

**Region 6 Compliance Assurance and Enforcement Division
INSPECTION REPORT**

Inspection Date(s):	April 26, 2018		
Media:	Water (CWA)		
Regulatory Program(s)	NPDES – Brine		
Company Name:	Diamond 3S, LLC		
Facility Name:	<i>Kennedy</i>		
Facility Physical Location:	36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
(city, state, zip code)	Pawhuska, Oklahoma 74056		
Mailing address:	20102 West Coyote Trail		
(city, state, zip code)	Sand Springs, Oklahoma 74063		
County/Parish:	Osage		
Facility Contact:	Joel Summers		
	(918) 638-9306		
FRS Number:	N/A		
Identification/Permit Number:	OKU000867		
Media Number:	N/A		
NAICS:	21111		
SIC:	1311		
Personnel participating in inspection:			
Kent W. Sanborn	EPA Region 6, 6EN-WR	Environmental Engineer	918-557-1615
EPA Lead Inspector Signature/Date			
	Kent W. Sanborn		Date
Supervisor Signature/Date			19 JUN 2018
	Guy Tidmore		Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

EPA Region 6 inspector Kent W. Sanborn arrived at the Diamond 3S, LLC lease on the Kennedy property near Pawhuska, Osage County, Oklahoma at about 1:00 PM on April 26, 2018 for an inspection. The inspection was initiated by a reported discharge of fluids into a nearby tributary of Daniel's Run Creek by Diamond 3S LLC, Kennedy #3 injection well. The inspection was a follow-up to inspections conducted March 16, 20, and April 12, 2018. The Bureau of Indian Affairs (BIA) in Pawhuska requested our assistance in addressing the discharge. There were no company representatives at the site during the inspection. I confirmed the discharge from contaminated soil from a previous spill was continuing to enter the tributary of Daniel's Run Creek. I observed no cleanup activity on the site during the inspection. The inspection was conducted under the authority of Section 308 of the CWA. The scope of the inspection was to determine if the facility was in compliance with Clean Water Act, including Section 301, and to identify and document discharges of produced wastewater (brine) to waters of the United States.

FACILITY DESCRIPTION

The origination point of discharge was a leaking injection well supply line connecting to the well known as the Kennedy Number 3 injection well. This well is also known as EPA inventory ID OS 4349. The line was buried up to the well, and the well was closed in. The flow line was leaking fluids and was connected to the main tank battery. The entire pasture area between the well and the creek was saturated with brine and continued to seep to the tributary of Daniel's Run Creek.

Section II – OBSERVATIONS

I arrived at the Diamond 3S, LLC, Kennedy lease at about 1:00 pm on April 26, 2018. Photo 1 indicated that the injection line that leaked brine and some oil into the tributary of Daniel's Run Creek had not been moved. Photo 2 shows the ongoing damage to the hillside where the flow path of brine occurred on the surface and subsurface from a previous leak that occurred in March 2018. The ground was still saturated with brine near the tributary (Photo 3). The brine was seeping into the creek (Photo 4). A Specific Conductance field reading was taken with a calibrated YSI 30 Conductivity Meter at the point of entry and was 67.4 milliSiemens (mS), which was converted to 43,810 milligrams/Liter (mg/L) Total Dissolved Solids (TDS) as shown in Appendix 2 (Photo 5 in Appendix 1). The tributary was full after a recent rainfall event (Photo 6). Dam 1 had water and brine running through a pipe and downstream along the tributary of Daniel's Run Creek during the inspection. There was some foam observed on the surface of the tributary. (Photo 7). A Specific Conductance field reading taken at Dam 1 was 65.9 mS, which was converted to 42,835 mg/L TDS as shown in Appendix 2 (Photo 8 in Appendix 1). Dam 2 was full and running over and flowing downstream during the inspection (Photo 9). A dead crayfish was present at the Dam 2 location (Photo 10). A Specific Conductance field reading taken at Dam 2 was 26.55 mS, which was converted to 17,257 mg/L TDS as shown in Appendix 2 (Photo 11 in Appendix 1). I observed that water and brine were also running through Dam 3 during the inspection and flowing south, downstream, as shown in Photos 12 and 13. A Specific Conductance field reading taken at Dam 3

was 41.95 mS, which was converted to 27,267 mg/L TDS as shown in Appendix 2 (Photo 14 in Appendix 1). I observed livestock tracks, including cattle tracks, that indicate cattle were at the tributary between Dam 2 and Dam 3 (Photo 15). Photo 16 shows a 4th dam that was built downstream of Dam 3. Water and brine were also running over the dam and flowing south in Daniel's Run Creek. A Specific Conductance field reading taken at Dam 4 was 6.44 mS, which was converted to 4,186 mg/L TDS as shown in Appendix 2 (Photo 17 in Appendix 1). Photo 18 shows the unaffected portion of the tributary of Daniel's Run Creek upstream of the discharge point of entry. A Specific Conductance field reading taken upstream in the tributary and was 749 microSiemens (uS), which was converted to 486 mg/L TDS as shown in Appendix 2 (Photo 19 in Appendix 1).

