NS	NS	8
5/20/2014	3	3	3	3	3	3	3	2	3	NS	NS	NS	26
5/28/2014	3	3	3	3	NS	3	3	NS	3	NS	NS	NS	21
Total	25	24	25	24	19	24	23	15	22	15	15	15	246

Notes:
NS indicates that no samples were collected.
Each transect included a surface water sample point near each bank and one in the middle of the river.
EPA & VDEQ approved removal of the Watkins Transect from the sampling plan after the 5/4/2014 event.
Two monthly sampling events will be conducted in June and July 2014.

Lynchburg Derailment,
Milepost CAB 145.7
Lynchburg, VA

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

Location			CSXT-HWY163-CTR-B	CSXT-HWY163-CTR-B	CSXT-HWY163-CTR-B	CSXT-HWY163-CTR-B	CSXT-HWY163-CTR-B	CSXT-HWY163-CTR-B	CSXT-HWY163-CTR-B	CSXT-HWY163-CTR-B	CSXT-HWY163-CTR-M	CSXT-HWY163-CTR-M	CSXT-HWY163-CTR-M	CSXT-HWY163-CTR-M	CSXT-HWY163-CTR-M	CSXT-HWY163-CTR-M	CSXT-HWY163-CTR-M	CSXT-HWY163-CTR-M
Sample Name			CSXT-HWY163-CTR-B-050314	CSXT-HWY163-CTR-B-050414	CSXT-HWY163-CTR-B-050514	CSXT-HWY163-CTR-B-050614	CSXT-HWY163-CTR-B-050714	CSXT-HWY163-CTR-B-051414	CSXT-HWY163-CTR-B-052014	CSXT-HWY163-CTR-B-052814	CSXT-HWY163-CTR-M-050314	CSXT-HWY163-CTR-M-050414	CSXT-HWY163-CTR-M-050514	CSXT-HWY163-CTR-M-050614	CSXT-HWY163-CTR-M-050714	CSXT-HWY163-CTR-M-051414	CSXT-HWY163-CTR-M-052014	CSXT-HWY163-CTR-M-052814
Sample Date			5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/14/2014	5/20/2014	5/28/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/14/2014	5/20/2014	5/28/2014
Matrix			WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
Validation Level			Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
Sample Type			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SDG			240368641	240368701	240368861	240369301	240370191	240372801	240375411	240378161	240368641	240368701	240368861	240369301	240370191	240372801	240375411	240378161
Analyte	Units	VRP_27B TIER II SW-FRESH																
FIELD																		
Conductivity	ms/cm	--	0.153	0.167	0.152	0.147	NA	0.251	0.137	0.247	0.114	0.173	0.151	0.148	0.175	0.251	0.165	0.247
Dissolved Oxygen	mg/l	--	10.55	10.38	10.67	10.58	7.09	8.63	10.91	8.74	10.55	10.38	10.18	10.32	7.33	8.63	10.91	8.72
pH	SU	--	7.24	7.2	7.32	7.66	6.52	7.71	6.41	7.78	6.91	7.06	7.14	7.63	6.72	7.71	6.37	7.78
Temperature	C	--	15.29	15.75	15.97	16.14	16.93	22.19	14.34	22.45	15.28	15.71	15.95	16.12	16.91	22.19	14.33	22.45
Gen Chem																		
Biological Oxygen Demand	mg/l	--	4.9	2.0 U	2.0 U	2.0 U	2.0 U	6.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	6.0 U	2.0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	20 U	12 J	12 J	20 UB	5.4 J	20 U	20 UJ	22 UB	12 J	20 U	20 U	20 UB	5.6 J	20 U	20 UJ	20 UB
Total Suspended Solids	mg/l	--	14	9.0	7.0	NA	NA	NA	NA	NA	5.0	8.0	7.0	NA	NA	NA	NA	NA
Inorganics																		
Aluminum	ug/l	87	**540**	**260**	**310**	NA	NA	NA	NA	NA	**620**	**420**	**370**	NA	NA	NA	NA	NA
Cadmium	ug/l	1.1	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA
Calcium	ug/l	--	17000	20000	21000	23000	25000	27000	21000	28000	18000	19000	21000	22000	25000	27000	21000	28000
Copper	ug/l	9	25 U	25 U	25 U	NA	NA	NA	NA	NA	25 U	25 U	25 U	NA	NA	NA	NA	NA
Iron	ug/l	1000	630	340	390	NA	NA	NA	NA	NA	700	520	460	NA	NA	NA	NA	NA
Lead	ug/l	14	2.0 J	10 U	10 U	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	NA	NA	NA
Magnesium	ug/l	--	3600 J	4000 J	4200 J	4500 J	5000	5600	3700 J	5700	3700 J	3800 J	4100 J	4500 J	4900 J	5800	3700 J	5700
Nickel	ug/l	20	40 U	40 U	40 U	NA	NA	NA	NA	NA	40 U	40 U	40 U	NA	NA	NA	NA	NA
Sulfur	ug/l	--	NA	NA	NA	4800	NA	NA	NA	NA	NA	NA	NA	4700	NA	NA	NA	NA
Vanadium	ug/l	--	2.8 J	20 U	20 U	NA	NA	NA	NA	NA	20 U	20 U	20 U	NA	NA	NA	NA	NA
SVOCs																		
Acenaphthene	ug/l	990	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Acenaphthylene	ug/l	--	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Anthracene	ug/l	40000	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.037 J	0.20 U	0.20 U	0.19 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Benzo(b)fluoranthene	ug/l	0.18	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Benzo(k)fluoranthene	ug/l	0.18	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Chrysene	ug/l	0.018	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	**0.054 J**	0.20 U	0.20 U	0.19 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Fluoranthene	ug/l	140	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Fluorene	ug/l	5300	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Naphthalene	ug/l	--	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Phenanthrene	ug/l	--	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Pyrene	ug/l	4000	0.21 U	0.21 U	0.21 U	0.21 U	0.19 U	0.22 U	0.19 U	0.19 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
TPH-DRO																		
Diesel (C10-C20)	mg/l	--	0.51 U	0.51 U	0.51 U	0.48 U	0.48 U	0.49 U	0.49 U	0.48 U	0.5 U	0.5 U	0.51 U	0.5 U	0.48 U	0.6 U	0.48 U	0.53 U
Oil Range Organics (C20-C34)	mg/l	--	0.51 U	0.51 U	0.51 U	0.48 U	0.48 U	0.49 U	0.49 U	0.48 U	0.5 U	0.5 U	0.51 U	0.5 U	0.48 U	0.6 U	0.48 U	0.53 U
TPH-GRO																		
Gasoline (C6-C10)	mg/l	--	0.1 UB	0.039 J	0.1 UB	NA	NA	NA	NA	NA	0.1 UB	0.035 J	0.1 UB	NA	NA	NA	NA	NA
VOCs																		
Benzene	ug/l	510	1.0 U	1.0 U	1.0 UB	1.0 U	1.0 U	1.0 U	1.0 U	0.25 J	1.0 U	1.0 UB	1.0 UB	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	1.0 UB	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ - The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

Location			CSXT-HWY163-CTR-S	CSXT-HWY163-CTR-S	CSXT-HWY163-CTR-S	CSXT-HWY163-CTR-S	CSXT-HWY163-CTR-S	CSXT-HWY163-CTR-S	CSXT-HWY163-CTR-S	CSXT-HWY163-CTR-S	CSXT-HWY163-CTR-S	CSXT-HWY163-LDB-B	CSXT-HWY163-LDB-B	CSXT-HWY163-LDB-B	CSXT-HWY163-LDB-B	CSXT-HWY163-LDB-B	CSXT-HWY163-LDB-B	CSXT-HWY163-LDB-B
Sample Name			CSXT-HWY163-CTR-S-050314	CSXT-HWY163-CTR-S-050414	CSXT-HWY163-CTR-S-050514	DUP01-050614	CSXT-HWY163-CTR-S-050614	CSXT-HWY163-CTR-S-050714	CSXT-HWY163-CTR-S-051414	CSXT-HWY163-CTR-S-052014	CSXT-HWY163-CTR-S-052814	CSXT-HWY163-LDB-B-050214	CSXT-HWY163-LDB-B-050314	CSXT-HWY163-LDB-B-050414	CSXT-HWY163-LDB-B-050514	CSXT-HWY163-LDB-B-050614	CSXT-HWY163-LDB-B-050714	CSXT-HWY163-LDB-B-051414
Sample Date			5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/6/2014	5/7/2014	5/14/2014	5/20/2014	5/28/2014	5/2/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/14/2014
Matrix			WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
Validation Level			Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
Sample Type			N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N
SDG			240368641	240368701	240368861	240369301	240369301	240370191	240372801	240375411	240378161	240368311	240368641	240368701	240368861	240369301	240370191	240372801
Analyte	Units	VRP_27B TIER II SW-FRESH																
FIELD																		
Conductivity	ms/cm	--	0.12	0.141	0.181	NA	0.143	0.206	0.251	0.16	0.247	0.184	0.15	0.165	0.148	0.144	0.171	0.247
Dissolved Oxygen	mg/l	--	11.51	10.37	10.53	NA	10.32	7.44	8.88	10.88	8.66	10.24	10.56	10.43	10.67	10.58	8.08	8.96
pH	SU	--	6.84	6.99	7.06	NA	7.29	6.64	7.6	6.51	7.74	7.42	7.46	6.65	7.31	7.05	6.73	7.3
Temperature	C	--	15.24	15.68	15.95	NA	16.1	16.9	22.19	14.32	22.45	14.86	15.09	6.65	15.9	16.03	16.81	22.14
Gen Chem																		
Biological Oxygen Demand	mg/l	--	6.6	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	6.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	6.0 U
Chemical Oxygen Demand	mg/l	--	29	8.6 J	10 J	20 UB	20 U	9.0 J	20 U	20 UJ	20 UB	20 U	8.7 J	20 U	11 J	20 UB	5.4 J	20 U
Total Suspended Solids	mg/l	--	6.0	9.0	10	NA	NA	NA	NA	NA	NA	12	12	8.0	8.0	NA	NA	NA
Inorganics																		
Aluminum	ug/l	87	**550**	**380**	**360**	NA	NA	NA	NA	NA	NA	**710**	**580**	**380**	**330**	NA	NA	NA
Cadmium	ug/l	1.1	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA
Calcium	ug/l	--	18000	19000	21000	23000	23000	24000	28000	21000	28000	16000	18000	19000	20000	22000	24000	27000
Copper	ug/l	9	25 U	25 U	25 U	NA	NA	NA	NA	NA	NA	25 U	25 U	25 U	25 U	NA	NA	NA
Iron	ug/l	1000	610	470	430	NA	NA	NA	NA	NA	NA	830	740	460	410	NA	NA	NA
Lead	ug/l	14	10 U	10 U	10 U	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA	NA	NA
Magnesium	ug/l	--	3600 J	3700 J	4200 J	4400 J	4500 J	4900 J	5900	3700 J	5700	3200 J	3700 J	3800 J	4000 J	4400 J	4800 J	5700
Nickel	ug/l	20	40 U	40 U	40 U	NA	NA	NA	NA	NA	NA	40 U	40 U	40 U	40 U	NA	NA	NA
Sulfur	ug/l	--	NA	NA	NA	4700	4800	NA	NA	NA	NA	NA	NA	NA	NA	4600	NA	NA
Vanadium	ug/l	--	20 U	20 U	20 U	NA	NA	NA	NA	NA	NA	20 U	20 U	20 U	20 U	NA	NA	NA
SVOCs																		
Acenaphthene	ug/l	990	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Acenaphthylene	ug/l	--	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Anthracene	ug/l	40000	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Benzo(a)anthracene	ug/l	0.18	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Benzo(a)pyrene	ug/l	0.18	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Benzo(b)fluoranthene	ug/l	0.18	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Benzo(g,h,i)perylene	ug/l	--	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Benzo(k)fluoranthene	ug/l	0.18	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Chrysene	ug/l	0.018	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Fluoranthene	ug/l	140	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Fluorene	ug/l	5300	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Naphthalene	ug/l	--	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Phenanthrene	ug/l	--	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pyrene	ug/l	4000	0.19 U	0.21 U	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
TPH-DRO																		
Diesel (C10-C20)	mg/l	--	0.49 U	0.5 U	0.52 U	0.5 U	0.5 U	0.47 U	0.5 U	0.5 U	0.54 U	0.49 U	0.49 U	0.51 U	0.51 U	0.5 U	0.48 U	0.48 U
Oil Range Organics (C20-C34)	mg/l	--	0.49 U	0.5 U	0.52 U	0.5 U	0.5 U	0.47 U	0.5 U	0.5 U	0.54 U	0.49 U	0.49 U	0.51 U	0.51 U	0.5 U	0.48 U	0.48 U
TPH-GRO																		
Gasoline (C6-C10)	mg/l	--	0.1 U	0.034 J	0.1 UB	NA	NA	NA	NA	NA	NA	0.1 UB	0.1 UB	0.033 J	0.1 UB	NA	NA	NA
VOCs																		
Benzene	ug/l	510	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UB	1.0 UB	1.0 UB	1.0 UB	1.0 UB	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ - The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

Location			CSXT-HWY163 LDB-B	CSXT-HWY163 LDB-B	CSXT-HWY163 LDB-M	CSXT-HWY163 LDB-M	CSXT-HWY163 LDB-M	CSXT-HWY163 LDB-M	CSXT-HWY163 LDB-M	CSXT-HWY163 LDB-M	CSXT-HWY163 LDB-M	CSXT-HWY163 LDB-M	CSXT-HWY163 LDB-M	CSXT-HWY163 LDB-S	CSXT-HWY163 LDB-S	CSXT-HWY163 LDB-S	CSXT-HWY163 LDB-S	CSXT-HWY163 LDB-S
Sample Name			CSXT-HWY163 LDB-B-052014	CSXT-HWY163 LDB-B-052814	CSXT-HWY163 LDB-M-050214	CSXT-HWY163 LDB-M-050314	CSXT-HWY163 LDB-M-050414	CSXT-HWY163 LDB-M-050514	CSXT-HWY163 LDB-M-050614	CSXT-HWY163 LDB-M-050714	CSXT-HWY163 LDB-M-051414	CSXT-HWY163 LDB-M-052014	CSXT-HWY163 LDB-M-052814	CSXT-HWY163 LDB-S-050214	CSXT-HWY163 LDB-S-050314	CSXT-HWY163 LDB-S-050414	CSXT-HWY163 LDB-S-050514	CSXT-HWY163 LDB-S-050614
Sample Date			5/20/2014	5/28/2014	5/2/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/14/2014	5/20/2014	5/28/2014	5/2/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014
Matrix			WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
Validation Level			Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
Sample Type			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SDG			240375411	240378161	240368311	240368641	240368701	240368861	240369301	240370191	240372801	240375411	240378161	240368311	240368641	240368701	240368861	240369301
Analyte	Units	VRP_27B TIER II SW-FRESH																
FIELD																		
Conductivity	ms/cm	--	0.158	0.245	0.117	0.154	0.165	0.151	0.146	0.17	0.247	0.159	0.245	0.212	0.112	0.164	0.147	0.148
Dissolved Oxygen	mg/l	--	10.88	8.67	11.25	10.61	10.43	10.68	10.54	8.12	9.09	10.87	8.71	10.5	10.5	10.5	10.67	10.54
pH	SU	--	6.72	7.69	7.12	6.37	6.65	7.03	7.51	6.87	7.18	6.82	7.58	6.91	6.43	7.03	6.97	7.28
Temperature	C	--	14.26	22.36	14.93	15	15.53	15.9	16.02	16.81	22.14	14.26	22.36	14.94	14.97	15.51	15.9	16.03
Gen Chem																		
Biological Oxygen Demand	mg/l	--	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.6	2.0 U	6.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	20 UJ	20 UB	20 U	20 U	11 J	13 J	20 UB	6.5 J	20 U	20 UJ	20 UB	20 U	20 U	10 J	20 U	20 UB
Total Suspended Solids	mg/l	--	NA	NA	15	8.0	7.0	8.0	NA	NA	NA	NA	NA	16	10	5.0	6.0	NA
Inorganics																		
Aluminum	ug/l	87	NA	NA	**660**	**710**	**400**	**360**	NA	NA	NA	NA	NA	**690**	**590**	**420**	**400**	NA
Cadmium	ug/l	1.1	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	NA
Calcium	ug/l	--	20000	26000	15000	18000	19000	21000	22000	24000	27000	21000	28000	16000	17000	19000	21000	22000
Copper	ug/l	9	NA	NA	25 U	25 U	25 U	25 U	NA	NA	NA	NA	NA	25 U	25 U	25 U	25 U	NA
Iron	ug/l	1000	NA	NA	750	800	510	460	NA	NA	NA	NA	NA	780	680	540	500	NA
Lead	ug/l	14	NA	NA	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Magnesium	ug/l	--	3600 J	5300	3200 J	3700 J	3800 J	4100 J	4400 J	4700 J	5700	3700 J	5600	3200 J	3500 J	3800 J	4200 J	4500 J
Nickel	ug/l	20	NA	NA	40 U	40 U	40 U	40 U	NA	NA	NA	NA	NA	40 U	40 U	40 U	40 U	NA
Sulfur	ug/l	--	NA	NA	NA	NA	NA	NA	4600	NA	NA	NA	NA	NA	NA	NA	NA	4600
Vanadium	ug/l	--	NA	NA	20 U	2.6 J	20 U	3.1 J	NA	NA	NA	NA	NA	3.8 J	2.4 J	20 U	20 U	NA
SVOCs																		
Acenaphthene	ug/l	990	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Acenaphthylene	ug/l	--	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Anthracene	ug/l	40000	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Benzo(a)anthracene	ug/l	0.18	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Benzo(a)pyrene	ug/l	0.18	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Benzo(b)fluoranthene	ug/l	0.18	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Benzo(g,h,i)perylene	ug/l	--	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Benzo(k)fluoranthene	ug/l	0.18	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Chrysene	ug/l	0.018	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Fluoranthene	ug/l	140	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Fluorene	ug/l	5300	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Naphthalene	ug/l	--	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Phenanthrene	ug/l	--	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
Pyrene	ug/l	4000	0.20 U	0.21 U	0.20 U	0.20 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.20 U	0.21 U	0.21 U	0.19 U	0.20 U
TPH-DRO																		
Diesel (C10-C20)	mg/l	--	0.5 U	0.49 U	0.49 U	0.52 U	0.52 U	0.51 U	0.5 U	0.47 U	0.48 U	0.48 U	0.48 U	0.49 U	0.48 U	0.55 U	0.5 U	0.49 U
Oil Range Organics (C20-C34)	mg/l	--	0.5 U	0.49 U	0.49 U	0.52 U	0.52 U	0.51 U	0.5 U	0.47 U	0.48 U	0.48 U	0.48 U	0.49 U	0.48 U	0.55 U	0.5 U	0.49 U
TPH-GRO																		
Gasoline (C6-C10)	mg/l	--	NA	NA	0.1 U	0.1 U	0.034 J	0.1 UB	NA	NA	NA	NA	NA	0.1 U	0.1 U	0.1 U	0.1 UB	NA
VOCs																		
Benzene	ug/l	510	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UB	1.0 UB	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ - The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

