Soil Genesis and Mined Land Reclamation

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Annual Monitoring Report for 2007 Calendar Year
Weanack Dredge Spoil Utilization

To: Raymond Jenkins, Virginia DEQ, Piedmont Regional Office

From: W. Lee Daniels and G. Richard Whittecar (Old Dominion Univ.)

Re: Weanack Ground & Surface Water Monitoring for VPA Permit No. VPA00579

Date: **February 14, 2008**

Cc: Mike Baker, PCC
Charles Carter, Weanack
Charles Saunders, Marshall Miller & Assoc.

This memorandum and associated maps, attachments and data sets comprise our Annual Monitoring Report for all work conducted in **calendar year 2007** for inbound sediment analyses, ground and surface water monitoring, hydrogeologic modeling and beneficial use study requirements for VPA Permit No. VPA00579 at Weanack Land LLP in Charles City County. The original monitoring plan submitted to DEQ by American Land Concepts (ALC) in November, 2000, focused on the Woodrow Wilson Bridge (WWB) sediment utilization area (Fig. 1). This approved monitoring plan served as the basis for our protocols and designs through mid 2004. On September 7, 2004, Virginia DEQ approved a modification to the monitoring plan as outlined below that reduced the number of water quality sampling points and frequency. Subsequently, in June 2005, DEQ approved further modifications to the permit and monitoring requirements to allow placement of a new source of dredge materials (Earle Naval Weapons Station - Earle) into a separate utilization basin as shown in Fig. 2. In July of 2005, modifications to the Operations and Maintenance Manual and Monitoring Plans for both utilization areas were approved by DEQ.

In 2006, permit coordinate and liaison responsibilities for this permit were transferred from ALC to Marshall Miller & Associates (MMA) who we have worked with closely over the past two years. Virginia Tech and Old Dominion University (ODU) continue to serve as subcontractors to Weanack Land LLP to carry out monitoring and research as specified in the approved plans. This report covers calendar year 2007 and includes data and analyses relative to both utilization areas (WWB and Earle) plus an overall assessment of site hydrologic conditions for both basins as detailed later.

Over the 2007 monitoring year we also cooperated with Science Applications International Corporation (SAIC) and the Norfolk District of the U.S. Army Corps of Engineers in the installation and monitoring of a small (35 x 120 feet) dredge sediment field experiment adjacent to the Earle Basin that is knows and the Landfarm Pilot Study (LPS). The SAIC/LPS study plan was approved on 7/25/07 to assess the ability of surfactants plus an added microbial consortium to degrade moderately contaminated (with PAH's) sediments from the nearby Appomattox River. A separate report on that project will be submitted to DEQ by SAIC in the near future.

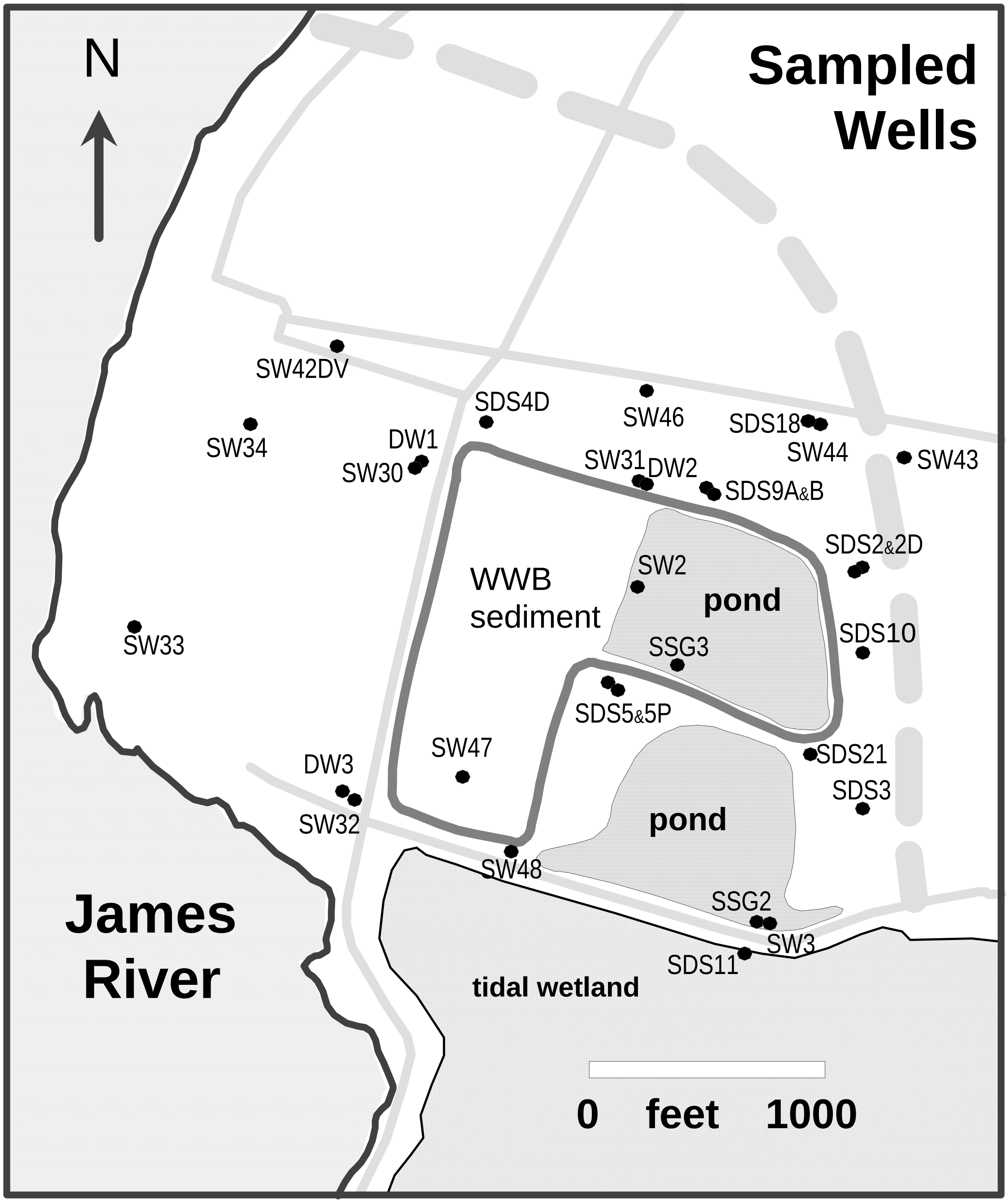

Figure 1. Map of basin location and monitoring wells around the Woodrow Wilson Bridge (WWB) sediments discussed in this report. The Shirley Plantation drinking well (SP) in the NW corner of the map area was also sampled but is not shown. The dashed line corresponds to a local terrace scarp which defines the base of older river sediments to the West. Please note that this map shows all wells installed over time around the WWB basin. Detailed monitoring locations are detailed below.