Section III – AREAS OF CONCERN

During the inspection, elevated levels of TDS continue to be present in the tributary of Daniel's Run Creek and Daniel's Run Creek due to a previous spill that occurred and contaminated soil continuing to seep brine into the tributary. The brine continues to flow further downstream from the previously documented furthest downstream location indicating new downstream impacts to the tributary and creek. There was minimal remedial activity to prevent further pollution in the tributary and downstream water bodies observed. Additionally, the contaminated flow path and large area of soil saturated with brine was still seeping into the tributary at the point of entry.

Section IV – FOLLOW UP

A follow up inspection will be conducted as needed.

Section V – LIST OF APPENDICES

Appendix 1 – Photo Log – 19 photos taken April 26, 2018.

Appendix 2 – Table 1 – Conversion from Specific Conductance to Total Dissolved Solids (TDS).

Appendix 1

Photographic Log (19 photos)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 1

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 1 (DSC_0001)

Orientation: South

Date of Photo: 04/26/2018

Time of Photo: 1:37 pm

Latitude: 36.586969N

Longitude: -96.498093W

Photographer: K.W. Sanborn

Description: This photo shows where a previous discharge originated from an injection well line located, which was a few yards from Kennedy #3 injection well.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 2

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 2 (DSC_0002)

Orientation: Southwest

Date of Photo: 04/26/2018

Time of Photo: 1:38 pm

Latitude: 36.586969N

Longitude: -96.498093W

Photographer: K.W. Sanborn

Description: The hillside southwest of the point of discharge was dead and saturated with brine during the inspection. The brine was seeping from the contaminated hillside into the tributary of Daniel's Run Creek.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 3

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 3 (DSC_0007)

Orientation: Southwest

Date of Photo: 04/26/2018

Time of Photo: 1:39 pm

Latitude: 36.586514N

Longitude: -96.499076W

Photographer: K.W. Sanborn

Description: The ground next to the tributary was saturated with brine and flowed to the point of entry to the tributary of Daniel's Run Creek.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 4

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 4 (DSC_0009)

Orientation: South

Date of Photo: 04/26/2018

Time of Photo: 1:40 pm

Latitude: 36.586514N

Longitude: -96.499076W

Photographer: K.W. Sanborn

Description: The brine enters the tributary of Daniel's Run Creek here from the large saturated area uphill from the point of entry.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 5

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 5 (DSC_0012)

Orientation: Southwest

Date of Photo: 04/26/2018

Time of Photo: 1:41 pm

Latitude: 36.586514N

Longitude: -96.499076W

Photographer: K.W. Sanborn

Description: A Specific Conductance field reading was taken with a calibrated YSI 30 Conductivity Meter at the point of entry was 67.4 milliSiemens (mS), which was converted to 43,810 milligrams/Liter (mg/L) Total Dissolved Solids (TDS) as shown in Appendix 2.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 6

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 6 (DSC_0013)

Orientation: Southwest

Date of Photo: 04/26/2018

Time of Photo: 1:41 pm

Latitude: 36.586313N

Longitude: -96.499364W

Photographer: K.W. Sanborn

Description: The tributary was shown here backed up behind the first temporary dam, or Dam 1. I observed some bed, bank and riparian vegetation.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 7

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 7 (DSC_0015)

Orientation: South

Date of Photo: 04/26/2018

Time of Photo: 1:42 pm

Latitude: 36.586313N

Longitude: -96.499364W

Photographer: K.W. Sanborn

Description: Dam 1 is shown here and water and brine were running through the pipe and downstream along the tributary of Daniel's Run Creek during the inspection. There was some foam observed on the surface of the tributary.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 8

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 8 (DSC_0017)

Orientation: Southwest

Date of Photo: 04/26/2018

Time of Photo: 1:43 pm

Latitude: 36.586313N

Longitude: -96.499364W

Photographer: K.W. Sanborn

Description: A Specific Conductance field reading taken at Dam 1 was 65.9 mS, which was converted to 42,835 mg/L TDS as shown in Appendix 2.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 9

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 9 (DSC_0019)

Orientation: South

Date of Photo: 04/26/2018

Time of Photo: 1:48 pm

Latitude: 36.585146N

Longitude: -96.500020W

Photographer: K.W. Sanborn

Description: This photo shows the second temporary dam, or Dam 2. Water and brine were also flowing over the dam and flowing downstream in the tributary of Daniel's Run Creek.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 10

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 10 (DSC_0018)

