



LOBEX

Engineering & Development

7 February 2008

Mr. Mike Kaiser, P.E.
Vice President
Waste Services, Inc.
3400 Jones Road
Jacksonville, Florida 32220

Subject: CQA Report for Cell 1 Sump Repairs
The J.E.D. Solid Waste Management Facility
Osceola County, Florida

Dear Mr. Kaiser:

Globex Engineering & Development, Inc. (Globex) is pleased to submit this letter report for the construction quality assurance (CQA) services provided by Globex during repairs to the vertical risers at the Cell 1 sump at the J.E.D. Solid Waste Management Facility located in Osceola County, Florida. The remainder of this letter report includes a background, parties involved, description of repair activities monitored by Globex, and certification of the completed work.

BACKGROUND

Globex was contacted by Waste Services, Inc. (WSI) for monitoring repair activities on the two primary vertical risers located in the primary sump of Cell 1. The two vertical risers were damaged by lightening and burned down several feet into the ground surface. Globex was tasked to monitor excavation of soils around the risers, installation of new risers over the existing risers, backfilling of excavation, installation of a geomembrane flap around the risers at the perimeter berm level, and placement of soil over the flap. Globex inspected operation of the risers following completion of the concrete work around the risers and connection of electrical lines to make the sump operational again.

Please note that the damage to the primary vertical risers was reported to the Florida Department of Environmental Protection (FDEP) on 6 July 2007, shortly after the damage was discovered. General excavation work was performed by Comanco Environmental Corporation and necessary materials were ordered for the repair work during the period of July 2007 and November 2007, when Globex arrived at the site to document repairs.

2043/F080065

PARTIES INVOLVED

The parties involved during repairs to the risers were, as follows:

- Waste Services, Inc., Owner
- G4 Land & Cattle, Earthwork and Concrete Contractor, Pipe Installer
- Comanco Environmental Corporation, Liner Installer
- Johns Electric Co., Electrical Contractor
- Sligo Systems, Pumps and Controls Contractor
- Globex Engineering & Development, Inc., CQA Monitor

DESCRIPTION OF REPAIRS

The following activities took place during repair of the risers:

- Soil around the primary and secondary risers was excavated to approximately 2 ft below the burned surface of primary risers. (approximately 8 ft below the perimeter berm level);
- The uneven portion of the top of the risers were sawed to level the top of risers;
- More soil excavation was performed to approximately 4 ft below the even top of the risers;
- The inside of the primary risers were cleaned using a vacuum truck;
- An 8-inch thick layer of non-calcareous gravel was placed around the primary risers on top of the graded soil platform;
- Two new 53-inch diameter risers were placed over the existing risers with an approximately 3-ft overlap between the new and existing risers;
- The new risers were plumbed and secured in position;
- Soil was placed back into the excavation in 1-ft lifts and compacted to 95 percent of the maximum dry density of the soil material measured in accordance with the Standard Proctor procedures;
- After backfilling of the excavation, a geomembrane flap was installed over the filled area and welded on three sides to the primary liner at the top of the perimeter berm; and also welded to the secondary and primary risers (note that the flap is not part of the liner system, but it only prevents precipitation from entering the sump);
- A 2-ft thick layer of soil was placed over the geomembrane flap;

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- A concrete slab was poured around the secondary and primary risers;
- A concrete block wall was constructed on the back side of the slab;
- Piping was completed to connect the secondary and primary risers to the existing leachate force main;
- Pumps were installed inside the primary risers; and
- Electrical conduits and control panels were installed to make the pumps operational.

The repair operation began in early November 2007. Globex was present on site from 5 November 2007 through 16 November 2007, until completion of the 2-ft thick layer of soil above the geomembrane flap. According to WSI, repair activities were completed on 8 January 2008. On 9 January 2008, Globex performed a site visit and verified that the construction of the concrete slab, concrete block wall, piping, pump installation, and electrical work were completed. Globex also observed and verified that pumps installed in the primary riser were operational at the completion of the project.

It should be emphasized that the integrity of the base liner was not compromised by the melt down of vertical risers, excavation work, and repair activities (other than the minor repair made at the anchor trench).

CERTIFICATION

The CQA monitoring services provided by Globex were carried out under direct supervision of Ali Khatami, Ph.D., P.E., a Professional Engineer registered in the State of Florida. Dr. Khatami was present on site on 9 November 2007 to observe the on-going repair activities in the field. Dr. Khatami observed the latter part of the soil excavation, placement of gravel, and installation of new risers over the existing risers. Dr. Khatami reviewed field logs prepared by the Globex personnel in the field. Copies of the daily logs are presented in Attachment A.

