

ATTACHMENT 9
HYDROLOGY MONITORING REPORT

ALBANY BUSH LANDFILL
Hydrologic & Water Quality Monitoring Schedule – April 17, 2007

Monitoring Plan:

The monitoring will include the 32 shallow 2-inch diameter piezometers (60-inch or longer as required) in the areas shown on the aerial photo monitoring plans. These include transect locations, wetland areas, fen, and vernal pond. Ten staff gages will be installed at the locations shown on the aerial photo. The piezometers and staff gages will be monitored once each month to provide data on the shallow groundwater and surface water elevation at the site. The datasondes can fit into the 2-inch diameter piezometers. In addition the datasonde will be used to measure water quality in the piezometer lowest in elevation or closest to the stream. If time permits water quality analysis from all piezometers is desirable.

The surface water will be monitored for flow volume using Telog recorders at two culvert locations on the stream adjacent to the landfill (shown on the aerial photo). One location is culvert 1 under Rapp Road and the other is culvert 3 behind the trailer court. Each telog unit should be placed about 20' upstream from the culvert entrance. The telog units continuously record water elevation at the culverts and using the surveyed culvert data the discharge volume versus time can be estimated. The Telog data will be downloaded monthly when the piezometers and staff gages are recorded.

Water quality will be measured at three stream locations using datasondes which record water temperature, dissolved oxygen, conductivity, pH, ORP (oxidation reduction potential), and chloride concentrations. At culvert 1 a datasonde will be deployed continuously to monitor water quality. The unit should be placed around 20' upstream from the culvert adjacent to the telog unit. The other datasonde will be used to measure water quality at culverts 3 and 8 on a revolving basis. This unit will be used to analyze the piezometer samples in between moves during the middle of the month. These units will be deployed for the time periods shown on the attached bar graph. The datasonde data will be downloaded monthly when the piezometers and staff gages are recorded.

The monitoring plan outlined above will provide both water quality and water discharge volume information from the site. The culvert surveys and discharge information will be used to develop a hydrologic model for the current conditions and the proposed restoration plan. The water quality information will be used to project improvements in water quality that may occur after restoration.

#06-0590 Albany Bush Landfill - Hydrologic Monitoring Equipment Requirements

As of

11/13/2006

Reference to Monitoring Plan Drawing - mon101106.dwg

Equipment	Deployment Location	Description	# of units	Location on Drawing
Telog with Casing and datalogger				
Telog	Culvert 1	5 psi -Telog/casing/datalogger	1	yes
	Culvert 4		1	yes
Total units =			2	

Datasonde Water Quality Monitor (WQM) and datalogger				
WQ Monitoring	Culvert 1	Hydrolab Minisonde MS5 units and Recon logger deployed for extended periods at culverts purchase two MS5 units w/logger water quality analyzed using hydrolab		yes
	Culvert 4			yes
	Culvert 8		2	yes
	piezometers			
Total units =			2	

Staff Gages				
Staff Gage	Culvert 1	Elevations marked (0-3.33')	1	yes
	Culvert 4	use metal fence or treated 2x4 post to hold gage	1	yes
	Culvert 8	0' at the ground (bottom) level	1	yes
	Wetland Pond		1	yes
	Wetland 2 - Buttonbush		1	yes
	Vernal Pond (VP)		2	yes
	Wetland 2 - Bog		1	yes
	Fen		1	yes
	Sedge Meadow		1	yes
Total units =			10	

20

60-inch Piezometers				
Piezometer	Transect E1	60-inch piezometer	5	yes
	Transect E2		3	yes
	Transect E5		4	yes
	Transect E4		4	yes
	Transect TP2		2	yes
	Transect DS1		2	yes
	Transect WL2 buttonbush		3	yes
	Transect VP		3	yes
	Transect WL 2 Bog		3	yes
	Transect SM		3	
	Total units =			32

For Calibration

The culverts will require survey elevations at inlet and outlet, length of pipe, and entrance/outlet type.

GPS location on all monitoring locations.

Survey Elevations will be required for the staff gages.

Survey Elevations will be required for the piezometers.

