

Region 6 Compliance Assurance and Enforcement Division

INSPECTION REPORT

Inspection Date(s):	03/30/2016		
Media:	Water		
Regulatory Program(s)	NPDES - Oil and Gas, Produced/Brine Water		
Company Name:	Samson Lone Star, LLC		
Facility Name:	Ruth Central Tank Battery (RRC Comingle No. 5446)		
Facility Physical Location:	Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
(city, state, zip code)	Nacogdoches, Texas 75964		
Mailing address:	342 Johnny Clark Road		
(city, state, zip code)	Longview, Texas 75603		
County/Parish:	Nacogdoches County, Texas		
Facility Contact:	John Turner	Sr. Environmental Specialist	
	903-261-4673		
FRS Number:	N/A		
Identification/Permit Number:	TXU011121		
Media Number:	N/A		
NAICS:	211111		
SIC:	1311		
Personnel participating in inspection:			
Jack Arias	6EN – WR	Environmental Scientist	(214) 665 – 8164
Jeanne Eckhart	6EN – WR	Environmental Scientist	(214) 665 – 8174
EPA Lead Inspector Signature/Date			
	Jack Arias		Date
Supervisor Signature/Date			
	Willie Lane		Date

Section I - INTRODUCTION

PURPOSE OF THE INSPECTION

The purpose of the inspection was to determine if the facility was in compliance with Section 301 of the Clean Water Act (CWA) and to identify and document discharges of produced wastewater (brine) to waters of the United States. The inspection was conducted under the authority of Section 308 of the CWA. EPA Region 6 inspectors, Jack Arias and Jeanne Eckhart, arrived at the Samson Lone Star, LLC – Ruth Central Tank Battery at approximately 11:50 AM on March 30, 2016 for an announced inspection. At approximately 12:35 PM, we met with Mr. John Turner, Senior Environmental Specialist and Mr. Jimmy Foxworth, Production Manager, and informed him that this was an EPA inspection to determine the facility's compliance with the CWA. We presented our credentials to Mr. Turner and Mr. Foxworth, and we proceeded to conduct an oil and gas, produced/brine water Clean Water Act (CWA) inspection. The scope of the inspection is to evaluate the facility's tanks, flow lines, flow paths, ponds, tributaries, creeks, and other related factors that are connected to the CWA at the facility.

FACILITY DESCRIPTION

The facility is known as the Samson Lone Star, LLC – Ruth Central Tank Battery and is located in Nacogdoches, Nacogdoches County, Texas. The facility consists of two storage tanks that were approximately 600 barrels each. See Photo Nos. 1 – 2 in Appendix 1. The facility is located at latitude 31.678383 N and longitude -94.737317 W.

The lease consists of production wells, injection wells, vessels, flow lines, collection points, and other equipment used for the production of crude oil and natural gas. Production wells produce a mixture of produced water and crude oil (well fluids). Flow lines are used to transport well fluids from various locations on the leases. Collection points known as tank batteries consist of various tanks, vessels, and equipment used to separate and store the produced water, brine water, and crude oil. Produced water is typically high in salts and is commonly known as oil field brine. The crude oil is sold for profit and the produced water, and/or brine, is transported to and disposed of in various injection wells.

The facility also produces and commercially sells natural gas. The facility is located near the Texas stream segment number 0611Q, which has designated use as a domestic public water supply. The facility is located near a tributary to Bayou Loco, which leads to Bayou Loco approximately 2.5 miles downstream from the point of entry into the tributary, which then leads to Lake Nacogdoches approximately 5.5 miles downstream from the point of entry into the tributary. Lake Nacogdoches is part of the Angelina River Watershed, stream segment 0611. This facility is designated as a National Energy Extraction Initiative facility.

Section II - OBSERVATIONS

When we arrived at this facility on March 30, 2016, we observed that the facility had secondary containment around the tank battery. At the time of the inspection, the facility had three operational portable tanks and one disposal truck on site to assist in the proper disposal of the produced water coming to the facility. See Photo Nos. 1 - 3 in Appendix 1. The facility representative, Mr. John Turner,