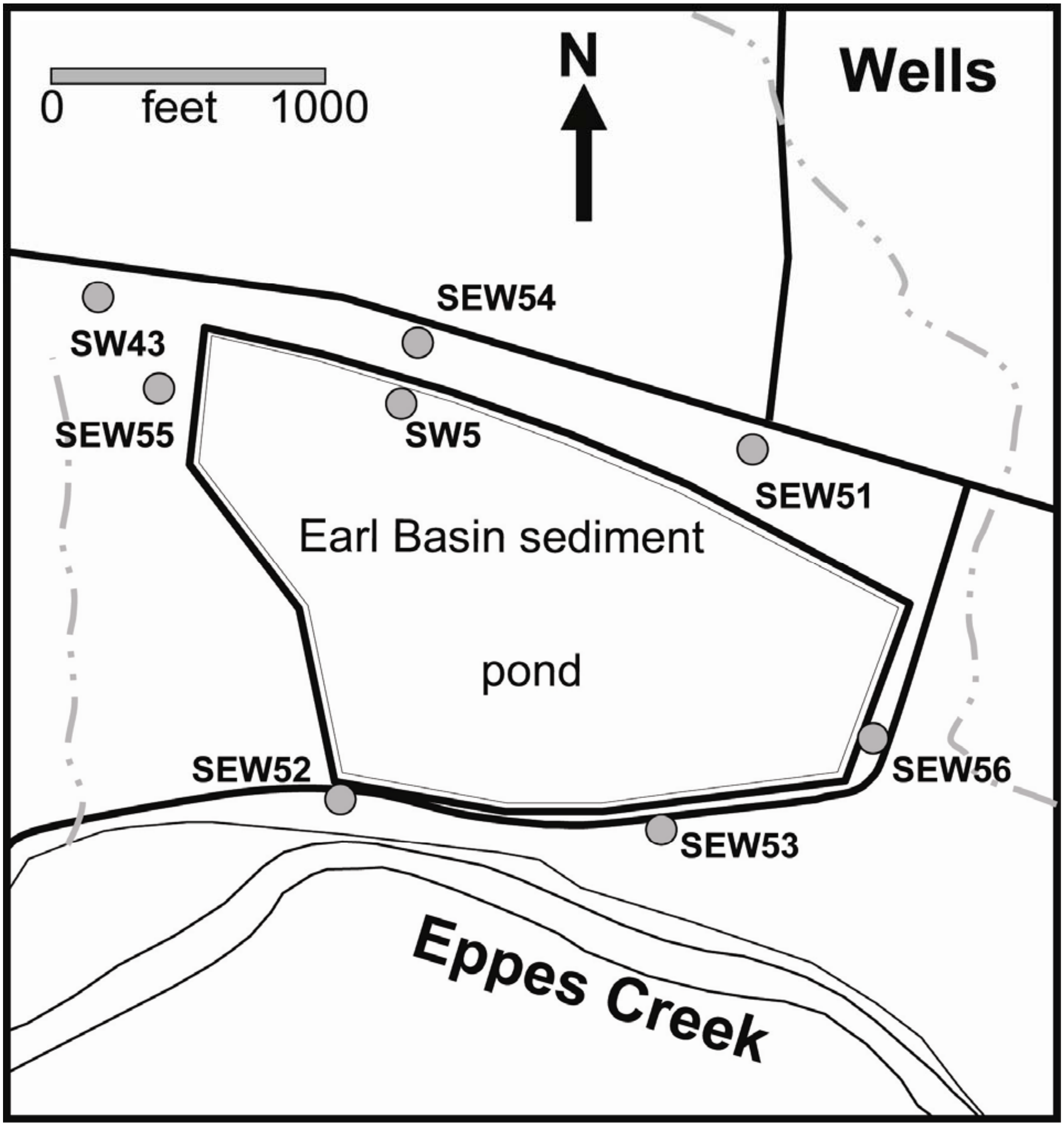

Figure 2. Map of basin location and monitoring wells sampled around the Earle sediment basin as discussed in this report. The WWB basin lies to west, across the ephemeral drain shown running south towards Eppes Creek. FYI: The LPS project is located to the southeast of well SEW 51 and approximately 50 feet uphill from the original edge of sediments deposited into this basin.

Water and Sediment Quality Monitoring Methods

WWB Monitoring Locations

Under the approved 9/7/04 monitoring plan revision for WWB, we reduced our routine monitoring frequency for temperature, pH, EC, and DOC to quarterly (Jan/Apr/July/Oct). Furthermore, our detailed water quality sampling locations were modified from all wells available on-site to a minimum of the six specified below. These locations and labels were further clarified via Email and memo interactions with DEQ over the summer of 2006. Thus, the following set of locations (see Fig. 1) was used for detailed water quality sampling:

Upgradient ground-water wells: **SDS 3 and SW 43**

Downgradient ground-water wells**: SW 30 and SW 31**

Surface water: **SW2** is sampled from the continuous water body present within the dikes in 2006 (SSG3 is the staff gage reading in that pond). The old mining slimes pond to the south of the WWB basin has been dry for the vast majority of sampling dates since 2005, and therefore reporting on that location (SSG 2/SW 3) was discontinued.

Owner's drinking well: **SP-well**

The locations specified above were sampled for detailed "partial suite" of water quality analyses in October of 2007 as set forth in Tables 1 and 2 of the 2004 water quality monitoring revision.

Earle Monitoring Locations

Procedures and rationale for the location, installation and sampling of the primary water quality monitoring points for the Earle Basin were included in the 2005 permit revision materials and in last year's annual report. The following set of locations (see Fig. 2) was used for "full suite" sampling and analysis in November of 2007. Due to a miscommunication with our new analytical lab (AWS Richmond), the November water samples were not analyzed for herbicides. Therefore, we returned to the site in early January and re-sampled all Earle sample points. We would also like to point out that due to a lack of appropriate coding on chain-of-custody forms, Mn was not run on these water samples as called for in the Table 1 analytes list. We will correct this for future sampling events.

Upgradient ground-water wells: **SEW 51 and SEW 54**

Downgradient ground-water wells: **SEW 52 and SW 53**

Surface water: **SW 5** is sampled from within the Earle Basin ponded portion as shown in Figure 2.

In addition to the detailed sampling events described above, we conducted routine quarterly monitoring (Jan/Apr/July/Oct) of wells around the WWB and Earle Basin sites for pH, conductivity, temperature, and DOC.

Inbound Dredge Spoil Testing

Samples representing every 30,000 yards of inbound Earle dredge material are taken by Weeks Marine personnel and splits are submitted to Microbac Labs/Gascoyne and Virginia Tech for comprehensive analyses. Microbac is shipped an evenly weighted composite of each 30,000 yards that is subjected to an extensive testing protocol as reported below. Virginia Tech receives 5,000 yard composites (six 5000-yard samples each time a Microbac sample is shipped) that we test for potential acidity (PPA) by the hydrogen peroxide oxidation method and calcium carbonate equivalence (CCE) by acid back-titration. We also maintain an archive of all samples in our freezer. Data are reported in Attachment 1 for one sample taken by Weeks and shipped for analysis on 8/30/07.

Overall Sediment Quality Results

As note above, only one sediment sample was taken and analyzed in 2007. Overall, the average analyses for metals, pesticides and organics were similar to those provided by Weeks Marine in the permit review and approval process. The reported levels for all parameters (see Attachment 1) are also similar to those reported for this particular dredge material over the past three years.

Analysis of the inbound sediment sample by Virginia Tech for potential acidity (lime requirement) indicated that an average of less than 0.5 ton of agricultural lime (per acre 6 inches) would be required over the "weathering lifetime" of this material to offset all acidity produced. Our laboratories also tested the one sediment samples for lime content and found that the average was 36 tons CCE per thousand ton of sediment. As reported last year, due to large cumulative additions of CCE in these materials and the presumption that any acid forming materials would be mixed, diluted, and "sandwiched" by higher CCE sediments, we do not expect widespread net acid forming conditions to develop as these materials dewater and oxidize over time.

