OhioEPA
State of Ohio Environmental Protection Agency

Northwest District Office

347 North Dunbridge Road
Bowling Green, OH 43402-9398

TELE: (419) 352-8461 FAX: (419) 352-8468
www.epa.state.oh.us

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

Re: Operating Facility Ground Water Inspection
Hancock County Landfill

December 19, 2007

Hancock County Board of Commissioners
300 South Main Street
Findlay, Ohio 45840

Dear Commissioners:

The Hancock County Sanitary Landfill (solid waste I.D. No. 32-00-01) is an operating facility. An Operating Facility Ground Water Inspection (OFGWI) was performed on October 22 and 23, 2007, by Ohio EPA. The facility is currently operating under the detection monitoring plan as required by OAC Rule 3745-27-10 (D). Two statistically significant increases over background were reported and confirmed in a recent data submittal. If demonstrations in accordance with OAC Rule 3745-27-10 (D)(7)(c) are not approved by the director within two hundred and ten days from initial sampling, the owner/operator will need to comply with the requirements of OAC Rule 3745-27-10 (E).

Prior to the OFGWI, a review of the facility's Ground Water Monitoring Plan was performed by Ohio EPA personnel and an OFGWI, including comments, was completed for the Ground Water Monitoring Plan related items. During the site inspection the rest of the checklist, including comments, along with Ground Water Monitoring Well Field Inspection Forms were completed. The comments included in the attachments which relate to the Ground Water Monitoring Plan and to the inspection items are located below. Annotation corresponds to the respective numbered comments in the OFGWI Checklist.

COMMENTS

VIOLATIONS

1. **The owner/operator is in violation of OAC Rule 3745-27-10 (B)(3)(e), which requires that monitoring wells be operated and maintained to perform to design specifications. The owner/operator needs to make any necessary well repairs immediately.**

   Although a surface seal was present at well MW-9, the concrete seal was broken potentially allowing contamination from the surface to enter the well through the annulus between the well casing and the boring.

This seal needs to be repaired. In addition, the hinge on the protective casing for well SW-5 is broken. While there is a lock on the well, the protective casing can be opened at the broken hinge opposite the lock allowing access to the monitoring well. This hinge should be repaired.

MORE INFORMATION NEEDED TO DETERMINE COMPLIANCE

2. **Compliance with OAC Rule 3745-27-10(B)(3)(e), which requires that monitoring wells be operated and maintained to perform to design specifications, cannot be determined at this time.**

   Although present, the weep hole in the protective casing in well SW-7 is at a level approximately level with the well casing and the weep hole in the protective casing in well MW-6 is at a level near the level of the well casing. Any liquids filling the annulus may flow into the well causing contamination of the well. The owner/operator needs to explain how the position of the weep hole will not potentially impact the quality of the samples collected from this well. Alternatively, since there is concrete between the protective casing and the well casing, the well should be extended above the weep hole or the concrete and weep hole need to be lowered.

   In addition although present, the weep hole in the protective casing in wells PZ-5 and MW-13 is at a level approximately level with the top of the sand between the protective casing and the well casing. Any liquids filling the annulus of either of these wells will saturate this sand and freezing conditions may damage the well casings. The owner/operator needs to explain how having a weep hole at the top of the sand will ensure that the well will not potentially be damaged. Alternatively, a weep hole should be drilled in the protective casing at the base of the sand to allow water to drain from the annular space between the protective casing and the well casing.

RECOMMENDATIONS

3. **Utilizing the flow-through cell and data logger field parameters are checked and recorded after purging and before sampling, however, this is not noted in the GWMP.** It is recommended that this procedure be noted in the GWMP.

4. **Because dedicated or disposable purging and sampling equipment is typically utilized at the site, it is not necessary to purge and sample wells from least to most contaminated.** It is recommended that well sampling order be discussed in the GWMP. The use of non-dedicated or non-disposable equipment should be discussed in the plan and noted on field sheets.

5. **The treatment of decontamination fluids are not discussed in the GWMP.** It is recommended this be discussed in the GWMP.

6. **Purge water from wells was disposed on the ground some distance from the wells.** Disposable of purge water is not discussed in the GWMP. It is recommended this be discussed in the GWMP.

7. **Samples were not field filtered however, this is not stated in the GWMP.** It is recommended that the GWMP contain a comment indicating that samples should not be field filtered.

