

July 8, 2014

Mr. Ming-Tai Chao, P.E.
Environmental Engineer
NC DENR - Division of Waste Management
1646 Mail Service Center
Raleigh, North Carolina 27699

Permit No.	Date	Document ID No.
43-03	July 09, 2014	21375

Received by an e-mail
Date: **July 08, 2014**
Solid Waste Section
Raleigh Central Office

**RE: French Drain Removal Update - Response to Comments
C&D Landfill (Permit No. 43-03)
Harnett County Anderson Creek Landfill Facility
Spring Lake, North Carolina**

Dear Mr. Chao:

As you know, Harnett County personnel have removed portions of the existing french drain located along the northwest side of the active C&D landfill at the above referenced facility. On June 26th Smith Gardner, Inc. (S+G) submitted a letter summarizing safety concerns regarding removal of the last approximately 190 feet of french drain with a request to leave this portion of the french drain in place. This letter is sent to address the comments from your email of June 27th regarding this matter. For ease in review, I have included your comments below, followed by our responses.

Comment #1: Please describe the size of the drain pipe. Was it perforated and enveloped by granular fill/geotextile? How deep was the drain pipe (below ground surface)?

Response #1: The french drain consisted of a 6-inch diameter pipe and a 4-inch diameter pipe. These pipes were perforated corrugated polyethylene (CPE-Type P). At the location of the old road at the east end of the active C&D landfill, there were two culverts –18-inch and 24-inch diameter, respectively (shown on **Figure 1**). The french drain pipes and two other previously unknown french drains, were found within the culvert piping. All the piping at this location was excavated and the two additional french drains were found to extend only a short distance and stop. These pipes were found to be dry and were removed with the main french drain piping in this area.

Approximately 50 feet of the french drain piping, at the end near the sedimentation basin was surrounded by gravel. The remainder of the french drain system was installed in native soils. Both pipes were covered with geotextile material (“sock”). As stated in our original letter, the original site berm of clayey material was located adjacent to the piping in the area where removal stopped. At this location, the piping was approximately 24 feet below current grade. Near the sedimentation basin, the french drain piping was approximately 5 feet below grade.

Comment #2: Was there any waste (C&D or MSW wastes) encountered during the piping removal activities? If so, how and where was it disposed of?

Response #2: No wastes were encountered during excavation of the french drain piping.

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Comment #3: *How was the excavation backfilled? The portions of the trench are located inside the future Phase 3.*

Response #3: The excavation was backfilled with native soils and regraded. Historic soil borings indicate native soils typically consist of loamy to clayey sands and sandy clays.

Comment #4: *Was any groundwater was encountered during the removal activities? If so, at what depth?*

Response #4: During excavation, groundwater was noted in close proximity to the french drain piping at the bottom of the excavation.

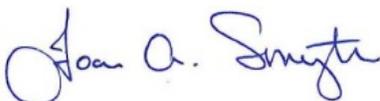
Comment #5: *Could the County use a lean concrete grout (cement/sand/bentonite mixture) to plug the pipe? The concrete pump truck could grout via the pipe ends.*

Response #5: The french drain pipes were found to be filled with sand when they were removed. It is reasonable to assume that the remaining piping is also filled with sand and therefore could not be filled with concrete grout. Also, the County is unsure of the location of the upgradient end of the pipe. Since grout would need to be injected from the upgradient end, excavation would be necessary to find the upgradient edge of the pipe. This raises significant safety concerns regarding excavating to this depth adjacent to the landfill to find the piping.

Additionally, since the pipes are surrounded by and filled with, native soils and now drain into native soils where the pipes were removed, we do not believe the remaining pipes pose a significant conduit for increased water flow.

Due to the pipes already being filled with sandy soil, excessive difficulty and safety concerns with finding the upgradient end of the pipe, as well as the low likelihood that the remaining pipe will create a flow conduit of any significance we believe plugging the pipe with a grout mixture is unnecessary at this time. Please let us know if you have any questions or require additional information.

Sincerely,
SMITH GARDNER, INC.



