Countywide Recycling & Disposal Facility
Division of Republic Waste Services of Ohio
3619 Gracemont Street S.W.
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May 2, 2007

Ohio Environmental Protection Agency, Central Office
Division of Solid and Infectious Waste Management
Attn: Mr. Ed Gortner
PO Box 1049
Columbus, Ohio 43216-1049

RE: WRITTEN DEMONSTRATION FOR GAS WELLS WITH OXYGEN EXCEEDANCES
ORDER 4.B.2, DIRECTOR'S FINAL FINDINGS AND ORDERS OF MARCH 28, 2007
COUNTYWIDE RECYCLING AND DISPOSAL FACILITY

Dear Mr. Gortner:

On April 16, 2007 Countywide Recycling and Disposal Facility (Countywide) submitted a written demonstration for seven (7) landfill gas (LFG) wells which exhibited oxygen levels greater than the target level of 1.5% as required by Order 4.B. The purpose of this letter is to inform you that five (5) of the seven (7) LFG wells have achieved compliance below the 1.5% target identified in the findings and orders within 30 days of the initial monitored exceedance. In addition Countywide wishes to provide an additional demonstration for the two (2) remaining LFG wells which did not achieve compliance with the 1.5% target as stated in the April 16, 2007 written demonstration.

The seven LFG wells identified during the week of April 1, 2007 are noted in Table 1, below. Also noted in the table is the date in which compliance was achieved if applicable and the oxygen content.

Table 1
LFG Wells with Greater than 1.5% Oxygen During the Week of April 1, 2007
For Which Written Demonstration is Required

Well ID	Date of Initial Exceedance	Initial Oxygen Reading	Date of Compliant Oxygen Reading or Last Oxygen Reading	Compliant Oxygen Reading or Last Oxygen Reading
PW-121R	4/2/2007	5.6%	4/24/2007	13.7%
C-1	4/3/2007	12.9%	4/19/2007	0.0%
PW-106	4/4/2007	21.9%	4/17/2007	1.3%
PW-109	4/5/2007	8.7%	4/23/2007	0.1%
PW-146	4/3/2007	4.6%	4/24/2007	1.0%
PW-156	4/3/2007	5.2%	4/17/2007	1.2%
PW-166	4/4/2007	13.1%	4/30/2007	7.7%

Corrective actions were taken as described in Table 2, however two (2) of these LFG wells are still exhibiting oxygen concentrations above 1.5% by volume and require additional assessment and corrective actions.

Table 2
Corrective Actions Taken During the Week of April 1, 2007
and Reason Mandated Oxygen Content Not Achieved

Well ID	Corrective Actions Taken	*Reason 1.5%* Level Not Achieved
PW-121R	Nominal vacuum adjustment, assessed well integrity and made repairs as appropriate, performed repairs on leachate pump installed in this LFG well	*Well is still watered-in.* Need additional time to allow leachate pump to dewater well and expose perforations.
C-1	Nominal vacuum adjustment, assessed well integrity, determined well was pinched/blocked at 16' below ground surface (BGS). Additional nominal vacuum adjustments.	*Not applicable this well has achieved compliance with the 1.5% target.* This LFG well has been compromised below grade and still needs to be assessed for possible abandonment and/or replacement.
PW-106	Assessed well integrity, performed well repairs, tightened flange connection, determined well was pinched/blocked at 18' BGS. Performed nominal vacuum adjustments. Installed a pump in the well.	*Not applicable this well has achieved compliance with the 1.5% target.* This LFG well has been compromised below grade and still needs to be assessed for possible abandonment and/or replacement.
PW-109	Nominal vacuum adjustments, assessed well integrity, replaced wellhead and fittings, performed inermediate cover and well boot repairs.	*Not applicable this well has achieved compliance with the 1.5% target.*
PW-146	Nominal vacuum adjustments, assessed well integrity, replaced wellhead and performed depth-to-water investigation, repaired well boot and leachate pump in this LFG well	*Not applicable this well has achieved compliance with the 1.5% target*
PW-156	Nominal vacuum adjustments, replaced wellhead, performed depth-to-water investigation, added bentonite to repair well bore seal, took down-hole gas sample at 30' to evaluate if O2 is deeper in well casing. Installed pvc liner boot to well casing.	*Not applicable this well has achieved compliance with the 1.5% target*
PW-166	Nominal vacuum adjustments, assessed well integrity, performed depth-to-water investigation, added bentonite to repair well bore seal.	*Unknown. Potentially additional cover repair needed.* The well is located on steep side slope in the south west corner of the disposal area. The wet weather has prevented equipment access to this location to make repairs.

A complete historical record of the corrective actions taken by Countywide for each of these LFG wells is provided in Attachment A. Chronological listing of oxygen content readings taken on each of these LFG wells is provided in Attachment B.

Countywide proposes an additional timeline to correct the oxygen exceedance at the two (2) LFG wells as shown in Table 3.