8. **While the sample labels contain the date and time of collection they do not contain the sample type (matrix) that was sampled.** It is recommended this information be included on the sample label and be required by the GWMP.

9. **While the sample labels contain the date and time of collection they do not contain the names or initials of the samplers.** The GWMP does not require the names or initials of the samplers on the sample labels. It is recommended this information be included on the sample label and be required by the GWMP.

10. **While field personnel indicated that they would document all deviations from the SAP-required procedures and equipment malfunctions the GWMP does not specifically require that deviations be noted.** It is recommended that this be required by the GWMP.

11. **The address and other landfill information were not included on the chain of custody form.** It is recommended that this information be included on the chain of custody form.

12. **While the chain of custody forms contain reference to the requested analytical methods for some of the parameters, the GWMP does not require that this information be provided on the chain of custody forms.** It is recommended that this information be required on the forms by the GWMP.

13. **While a general description of the bottles to be used for the sample is included in the GWMP it does not require that this information be included on the chain of custody form.** It is recommended that this information be included on the chain of custody form.

14. **The presence of ice in the cooler upon arrival at the laboratory is not required by the GWMP to be included on the chain of custody.** It is recommended this information be included on the chain of custody form and be required as part of the GWMP.

15. **While the GWMP requires that names and signatures be included on the chain of custody forms, there is no requirement that these names be legible.** It is sometimes difficult to determine who the samplers were and who is signing the form. It is recommended this information be included on the chain of custody form and be required as part of the GWMP.

16. **The GWMP does not require that the field forms contain the documentation of the monitoring program for each well.** It is recommended this information be included on the field form and be required as part of the GWMP.

17. **While copies of all field forms (and/or field log book), COC forms, and sample shipping documents are stored at the landfill facility as part of the owner/operator's operating record the GWMP does not specifically require this.** It is recommended that the GWMP state that this information be required to be stored at the landfill.

If you have any questions, please feel free to contact Randy Skrzyniecki at the Ohio EPA Northwest District Office (419) 373-3149. Any written correspondence should be sent to the attention of Jeremy Scoles, Division of Solid and Infectious Waste Management, Ohio EPA Northwest District Office, 347 N. Dunbridge Road, Bowling Green, Ohio 43402.

Sincerely,

Jeremy Scoles, SIT, CHMM
Environmental Specialist
Division of Solid and Infectious Waste Management

/llr

Attachment

pc: Lindsay Summit, Hancock County Health Department
Wes Rhiel, P.E., Malcolm Pirnie, Inc
File: Hancock County, Hancock County Landfill, Ground Water
ec: Abdul Smiley, Jack Leow, Randy Skrzyniecki
i.d.: 5-6802

DSIWM FACILITY GROUND WATER INSPECTION CHECKLIST

Facility Name: **HANCOCK COUNTY LANDFILL**	Inspection Date: **OCTOBER 22, 23, 2007**
Facility Address: 10400 Allen Twp. Rd. 107 Findlay, OH 45840	Ohio EPA ID#: **32-00-01** District: **NWDO**
Facility Type (circle one): ***MSW*** Ind Res C&DD If applicable, Residual Facility Class:	Facility Status (circle one): Operating ***OPERATING***
Facility Contact, Name & Title: Steve Trutt,	
DSIWM Inspector: **JEREMY SCOLES**	DDAGW Hydrogeologist: **RANDY SKRZYNIECKI**
Names and company affiliations of facility or consulting personnel performing field monitoring and sampling activities: **1. STEVE WILLIAMSON**, Malcolm Pirnie, Inc., **2. BRIAN WEBB**, Malcolm Pirnie, Inc., **3. PHIL GEARING**, Malcolm Pirnie, Inc.	