reported a brine/produced water spill into the tributary of Bayou Loco on March 24, 2016 to the National Response Center at approximately 05:30 PM. According to the report and the on-site representative, the source of the brine discharge was a detached four-inch pressurized poly-line that transports produced water from the Ruth Central Tank Battery to a nearby disposal well. At approximately 01:30 PM the pipeline discharge was shut-in, or stopped, by the response actions of the company on March 24, 2016. At the time of the inspection, Mr. Turner and Mr. Foxworth stated that the estimated break in the disposal line occurred approximately March 6, 2016, and approximately 2,100 barrels of produced wastewater was released into the tributary of Bayou Loco. The pressurized force of the transfer line was approximately 50 to 60 pounds per square inch (psi). The line was rated for approximately 2,000 psi, according to the on-site production manager, Mr. Foxworth. Mr. Turner informed us that the Texas Railroad Commission (RRC) did an on-site assessment on March 26, 2016. We also noted that according to the Production Manager, Mr. Foxworth, the produced waste water tanks pulls water into the disposal transfer line from the bottom of the tank battery, so as not to have oil in the wastewater disposal lines and the operations do not pull the produced wastewater tanks fluid levels all the way to the bottom to also prevent oil from being put into the disposal lines from the produced wastewater tanks.

The produced wastewater transfer line which was the point of discharge (POD) and Point of Entry (POE) was located at latitude 31.678535 N and longitude -94.734162 W. The transfer line was busted and leaked into the tributary of Bayou Loco for approximately 3 weeks. See Photo No. 1 in Appendix 1. The transfer line had a pressurized force of approximately 50 to 60 pounds per square inch (psi). It transported produced wastewater from the Ruth Central Tank Battery to a nearby disposal well. At the POE, which is also the POD, into the tributary of Bayou Loco a Total Soluble Salts (TSS) reading of 1,900 parts-per-million (ppm) was taken. The tributary was approximately 5 to 10 feet wide and 6-inches to 10-inches deep at the POE. See Photo Nos. 4-5 in Appendix 1.

Downstream TSS Readings located on the tributary of Bayou Loco. We followed the flow path of discharge approximately 1/2 mile downstream from the POE to a ponded area of the tributary of Bayou Loco and collected different TSS readings. Table 1 below displayed the readings along the tributary of Bayou Loco.

Table 1: Total Soluble Salts (TSS) readings along the Tributary of Bayou Loco

<i>Latitude</i>	<i>Longitude</i>	<i>TSS Reading</i>	<i>Distance from POE</i>	<i>Photo No. in Appendix 1</i>
31.676539 N	-94.736160 W	58,700 ppm	Approx. 915 feet	6
31.677216 N	-94.735172 W	51,900 ppm	Approx. 630 feet	7
31.676553 N	-94.739798 W	11,100 ppm	Approx. 2,640 feet	9
31.676710 N	-94.740039 W	4,400 ppm	Approx. 2,690 feet	12
31.676311 N	-94.740413 W	8,300 ppm	Approx. 3,000 feet	15
31.676067 N	-94.740989 W	12,200 ppm	Approx. 3,050 feet	16
31.675121 N	-94.742572 W	100 ppm	Approx. 3,325 feet	17

While gathering TSS readings, we also observed impacted vegetation and aquatic wildlife at the time of the inspection downstream from the POE. We saw that along the tributary of Bayou Loco, near the ponded area, approximately 2,640 feet downstream from the POE, that the north side of the ponded area was negatively impacted from the spill and remediation operations. See Photo Nos. 8 and 13 in Appendix 1. According to Mr. Turner, the facility removed approximately 735 dead fish from the pond prior to the inspection. We counted several dead fish at the time of the inspection. See Photo Nos. 10 – 11 in Appendix 1. We observed the facility pumping from the ponded area, which was approximately 1.25 acres in size and 13 feet deep, produced wastewater. The pond was being pumped out at a rate of over 7 barrels per minute at the time of the inspection. The pumping operation is shown in Photo No. 14 in Appendix 1. The wastewater was being removed and hauled for disposal into a commercial disposal well, according to Mr. Turner.

Background Measurement upstream of tributary of Bayou Loco

We measured the TSS to determine water quality data, such as water quality in the area, approximately 50 feet upstream of the POE to the tributary of Bayou Loco. We measured TSS of less than 100 ppm at Latitude 31.67869 N and Longitude -94.73409 W. See Photo No. 18 in Appendix 1.

Section III – AREAS OF CONCERN

We observed during the inspection areas of concerns at this facility that included:

- Produced fluids from the broken produced wastewater disposal line leaked into the tributary of Bayou Loco,
- High concentrations of TSS in the tributary of Bayou Loco caused negative impacts to aquatic life, including a fish kill of over 735 fish at a ponded area along the tributary of Bayou Loco,
- And high concentrations of TSS in the tributary of Bayou Loco downstream from the POE.

Section IV – FOLLOW UP

The following follow-up actions will be conducted:

- EPA will send a copy of the inspection report to the facility

Section V – LIST OF APPENDICES

Appendix 1 – Photo Log –18 photos taken on 03/30/2016.