Albany Bush Landfill – culverts (092606 site visit)

Culvert 1



2- 15" CMP pipes under Rapp Road

Culvert 2



24" CMP with bottom 8' sediment covered

Culvert 3



24" CMP

Culvert 4



18" CMP

Culvert 5



24" CMP

Culvert 6

No picture or data

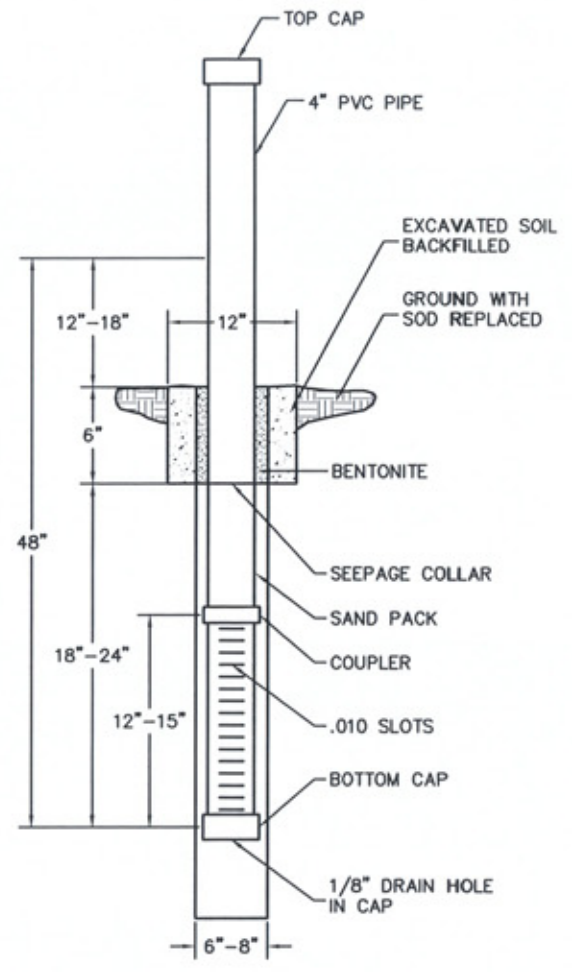
Culvert 7



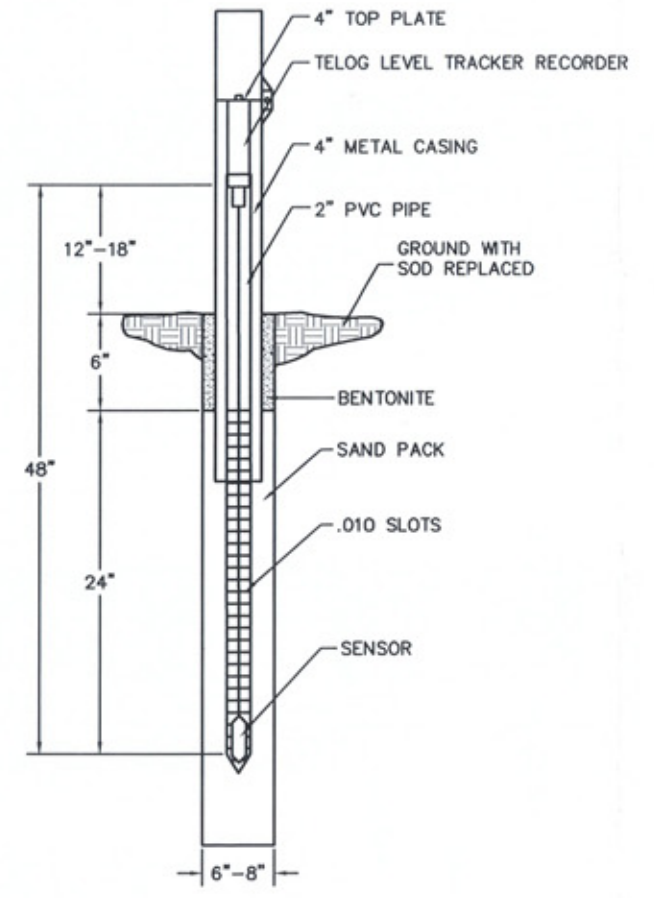
10x16 rectangular riser (10" above outlet top) discharging through 12" plastic corrugated pipe

