



9127 South Jamaica Drive  
Englewood, Colorado 80112

January 23, 2013

Love Ranch Centralized E&P Waste Annual Report  
Piceance Creek Facility  
Facility ID: 149012

Mr. Alex Fischer  
COGCC Environmental Supervisor – Western Colorado  
1120 Lincoln Street, Suite 801  
Denver, Colorado 80203

Dear Mr. Fischer,

Please find enclosed the Annual Report for the Love Ranch Centralized E&P Waste Facility #149012.

Included in the annual report are analysis of sediment, produced water in and produced water out.

If you should have any concerns or questions regarding the contents related to this submittal please contact me directly at (970) 675-4022 or email at [Tommee\\_Lambert@xtoenergy.com](mailto:Tommee_Lambert@xtoenergy.com). Thanks again for your assistance.

Respectfully,

A handwritten signature in black ink, reading 'Tommee Lynn Lambert', written over a horizontal line.

Tommee Lynn Lambert  
XTO Energy, a subsidiary of ExxonMobil  
EH&S Coordinator



**XTO Energy, Inc. a subsidiary of ExxonMobil**

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Centralized E&P Waste Management Facility

Love Ranch Evaporation Pond

COGCC Facility No. 149012

Rio Blanco County, Colorado

Reporting Year: 2012

## 1. Introduction

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Love Ranch Centralized E&P Waste site is located in Rio Blanco County, approximately 45 miles north/northwest of Rifle, Colorado. This site includes a salt water disposal (SWD) pond and its associated pumping and storage facilities. The purpose of the pond is to retain produced water from natural gas operations and production.

Location: SWNW Section 9, Township 2 South, Range 97 West  
Latitude/Longitude: 39.892642 / -108.296246



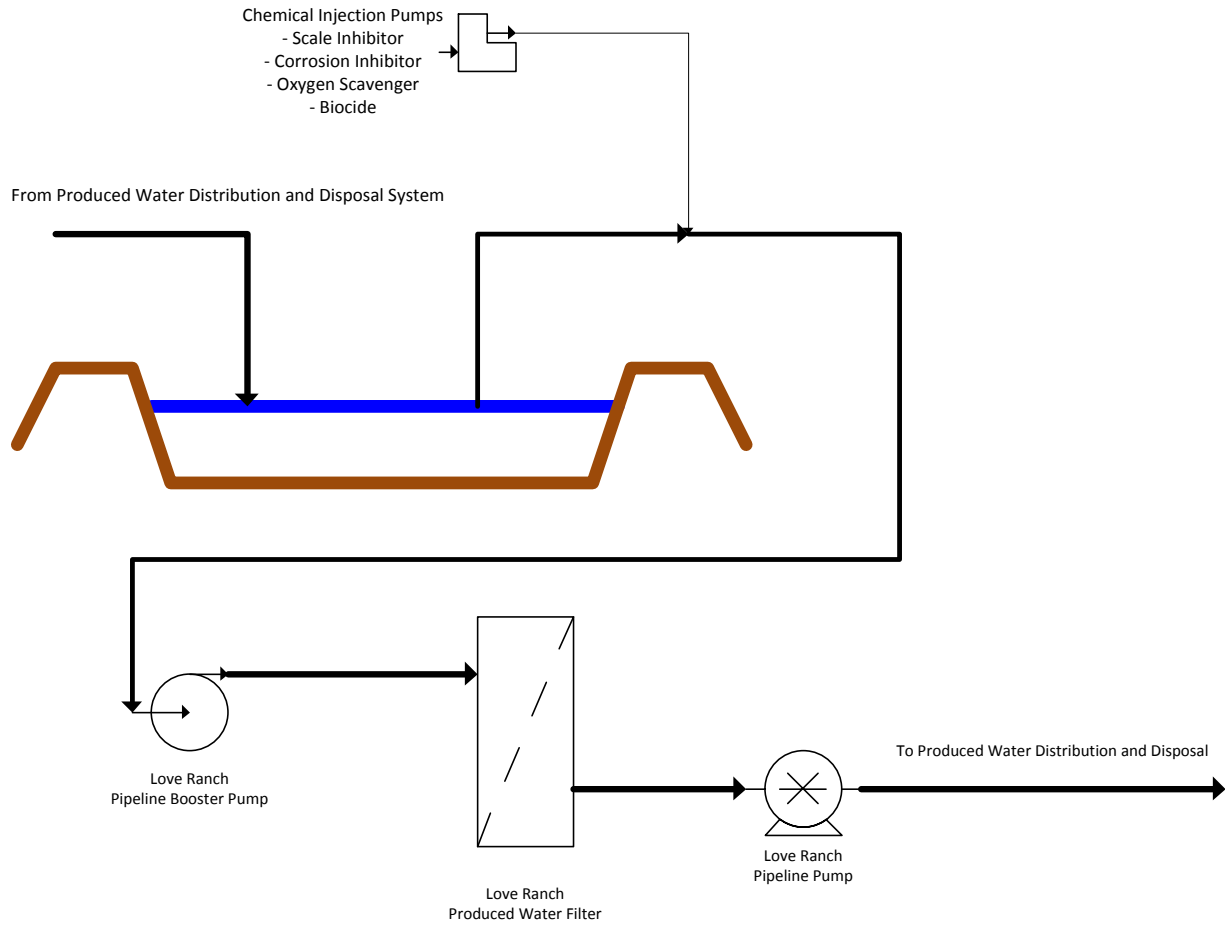
## 2. Facility Flow Process:

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The purpose of the Love Ranch Centralized E&P Waste site is to store produced water in the event disposal / alternative usage is not available. A pipeline pump returns produced water from Love Ranch Pond back to the Produced Water Distribution and Disposal (PWDD) System. Water accumulates in the pond on demand for storage/surge or as a pressure relief for the PWDD system specifically when insufficient users (well drilling, completions and disposal injection wells) exist in comparison to production. Conversely, when users exceed production, produced water that has accumulated in the pond can be pumped back to the pipeline at a low rate, 2000 BBL/day, for use or disposal. All produced water pumped from Love Ranch pond is filtered and treated with oxygen scavenger, biocide, corrosion inhibitor, and scale inhibitor to protect the pipeline, downstream equipment and wells from corrosion and deposits. The Love Ranch Pond can store up to 393,000 BBL of produced water.

### 3. Facility Flow Schematic:

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## **4. Monitoring Process:**

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Surface monuments are monitored annually. The testing frequency will change to every two years if there is no significant movement ( $>0.1'$  in lateral and  $>0.3'$  in vertical) detected in the first five years. The monument movement will be plotted and interpreted after every inspection. Due to the nature of the soil, the vertical displacement is anticipated to follow an asymptotic decline. Trained survey personnel will monitor the monuments using precise survey equipment.

Piezometers are monitored quarterly. If water levels are detected in the piezometers, samples will be taken to determine water quality.

Seepage through the dam will be collected in the toe drain system and piped to a manhole. Liquid levels in the manhole will be monitored monthly for normal operations. When the pond is more than 50% full by height, liquid levels in the manhole will be measured weekly. The seepage rate through the toe drain will be measured quarterly by capturing the liquid flowing into the manhole and measuring the volume vs. time.

The pond level readings of the pond shall be recorded at the time of all readings.

All dam instrumentation (including piezometers, drains, reservoir gage, and survey monuments) shall be monitored immediately following an earthquake where ground motions are felt in the area or the owner is informed of seismic activity in the vicinity. Results of the inspection reports and instrumentation readings should be immediately sent to the State Engineer.

All measurements and descriptive details that are required to monitor the performance of the dam will be recorded. The information will be grouped into the following three categories:

**LOCATION** — the location of any questionable area or condition will be accurately described to allow that area or condition to be evaluated. The location along the length of the dam, as well as height above the toe or distance down from the dam's crest, will be established and recorded.

**EXTENT OF AREA**—the length, width, and depth or height of any area where a suspected problem is found shall be recorded.

