

## SPCC Plan Update/Revision Summary

Facility: Frank 5, 6LL

Date: 10/2019

Amendment Type (Tech or Non-Tech): Technical

Description of changes made from previous version:

10/2019 Revision: Tank berm changed shape. Certified using minimum earthen berm heights.

11/2017 Revision: Two wells have been plugged and abandoned.

PE Certification Required (Y/N): Y

Implementation Items (Y/N): N

## **SITE-SPECIFIC INFORMATION**

### **Facility: Frank 5, 6LL**

#### **Description [40 CFR 112.7(a)(3)]**

This is an oil and gas facility where well stream production from the wellhead(s) is piped to separation equipment within secondary containment. Crude oil/condensate and produced water are mechanically separated and piped to bulk storage tanks awaiting transportation for sale or disposal by truck or pipeline. Produced natural gas is piped from the separation equipment and compressed as necessary prior to the sales meter. Each facilities location is included with this plan, see Figure 1. The facility diagram (Figure 2) included in this plan provides additional facility details. Table A-1 describes the site specific bulk storage tanks and equipment that are present at this location. Table A-2 contains all secondary containment calculations and Table A-3 describes additional state specific discharge prevention and containment requirements. A driving directions map (Figure 3) is also provided.

#### **Operation [40 CFR 112.7(a)(3)]**

The facility operates twenty-four hours per day, seven days per week. This facility is attended by an onsite Pumper as described in Section 2.1 of this Plan. Pumpers typically inspect the facility daily while performing routine maintenance. Inspections may be delayed due to reasons including hazardous weather, vehicle malfunctions, or other unforeseen circumstances. The inspection frequency may also be reduced when the facility is shut-in and not actively producing.

#### **Products Handled [40 CFR 112.7(a)(3)(i); 40 CFR 112.7(b)]**

This facility handles condensate and produced water. Worst case spill scenarios, a tank inventory, and a containment summary can be found in Tables A-1 and A-2.

#### **Facility Storage and Bulk Storage Containers [112.7(a)(3)(i); 112.7(k); 112.9(c)(5)]**

This facility is equipped with the petroleum product containers and flow-through process vessels listed in Table A-1. The tanks are used for temporary storage of condensate and produced water. Tanks are gauged manually or, if present, an automatic tank gauging system. Condensate tanks are connected by overflow equalizing lines. SPCC applicable oil-filled operational equipment and flow through process vessels are also listed in Table A-1, if present.

#### **Loading Operations [40 CFR 112.9(d)]**

Condensate and produced water are removed from the site via contracted tank trucks. The truck operator supervises all loading operations, and are equipped and trained to use secondary containment materials to contain the majority of small leaks, spills or drips that may occur during load out operations. Truck operators follow a standard truck loading/unloading procedure for all loading operations as described in Appendix B of the General SPCC Plan.

### **Piping Systems and Facility Transfer Operations [40 CFR 112.7(a)(3); 40 CFR 112.7(a)(3)(ii); 40CFR 112.9(d)]**

Above ground piping is restricted to areas directly around equipment such as wellheads, separators, line compressors, vapor recovery units, and storage tanks. All other piping is underground. Figure 2 shows the approximate locations of all gas lines, drain/load out lines, produced water lines and condensate lines located at the site. For flow lines located outside of the containment areas, PDC has prepared a General SPCC Field Plan and associated Oil/Condensate Spill Response Contingency Plan to address spill release prevention and response procedures. This Plan is maintained at the PDC Evans field office.

Facility transfer operations are discussed in Sections 4.1 and 5.4 of the General SPCC Plan.

### **Secondary Containment [40 CFR 112.7(a)(3)(iii); 40 CFR 112.7(c)]**

Secondary containment is constructed of material that is sufficiently impervious to contain oil, which allows for discharge discovery and cleanup while preventing a discharge to navigable waters or adjoining shorelines. Bermed areas are not typically equipped with drainage discharge pipes. Secondary containment materials and capacities are summarized in Tables A-1 and A-2 in this section.

### **Site Drainage [40 CFR 112.7(a)(3); 40 CFR 112.7(b)]**

Regional topography and distance to surface water is shown on Figure 1. Surface drainage is depicted in the facility diagram (Figure 2).