Table 3
Proposed Timeline to Achieve 1.5% Oxygen Content

Well ID	Requested Timeline for Correction
PW-121R	July 1 (90 days from initial exceedance) to identify and install a leachate pump capable of removing more volume than the current pump in use. This should lower the liquid level and open up the perforated portion of the well and allow LFG to flow and reduce the oxygen levels. In addition Countywide is evaluating the need for this LFG well as part of it's gas collection system. A professional engineer's evaluation is being performed in accordance with Title V and NSPS requirements for potential abandonment of this well.
PW-166	June 3 (60 days from initial exceedance) to repair cover, install a pvc well boot, and conduct additional tuning.

Countywide does not believe that the source of oxygen for any of these LFG wells is a result of overpull, nor is the oxygen being introduced into the waste mass. Instead we believe the air is vapor-locked in the top of these wells or is from shallow air intrusion.

Please note that if Countywide is not able to achieve the required 1.5% oxygen concentration as a result of additional investigation and corrective actions within the timelines requested in Table 3, Countywide may still request higher operating parameters for these LFG wells, if necessary. In addition Countywide will continue to monitor these LFG wells as required and continue working to achieve 1.5% or less oxygen concentration for these and all other LFG wells.

Please feel free to call me should you have any questions.

Tim Vandersall, P.E.
General Manager

Attachments:

Attachment A - Well Assessment and Repair Logs
Attachment B – Chronological Oxygen Content Readings

cc: Bill Skowronski, OEPA-NEDO
Kirk Norris, SCHD
Dan Aleman, CHD
Todd Hamilton, CWRDF
Kyle Nay, Cornerstone
Mike Michels, Cornerstone
Mike Contestabile, Cornerstone
Jason Perdion, B&H
Jim Walsh, SCS Engineers

Attachment A
Historical Record of Corrective Actions

American Environmental Group Ltd.

Landfill Gas Collection and Control System Repair Documentation Report

this form documents corrective actions taken to achieve less than 1.5% O2 in vertical landfill gas well locations for Republic Services of Ohio II LLC, dba Countryside Recycling and Disposal Facility
Order 4 4A and 4B

PRIORITY RESPONSE TO > 1.5% O2 LFG WELL READING

Initial Discovery

Well Identification: PW 12/R

☒ Date: 4-2-07 Time: 1440 of initial discovery of > 1.5% oxygen

Technician: JOHN MERGA 7.4 % O2 non-compliant reading

Possible issue(s): PUMP NOT RUNNING / LEAKING CONNECTIONS

Yes No N/A
☒ ☐ ☐ Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Complete within 1-day of initial discovery

Date: _____ of AEGL O&M Well Integrity Assessment (below)

Technician: _____

Yes	No	N/A	
☒	☐	☐	Is well labeled?
☒	☐	☐	Is well head remote?
☒	☐	☐	Is well hard piped?
☒	☐	☐	Are all sample ports in good condition?
☐	☐	☒	Are all flanges in good condition?
☐	☒	☐	Are all other connections in good condition?
☒	☐	☐	Is well valve in good condition?
☐	☐	☒	Is the well kanallex in good condition?
☒	☐	☐	Is there a pump in the well?
☒	☐	☐	Does pump require service?
☒	☐	☐	Is well casing in good condition?
☒	☐	☐	Miscellaneous - please describe
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Yes	No	N/A	
☒	☐	☐	Is well lateral / header in good condition?
☐	☒	☐	Is lateral or header line surging?
☐	☒	☐	Is the well surging?
☐	☒	☐	Lateral or Header Piping
☒	☐	☐	Is well boot (liner) in good condition?
☒	☐	☐	Is well bore (soil) in good condition?

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

HDPE PIPE HAS A PVC PUMP HOUSING

Complete within 2 days of initial discovery

Date: 4-5-07 of AEGL O&M Well Integrity Repairs

Technician: RANDY EVERETT

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☒	☐	Wellhead ports / fittings / connections repaired/replaced?
☐	☐	☒	Wellhead Kanallex repaired or replaced?
☐	☐	☐	Reviewed 3-months monitoring data for O2 trends (attach copy)
☐	☒	☐	Well casing integrity checked with dummy?
☐	☒	☐	Wellhead valve replaced or repair?
☐	☒	☐	Miscellaneous repaired or replaced? - please describe
☐	☒	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"
☒	☐	☐	Review logs for original pipe lengths installed?

PUMP RUNNING BUT WAS NOT FOR 7 DAYS

Solid 55 ft.
Perforation 113 ft.
DTB _____ ft.
DTF 16.0 ft.

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted integrity issues: HDPE PIPE HAS PVC PUMP HOUSING

Initiate within 3 days of discovery

Date: 4/9/07 of AEGL Pump Repairs

Technician: CHUCK LO

Description on noted issue(s): REPAIRED PUMP RETURNED TO OPERATION

Repair Summary:

Yes	No	N/A	
☒	☐	☐	Well pump repairs completed?