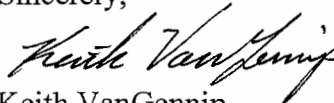
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Globex appreciated the opportunity of providing CQA monitoring services to WSI during repairs to the risers. Please contact either of the undersigned at 954-571-9200 if you have any questions.

Sincerely,



Keith VanGennip

Field Services Manager



Ali Khatami, Ph.D., P.E.

Principal

ATTACHMENT A

DAILY LOGS



Site: WSI Oak Hammock

Project No.: 2043

Date: 11/05/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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Arrive at job site at 8:00 am meet with Matt we went to brief job description

- CQA on excavation and dewatering in order to install of two 50" Ø HDPE Primary Sump Risers to cover the two 48" Ø HDPE Primary Sump Risers damaged by lightning.
- Air monitoring the excavation area for gases that in high levels are hazard as:
 - H₂S – hydroxide sulfide,
 - CO – carbon monoxide,
 - O₂ – oxygen in high levels is flammable combustible,
 - CO₂ – carbon dioxide,
 - Methane, flammable combustible, and
 - LEL – Lower Explosion Level.
- Time and personnel tracking in the job area
- G-4 Land & Cattle, Inc. will be the contractor responsible for the installation of two 50" Ø HDPE Primary Sump Risers.
 - Robbie Rowley – Construction Manager
 - Wesley – Superintendent
 - 4 helpers
- Comanco Environmental will cap the leachate sump with 60 mil HDPE textured liner.
 - Crew not on site

G-4 crew was on site at 7:00 am report Superintendent and operations were standing by.

At 9: 30 am Matt gave ok to start cutting the burn remaining sections of the two 48" Ø HDPE Primary Sump Risers damaged by lightning; to perform this operation used air pressure powered saw. I constantly was monitoring the air using biosystems four gas PHD-Lite gas sensor recording readings every half hour.

At 10:04am after setting the equipment and air blower two G4 members went down to the excavation area wearing taxipro H₂O personal sensors to cutting the #1 sump riser.

At 13:30am G4 using a 330LC excavator move the 50" Ø HDPE Primary Sump Risers to the excavation area.

At 11:00am they start cutting the #2 sump riser.

At 11:30am G4 stop for lunch break.

At 12:50pm G4 re-start operations again.

At 13:05pm Mike Kaiser (engineer) shows up to the excavation area to over look the operation progress.



Site: WSI Oak Hammock

Project No.: 2043

Date: 11/05/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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At 13:20 pm Robbie Rowley G4 Construction Manager took measurements of the position of the two 48" Ø HDPE Primary Sump Risers damaged by lightning to figured out how more has to be excavated to set the 50" Ø HDPE Primary Sump Risers; taking the top of the # 2 sump raiser Mike Kaiser estimated a clearance of 3' form the top the ground.

At 13:30pm G4 finish cut the two sump risers

At 13:40pm G4 start chip the sludge inside the sump risers.

At 13:50pm G4 change the hydraulic 12" pump to the second sump riser to pump leachate out of the sump.

At 14:20pm G4 cut a section of the base of one of the 50" Ø HDPE Primary Sump Risers.

At 14:50pm G4 Superintendent shouts down operations.

At 15:00pm G4 left the premises.

After that went to the main office to meet with Mike Kaiser

Air testing data

GASES/TIME	9:30AM	10:00AM	10:30AM	11:00AM	12:50PM	1:30PM	2:00PM	2:30PM
<i>O2</i>	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
<i>CO</i>	7	7	12	0	6	32	8	9
<i>H2S</i>	2	2	2	6	11	8	3	4
<i>LEL</i>	0	0	3	0	0	3	0	2

Tomorrow a vacuum truck will be used to clean the two 48" Ø HDPE Primary Sump Risers damaged by lightning and G4 will try to set the two 50" Ø HDPE Primary Sump Risers.