As discussed last year, the inbound Earle sediments contain entrained salts from their marine environment which would be expected to initially limit plant establishment as the sediments dewater, and to contribute to relatively high salt levels in surface ponded water as discussed later. One of our research objectives at the Earle Basin is to document the nature and rate of transformation of these originally saline materials. On April 17, 2007, we collected a composite soil sample from the southern edge of the fully dewatered and cracked Earle sediments. That sample was run in our labs (VT) for saturated paste electrical conductance and pH. The EC was 27.4 mmhos/cm and the pH was 7.51. While this EC value was still quite high (6X normal plant tolerance), the pH value was low enough to indicate that Na was not present in significant quantities. We returned to the same general location on September 19 and composite sampled two differing zones, one at higher elevation where vegetation was present with no surface salt crust evident, and a second lower elevation location with obvious surface salts just beyond the vegetation establishment zone. The high elevation soil was pH 5.64 with a saturated paste EC of 6.54 mmhos/cm, while the lower elevation soil was pH 7.14 with an EC of 7.14 mmhos/cm. Taken together, these analyses indicate that the surface layers of dredge materials are losing their salt load relatively quickly with time and their pH appears to stabilizing into a normal range for plant growth.

In last year's report, we discussed the clear need for Weanack and its consultants develop a rigorous and mutually agreeable protocol for (A) determining the actual expected concentrations of contaminants within the inbound sediments, (B) setting appropriate exceedance thresholds for triggering specific risk assessment, and (C) prescribing an adequate risk assessment approach if significantly contaminated samples are actually received at Weanack. To this end, we met with DEQ on March 22, 2007, to initiate discussions on an acceptable framework for dredge material screening. We are currently completing a detailed (40+ page) literature review on dredge spoil contaminants (particularly PAHs) and existing state/federal regulation of upland utilization which we will share with DEQ upon its completion this spring.

Hydrogeologic Analyses and Results for 2007

Water flow analyses for the two basins are combined on one map (Figure 3) due to the close proximity of the basins. This more comprehensive view gives a larger perspective of the relationships of water flow through this topographically and stratigraphically complex setting.

Woodrow Wilson Bridge Basin

After stabilizing in 2006, water levels in the pond inside of the WWB berm (measured at SSG3) dropped significantly (2.93 feet lower) during 2007. Pond levels are maintained by a combination of direct precipitation and groundwater inflow from the sediment mound deposited in the western end of the disposal area. Water levels in most monitoring wells dropped throughout the year. These declines reflect the low rainfall afflicting many states in the Southeastern U.S. during 2007, as well as normal seasonal heating/evaporation losses. The Fall 2007 levels are the lowest pond elevations that we have seen in many years at this site, and we presume that the saturated zone within the lower portion of WWB sediments was also significantly lowered and oxidized/weathered as discussed later.

Analyses of water flow direction for the WWB area shown in Figure 3 indicate no important change in flow directions from previous analyses, despite the general lowering of the water table system due to the drought. As is usual, minor changes were observed over time and over short distances. Shallow wells and wells close to storm water drainage ditches proved to be the most responsive to rainfall events, being the most likely to rise after one of the few rain showers. The spatial pattern of water levels during July (Figure 3) and October also reflect the effects of strong evapotranspiration from sizable stands of large trees with deep roots, compared to the lesser effects of shallow-rooted crops. The close relationship between the shape of the berm and groundwater contours reflects the permeable connection between the fill sediments, the pond, and the surrounding aquifer. Variations in hydraulic conductivity of these permeable sediments over short distances cause the locally steep gradients in the water table.

Earle Basin

The groundwater flow analyses of the Earle Basin site (Figure 3) also show no important change in flow directions from previous analyses. Water levels in the pond inside of the berm (measured at SSG5) dropped consistently throughout 2007. Water levels in monitoring wells indicate that internal pond water does not influence the groundwater flow patterns surrounding the Earle Basin sediments in any measurable way. The clay-rich substrate across the floor of the basin, purposefully compacted and smeared to reduce its permeability, effectively retains basin water. The gentle ground water ridge that lies several meters below the level of the pond existed before the sediment basin was constructed and our data do not indicate that it has changed in any important way due to the filling of the basin.

The water pH and conductivity readings for the monitoring wells around the Earle Basin are values typical for groundwater in this hydrogeologic setting. The water in the Earle Basin sediment retention basin is brackish, reflecting the pore water quality of the estuarine sediments placed into the basin. Fluctuations in pH and EC values (Attach. 2.1) during the year also reflect the influence of rainfall events within a few days of sampling times, as well as the dry conditions during much of the year.

We note that the conductivity values for SEW53 - the down-gradient monitoring well closest to the disposal area - increased during the last half of 2007, from relatively stable values of approximately 300 uS to values over 500 uS (Attach. 2.1). If this trend continues into 2008, it will suggest that seepage water from the basin has reached that monitoring well site. This possibility is supported by the water quality data discussed later. Water quality readings in both of the down-gradient wells (SEW 52 and 53) are still within the range of values common in aquifer water in this study area.

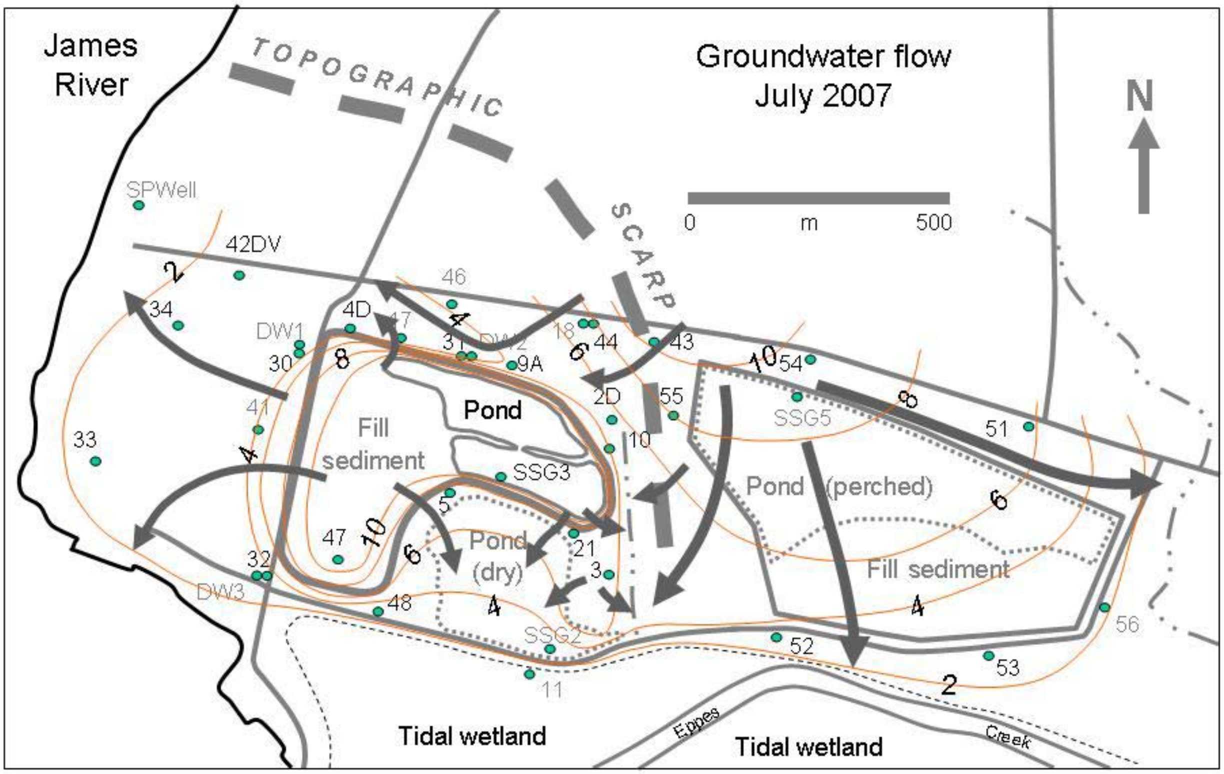

Figure 3. Ground water flow around the disposal site for the Woodrow Wilson Bridge (WWB) sediments (western disposal basin) and the Earle Basin sediments (eastern disposal basin). Wells are marked with the number of their label; wells and ponds marked with grey labels were not used in the analysis of flow on this day (07/13/07). Contours show the shape of the water table surface and are in feet elevation. Grey lines denote roads, creeks, and the compacted sediment berms that contain the disposal sediment. The large dashed line notes location of a distinct scarp between a higher terrace that underlies the Earle Basin and the lower terrace that underlies the Woodrow Wilson Bridge sediment disposal site.