### **Conformance with State Rules [40 CFR 112.1(e); Rule 600 Series (603) & (604)]**

State discharge prevention and containment rules are discussed in Section 7.2 of the General SPCC Plan. Table A-3 describes the Colorado Exception Zone Setback rules and indicates the applicable rules and compliance status of the facility.

## ***Certification of Substantial Harm Criteria***

**Facility: Frank 5, 6LL**

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes ☐ No ☒

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground storage tank area?

Yes ☐ No ☒

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

Yes ☐ No ☒

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula) such that a discharge from the facility would shut down a public drinking water intake?

Yes ☐ No ☒

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes ☐ No ☒

### **Certification**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.



11-15-19

Signature

Date

Wes Hudkins

Production Manager

Printed Name

Title

**Professional Engineer Certification [40 CFR 112.3(d); 40 CFR 112.9(a)]**

**Facility: Frank 5, 6LL**

*The undersigned Registered Professional Engineer is familiar with the requirements of Part 112 of Title 40 of the Code of Federal Regulations (40 CFR 112) and all of its subsequent revisions and amendments and has visited and examined the facility, or has supervised examination of the facility by appropriately qualified personnel. The undersigned Registered Professional Engineer attests that this Spill Prevention, Control, and Countermeasure Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and the requirements of 40 CFR part 112; that procedures for required inspections and testing have been established; and that this plan is adequate for the facility.*

This certification in no way relieves the owner/operator of the facility of their duty to prepare and fully implement this SPCC Plan in accordance with the requirements of 40 CFR Part 112. The owner/operator of these facilities is responsible to ensure secondary containment and other spill prevention, control and countermeasures are implemented as described in this plan.

This certification applies to the above referenced facility and does not extend to the execution of the plan or the operation and maintenance of the facility. This certification shall expire if there is a change in facility design, operation, construction or maintenance that materially affects its potential for a discharge as described.

*Michael Shaffron* *10/28/2019*

Signature

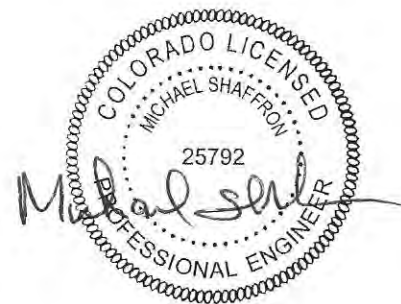
Date

Seal Below

**Michael Shaffron, P.E.**  
Professional Engineer

**P.E. 25792**  
Registration Number

**CO**  
Issuing State



**Table A-1**  
**Oil Storage Equipment & Secondary Containment**

**Facility: Frank 5, 6LL**

**Equipment Information**

<b>Equipment</b>	<b>Quantity</b>	<b>Tank Size (bbl)</b>	<b>Contents</b>	<b>Type</b>	<b>Type of Potential Failure</b>	<b>Maximum Discharge Rate (bbls/min)</b>	<b>Direction of Flow</b>	<b>Secondary Containment Type/Name</b>
Crude Oil Tank	1	268	Crude Oil	Steel	Rupture, leakage, overfill	268	North	Tank Battery Earthen Berm
Produced Water Tank	1	100	Produced Water	Fiberglass	Rupture, leakage, overfill	100	North	Tank Battery Earthen Berm
Separator	1	10	Well Stream	Steel	Rupture, leakage	Daily Production	North	Separator Earthen Berm

**Total SPCC Volume: Up to 378 bbl**

**Table A-2**  
**Secondary Containment Calculations**

**Facility: Frank 5, 6LL**

Berm Name	Berm Height (in) <sup>1*</sup>	Berm Length (ft)	Berm Width (ft)	Berm Area (ft <sup>2</sup> )	Berm Capacity (ft <sup>3</sup> )	Tank Diameter (ft) <sup>2</sup>	No. of Tanks Displacing Cont. Vol. <sup>3</sup>	25 Yr. Precip. Event <sup>4</sup> (in)
Tank Battery Earthen Berm	21.0	See Diagram	See Diagram	1175.0	2056.3	10.0	1	3.5
Separator Earthen Berm	6.0	See Diagram	See Diagram	489.0	244.5	NA	0	

\*Berm height for earthen berms is the minimum required berm height. Berm height for steel berms is the actual field measured height.