Documentation Reviewed Prior to Field Inspection

Before observing field activities, the following documents were reviewed by Ohio EPA to determine the applicable monitoring and sampling requirements: **DMSAP (Rev 12/2005), GW, REPORT (07/2007)**

Document:	Yes	No	N/A	Comments:
1. Approved Permit?	y			If yes, date approved: April 1, 2002
2. Approved Closure Plan?			na	If yes, date approved:
3. Final enforcement actions between AGO/Ohio EPA and facility?			na	If yes, date signed:
4. Current Ground Water Detection Monitoring Plan (GWDMP)?	y			If yes, document date: Last Revised April 2007.
5. Current Ground Water Quality Assessment Monitoring Plan (GWQAP)?	y			If yes, document date: Last Revised January 2007.
6. Current Ground Water Compliance Monitoring Plan (GWCMP)?			na	If yes, document date:
7. Current Sampling & Analysis Plan (SAP)?	y			If yes, document date: Last Revised July 2006.
a) Are copies of the most current SAP, GWDMP, GWQAP, GWCMP, and/or Closure Plan always available at the facility for review?	y			
b) If the facility has entered into assessment monitoring, has the SAP been revised to reflect all necessary changes (*e.g.*, updated constituent list)?	y			
8. Previous Ohio EPA inspection?	y			If yes, inspection date: SEPTEMBER 23, 24, 2004

Monitoring Well System				
Construction, Maintenance, & Sampling Information:	**Yes**	**No**	**N/A**	**Comments:**
1. Do the actual number, locations, and depths of the wells sampled correspond to the SAP, GWDMP, GWQAP, GWCMP, and/or Closure Plan?	Y			
2. Are the wells maintained properly? (Please refer to the attached *Ground Water Monitoring Well Inspection Form*)	y	n		Comments 1 and 2
3. Have samples previously been collected and analyzed from **all** wells in the ground water monitoring system?	y			

Please note that for the purposes of this inspection, the terms "monitoring well" and "well" include piezometers (used to collect water level elevation data only) required by the SAP, GWDMP, GWQAP, GWCMP, and/or Closure Plan.

Sampling & Analysis Plan Requirements and Field Procedures

Were the following step-by-step procedures and techniques required by the SAP properly implemented in the field? In answering the following questions, evaluate if the described procedures and methods are technically adequate to ensure collection of representative groundwater samples and protection of human health and the environment. Please provide written comments on any inadequate procedures or methods. Although this checklist utilizes Ohio EPA's *Technical Guidance Manual* (TGM) Chapter 10 as guidance for ground water sampling, procedures and methods not described in the TGM may be acceptable. At a minimum, any procedures or methods not included in the TGM must ensure collection of representative ground water samples and protection human health and the environment as required by the applicable rules. **Note that this section of the checklist incorporates reviews of both the SAP and field activities. Review and comment of the SAP should be completed prior to observing field activities.**

Additional Comments & Notes:

1. Measuring ground water levels/elevations (and surface water levels/elevations, if applicable), including:	**SAP Requirement?**			**Field Implementation**			**Comments:**
	Yes	**No**	**N/A**	**Yes**	**No**	**N/A**	
a) Measuring all ground water levels (and if applicable, surface water levels) within a 24-hour period?	y			y			
b) Measuring all ground water levels prior to purging and sampling?	y			y			
c) Measuring all ground water levels (and surface water levels, if applicable) to an accuracy of at least 0.01 ft?	y			y			

	SAP Requirement?			Field Implementation			Comments:
	Yes	No	N/A	Yes	No	N/A	
d) Using a reference point established by a licensed surveyor at the top of each well casing (and at each surface water sampling point, if applicable) to measure each water level?	y			Y			
e) Procedures for documenting and measuring both dense non-aqueous phase liquid (DNAPL) and light non-aqueous phase liquid (LNAPL)?	y					na	
f) Is the total depth for each well measured? If not, what is the facility's schedule for measuring and evaluating total depths?	y				n		In Spring.
g) Type(s) of device(s) used to measure water levels and total depths?	electric tape/ interface probe			electric tape/ interface probe			
h) Are water levels used for determining ground water flow direction recorded on the field form with well purging and sampling information or on a separate field form?	y - on field form with purge and sample info.			y - on field form with purge and sample info and in field notebook.			
2. Well purging (evacuation), including:							
a) Purging method(s) and equipment used:	bailer/pump			bailer/pump			
b) Is purging equipment dedicated?	y	n		y	n		Dedicated pumps in MW wells.
c) Purge volumes for each well correctly calculated?	y			y			
d) Purging an adequate water volume from each well?	y			y			
e) Are all SAP-required water stabilization indicator parameters properly measured to determine when purging is adequate?	y			y			
f) If bailers are used, is purging performed in a manner which minimizes mixing and aeration of the well water column?	y			y			
g) Type of cord or wire used to purge with bailers:	not specified			nylon			
h) Purging low-yielding wells completely dry unless a passive sampling technique is being used?	y			y			
i) If using a passive sampling technique for low-yielding wells, is the purge volume equal to or greater than the volume of the pump and discharge tubing and less than the volume of the screened interval?			na			na	
j) If purging for low-flow sampling:							
(1) Is the pump intake placed at or slightly above the center of the well screen?	y			y			

