AP 34-8-695 Pit

Facility ID 284483 | Location ID 335601

909.j.(6) Alternative Sampling Plan

A. INTRODUCTION

TEP Rocky Mountain LLC ("TEP") has prepared this Alternative Sampling Plan for director approval per COGCC Rule 909.j.(6) for the AP 34-8-695 Pit. TEP has extensive water reuse and recycle infrastructure to utilize produced water from approximately 7,000 natural gas wells in the Piceance Basin for hydraulic fracturing of new natural gas wells, primarily in Garfield and Rio Blanco Counties. Twenty-eight (28) lined produced water pits are part of this infrastructure. Due to the very large number of individual actively producing wells it is impractical to sample produced water from each well. However, since proximate wells are producing from the same, or similar, formations, collecting and analyzing produced water from the composite inlet stream of each lined pit will provide representative analytical results.

B. LOCATION DESCRIPTION

The AP 34-8-695 facility is a single-well pit located within Section 8, Township 6 South, Range 95 West in Garfield County (facility ID 284483, location ID 335601, lat. 39.533418, long. -108.023016). A facility diagram is attached for reference. The facility consists of a 7,966 barrel capacity lined produced water pit, natural gas wells, three-phase production separators, and oil storage tanks.

C. PRODUCED WATER SAMPLING PROTOCOL

In accord with COGCC Rule 909.j.(1) produced water samples will be collected from the inlet produced water pipeline entering the pit and analyzed for the properties and constituents listed below. A list of wells that send produced water to the AP 34-8-695 Pit is included in Section D ("Well List") below.

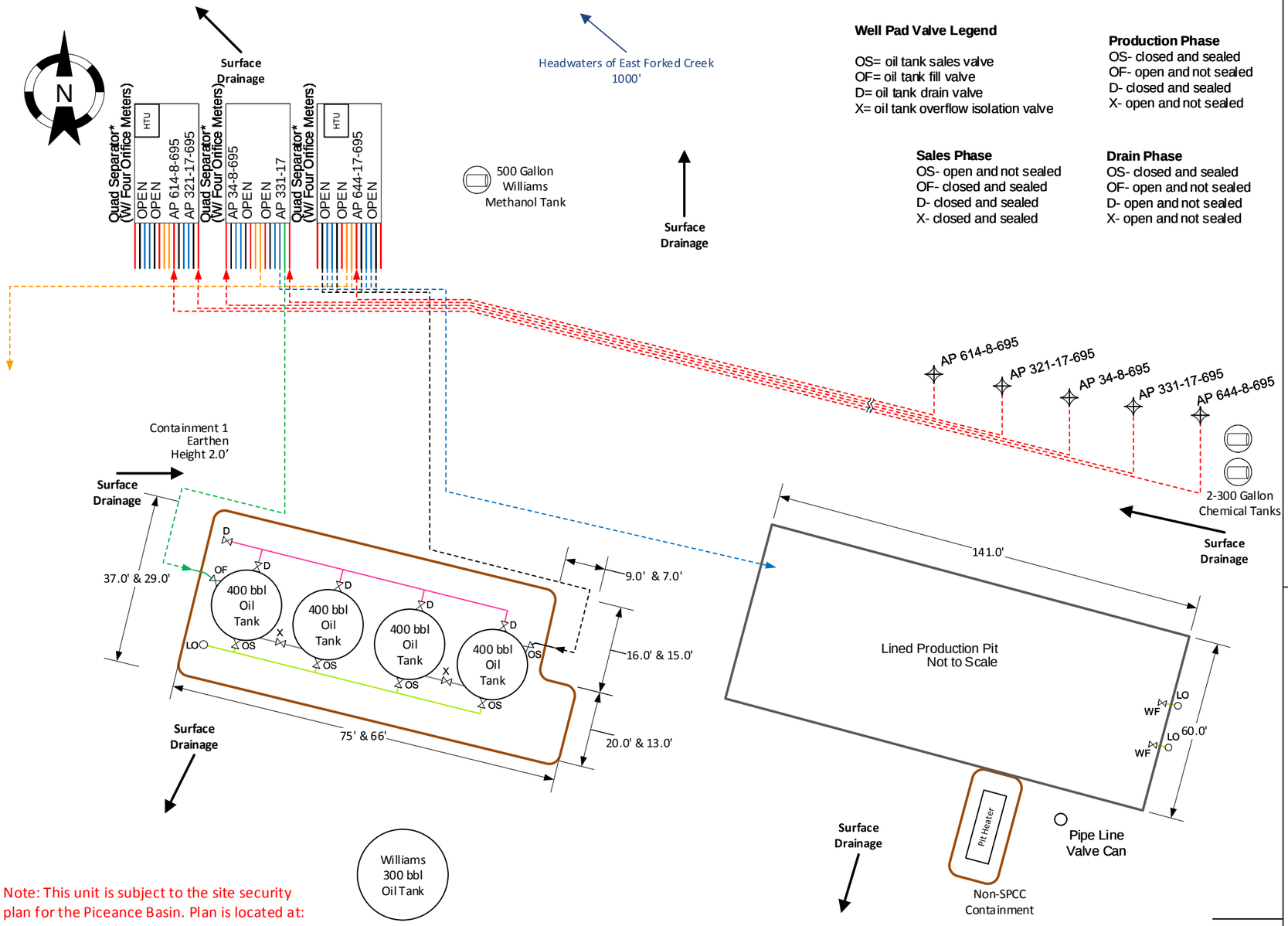
- pH
- Specific conductance
- Total dissolved and suspended solids (TDS and TSS)
- Alkalinity (total, bicarbonate, and carbonate as CaCO3)
- Major anions (bromide, chloride, fluoride, sulfate, nitrate and nitrite as N, and phosphorus)
- Major cations (calcium, iron, magnesium, manganese, potassium, and sodium)
- Other elements (barium, boron, selenium, and strontium)
- Naphthalene
- Total petroleum hydrocarbons ("TPH") as total volatile hydrocarbons (C6 to C10) and total extractable hydrocarbons (C10 to C36)
- BTEX compounds (benzene, toluene, ethylbenzene, and xylenes)
- Radium (226Ra and 228Ra)