	Location		CSXT-HWY163 LDB-S	CSXT-HWY163 LDB-S	CSXT-HWY163 LDB-S	CSXT-HWY163 LDB-S	CSXT-HWY163 RDB-B	CSXT-HWY163 RDB-B	CSXT-HWY163 RDB-B	CSXT-HWY163 RDB-B	CSXT-HWY163 RDB-B	CSXT-HWY163 RDB-B	CSXT-HWY163 RDB-B	CSXT-HWY163 RDB-B	CSXT-HWY163 RDB-M	CSXT-HWY163 RDB-M	CSXT-HWY163 RDB-M
	Sample Name		CSXT-HWY163 LDB-S-050714	CSXT-HWY163 LDB-S-051414	CSXT-HWY163 LDB-S-052014	CSXT-HWY163 LDB-S-052814	CSXT-HWY163 RDB-B-050314	CSXT-HWY163 RDB-B-050414	CSXT-HWY163 RDB-B-050514	CSXT-HWY163 RDB-B-050614	CSXT-HWY163 RDB-B-050714	CSXT-HWY163 RDB-B-051414	CSXT-HWY163 RDB-M-052014	CSXT-HWY163 RDB-B-052014	CSXT-HWY163 RDB-B-052814	CSXT-HWY163 RDB-M-050314	CSXT-HWY163 RDB-M-050414	CSXT-HWY163 RDB-M-050514
	Sample Date		5/7/2014	5/14/2014	5/20/2014	5/28/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/14/2014	5/20/2014	5/20/2014	5/28/2014	5/3/2014	5/4/2014	5/5/2014
	Matrix		WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
	Validation Level		Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
	Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	SDG		240370191	240372801	240375411	240378161	240368641	240368701	240368861	240369301	240370191	240372801	240375411	240375411	240378161	240368641	240368701	240368861
Analyte	Units	VRP_27B TIER II SW-FRESH																
FIELD																		
Conductivity	ms/cm	--	0.203	0.248	0.106	0.245	0.156	0.168	0.16	0.149	0.177	0.253	0.154	0.166	0.251	0.153	0.146	0.174
Dissolved Oxygen	mg/l	--	8.98	9.18	10.81	8.66	10.34	10.39	10.63	10.55	6.81	8.77	10.94	10.93	8.73	10.52	10.37	10.63
pH	SU	--	6.76	7.11	6.22	7.25	7.79	7.91	7.39	8.04	6.51	7.78	6.59	6.58	7.87	7.57	7	7.43
Temperature	C	--	16.81	22.13	14.25	22.37	15.89	15.97	16.03	16.27	17.05	22.11	14.37	14.39	22.63	15.55	15.96	16.03
Gen Chem																		
Biological Oxygen Demand	mg/l	--	2.0 U	6.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	6.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.8 UB
Chemical Oxygen Demand	mg/l	--	6.6 J	20 U	20 UJ	20 UB	20 U	10 J	14 J	20 UB	8.3 J	20 U	20 UJ	20 UJ	21 UB	20 U	14 J	20 U
Total Suspended Solids	mg/l	--	NA	NA	NA	NA	12	10	8.0	NA	NA	NA	NA	NA	NA	9.0	8.0	8.0
Inorganics																		
Aluminum	ug/l	87	NA	NA	NA	NA	**490**	**480**	**380**	NA	NA	NA	NA	NA	NA	**490**	**330**	**230**
Cadmium	ug/l	1.1	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U
Calcium	ug/l	--	24000	27000	21000	28000	18000	19000	21000	23000	25000	28000	20000	20000	28000	18000	19000	21000
Copper	ug/l	9	NA	NA	NA	NA	25 U	25 U	25 U	NA	NA	NA	NA	NA	NA	25 U	25 U	25 U
Iron	ug/l	1000	NA	NA	NA	NA	620	590	470	NA	NA	NA	NA	NA	NA	600	440	300
Lead	ug/l	14	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Magnesium	ug/l	--	4800 J	5700	3600 J	5800	3700 J	3900 J	4100 J	4500 J	5000	5900	3500 J	3600 J	5800	3700 J	3800 J	4100 J
Nickel	ug/l	20	NA	NA	NA	NA	40 U	40 U	40 U	NA	NA	NA	NA	NA	NA	40 U	40 U	40 U
Sulfur	ug/l	--	NA	NA	NA	NA	NA	NA	NA	4900	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	ug/l	--	NA	NA	NA	NA	20 U	20 U	20 U	NA	NA	NA	NA	NA	NA	20 U	20 U	20 U
SVOCs																		
Acenaphthene	ug/l	990	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Acenaphthylene	ug/l	--	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Anthracene	ug/l	40000	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Benzo(a)anthracene	ug/l	0.18	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Benzo(a)pyrene	ug/l	0.18	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Benzo(b)fluoranthene	ug/l	0.18	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Benzo(g,h,i)perylene	ug/l	--	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Benzo(k)fluoranthene	ug/l	0.18	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Chrysene	ug/l	0.018	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Fluoranthene	ug/l	140	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.16 J	0.21 U
Fluorene	ug/l	5300	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Naphthalene	ug/l	--	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Phenanthrene	ug/l	--	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
Pyrene	ug/l	4000	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.21 U
TPH-DRO																		
Diesel (C10-C20)	mg/l	--	0.48 U	0.49 U	0.5 U	0.48 U	0.52 U	0.53 U	0.52 U	0.5 U	0.47 U	0.48 U	0.49 U	0.48 U	0.49 U	0.51 U	0.51 U	0.5 U
Oil Range Organics (C20-C34)	mg/l	--	0.48 U	0.49 U	0.5 U	0.48 U	0.52 U	0.53 U	0.52 U	0.5 U	0.47 U	0.48 U	0.49 U	0.48 U	0.49 U	0.51 U	0.51 U	0.5 U
TPH-GRO																		
Gasoline (C6-C10)	mg/l	--	NA	NA	NA	NA	0.1 U	0.029 J	0.1 UB	NA	NA	NA	NA	NA	NA	0.1 U	0.051 J	0.1 UB
VOCs																		
Benzene	ug/l	510	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UB	1.0 UB	1.0 U	1.0 U	1.0 U	1.0 U	0.15 J	1.0 U	1.0 UB	1.0 UB
Ethylbenzene	ug/l	2100	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 UJ	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ - The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

	Location		CSXT-HWY163-RDB-M	CSXT-HWY163-RDB-M	CSXT-HWY163-RDB-M	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S	CSXT-HWY163-RDB-S
	Sample Name		CSXT-HWY163-RDB-M-050614	CSXT-HWY163-RDB-M-050714	CSXT-HWY163-RDB-M-052814	DUP01-050314	CSXT-HWY163-RDB-S-050314	CSXT-HWY163-RDB-S-050414	CSXT-HWY163-RDB-S-050514	CSXT-HWY163-RDB-S-050614	DUP01-050714	CSXT-HWY163-RDB-S-050714	CSXT-HWY163-RDB-S-051414	CSXT-DUP01-052014	CSXT-HWY163-RDB-S-052014	CSXT-DUP01-052814	CSXT-HWY163-RDB-S-052814
	Sample Date		5/6/2014	5/7/2014	5/28/2014	5/3/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/7/2014	5/14/2014	5/20/2014	5/20/2014	5/28/2014	5/28/2014
	Matrix		WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
	Validation Level		Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
	Sample Type		N	N	N	FD	N	N	N	N	FD	N	N	FD	N	FD	N
	SDG		240369301	240370191	240378161	240368641	240368641	240368701	240368861	240369301	240370191	240370191	240372801	240375411	240375411	240378161	240378161
Analyte	Units	VRP_27B TIER II SW-FRESH															
FIELD																	
Conductivity	ms/cm	--	0.149	0.176	0.251	NA	0.12	0.169	0.151	0.149	NA	0.176	0.253	NA	0.165	NA	0.251
Dissolved Oxygen	mg/l	--	10.57	6.72	8.78	NA	11.1	10.37	10.62	10.59	NA	6.74	8.66	NA	10.94	NA	8.68
pH	SU	--	7.98	6.57	7.86	NA	6.64	7	7.08	7.45	NA	6.55	7.73	NA	6.57	NA	7.86
Temperature	C	--	16.26	17.04	22.62	NA	15.51	15.92	16.03	16.26	NA	17.03	22.11	NA	14.37	NA	22.62
Gen Chem																	
Biological Oxygen Demand	mg/l	--	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	16 J	2.0 UJ	6.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	20 U	6.2 J	20 UB	20 U	10 J	10 J	11 J	20 U	8.3 J	5.4 J	20 U	20 UJ	20 UJ	20 UB	20 UB
Total Suspended Solids	mg/l	--	NA	NA	NA	11	12	8.0	9.0	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics																	
Aluminum	ug/l	87	NA	NA	NA	**510**	**520**	**350**	**180 J**	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	ug/l	1.1	NA	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	ug/l	--	23000	25000	28000	18000	18000	19000	21000	23000	24000	25000	26000	20000	21000	28000	29000
Copper	ug/l	9	NA	NA	NA	25 U	25 U	25 U	25 U	NA	NA	NA	NA	NA	NA	NA	NA
Iron	ug/l	1000	NA	NA	NA	620	630	470	260	NA	NA	NA	NA	NA	NA	NA	NA
Lead	ug/l	14	NA	NA	NA	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	ug/l	--	4600 J	4800 J	5900	3700 J	3700 J	3900 J	4100 J	4500 J	4800 J	4800 J	5400	3600 J	3700 J	5800	5900
Nickel	ug/l	20	NA	NA	NA	40 U	40 U	40 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA
Sulfur	ug/l	--	4900	NA	NA	NA	NA	NA	NA	4800	NA	NA	NA	NA	NA	NA	NA
Vanadium	ug/l	--	NA	NA	NA	3.1 J	2.9 J	20 U	20 U	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																	
Acenaphthene	ug/l	990	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Acenaphthylene	ug/l	--	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Anthracene	ug/l	40000	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Benzo(b)fluoranthene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Benzo(k)fluoranthene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Chrysene	ug/l	0.018	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Fluoranthene	ug/l	140	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Fluorene	ug/l	5300	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Naphthalene	ug/l	--	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Phenanthrene	ug/l	--	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
Pyrene	ug/l	4000	0.19 U	0.20 U	0.21 U	0.22 U	0.22 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U
TPH-DRO																	
Diesel (C10-C20)	mg/l	--	0.49 U	0.48 U	0.48 U	0.53 U	0.51 U	0.5 U	0.49 U	0.49 U	0.48 U	0.48 U	0.5 U	0.47 U	0.49 U	0.48 U	0.48 U
Oil Range Organics (C20-C34)	mg/l	--	0.49 U	0.48 U	0.48 U	0.53 U	0.51 U	0.5 U	0.49 U	0.49 U	0.48 U	0.48 U	0.5 U	0.47 U	0.49 U	0.48 U	0.48 U
TPH-GRO																	
Gasoline (C6-C10)	mg/l	--	NA	NA	NA	0.1 U	0.1 U	0.037 J	0.1 UB	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																	
Benzene	ug/l	510	1.0 U	1.0 U	0.20 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ - The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

	Location		CSXT-NF-CTR-B	CSXT-NF-CTR-B	CSXT-NF-CTR-B	CSXT-NF-CTR-B	CSXT-NF-CTR-B	CSXT-NF-CTR-B	CSXT-NF-CTR-B	CSXT-NF-CTR-B	CSXT-NF-CTR-M	CSXT-NF-CTR-M	CSXT-NF-CTR-M	CSXT-NF-CTR-M	CSXT-NF-CTR-M	CSXT-NF-CTR-M	CSXT-NF-CTR-M
	Sample Name		CSXT-NF-CTR-B-050314	CSXT-NF-CTR-B-050414	CSXT-NF-CTR-B-050514	CSXT-NF-CTR-B-050614	CSXT-NF-CTR-B-050714	CSXT-NF-CTR-B-051314	CSXT-NF-CTR-B-052014	CSXT-NF-CTR-B-052814	CSXT-NF-CTR-M-050314	CSXT-NF-CTR-M-050414	CSXT-NF-CTR-M-050514	CSXT-NF-CTR-M-050614	CSXT-NF-CTR-M-050714	CSXT-NF-CTR-M-052014	DUP01-050514
	Sample Date		5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014	5/28/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/20/2014	5/5/2014
	Matrix		WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
	Validation Level		Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
	Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD
	SDG		240368641	240368701	240368861	240369301	240370191	240372801	240375411	240378161	240368641	240368701	240368861	240369301	240370191	240375411	240368861
Analyte	Units	VRP_27B TIER II SW-FRESH															
FIELD																	
Conductivity	ms/cm	--	0.157	0.171	0.152	0.149	0.14	0.234	0.132	0.249	0.161	0.169	0.153	0.15	0.14	0.126	NA
Dissolved Oxygen	mg/l	--	10.21	10.08	10 56	10.48	9.6	8 8	10.82	8.95	10.23	9.77	10 56	10.54	9.35	10.8	NA
pH	SU	--	7.48	7.31	7.52	7.82	8.24	7.82	6.67	7.76	6.73	7.4	7.35	7 31	8.3	6.71	NA
Temperature	C	--	16.18	16.56	16 23	16.64	17.72	22 08	14.62	22.76	16.18	16.55	16.18	16.63	17.72	14.6	NA
Gen Chem																	
Biological Oxygen Demand	mg/l	--	2.0 U	2 0 U	2.0 U	2.0 U	2 0 U	2.0 U	2.0 U	2 0 U	2.0 U	2 0 U	2.0 U	2.0 U	2.0 U	2 0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	9 3 J	8.0 J	10 J	20 UB	20 U	20 U	20 U	20 UB	20 U	11 J	12 J	20 UB	20 U	20 UJ	20 U
Total Suspended Solids	mg/l	--	9.0	10	7 0	NA	NA	NA	NA	NA	4.0	8.0	4 0	NA	NA	NA	3.0 J
Inorganics																	
Aluminum	ug/l	87	**430**	**400**	**300**	NA	NA	NA	NA	NA	**480**	**500**	**220**	NA	NA	NA	**320**
Cadmium	ug/l	1.1	5.0 U	5 0 U	5.0 U	NA	NA	NA	NA	NA	5.0 U	5 0 U	5.0 U	NA	NA	NA	5.0 U
Calcium	ug/l	--	18000	20000	21000	23000	25000	28000	20000	27000	18000	20000	21000	23000	24000	20000	21000
Copper	ug/l	9	25 U	25 U	25 U	NA	NA	NA	NA	NA	25 U	25 U	25 U	NA	NA	NA	25 U
Iron	ug/l	1000	550	490	390	NA	NA	NA	NA	NA	570	620	300	NA	NA	NA	420
Lead	ug/l	14	10 U	10 U	10 U	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	NA	2.5 J
Magnesium	ug/l	--	3700 J	4000 J	4100 J	4500 J	4900 J	5700	3600 J	5700	3700 J	4100 J	4200 J	4500 J	4800 J	3600 J	4200 J
Nickel	ug/l	20	40 U	40 U	40 U	NA	NA	NA	NA	NA	40 U	40 U	40 U	NA	NA	NA	40 U
Sulfur	ug/l	--	NA	NA	NA	4800	NA	NA	NA	NA	NA	NA	NA	4800	NA	NA	NA
Vanadium	ug/l	--	20 U	20 U	20 U	NA	NA	NA	NA	NA	20 U	20 U	20 U	NA	NA	NA	20 U
SVOCs																	
Acenaphthene	ug/l	990	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Acenaphthylene	ug/l	--	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Anthracene	ug/l	40000	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Benzo(a)anthracene	ug/l	0.18	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Benzo(a)pyrene	ug/l	0.18	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Benzo(b)fluoranthene	ug/l	0.18	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Benzo(g,h,i)perylene	ug/l	--	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Benzo(k)fluoranthene	ug/l	0.18	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Chrysene	ug/l	0.018	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Fluoranthene	ug/l	140	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Fluorene	ug/l	5300	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Naphthalene	ug/l	--	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.10 J	0 20 U
Phenanthrene	ug/l	--	0.19 U	0.21 U	0.20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Pyrene	ug/l	4000	0.19 U	0.21 U	0 20 U	0.20 U	0.19 U	0.19 U	0.21 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
TPH-DRO																	
Diesel (C10-C20)	mg/l	--	0.5 U	0.51 U	0.48 U	0.48 U	0.062 J	0.5 U	0.49 U	0.48 U	0.51 U	0.49 U	0.48 U	0.053 J	0.058 J	0.48 U	0.5 U
Oil Range Organics (C20-C34)	mg/l	--	0.5 U	0.51 U	0.48 U	0.48 U	0.5 UB	0.5 U	0.49 U	0.48 U	0.51 U	0.49 U	0.48 U	0.49 U	0.5 UB	0.48 U	0.5 U
TPH-GRO																	
Gasoline (C6-C10)	mg/l	--	0.1 U	0.1 U	0.1 UB	NA	NA	NA	NA	NA	0.1 U	0.1 U	0.1 UB	NA	NA	NA	0.1 UB
VOCs																	
Benzene	ug/l	510	1.0 U	1 0 U	1.0 UB	1.0 U	1 0 U	1.0 U	1.0 UB	1 0 U	1.0 U	1 0 UB	1.0 UB	1.0 U	1.0 U	1 0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