Site: WSI Oak Hammock

Project No.: 2043

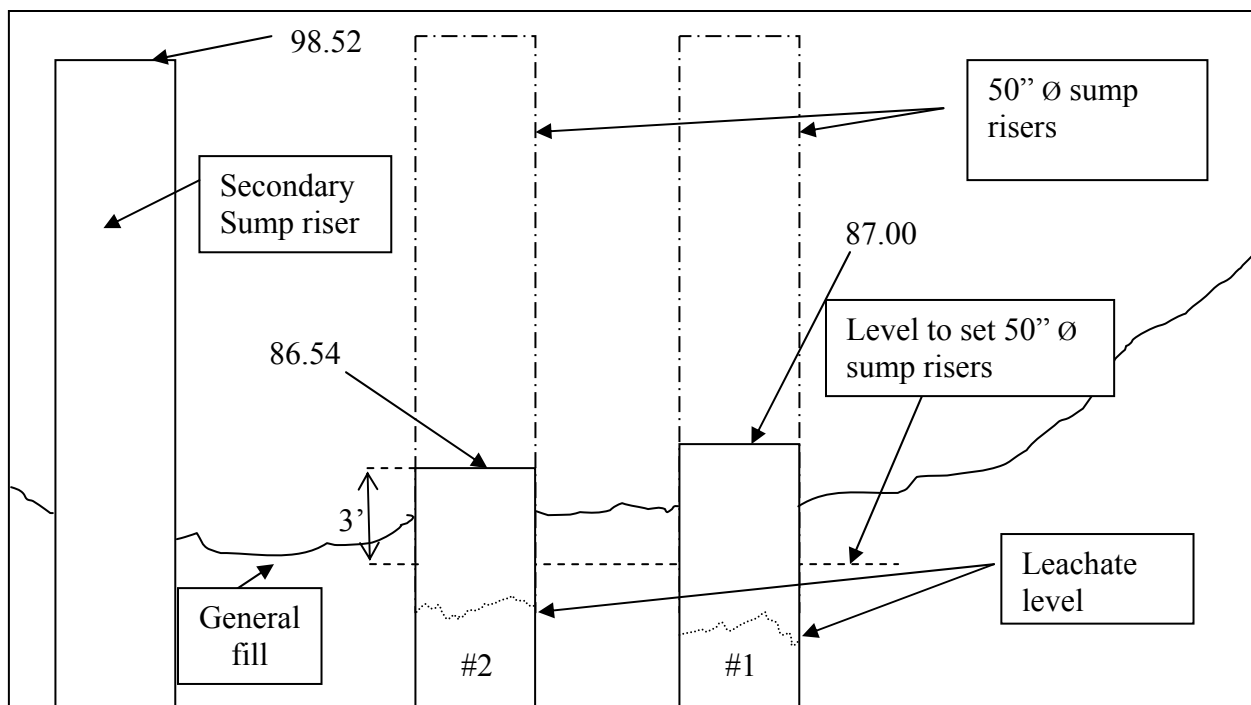
Date: 11/05/07

Daily Report Log

CQA PERSONNEL:

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SUMP RISER REPLACEMENT





Site: WSI Oak Hammock

Project No.: 2043

Date: 11/06/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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At 7:10am G4 crew start excavating with shovels around the sump risers to reach the 3' feet level point.

At 8:40am vacuum truck arrive at the facility.

At 8:45am G4 crew start wearing green vests and hard hats and continued working.

At 9:20am vacuum truck reach the excavation area.

At 9:35am start vacuuming inside #2 sump riser.

Using one G4 member to help one of the vacuum truck operators clean inside the sump riser and another G4 member to hold still the hoist on to top of the excavation, the second member of the vacuum truck was next to the truck operating the vacuum.

At 9:48am vacuum stops to change the 3"hoist by 6" hoist

At 10:48am re-started vacuuming inside #2 sump riser.

At 11:26am CO gas concentration went up to 42 and LEL up to 15 in my sensor device and the vacuum truck operator had these reading in his device: H2S - 24, CO - 9 and LEL - 17. We evacuate the area letting the gases dissipate.

At 11:40am we re-enter to the excavated area re-set the air blower close to the sump riser and continued with the cleaning inside #2 sump riser.

At 12:00pm gas concentration went to high CO-39, H2S-27AND LEL-19. We evacuate the area and G4 superintendent and vacuum truck operator in charge re evaluate work conditions at the excavated area and conclude that it was to dangerous to continued operations and more safety equipment will be needed.

At 14:00pm G4 Superintendent shouts down operations and left job site.

I went to the main office and inform to Matt and Mike Kaiser about the situation. Me and Mike Kaiser return to the excavate area to check work progress.

Vacuum truck will be re-scheduled to Thursday 11/08/07.

Tomorrow will be no work at the excavated area.