Joan A. Smyth, P.G.
Senior Hydrogeologist
joan@smithgardnerinc.com

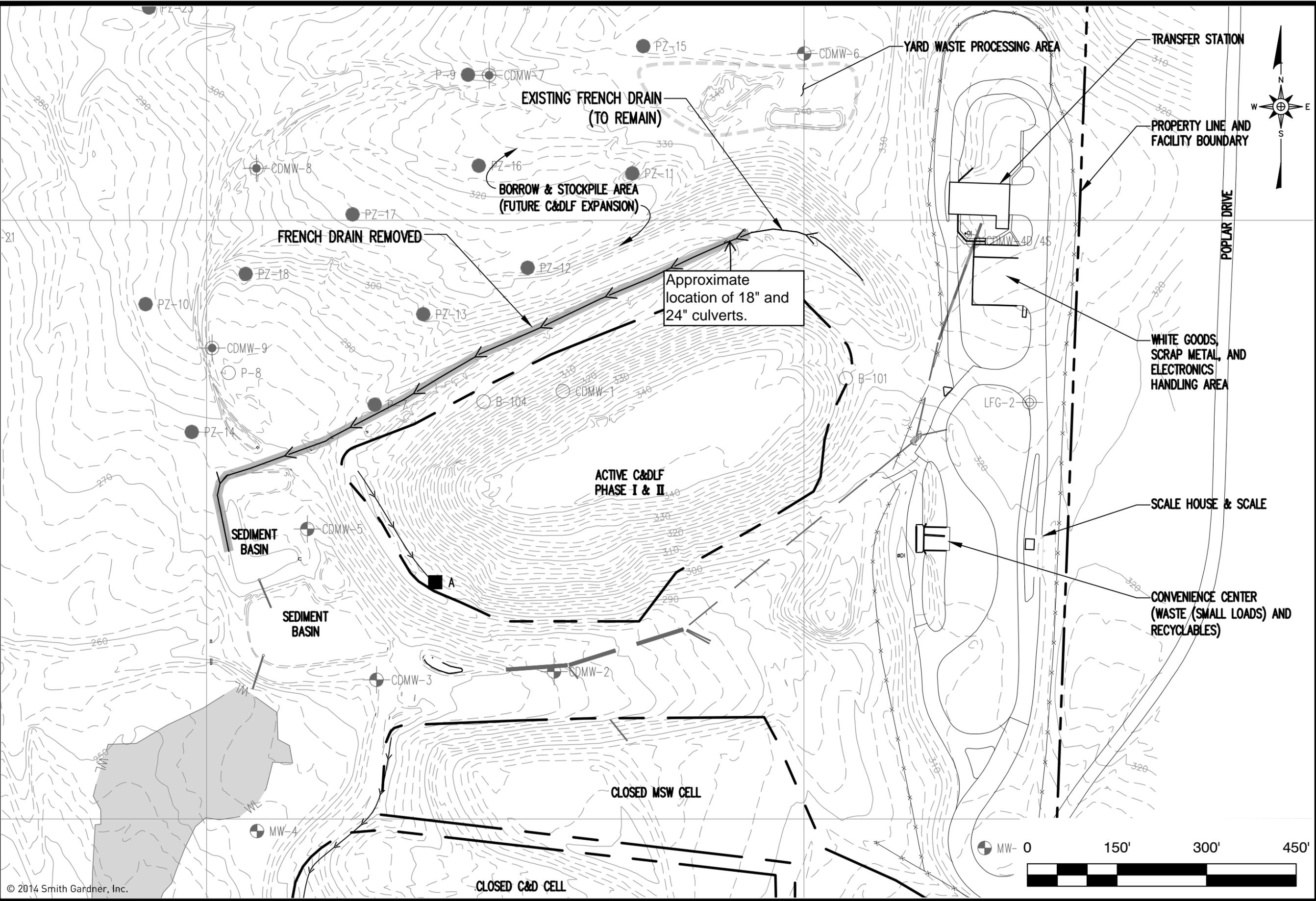


Pieter K. Scheer, P.E.
Vice President, Senior Engineer
pieter@smithgardnerinc.com

Attachment

cc: Amanda Bader, P.E., Harnett County
Randy Smith, Harnett County
Andrew Holland, Harnett County

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PREPARED BY: _____ NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER
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FIGURE NO. 1
 SCALE: AS SHOWN
 APPROVED: J.A.S.
 DRAWN: K.C.B.

PROJECT NO. HARNETT-AC-13-4
 FILENAME: HARNETT-B0043

DATE: Jun 2014

PREPARED FOR:

**ANDERSON CREEK C&D LANDFILL
 FRENCH DRAIN REMOVAL DETAIL**

From: [Joan Smyth](#)
To: [Chao, Ming-tai](#)
Cc: [Amanda Bader](#); rwsmith@harnett.org; [Andrew Holland](#); [Pieter Scheer](#)
Subject: Harnett County Anderson Creek Response
Date: Tuesday, July 08, 2014 9:09:33 AM
Attachments: [M.Chao 07-08-14 french drain response to comments.pdf](#)

Ming –

Attached please find our response to your comments regarding the french drain removal project at the Anderson Creek C&D landfill in Harnett County. Please let me know if you have any further questions or need any additional information.

Thanks.

Joan A. Smyth, P.G.
Senior Hydrogeologist

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