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted integrity issues: _____

Initiate within 1 days of discovery

Date: _____ of AEGL Field Repairs

Technician: _____

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☐	☐	Lateral or header piping adjustment or repair?
☐	☐	☐	Well boot liner repair? "additional placement of membrane repair of gas extraction boot"
☐	☐	☐	Well bore seal repairs?(earthwork/bentonite seal) "placement of low permeability soils"
☐	☐	☐	Well casing investigation performed? (camera)
☐	☐	☐	Well casing repairs performed?

Yes	No	N/A	
☐	☐	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted issues: _____

☐ Date: _____ compliance of < 1.5% achieved within _____ days

☒ Date: 4/13/07 compliance not achieved - proposed alternate timeline and/or operating value AS PUMP DEWATERS WILL REMONITOR FOR COMPLIANCE W/IN 2 EXPOSED PERFORATIONS EXPECT COMPLIANCE

American Environmental Group Ltd

Landfill Gas Collection and Control System Repair Documentation Report

this form documents corrective actions taken to achieve less than 1.5% O2 in vertical landfill gas well locations for Republic Services of Ohio II LLC dba Countryside Recycling and Disposal Facility Order 4, 4A and 4B

PRIORITY RESPONSE TO > 1.5% O2 LFG WELL READING

Initial Discovery

Well Identification: L001

☒ **Date:** 4-3-07 **Time:** 901 **of initial discovery of > 1.5% oxygen**

Technician: JOSH/NEPSA 12.9 % O2 non-compliant reading

Possible issue(s):

Yes	No	N/A	
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Complete within 1-day of initial discovery

Date: 4-3-07 **of AEGL O&M Well Integrity Assessment (below)**

Technician: RANDY/EVERETT

Yes	No	N/A	
☒	☐	☐	Is well labeled?
☐	☒	☐	Is well head remote?
☐	☒	☐	Is well hard piped?
☒	☐	☐	Are all sample ports in good condition?
☐	☐	☒	Are all flanges in good condition?
☒	☐	☐	Are all other connections in good condition?
☒	☐	☐	Is well valve in good condition?
☒	☐	☐	Is the well kanaflex in good condition?
☐	☒	☐	Is there a pump in the well?
☐	☐	☒	Does pump require service?
☒	☐	☐	Is well casing in good condition?
☐	☒	☐	Miscellaneous - please describe
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Yes	No	N/A	
☒	☐	☐	Is well lateral / header in good condition?
☐	☒	☐	Is lateral or header line surging?
☐	☒	☐	Is the well surging?
☐	☒	☐	Lateral or Header Piping
☐	☐	☒	Is well boot (liner) in good condition?
☒	☐	☐	Is well bore (soil) in good condition?

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Complete within 2-days of initial discovery

Date: 4-3-07 **of AEGL O&M Well Integrity Repairs**

Technician: RANDY/EVERETT

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☒	☐	Wellhead ports / fittings / connections repaired/replaced?
☐	☒	☐	Wellhead Kanaflex repaired or replaced?
☒	☐	☐	Reviewed 3-month monitoring data for O2 trends (attach copy)
☐	☒	☐	Well casing integrity checked with dummy?
☐	☒	☐	Wellhead valve replaced or repair?
☐	☒	☐	Miscellaneous repaired or replaced? please describe 16.0' HARD BOTTOM
☐	☒	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"
☒	☐	☐	Review logs for original pipe lengths installed?

Solid 35 ft.

Perforation 32 ft

DTB 16.0 ft.

DTF ____ ft.

Noted integrity issues

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Initiate within 3 days of discovery

Date: _____ **of AEGL Pump Repairs**

Technician:

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☐	☐	Well pump repairs completed?

Noted integrity issues

Yes	No	N/A	
☐	☐	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Initiate within 3 days of discovery

Date: _____ **of AEGL Field Repairs**

Technician:

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☐	☐	Lateral or header piping adjustment or repair?
☐	☐	☐	Well boot liner repair? 'additional placement of membrane, repair of gas extraction boot'
☐	☐	☐	Well bore seal repairs?(earthwork/bentonite seal) 'placement of low permeability soils'
☐	☐	☐	Well casing investigation performed? (camera)
☐	☐	☐	Well casing repairs performed?

Noted issues

Yes	No	N/A	
☐	☐	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

☐ **Date:** _____ *compliance of < 1.5% achieved within* _____ *days*

☒ **Date:** 4/13/07 *compliance not achieved - proposed alternate timeline and/or operating value* WELL COMPROMISED

American Environmental Group Ltd.