	SAP Requirement?			Field Implementation			Comments:
	Yes	No	N/A	Yes	No	N/A	
(2) Do ground water levels measured during purging indicate that minimal drawdown (*i.e.*, < 0.3 ft) is present in the well?	y			y			
(3) Is the minimum time interval between measuring successive water stabilization indicator parameters at least 3 to 5 minutes?	y			y			
3. Field parameters for ground water, surface water, and/or leachate, including:							
a) Are field analyses of temperature, pH, and specific conductance performed as required by rule?	y			y			
b) Are field parameters checked after purging and before sampling?		n		y			Comment 3.
4. Ground water (and if applicable, surface water or leachate) sample collection, including:							
a) Sample collection methods and equipment used:	bailer/pump			bailer/pump			
b) Is the ground water sampling equipment dedicated?	y	n		y	n		
c) If applicable, is the well sampling order from least to most contaminated?		n			n		Comment 4.
d) Are sample containers filled in order of parameter volatilization sensitivity, *e.g.*, VOCs, SVOCs, total metals?	y			y			
e) If bailers are used, are samples collected in a manner which minimizes mixing and aeration of the well water column?	y			y			
f) Type of cord or wire used with sampling bailers:	Not specified.			nylon			
g) If used, are bladder pumps operated in a manner that prevents sample aeration and minimizes sample turbidity?	y			y			
h) Are pumps (all types) operated at a rate low enough to prevent sample aeration and minimize sample turbidity?	y			y			
i) If a low-flow ground water sampling technique is used, do ground water levels measured during sampling indicate that minimal drawdown (*i.e.*, < 1.0 ft) is present in the well?	y			y			
j) Wells where ground water purging and sampling procedures were observed by Ohio EPA:	MW-1, SZ-4A, SZ-3B, MW-3, SW-3, MW-4, MW-5						
5. Calibration of field monitoring and analytical equipment, including:							
a) Is each device calibrated to its manufacturer's specifications?	y			y			
b) Is each device calibrated prior to use in accordance with the SAP?	y			y			

	SAP Requirement?			Field Implementation			Comments:
	Yes	No	N/A	Yes	No	N/A	
c) Are all calibration procedures and/or equipment maintenance (and the date(s) performed) documented on field forms or in a field log book?	y			y			
6. Equipment decontamination, including:							
a) If applicable, is all non-dedicated monitoring, purging, and sampling equipment decontaminated between sampling locations in accordance with the SAP?	y			y			
b) Is clean or decontaminated sampling equipment placed on the ground or in other potentially contaminated areas prior to use?		n			n		
c) Are all decontamination fluids contained and disposed in accordance with the SAP?		n				na	Comment 5. Decon fluids on ground away from well
7. Purge water disposal, including:							
a) If previous monitoring results indicate that a well has not been impacted by the landfill, is all purge water disposed in an area where it cannot affect purging or sampling activities at any sampling location during the ongoing event?		n				na	Comment 6
b) If previous monitoring results indicate that a well has been impacted by the landfill, or if the ground water is known to be contaminated, is all purge water properly contained, stored, transported, and disposed per applicable federal, state, and local laws?		n				na	Comment 6
8. Field sample preparation, including:							
a) <u>Sample containers and handling</u>:							
(1) Are all sample containers pre-cleaned and provided by the laboratory?	y			y			
(2) Are any samples field filtered prior to being transferred to their appropriate containers?		n			n		Comment number 7.
(3) Are samples transferred directly from the sampling device to their appropriate containers in a manner that minimizes agitation and aeration?	y			y			
(4) Are VOC sample containers completely filled to form a meniscus and capped in a prompt manner to minimize volatilization?	y			y			
(5) Are VOC containers checked for air bubbles after filling and capping?	y			y			