Site: WSI Oak Hammock

Project No.: 2043

Date: 11/06/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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Site: WSI Oak Hammock

Project No.: 2043

Date: 11/08/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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Last night 4" hydraulic pump run out of diesel and the leachate inside the risers were high.



At 7:00am G4 show up.

At 7:30am FECC (vacuum truck) show up.

The 4" hydraulic pump was refuel at 8:00am and start pumping leachate out riser #1 at 8:05am.

At 8:11am pumping leachate out side the risers.

At 8:20am start pumping riser #2.

At 8:29 am FECC start setting air ventilation system.

From 9:00 am FECC start working on clean riser #2 having some difficulties due to the high level of leachate by 10:05 am riser #2 was clean.

At 10:40 am FECC was done with the clean up of riser #1 and left.



At 10:45 am G4 start working on dewatering the excavation area.

At 11:05am dewatering was done and G4 start digging around the risers to set the new manholes.

At 12:00pm take ½ hour lunch.

At 1:00pm the 3' were rich.

At 1:30pm the 10" rock bed was in place.



3'



Site: WSI Oak Hammock

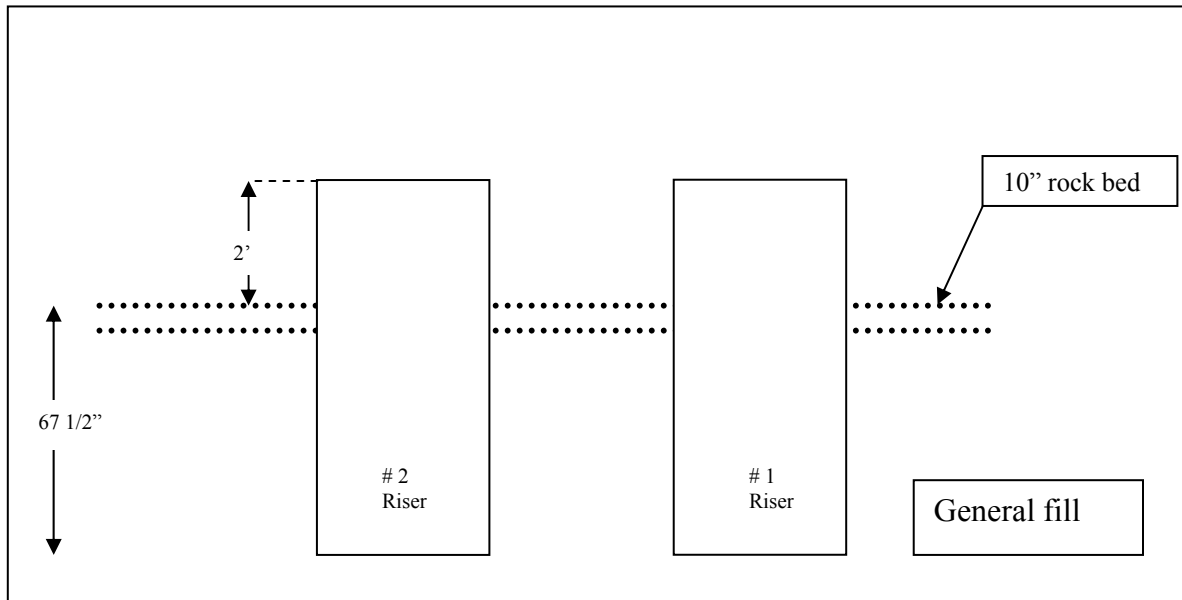
Project No.: 2043

Date: 11/08/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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At 1:35pm G4 start welding the 2" inside pipes



At 3:20pm G4 cut the last portion of the risers that melt getting the two risers at the same level.

At 4:30pm done for today.





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Site: WSI Oak Hammock

Project No.: 2043

Date: 11/08/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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Air testing data

GASES/TIME	8:00AM	8:30AM	9:00AM	9:30AM	9:44AM	10:15AM	12:30PM	1:00PM
<i>O2</i>	20.9	20.9	20.9	20.9	20.9	20.9	21.2	20.9
<i>CO</i>	0	2	2	0	4	0	1	5
<i>H2S</i>	0	0	0	0	9	3	2	0
<i>LEL</i>	3	0	0	0	3	0	3	0

Air testing data

GASES/TIME	1:30PM	8:30AM	9:00AM	9:30AM	9:44AM	10:15AM	12:30PM	1:00PM
<i>O2</i>	20.9	20.9	20.9	20.9	20.9	20.9	21.2	20.9
<i>CO</i>	0	2	2	0	4	0	1	5
<i>H2S</i>	0	0	0	0	9	3	2	0
<i>LEL</i>	3	0	0	0	3	0	3	0



Site: WSI Oak Hammock

Project No.: 2043

Date: 11/09/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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At 7:00m G4 crew was on site

At 7:20am G4 crew start excavating around the two 48" Ø HDPE Primary Sump Risers damaged by lightning to make room to set the two 50" Ø HDPE Primary Sump Risers.