Landfill Gas Collection and Control System Repair Documentation Report

this form documents corrective actions taken to achieve less than 1.5% O2 in vertical landfill gas well locations for Republic Services of Ohio II LLC dba Countywide Recycling and Disposal Facility Order 4, 4A and 4B

PRIORITY RESPONSE TO > 1.5% O2 LFG WELL READING

Initial Discovery

Well Identification: PW106

☒ Date: 4-4-07 Time: 1049 of initial discovery of > 1.5% oxygen

Technician: JOSH NEGA 21.0 % O2 non-compliant reading

Possible issue(s): WATER

Yes	No	N/A	
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Complete within 1-day of initial discovery

Date: 4-4-07 of AEGL O&M Well Integrity Assessment (below)

Technician: JOSH NEGA

Yes	No	N/A	
☒	☐	☐	Is well labeled?
☒	☐	☐	Is well head remote?
☒	☐	☐	Is well hard piped?
☒	☐	☐	Are all sample ports in good condition?
☒	☐	☐	Are all flanges in good condition?
☐	☒	☐	Are all other connections in good condition?
☒	☐	☐	Is well valve in good condition?
☐	☐	☒	Is the well kanaflex in good condition?
☒	☐	☐	Is there a pump in the well?
☒	☐	☐	Does pump require service?
☒	☐	☐	Is well casing in good condition?
☐	☒	☐	Miscellaneous - please describe
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Yes	No	N/A	
☒	☐	☐	Is well lateral / header in good condition?
☐	☒	☐	Is lateral or header line surging?
☐	☒	☐	Is the well surging?
☐	☒	☐	Lateral or Header Piping
☒	☐	☐	Is well boot (liner) in good condition?
☒	☐	☐	Is well bore (soil) in good condition?

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Complete within 7 days of initial discovery

Date: 4-5-07 of AEGL O&M Well Integrity Repairs

Technician: MARK ARILLA

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☒	☐	Wellhead ports / fittings / connections repaired/replaced?
☐	☒	☐	Wellhead Kanaflex repaired or replaced?
☒	☐	☐	Reviewed 3-months monitoring data for O2 trends (attach copy)
☐	☒	☐	Well casing integrity checked with dummy?
☐	☒	☐	Wellhead valve replaced or repair?
☒	☐	☐	Miscellaneous repaired or replaced? - please describe
☐	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"
☐	☐	☐	Review logs for original pipe lengths installed?

ADDED 4 BOLTS TO BLIND FLANGE AND TIGHTENED

Solid 20 ft.

Perforation 35 ft.

DTB 18 ft.

DTT 5 ft.

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted integrity issues: WARRING FOR PUMP REPAIR

Initiate within 3 days of discovery

Date: _____ of AEGL Pump Repairs

Technician:

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☐	☐	Well pump repairs completed?

Yes	No	N/A	
☐	☐	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted integrity issues:

Initiate within 3 days of discovery

Date: _____ of AEGL Field Repairs

Technician:

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☐	☐	Lateral or header piping adjustment or repair?
☐	☐	☐	Well boot liner repair? "auditional placement of membrane, repair of gas extraction boot"
☐	☐	☐	Well bore seal repairs?(earthwork/bentonite seal) "placement of low permeability soils"
☐	☐	☐	Well casing investigation performed? (camera)
☐	☐	☐	Well casing repairs performed?

Yes	No	N/A	
☐	☐	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted issues:

☐ Date: _____ compliance of < 1.5% achieved within _____ days

☒ Date: 4/13/07 compliance not achieved - proposed alternate timeline and/or operating value WELL CASING COMPROMISED

American Environmental Group Ltd.

Landfill Gas Collection and Control System Repair Documentation Report

this form documents corrective actions taken to achieve less than 1.5% O2
in vertical landfill gas well locations for:
Republic Services of Ohio II, LLC. dba Countywide Recycling and Disposal Facility
Order 4, 4A and 4B

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PRIORITY RESPONSE TO > 1.5% O2 LFG WELL READING

Initial Discovery

Well Identification: PW 109

☐ ***Date:*** 4-5-07 ***Time:*** 9:52 ***of initial discovery of > 1.5% oxygen***

Technician: Josh Nepsa 8.7 % O2 non-compliant reading

Possible issue(s):

Yes	No	N/A	
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Complete within 1-day of initial discovery

Date: 4-5-07 ***of AEGL O&M Well Integrity Assessment (below)***

Technician: Josh Nepsa

Yes	No	N/A	
☒	☐	☐	Is well labeled?
☐	☒	☐	Is well head remote?
☐	☒	☐	Is well hard piped?
☒	☐	☐	Are all sample ports in good condition?
☐	☐	☒	Are all flanges in good condition?
☒	☐	☐	Are all other connections in good condition?
☒	☐	☐	Is well valve in good condition?
☒	☐	☐	Is the well kanaflex in good condition?
☐	☒	☐	Is there a pump in the well?
☐	☐	☒	Does pump require service?
☒	☐	☐	Is well casing in good condition?
☐	☒	☐	Miscellaneous - please describe
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Yes	No	N/A	
☒	☐	☐	Is well lateral / header in good condition?
☐	☒	☐	Is lateral or header line surging?
☐	☒	☐	Is the well surging?
☐	☐	☒	Is well boot (liner) in good condition?
☒	☐	☐	Is well bore (soil) in good condition?