	SAP Requirement?			Field Implementation			Comments:
	Yes	No	N/A	Yes	No	N/A	
b) **Sample Preservation**							
(1) Are samples for all organic parameters, alkalinity, COD, cyanide, nitrate/nitrite, phosphorous, sulfate, sulfide, TDS, TOC, and/or turbidity immediately placed in a cooler with ice for preservation at 4° C?	y			y			
(2) Are VOC samples field-acidified to pH < 2 with HCl?	y			y			Bottles are pre-preserved.
(3) Are samples for metals and/or radiological parameters (gross alpha, gross beta, radium) field-acidified to pH < 2 with HNO_3?	y			y			Bottles are pre-preserved.
(4) Are samples for ammonia, COD, nitrate/nitrite, phosphorous, and/or TOC field-acidified to pH < 2 with H_2SO_4?	y			y			Bottles are pre-preserved.
(5) Are cyanide samples field-preserved at pH > 12 with 50% NaOH?			na			na	
c) **Sample labeling:**							
(1) Unique sample (field) identification number that clearly associates the sample and the sampling location?	y				y		
(2) Facility name?	y				y		
(3) Sample type (matrix) and date and time of collection?		n		y	n		Comment 8. no matrix
(4) Parameters and analyses requested?	y			y			
(5) Sample preservatives?	y			y	n		"Acid". Type not specified.
(6) Name or initials of sampler and company affiliation?		n		y	n		Comment 9. no name/initials
9. Field Quality Assurance/Quality Control (QA/QC), including:							
(a) Use of standard procedures that ensure the validity and reliability of field and laboratory data, as well as representative analytical results?	y			y			
(b) Documentation of all deviations from SAP-required procedures?		n				na	Comment 10.
(c) **Collection of the following QA/QC samples in accordance with the SAP:**							
(1) Duplicate samples?	y			y			
(2) Field blanks?	y					na	not observed
(3) Equipment blanks?	y					na	not observed
(4) Trip blanks?	y			y		na	in cooler with VOCs
(d) Collection of all necessary laboratory QA/QC samples (*e.g.*, matrix spike, matrix spike duplicate)?			na			na	

	SAP Requirement?			Field Implementation			Comments:
	Yes	No	N/A	Yes	No	N/A	
10. Chain-of-Custody (COC) procedures, including:							
(a) Are all SAP-required COC procedures followed? (If not, explain why.)				y			
(b) Are standardized COC forms used to establish a complete custody record from the field to the laboratory for all samples?	y			y			
(1) Address and contact information for the landfill facility, laboratory, and, if applicable, all consulting firms performing sampling?		n			n		Comment number 11. no facility info in spring 2007
(2) Unique sample (field) identification numbers that clearly associate the sampling location and sample?	y			y			
(3) Sample type (matrix) and date and time of collection?	y			y			
(4) Requested parameters, or a reference for the requested parameters?	y			y			
(5) Requested analytical methods, or a reference for the requested analytical methods?		n		y	n		Comment number 12. not all methods noted
(6) Types of sampling containers used, or a reference for the types of sampling containers used?		n			n		Comment number 13.
(7) Types of sample preservatives used, or a reference for the types of sample preservatives used?	y			y			
(8) Sample shipping information, including but not limited to the transporter(s), tracking number(s), and delivery time frame(s)?	y			y			
(9) Temperature of the samples when received by the laboratory?	y			y			
(10) Whether or not ice is present in the shipping cooler when received by the laboratory?		n			n		Comment number 14.
(11) Legible names (printed) and signatures of all field and laboratory personnel relinquishing and/or receiving the samples which provide a complete record of sample custody? (Names and signatures of commercial shipping personnel are not required.)		n		y			Comment number 15.
(d) Are custody seals (signed by the sampler) placed on sample coolers prior to shipment to indicate if the cooler has been opened or tampered with during shipment?	y			y			
11. Is the following sampling and water level elevation information properly documented on field forms or in a field log book for each well, surface water, or leachate sampling location?							
(a) Monitoring program (detection, assessment, or compliance) identified?		n			n		Comment number 16. not in spring 2007