At 8:15am G4 crew start setting the 50" Ø HDPE Primary Sump Risers. 50" Ø HDPE Primary Sump Riser # 2 was set first while the pump was running on Sump Riser #1 to keep leachate level down. After setting 50" Ø HDPE Primary Sump Riser # 2 hydraulic pump was removed from Sump Riser #1 and proceed to set 50" Ø HDPE Primary Sump Riser #1



At 9:12am After re-check elevations the 50" Ø HDPE Primary Sump Risers were 2' higher than the Secondary Sump Riser, the 50" Ø HDPE Primary Sump Risers were removed and the 10" bed rock too and G4 dug 12" more and set 4" bed rock leaving 3' sleeve of 48" Ø HDPE inside the two 50" Ø HDPE Primary Sump Risers after being re-installed; elevations were checked and the 50" Ø HDPE Primary Sump Risers were 1' higher than the Secondary Riser as required.



At 11:34 am G4 start setting the first lift of soil around the 50" Ø HDPE Primary Sump Risers

At 4:00 pm G4 complete 3rd lift and call the day, G4 won't work over the weekend and will restart operations Tuesday 13 at 7:00 am



Site: WSI Oak Hammock

Project No.: 2043

Date: 11/13/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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At 7:00 am G4 was on site.

At 7:10 am G4 start working on 4th lift

At 9:30 am 4th lift pass compaction test

At 11:07am 5th lift pass compaction test.

At 12:30 pm lunch break.

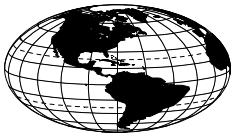
At 12:56 pm 6th lift pass compaction test.

At 2:13 pm 7th lift pass compaction test.

At 4:15 pm 8th lift pass compaction test.

At 4:30 pm G4 end the day.





Site: WSI Oak Hammock

Project No.: 2043

Date: 11/14/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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At 7:00 am G4 was on site.

At 7:40 am G4 start working on 9th lift

At 8:05 am G4 complete 9th lift passing compaction test.

Before G4 start working on 10th lift G4 decides exposes liner limits.

At 2:30pm 10th lift compaction pass compaction test.

While G4 was cleaning the area around the sump found a repair, a hole was made in the liner going thru the 6 layer in the east corner of the sump.

G4 clean the area to Comanco could repair it to morrow.

At 4:30 pm G4 end the day, Comanco will start tomorrow at 9:00 am.





Site: WSI Oak Hammock

Project No.: 2043

Date: 11/15/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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At 8:30 am arrive to job site and Comanco was on site with Comanco trailer and Skytrak 10k forklift.
At 9:30 am Comanco start working on repair of the 6 layer patch and the liner cap of the Sump.



At 3:30 pm Comanco finish repair and G4 complete 10th lift
at 4:00 pm passing compaction test.

At 4:30 pm Comanco stop operations and will continued tomorrow.



Site: WSI Oak Hammock

Project No.: 2043

Date: 11/16/07

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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At 8:30 am arrive to job site and Comanco was on site.
At 11:00 am Comanco finish Sump cover liner and start vacuum testing, all good.
At 11:30 am G4 start working on 11th lift, this lift will cover the liner with 1' of dirt.
At 11:45 am Comanco Left the premises.
At 12:00 pm lunch break.
At 1:40 pm G4 complete 11th lift by passing compaction test.



At 3:30 pm G4 complete 12th lift
finish the dirt face and the area is
ready to concrete and electrical
work.

At 4:00 pm G4 left.
At 4:15 pm call Mike Kaiser and
left the premises.



Site: WSI Oak Hammock

Project No.: 2043

Date: 01/09/08

Daily Report Log

CQA PERSONNEL: Jorge Barrantes

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At 9:00 am arrive to job site and call Mike Kaiser.

Went to work area and concrete, electrical and pipe connections were done took pictures start pumps to verify they are in operating conditions.

At 9:30 am left the premises.