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Complete within 2 days of initial discovery

Date: 4-10-07 ***of AEGL O&M Well Integrity Repairs & Investigation***

Technician: Josh Nepsa

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☒	☐	☐	Wellhead ports / fittings / connections repaired/replaced?
☐	☒	☐	Wellhead Kanaflex repaired or replaced?
☒	☐	☐	Reviewed 3-months monitoring data for O2 trends (attach copy)
☐	☒	☐	Well casing integrity checked with dummy?
☒	☐	☐	Wellhead valve replaced or repair?
☐	☒	☐	Miscellaneous repaired or replaced? - please describe
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"
☒	☐	☐	Review logs for original pipe lengths installed?

Solid 20 ft.
Perforation 19 ft.
DTB 37 ft.
DTF – ft.

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted integrity issues:

Additional Comments: Possible well boot repair

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Republic Services of Ohio II, LLC. dba Countywide Recycling and Disposal Facility

Order 4, 4A and 4B

American Environmental Group Ltd.

PRIORITY RESPONSE TO > 1.5% O2 LFG WELL READING

Initiate within 3 days of discovery

Date: _____ ***of AEGL Pump Repairs***

Technician: _____

Description on noted issue(s): _____

Repair Summary:

Yes	No	N/A	
☐	☐	☒	Well pump repairs completed?

Yes	No	N/A	
☐	☐	☒	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted integrity issues: _____

Initiate within 3 days of discovery

Date: 4-20-07 ***of AEGL Field Repairs***

Technician: Tom Denver

Description on noted issue(s): High O2 OUT OF COMPLIANCE

Repair Summary:

Yes	No	N/A	
☐	☑	☐	Lateral or header piping adjustment or repair?
☑	☐	☐	Well boot liner repair? "additional placement of membrane, repair of gas extraction boot"
☑	☐	☐	Well bore seal repairs?(earthwork/bentonite seal) "placement of low permeability soils"
☐	☑	☐	Well casing investigation performed? (camera)
☐	☑	☐	Well casing repairs performed?

Yes	No	N/A	
☒	☐	☐	Compliance achieved?

4-23-07 Date compliance achieved?

0.0 % O2 compliant reading

Noted issues: _____

☐ ***Date:*** 4-23-07 ***compliance of < 1.5% achieved within*** 18 ***days***

☐ ***Date:*** _____ ***compliance not achieved - proposed alternate timeline and/or operating value***

Additional Comments:

American Environmental Group Ltd

Landfill Gas Collection and Control System Repair Documentation Report

this form documents corrective actions taken to achieve less than 1.5% O2 in vertical landfill gas well locations for Republic Services of Ohio II LLC dba Countywide Recycling and Disposal Facility Order 4, 4A and 4B

PRIORITY RESPONSE TO > 1.5% O2 LFG WELL READING

Initial Discovery

Well Identification: PW146

☒ Date: 4-3-07 Time: 1334 of initial discovery of > 1.5% oxygen

Technician: JOSH NEPA 4.6 % O2 non-compliant reading

Possible issue(s):

Yes	No	N/A	
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Complete within 1-day of initial discovery

Date: 4-3-07 of AEGL O&M Well Integrity Assessment (below)

Technician: JOSH NEPA

Yes	No	N/A	
☒	☐	☐	Is well labeled?
☐	☒	☐	Is well head remote?
☐	☒	☐	Is well hard piped?
☒	☐	☐	Are all sample ports in good condition?
☐	☐	☒	Are all flanges in good condition?
☐	☒	☐	Are all other connections in good condition?
☒	☐	☐	Is well valve in good condition?
☒	☐	☐	Is the well kanaflex in good condition?
☒	☐	☐	Is there a pump in the well?
☒	☐	☐	Does pump require service?
☒	☐	☐	Is well casing in good condition?
☐	☒	☐	Miscellaneous - please describe
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Yes	No	N/A	
☒	☐	☐	Is well lateral / header in good condition?
☐	☒	☐	Is lateral or header line surging?
☐	☒	☐	Is the well surging?
☐	☒	☐	Lateral or Header Piping
☐	☒	☐	Is well boot (liner) in good condition?
☐	☒	☐	Is well bore (soil) in good condition?

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

Date compliance achieved?

% O2 compliant reading

Complete within 2 days of initial discovery

Date: 4-10-07 of AEGL O&M Well Integrity Repairs

Technician: JOSH NEPA

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☒	☐	☐	Wellhead ports / fittings / connections repaired/replaced?
☐	☒	☐	Wellhead Kanaflex repaired or replaced?
☒	☐	☐	Reviewed 3-months monitoring data for O2 trends (attach copy)
☐	☒	☐	Well casing integrity checked with dummy?
☐	☒	☐	Wellhead valve replaced or repair?
☒	☐	☐	Miscellaneous repaired or replaced? - please describe
☐	☒	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"
☒	☐	☐	Review logs for original pipe lengths installed?