**DESCRIPTIVE DETAIL**—a brief yet detailed description of a condition or observation will be given.

Some description items are:

- Quantity of Toe Drain Intercept Outflow
- Quantity of Seepage from Point and Area Sources
- Length, Displacement, and Depth of Cracks
- Is Area Moist, Wet, or Saturated
- Is Protective Cover Adequate
- Is Surface Drainage Adequate
- Sloughing / Erosion of Slopes
- Settlement / Depression Location, Depth, Length, and Width
- Do Slopes appear too steep
- Does Deterioration appear to be rapid or slow
- Have Conditions Changed

### **Monitoring Process continued:**

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The above listing of inspection findings that must be recorded is not meant to be a complete list but is to serve as a guide. If an inspector thinks a condition has changed since the last inspection it will be documented and the State Engineer will be contacted. Photos will also be taken of the area, carefully noting the date and writing a description of the scene shown on the photo.

Dam Inspections will be conducted quarterly. It is the responsibility of those obtaining the data to know if readings are within normal historical and/or design operating parameters. Emergency conditions should be assumed if readings exceed normal historical and/or design operating parameters and immediate notification of the State Engineer is required.

### **5. Waste Tracking:**

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2012 Volumes

Location	Produced Water Inflow (bbl.)	Produced Water Outflow (bbl.)	
		Injected/Disposal	Recycled
Love Ranch Pond	244,721.9	267,877.3	0

### **6. Monitoring Reports:**

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- Annual Settlement Monument Survey
- Quarterly Piezometers Report
- Monthly Dam Inspection Report

### **7. Sampling Reports:**

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- Solids
- Produced Water Inlet
- Produced Water Outlet

**Table 1**  
**Love Ranch Evaporation Pond Lab Summary**

Notes: 1) ND = not detectible to the laboratory detection limit. 2) "-" indicates no analysis.

Last update 11/27/2012

<b>Analytical Parameter</b>			
(with units)	<b>Solids</b>	<b>Produced Water Inlet</b>	<b>Produced Water Outlet</b>
Accutest Job #	D39958	D41247	D41247
TPH (GRO)	2930 mg/kg	8.40 mg/l	175 mg/l
TPH (DRO)	76200 mg/kg	25.3 mg/l	21.4 mg/l
TPH (GRO + DRO)	79130 mg/kg	33.7 mg/l	196.4 mg/l
Benzene	23700 ug/kg	14.3 mg/l	0.751 mg/l
Toluene	138000 ug/kg	24.9 mg/l	1.46 mg/l
Ethylbenzene	18100 ug/kg	0.786 mg/l	0.0652 mg/l
Xylenes (total)	312000 ug/kg	13.5 mg/l	1.12 mg/l
Acenaphthene	ND	-	-
Anthracene	ND	-	-
Benzo(A)anthracene	ND	-	-
Benzo(A)pyrene	ND	-	-
Benzo(B)fluoranthene	ND	-	-
Benzo(K)fluoranthene	ND	-	-
Chrysene	2320 ug/kg	-	-
Dibenzo(A,H)anthracene	ND	-	-
Fluoranthene	1950 ug/kg	-	-
Fluorene	25500 ug/kg	-	-
Indeno(1,2,3,C,D)pyrene	ND	-	-
Naphthalene	40200 ug/kg	-	-
Pyrene	3400 ug/kg	-	-
Electrical Conductivity	8250 umhos/cm	-	-
Sodium Adsorption Ratio (SAR)	85.2	-	-
Sodium	2280 mg/l	-	-
pH	8.17	-	-
Arsenic	5.5 mg/kg	-	-
Barium	3250 mg/kg	-	-
Cadmium	<1.5 mg/kg	-	-
Chromium (III)	39.6 mg/kg	-	-
Chromium (VI)	<1.0 mg/kg	-	-
Copper	33.1 mg/kg	-	-
Lead (inorganic)	10.2 mg/kg	-	-
Mercury	1.3 mg/kg	-	-
Nickel	15.1 mg/kg	-	-
Selenium	<7.7 mg/kg	-	-
Silver	<4.6 mg/kg	-	-
Calcium	44.2 mg/l	-	-
Magnesium	6.04 mg/l	-	-
Zinc	43.3 mg/kg	-	-
% Solids	66%	-	-