	SAP Requirement?			Field Implementation			Comments:
	Yes	No	N/A	Yes	No	N/A	
(b) Correct reference to well identification number or specific well location?	y			y			
(c) Static ground water level (elevation), associated measurement technique, date, and time?	y			y			
(d) Surface water level (elevation), associated measurement technique, date, and time?			na			na	
(e) Total depth and associated measurement technique for each well?	y			y			from spring event
(f) Presence and thickness of immiscible layers and associated measurement technique?	y					na	No immiscible layers.
(g) Well purging procedures and all associated SAP-required information?	y			y			
(h) Field analyses procedures and all associated SAP-required information?	y			y			
(i) Sampling procedures and all associated SAP-required information?	y			y			
(j) Field observations, including but not limited to unusual sample characteristics (appearance, odor, *etc.*), unusual well recharge rates, apparent well damage, potential contamination sources, and climatic conditions (approximate temperature, precipitation conditions, and wind speed/direction when sampling)?	y			y			
(k) Equipment malfunction(s)?	y	n				na	Comment number 10.
(l) Any deviations from the SAP and explanation of why such modifications were necessary?	y	n				na	Comment number 10.
(m) Sampling team personnel and company affiliation?	y			y			Initials only. Forms have names.
12. Are copies of all field forms (and/or field log book), COC forms, and sample shipping documents stored at the landfill facility as part of the owner/operator's operating record?		n		y			Comment number 17.
Additional Comments & Notes:							

GROUND WATER MONITORING WELL FIELD INSPECTION FORM
DSIWM Facility Ground Water Inspection Checklist

HANCOCK COUNTY LANDFILL, ID# 32-00-01, OCTOBER 22, 2007

Well identification number:	**MW-11**	**SW-11**	**MW-10**	**SW-10**	**MW-9**	**SW-9**	
Correct location?	Y	Y	Y	Y	Y	Y	
Clearly and correctly labeled?	Y	Y	Y	Y	Y	Y	
Locked prior to arrival at well location?	Y	Y	Y	Y	Y	Y	
Ground water depth:	60.14	48.30	60.30	41.17	54.57	34.98	
Well total depth:	N/M	N/M	N/M	N/M	N/M	N/M	
Protective casing present?	Y	Y	Y	Y	Y	Y	
(a) Condition?	G	G	G	G	G	G	
(b) Locking cap? Condition?	YG	YG	YG	YG	YG	YG	
(c) Weep hole present?	Y	Y	Y	Y	Y	Y	
(d) Standing water between protective casing & well casing?	N	N	N	N	N	N	
Surface seal present?	Y	Y	Y	Y	Y	Y	
(a) Condition?	G	G	G	G	Cracked, loose	G	
(b) Ponded surface water?	N	N	N	N	N	N	
Well (inner) casing condition?	G	G	G	G	G	G	
(a) Material?	PVC 4"	pvc 4"	pvc 4"	pvc 4"	pvc 4"	pvc 4"	
(b) Survey reference mark?	Y	Y	Y	Y	Y	Y	
(c) Cap present?	Y	Y	Y	Y	Y	Y	
TOP OF CASING							
GROUND LEVEL							
STICK-UP (estimated)							

Additional Comments: Most wells with high weep holes appear to be filled with concrete between well casing and protective casing. However, those with sand filled to high weep hole does not appear to provide adequate drainage.

MW-9 -- Concrete seal cracked and loose around well protective casing.

GROUND WATER MONITORING WELL FIELD INSPECTION FORM
DSIWM Facility Ground Water Inspection Checklist

HANCOCK COUNTY LANDFILL, ID# 32-00-01, OCTOBER 22, 2007

Well identification number:	MW-8	SW-8	MW-7	SW-7	MW-6	SW-6	
Correct location?	Y	Y	Y	Y	Y	Y	
Clearly and correctly labeled?	Y	Y	Y	Y	Y	Y	
Locked prior to arrival at well location?	Y	Y	Y	Y	Y	Y	
Ground water depth:	43.48	35.16	51.76	42.69	58.67	35.01	
Well total depth:	N/M	N/M	N/M	N/M	N/M	N/M	
Protective casing present?	Y	Y	Y	Y	Y	Y	
(a) Condition?	G	G	G	G	G	G	
(b) Locking cap? Condition?	YG	YG	YG	YG	YG	YG	
(c) Weep hole present?	Y (hi)	Y(hi)	Y (hi)	**Y (hi, AT TOP OF PVC)**	**Y(hi, NEAR TOP OF PVC)**	Y (hi)	
(d) Standing water between protective casing & well casing?	N	N	N	N	N	N	
Surface seal present?	Y	Y	Y	Y	Y	Y	
(a) Condition?	G	G	G	G	G	G	
(b) Ponded surface water?	N	N	N	N	N	N	
Well (inner) casing condition?	G	G	G	G	G	G	
(a) Material?	PVC 4"	PVC 4"	PVC 4"	PVC 4"	PVC 4"	PVC 4"	
(b) Survey reference mark?	Y	Y	Y	Y	Y	Y	
(c) Cap present?	Y	Y	Y	Y	Y	Y	
TOP OF CASING							
GROUND LEVEL							
STICK-UP (estimated)							