Solid ____ ft.

Perforation ____ ft.

DTB ____ ft.

DTF 19.7 ft. — NO OPEN PERFORATIONS

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

Date compliance achieved?

% O2 compliant reading

Noted integrity issues: LINER BOOT HAS APPEARANCES REPAIR

Initiate within 3 days of discovery

Date: 4/11/07 of AEGL Pump Repairs

Technician: CHUNG LO

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☒	☐	☐	Well pump repairs completed?

WILL CONTINUE TO MONITOR WATER LEVELS

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

Date compliance achieved?

% O2 compliant reading

Noted integrity issues:

Initiate within 3 days of discovery

Date: of AEGL Field Repairs

Technician:

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☐	☐	Lateral or header piping adjustment or repair?
☐	☐	☐	Well boot liner repair? 'additional placement of membrane, repair of gas extraction boot'
☐	☐	☐	Well bore seal repairs?(earthwork/bentonite seal) "placement of low permeability soils"
☐	☐	☐	Well casing investigation performed? (camera)
☐	☐	☐	Well casing repairs performed?

Noted issues:

Yes	No	N/A	
☐	☐	☐	Compliance achieved?

Date compliance achieved?

% O2 compliant reading

☐ Date: ____ compliance of < 1.5% achieved within ____ days

☒ Date: 4/13/07 compliance not achieved - proposed alternate timeline and/or operating value

WILL CONTINUE TO CHECK WATER LEVELS W/ OPERATING PUMP EXPECT COMPLIANT READING WITH MORE EXPOSED PERFORATIONS

American Environmental Group Ltd
Landfill Gas Collection and Control System Repair Documentation Report
this form documents corrective actions taken to achieve less than 1.5% O2 in vertical landfill gas well locations for Republic Services of Ohio II LLC dba Countywide Recycling and Disposal Facility
Order 4, 4A and 4B

PRIORITY RESPONSE TO > 1.5% O2 LFG WELL READING

Initial Discovery

Well Identification: RW 156

Date: 4-3-07 Time: 1341 of initial discovery of > 1.5% oxygen

Technician: JOSH NEPSA 5.2 % O2 non-compliant reading

Possible issue(s):

Yes	No	N/A	
X			Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Complete within 1-day of initial discovery

Date: 4-3-07 of AEGL O&M Well Integrity Assessment (below)

Technician: JOSH NEPSA

Yes	No	N/A	
X			Is well labeled?
	X		Is well head remote?
	X		Is well hard piped?
X			Are all sample ports in good condition?
		X	Are all flanges in good condition?
X			Are all other connections in good condition?
X			Is well valve in good condition?
X			Is the well kanaflex in good condition?
	X		Is there a pump in the well?
		X	Does pump require service?
X			Is well casing in good condition?
	X		Miscellaneous please describe
X			Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Yes	No	N/A	
X			Is well lateral / header in good condition?
	X		Is lateral or header line surging?
	X		Is the well surging?
	X		Lateral or Header Piping
		X	Is well boot (liner) in good condition?
	X		Is well bore (soil) in good condition?

Yes	No	N/A	
	X		Compliance achieved?

Date compliance achieved?

% O2 compliant reading

Complete within 2 days of initial discovery

Date: 4-10-07 of AEGL O&M Well Integrity Repairs

Technician: JOSH NEPSA

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
X			Wellhead ports / fittings / connections repaired/replaced?
	X		Wellhead Kanaflex repaired or replaced?
X			Reviewed 3-months monitoring data for O2 trends (attach copy)
	X		Well casing integrity checked with dummy?
	X		Wellhead valve replaced or repair?
X			Miscellaneous repaired or replaced? please describe
			Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"
			Review logs for original pipe lengths installed?

* DOWNHOLE GAS SAMPLE @ APPROXIMATELY 30' - NON COMPLIANT READING

2x50# BAGS OF BENTONITE ADDED

Solid 23.0 ft.
Perforation 89.0 ft.
DTB 104.5 ft.
DTF 80.5 ft.

Yes	No	N/A	
	X		Compliance achieved?

Date compliance achieved?

% O2 compliant reading

Noted integrity issues:

Initiate within 3 days of discovery

Date: of AEGL Pump Repairs

Technician:

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
		X	Well pump repairs completed?

Yes	No	N/A	
			Compliance achieved?

Date compliance achieved?