Berm Name	Displacement (ft <sup>3</sup> ) <sup>3</sup>	Berm Volume (bbl) <sup>5</sup>	Precipitation Event (bbl) <sup>5</sup>	Net Volume (bbl) <sup>6</sup>	Largest Tank (bbl)	Containment Capacity <sup>7</sup>	Excess Capacity (bbl)
Tank Battery Earthen Berm	137.4	341.7	61.0	280.7	268	105%	12.7
Separator Earthen Berm	0.0	43.5	25.4	18.1	10	181%	8.1

**Notes:**

<sup>1</sup> Minimum required earthen berm height necessary to provide adequate secondary for largest tank including displacement and precipitation.

<sup>2</sup> Other indicates equipment other than standard sized tank causing displacement within the containment. Displacement will be input manually. Tank dimensions are provided on diagram.

<sup>3</sup> No. of Tanks Displacing Containment Volume = Total Number of Tanks - Largest Tank

<sup>3</sup> Displacement for circular equipment =  $3.14159 \times \text{radius}^2 \times \text{Height}$  (berm height or equip. height if less than berm height)

<sup>3</sup> Displacement for rectangular displacement = Length x Width x Height (berm height or equip. height if less than berm height)

<sup>4</sup> Precipitation Event (bbl) = (Berm Area x Precip. Event (in./12 in.)) x (7.48 gal/cu. ft.) / (42 gal/bbl)

<sup>4</sup> Precipitation freeboard depth is the 25-year, 24-hour rainfall event amount (Source - NOAA Atlas, Vol. II)

<sup>5</sup> Berm Volume (bbl) = (Berm Capacity x (7.48 gal/cu. ft.) / 42 gal/bbl) - (Displacement x (7.48 gal/cu. ft.) / 42 gal/bbl)

<sup>6</sup> Net Volume = Berm Volume (bbl) - Precip. Event (bbl)

<sup>7</sup> Containment Capacity = Net Volume / Largest Tank. This accounts for the largest tank, displacement and precipitation.

**Table A-3**  
**COGCC Rule 600 Series [604] Compliance**  
**Designated Setback Location Mitigation Measures**

**Facility: Frank 5, 6LL**

☒ **Facility does not fall within a Designated Setback Location.**

or

☐ **Facility falls under one or more Designated Setback Areas. Check all that apply:**

☐ **Buffer Zone<sup>a</sup>**

☐ **Urban Mitigation Area<sup>b</sup>**

☐ Sufficiently impervious to contain any spilled or released material.

☐ No potential ignition sources.

☐ Provides containment for 150% of the largest single tank.

150% of Largest Single Tank =  bbls

Actual Tank Berm Net Volume =  bbls

☐ **Exception Zone<sup>c</sup>**

☐ Sufficiently impervious to contain any spilled or released material.

☐ No potential ignition sources.

☐ Constructed of steel rings, designed and installed to prevent leakage and resist degradation.

☐ Constructed with a synthetic or engineered liner that contains all primary containment vessels and flowlines and is mechanically connected to the steel ring.

☐ Provides containment for 150% of the largest single tank.

150% of Largest Single Tank =  bbls

Actual Tank Berm Net Volume =  bbls

☐ Tertiary containment installed at facilities located within 500 ft. and upgradient of a surface water body.

☐ **Urban Mitigation Area Exception Zone<sup>d</sup>**

☐ No more than two (2) crude oil or condensate tanks located within a single berm.

<sup>a</sup>Production Facility located within 1,000 ft. of a Building Unit (Rule 604.a.(2)).