	Location		CSXT-NF-CTR-S	CSXT-NF-CTR-S	CSXT-NF-CTR-S	CSXT-NF-CTR-S	CSXT-NF-CTR-S	CSXT-NF-CTR-S	CSXT-NF-CTR-S	CSXT-NF-CTR-S	CSXT-NF-LDB-B	CSXT-NF-LDB-B	CSXT-NF-LDB-B	CSXT-NF-LDB-B	CSXT-NF-LDB-B	CSXT-NF-LDB-B	CSXT-NF-LDB-B
	Sample Name		CSXT-NF-CTR-S-050314	CSXT-NF-CTR-S-050414	CSXT-NF-CTR-S-050514	CSXT-NF-CTR-S-050614	CSXT-NF-CTR-S-050714	CSXT-NF-CTR-S-051314	CSXT-NF-CTR-S-052014	CSXT-NF-CTR-S-052814	CSXT-NF-LDB-B-050314	CSXT-NF-LDB-B-050414	CSXT-NF-LDB-B-050514	CSXT-NF-LDB-B-050614	CSXT-NF-LDB-B-050714	CSXT-NF-LDB-B-051314	CSXT-NF-LDB-B-052014
	Sample Date		5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014	5/28/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014
	Matrix		WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
	Validation Level		Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
	Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	SDG		240368641	240368701	240368861	240369301	240370191	240372801	240375411	240378161	240368641	240368701	240368861	240369301	240370191	240372801	240375411
Analyte	Units	VRP_27B TIER II SW-FRESH															
FIELD																	
Conductivity	ms/cm	--	0.186	0.168	0.152	0.15	0.14	0.234	0.129	0.249	0.154	0.165	0.152	0.147	0.137	0.234	0.139
Dissolved Oxygen	mg/l	--	10.25	10.18	10.31	10.53	9.4	8 81	10.76	8.92	10.18	10.2	10.31	10 51	10.09	9.01	10 65
pH	SU	--	6.18	7.12	7.11	7.48	8.34	7 81	6.61	7.6	7 37	7.35	7.51	7 84	8.13	7.76	6.78
Temperature	C	--	16.16	16 53	16.17	16.62	17.73	22.06	14.6	22.75	16.14	16.34	16.1	16.42	17.58	21.94	14.49
Gen Chem																	
Biological Oxygen Demand	mg/l	--	2 0 U	2.0 U	2.0 U	2 0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.4 J	2.0 U
Chemical Oxygen Demand	mg/l	--	8.3 J	9.3 J	8 8 J	20 U	6.4 J	20 U	20 UJ	20 UB	20 U	11 J	20 U	20 UB	6.3 J	20 U	20 UJ
Total Suspended Solids	mg/l	--	9.0	7 0	7.0	NA	NA	NA	NA	NA	11	5.0	5 0	NA	NA	NA	NA
Inorganics																	
Aluminum	ug/l	87	**470**	**340**	**300**	NA	NA	NA	NA	NA	**550**	**400**	**310**	NA	NA	NA	NA
Cadmium	ug/l	1.1	5 0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA
Calcium	ug/l	--	18000	20000	21000	23000	25000	28000	20000	29000	18000	19000	20000	22000	24000	28000	19000
Copper	ug/l	9	25 U	25 U	25 U	NA	NA	NA	NA	NA	25 U	25 U	25 U	NA	NA	NA	NA
Iron	ug/l	1000	560	440	400	NA	NA	NA	NA	NA	640	500	410	NA	NA	NA	NA
Lead	ug/l	14	10 U	10 U	10 U	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	NA	NA
Magnesium	ug/l	--	3700 J	4000 J	4200 J	4600 J	4800 J	5800	3600 J	5900	3800 J	3800 J	4100 J	4400 J	4700 J	5800	3500 J
Nickel	ug/l	20	40 U	40 U	40 U	NA	NA	NA	NA	NA	40 U	40 U	40 U	NA	NA	NA	NA
Sulfur	ug/l	--	NA	NA	NA	4900	NA	NA	NA	NA	NA	NA	NA	4700	NA	NA	NA
Vanadium	ug/l	--	20 U	20 U	20 U	NA	NA	NA	NA	NA	20 U	20 U	20 U	NA	NA	NA	NA
SVOCs																	
Acenaphthene	ug/l	990	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Acenaphthylene	ug/l	--	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Anthracene	ug/l	40000	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(b)fluoranthene	ug/l	0.18	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(k)fluoranthene	ug/l	0.18	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Chrysene	ug/l	0.018	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Fluoranthene	ug/l	140	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Fluorene	ug/l	5300	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Naphthalene	ug/l	--	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
Phenanthrene	ug/l	--	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 UB	0.19 U
Pyrene	ug/l	4000	0.20 U	0 22 U	0.20 U	0.19 U	0 20 U	0.19 U	0.20 U	0 20 U	0.22 U	0.20 U	0 21 U	0.19 U	0.19 U	0.19 U	0.19 U
TPH-DRO																	
Diesel (C10-C20)	mg/l	--	0.53 U	0.5 U	0.48 U	0.49 U	0.5 U	0.5 U	0 5 U	0.48 U	0.5 U	0.54 U	0 51 U	0.5 U	0 06 J	0.48 U	0.48 U
Oil Range Organics (C20-C34)	mg/l	--	0.53 U	0.5 U	0.48 U	0.49 U	0.5 U	0.06 J	0 5 U	0.48 U	0.5 U	0.54 U	0 51 U	0.5 U	0 5 UB	0.48 U	0.48 U
TPH-GRO																	
Gasoline (C6-C10)	mg/l	--	0.1 U	0.1 UJ	0.1 UB	NA	NA	NA	NA	NA	0.1 U	0.029 J	0.1 UB	NA	NA	NA	NA
VOCs																	
Benzene	ug/l	510	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 UB	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

	Location		CSXT-NF-LDB-B	CSXT-NF-LDB-M	CSXT-NF-LDB-M	CSXT-NF-LDB-M	CSXT-NF-LDB-M	CSXT-NF-LDB-M	CSXT-NF-LDB-M	CSXT-NF-LDB-S	CSXT-NF-LDB-S	CSXT-NF-LDB-S	CSXT-NF-LDB-S	CSXT-NF-LDB-S	CSXT-NF-LDB-S	CSXT-NF-LDB-S	CSXT-NF-LDB-S
	Sample Name		CSXT-NF-LDB-B-052814	CSXT-NF-LDB-M-050314	CSXT-NF-LDB-M-050414	CSXT-NF-LDB-M-050514	CSXT-NF-LDB-M-050614	CSXT-NF-LDB-M-050714	CSXT-NF-LDB-M-052014	CSXT-HWY163-NF-LDB-S-052014	CSXT-NF-LDB-S-050314	CSXT-NF-LDB-S-050414	CSXT-NF-LDB-S-050514	CSXT-NF-LDB-S-050614	CSXT-NF-LDB-S-050714	CSXT-NF-LDB-S-051314	CSXT-NF-LDB-S-052814
	Sample Date		5/28/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/20/2014	5/20/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/28/2014
	Matrix		WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
	Validation Level		Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
	Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	SDG		240378161	240368641	240368701	240368861	240369301	240370191	240375411	240375411	240368641	240368701	240368861	240369301	240370191	240372801	240378161
Analyte	Units	VRP_27B TIER II SW-FRESH															
FIELD																	
Conductivity	ms/cm	--	0.246	0.15	0.165	0.149	0.147	0.137	0.163	0.149	0.109	0.172	0.157	0.151	0.138	0 233	0.246
Dissolved Oxygen	mg/l	--	8.83	10.23	10.2	10.55	10.51	10.03	10 82	10 8	10 34	10.17	10.44	10.47	11.04	9.1	8.81
pH	SU	--	7.92	7.25	7.35	7 38	7.71	8.12	6.75	6.72	6.92	7.12	7.08	7.31	8.16	7.8	7.89
Temperature	C	--	22 59	16.11	16 34	16.09	16.39	17.57	14.47	14.48	16 09	16.26	16.09	16.38	17.56	21.96	22.6
Gen Chem																	
Biological Oxygen Demand	mg/l	--	2.0 U	2 0 U	2.0 U	2.0 U	2.0 U	2 0 U	2.0 UB	2 0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	20 UB	20 U	11 J	20 U	20 UB	6.9 J	20 UJ	20 UJ	12 J	12 J	11 J	20 U	20 U	20 U	20 UB
Total Suspended Solids	mg/l	--	NA	12	7 0	7.0	NA	NA	NA	NA	10	9.0	4.0	NA	NA	NA	NA
Inorganics																	
Aluminum	ug/l	87	NA	**490**	**510**	**320**	NA	NA	NA	NA	**490**	**390**	**370**	NA	NA	NA	NA
Cadmium	ug/l	1.1	NA	5 0 U	5.0 U	5.0 U	NA	NA	NA	NA	5.0 U	5.0 U	5 0 U	NA	NA	NA	NA
Calcium	ug/l	--	28000	18000	20000	20000	22000	24000	20000	20000	17000	18000	20000	22000	25000	28000	28000
Copper	ug/l	9	NA	25 U	25 U	25 U	NA	NA	NA	NA	25 U	25 U	25 U	NA	NA	NA	NA
Iron	ug/l	1000	NA	620	620	430	NA	NA	NA	NA	600	470	440	NA	NA	NA	NA
Lead	ug/l	14	NA	10 U	10 U	10 U	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	NA	NA
Magnesium	ug/l	--	5800	3700 J	4100 J	4000 J	4500 J	4700 J	3600 J	3500 J	3600 J	3700 J	4100 J	4400 J	4800 J	5700	5800
Nickel	ug/l	20	NA	40 U	40 U	40 U	NA	NA	NA	NA	40 U	40 U	40 U	NA	NA	NA	NA
Sulfur	ug/l	--	NA	NA	NA	NA	4700	NA	NA	NA	NA	NA	NA	4700	NA	NA	NA
Vanadium	ug/l	--	NA	20 U	20 U	20 U	NA	NA	NA	NA	20 U	20 U	20 U	NA	NA	NA	NA
SVOCs																	
Acenaphthene	ug/l	990	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Acenaphthylene	ug/l	--	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Anthracene	ug/l	40000	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Benzo(a)anthracene	ug/l	0.18	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Benzo(a)pyrene	ug/l	0.18	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Benzo(b)fluoranthene	ug/l	0.18	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Benzo(g,h,i)perylene	ug/l	--	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Benzo(k)fluoranthene	ug/l	0.18	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Chrysene	ug/l	0 018	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Dibenzo(a,h)anthracene	ug/l	0.18	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Fluoranthene	ug/l	140	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Fluorene	ug/l	5300	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Naphthalene	ug/l	--	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
Phenanthrene	ug/l	--	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 UB	0 20 U
Pyrene	ug/l	4000	0 20 U	0.20 U	0 22 U	0.19 U	0.19 U	0.19 U	0.19 U	0.21 U	0 20 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0 20 U
TPH-DRO																	
Diesel (C10-C20)	mg/l	--	0.49 U	0 5 U	0 51 U	0.52 U	0.052 J	0.052 J	0.49 U	0 5 U	0 51 U	0.51 U	0.49 U	0.49 U	0.5 U	0.48 U	0.48 U
Oil Range Organics (C20-C34)	mg/l	--	0.49 U	0 5 U	0 51 U	0.52 U	0.49 U	0 5 UB	0.49 U	0 5 U	0 51 U	0.51 U	0.49 U	0.49 U	0.5 U	0.48 U	0.48 U
TPH-GRO																	
Gasoline (C6-C10)	mg/l	--	NA	0.1 U	0 027 J	0.1 UB	NA	NA	NA	NA	0.1 U	0.039 J	0.1 UB	NA	NA	NA	NA
VOCs																	
Benzene	ug/l	510	1.0 U	1 0 U	1.0 U	1.0 UB	1.0 U	1 0 U	1.0 UB	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

Location			CSXT-NF-LDB-S	CSXT-NF-RDB-B	CSXT-NF-RDB-B	CSXT-NF-RDB-B	CSXT-NF-RDB-B	CSXT-NF-RDB-B	CSXT-NF-RDB-B	CSXT-NF-RDB-B	CSXT-NF-RDB-B	CSXT-NF-RDB-M	CSXT-NF-RDB-M	CSXT-NF-RDB-M	CSXT-NF-RDB-M	CSXT-NF-RDB-M	CSXT-NF-RDB-M
Sample Name			DUP01-050414	CSXT-NF-RDB-B-050314	CSXT-NF-RDB-B-050414	CSXT-NF-RDB-B-050514	CSXT-NF-RDB-B-050614	CSXT-NF-RDB-B-050714	CSXT-NF-RDB-B-051314	CSXT-NF-RDB-B-052014	CSXT-NF-RDB-B-052814	CSXT-NF-RDB-M-050314	CSXT-NF-RDB-M-050414	CSXT-NF-RDB-M-050514	CSXT-NF-RDB-M-050614	CSXT-NF-RDB-M-050714	CSXT-NF-RDB-M-051314
Sample Date			5/4/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014	5/28/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014
Matrix			WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
Validation Level			Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
Sample Type			FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SDG			240368701	240368641	240368701	240368861	240369301	240370191	240372801	240375411	240378161	240368641	240368701	240368861	240369301	240370191	240372801
Analyte	Units	VRP_27B T ER II SW-FRESH															
FIELD																	
Conductivity	ms/cm	--	NA	0.188	0.171	0.153	0.144	0.14	0 234	0.134	0.239	0.166	0.164	0.154	0.149	0.14	0.234
Dissolved Oxygen	mg/l	--	NA	10.14	10 07	10 54	10.4	9.37	8.84	10.79	8 88	10.18	10.08	10.5	10.45	9.14	8 97
pH	SU	--	NA	7.41	7 35	7.58	7.83	7.76	7.82	6.7	7 85	7.07	7 24	7.47	7.68	8.32	7 82
Temperature	C	--	NA	16.22	16 66	16.27	16.77	17.98	22.24	14.73	22 62	16.22	16.66	16 27	16.75	17.95	22.25
Gen Chem																	
Biological Oxygen Demand	mg/l	--	2.0 U	2.0 U	2.0 U	2.0 U	2 0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 0 U	2.0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	20 U	20 U	13 J	9.4 J	20 UB	7.5 J	20 U	20 U	20 UB	20 U	8.0 J	20 U	20 UB	7.7 J	20 U
Total Suspended Solids	mg/l	--	6.0	10	6 0	7.0	NA	NA	NA	NA	NA	11	6.0	2.0 J	NA	NA	NA
Inorganics																	
Aluminum	ug/l	87	**380**	**500**	**460**	**280**	NA	NA	NA	NA	NA	**560**	**380**	**340**	NA	NA	NA
Cadmium	ug/l	1.1	5.0 U	5.0 U	5.0 U	5 0 U	NA	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U	NA	NA	NA
Calcium	ug/l	--	19000	19000	20000	21000	23000	24000	28000	21000	27000	19000	20000	21000	22000	24000	29000
Copper	ug/l	9	25 U	25 U	25 U	25 U	NA	NA	NA	NA	NA	25 U	25 U	25 U	NA	NA	NA
Iron	ug/l	1000	460	640	550	360	NA	NA	NA	NA	NA	670	500	430	NA	NA	NA
Lead	ug/l	14	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	NA
Magnesium	ug/l	--	3800 J	4000 J	4000 J	4100 J	4500 J	4700 J	5800	3800 J	5700	3900 J	4000 J	4100 J	4500 J	4800 J	5900
Nickel	ug/l	20	40 U	40 U	40 U	40 U	NA	NA	NA	NA	NA	40 U	40 U	40 U	NA	NA	NA
Sulfur	ug/l	--	NA	NA	NA	NA	4700	NA	NA	NA	NA	NA	NA	NA	4700	NA	NA
Vanadium	ug/l	--	20 U	20 U	2.4 J	20 U	NA	NA	NA	NA	NA	3 0 J	20 U	20 U	NA	NA	NA
SVOCs																	
Acenaphthene	ug/l	990	0.21 U	0.21 U	0 20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0 20 U	0.21 U	0.20 U	0.19 U	0.19 U
Acenaphthylene	ug/l	--	0.21 U	0.21 U	0 20 U	0.20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0 20 U	0.21 U	0.20 U	0.19 U	0.19 U
Anthracene	ug/l	40000	0.21 U	0.21 U	0 20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0 20 U	0.21 U	0.20 U	0.19 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0.21 U	0.21 U	0 20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0.21 U	0.21 U	0 20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Benzo(b)fluoranthene	ug/l	0.18	0.21 U	0.21 U	0 20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0.21 U	0.21 U	0 20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Benzo(k)fluoranthene	ug/l	0.18	0.21 U	0.21 U	0 20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Chrysene	ug/l	0.018	0.21 U	0.21 U	0.20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.21 U	0.21 U	0.20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Fluoranthene	ug/l	140	0.21 U	0.21 U	0.20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Fluorene	ug/l	5300	0.21 U	0.21 U	0.20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.21 U	0.21 U	0.20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Naphthalene	ug/l	--	0.21 U	0.21 U	0.20 U	0 20 U	0.20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Phenanthrene	ug/l	--	0.21 U	0.21 U	0.20 U	0 20 U	0 20 U	0.083 J	0.19 UB	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
Pyrene	ug/l	4000	0.21 U	0.21 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.22 U	0.20 U	0 21 U	0.20 U	0.19 U	0.19 U
TPH-DRO																	
Diesel (C10-C20)	mg/l	--	0.51 U	0.52 U	0.5 U	0 54 U	0.49 U	0.49 U	0.5 U	0.48 U	0.52 U	0.53 U	0.53 U	0 52 U	0.49 U	0.48 U	0.48 U
Oil Range Organics (C20-C34)	mg/l	--	0.51 U	0.52 U	0.5 U	0 54 U	0.49 U	0.49 UB	0.5 U	0.058 J	0.52 U	0.53 U	0.53 U	0 52 U	0.49 U	0.48 U	0.48 U
TPH-GRO																	
Gasoline (C6-C10)	mg/l	--	0.1 U	0.1 U	0.1 U	0.1 UB	NA	NA	NA	NA	NA	0.1 U	0.1 U	0.1 UB	NA	NA	NA
VOCs																	
Benzene	ug/l	510	1.0 U	1.0 UB	1.0 U	1.0 UB	1 0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UB	1 0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