Water Quality Results for 2006

Woodrow Wilson Bridge Basin

With the exception of a moderate increase in sulfate levels discussed below, we have not been able to detect any significant detrimental effects of sediment placement upon ground- or surface-water quality in or around the WWB dredge utilization area (see Attach. 2.2). As reported last year, quarterly ground-water levels of DOC appear to be dropping with time relative to previous years, although the DOC levels continue to be quite variable. All quarterly data for water levels, EC, pH and DOC are reported in Attachment 2.1.

Review of the October 2006 partial suite data (Attach. 2.2) reveals no notable up- vs. down-gradient effects of the dredge materials weathering and leaching over time with the exception of total sulfate, which as reported last year, continues to be significantly higher in both downgradient wells. These higher sulfate levels also continue to be reflected in higher EC values at these two locations (SW 30 and SW 31). As pointed out in previous reporting, the presence of appreciable amounts of sulfidic materials in the directly underlying Shirley Formation sediments greatly complicates this analysis and also appears to contribute to higher levels of Al, Fe and Mn at many WWB locations and occasional detectable levels of Ni, Zn and Pb. We have noted and reported similar wide fluctuations in pH, Fe and Al in ground-water at various well locations around the site on several occasions since 2001. Observed sulfate levels in 2007 were higher than reported for 2006 and were well above the secondary drinking water standard of 250 mg/L. We presume these variations are due to well disturbance and water level fluctuations interacting with the sulfidic sediments at depth. The fact that 2007 was a particularly dry year and water levels in the oxidizing and weathering sediments dropped lower than previous years may have accelerated the sulfate release.

Earle Basin

The quarterly pH, conductivity (EC), and DOC values for the monitoring wells around the Earle Basin are typical for groundwater in this hydrogeologic setting (Attach. 2.1). The water in the Earle sediment retention basin is brackish, reflecting the pore water quality of the estuarine sediments placed in the basin. As reported last year, the water within the surface ponded portion of the basin is still saline and the pH of this water gradually increased to greater than 9.0 in 2006 as expected due to sodium dominance in the cation/bicarbonate buffering system. However, in 2007, the pH values appear to be dropping, although they did vary quite a bit (e.g. pH 7.3 to 9.0 between July and October 2007).

Detailed water quality samples were taken in late November 2007 (full suite) and January of 2008 (herbicides re-sampled) per the approved monitoring plan and reported in Attachments 2.3. The November 2007 full suite analyses revealed no detectable concentrations of any organic compounds with the exception of bis(2-ethylhyxyl)phthalate and benzoic acid in all samples (including the field blank) at very low levels. Presence of these compounds in the field blanks at levels similar to the monitoring samples indicates background trace contamination at some point in the sample collection/analysis train. Toxaphene was also detected (but below quantitation level) at one location (SEW 52). We have not seen this compound at detectable levels in the inbound sediments over time. Differential analysis (up- vs. down-gradient) of the November 2007 data for inorganics also reveals no significant effect of dredge spoil placement on ground-water quality to date. It is interesting to note that similar to the 2006 data for this basin (and the WWB wells), a number of up- and down-gradient wells generated high Fe and Al levels, and several wells were high in nitrate-N. We assume that similar mechanisms (well disturbance/sulfidic sediment interactions and agriculture) are probably responsible.

As noted earlier, the one potential effect to date of dredge placement in the Earle Basin may be the late 2007 increase in EC and Cl for well 53 as discussed earlier. Increased EC and Cl in down-gradient well SEW 53 may suggest that seepage water from the Earle basin may finally be reaching that location. However, downgradient well SEW 52 still appears unaffected. It is also important to point out that the EC levels in well SEW 53 are considerably lower than those in almost all wells around the WWB basin. The one notably different Earle water quality sample is from the ponded area (SW 5), which continues to be much higher in total-N, TOC, sulfate, and base cations as expected.

Soil Formation/Beneficial Use Conversion Studies

While we did not measure crop yields on the reclaimed WWB sediments in 2007, the local farmer (John Black) and Virginia Tech Extension Agent (Paul Davis) estimated that the soybean yield at 95 bushels per acre. This level is significantly higher than long-term county average yields.

As of late 2007, the majority of the surface of the Earle sediments remained ponded or too low in bearing strength to allow appropriate gridded and composite soil sampling and observations. This will be accomplished in the near future once the materials de-water sufficiently.

Overall Monitoring Summary

Our overall long-term conclusion remains that the WWB materials appear benign with respect to potential ground- or surface water degradation. We have yet to detect any significant contaminants in inbound dredge spoils, dewatered dredge soils, or water samples in and around the disposal/utilization area. The elevated levels of sulfate in the two downgradient wells and surface water samples may be due to lower water levels and accelerated weathering and leaching of the dredge materials in the very hot/dry summer of 2007. We will continue to monitor this trend over 2008 and beyond.

The Earle basin materials differ from the WWB dredge sediments in that they contain a much higher inbound salt load, are slightly higher in total heavy metals, and do contain detectable levels of certain organics (PAHs) as discussed in last year's report. We have yet to detect any potential migration or mobility of these contaminants, however. Future soil and water quality monitoring efforts will be focused on these parameters to determine net degradation, attenuation, or any potential for movement with time. It does appear that some soluble salts from this basin have migrated to one of the downgradient wells, although the effect is relatively minor. The ponded water within the Earle Basin remains high in salts, but the pH of both the surrounding dewatered sediments and surface water is declining as expected.

Acknowledgments

We deeply appreciate the continuing support of Mr. Charles Carter of Weanack/Shirley and Mr. Mike Baker of Potomac Crossing Consultants/Woodrow Wilson Bridge Project in our efforts. The assistance in the field of Steve Nagle, Mike Nester, W.T. Price, Julie Burger, and Nick Nolasco was also essential to our continuing efforts. The sediment and water data sets contained herein were compiled by Sue Brown. Finally thanks to Chee Saunders of Marshall Miller & Associates for coordination of permit monitoring requirements and to Carmela Tombes of Air, Water & Soil Labs in Richmond for assistance with the waters quality analyses.