Orientation: East

Date of Photo: 04/26/2018

Time of Photo: 1:45 pm

Latitude: 36.585146N

Longitude: -96.500020W

Photographer: K.W. Sanborn

Description: I observed a dead crayfish in the tributary at Dam 2.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 11

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 11 (DSC_0020)

Orientation: South

Date of Photo: 4/26/2018

Time of Photo: 1:49 pm

Latitude: 36.585146N

Longitude: -96.500020W

Photographer: K.W. Sanborn

Description: A Specific Conductance field reading taken at Dam 2 was 26.55 mS, which was converted to 17,257 mg/L TDS as shown in Appendix 2.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 12

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 12 (DSC_0022)

Orientation: South

Date of Photo: 4/26/2018

Time of Photo: 1:56 pm

Latitude: 36.583809N

Longitude: -96.502419W

Photographer: K.W. Sanborn

Description: This photo shows a third temporary dam, or Dam 3.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 13

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 13 (DSC_0021)

Orientation: North

Date of Photo: 4/26/2018

Time of Photo: 1:49 pm

Latitude: 36.583809N

Longitude: -96.502419W

Photographer: K.W. Sanborn

Description: I observed that water and brine were also running through the Dam 3 during the inspection and flowing south, downstream.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 14

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 14 (DSC_0023)

Orientation: Southwest

Date of Photo: 4/26/2018

Time of Photo: 1:56 pm

Latitude: 36.583809N

Longitude: -96.502419W

Photographer: K.W. Sanborn

Description: A Specific Conductance field reading taken at Dam 3 was 41.95 mS, which was converted to 27,267 mg/L TDS as shown in Appendix 2.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 15

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 15 (DSC_0026)

Orientation: Southeast

Date of Photo: 4/26/2018

Time of Photo: 1:59 pm

Latitude: 36.584833N

Longitude: -96.500620W

Photographer: K.W. Sanborn

Description: I observed livestock tracks, including cattle tracks, that indicate cattle were at the tributary at this location here, between Dam 2 and Dam 3.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 16

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 16 (DSC_0027)

Orientation: South

Date of Photo: 4/26/2018

Time of Photo: 2:03 pm

Latitude: 36.582435N

Longitude: -96.502429W

Photographer: K.W. Sanborn

Description: A fourth Dam has been built as shown here, or Dam 4. Water and brine were flowing through the dam at the time of the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 17

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 17 (DSC_0028)

Orientation: South

Date of Photo: 4/26/2018

Time of Photo: 2:03 pm

Latitude: 36.582035N

Longitude: -96.502429W

Photographer: K.W. Sanborn

Description: A Specific Conductance field reading taken at Dam 4 was 6.44 mS, which was converted to 4,186 mg/L TDS as shown in Appendix 2.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 18

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo File Name: Photo 18 (DSC_0032)

Orientation: North

Date of Photo: 4/26/2018

Time of Photo: 2:20 pm

Latitude: 36.587812N

Longitude: -96.498510W

Photographer: K.W. Sanborn

Description: I observed the tributary of Daniel's Run Creek upstream of the discharge point of entry at this location.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 19

36.586969N, -96.498093W (NE Sect. 1, T 24N, R 7E)		
City: Pawhuska	County: Osage	State: Oklahoma



Photo file Name: Photo 19 (DSC_0031)

Orientation: North

Date of Photo: 4/26/2018

Time of Photo: 2:20 pm

Latitude: 36.587812N

Longitude: -96.498510W

Photographer: K.W. Sanborn

Description: A Specific Conductance field reading taken upstream in the tributary and was 749 microSiemens (uS), which was converted to 486 mg/L TDS as shown in Appendix 2.

Appendix 2

Table 1: Conversion of Specific Conductance Readings to Total
Dissolved Solids

Table 1

Conversion from Specific Conductance (milliSiemens) Field
Readings to Total Dissolved Solids (milligrams/Liter)
Measurements taken with a calibrated YSI 30 Conductivity
Meter

Inspection Report Photo No.	Specific Conductance Reading (mS)	Specific Conductance (uS)	Converted Total Dissolved Solids (mg/L)*
Photo No. 5	67.4 mS	67,400 uS	43,810 mg/L
Photo No. 8	65.9 mS	65,900 uS	42,835 mg/L
Photo No. 11	26.55 mS	26,550 uS	17,257.5 mg/L
Photo No. 14	41.95 mS	41,950 uS	27,267.5 mg/L
Photo No. 17	6.44 mS	6,440 uS	4,186 mg/L
Photo No. 19	N/A	749 uS	486.8 mg/L

*The default conversion value to convert specific conductance (uS) to Total Dissolved Solids (TDS) used in this inspection report was 0.65. For example, 67,400 uS multiplied by 0.65 equates to 43,810 mg/L TDS.