	Location		CSXT-NF-RDB-M	CSXT-NF-RDB-S	CSXT-NF-RDB-S	CSXT-NF-RDB-S	CSXT-NF-RDB-S	CSXT-NF-RDB-S	CSXT-NF-RDB-S	CSXT-NF-RDB-S	CSXT-NF-RDB-S
	Sample Name		CSXT-NF-RDB-M-052014	CSXT-NF-RDB-S-050314	CSXT-NF-RDB-S-050414	CSXT-NF-RDB-S-050514	CSXT-NF-RDB-S-050614	CSXT-NF-RDB-S-050714	CSXT-NF-RDB-S-051314	CSXT-NF-RDB-S-052014	CSXT-NF-RDB-S-052814
	Sample Date		5/20/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014	5/28/2014
	Matrix		WS	WS	WS	WS	WS	WS	WS	WS	WS
	Validation Level		Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
	Sample Type		N	N	N	N	N	N	N	N	N
	SDG		240375411	240368641	240368701	240368861	240369301	240370191	240372801	240375411	240378161
Analyte	Units	VRP_27B T ER II SW-FRESH									
FIELD											
Conductivity	ms/cm	--	0.128	0.126	0.168	0.178	0.143	0.139	0.234	0.126	0.24
Dissolved Oxygen	mg/l	--	10.8	11.17	10.04	10.51	10.4	9.19	9.51	10.76	8.85
pH	SU	--	6.64	6.82	7.16	7.25	7.43	8 36	7.82	6.61	7.84
Temperature	C	--	14.73	11.28	16.64	16.28	16.74	17.97	22 23	14.72	22.64
Gen Chem											
Biological Oxygen Demand	mg/l	--	2.0 U	2 0 U	2 0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 0 U
Chemical Oxygen Demand	mg/l	--	20 U	20 U	12 J	20 U	20 UB	7.8 J	20 U	20 U	20 UB
Total Suspended Solids	mg/l	--	NA	10	8.0	7.0	NA	NA	NA	NA	NA
Inorganics											
Aluminum	ug/l	87	NA	**520**	**350**	**270**	NA	NA	NA	NA	NA
Cadmium	ug/l	1.1	NA	5 0 U	5 0 U	5.0 U	NA	NA	NA	NA	NA
Calcium	ug/l	--	21000	19000	19000	21000	23000	24000	29000	20000	27000
Copper	ug/l	9	NA	25 U	25 U	25 U	NA	NA	NA	NA	NA
Iron	ug/l	1000	NA	620	460	360	NA	NA	NA	NA	NA
Lead	ug/l	14	NA	10 U	10 U	10 U	NA	NA	NA	NA	NA
Magnesium	ug/l	--	3800 J	3900 J	3700 J	4200 J	4500 J	4700 J	5900	3600 J	5600
Nickel	ug/l	20	NA	40 U	40 U	40 U	NA	NA	NA	NA	NA
Sulfur	ug/l	--	NA	NA	NA	NA	4700	NA	NA	NA	NA
Vanadium	ug/l	--	NA	2.4 J	20 U	20 U	NA	NA	NA	NA	NA
SVOCs											
Acenaphthene	ug/l	990	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Acenaphthylene	ug/l	--	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Anthracene	ug/l	40000	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Benzo(b)fluoranthene	ug/l	0.18	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Benzo(k)fluoranthene	ug/l	0.18	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Chrysene	ug/l	0.018	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Fluoranthene	ug/l	140	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Fluorene	ug/l	5300	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Naphthalene	ug/l	--	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Phenanthrene	ug/l	--	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
Pyrene	ug/l	4000	0.21 U	0.21 U	0.20 U	0.19 U	0.20 U	0.20 U	0 21 U	0.19 U	0.19 U
TPH-DRO											
Diesel (C10-C20)	mg/l	--	0.48 U	0.51 U	0.5 U	0.49 U	0.48 U	0.49 U	0.5 U	0 5 U	0.48 U
Oil Range Organics (C20-C34)	mg/l	--	0.48 U	0.51 U	0.5 U	0.49 U	0.48 U	0.49 UB	0 065 J	0.067 J	0.48 U
TPH-GRO											
Gasoline (C6-C10)	mg/l	--	NA	0.1 U	0.027 J	0.1 UB	NA	NA	NA	NA	NA
VOCs											
Benzene	ug/l	510	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1 0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1 0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3 0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

Location			CSXT-HWY60 CTR-B	CSXT-HWY60 CTR-B	CSXT-HWY60 CTR-B	CSXT-HWY60 CTR-B	CSXT-HWY60 CTR-B	CSXT-HWY60 CTR-B	CSXT-HWY60 CTR-B	CSXT-HWY60-CTR-M	CSXT-HWY60 CTR-M	CSXT-HWY60-CTR-M	CSXT-HWY60-CTR-M	CSXT-HWY60 CTR-M	CSXT-HWY60-CTR-S	CSXT-HWY60 CTR-S	CSXT-HWY60 CTR-S	CSXT-HWY60 CTR-S	CSXT-HWY60 CTR-S
Sample Name			CSXT-HWY60 CTR-B-050414	CSXT-HWY60 CTR-B-050514	CSXT-HWY60 CTR-B-050614	CSXT-HWY60 CTR-B-050714	CSXT-HWY60 CTR-B-051314	CSXT-HWY60 CTR-B-052014	CSXT-HWY60 CTR-B-052814	CSXT-HWY60-CTR-M-050414	CSXT-HWY60 CTR-M-050514	CSXT-HWY60-CTR-M-050614	CSXT-HWY60-CTR-M-050714	CSXT-HWY60 CTR-M-052014	CSXT-HWY60-C-S-050414	CSXT-HWY60 CTR-S-050514	CSXT-HWY60 CTR-S-050614	CSXT-HWY60 CTR-S-050714	CSXT-HWY60 CTR-S-051314
Sample Date			5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014	5/28/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/20/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014
Matrix			WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
Validation Level			Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
Sample Type			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SDG			240368711	240368871	240369311	240370211	240372801	240375411	240378161	240368711	240368871	240369311	240370211	240375411	240368721	240368881	240369321	240370221	240372801
Analyte	Units	VRP_27B T ER II SW-FRESH																	
FIELD																			
Conductivity	ms/cm	--	0.153	0.164	0.174	0.179	0 217	0.127	0.236		0.164	0.175	0.17	NA	0.167				NA
Dissolved Oxygen	mg/l	--	10.53	8.7	7.64	9.08	9.08	10.01	9.41	10 088	8.94	7.15	9.15	9 86	11.13	9.35	9 36	9.34	9.01
pH	SU	--	6.77	7.14	6.88	7.82	8	6.47	8.41	6.59	7.22	7.11	7.75	6.45	7.73	7.88	7.8	8.06	7.95
Temperature	C	--	16.89	16.5	16.96	18.18	22.91	15.87	25.47	16.89	16.51	16.95	18.18	15.86	15.76	16.22	16 25	17 39	22 9
Gen Chem																			
Biological Oxygen Demand	mg/l	--	3.8 UB	2.0 U	2.0 U	2 0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.8 UB	2.0 U	2 0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 0 U
Chemical Oxygen Demand	mg/l	--	8 2 J	6.7 J	20 UB	20 U	20 U	20 U	20 UB	20 U	11 J	20 U	20 U	20 U	6.2 J	20 U	13 J	20 U	20 U
Total Suspended Solids	mg/l	--	12	11	NA	NA	NA	NA	NA	15	12	NA	NA	NA	16	11	NA	NA	NA
Inorganics																			
Aluminum	ug/l	87	**460 J**	**310**	NA	NA	NA	NA	NA	**480 J**	**270**	NA	NA	NA	**420**	**310**	NA	NA	NA
Cadmium	ug/l	1.1	5.0 U	5.0 U	NA	NA	NA	NA	NA	5.0 U	5.0 U	NA	NA	NA	5.0 U	5.0 U	NA	NA	NA
Calcium	ug/l	--	19000	20000	21000	22000	26000	20000	26000	19000	21000	20000	21000	20000	18000 J	20000	20000	22000	26000
Copper	ug/l	9	25 U	25 U	NA	NA	NA	NA	NA	25 U	25 U	NA	NA	NA	25 U	25 U	NA	NA	NA
Iron	ug/l	1000	630	440	NA	NA	NA	NA	NA	690	430	NA	NA	NA	560	510	NA	NA	NA
Lead	ug/l	14	10 U	10 U	NA	NA	NA	NA	NA	10 U	10 U	NA	NA	NA	10 U	10 U	NA	NA	NA
Magnesium	ug/l	--	3700 J	4100 J	4100 J	4300 J	5300	3600 J	5300	3800 J	4100 J	4000 J	4300 J	3600 J	3500 J	4100 J	4000 J	4400 J	5300
Nickel	ug/l	20	40 U	40 U	NA	NA	NA	NA	NA	40 U	40 U	NA	NA	NA	40 U	40 U	NA	NA	NA
Sulfur	ug/l	--	NA	4300	NA	NA	NA	NA	NA	NA	4400	NA	NA	NA	NA	4300	NA	NA	NA
Vanadium	ug/l	--	20 U	20 U	NA	NA	NA	NA	NA	20 U	20 U	NA	NA	NA	20 U	20 U	NA	NA	NA
SVOCs																			
Acenaphthene	ug/l	990	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Acenaphthylene	ug/l	--	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Anthracene	ug/l	40000	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Benzo(a)anthracene	ug/l	0.18	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Benzo(a)pyrene	ug/l	0.18	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Benzo(b)fluoranthene	ug/l	0.18	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Benzo(g,h,i)perylene	ug/l	--	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Benzo(k)fluoranthene	ug/l	0.18	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Chrysene	ug/l	0.018	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Fluoranthene	ug/l	140	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Fluorene	ug/l	5300	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Naphthalene	ug/l	--	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
Phenanthrene	ug/l	--	0.19 UB	0.19 U	0.21 U	0.19 U	0.19 UB	0.19 U	0.19 U	0.19 UB	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 UB
Pyrene	ug/l	4000	0.19 U	0.19 U	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0 20 U
TPH-DRO																			
Diesel (C10-C20)	mg/l	--	0.48 U	0.48 U	0.49 U	0.49 U	0.48 U	0.5 U	0.54 U	0.48 U	0.49 U	0.48 U	0.48 U	0.5 U	0.47 U	0.47 U	0.48 U	0.48 U	0.48 U
Oil Range Organics (C20-C34)	mg/l	--	0.48 UB	0.48 U	0.49 U	0.49 U	0.48 U	0.5 U	0.54 U	0.48 UB	0.49 U	0.48 U	0.48 U	0.5 U	0.081 J	0.47 U	0.48 U	0.48 U	0.48 U
TPH-GRO																			
Gasoline (C6-C10)	mg/l	--	0.1 U	0.1 U	NA	NA	NA	NA	NA	0.1 U	0.1 U	NA	NA	NA	0.1 U	0.1 U	NA	NA	NA
VOCs																			
Benzene	ug/l	510	1.0 U	1.0 UB	1.0 UB	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 UB	1.0 UB	1 0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

	Location		CSXT-HWY60 CTR-S	CSXT-HWY60 CTR-S	CSXT-HWY60-CTR-	CSXT-HWY60 CTR-S	CSXT-HWY60 LDB	CSXT-HWY60 LDB-B	CSXT-HWY60 LDB-B	CSXT-HWY60 LDB-B	CSXT-HWY60 LDB-B	CSXT-HWY60 LDB-B	CSXT-HWY60 LDB-B	CSXT-HWY60 LDB-B	CSXT-HWY60 LDB-B	CSXT-HWY60 LDB-M	CSXT-HWY60 LDB-M	CSXT-HWY60 LDB-M	CSXT-HWY60 LDB-M
	Sample Name		CSXT-HWY60 CTR-S-052014	CSXT-HWY60 CTR-S-052814	CSXT-HWY60-DUP2-050714	CSXT-HWY60-DUP-S-050414	CSXT-HWY60 LDB-S-050414	CSXT-HWY60 LDB-B-050314	CSXT-HWY60 LDB-B-050414	CSXT-HWY60 LDB-B-050514	CSXT-HWY60 LDB-B-050614	CSXT-HWY60 LDB-B-050714	CSXT-HWY60 LDB-B-051314	CSXT-HWY60 LDB-B-052014	CSXT-HWY60 LDB-B-052814	CSXT-HWY60 LDB-M-050314	CSXT-HWY60 LDB-M-050414	CSXT-HWY60 LDB-M-050514	CSXT-HWY60 LDB-M-050614
	Sample Date		5/20/2014	5/28/2014	5/7/2014	5/4/2014	5/4/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014	5/28/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014
	Matrix		WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
	Validation Level		Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
	Sample Type		N	N	FD	FD	N	N	N	N	N	N	N	N	N	N	N	N	N
	SDG		240375411	240378161	240370221	240368721	240368721	240368671	240368711	240368871	240369311	240370211	240372801	240375411	240378161	240368671	240368711	240368871	240369311
Analyte	Units	VRP_27B TIER II SW-FRESH																	
FIELD																			
Conductivity	ms/cm	--	NA	NA	NA	NA				164	0.175	0.179	NA	NA	NA	0.128			
Dissolved Oxygen	mg/l	--	9.94	9.25	NA	NA	10.33	8.24	10.97	8.84	6 93	9.16	8.81	10.01	9.23	7.22	10.29	9.23	6.85
pH	SU	--	6.47	8.36	NA	NA	6.51	6.17	7.14	7.02	6 34	7.69	7.86	6.33	8.31	6.21	6 97	7.05	6.84
Temperature	C	--	15.83	25.46	NA	NA	16.74	16.14	16.75	16.4	16 86	18.02	22.72	15.8	25.27	16.1	16.74	16.41	16.87
Gen Chem																			
Biological Oxygen Demand	mg/l	--	2 0 U	2 0 U	2 0 U	2.0 U	20 UB	4.3 UB	2 3 UB	2.0 U	2.0 U	2.0 U	2 0 U	2.0 U	2.0 U	2 5 UB	2.0 U	3.0 UB	2 0 U
Chemical Oxygen Demand	mg/l	--	20 U	20 UB	20 U	9 9 J	8.9 J	32	7.0 J	16 J	20 UB	11 J	20 U	20 U	20 UB	20 UB	7 2 J	12 J	20 U
Total Suspended Solids	mg/l	--	NA	NA	NA	16	19	14 J	15	11	NA	NA	NA	NA	NA	15 J	17	12	NA
Inorganics																			
Aluminum	ug/l	87	NA	NA	NA	**410**	**590**	280 UB	**520 J**	**290**	NA	NA	NA	NA	NA	280 UB	**510 J**	**340**	NA
Cadmium	ug/l	1.1	NA	NA	NA	5.0 U	5.0 U	5 0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	5 0 U	5.0 U	5.0 U	NA
Calcium	ug/l	--	19000	26000	21000	18000 J	18000 J	18000	20000	20000	21000	22000	26000	20000	26000	18000	19000	20000	20000
Copper	ug/l	9	NA	NA	NA	25 U	25 U	25 U	25 U	25 U	NA	NA	NA	NA	NA	25 U	25 U	25 U	NA
Iron	ug/l	1000	NA	NA	NA	520	770	320	710	410	NA	NA	NA	NA	NA	330	760	520	NA
Lead	ug/l	14	NA	NA	NA	10 U	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA
Magnesium	ug/l	--	3400 J	5400	4200 J	3700 J	3600 J	3600 J	3800 J	4000 J	4200 J	4400 J	5300	3500 J	5400	3600 J	3800 J	4000 J	4100 J
Nickel	ug/l	20	NA	NA	NA	40 U	40 U	40 U	40 U	40 U	NA	NA	NA	NA	NA	1.3 J	40 U	40 U	NA
Sulfur	ug/l	--	NA	NA	NA	NA	NA	NA	NA	4300	NA	NA	NA	NA	NA	NA	NA	4200	NA
Vanadium	ug/l	--	NA	NA	NA	20 U	20 U	20 U	20 U	20 U	NA	NA	NA	NA	NA	20 U	20 U	20 U	NA
SVOCs																			
Acenaphthene	ug/l	990	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Acenaphthylene	ug/l	--	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Anthracene	ug/l	40000	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(b)fluoranthene	ug/l	0.18	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(k)fluoranthene	ug/l	0.18	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Chrysene	ug/l	0 018	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Fluoranthene	ug/l	140	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Fluorene	ug/l	5300	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Naphthalene	ug/l	--	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Phenanthrene	ug/l	--	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 UB	0.19 U	0.20 U	0 20 U	0 20 UB	0.20 U	0.19 U	0.19 U	0.19 UB	0.19 U	0.19 U
Pyrene	ug/l	4000	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0 20 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
TPH-DRO																			
Diesel (C10-C20)	mg/l	--	0.5 U	0 5 U	0.48 U	0.47 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0 5 U	0.5 U	0.48 U	0.48 U	0.48 U	0.48 U
Oil Range Organics (C20-C34)	mg/l	--	0.5 U	0 5 U	0.48 U	0.47 U	0.47 U	0.49 U	0.48 UB	0.48 U	0.48 U	0.48 U	0.48 U	0 5 U	0.5 U	0.48 U	0.48 UB	0.48 U	0.48 U
TPH-GRO																			
Gasoline (C6-C10)	mg/l	--	NA	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	NA	NA	NA	NA	0.1 U	0.1 U	0.1 U	NA
VOCs																			
Benzene	ug/l	510	1.0 U	1 0 U	1 0 U	1.0 U	1.0 U	1.0 UB	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1 0 U	1.0 U	1 0 UB	1.0 U	1.0 U	1.0 UB
Ethylbenzene	ug/l	2100	1.0 U	1 0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1 0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1 0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1 0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3 0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3 0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