ATTACHMENT 1

Inbound Sediment Analyses

Attachment 1
Weanack Sediment

Sample ID: **ENWS**
Date: **8/30/07**

Analyses	Methods	Units	Test Results	Reporting Limit
Moisture Content	160.3_R3_83	wt%	7.5	0.050
pH			9.7	1.0
Temperature		C °	22.7	0.10
Metals				
Antimony	SW 846 6020	mg/kg	<2.0	2.0
Arsenic		mg/kg	3.8	0.39
Beryllium		mg/kg	<0.49	0.49
Cadmium		mg/kg	<0.099	0.099
Chromium		mg/kg	5.7	0.49
Copper		mg/kg	4.2	0.39
Lead		mg/kg	17	0.39
Manganese		mg/kg	56	0.99
Nickel		mg/kg	2.8	0.39
Selenium		mg/kg	<0.99	0.99
Silver		mg/kg	<0.20	0.20
Thallium		mg/kg	<0.39	0.39
Zinc		mg/kg	51	3.9
Mercury	EPA 7471A	mg/kg-dry	<0.027	0.027
Calcium	EPA 6010B	mg/kg	5,200	250
Iron		mg/kg	4,200	49
Magnesium		mg/kg	1,400	49
Potassium		mg/kg-dry	490	49
Sodium		mg/kg-dry	1,500	490
TKN	SM 4500-Norg	Mg/kg	35	10
Total Organic Carbon	MSA 29-3.5.2	wt%-dry	<0.10	0.10
Nitrate-Nitrite-N	EPA 353.2M	mg/kg-dry	<0.54	0.54
Orthophosphate	EPA 365.1M	mg/kg-dry	0.15	0.063
Chloride	SM (20) 4500CL C	mg/kg-dry	150	2.2
Cyanide	EPA 9010B/9014	mg/kg-dry	0.26	0.24
Sulfate	ASTM D516-02M	mg/kg-dry	350	110
Sulfide	EPA 9030B	mg/kg-dry	<5.4	5.4
Pesticides & PCBS				
alpha-BHC	EPA 8081A/8082	mg/kg-dry	<54	54
beta-BHC		mg/kg-dry	<54	54
gamma-BHC		mg/kg-dry	<54	54
delta-BHC		mg/kg-dry	<54	54
Heptachlor		mg/kg-dry	<54	54
Aldrin		mg/kg-dry	<54	54

Attachment 1 Sample ID: **ENWS**
Weanack Sediment Date: **8/30/07**

Analyses	Methods	Units	Test Results	Reporting Limit
Pesticides & PCBS cont.				
Heptachlor epoxide	EPA 8081A/8082	mg/kg-dry	<54	54
gamma-Chlordane		mg/kg-dry	<110	110
Endosulfan I		mg/kg-dry	<110	110
alpha-Chlordane		mg/kg-dry	<110	110
Dieldrin		mg/kg-dry	<110	110
4,4'-DDE		µg/kg-dry	<110	110
Endrin		µg/kg-dry	<110	110
Endosulfan II		µg/kg-dry	<320	320
4,4'-DDD		µg/kg-dry	<320	320
Endrin aldehyde		µg/kg-dry	<320	320
Endosulfan sulfate		µg/kg-dry	<320	320
4,4'-DDT		µg/kg-dry	<320	320
Endrin Ketone		µg/kg-dry	<320	320
Methoxychlor		µg/kg-dry	<540	540
Toxaphene		µg/kg-dry	<1,100	1,100
Technical Chlordane		µg/kg-dry	<3,200	3,200
Aroclor 1016		µg/kg-dry	<1,100	1,100
Aroclor 1221		µg/kg-dry	<1,100	1,100
Aroclor 1232		µg/kg-dry	<1,100	1,100
Aroclor 1242		µg/kg-dry	<1,100	1,100
Aroclor 1248		µg/kg-dry	<1,100	1,100
Aroclor 1254		µg/kg-dry	<1,100	1,100
Aroclor 1260		µg/kg-dry	<1,100	1,100
Total PCBs		µg/kg-dry	<1,100	1,100
2,4-D	EPA 8151A	mg/kg-dry	<54	54
2,4,5-TP (Silvex)		mg/kg-dry	<22	22
PNA's				
Acenaphthene	PAH LL (8270C)	mg/kg	0.6	0.10
Acenaphthylene		mg/kg	BRL	0.10
Anthracene		mg/kg	0.8	0.10
Benzo(b)fluoranthene	PNA (8310)	mg/kg	0.11	0.10
Benzo(a)anthracene		mg/kg	0.2	0.10
Benzo(a)pyrene		mg/kg	0.1	0.10
Benzo(ghi)perylene		mg/kg	BRL	0.10
Benzo(k)fluoranthene		mg/kg	0.1	0.10
Chrysene		mg/kg	0.3	0.10
Dibenzo(a,h)anthracene		mg/kg	BRL	0.10
Fluoranthene		mg/kg	0.9	0.10
Fluorene		mg/kg	0.7	0.10
Indeno(1,2,3-cd)pyrene		mg/kg	BRL	0.10

Attachment 1

Weanack Sediment		Sample ID:	**ENWS**	
		Date:	**8/30/07**	
Analyses -	Methods	Units	Test Results	Reporting Limit
PNA's cont.				
Naphthalene		mg/kg	0.2	0.10
Benzo(b)fluoranthene	PNA (8310)	mg/kg	0.11	0.10
Benzo(a)anthracene		mg/kg	0.2	0.10
Benzo(a)pyrene		mg/kg	0.1	0.10
Benzo(ghi)perylene		mg/kg	BRL	0.10
Benzo(k)fluoranthene		mg/kg	0.1	0.10
Chrysene		mg/kg	0.3	0.10
Dibenzo(a,h)anthracene		mg/kg	BRL	0.10
Fluoranthene		mg/kg	0.9	0.10
Fluorene		mg/kg	0.7	0.10
Indeno(1,2,3-cd)pyrene		mg/kg	BRL	0.10
Naphthalene		mg/kg	0.2	0.10
Phenanthrene		mg/kg	2.1	0.10
Pyrene		µg/kg		
2,3,7,8-TCDD (Dioxin)	EPA 1613	ng/kg	BDL	0.11
Semi Volatile Organics				
Bis(2-chloroethyl) ether	EPA 8270C	µg/kg	<360	360
Phenol		µg/kg	<360	360
2-Chlorophenol		µg/kg	<360	360
1,3-Dichlorobenzene		µg/kg	<360	360
1,4-Dichlorobenzene		µg/kg	<360	360
1,2-Dichlorobenzene		µg/kg	<360	360
Bis(2-chloroisopropyl) ether		µg/kg	<360	360
2-Methylphenol		µg/kg	<360	360
Hexachloroethane		µg/kg	<360	360
N-Nitrosodi-n-propylamine		µg/kg	<360	360
4-Methylphenol,3-Methylphenol		µg/kg	<360	360
Nitrobenzene		µg/kg	<360	360
Isophorone		µg/kg	<360	360
2-Nitrophenol		µg/kg	<360	360
2,4-Dimethylphenol		µg/kg	<360	360
Bis(2-chloroethoxy) methane		µg/kg	<360	360
2,4-Dichlorophenol		µg/kg	<360	360
1,2,4-Trichlorobenzene		µg/kg	<360	360
Naphthalene		µg/kg	1,700	360
4-Chloroaniline		µg/kg	<720	720
Hexachlorobutadiene		µg/kg	<360	360
4-Chloro-3-methylphenol		µg/kg	<720	720
4-Chloro-3-methylphenol		µg/kg	<720	720
2-Methylnaphthalene		µg/kg	1,000	360
Hexachlorocyclopentadiene		µg/kg	<360	360