Appendix 1

Photograph Log



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 1

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: Samson TopoImagery - zoomed In.JPG

Date of Photograph: 04/15/2016

Latitude: 31.678383 N

Longitude: -94.737317 W

Map Datum: WGS-84

Photographer: Jeanne Eckhart

Description: This image shows a USGS Topo-Imagery map. The white dot on the map represents the location of the facility. The orange dots on the map represent the Point of Entry and the Total Soluble Salts (TSS) readings along the tributary of Bayou Loco. The light purple dot on the map represents the location where we observed dead fish at the ponded area along the tributary of Bayou Loco.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 2

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0459.JPG
Date of Photograph: 03/30/2016
Latitude: 31.678383 N
Longitude: -94.737317 W
Orientation: SW
Map Datum: WGS-84
Time of Photo: 03:43 PM
Photographer: Jeanne Eckhart
Description: This image shows the sign at the Samson Lone Star, LLC – Ruth Central Tank Battery



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 3

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0458.JPG

Date of Photograph: 03/30/2016

Latitude: 31.678383 N

Longitude: -94.737317 W

Orientation: W

Map Datum: WGS-84

Time of Photo: 03:42 PM

Photographer: Jeanne Eckhart

Description: This image shows an overview of the Ruth Central Tank Battery, which has two produced water tanks that are approximately 600 barrels each.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 4

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0430.JPG

Date of Photograph: 03/30/2016

Latitude: 31.678535 N

Longitude: -94.734162 W

Orientation: W

Map Datum: WGS-84

Time of Photo: 12:40 PM

Photographer: Jeanne Eckhart

Description: This image shows the point of discharge and the point of entry into the tributary of Bayou Loco. We observed that a produced water transfer pipe broke and leaked produced wastewater into the tributary of Bayou Loco.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 5

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0431.JPG

Date of Photograph: 03/30/2016

Latitude: 31.678535 N

Longitude: -94.734162 W

Orientation: W

Map Datum: WGS-84

Time of Photo: 12:403 PM

Photographer: Jeanne Eckhart

Description: This image shows the point of discharge and the point of entry into the tributary of Bayou Loco. We observed that a produced water transfer pipe broke and leaked produced wastewater into the tributary of Bayou Loco. A Total Soluble Salts (TSS) reading of 1,900 parts-per-million (ppm) was taken as the point of discharge and point of entry into tributary of Bayou Loco.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 6

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0438.JPG

Date of Photograph: 03/30/2016

Latitude: 31.676539 N

Longitude: -94.736160 W

Orientation: W

Map Datum: WGS-84

Time of Photo: 01:15 PM

Photographer: Jeanne Eckhart

Description: This image shows a measurement of Total Soluble Salts (TSS) reading of 58,700 parts-per-million (ppm) downstream from the Point of Entry (POE) approximately 915 feet.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 7

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0441.JPG

Date of Photograph: 03/30/2016

Latitude: 31.677216 N

Longitude: -94.735172 W

Orientation: NW

Map Datum: WGS-84

Time of Photo: 01:20 PM

Photographer: Jeanne Eckhart

Description: This image shows a TSS reading of 51,900 ppm downstream from the POE approximately 630 feet.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 8

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0447.JPG

Date of Photograph: 03/30/2016

Latitude: 31.676414 N

Longitude: -94.739741 W

Orientation: NW

Map Datum: WGS-84

Time of Photo: 02:06 PM

Photographer: Jeanne Eckhart

Description: This image shows a downstream view of a large ponded area approximately 0.5 mile from the POE. We observed impacted riparian vegetation and dead fish upstream of the ponded area along the tributary of Bayou Loco.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 9

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0449.JPG

Date of Photograph: 03/30/2016

Latitude: 31.676553 N

Longitude: -94.739798 W

Orientation: NW

Map Datum: WGS-84

Time of Photo: 02:12 PM

Photographer: Jeanne Eckhart

Description: This image shows a TSS reading of 11,100 ppm at the headwaters of the ponded area along the tributary of Bayou Loco, shown in Photo No. 8. The TSS reading was taken approximately 0.5 miles downstream from the POE.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 10

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0450.JPG

Date of Photograph: 03/30/2016

Latitude: 31.676706 N

Longitude: -94.40032 W

Orientation: NW

Map Datum: WGS-84

Time of Photo: 02:21 PM

Photographer: Jeanne Eckhart

Description: This image shows a dead fish found at the headwaters of the ponded area along the tributary of Bayou Loco. We observed several dead fish at the headwaters of the ponded area in the impacted riparian vegetation, approximately 0.5 miles downstream from the POE. We observed the company pumping out the wastewater at the southwestern corner of the ponded area along the tributary of Bayou Loco and hauling the wastewater off for disposal.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 11