Additional Comments: Most wells with high weep holes appear to be filled with concrete between well casing and protective casing. However, those with sand filled to high weep hole does not appear to provide adequate drainage.

GROUND WATER MONITORING WELL FIELD INSPECTION FORM
DSIWM Facility Ground Water Inspection Checklist

HANCOCK COUNTY LANDFILL, ID# 32-00-01, OCTOBER 22, 2007

Well identification number:	**MW-4**	**SW-4**	**MW-13**	**SW-13**	**MW-3**	**SW-3**	
Correct location?	Y	Y	Y	Y	Y	Y	
Clearly and correctly labeled?	Y	Y	Y	Y	Y	Y	
Locked prior to arrival at well location?	Y	Y	Y	Y	Y	Y	
Ground water depth:	56.27						
Well total depth:	N/M	N/M	N/M	N/M	N/M	N/M	
Protective casing present?	Y	Y	Y	Y	Y	Y	
(a) Condition?	G	G	G	G	G	G	
(b) Locking cap? Condition?	YG	YG	YG	YG	YG	YG	
(c) Weep hole present?	Y (hi)	Y (hi)	Y (above sand)	Y	Y (hi)	Y (hi)	
(d) Standing water between protective casing & well casing?	N	N	N	N	N	N	
Surface seal present?	Y	Y	Y	Y	Y	Y	
(a) Condition?	G	G	G	G	G	G	
(b) Ponded surface water?	N	N	N	N	N	N	
Well (inner) casing condition?	G	G	G	G	G	G	
(a) Material?	PVC 4"	PVC 4"	PVC 4"	PVC 4"	PVC 4"	PVC 4"	
(b) Survey reference mark?	Y	Y	Y	Y	Y	Y	
(c) Cap present?	Y	Y	Y	Y	Y	Y	
TOP OF CASING							
GROUND LEVEL							
STICK-UP (estimated)							

Additional Comments: Most wells with high weep holes appear to be filled with concrete between well casing and protective casing. However, those with sand filled to high weep hole does not appear to provide adequate drainage.

MW-13 – weep hole is above porous sand and likely does not provide adequate draining for area below weep hole.

GROUND WATER MONITORING WELL FIELD INSPECTION FORM
DSIWM Facility Ground Water Inspection Checklist

HANCOCK COUNTY LANDFILL, ID# 32-00-01, OCTOBER 22, 2007

Well identification number:	MW-2	SW-2	SZ-3A	MW-5	SW-5	MW-14	SW-14
Correct location?	Y	Y	Y	Y	Y	Y	Y
Clearly and correctly labeled?	Y	Y	Y	Y	Y	Y	Y
Locked prior to arrival at well location?	Y	Y	Y	Y	Y/N	Y	Y
Ground water depth:	53.58	25.53	26.35	59.77	40.26	62.90	42.41
Well total depth:	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Protective casing present?	Y	Y	Y	Y	Y	Y	Y
(a) Condition?	G	G	G	G	G	G	G
(b) Locking cap? Condition?	YG	YG	YG	YG	YG	YG	YG
(c) Weep hole present?	Y (hi)	Y (hi)	Y	Y (hi)	Y (hi)	Y	Y
(d) Standing water between protective casing & well casing?	N	N	N	N	N	N	N
Surface seal present?	Y	Y	Y	Y	Y	Y	Y
(a) Condition?	G	G	G	G	G	G	G
(b) Ponded surface water?	N	N	N	N	N	N	N
Well (inner) casing condition?	G	G	G	G	G	G	G
(a) Material?	PVC 4"	PVC 4"	PVC 4"	PVC 4"	PVC 4"	PVC 4"	PVC 4"
(b) Survey reference mark?	Y	Y	Y	Y	Y	Y	Y
(c) Cap present?	Y	Y	Y	Y	Y	Y	Y
TOP OF CASING							
GROUND LEVEL							
STICK-UP (estimated)							

Additional Comments: Most wells with high weep holes appear to be filled with concrete between well casing and protective casing. However, those with sand filled to high weep hole does not appear to provide adequate drainage.