Attachment 1
Weanack Sediment

Analyses	Methods	Units	Test Results	Reporting Limit
		Sample ID:	**ENWS**	
		Date:	**8/30/07**	
SVO's cont.				
2,4,6-Trichlorophenol	EPA 8270C	µg/kg	<360	360
2,4,5-Trichlorophenol		µg/kg	<360	360
2-Chloronaphthalene		µg/kg	<360	360
2-Nitroaniline		µg/kg	<1,800	1,800
Acenaphthylene		µg/kg	<360	360
Dimethyl phthalate		µg/kg	<360	360
2,6-Dinitrotoluene		µg/kg	<360	360
Acenaphthene		µg/kg	1,300	360
3-Nitroaniline		µg/kg	<1,800	1,800
2,4-Dinitrophenol		µg/kg	<1,800	1,800
Dibenzofuran		µg/kg	1,300	360
2,4-Dinitrotoluene		µg/kg	<360	360
4-Nitrophenol		µg/kg	<1,800	1,800
Fluorene		µg/kg	1,800	360
4-Chlorophenyl phenyl ether		µg/kg	<360	360
Diethyl phthalate		µg/kg	<360	360
4-Nitroaniline		µg/kg	<1,800	1,800
4,6-Dinitro-2-methylphenol		µg/kg	<1,800	1,800
N-Nitrosodiphenylamine		µg/kg	<360	360
4-Bromophenyl phenyl ether		µg/kg	<360	360
Hexachlorobenzene		µg/kg	<360	360
Pentachlorophenol		µg/kg	<1,800	1,800
Phenanthrene		µg/kg	5000	360
Anthracene		µg/kg	1,700	360
Carbazole		µg/kg	1,300	360
Di-n-butyl phthalate		µg/kg	<360	360
Fluoranthene		µg/kg	2,500	360
Pyrene		µg/kg	1,500	360
Butyl benzyl phthalate		µg/kg	<360	360
3,3-Dichlorobenzidine		µg/kg	<720	720
Benz(a)anthracene		µg/kg	420	360
Chrysene		µg/kg	450	360
Bis(2-ethylhexyl)phthalate		µg/kg	<360	360
Di-n-octyl phthalate		µg/kg	<360	360
Benzo(b)fluoranthene		µg/kg	<360	360
Benzo(k)fluoranthene		µg/kg	<360	360
Benzo(a)pyrene		µg/kg	<360	360
Indeno(1,2,3-cd)pyrene		µg/kg	<360	360
Dibenz(a,h)anthracene		µg/kg	<360	360
Benzo(g,h,i)perylene		µg/kg	<360	360

ATTACHMENT 2

Detailed Water Quality Analyses

Attachment 2.1A **Quarterly Water Level Levels**

Monitoring Wells	**1/15/07**	**4/27/07**	**7/13/07**	**10/8/07**	**1/4/08**
SDS 2	12.2	11.31	9.24	8.41	9.89
SDS 2D	5.53	4.9	4.6	3.89	3.76
SDS 3	9.29	8.38	7.8	7.01	7.89
SDS 4D	7.13	5.97	4	3.02	2.73
SDS 5	6.3	5.5	3.02	2.6	4.78
SDS 5P	6.11	5.68	3.29	2.7	4.88
SDS 9A	5.81	4.99	4.69	3.92	3.61
SDS 9B	4.8	4	dry	dry	dry
SDS 10	8.37	7.52	5.87	5.17	5.92
SDS 11	na	na	na	na	na
SDS 18	15.83	15.75	13.22	7.14	15.69
SDS 21	8.26	7.63	6.26	5.14	6.48
SW 30	3.68	3.39	3.21	2.94	2.52
SW 31	4.85	4.17	3.8	3	1.71
SW 32	3.66	3.69	3.28	3.41	2.54
SW 33	5.78	6.48	2.2	1.4	2.01
SW 34	3.17	2.94	3.17	2.62	2.13
SSG 2	8.54	8.04	dry	dry	dry
SSG 3	13.34	12.73	11.84	10.75	10.41
SW42DV	2.72	2.48	2.37	2.18	1.7
SW43	11.9	12.02	11.96	11.53	11.19
SW44	9.55	8.31	8.07	6.63	6.89
SW46	5.53	4.85	4.83	4.18	3.98
SW47	13.21	12.72	11.85	na	6.94
SW48	5.53	5.6	5.53	dry	4.52
SEW51	6.55	6.33	6.1	5.58	4.82
SEW52	3.96	3.78	3.02	2.7	2.89
SEW53	3.52	2.93	2.69	2.4	1.89
SEW54	9.95	9.8	9.85	9.62	8.92
SEW55	8.23	8.1	8.1	7.76	7.44
SEW56	9.3	9.03	8.43	7.98	7.76
SSG5	26.93	26.69	26.69	26.51	25.85

na = not available   Ft above sea level

Attachment 2.1B - pH **Quarterly pH**

WWB	1/15/07	4/27/0 7	7/13/0 7	10/8/0 7	1/4/08
SDS 3	5.89	5.63	5.67	5.48	5.14
SW 30	6.06	5.77	5.83	5.9	5.54
SW 31	5.93	5.68	5.7	5.79	5.30
SW43	5.43	5.2	5.29	5.62	4.86
SW3(@SSG 2)	7.14	6.6	dry	dry	dry
SW2(@SSG 3)	7.58	7.17	8.07	8.96	6.58
SPWell	7.82	7.34	7.58	7.55	7.18
Earle					
SEW51	5.51	5.11	5.12	5.48	4.95
SEW52	6.1	5.59	5.34	5.62	4.97
SEW53	5.72	5.22	5.36	5.64	4.76
SEW54	5.61	5.46	5.46	5.74	5.12
SW5(@SSG5)	10.13	9.17	7.28	9.02	8.00

na = not available

Attachment 2.1C -Conductance **Quarterly EC**

WWB	1/15/07	4/27/07	7/13/07	10/8/07	1/4/08
SDS 3	126	155	223	240	144
SW 30	909	1036	1057	1033	1125
SW 31	706	687	666	642	596
SW 43	157	164	167	167	170
SW3(@SSG 2)	273	206	dry	dry	dry
SW2(@SSG 3)	630	580	477	368	578
Earle					
SPWell	436	440	439	434	461
SEW51	220	206	205	203	199
SEW52	259	206	190	221	234
SEW53	303	303	332	409	528
SEW54	232	213	226	237	264
SW5(@SSG5)	6,400	6,800	10,200	11,360	6,400

na = not available EC – Conductance in uS/cm

Attachment 2.1D – DOC			**Quarterly DOC**		
WWB	**1/15/07**	**4/27/07**	**7/13/07**	**10/8/07**	**1/4/08**
SDS 3	4.69	3.64	6.21	8.99	5.97
SW 30	3.53	5.54	5.63	5.61	10.75
SW 31	3.38	3.17	3.33	3.52	4.50
SW 43	1.16	1.05	1.24	1.89	2.00
SW3 (@SSG 2)	11.00	12.60	na	na	na
SW2 (@SSG 3)	8.35	9.18	9.80	9.75	13.95
SPWell	0.48	1.05	1.39	1.43	2.03
Earle					
SEW51	0.97	1.01	0.83	1.51	1.40
SEW52	2.27	1.99	1.83	2.26	3.15
SEW53	1.89	1.71	1.84	2.16	2.41
SEW54	0.79	0.85	0.93	1.66	1.82
SW5 (@SSG5)	6.26	6.95	9.50	8.99	7.20

na = not available DOC (mg/L)