Culvert 8

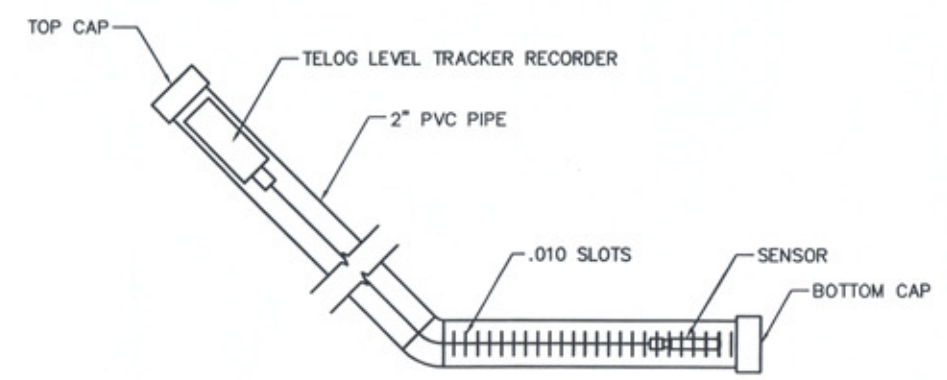
Stream crossing under Rapp Road. No picture or data.



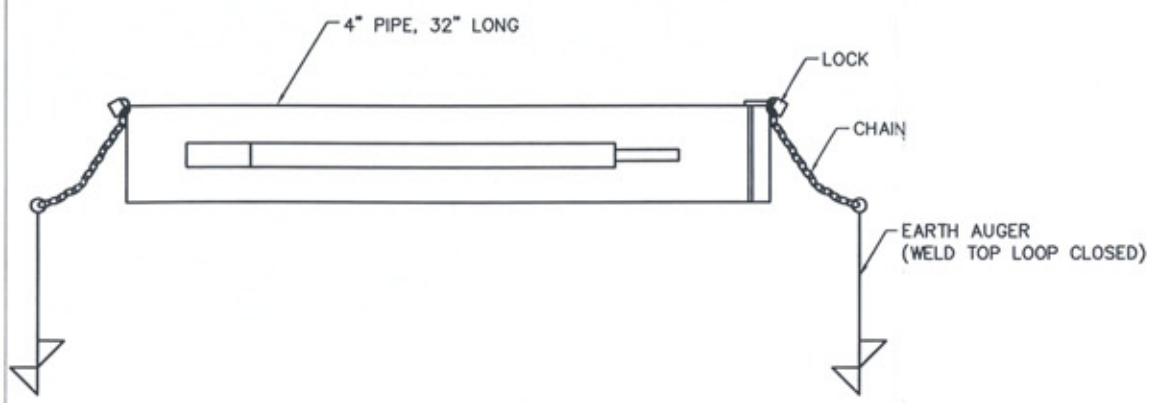
PIEZOMETER DETAIL
NOT TO SCALE



PIEZOMETER WITH TELOG DETAIL
NOT TO SCALE



TELOG HORIZONTAL DEPLOYMENT DETAIL
NOT TO SCALE



HYDROLAB DEPLOYMENT DETAIL
NOT TO SCALE

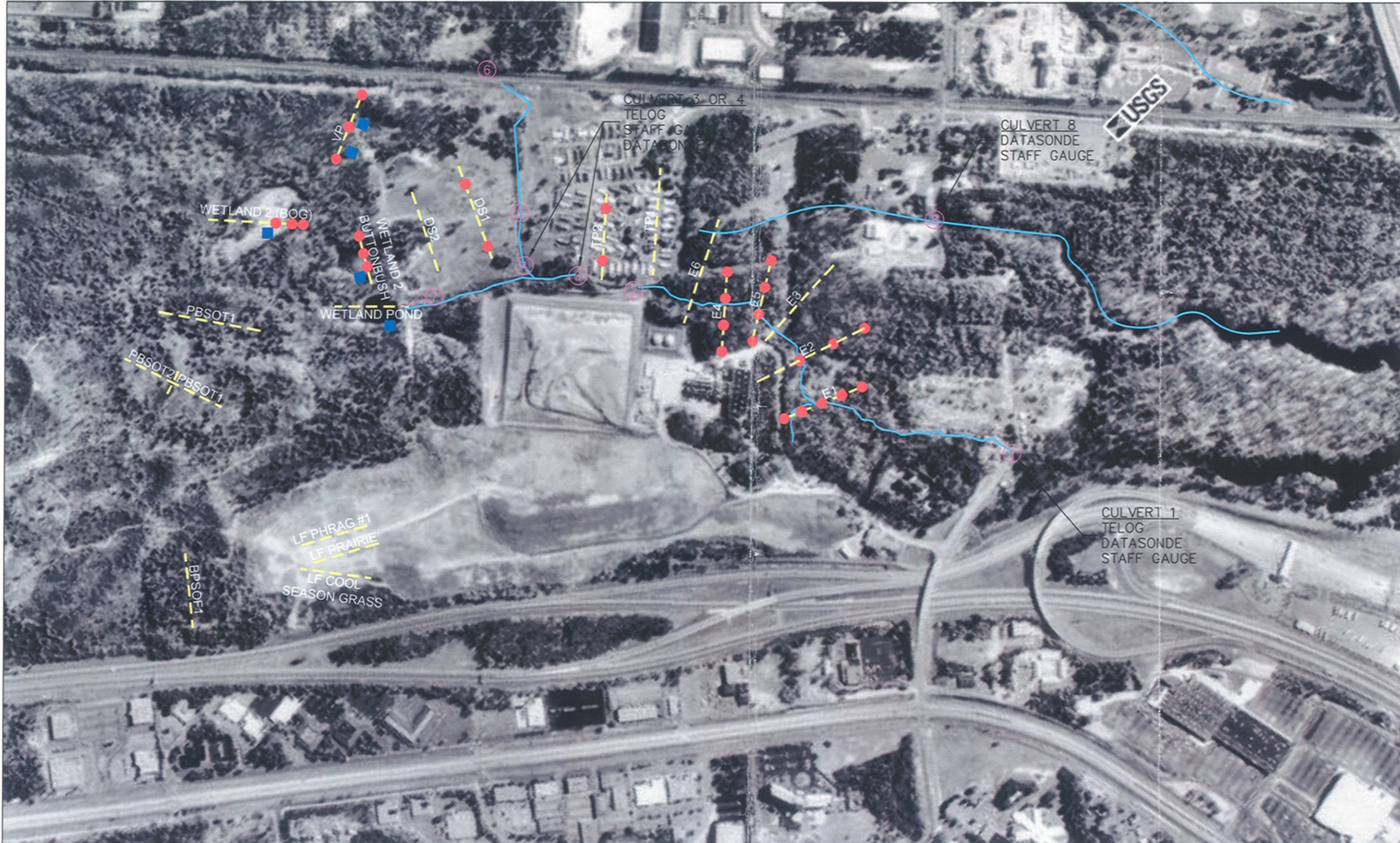
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Standard Details

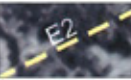




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 Checked:
 Approved:
 AES Project No.: 06-0590
 File Name: tran100906.dwg
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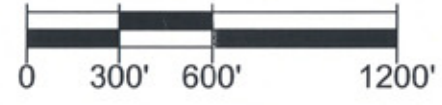
Albany Pine Bush Landfill
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Legend

-  Transect Location
-  Staff Gauge Location
-  Existing Culvert Location
-  Piezometer Location
-  Existing Stream



SCALE: 1" = 600'



Revisions:	
No.	Description
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Monitoring Plan

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Legend



Transect Location



Staff Gauge Location



Piezometer Location



SCALE: 1" = 600'



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Monitoring Plan-West

Drawn By: L.e.g.
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Revisions:	
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