% O2 compliant reading

Noted integrity issues:

Initiate within 3 days of discovery

Date: 4-13-07 of AEGL Field Repairs

Technician: TOM DENVER

Description on noted issue(s): LIVED ROOT

Repair Summary:

Yes	No	N/A	
		X	Lateral or header piping adjustment or repair?
X		X	Well boot liner repair? "additional placement of membrane, repair of gas extraction boot"
X		X	Well bore seal repairs? (earthwork/bentonite seal) "placement of low permeability soils" YES — SEE ABOVE
		X	Well casing investigation performed? (camera)
		X	Well casing repairs performed?

Yes	No	N/A	
X	X		Compliance achieved?

4-17-07 Date compliance achieved?

1.2 % O2 compliant reading

Noted issues

Date: compliance of < 1.5% achieved within days

X Date: 4/13/07 compliance not achieved - proposed alternate timeline and/or operating value

* WILL RECHECK DOWN WELL GAS READING

American Environmental Group Ltd.

Landfill Gas Collection and Control System Repair Documentation Report

this form documents corrective actions taken to achieve less than 1.5% O2 in vertical landfill gas well locations for Republic Services of Ohio II, LLC dba Countryside Recycling and Disposal Facility Order 4, 4A and 4B

PRIORITY RESPONSE TO > 1.5% O2 LFG WELL READING

Initial Discovery

Well Identification: PW146

☒ Date: 4-4-07 Time: 1439 of initial discovery of > 1.5% oxygen

Technician: JOSH NEPSA 13.1 % O2 non-compliant reading

Possible issue(s):

Yes No N/A

☒ ☐ ☐ Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Complete within 1 day of initial discovery

Date: 4-4-07 of AEGL O&M Well Integrity Assessment (below)

Technician: RANDY EVERETT

Yes	No	N/A	
☒	☐	☐	Is well labeled?
☐	☒	☐	Is well head remote?
☐	☒	☐	Is well hard piped?
☒	☐	☐	Are all sample ports in good condition?
☐	☐	☒	Are all flanges in good condition?
☒	☐	☐	Are all other connections in good condition?
☒	☐	☐	Is well valve in good condition?
☒	☐	☐	Is the well kanatlex in good condition?
☐	☒	☐	Is there a pump in the well?
☐	☐	☒	Does pump require service?
☒	☐	☐	Is well casing in good condition?
☐	☒	☐	Miscellaneous - please describe
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"

Yes	No	N/A	
☒	☐	☐	Is well lateral / header in good condition?
☐	☒	☐	Is lateral or header line surging?
☐	☒	☐	Is the well surging?
☐	☒	☐	Lateral or Header Piping
☐	☐	☒	Is well boot (liner) in good condition?
☒	☐	☐	Is well bore (soil) in good condition?

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Complete within 2 days of initial discovery

Date: 4-11-07 of AEGL O&M Well Integrity Repairs

Technician: JOSH NEPSA

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☒	☐	Wellhead ports / fittings / connections repaired/replaced?
☐	☒	☐	Wellhead Kanatlex repaired or replaced?
☒	☐	☐	Reviewed 3-months monitoring data for O2 trends (attach copy)
☐	☒	☐	Well casing integrity checked with dummy?
☐	☒	☐	Wellhead valve replaced or repair?
☐	☒	☐	Miscellaneous repaired or replaced? - please describe
☒	☐	☐	Nominal vacuum adjustments "appropriate and reasonable reductions in vacuum"
☒	☐	☐	Review logs for original pipe lengths installed?

POSSIBLY NEEDS PUMP

Solid 23 ft.

Perforation 118.95 ft.

DTB 118.7 ft.

DTF 69.0 ft.

Yes	No	N/A	
☐	☒	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted integrity issues: ONLY 26" AVAILABLE PERFS *

Initiate within 3 days of discovery

Date: _____ of AEGL Pump Repairs

Technician:

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☐	☒	Well pump repairs completed?

Yes	No	N/A	
☐	☐	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted integrity issues

Initiate within 3 days of discovery

Date: _____ of AEGL Field Repairs

Technician:

Description on noted issue(s):

Repair Summary:

Yes	No	N/A	
☐	☐	☒	Lateral or header piping adjustment or repair?
☐	☐	☒	Well boot liner repair? "additional placement of membrane repair of gas extraction boot"
☒	☐	☐	Well bore seal repairs?(earthwork/bentonite seal) "placement of low permeability soils" SHOVEL WORK PERFORMED
☐	☐	☒	Well casing investigation performed? (camera)
☐	☐	☒	Well casing repairs performed?

Yes	No	N/A	
☐	☐	☐	Compliance achieved?