SW-5 – Hinge for cap on protective casing is broken. Even though well is locked, this broken hinge allows for access to well without the benefit of a key for the lock.

GROUND WATER MONITORING WELL FIELD INSPECTION FORM

DSIWM Facility Ground Water Inspection Checklist

HANCOCK COUNTY LANDFILL, ID# 32-00-01, OCTOBER 22, 2007

Well identification number:	PZ-5	SW-15	SZ-4A	MW-1	SW-1	SZ-1A	
Correct location?	Y	Y	Y	Y	Y	Y	
Clearly and correctly labeled?	Y	Y	Y	Y	Y	Y	
Locked prior to arrival at well location?	Y	Y	Y	Y	Y	Y	
Ground water depth:	28.86	32.20	25.27	50.41	28.39	26.99	
Well total depth:	N/M	N/M	N/M	N/M	N/M	N/M	
Protective casing present?	Y	Y	Y	Y	Y	Y	
(a) Condition?	G	G	G	G	G	G	
(b) Locking cap? Condition?	YG	YG	YG	YG	YG	YG	
(c) Weep hole present?	Y	Y	Y	Y	Y	Y	
(d) Standing water between protective casing & well casing?	N	N	N	N	N	N	
Surface seal present?	Y	Y	Y	Y	Y	Y	
(a) Condition?	G	G	G	G	G	G	
(b) Ponded surface water?	N	N	N	N	N	N	
Well (inner) casing condition?	G	G	G	G	G	G	
(a) Material?	PVC 2"	PVC 2"	PVC 2"	PVC 4"	PVC 4"	PVC 2"	
(b) Survey reference mark?	Y	Y	Y	Y	Y	Y	
(c) Cap present?	Y	Y	Y	Y	Y	Y	
TOP OF CASING							
GROUND LEVEL							
STICK-UP (estimated)							

Additional Comments:

PZ-5 - weep hole is above porous sand and likely does not provide adequate draining for area below weep hole.

SZ-4A - previously displayed signs that surface water would collect around well. It appears that the owner/operator made modification in road to help drain water from near well and also added a drain in road near this well.

GROUND WATER MONITORING WELL FIELD INSPECTION FORM
DSIWM Facility Ground Water Inspection Checklist

HANCOCK COUNTY LANDFILL, ID# 32-00-01, OCTOBER 22, 2007

Well identification number:	MW-12	SW-12	SZ-2	PZ-7	SW-16	PZ-6	
Correct location?	Y	Y	Y	Y	Y	Y	
Clearly and correctly labeled?	Y	Y	Y	Y	Y	Y	
Locked prior to arrival at well location?	Y	Y	Y	Y	Y	Y	
Ground water depth:	48.40	27.74	25.56	21.22	28.17	26.65	
Well total depth:	N/M	N/M	N/M	N/M	N/M	N/M	
Protective casing present?	Y	Y	Y	Y	Y	Y	
(a) Condition?	G	G	G	G	G	G	
(b) Locking cap? Condition?	YG	YG	YG	YG	YG	YG	
(c) Weep hole present?	Y	Y	Y	Y	Y	Y	
(d) Standing water between protective casing & well casing?	N	N	N	N	N	N	
Surface seal present?	Y	Y	Y	Y	Y	Y	
(a) Condition?	G	G	G	G	G	G	
(b) Ponded surface water?	N	N	N	N	N	N	
Well (inner) casing condition?	G	G	G	G	G	G	
(a) Material?	PVC 4"	PVC 4"	PVC 4"	PVC 2"	PVC 2"	PVC 2"	
(b) Survey reference mark?	Y	Y	Y	Y	Y	Y	
(c) Cap present?	Y	Y	Y	Y	Y	Y	
TOP OF CASING							
GROUND LEVEL							
STICK-UP (estimated)							

Additional Comments: