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February 28, 2019

Mr. Jason Wilson, Chief
c/o Mrs. Brandi Little
Governmental Hazardous Waste Branch Land Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, Alabama 36130-1463

SUBJECT: Response to ADEM Comments dated January 28, 2019 RE: *Well Abandonment at Baby Bains Gap Road Ranges, Range 18*, dated January 3, 2019

Dear Mr. Wilson:

On behalf of the McClellan Development Authority (MDA), Matrix Environmental Services, LLC (Matrix) is pleased to submit the Response to ADEM Comments dated January 28, 2019 on the *Well Abandonment at Baby Bains Gap Road Ranges, Range 18*, dated January 3, 2019.

The MDA abandoned wells HR-74Q-MW01, HR-74Q-MW02, HR-74Q-MW03 and HR-74Q-MW04 in Range 18 (Parcel 74Q) on February 6 - 7, 2017 in accordance with the Monitoring Well Abandonment Plan, dated June 23, 2015 approved by ADEM on April 11, 2016 and with Appendix B, Section B.5.2(c) of the Alabama Environmental Investigation and Remediation Guidance (AEIRG). Copies of the well abandonment logs are attached.

Specifically, wells HR-74Q-MW01, HR-74Q-MW02, and HR-74Q-MW03 were abandoned by over-drilling using 4 ¼ inch inner diameter hollow-stem augers. A stinger rod in front of the over-drill bit rides down inside the polyvinyl chloride casing in order to keep the augers centered inside the well. The process included over-drilling to total depth of the wells and removal of casing and screen before grouting. A grout mixture was prepared using Portland cement, water, and bentonite, and using a tremie pipe each well was pressure grouted from the bottom up.

Bedrock well HR-74Q-MW04 was constructed using an 8-inch steel surface casing. An attempt to pull the casing was unsuccessful so well HR-74Q-MW04 was grouted in-place by pressure grouting from the bottom up. No uncharacteristic events occurred during well abandonment. All well materials, surficial debris and concrete were managed as nonhazardous waste and properly disposed of with impacted soils from the corrective measures activities.

Two hard copies and one electronic copy have been provided to Mrs. Brandi Little. Please contact me at (256) 847-0780 should you have any questions or comments.

Sincerely,

MATRIX ENVIRONMENTAL SERVICES, LLC

A handwritten signature in black ink, appearing to read "Richard L. Little".

BBGRR Ph III Well Abandonment

February 28, 2019

Page 2

Richard Satkin, P.G
McClellan Program Manager

Enclosure

cc: Mrs. Brandi Little, ADEM (two paper copies)
Mr. Jason Odom, MDA (transmittal letter only)
Ms. Lisa Holstein, U.S. Army (one paper copy)
MES Files (one paper copy)

General Comments

1. *Please revise the subject documents to include the following:*

- *a description of the method used to abandon the groundwater wells;*
- *a discussion regarding disposal of well material;*
- *any deviations from the proposed method; and,*
- *any uncharacteristic events that occurred during the procedure.*

MDA Response:

The letter has been revised to include the requested information.

Specific Comments

1. Range 18. *The cover letter states that five groundwater wells were abandoned at Range 18. However, the attachment only included well data for four groundwater wells. Please clarify.*

MDA Response:

The letter has been revised to indicate four wells were abandoned.

WELL DECOMMISSIONING RECORD

Site Name: Fort Clellan - Baby Bains Gap Road Ranges

Well I.D.: HR-74Q-MW01

Site Location: Anniston, Alabama

Driller: Curtis Lee

Drilling Company: Technical Drilling Services, Inc.

Date: February 6, 2017

Well Diameter: 2"

Well Depth: 25'

Material: PVC

Surface Casing: N/A

Casing Depth: N/A

Material: N/A

Surface Completion Stand up

Bollards: 0

Removed: Yes

Method

Overdrill - X

In-place

Pull & grout

DECOMMISSIONING DATA

ABANDON WELL BY OVERDRILLING

Drilling method Hollowstem Auger

Interval drilled (ft.) 0 - 25'

Borehole diameter (in.) 8.5"

Interval grouted (ft.) 0 - 25'

Grout type Cement/Bentonite

94# Bags cement 8

Water per bag cement (gal.) 6

Grout Volume (gal.) 78.0

ABANDON WELL IN-PLACE

Placement method _____

Interval grouted (ft.) _____

Grout type _____

94# Bags cement _____

Water per bag cement (gal.) _____

Grout Volume (gal.) _____

SURFACE COMPLETION

Flush or stand up Stand up

With bollards 0

Removed Yes

Finished surface material Top soil

All wells were abandoned according to ADEM guidelines.

WELL DECOMMISSIONING RECORD

Site Name: Fort Clellan - Baby Bains Gap Road Ranges

Well I.D.: HR-74Q-MW02

Site Location: Anniston, Alabama

Driller: Curtis Lee

Drilling Company: Technical Drilling Services, Inc.

Date: February 6, 2017

Well Diameter: 2"

Well Depth: 17'

Material: PVC

Surface Casing: N/A

Casing Depth: N/A

Material: N/A

Surface Completion Stand up

Bollards: 0

Removed: Yes

Method

Overdrill - X

In-place

Pull & grout

DECOMMISSIONING DATA

ABANDON WELL BY OVERDRILLING

Drilling method Hollowstem Auger

Interval drilled (ft.) 0 - 17'

Borehole diameter (in.) 8.5"

Interval grouted (ft.) 0 - 17'

Grout type Cement/Bentonite

94# Bags cement 6

Water per bag cement (gal.) 6

Grout Volume (gal.) 58.5

ABANDON WELL IN-PLACE

Placement method _____

Interval grouted (ft.) _____

Grout type _____

94# Bags cement _____

Water per bag cement (gal.) _____

Grout Volume (gal.) _____

SURFACE COMPLETION

Flush or stand up Stand up

With bollards 0

Removed Yes

Finished surface material Top soil

All wells were abandoned according to ADEM guidelines.

WELL DECOMMISSIONING RECORD

Site Name: Fort Clellan - Baby Bains Gap Road Ranges

Well I.D.: HR-74Q-MW03

Site Location: Anniston, Alabama

Driller: Curtis Lee

Drilling Company: Technical Drilling Services, Inc.

Date: February 6, 2017

Well Diameter: 2"

Well Depth: 32'

Material: PVC

Surface Casing: N/A

Casing Depth: N/A

Material: N/A

Surface Completion Stand up

Bollards: 0

Removed: Yes

Method

Overdrill - X

In-place

Pull & grout

DECOMMISSIONING DATA

ABANDON WELL BY OVERDRILLING

Drilling method Hollowstem Auger

Interval drilled (ft.) 0 - 20.5'

Borehole diameter (in.) 8.5"

Interval grouted (ft.) 0 - 20.5'

Grout type Cement/Bentonite

94# Bags cement 15

Water per bag cement (gal.) 6

Grout Volume (gal.) 146.3

ABANDON WELL IN-PLACE

Placement method _____

Interval grouted (ft.) _____

Grout type _____

94# Bags cement _____

Water per bag cement (gal.) _____

Grout Volume (gal.) _____

SURFACE COMPLETION

Flush or stand up Stand up

With bollards 0

Removed Yes

Finished surface material Top soil

All wells were abandoned according to ADEM guidelines.

WELL DECOMMISSIONING RECORD

Well I.D.: HR-74Q-MW04

Driller: Curtis Lee

Date: February 7, 2017

Material: PVC

Material: Steel

Removed: Yes

Pull & grout

ABANDON WELL BY OVERDRILLING

Interval drilled (ft.)

Interval grouted (ft.)

94# Bags cement

Grout Volume (gal.)

ABANDON WELL IN-PLACE

Interval grouted (ft.) 0 - 75'

94# Bags cement 6

Grout Volume (gal.) 58.5

Note: Attempted first to over-drill the well then tried to pull the steel surface. However, we were unsuccessful so the well was tremie grouted in-place

SURFACE COMPLETION

With bollards 0

Finished surface material Top soil

All wells were abandoned according to ADEM guidelines.