_____ Date compliance achieved?

_____ % O2 compliant reading

Noted issues

☐ Date: _____ compliance of < 1.5% achieved within _____ days

☒ Date: 4/13/07 compliance not achieved - proposed alternate timeline and/or operating value

* REQUEST PUMP INSTALLATION - POSSIBLE

* NEAR EROSIONS / ROCK LET DOWN SSW CORNER OF LANDFILL

Attachment B
Chronological Oxygen Content Readings

Attachment B
Chronological Oxygen Content Readings

GEM ID	As-built ID	Date Time	O2 %
CNTY121R	PW-121R	4/2/2007 14:40	7.4
CNTY121R	PW-121R	4/2/2007 14:41	5.6
CNTY121R	PW-121R	4/5/2007 12:21	13.6
CNTY121R	PW-121R	4/5/2007 12:38	3.7
CNTY121R	PW-121R	4/9/2007 13:46	9
CNTY121R	PW-121R	4/9/2007 13:51	8.9
CNTY121R	PW-121R	4/11/2007 14:17	5.9
CNTY121R	PW-121R	4/11/2007 14:18	5.8
CNTY121R	PW-121R	4/16/2007 10:25	10.3
CNTY121R	PW-121R	4/16/2007 10:28	9.5
CNTY121R	PW-121R	4/24/2007 15:20	14.8
CNTY121R	PW-121R	4/24/2007 15:22	13.7
CNTYC001	C1	4/3/2007 9:01	12.9
CNTYC001	C1	4/3/2007 9:11	7.4
CNTYC001	C1	4/13/2007 11:16	19.9
CNTYC001	C1	4/13/2007 11:24	20.9
CNTYC001	C1	4/19/2007 10:32	0
CNTYC001	C1	4/19/2007 10:36	0
CTYPW106	PW-106	4/4/2007 10:49	21.9
CTYPW106	PW-106	4/4/2007 10:51	21.7
CTYPW106	PW-106	4/5/2007 10:45	21.7
CTYPW106	PW-106	4/6/2007 11:33	21.3
CTYPW106	PW-106	4/12/2007 12:24	12.4
CTYPW106	PW-106	4/12/2007 12:26	6.9
CTYPW106	PW-106	4/17/2007 11:35	1.3
CTYPW106	PW-106	4/17/2007 11:35	1.3
CTYPW109	PW-109	4/5/2007 9:52	8.7
CTYPW109	PW-109	4/5/2007 9:55	8
CTYPW109	PW-109	4/5/2007 9:57	5.7
CTYPW109	PW-109	4/10/2007 10:56	8.2
CTYPW109	PW-109	4/10/2007 11:04	4
CTYPW109	PW-109	4/11/2007 11:19	6.6
CTYPW109	PW-109	4/11/2007 11:22	6.6
CTYPW109	PW-109	4/17/2007 9:23	7.2
CTYPW109	PW-109	4/17/2007 9:26	8
CTYPW109	PW-109	4/17/2007 9:29	6.5
CTYPW109	PW-109	4/17/2007 9:31	7.4
CTYPW109	PW-109	4/23/2007 10:47	0.1
CTYPW109	PW-109	4/23/2007 10:49	0
CTYPW146	PW-146	4/3/2007 13:34	4.6
CTYPW146	PW-146	4/3/2007 13:36	5.1
CTYPW146	PW-146	4/5/2007 11:49	9.3
CTYPW146	PW-146	4/10/2007 17:28	4.7
CTYPW146	PW-146	4/18/2007 16:07	3.7
CTYPW146	PW-146	4/18/2007 16:10	2.3

Attachment B
Chronological Oxygen Content Readings

GEM ID	As-built ID	Date Time	O2 %
CTYPW146	PW-146	4/24/2007 13:04	1
CTYPW146	PW-146	4/24/2007 13:06	0.9
CTYPW156	PW-156	4/3/2007 13:41	5.2
CTYPW156	PW-156	4/3/2007 13:44	5.3
CTYPW156	PW-156	4/5/2007 11:38	8
CTYPW156	PW-156	4/6/2007 12:18	8.1
CTYPW156	PW-156	4/10/2007 16:08	4.4
CTYPW156	PW-156	4/10/2007 17:06	5.7
CTYPW156	PW-156	4/10/2007 17:09	6.2
CTYPW156	PW-156	4/17/2007 15:41	1.5
CTYPW156	PW-156	4/17/2007 15:44	1.2
CTYPW166	PW-166	4/4/2007 14:29	13.1
CTYPW166	PW-166	4/4/2007 14:37	13.1
CTYPW166	PW-166	4/5/2007 9:18	10.9
CTYPW166	PW-166	4/5/2007 9:38	8.2
CTYPW166	PW-166	4/11/2007 9:24	8
CTYPW166	PW-166	4/11/2007 9:27	7.8
CTYPW166	PW-166	4/18/2007 14:56	7.8
CTYPW166	PW-166	4/18/2007 14:58	8.1
CTYPW166	PW-166	4/18/2007 14:59	8.1
CTYPW166	PW-166	4/24/2007 8:56	9.3
CTYPW166	PW-166	4/24/2007 9:01	10.1
CTYPW166	PW-166	4/24/2007 9:03	9
CTYPW166	PW-166	4/30/2007 11:00	8.7
CTYPW166	PW-166	4/30/2007 11:03	7.7