Location			CSXT-HWY60-LDB-M	CSXT-HWY60-LDB-M	CSXT-HWY60-LDB-S	CSXT-HWY60-LDB-S	CSXT-HWY60-LDB-S	CSXT-HWY60-LDB-S	CSXT-HWY60-LDB-S	CSXT-HWY60-LDB-S	CSXT-HWY60-LDB-S	CSXT-HWY60-LDB-S	CSXT-HWY60-LDB-S	CSXT-HWY60-RDB	CSXT-HWY60-RDB-B	CSXT-HWY60-RDB-B	CSXT-HWY60-RDB-B	CSXT-HWY60-RDB-B	CSXT-HWY60-RDB-B	CSXT-HWY60-RDB-B
Sample Name			CSXT-HWY60-LDB-M-050714	CSXT-HWY60-LDB-M-052014	CSXT-HWY60-DUP-S-050514	CSXT-HWY60-LDB-S-050314	CSXT-HWY60-LDB-S-050514	CSXT-HWY60-LDB-S-050614	CSXT-HWY60-LDB-S-050714	CSXT-HWY60-LDB-S-051314	CSXT-HWY60-LDB-S-052014	CSXT-HWY60-LDB-S-052814	CSXT-HWY60-RDB-S-050414	CSXT-HWY60-RDB-B-050414	CSXT-HWY60-RDB-B-050514	CSXT-HWY60-RDB-B-050614	CSXT-HWY60-RDB-B-050714	CSXT-HWY60-RDB-B-051314	CSXT-HWY60-RDB-B-052014
Sample Date			5/7/2014	5/20/2014	5/5/2014	5/3/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014	5/28/2014	5/4/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014
Matrix			WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
Validation Level			Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
Sample Type			N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SDG			240370211	240375411	240368881	240368671	240368881	240369321	240370221	240372801	240375411	240378161	240368721	240368711	240368871	240369311	240370211	240372801	240375411
Analyte	Units	VRP_27B TIER II SW-FRESH																	
FIELD																			
Conductivity	ms/cm	--	0.181	NA	NA	0.127	0.195	0.176		0.219	0.162	NA	0.156	0.152	0.163	0.174	0.178	0.215	0.13
Dissolved Oxygen	mg/l	--	9.43	9 93	NA	7.98	9.37	9.3	9.11	8.75	9.78	9.21	9.64	9.75	9.14	7.65	8.94	9.44	9 94
pH	SU	--	7.41	6.48	NA	7.58	7.93	7.84	8 09	7.78	6.47	8.27	7.3	6 59	7.03	6.49	7.76	8	6 53
Temperature	C	--	18.02	15.78	NA	16.24	15.25	16.25	17.39	22.71	15.79	25.27	15.18	16.85	16.54	19.92	18.12	23.04	15.84
Gen Chem																			
Biological Oxygen Demand	mg/l	--	2 0 U	5.8 UB	6.3 UB	3.3 UB	6.0 U	2.0 U	2.0 U	2.0 U	2 0 U	2.0 U	2.0 U	2.0 U	2.5 UB	3 2 UB	2.0 U	2.0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	9.9 J	20 U	20 U	25 UB	20 U	20 U	20 U	5.2 J	20 U	20 UB	20 U	8 6 J	29	35 UB	20 U	20 U	20 U
Total Suspended Solids	mg/l	--	NA	NA	13	18	14	NA	NA	NA	NA	NA	13	12	11	NA	NA	NA	NA
Inorganics																			
Aluminum	ug/l	87	NA	NA	**260**	280 UB	**310**	NA	NA	NA	NA	NA	**440**	**460 J**	**320**	NA	NA	NA	NA
Cadmium	ug/l	1.1	NA	NA	5.0 U	5 0 U	5.0 U	NA	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA
Calcium	ug/l	--	22000	20000	21000	18000	20000	21000	21000	27000	20000	26000	15000 J	19000	20000	21000	21000	26000	20000
Copper	ug/l	9	NA	NA	25 U	25 U	25 U	NA	NA	NA	NA	NA	25 U	25 U	25 U	NA	NA	NA	NA
Iron	ug/l	1000	NA	NA	410	310	450	NA	NA	NA	NA	NA	930	620	510	NA	NA	NA	NA
Lead	ug/l	14	NA	NA	10 U	10 U	10 U	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	NA	NA
Magnesium	ug/l	--	4300 J	3500 J	4200 J	3600 J	4000 J	4100 J	4200 J	5400	3500 J	5400	3300 J	3800 J	4100 J	4100 J	4400 J	5300	3600 J
Nickel	ug/l	20	NA	NA	40 U	40 U	40 U	NA	NA	NA	NA	NA	40 U	40 U	40 U	NA	NA	NA	NA
Sulfur	ug/l	--	NA	NA	4300	NA	4200	NA	NA	NA	NA	NA	NA	NA	4300	NA	NA	NA	NA
Vanadium	ug/l	--	NA	NA	20 U	20 U	20 U	NA	NA	NA	NA	NA	20 U	20 U	20 U	NA	NA	NA	NA
SVOCs																			
Acenaphthene	ug/l	990	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Acenaphthylene	ug/l	--	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Anthracene	ug/l	40000	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.041 J	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Benzo(a)anthracene	ug/l	0.18	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.077 J	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Benzo(a)pyrene	ug/l	0.18	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.059 J	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Benzo(b)fluoranthene	ug/l	0.18	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.081 J	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Benzo(g,h,i)perylene	ug/l	--	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.074 J	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Benzo(k)fluoranthene	ug/l	0.18	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.062 J	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Chrysene	ug/l	0.018	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	**0.070 J**	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Fluoranthene	ug/l	140	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.086 J	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Fluorene	ug/l	5300	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.057 J	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.068 J	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Naphthalene	ug/l	--	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
Phenanthrene	ug/l	--	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 UB	0.20 U	0.19 U	0.061 J	0.19 UB	0.19 U	0.20 U	0 20 U	0.19 UB	0.20 U
Pyrene	ug/l	4000	0.21 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.094 J	0.19 U	0.20 U	0 20 U	0.19 U	0.20 U
TPH-DRO																			
Diesel (C10-C20)	mg/l	--	0.48 U	0.48 U	0.47 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0 5 U	0.48 U	0.47 U	0.49 U	0.48 U	0.48 U	0.49 U	0.48 U	0.5 U
Oil Range Organics (C20-C34)	mg/l	--	0.48 U	0.48 U	0.47 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0 097 J	0.48 U	0.076 J	0.49 UB	0.48 U	0.48 U	0.49 U	0.48 U	0.5 U
TPH-GRO																			
Gasoline (C6-C10)	mg/l	--	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	NA	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	NA	NA
VOCs																			
Benzene	ug/l	510	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 UB	1 0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

	Location		CSXT-HWY60-RDB-B	CSXT-HWY60-RDB-M	CSXT-HWY60-RDB-M	CSXT-HWY60-RDB-M	CSXT-HWY60-RDB-M	CSXT-HWY60-RDB-S	CSXT-HWY60-RDB-S	CSXT-HWY60-RDB-S	CSXT-HWY60-RDB-S	CSXT-HWY60-RDB-S	CSXT-HWY60-RDB-S	CSXT-HWY60-RDB-S	CSXT-HWY60-RDB-S	CSXT-HWY60-RDB-S
	Sample Name		CSXT-HWY60-RDB-B-052814	CSXT-HWY60-RDB-M-050414	CSXT-HWY60-RDB-M-050514	CSXT-HWY60-RDB-M-050614	CSXT-HWY60-RDB-M-050714	CSXT-DUP-01-051314	CSXT-HWY60-DUP2-S-050614	CSXT-HWY60-RDB-S-050214	CSXT-HWY60-RDB-S-050514	CSXT-HWY60-RDB-S-050614	CSXT-HWY60-RDB-S-050714	CSXT-HWY60-RDB-S-051314	CSXT-HWY60-RDB-S-052014	CSXT-HWY60-RDB-S-052814
	Sample Date		5/28/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/6/2014	5/2/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014	5/28/2014
	Matrix		WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
	Validation Level		Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
	Sample Type		N	N	N	N	N	FD	FD	N	N	N	N	N	N	N
	SDG		240378161	240368711	240368871	240369311	240370211	240372801	240369321	240368311	240368881	240369321	240370221	240372801	240375411	240378161
Analyte	Units	VRP_27B TIER II SW-FRESH														
FIELD																
Conductivity	ms/cm	--	0 237	0.152	0.163	0.174	0.179	NA					0.112	NA	NA	NA
Dissolved Oxygen	mg/l	--	9 61	9.26	8.51	7.43	9.16	NA	NA	9.31	9.39	9 5	9 61	9.53	9.87	8 9
pH	SU	--	8.3	6.59	7.3	6.72	7.73	NA	NA	7.42	7 5	7.14	8 03	7.99	6.5	8.26
Temperature	C	--	25.32	16.85	16.55	19.65	18.13	NA	NA	16.48	16.01	15.7	17.19	23.04	15.85	25.22
Gen Chem																
Biological Oxygen Demand	mg/l	--	2.2	16 UB	2 0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.5	2.2 UB	2.0 U	2.0 U	2.0 U	2 0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	20 UB	11 J	17 J	20 UB	9.6 J	20 U	12 J	13 J	20 U	20 U	8.9 J	20 U	20 U	20 UB
Total Suspended Solids	mg/l	--	NA	14	11	NA	NA	NA	NA	25	11	NA	NA	NA	NA	NA
Inorganics																
Aluminum	ug/l	87	NA	**470 J**	**280**	NA	NA	NA	NA	**1200**	**330**	NA	NA	NA	NA	NA
Cadmium	ug/l	1.1	NA	5.0 U	5 0 U	NA	NA	NA	NA	5 0 U	5.0 U	NA	NA	NA	NA	NA
Calcium	ug/l	--	25000	19000	20000	20000	21000	25000	18000	15000	17000	18000	18000	26000	20000	26000
Copper	ug/l	9	NA	25 U	25 U	NA	NA	NA	NA	25 U	25 U	NA	NA	NA	NA	NA
Iron	ug/l	1000	NA	640	470	NA	NA	NA	NA	**1400**	590	NA	NA	NA	NA	NA
Lead	ug/l	14	NA	10 U	10 U	NA	NA	NA	NA	10 UB	10 U	NA	NA	NA	NA	NA
Magnesium	ug/l	--	5100	3800 J	4100 J	4100 J	4300 J	5100	3800 J	3100 J	3800 J	3800 J	4000 J	5300	3500 J	5400
Nickel	ug/l	20	NA	40 U	40 U	NA	NA	NA	NA	40 U	40 U	NA	NA	NA	NA	NA
Sulfur	ug/l	--	NA	NA	4300	NA	NA	NA	NA	NA	3500	NA	NA	NA	NA	NA
Vanadium	ug/l	--	NA	20 U	20 U	NA	NA	NA	NA	20 U	20 U	NA	NA	NA	NA	NA
SVOCs																
Acenaphthene	ug/l	990	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Acenaphthylene	ug/l	--	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Anthracene	ug/l	40000	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.12 J	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Benzo(b)fluoranthene	ug/l	0.18	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Benzo(k)fluoranthene	ug/l	0.18	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Chrysene	ug/l	0.018	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	**0.14 J**	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Fluoranthene	ug/l	140	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.11 J	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Fluorene	ug/l	5300	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Naphthalene	ug/l	--	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
Phenanthrene	ug/l	--	0.19 U	0.19 UB	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.11 J	0.19 U	0.19 U	0.19 U	0.20 UB	0.21 U	0.19 U
Pyrene	ug/l	4000	0.19 U	0.19 U	0.20 U	0.20 U	0.19 U	0 20 U	0.19 U	0.11 J	0.19 U	0.19 U	0.19 U	0.20 U	0.21 U	0.19 U
TPH-DRO																
Diesel (C10-C20)	mg/l	--	0.55 U	0.48 U	0.49 U	0.52 U	0.49 U	0 5 U	0.48 U	0.52 U	0.48 U	0.48 U	0.48 U	0.5 U	0 5 U	0.49 U
Oil Range Organics (C20-C34)	mg/l	--	0.55 U	0.48 UB	0.49 U	0.52 U	0.49 U	0 5 U	0.48 U	0.52 U	0.48 U	0.48 U	0.48 U	0.5 U	0 5 U	0.49 U
TPH-GRO																
Gasoline (C6-C10)	mg/l	--	NA	0.1 U	0.1 U	NA	NA	NA	NA	0.1 UJ	0.1 U	NA	NA	NA	NA	NA
VOCs																
Benzene	ug/l	510	1.0 U	1 0 U	1.0 UB	1.0 U	1.0 U	1 0 U	1.0 U	1 0 UB	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U
Ethylbenzene	ug/l	2100	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U
Toluene	ug/l	6000	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U
Total Xylenes	ug/l	--	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

			Location	CSXT-WATKINS-CTR-B	CSXT-WATKINS-CTR-B	CSXT-WATKINS-CTR-B	CSXT-WATKINS-CTR-B	CSXT-WATKINS-CTR-B	CSXT-WATKINS-CTR-M	CSXT-WATKINS-CTR-M	CSXT-WATKINS-CTR-M	CSXT-WATKINS-CTR-M	CSXT-WATKINS-CTR-M	CSXT-WATKINS-CTR-S	CSXT-WATKINS-CTR-S	CSXT-WATKINS-CTR-S	CSXT-WATKINS-CTR-S	CSXT-WATKINS-CTR-S	CSXT-WATKINS-LDB-B
			Sample Name	CSXT-WATKINS-CTR-B 050314	CSXT-WATKINS-CTR-B-050414	CSXT-WATKINS-CTR-B-050514	CSXT-WATKINS-CTR-B-050614	CSXT-WATKINS-CTR-B-050714	CSXT-WATKINS-CTR-M-050314	CSXT-WATKINS-CTR-M-050414	CSXT-WATKINS-CTR-M-050514	CSXT-WATKINS-CTR-M-050614	CSXT-WATKINS-CTR-M-050714	CSXT-WATKINS-CTR-S-050314	CSXT-WATKINS-CTR-S-050414	CSXT-WATKINS-CTR-S-050514	CSXT-WATKINS-CTR-S-050614	CSXT-WATKINS-CTR-S-050714	CSXT-DUP-01-050314
			Sample Date	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/3/2014
			Matrix	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
			Validation Level	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD
			SDG	240368671	240368711	240368871	240369311	240370211	240368671	240368711	240368871	240369311	240370211	240368671	240368711	240368871	240369311	240370211	240368671
Analyte	Units	VRP_27B TIER II SW-FRESH																	
FIELD																			
Conductivity	ms/cm	--	0.094	0.099	0.109	0.118	0.123	0.94	0.098	0.11	0.118	0.11	0 095	0.099	0.11	0.118	0.101	NA
Dissolved Oxygen	mg/l	--	8.75	10 88	9.04	8.14	7.99	8.4	10.56	8.8	7.99	8.05	8 53	10.44	9 3	7.82	8.39	NA
pH	SU	--	6.45	6.57	5.52	6.25	6.64	5.97	6.57	5 87	6.33	6.55	6.77	6.37	6.55	6.32	6.31	NA
Temperature	C	--	16.27	16 35	16.89	16.85	17.38	16.27	16.34	16.89	16.85	17 39	16.3	16.35	16 91	16.87	17.4	NA
Gen Chem																			
Biological Oxygen Demand	mg/l	--	4.7 UB	2.0 U	4 5 UB	2.0 U	2.0 U	5 8 UB	4.1 UB	2.0 U	2 0 U	2.0 U	2.0	2 0 U	2.0 U	2.0 U	2.0 U	2.0 UB
Chemical Oxygen Demand	mg/l	--	21 UB	18 J	11 J	20 UB	14 J	56	15 J	17 J	20 UB	12 J	28 UB	13 J	5.8 J	20 UB	20 U	20 UB
pH	pH units	--	NA	NA	7.69	NA	NA	NA	NA	7.72	NA	NA	NA	NA	7.76	NA	NA	NA
Total Suspended Solids	mg/l	--	72	37	28	NA	NA	64	43	38	NA	NA	64	46	37	NA	NA	75
Inorganics																			
Aluminum	ug/l	87	**910**	**1900 J**	**1200**	NA	NA	**570**	**2000 J**	**1400**	NA	NA	**870**	**1700 J**	**1100**	NA	NA	**770**
Cadmium	ug/l	1.1	5.0 U	5.0 U	5.0 U	NA	NA	5.0 U	5.0 U	5.0 U	NA	NA	5.0 U	5 0 U	5.0 U	NA	NA	5.0 U
Calcium	ug/l	--	12000	12000	13000	13000	14000	12000	12000	13000	12000	14000	13000	11000	12000	13000	14000	12000
Copper	ug/l	9	25 U	25 U	25 U	NA	NA	25 U	25 U	25 U	NA	NA	25 U	25 U	25 U	NA	NA	25 U
Iron	ug/l	1000	**1200**	**2600**	**2000**	NA	NA	880	**2900**	**2100**	NA	NA	**1100**	**2300**	**1600**	NA	NA	**1100**
Lead	ug/l	14	10 U	10 U	10 U	NA	NA	10 U	10 U	10 U	NA	NA	10 U	10 U	10 U	NA	NA	10 U
Magnesium	ug/l	--	2700 J	2800 J	2900 J	2900 J	3200 J	2700 J	2800 J	3100 J	2800 J	3200 J	2700 J	2700 J	2900 J	2900 J	3000 J	2600 J
Nickel	ug/l	20	1.7 J	1.6 J	1.4 J	NA	NA	40 U	2.0 J	2.3 J	NA	NA	1.3 J	1.6 J	1.3 J	NA	NA	1.4 J
Sulfur	ug/l	--	NA	NA	3100	NA	NA	NA	NA	3200	NA	NA	NA	NA	3100	NA	NA	NA
Vanadium	ug/l	--	20 U	20 U	20 U	NA	NA	20 U	20 U	20 U	NA	NA	20 U	20 U	20 U	NA	NA	20 U
SVOCs																			
Acenaph hene	ug/l	990	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Acenaph hylene	ug/l	--	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
An hracene	ug/l	40000	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(b)fluoran hene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(k)fluoranthene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Chrysene	ug/l	0.018	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Fluoranthene	ug/l	140	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Fluorene	ug/l	5300	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Naphthalene	ug/l	--	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Phenanthrene	ug/l	--	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Pyrene	ug/l	4000	0.19 U	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
TPH-DRO																			
Diesel (C10-C20)	mg/l	--	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.5 U	0.48 U	0.48 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.49 U
Oil Range Organics (C20-C34)	mg/l	--	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.5 U	0.48 UB	0.48 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.49 U
TPH-GRO																			
Gasoline (C6-C10)	mg/l	--	0.1 U	0.1 U	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.1 U
VOCs																			
Benzene	ug/l	510	1.0 UB	1.0 U	1 0 UB	1.0 UB	1.0 U	1 0 UB	1.0 U	1.0 U	1 0 U	0.17 J	1.0 UB	1 0 U	1.0 U	1.0 U	1.0 U	1.0 UB
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

			Location	CSXT-WATKINS-LDB-B	CSXT-WATKINS-LDB-B	CSXT-WATKINS-LDB-B	CSXT-WATKINS-LDB-B	CSXT-WATKINS-LDB-B	CSXT-WATKINS-LDB-M	CSXT-WATKINS-LDB-M	CSXT-WATKINS-LDB-M	CSXT-WATKINS-LDB-M	CSXT-WATKINS-LDB-M	CSXT-WATKINS-LDB-S	CSXT-WATKINS-LDB-S	CSXT-WATKINS-LDB-S	CSXT-WATKINS-LDB-S
			Sample Name	CSXT-WATKINS-LDB-B-050314	CSXT-WATKINS-LDB-B-050414	CSXT-WATKINS-LDB-B-050514	CSXT-WATKINS-LDB-B-050614	CSXT-WATKINS-LDB-B-050714	CSXT-WATKINS-LDB-M-050314	CSXT-WATKINS-LDB-M-050414	CSXT-WATKINS-LDB-M-050514	CSXT-WATKINS-LDB-M-050614	CSXT-WATKINS-LDB-M-050714	CSXT-WATKINS-LDB-S-050314	CSXT-WATKINS-LDB-S-050414	CSXT-WATKINS-LDB-S-050514	CSXT-WATKINS-LDB-S-050614
			Sample Date	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014
			Matrix	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
			Validation Level	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			SDG	240368671	240368711	240368871	240369311	240370211	240368671	240368711	240368871	240369311	240370211	240368671	240368711	240368871	240369311
Analyte	Units	VRP_27B TIER II SW-FRESH															
FIELD																	
Conductivity	ms/cm	--	0.095	0.097	0.107	0.114	0.119	0.095	0.097	0.107	0.114	0.104	0.095	0.097	0.107	0.114
Dissolved Oxygen	mg/l	--	9.16	11.07	9.51	8.44	8.01	9.3	11.07	9.57	8.45	8.09	8 9	10.88	9.62	8.32
pH	SU	--	5.31	5.89	4.93	5.32	6.5	5 24	5.94	5.01	5.2	6.18	5.34	6.91	5.66	5.57
Temperature	C	--	16.09	15.99	16.64	16.68	17.26	16.07	16	16.65	16.69	17.2	16 04	16.03	16.66	16.69
Gen Chem																	
Biological Oxygen Demand	mg/l	--	2.0 U	11 UB	6.0 UB	2.0 U	2.0 U	5.1 UB	2 0 U	2.0 U	2.0 U	2 0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	31	14 J	33	20 UB	20 U	21	21	11 J	20 UB	16 J	21	16 J	9.1 J	20 U
pH	pH units	--	NA	NA	7.72	NA	NA	NA	NA	7.67	NA	NA	NA	NA	7.38	NA
Total Suspended Solids	mg/l	--	86	40 J	36	NA	NA	76	50	38	NA	NA	68	45	35	NA
Inorganics																	
Aluminum	ug/l	87	**920**	**1900 J**	**1300**	NA	NA	**840**	**1900 J**	**1000**	NA	NA	**540**	**1900 J**	**1100**	NA
Cadmium	ug/l	1.1	5.0 U	5.0 U	5.0 U	NA	NA	5.0 U	5 0 U	5.0 U	NA	NA	5.0 U	5.0 U	5.0 U	NA
Calcium	ug/l	--	12000	12000	12000	12000	13000	12000	11000	12000	13000	13000	13000	12000	12000	13000
Copper	ug/l	9	25 U	25 U	25 U	NA	NA	25 U	25 U	25 U	NA	NA	25 U	25 U	25 U	NA
Iron	ug/l	1000	**1100**	**2900**	**1900**	NA	NA	**1200**	**3000**	**1600**	NA	NA	950	**2500**	**1700**	NA
Lead	ug/l	14	10 U	10 U	10 U	NA	NA	10 U	10 U	10 U	NA	NA	10 U	10 U	10 U	NA
Magnesium	ug/l	--	2600 J	2800 J	2900 J	2800 J	3000 J	2700 J	2800 J	2800 J	2900 J	3100 J	2700 J	2800 J	2900 J	2900 J
Nickel	ug/l	20	1.4 J	1.5 J	1.6 J	NA	NA	1.6 J	1.8 J	1.4 J	NA	NA	1.3 J	1 3 J	1.4 J	NA
Sulfur	ug/l	--	NA	NA	2900	NA	NA	NA	NA	2900	NA	NA	NA	NA	2900	NA
Vanadium	ug/l	--	20 U	20 U	20 U	NA	NA	20 U	20 U	20 U	NA	NA	20 U	20 U	20 U	NA
SVOCs																	
Acenaphthene	ug/l	990	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U
Acenaphthylene	ug/l	--	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U
Anthracene	ug/l	40000	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.053 J	0.19 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U
Benzo(b)fluoranthene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.082 J	0.19 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.067 J	0.19 U	0.19 U
Benzo(k)fluoranthene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.063 J	0.19 U	0.19 U
Chrysene	ug/l	0.018	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	**0.085 J**	0.19 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U
Fluoranthene	ug/l	140	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.11 J	0.19 U	0.19 U
Fluorene	ug/l	5300	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.054 J	0.19 U	0.19 U
Naphthalene	ug/l	--	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U
Phenanthrene	ug/l	--	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 UB	0.19 U	0.19 U
Pyrene	ug/l	4000	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.073 J	0.19 U	0.19 U
TPH-DRO																	
Diesel (C10-C20)	mg/l	--	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.5 U	0.48 U	0.49 U	0.48 U
Oil Range Organics (C20-C34)	mg/l	--	0.47 U	0.48 U	0.051 J	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.5 U	0.48 U	0.49 U	0.48 U
TPH-GRO																	
Gasoline (C6-C10)	mg/l	--	0.1 U	0.1 U	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	NA
VOCs																	
Benzene	ug/l	510	1.0 UB	1.0 U	1.0 UB	1 0 UB	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

			Location	CSXT-WATKINS-LDB-S	CSXT-WATKINS-RDB-B	CSXT-WATKINS-RDB-B	CSXT-WATKINS-RDB-B	CSXT-WATKINS-RDB-B	CSXT-WATKINS-RDB-B	CSXT-WATKINS-RDB-M	CSXT-WATKINS-RDB-M	CSXT-WATKINS-RDB-M	CSXT-WATKINS-RDB-M	CSXT-WATKINS-RDB-M	CSXT-WATKINS-RDB-S	CSXT-WATKINS-RDB-S	CSXT-WATKINS-RDB-S	CSXT-WATKINS-RDB-S	CSXT-WATKINS-RDB-S
			Sample Name	CSXT-WATKINS-LDB-S-050714	CSXT-WATKINS-RDB-B-050314	CSXT-WATKINS-RDB-B-050414	CSXT-WATKINS-RDB-B-050514	CSXT-WATKINS-RDB-B-050614	CSXT-WATKINS-RDB-B-050714	CSXT-WATKINS-RDB-M-050314	CSXT-WATKINS-RDB-M-050414	CSXT-WATKINS-RDB-M-050514	CSXT-WATKINS-RDB-M-050614	CSXT-WATKINS-RDB-M-050714	CSXT-WATKINS-RDB-S-050314	CSXT-WATKINS-RDB-S-050414	CSXT-WATKINS-RDB-S-050514	CSXT-WATKINS-RDB-S-050614	CSXT-WATKINS-RDB-S-050714
			Sample Date	5/7/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014
			Matrix	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
			Validation Level	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			SDG	240370211	240368671	240368711	240368871	240369311	240370211	240368671	240368711	240368871	240369311	240370211	240368671	240368711	240368871	240369311	240370211
Analyte	Units	VRP_27B T ER II SW-FRESH																	
FIELD																			
Conductivity	ms/cm	--	0.104	0.093	0.098	0.111	0.119	0.12	0.092	0.099	0.109	0.119	0.109	0.092	0.098	0.11	0.119	0.111
Dissolved Oxygen	mg/l	--	8.22	8.15	9.49	8.98	7.95	7.96	8.16	9.57	8.89	7 89	8	8 3	9.65	8.76	7.57	8.07
pH	SU	--	6 2	6.26	6	5.62	6.3	6.72	6.66	5.83	5.56	6 51	6.35	6.97	6.01	5.68	6.48	6.28
Temperature	C	--	17.3	16.38	16.57	17.01	16.95	17.47	16.4	16.57	17 01	16.96	17.48	16.41	16.58	17.02	19.96	17.48
Gen Chem																			
Biological Oxygen Demand	mg/l	--	2.0 U	2.0 U	5.0 UB	4.6 UB	2.1 UB	2.0 U	2.0 U	6 0 U	2.0 U	2.0 U	2 0 U	2.1 UB	2.0 U	2.0 U	2.0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	12 J	24 UB	12 J	20 U	20 UB	20 U	27 UB	16 J	16 J	21 UB	20 U	36	15 J	20 U	20 U	13 J
pH	pH units	--	NA	NA	NA	7.75	NA	NA	NA	NA	7.70	NA	NA	NA	NA	7.70	NA	NA
Total Suspended Solids	mg/l	--	NA	62	56	42	NA	NA	61	43	28	NA	NA	73	46	39	NA	NA
Inorganics																			
Aluminum	ug/l	87	NA	**890**	**1600 J**	**1100**	NA	NA	**810**	**1900 J**	**1100**	NA	NA	**850**	**1800 J**	**1100**	NA	NA
Cadmium	ug/l	1.1	NA	5.0 U	5.0 U	5.0 U	NA	NA	5.0 U	5 0 U	5.0 U	NA	NA	5.0 U	5.0 U	5.0 U	NA	NA
Calcium	ug/l	--	14000	12000	11000	13000	13000	14000	12000	11000	13000	13000	14000	12000	11000	13000	13000	14000
Copper	ug/l	9	NA	25 U	25 U	25 U	NA	NA	25 U	25 U	25 U	NA	NA	25 U	25 U	25 U	NA	NA
Iron	ug/l	1000	NA	**1100**	**2300**	**1800**	NA	NA	**1100**	**2800**	**1600**	NA	NA	**1100**	**2600**	**1800**	NA	NA
Lead	ug/l	14	NA	10 U	10 U	10 U	NA	NA	10 U	10 U	10 U	NA	NA	10 U	10 U	10 U	NA	NA
Magnesium	ug/l	--	3200 J	2600 J	2700 J	2900 J	3000 J	3200 J	2600 J	2800 J	2900 J	3000 J	3300 J	2600 J	2700 J	2900 J	3000 J	3200 J
Nickel	ug/l	20	NA	40 U	1.4 J	1.4 J	NA	NA	1.5 J	1.9 J	1.3 J	NA	NA	1.5 J	1 9 J	1.7 J	NA	NA
Sulfur	ug/l	--	NA	NA	NA	2900	NA	NA	NA	NA	2900	NA	NA	NA	NA	3000	NA	NA
Vanadium	ug/l	--	NA	20 U	20 U	20 U	NA	NA	20 U	20 U	20 U	NA	NA	20 U	20 U	20 U	NA	NA
SVOCs																			
Acenaphthene	ug/l	990	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Acenaphthylene	ug/l	--	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Anthracene	ug/l	40000	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Benzo(b)fluoranthene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Benzo(k)fluoran hene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Chrysene	ug/l	0.018	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Fluoranthene	ug/l	140	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Fluorene	ug/l	5300	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Naphthalene	ug/l	--	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Phenanthrene	ug/l	--	0.19 U	0.19 U	0.20 UB	0.19 U	0.19 U	0.19 U	0.19 U	0.19 UB	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
Pyrene	ug/l	4000	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U
TPH-DRO																			
Diesel (C10-C20)	mg/l	--	0.48 U	0.47 U	0.48 U	0.48 U	0.49 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.47 U	0.48 U	0.47 U	0.49 U	0.48 U
Oil Range Organics (C20-C34)	mg/l	--	0.48 U	0.47 U	0.48 U	0.48 U	0.49 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.47 U	0.48 U	0.47 U	0.49 U	0.48 U
TPH-GRO																			
Gasoline (C6-C10)	mg/l	--	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA
VOCs																			
Benzene	ug/l	510	1.0 U	1 0 UB	1.0 U	1.0 U	1 0 UB	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	0.15 J	1.0 UB	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

Location			QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC
Sample Name			CSXT-EB-050314	CSXT-ER01052014	CSXT-ER01052814	CSXT-ER-ER01-051314	CSXT-ER-ER02-050414	CSXT-ER-ER02-050514	CSXT-ER-ER02-050614	CSXT-ER-ER02-050714	CSXT-FB01051314	CSXT-FB01052014	CSXT-FB01052814	CSXT-FB-050314	CSXT-HWY60-FB02-S-050714	CSXT-HWY60-FB-S-050414	CSXT-HWY60-FB-S-050514	CSXT-HWY60-FB-S-050614	ER-01-050214
Sample Date			5/3/2014	5/20/2014	5/28/2014	5/13/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/13/2014	5/20/2014	5/28/2014	5/3/2014	5/7/2014	5/4/2014	5/5/2014	5/6/2014	5/2/2014
Matrix			WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ
Validation Level			Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
Sample Type			EB	EB	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB	FB	FB	EB
SDG			240368671	240375411	240378161	240372801	240368711	240368871	240369311	240370211	240372801	240375411	240378161	240368671	240370221	240368721	240368881	240369321	240368311
Analyte	Units	VRP_27B T ER II SW-FRESH																	
Gen Chem																			
Biological Oxygen Demand	mg/l	--	2.2	4 3	2.0 U	2.0 U	16	2.3	11	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	52	27	2.0 U	2.0 U
Chemical Oxygen Demand	mg/l	--	6 2 J	20 U	14 J	20 U	20 U	20 U	27	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Total Suspended Solids	mg/l	--	4.3 U	NA	NA	NA	4.0 U	4 3 U	NA	NA	NA	NA	NA	5.3 U	NA	4 0 U	8.0 U	NA	4.0 U
Inorganics																			
Aluminum	ug/l	87	200 U	NA	NA	NA	200 U	200 U	NA	NA	NA	NA	NA	200 U	NA	200 U	200 U	NA	200 U
Cadmium	ug/l	1.1	5.0 U	NA	NA	NA	5.0 U	5 0 U	NA	NA	NA	NA	NA	5.0 U	NA	5 0 U	5.0 U	NA	5.0 U
Calcium	ug/l	--	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	270 JB	170 JB	5000 U	5000 U	5000 U	5000 U	250 JB	5000 U	5000 U	260 JB	5000 U
Copper	ug/l	9	25 U	NA	NA	NA	25 U	25 U	NA	NA	NA	NA	NA	25 U	NA	25 U	25 U	NA	25 U
Iron	ug/l	1000	200 U	NA	NA	NA	200 U	200 U	NA	NA	NA	NA	NA	200 U	NA	200 U	200 U	NA	200 U
Lead	ug/l	14	10 U	NA	NA	NA	10 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	10 U	NA	10 U
Magnesium	ug/l	--	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	69 JB	66 JB	5000 U	5000 U	5000 U	5000 U	49 JB	5000 U	5000 U	50 JB	5000 U
Nickel	ug/l	20	40 U	NA	NA	NA	40 U	40 U	NA	NA	NA	NA	NA	40 U	NA	40 U	1.6 J	NA	40 U
Sulfur	ug/l	--	NA	NA	NA	NA	NA	250 U	NA	NA	NA	NA	NA	NA	NA	NA	250 U	NA	NA
Vanadium	ug/l	--	20 U	NA	NA	NA	20 U	20 U	NA	NA	NA	NA	NA	20 U	NA	20 U	20 U	NA	20 U
SVOCs																			
Acenaphthene	ug/l	990	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Acenaphthylene	ug/l	--	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Anthracene	ug/l	40000	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(a)anthracene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(a)pyrene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(b)fluoranthene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(g,h,i)perylene	ug/l	--	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Benzo(k)fluoranthene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Chrysene	ug/l	0.018	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Dibenzo(a,h)anthracene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Fluoranthene	ug/l	140	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Fluorene	ug/l	5300	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Naphthalene	ug/l	--	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Phenanthrene	ug/l	--	0.19 U	0.20 U	0.21 U	0.053 J	0 055 J	0.19 U	0.20 U	0.19 U	0.051 J	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Pyrene	ug/l	4000	0.19 U	0.20 U	0.21 U	0.20 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
TPH-DRO																			
Diesel (C10-C20)	mg/l	--	0.49 U	0.5 U	0.54 U	0.5 U	0.48 U	0.49 U	0.48 U	0.48 U	0.47 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.47 U	0.48 U	1 U
Oil Range Organics (C20-C34)	mg/l	--	0.49 U	0.5 U	0.54 U	0.5 U	0 095 J	0.49 U	0.48 U	0.48 U	0.47 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.47 U	0.48 U	1 U
TPH-GRO																			
Gasoline (C6-C10)	mg/l	--	0.1 U	NA	NA	NA	0.1 U	0.1 U	NA	NA	NA	NA	NA	0.1 U	NA	0.1 U	0.1 U	NA	0.03 J
VOCs																			
Benzene	ug/l	510	0.89 J	0.51 J	0 38 J	1.0	0.76 J	0 30 J	0.38 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	0.44 J
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	0 21 J	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.34 J	1.0 U	0.13 J	1 0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U