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0452.JPG

Date of Photograph: 03/30/2016

Latitude: 31.676710 N

Longitude: -94.740039 W

Orientation: NE

Map Datum: WGS-84

Time of Photo: 02:25 PM

Photographer: Jeanne Eckhart

Description: This image shows another dead fish found at the headwaters of the ponded area along the tributary of Bayou Loco, as identified by the red arrow in the above image. We observed several dead fish at the headwaters of the ponded area in the impacted riparian vegetation, approximately 0.5 miles downstream from the POE.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 12

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0451.JPG
Date of Photograph: 03/30/2016
Latitude: 31.676710 N
Longitude: -94.740039 W
Orientation: W
Map Datum: WGS-84
Time of Photo: 02:23 PM
Photographer: Jeanne Eckhart
Description:

This image shows a TSS reading of 4,400 ppm taken at the same location as the Photo No. 11, where we observed several dead fish. This TSS reading was taken approximately 0.5 miles downstream of the POE and approximately 50 feet downstream from Photo No. 9, where a TSS reading of 11,100 ppm was measured.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 13

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0453.JPG

Date of Photograph: 03/30/2016

Latitude: 31.676710 N

Longitude: -94.740039 W

Orientation: NE

Map Datum: WGS-84

Time of Photo: 02:25 PM

Photographer: Jeanne Eckhart

Description: This image shows an upstream view of the tributary of Bayou Loco as the ponded area approximately 0.5 miles downstream from the POE, as seen in Photos No. 8 – 12. We observed dead and negatively impacted riparian vegetation along the tributary and headwaters of the ponded area. We also observed dead fish. At the time of the inspection, the company was pumping out produced wastewater from the tributary of the Bayou Loco to prevent further impacts downstream from the ponded area downstream.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 14

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0454.JPG

Date of Photograph: 03/30/2016

Latitude: 31.676311 N

Longitude: -94.740413 W

Orientation: W

Map Datum: WGS-84

Time of Photo: 02:30 PM

Photographer: Jeanne Eckhart

Description: This image shows a downstream view of the ponded area along the tributary of Bayou Loco, approximately 0.5 miles downstream. The western end, or downstream end of the pond was the location where the company was pumping wastewater from the pond to the tank battery location and then to haul off for disposal. We observed the pump in operation and the receding banks of the ponded area during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 15

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0454.JPG

Date of Photograph: 03/30/2016

Latitude: 31.676311 N

Longitude: -94.740413 W

Orientation: NE

Map Datum: WGS-84

Time of Photo: 02:32 PM

Photographer: Jeanne Eckhart

Description: This image shows a TSS reading of 8,300 ppm approximately 0.5 miles downstream from the POE. The TSS reading was taken from the same position along the ponded area of the tributary of Bayou Loco as Photo No. 14 was taken.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 16

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0456.JPG

Date of Photograph: 03/30/2016

Latitude: 31.676067 N

Longitude: -94.740989 W

Orientation: NE

Map Datum: WGS-84

Time of Photo: 02:39 PM

Photographer: Jeanne Eckhart

Description: This image shows a TSS reading of 12,200 ppm approximately 0.5 miles downstream from the POE. The TSS reading was taken from the southwestern most point, near the pumping from the ponded area of Bayou Loco operations. We identified this measurement point as one of the deepest points of the ponded area.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 17

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0457.JPG

Date of Photograph: 03/30/2016

Latitude: 31.675121 N

Longitude: -94.742572 W

Orientation: N

Map Datum: WGS-84

Time of Photo: 03:07 PM

Photographer: Jeanne Eckhart

Description: This image shows a TSS reading of 100 ppm approximately 0.63 miles downstream from the POE. The TSS reading was taken downstream from the ponded area along the tributary of Bayou Loco.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 18

Location: Approx. 0.36 miles from the intersection of CR 524 and CR 343 (31.678383 N, -94.737317 W)		
City: Nacogdoches	County/Parish: Nacogdoches	State: Texas



Photograph File Name: DSCN0432.JPG

Date of Photograph: 03/30/2016

Latitude: 31.67869 N

Longitude: -94.73409 W

Orientation: NW

Map Datum: WGS-84

Time of Photo: 12:45 PM

Photographer: Jeanne Eckhart

Description: This image shows a TSS reading of less than 100 ppm approximately 50 feet upstream from the POE along the tributary of Bayou Loco, which is the background measurement.