In accord with COGCC Rule 909.j.(3) analytical results will be submitted to the COGCC via Form 43.

D. WELL LIST

Pad Name	Location ID	Well API	Field Code	Formation 1	Formation 2
AP 34-8-695 PAD	335601	05-045-12419	67350	WFCM	-----
AP 34-8-695 PAD	335601	05-045-16090	67350	WFCM	-----
AP 34-8-695 PAD	335601	05-045-15925	67350	WFCM	-----
AP 34-8-695 PAD	335601	05-045-16089	67350	WFCM	-----
AP 34-8-695 PAD	335601	05-045-16091	67350	WFCM	-----

Formation Codes			Field Codes	
CMEOC	Cameo Coal		67350	Parachute
WFCM	Williams Fork - Cameo		75400	Rulison
WMFK	Williams Fork			
WSTC	Wasatch			



Well Pad Valve Legend

OS= oil tank sales valve
OF= oil tank fill valve
D= oil tank drain valve
X= oil tank overflow isolation valve

Production Phase
OS- closed and sealed
OF- open and not sealed
D- closed and sealed
X- open and not sealed

Sales Phase
OS- open and not sealed
OF- closed and sealed
D- closed and sealed
X- closed and sealed

Drain Phase
OS- closed and sealed
OF- open and not sealed
D- open and not sealed
X- open and not sealed

Note: This unit is subject to the site security plan for the Piceance Basin. Plan is located at:
TEP Rocky Mountain, LLC
1058 County Road 215
Parachute, CO 81635

Note: Some measurements on drawing are estimates and not field verified.

Facility ID	
DRAWN BY:	TG
DATE:	12/12/18
SCALE:	NONE

Facility Diagram
TEP Rocky Mountain LLC
North Grand Valley
AP 34-8-695 Pad
Latitude: 39.533418 Longitude: -108.023016
SW/SE, Sec.8, T6S, R95W
COC# NONE
Garfield County, CO

Legend

- Water Dump Line
- Flowline
- Oil Dump Line
- Oil Dump Line 2
- Oil Dump Line 3
- Oil Dump Line 4
- Gas Sales Line
- Overflow Line
- Vent Line
- Manifold Line
- Load Line
- Valve
- Load Out Valve
- Well Head

Dotted lines denote underground pipes. All lines denote 2" steel pipe, unless otherwise noted. Valves on separator not shown.