Footnotes:
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

ARCADIS

		Location	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC TRIP	QAQC TRIP	QAQC TRIP	QAQC TRIP	QAQC TRIP	QAQC TRIP	QAQC	QAQC
		Sample Name	ER01-050314	ER01-050414	ER01-050514	ER01-050614	ER01-050714	FB-01-050214	FB01-050314	FB01-050414	FB01-050514	FB01-050614	FB-050714	BLANK 05022014	BLANK 05032014	BLANK 05042014	BLANK 05132014	BLANK 05202014	BLANK 05282014	TRIP BLANK-1 05032014	TRIP BLANK-1 05042014
		Sample Date	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/2/2014	5/3/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/2/2014	5/3/2014	5/4/2014	5/13/2014	5/20/2014	5/28/2014	5/3/2014	5/4/2014
		Matrix	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ
		Validation Level	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
		Sample Type	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB	TB	TB	TB	TB	TB	TB	TB	TB
		SDG	240368641	240368701	240368861	240369301	240370191	240368311	240368641	240368701	240368861	240369301	240370191	240368311	240368671	240368701	240372801	240375411	240378161	240368641	240368721
Analyte	Units	VRP_27B T ER II SW-FRESH																			
Gen Chem																					
Biological Oxygen Demand	mg/l	--	2.0 U	2 0 U	3.9	2.0 U	2.0 U	2 0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand	mg/l	--	20 U	20 U	20 U	11 J	20 U	20 U	8.0 J	20 U	20 U	20 U	20 U	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids	mg/l	--	4.0 U	4 0 U	4.0 U	NA	NA	4 0 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics																					
Aluminum	ug/l	87	200 U	200 U	200 U	NA	NA	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	ug/l	1.1	5.0 U	5 0 U	5.0 U	NA	NA	5 0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	ug/l	--	5000 U	350 JB	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	NA	NA	NA	NA	NA	NA	NA	NA
Copper	ug/l	9	25 U	25 U	25 U	NA	NA	25 U	25 U	25 U	25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	ug/l	1000	200 U	200 U	200 U	NA	NA	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	ug/l	14	10 U	10 U	10 U	NA	NA	2.1 J	10 U	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	ug/l	--	5000 U	92 JB	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/l	20	40 U	40 U	40 U	NA	NA	40 U	40 U	40 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfur	ug/l	--	NA	NA	NA	250 U	NA	NA	NA	NA	NA	250 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	ug/l	--	20 U	20 U	20 U	NA	NA	20 U	20 U	20 U	20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																					
Acenaphthene	ug/l	990	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	ug/l	--	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	ug/l	40000	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	ug/l	--	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	ug/l	0.018	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	ug/l	140	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	ug/l	5300	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ug/l	0.18	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	ug/l	--	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	ug/l	--	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	ug/l	4000	0.19 U	0.19 U	0 20 U	0.19 U	0.19 U	0.19 U	0.21 U	0.22 U	0.19 U	0.22 U	0 20 U	NA	NA	NA	NA	NA	NA	NA	NA
TPH-DRO																					
Diesel (C10-C20)	mg/l	--	0.48 U	0.48 U	0 52 U	0.49 U	0.48 U	0.48 U	0.5 U	0.56 U	0.5 U	0.49 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range Organics (C20-C34)	mg/l	--	0.48 U	0.48 U	0 52 U	0.49 U	0.48 U	0.48 U	0.5 U	0.56 U	0.5 U	0.49 U	0.053 J	NA	NA	NA	NA	NA	NA	NA	NA
TPH-GRO																					
Gasoline (C6-C10)	mg/l	--	0.026 J	0.1 U	0 031 J	NA	NA	0 027 J	0.1 U	0.1 U	0 039 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																					
Benzene	ug/l	510	0.14 J	0.19 J	0.70 J	0.63 J	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	0.29 J	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	0.25 J	0.17 J	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U

Footnotes:
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B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ -The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
UB - Compound considered non-detect at the listed value due to associated blank contamination.
ug/mL = micrograms per Liter
mg/mL = milligrams per Liter
VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 5
Surface Water Sample Analytical Results
Initial Abatement Report
043014-K08227, Lynchburg, VA

	Location		QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC
	Sample Name		TRIP BLANK-1 05052014	TRIP BLANK-1 05062014	TRIP BLANK-1 05072014	TRIP BLANK-2 05042014	TRIP BLANK-2 05052014	TRIP BLANK-2 05062014	TRIP BLANK-2 05072014	TRIP BLANK-3 05052014	TRIP BLANK-3 05062014	TRIP BLANK-3 05072014
	Sample Date		5/5/2014	5/6/2014	5/7/2014	5/4/2014	5/5/2014	5/6/2014	5/7/2014	5/5/2014	5/6/2014	5/7/2014
	Matrix		WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ	WQ
	Validation Level		Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II	Tier II
	Sample Type		TB	TB	TB	TB	TB	TB	TB	TB	TB	TB
	SDG		240368861	240369311	240370191	240368701	240368871	240369321	240370211	240368881	240369301	240370221
Analyte	Units	VRP_27B TIER II SW-FRESH										
Gen Chem												
Biological Oxygen Demand	mg/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand	mg/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids	mg/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics												
Aluminum	ug/l	87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	ug/l	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	ug/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	ug/l	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	ug/l	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	ug/l	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	ug/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/l	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfur	ug/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	ug/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs												
Acenaphthene	ug/l	990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	ug/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	ug/l	40000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	ug/l	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	ug/l	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/l	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	ug/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/l	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	ug/l	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	ug/l	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	ug/l	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	ug/l	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ug/l	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	ug/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	ug/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	ug/l	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-DRO												
Diesel (C10-C20)	mg/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range Organics (C20-C34)	mg/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-GRO												
Gasoline (C6-C10)	mg/l	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs												
Benzene	ug/l	510	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	2100	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/l	6000	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U	1 0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	ug/l	--	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U	3 0 U	3.0 U	3.0 U	3.0 U

Footnotes:
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B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
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ug/mL = micrograms per Liter
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VRP_27B TIER II SW-FRESH: Virginia Department of Environmental Quality VRP Tier II Screening for Unrestricted Sites Table 2.7b: Other Surface Water-Fresh

Table 6
Waste Management Summary
Initial Abatement Report
043014-K08227, Lynchburg, VA

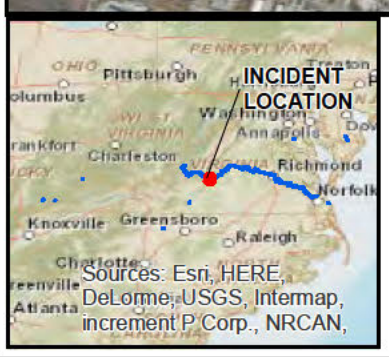
Waste Stream		Generation point	Disposal Facility	Disposal Method	Total Volume Disposed	Volume Pending Disposal
1	Non-Regulated Material (Soil/Ballast/Debris impacted with Crude Oil)	Rail bed excavation (~160 ton) Upper slope excavation (~40 ton) Lower slope excavation (~60 ton) recovered from the railcar CBTX741712 during railcar decontamination activities (1 drum)	RECO Biotechnology in Richmond, VA	RECYCLE & LANDF LL - Soil gets treated per VADEQ permit # PBR052 and then goes as daily cover to TEEL (The East End Landfill) in Henrico, VA.	245.18 tons	T&D completed
2	Non-Regulated Material (PPE/Absorbent Material impacted with crude oil)	Initial response (12 drums plus one roll-off), rail car clean out (7 drums) and cleaning of vac tanker used to transport rail car decontamination water (2 drums)- includes pads, booms, snares, hay	RECO Biotechnology in Richmond, VA	LANDFILL- Debris goes to Wheelabrator in Portsmouth, VA (Old SPSA facility).	4.29 ton	T&D of Initial response and railcar clean out waste complete. *T&D of drums (2) generated from cleaning of Vac tanker is scheduled for July 1, 2014.*
3	Non-Regulated Material (Booms)	Boom Maintenance - post remediation (one roll-off box)	Republic -Brunswick Landfill	LANDFILL	0.86 ton	T&D completed
4	Ties/Timbers/Vegetation/Hay impacted with crude oil	Generated during remediation activities, includes soil stockpile secondary containment (two roll-off boxes)	Republic - Upper Piedmont Landfill	LANDFILL	4.23 ton	T&D completed
5	Trees/limbs	un-impacted trees/limbs removed from the slope so work could be performed and trees/limbs that were scorched from the fire and cut back following final soil remediation (two roll-off boxes)	Republic - Upper Piedmont Landfill	LANDFILL	5.21 ton	T&D completed
6	Non-Regulated Material (Hay bales)	Used in the James River used for erosion control within the boomed area	Region 2000 Landfill or Republic - Brunswick Waste Magagement Facility	LANDFILL	*Pending*	*Waste characterization sampling scheduled for July 7, 2014*
7	Municipal Trash	Food Tent / clean unimpacted hay from secondary containment structure of soil pile	Region 2000 Landfill	LANDFILL	2 6 ton	T&D completed
8	Non-Regulated Material (Recovered Oil and Water Mixture)*	Frac tank SV26405L - pumped from railcar CBTX741712 (6,997 gal)	RECO Biotechnology in Richmond, VA	RECYCLE & DISCHARGE (REUSE) - Waste water is treated sent to City of Richmond POTW under permit No 2450; Fuels are recycled sent to FCC Environmental in Rockville, VA	6,997 gallons	T&D completed
9	UN1993, Flammable Liquid, n.o s, (oil and water), 3, PGII *	Frac tank FVP4001L - residual remaining in frac tanks from off loading of railcars GATX286291 & CBTX741672 and decon of frac tanks SV26405L and SV22715L (~ 1,060 gal = 618 gallons oil and 442 gallons water)	RECO Biotechnology in Richmond, VA	RECYCLE & DISCHARGE (REUSE) - Waste water is treated sent to City of Richmond POTW under permit No 2450; Fuels are recycled sent to FCC Environmental in Rockville, VA	1,150 gallons	T&D completed
10	Non-Regulated Material (Decontamination Water Mixture)	Purging and cleaning of 18 railcars staged at the CSX- Gladstone Yard Mile Post CAB119,Gladstone, VA - 24553	RECO Biotechnology in Richmond, VA	RECYCLE & DISCHARGE (REUSE) - Waste water is treated sent to City of Richmond POTW under permit No 2450; Fuels are recycled sent to FCC Environmental in Rockville, VA. LANDFILL - Sludge is solidified with Ag lime and sent to Republic - Old Dominion Landfill in Richmond, VA	5,500 gallons (3,200 gallons water and 2,300 gallons sludge)	T&D completed

Notes:
*RCRA exempt under 40 CFR 261.2(c)(3)

ARCADIS

Figures

CITY: CLE DIV/GROUP: SER/AIT DB: L.GREENE LD: PIC: PM: TM: TR:
Project (Project #)



0 2,000 4,000 Feet

GRAPHIC SCALE

NOTE:
Aerial Source - ESRI Online Imagery

CSX Transportation
Lynchburg, Virginia
Initial Abatement Report

SITE LOCATION

ARCADIS

FIGURE
1

CITY: CLE DIV/GROUP: SER/AIT DB: L.GREENE LD: PIC: PM: TM: TR:
Project (Project #)

[redacted]

CAR POSITION	TANK ID	GCS NAD83 LAT	GCS NAD83 LONG
35	CBTX 742045	37.413613	-79.137308
36	CTCX 735779	37.414373	-79.137839
37	CTCX 743047	37.414514	-79.137930
38	CTCX 735774	37.414658	-79.138011
39	CBTX 741925	37.414795	-79.138129
40	CBTX 736244	37.415072	-79.138313
41	CBTX 741725	37.415206	-79.138416
42	CBTX 741864	37.415350	-79.138512
43	GATX 286291	37.415520	-79.138410
44	CBTX 741712	37.415550	-79.138350
45	CBTX 741720	37.415506	-79.138567
46	CBTX 741672	37.415620	-79.138400
47	CTCX 743023	37.415605	-79.138688
48	CBTX 743190	37.415650	-79.138703
49	CBTX 743197	37.415783	-79.138815
50	CBTX 743147	37.415848	-79.138844

Legend

- DERAILED RAILCAR
- RAILCAR ON RAIL

0 50 100 200
Feet
GRAPHIC SCALE

CSX Transportation, Inc.
Lynchburg, Virginia
Initial Abatement Report

RAILCAR FIELD ASSESSMENT

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FIGURE
2

Scottsville, VA

Leading Sheen Area @ 3pm - May 1

Oil and Sheen Observed
From Storm Drain - May 3

60 Miles 70 Miles

80 Miles

50 Miles

40 Miles

100 Miles

120 Miles

130 Miles

140 Miles

Richmond, VA

Bremo Bluff, VA

Incident @ 2:30 pm - April 30

30 Miles

20 miles

10 Miles

Incident

150 Miles

Pollen Rafting Confirmed
By Helocopter Test - May 3

160 Miles

Sheen Seen In Eddy - May 2
No Sheen - May 3

170 Miles

180 Miles

200 Miles

210 Miles

220 Miles

End of Survey - May 2

End of Survey - May 3

Small Sheen Observed
May 2 and 3

Small Sheen Observed
May 3

10 Miles

Boom 1

Incident

Extent of Sheen From Incident - May 1

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013, Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

DISTANCE DOWNSTREAM FROM INCIDENT LOCATION

INCIDENT LOCATION

LEADING SHEEN BODY

0 15 30 Miles

CSXT
Lynchburg, VA
Initial Abatement Report

ARCADIS

FIGURE
4

CITY:(KNOXV LLE) DIV/GROUP (ENV/GIS) DB: LD: PIC: PM: TM:
PROJECT: TN000000.0000.00000 PATH: G:\GIS_Library\TitleBlockAndBorders\2011_ARCADIS_Templates\ANSI_B_Landscape.mxd - 5/20/2011 @ 2:50:38 PM

CITY: CLE DIV/GROUP: SER/AIT DB: lgreene LD: PIC: PM: TM: TR:
Project (Project #)
Path: [redacted] 6/17/2014 5:50 27 PM

DRAFT

Legend

- SAMPLE LOCATIONS
- INCIDENT LOCATION
- JAMES RIVER AND ASSOCIATED WATER BODIES

0 35 70 140
Feet
1 inch = 70 feet

NOTE:
1. REAL-TIME AERIAL IMAGE CAPTURED ON 5/3/2014. SOME DISTORTION MAY BE EVIDENT AT IMAGE EDGES DUE TO SLIGHT OBLIQUE ANGLE OF CAPTURE
2. SAMPLE COLLECTED BY ARCADIS USING A TRIMBLE GEOXH