Attachment 2.2
Woodrow Wilson Bridge
Water Partial Suite

			Sample Date:	**10/9/07**	**10/9/07**	**10/9/07**	**10/9/07**	**10/9/07**	**10/9/07**	**10/9/07**
			Well ID:	**SW30**	**SW31**	**SW43**	**SDS3**	**SW2**	**SP Well**	**FB**
Metals	Methods	Detection Limits	Units	Results	Results	Results	Results	Results	Results	Results
Aluminum	SW-6010B	0.02	mg/L	0.078	0.106	29.3	6.05	0.482	bd*	0.037 J**
Antimony	SW-7041	0.003	mg/L	bd	bd	bd	bd	bd	bd	bd
Arsenic	SW-6010B	0.003	mg/L	bd	bd	0.011	0.007 J	bd	bd	bd
Beryllium	SW-6010B	0.001	mg/L	bd	bd	bd	bd	bd	bd	bd
Cadmium	SW-6010B	0.002	mg/L	bd	bd	0.002 J	bd	bd	bd	bd
Chromium	SW-6010B	0.001	mg/L	0.015	0.001 J	0.046	0.007 J	bd	bd	bd
Copper	SW-6010B	0.003	mg/L	bd	bd	0.023	0.007 J	bd	bd	bd
Iron	SW-6010B	0.003	mg/L	0.242	0.217	47.5	26.3	0.851	0.008 J	0.004 J
Lead	SW-6010B	0.006	mg/L	bd	bd	0.024	0.014	bd	bd	bd
Mercury	SW-7470	0.0002	mg/L	bd	bd	bd	bd	bd	bd	bd
Nickel	SW-6010B	0.002	mg/L	0.012	0.013	0.028	0.011	bd	bd	bd
Selenium	SW-7740	0.002	mg/L	bd	bd	bd	bd	bd	bd	bd
Silver	SW-6010B	0.002	mg/L	bd	bd	bd	bd	bd	bd	bd
Thallium	SW-7841	0.002	mg/L	bd	bd	bd	bd	bd	bd	bd
Zinc	SW-6010B	0.01	mg/L	0.019	0.017 J	0.131	0.044	bd	0.018 J	bd
Nitrate-N	EPA-300.0	0.1	mg/L	bd	0.99	1.22	bd	bd	bd	bd
Nitrite-N	EPA-300.0	0.01	mg/L	bd	bd	bd	bd	bd	bd	bd
Orthophosphate	SM4500-PE	0.05	mg/L	bd	bd	bd	0.69	bd	0.35	bd
Sulfate	EPA-300.0	1	mg/L	630	510	47	53	420	9	bd
Sulfide	SW-9030B	1	mg/L	bd	bd	bd	bd	bd	bd	bd
TKN	EPA 351.2	0.2	mg/L	2.1	0.5	1.0	1.8	1.6	0.4	bd
Total Organic Carbon	SW-9060	1	mg/L	4.2	2.3	1.7	9.7	12	bd	bd
Total Cyanide	Kelada-01	0.01	mg/L	bd	bd	bd	bd	bd	bd	bd

*bd = below detection

**J = analyte was detected, but below quantitation limit

Attachment 2.3			Sample Date:	11/30/07	11/30/07	11/30/07	11/30/07	11/30/07	11/30/07
Full Suite Earle Basin			Well ID:	**SEW 51**	**SEW 52**	**SEW 53**	**SEW 54**	**SW5**	**Field Blank**
Analyses	Method	Detection Limits	Units	Results	Results	Results	Results	Results	Results
Metals									
Aluminum	EPA 200.7	0.020	mg/L	0.528	58.1	13.1	5.54	0.324	bd*
Arsenic	EPA 200.7	0.003	mg/L	0.004 J**	0.022	0.008 J	bd	0.008 J	bd
Beryllium	EPA 200.7	0.002	mg/L	bd	0.016	0.004 J	bd	bd	bd
Cadmium	EPA 200.7	0.002	mg/L	bd	0.008 J	0.003 J	bd	bd	bd
Chromium	EPA 200.7	0.001	mg/L	0.003 J	0.092	0.027	0.007 J	0.001 J	bd
Copper	EPA 200.7	0.003	mg/L	0.004 J	0.070	0.018	0.009 J	0.011	0.004 J
Iron	EPA 200.7	0.003	mg/L	1.20	84.3	23.4	7.11	0.418	0.007 J
Lead	EPA 200.7	0.006	mg/L	bd	0.058	0.010 J	0.007 J	bd	bd
Nickel	EPA 200.7	0.002	mg/L	0.005 J	0.087	0.019	0.006 J	0.002 J	bd
Silver	EPA 200.7	0.002	mg/L	bd	bd	bd	bd	bd	bd
Zinc	EPA 200.7	0.010	mg/L	0.014 J	0.352	0.075	0.034	0.011 J	bd
Antimony	EPA 200.9	0.003	mg/L	bd	bd	bd	bd	bd	bd
Selenium	EPA 200.9	0.002	mg/L	bd	0.004	bd	bd	bd	bd
Thallium	EPA 200.9	0.002	mg/L	bd	bd	bd	bd	bd	bd
Mercury	EPA 245.1	0.0002	mg/L	bd	bd	bd	bd	bd	bd
Nutrients & Other Inorganics									
Chloride	EPA300.0	1.0	mg/L	15.3	19.8	106	33.2	3640	bd
Nitrate+Nitrite	SM4500NO3F	0.1	mg/L	9.3	2.2	8.1	13.7	bd	bd
TKN	EPA 351.2	0.2	mg/L	bd	5.2	2.2	0.5	7.9	0.4

*bd = below detection **J = analyte detected, but below quantitation limits

Attachment 2.3

Full Suite Earle Basin

Analyses	Method	Detection Limits	Units	Results	Results	Results	Results	Results	Results
			Sample Date:	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**
			Well ID:	**SEW 51**	**SEW 52**	**SEW 53**	**SEW 54**	**SW5**	**Field Blank**
Total Organic Carbon (TOC)	SW9060	1.0	mg/L	bd	2.5	1.5	bd	bd	<1.0
Ortho -P	SM4500P E	0.05	mg/L	bd	0.10	bd	bd	0.16	bd
Sulfate	EPA300.0	1.0	mg/L	16.6	25.4	13.9	3.5	1150	bd
Sulfide	SM4500-S2 E	1.0	mg/L	bd	bd	bd	bd	bd	bd
Total Cyanide	Kelada-01	0.01	mg/L	bd	bd	bd	bd	bd	bd
Organics, Herbicides/Pesticides									
1,2-Dibromo-3-chloropropane	SW8011	0.010	µg/l	bd	bd	bd	bd	bd	bd
1,2-Dibromoethane (EDB)	SW8011	0.008	µg/l	bd	bd	bd	bd	bd	bd
Aroclor 1016	SW8082	0.2	µg/l	bd	bd	bd	bd	bd	bd
Aroclor 1221	SW8082	0.2	µg/l	bd	bd	bd	bd	bd	bd
Aroclor 1232	SW8082	0.2	µg/l	bd	bd	bd	bd	bd	bd
Aroclor 1242	SW8082	0.2	µg/l	bd	bd	bd	bd	bd	bd
Aroclor 1248	SW8082	0.2	µg/l	bd	bd	bd	bd	bd	bd
Aroclor 1254	SW8082	0.2	µg/l	bd	bd	bd	bd	bd	bd
Aroclor 1260	SW8082	0.2	µg/l	bd	bd	bd	bd	bd	bd

Attachment 2.3			Sample Date:	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**
Full Suite Earle Basin			Well ID:	**SEW 51**	**SEW 52**	**SEW 53**	**SEW 54**	**SW5**	**Field Blank**
Analyses	Method	Detection Limits	Units	Results	Results	Results	Results	Results	Results
4,4-DDD	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
4,4-DDE	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
4,4-DDT	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
Aldrin	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
alpha-BHC	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
beta-BHC	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
Chlordane	SW8081A	0.10	µg/l	bd	bd	bd	bd	bd	bd
delta-BHC	SW8081A	0.012	µg/l	bd	bd	bd	bd	bd	bd
Dieldrin	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
Endosulfan I	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
Endosulfan II	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
Endrin	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
Endrin aldehyde	SW8081A	0.010	µg/l	bd	bd	bd	bd	bd	bd
gamma-BHC (Lindane)	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
Heptachlor	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
Heptachlor epoxide	SW8081A	0.005	µg/l	bd	bd	bd	bd	bd	bd
Methoxychlor	SW8081A	0.010	µg/l	bd	bd	bd	bd	bd	bd
Toxaphene	SW8081A	0.20	µg/l	bd	0.48 J	bd	bd	bd	bd
1,2,4,5-Tetrachlorobenzene	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
1,2,4-Trichlorobenzene	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
1,2-Dichlorobenzene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd

Attachment 2.3			Sample Date:	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**
Full Suite Earle Basin			Well ID:	**SEW 51**	**SEW 52**	**SEW 53**	**SEW 54**	**SW5**	**Field Blank**
Analyses	Method	Detection Limits	Units	Results	Results	Results	Results	Results	Results
1,3-Dichlorobenzene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
1,4-Dichlorobenzene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
1-Chloronaphthalene	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
2,3,4,6-Tetrachlorophenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2,4,5-Trichlorophenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2,4,6-Trichlorophenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2,4-Dichlorophenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2,4-Dimethylphenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2,4-Dinitrophenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2,4-Dinitrotoluene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2,6-Dichlorophenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2,6-Dinitrotoluene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2-Chloronaphthalene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2-Chlorophenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
2-Methylnaphthalene	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
2-Naphthylamine	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
2-Nitroaniline	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
2-Nitrophenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
3,3-Dichlorobenzidine	SW8270C	4.0	µg/l	bd	bd	bd	bd	bd	bd
3-Methylcholanthrene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
3-Nitroaniline	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
4,6-Dinitro-2-methylphenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd

Attachment 2.3

Full Suite Earle Basin

Analyses	Method	Detection Limits	Units	Sample Date: **11/30/07** Well ID: **SEW 51** Results	**11/30/07** **SEW 52** Results	**11/30/07** **SEW 53** Results	**11/30/07** **SEW 54** Results	**11/30/07** **SW5** Results	**11/30/07** **Field Blank** Results
4-Aminobiphenyl	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
4-Bromophenyl phenyl ether	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
4-Choloro-3-methylphenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
4-Chloroaniline	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
4-Chlorophenyl phenyl ether	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
4-Nitroaniline	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
4-Nitrophenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
7,12-Dimethylbenz(a)anthracene	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
Acenaphthene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Acenaphthylene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Acetophenone	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
Aniline	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
Anthracene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Azobenzene	SW8270C	10.0	µg/l	bd	bd	bd	bd	bd	bd
Benzidine	SW8270C	50.0	µg/l	bd	bd	bd	bd	bd	bd
Benzo(a)anthracene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Benzo(a)pyrene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Benzo(b)fluoranthene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Benzo(g,h,i)perylene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Benzo(k)fluoranthene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Benzoic acid	SW8270C	1.0	µg/l	2.0 J	3.5 J	2.2 J	1.5 J	bd	1.6 J
Benzyl alcohol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
bis(2-Chloroethoxy) methane	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd

Attachment 2.3			Sample Date:	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**
Full Suite Earle Basin			Well ID:	**SEW 51**	**SEW 52**	**SEW 53**	**SEW 54**	**SW5**	**Field Blank**
Analyses	Method	Detection Limits	Units	Results	Results	Results	Results	Results	Results
bis(2-Chloroethyl) ether	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
bis(2-Chloroisopropyl) ether	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
bis(2-Ethylhexyl) phthalate	SW8270C	1.0	µg/l	5.0 J	5.9 J	2.4 J	3.1 J	4.3 J	2.8 J
Butyl benzyl phthalate	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Chrysene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Cresols, Total	SW8270C	3.0	µg/l	bd	bd	bd	bd	bd	bd
Dibenz(a,h)anthracene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Dibenz(a,j)acridene	SW8270C	3.0	µg/l	bd	bd	bd	bd	bd	bd
Dibenzofuran	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
Diethyl phthalate	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Dimethyl phthalate	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Di-n-butyl phthalate	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
Di-n-octyl phthalate	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Diphenylamine	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
Ethyl methanesulfonate	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Fluorathene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Fluorene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Hexachlorobenzene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Hexachlorobutadiene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Hexachlorocyclopentadience	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Hexachloroethane	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Indo(1,2,3-cd)pyrene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Isophorone	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Methyl methanesulfonate	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd

Attachment 2.3			Sample Date:	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**
Full Suite Earle Basin			Well ID:	**SEW 51**	**SEW 52**	**SEW 53**	**SEW 54**	**SW5**	**Field Blank**
Analyses	Method	Detection Limits	Units	Results	Results	Results	Results	Results	Results
Naphthalene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Nitrobenzene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
N-Nitrosodimethylamine	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
N-Nitrosodi-N-butylamine	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
N-Nitrosodi-N-propylamine	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
N-Nitrosodiphenylamine	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
N-Nitrosopiperidine	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
o-Cresol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
p-Cresol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
p-Dimethylaminoazobenzene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Pentachlorobenzene	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
Pentachloronitrobenzene	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Pentachlorophenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Phenacetin	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Phenathrene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Phenol	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Pronamide	SW8270C	2.0	µg/l	bd	bd	bd	bd	bd	bd
Pyrene	SW8270C	0.1	µg/l	bd	bd	bd	bd	bd	bd
Pyridine	SW8270C	1.0	µg/l	bd	bd	bd	bd	bd	bd
Total Recoverable Phenolics	EPA420.1	0.03	mg/L	bd	bd	bd	bd	bd	bd
2,3,7,8-TCDD (Dioxin)	EPA1513	1.00	ng/l	bd	bd	bd	bd	bd	bd
Diquat	EPA549.2	2.00	µg/l	bd	bd	bd	bd	bd	bd

Attachment 2.3			Sample Date:	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**	**11/30/07**
Full Suite Earle Basin			Well ID:	**SEW 51**	**SEW 52**	**SEW 53**	**SEW 54**	**SW5**	**Field Blank**
Analyses	Method	Detection Limits	Units	Results	Results	Results	Results	Results	Results
3-Hydroxcarbofuran	EPA531.1	2.5	µg/l	bd	bd	bd	bd	bd	bd
Aldicarb	EPA531.1	2.5	µg/l	bd	bd	bd	bd	bd	bd
Aldicarb sulfone	EPA531.1	2.5	µg/l	bd	bd	bd	bd	8.5	bd
Aldicarb sulfoxide	EPA531.1	2.5	µg/l	bd	bd	bd	bd	bd	bd
Carbaryl	EPA531.1	2.5	µg/l	bd	bd	bd	bd	bd	bd
Carbofuran	EPA531.1	2.5	µg/l	bd	bd	bd	bd	bd	bd
Methiocarb	EPA531.1	2.5	µg/l	bd	bd	bd	bd	bd	bd
Endothall	EPA548.A	10.0	µg/l	bd	bd	bd	bd	bd	bd
Glyphosate	EPA547	50.0	µg/l	bd	bd	bd	bd	bd	bd
Asbestos Conc. (total)	TEM		MF/L	<1.78	<1.78	<1.78	<0.36	<0.04	---
Asbestos Conc. (>10 µm)	TEM		MF/L	<1.78	<1.78	<1.78	<0.36	<0.04	---

Attachment 2.3			Sample Date:	**1/4/08**	**1/4/08**	**1/4/08**	**1/4/08**	**1/4/08**	**1/4/08**
Full Suite Earle Basin			Well ID:	**SEW 51**	**SEW 52**	**SEW 53**	**SEW 54**	**SW5**	**Field Blank**
Analyses	Method	Detection Limits	Units	Results	Results	Results	Results	Results	Results
Herbicides									
2,4,5-T	SW8151A	0.100	ug/L	bd	bd	bd	bd	bd	bd
2,4,5-TP (Silvex)	SW8151A	0.100	ug/L	bd	bd	bd	bd	bd	bd
2,4-D	SW8151A	0.100	ug/L	bd	bd	bd	bd	bd	bd
Dinoseb	SW8151A	0.100	ug/L	bd	bd	bd	bd	bd	bd
Pentachlorophenol	SW8151A	0.100	ug/L	bd	bd	bd	bd	bd	bd