CSX Transportation
Lynchburg, Virginia
Initial Abatement Report

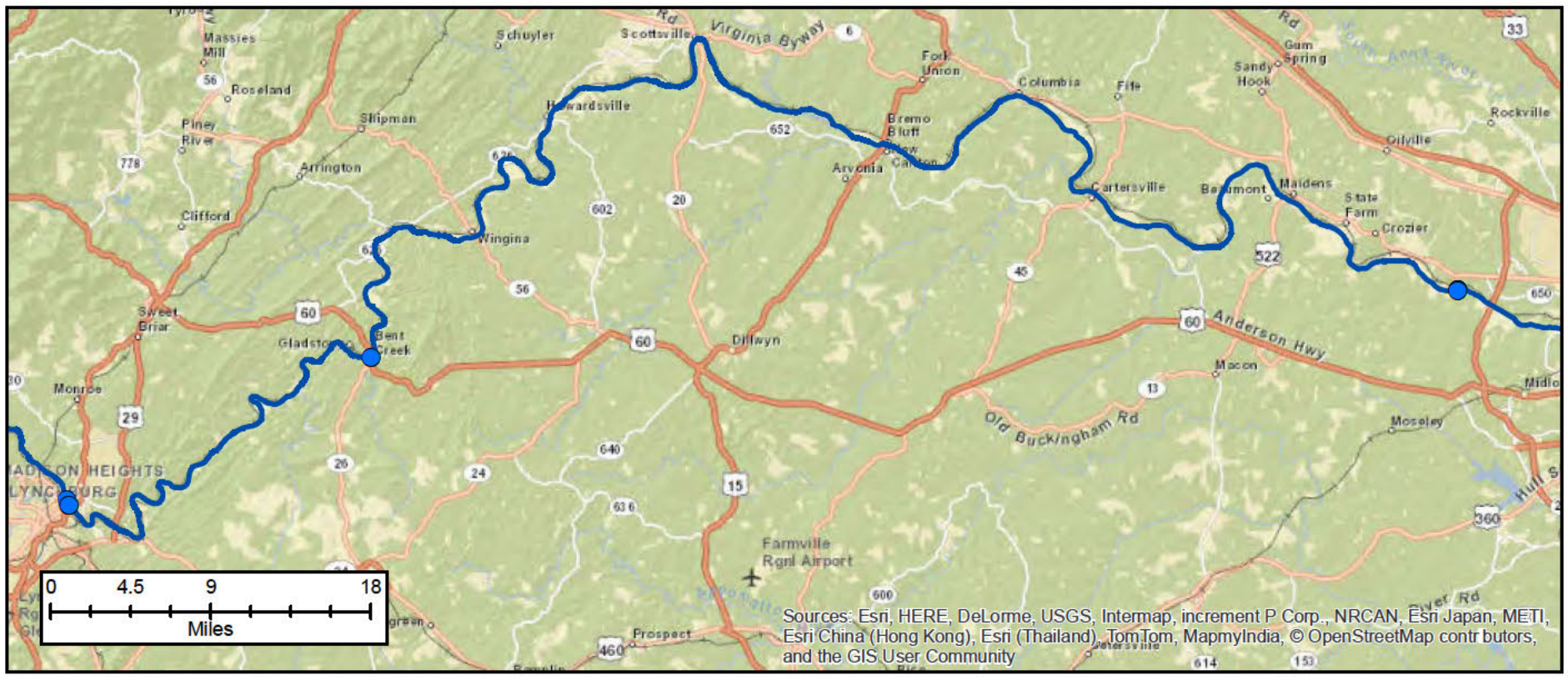
SOIL CONFIRMATION SAMPLE LOCATIONS

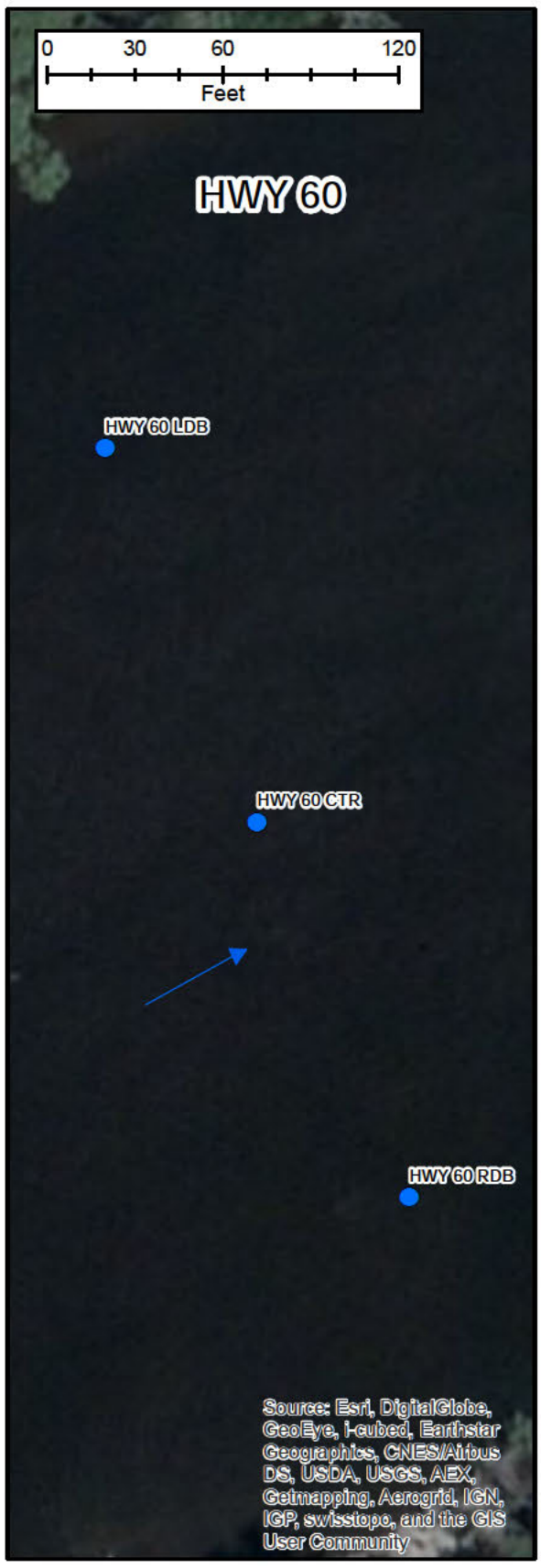
ARCADIS

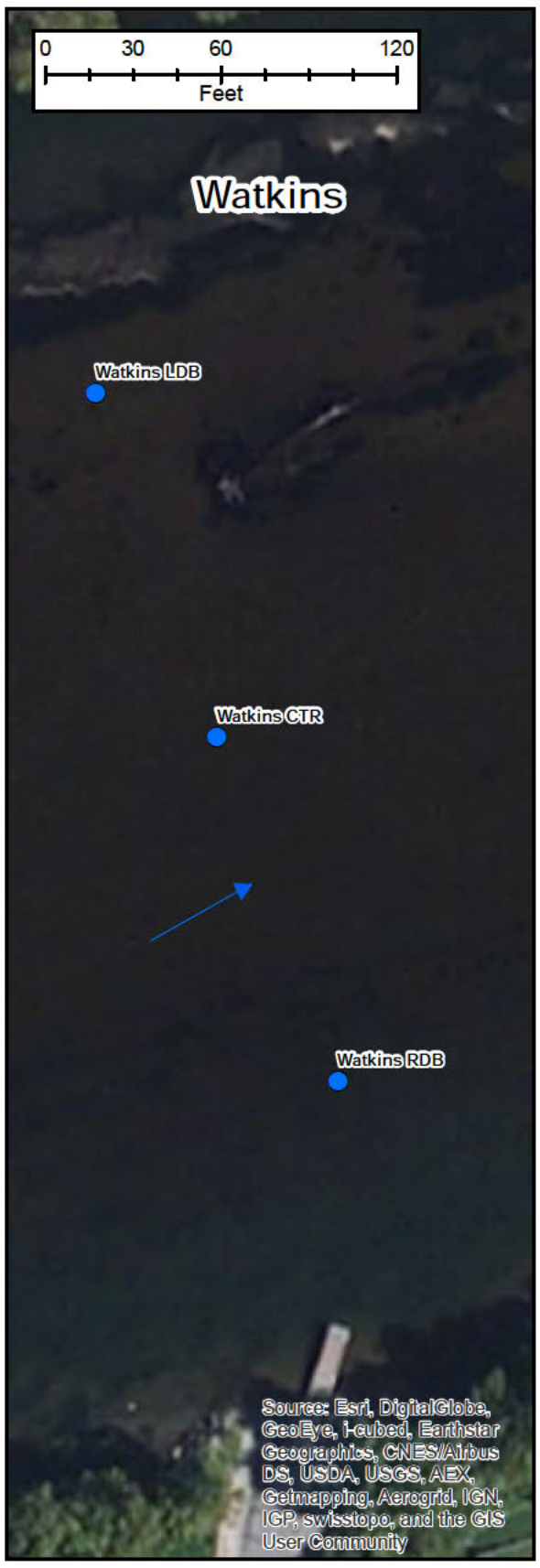
FIGURE
4

CITY: CLE DIV/GROUP: SER/AIT DB: L.GREENE LD: PIC: PM: TM: TR:
Project (Project #)

Document Path: [redacted] Date Saved: 6/26/2014 9 25:46 AM







Legend

- INCIDENT LOCATION
- SURFACE WATER SAMPLING LOCATIONS
- STREAM FLOW DIRECTION
- JAMES RIVER

CSX Transportation
Lynchburg, Virginia
Initial Abatement Report

SURFACE WATER SAMPLING LOCATIONS

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FIGURE 6

ARCADIS

Appendix A

Photograph Log

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

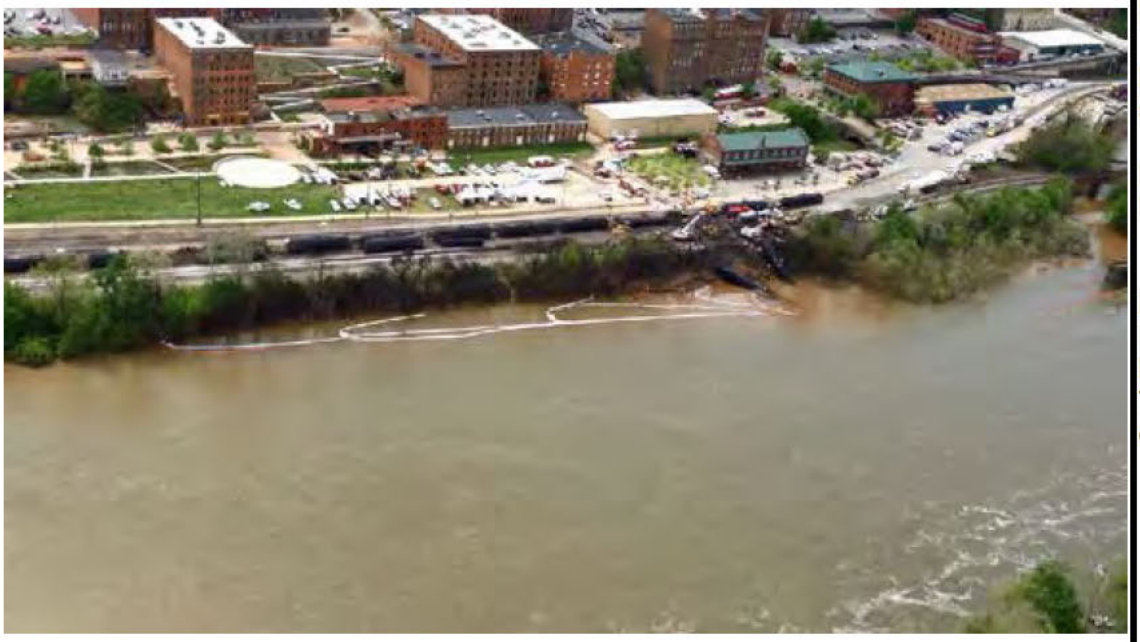

Photo No.: 1

Date:
5/2/2014

Location:
Lynchburg, VA

Description:
Helicopter view of incident location, view facing west. Three lines of boom installed downstream of incident.

Photo No.: 2

Date:
5/2/2014

Location:
Lynchburg, VA

Description:
View of James River near Buzzard Island, approximately 7 miles downstream of incident location. Sheen observed on river. View facing northwest.

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

Photo No.: 3

Date:
5/2/2014

Location:
Lynchburg, VA

Description:
Three layers of 6 millimeter poly liner placed in preparation for the soil staging area. View facing southeast.

Photo No.: 4

Date:
5/2/2014

Location:
Lynchburg, VA

Description:
Soil stockpile from soil and ballast excavated in the track bed, covered with plastic sheeting. View facing northwest.

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

Photo No.: 5

Date:
5/3/2014

Location:
Lynchburg, VA

Description:
Excavation of slope, starting at the northern portion of impacted area. Excavator was able to reach approximately 30 feet down the slope, but was unable to reach the waters edge from the top of the hill. View facing north.

Photo No.: 6

Date:
5/3/2014

Location:
Lynchburg, VA

Description:
A layer of sand was placed on top of the excavated materials acting as a vapor/odor suppressant. View facing north.

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

Photo No.: 7

Date:
5/3/2014

Location:
Lynchburg, VA

Description:
Soil stockpile covered with poly sheeting, safety fencing and caution barriers installed around stockpile. View facing northeast.

Photo No.: 8

Date:
5/5/2014

Location:
Lynchburg, VA

Description:
Silt fence and hay bales installed at bottom of slope excavation. Water level of James River has dropped several feet since start of incident. View facing north.

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

Photo No.: 9

Date:
5/5/2014

Location:
Lynchburg, VA

Description:
View of incident location from shoreline opposite side of James River (east side). Hay mat has been installed to cover the slope excavation area. View facing southwest.

Photo No.: 10

Date:
5/5/2014

Location:
Lynchburg, VA

Description:
BioMatrix was applied to the shoreline below the slope excavation area, below the silt fence. View facing northwest.

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

Photo No.: 11

Date:
5/6/2014

Location:
Lynchburg, VA

Description:
Shoreline cleanup including removing impacted vegetation was initiated downstream of incident location. Oil residue visible on leaves where James River water level was when incident happened on 4/30/14. View facing northwest.

Photo No.: 12

Date:
5/6/2014

Location:
Lynchburg, VA

Description:
View facing north of crews addressing oil impacts from the shoreline, removing soils and vegetation. BioMatrix was applied as a precautionary measure to shoreline after cleanup was completed. More than 30 bags of debris were collected for disposal on May 6th and 7th from the shoreline near the incident and Buzzard Island.

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

Photo No.: 13

Date:
5/7/2014

Location:
Lynchburg, VA

Description:
View towards the northwest of the Mt. Athos Boat Ramp where VDEQ received a report on May 7, 2014 of sheen along the right descending bank (RDB). CSX an ES personnel investigated but did not find any oil related sheens. Note orange boom installed approximately 10 river miles down stream of the derailment location.

Photo No.: 14

Date:
5/7/2014

Location:
Lynchburg, VA

Description:
View facing north of the downstream boom installed approximately 10 river miles down stream of the derailment. RDB was checked for sheen reported to VDEQ, but no oil sheens were identified.

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

Photo No.: 15

Date:
5/8/2014

Location:
Lynchburg, VA

Description:
View of additional absorbent boom placement in the vicinity of the derailment area. View facing northeast.

Photo No.: 16

Date:
5/8/2014

Location:
Lynchburg, VA

Description:
View facing southeast of booms in the vicinity of the derailment that were left in place to contain potential sheen.

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

Photo No.: 17

Date:
5/9/2014

Location:
Lynchburg, VA

Description:
View facing north of the soil staging area after all stockpiled soil was removed on 5/8/14.

Photo No.: 18

Date:
5/9/2014

Location:
Lynchburg, VA

Description:
View facing northwest of the Depot Grille and parking area after all derailment support equipment and fencing was removed.

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

Photo No.: 19

Date:
5/20/2014

Location:
Lynchburg, VA

Description:
View facing north-northwest of additional soil excavation using a long-stick excavator along the bottom slope of the derailment area. The soil was loaded in to roll-off for waste characterization and disposal.

Photo No.: 20

Date:
5/21/2014

Location:
Lynchburg, VA

Description:
View facing north of installation of Geofabric on the sloped following additional excavation.

CSXT Project No.: R129445
CSXT Project Name: 043014-K08227
City/State: Lynchburg, VA

Photo No.: 21

Date:
5/22/2014

Location:
Lynchburg, VA

Description:
View facing north of the derailment slope area after installation of rip rap material.

Photo No.: 22

Date:
5/22/2014

Location:
Lynchburg, VA

Description:
View facing west of the installed rip rap material.

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Appendix C

Mass Balance Calculations

Mass Balance Details

Oil	Notes	Oil Volume (gal)
Tank contents	CBTX741712	29,916
Burned	Burned oil volume is estimated per USCG calculation tool. A Monte Carlo simulation indicates that more than 97% of the oil burned in the fire. This is corroborated by the observations of the other mass balance components.	Monte Carlo Estimate: median = 29,245 95% probable that more than 23,400 burned
Track Ballast Material Removed	**160 tons**	trace
Slope soils removed May 4	**40 tons**	15
Slope soils removed May 19-20	**60 tons**	22
Slope soils remaining	Soil samples collected from the slope showed a small area of oil impact in the vicinity of SO-6 and SO-14. The highest concentrations from those sample results (SO-6 & SO-14) were conservatively used to calculate the remaining oil in the soil (~245 gallons).	245
Tank residue	Oily water – 5,833 gallons total oil + water	186 (measured)
Oil inside boom removed	Trace – pads and boom	trace
Downstream sheen	Max 10% of river surface, rainbow sheen, 15 miles	390 gallons (calculated)
Dissolved phase	Trace in 20,000 cfs flow (baseline 5,000 cfs)	below detection

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Appendix J

Tri-State Bird Rescue & Research Inc. Report

Tri-State Bird Rescue & Research, Inc. (TSBRR) received initial notification from Rahgu Chatrathi of CSX Transportation, Inc. (CSX) concerning a train derailment of three cars carrying Bakken crude oil along the James River in Lynchburg, VA at 0900 on 01 May 2014. A nesting pair of bald eagles is located in the area of James River near the incident, and there was concern for the safety of the adults and chicks. At that time, no wildlife had been observed to be impacted by the release, but Mr. Chatrathi proactively requested an oiled wildlife assessment team be sent to Lynchburg, VA to begin wildlife impact surveys. TSBRR immediately mobilized a two-member team (Michelle Neef and Sarah Tegtmeier) to the derailment site. The team arrived to the incident site in Lynchburg, VA at 1830 to check in with Paul Kurzanski (CSX) and Meggon Rapole (HEPACO). The team received their incident identification cards and made plans for wildlife field surveys for the following days.

The team remained on-scene for wildlife impact assessment surveys for three consecutive days (1 May – 3 May) and was prepared to capture and rehabilitate any animals that may have been affected by the incident. The TSBRR team identified habitats around the incident where wildlife might congregate and worked with local organizations to ensure that the team did not omit important areas to perform wildlife surveys. During wildlife surveys, TSBRR determined the species in the area, whether they appeared to be impacted by the release, and observed behavior. Due to the heavy rains in the previous days, the James River was moving quickly and the water level was higher than normal. This can reduce the number of wildlife in areas where they are usually observed. TSBRR saw very few species and individuals over the assessment period.

Wildlife impact assessment surveys were primarily performed by boat and on foot. Water-based wildlife surveys extended from 10th Ninth Street to Stage Road. Land-based wildlife surveys included the following areas: Riverwalk Amherst County Park, Percival's Island Natural Area, Civitan Park, and James River Heritage Trail.

TSBRR did observe a line of crude oil on tree leaves and branches at the high-water mark, this occurred for about an eighth of a mile downstream from the derailment site. Two (2) turtles were observed basking near this region but appeared to be unoiled, behaving normally, and alert. No attempt was made to capture these animals. The TSBRR team recommended that these branches be cleaned or removed to prevent the oiling of animals or humans that may come in contact with these areas.

All wildlife observed during the water- and land-based surveys were uncontaminated, including a bald eagle and associated nest. Surveys documented a total of 108 individual animals. Species included sandpipers (20), double crested cormorant (6), mallard ducks (6), osprey (2), wood duck (4), great blue heron (1), unidentified species of duck (2), bald eagle (1), red-tailed hawk (1), eastern kingbird (1), American crow (3), black vultures (25), and unidentified species of turtles (37).

On the third consecutive day of wildlife surveys without seeing oiled animals, TSBRR recommended that they be demobilized. Before leaving the area, TSBRR developed a contingency plan in coordination with CSX and local partners in the event that oiled animals were observed and captured for rehabilitation. The team worked with The James River Association Riverkeepers, Gwenn Johnson (a local rehabilitator), and the Wildlife Center of Virginia to help facilitate wildlife questions or concerns. The team returned to Newark, DE on 3 May 2014, but remained ready to assist CSX if debilitated oiled wildlife was reported.