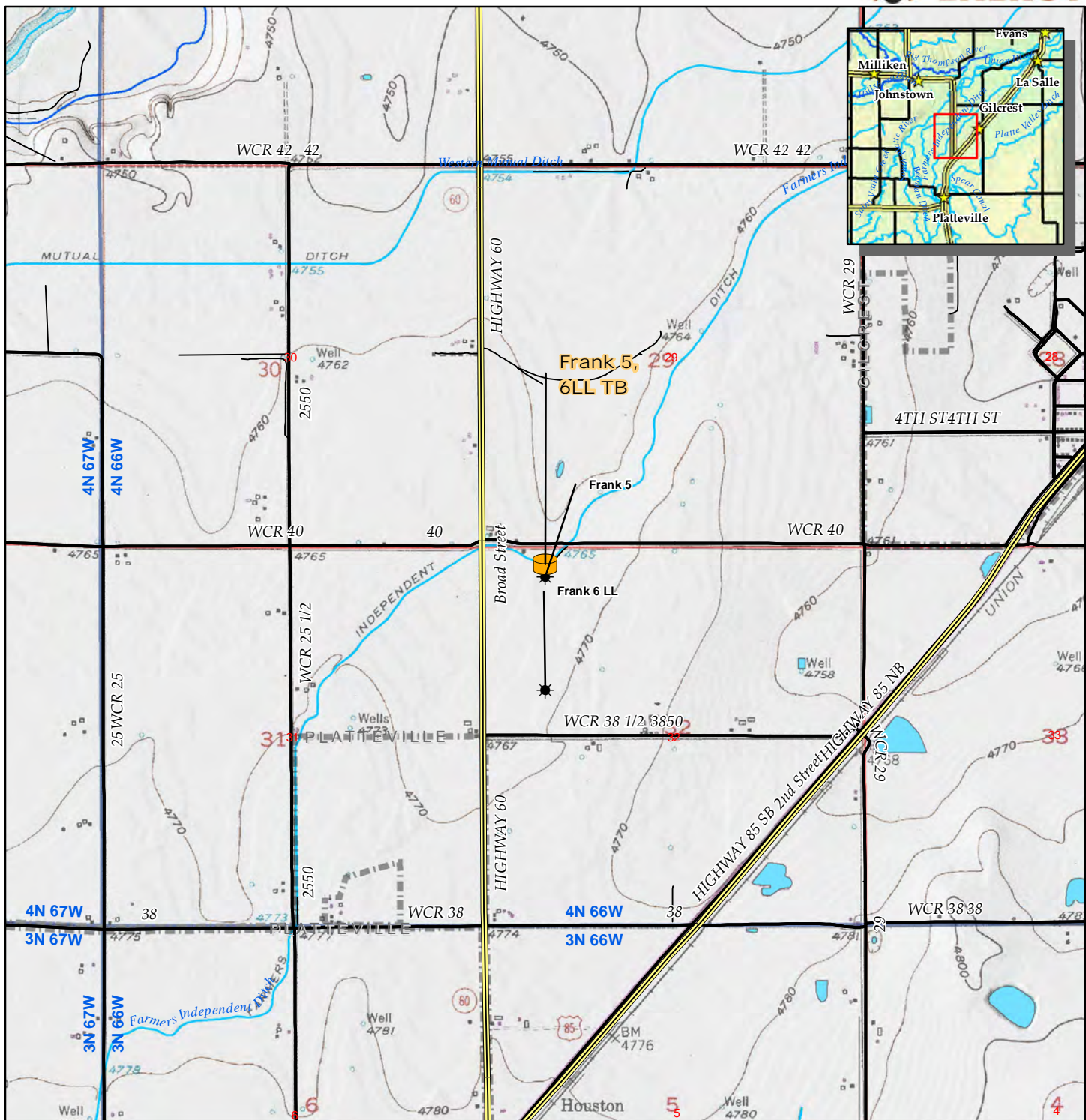
<sup>b</sup>Production Facility located within 1,000 ft. of a Building Unit plus density criteria (100-Series Rules).

<sup>c</sup>Production Facility located within 500 ft. of a Building Unit (Rule 604.a.(1)).

<sup>d</sup>As described in Rule 604.c.(3)B.iv.








**Frank 5, 6LL TB**



Coordinate System: NAD 1983 UTM Zone 13N  
Date Generated: 6/13/2019

Scale: 1:24,000  Miles

-  Highway  
 County/Local  
 Oil/Gas Road  
 Township/Range  
 Section

Flow Path: The nearest waterway is Farmers Independent Ditch located less than 0.1 mile N.; a tributary of Hewes Cook Ditch; a tributary of the South Platte River.



Edited By: nwilson

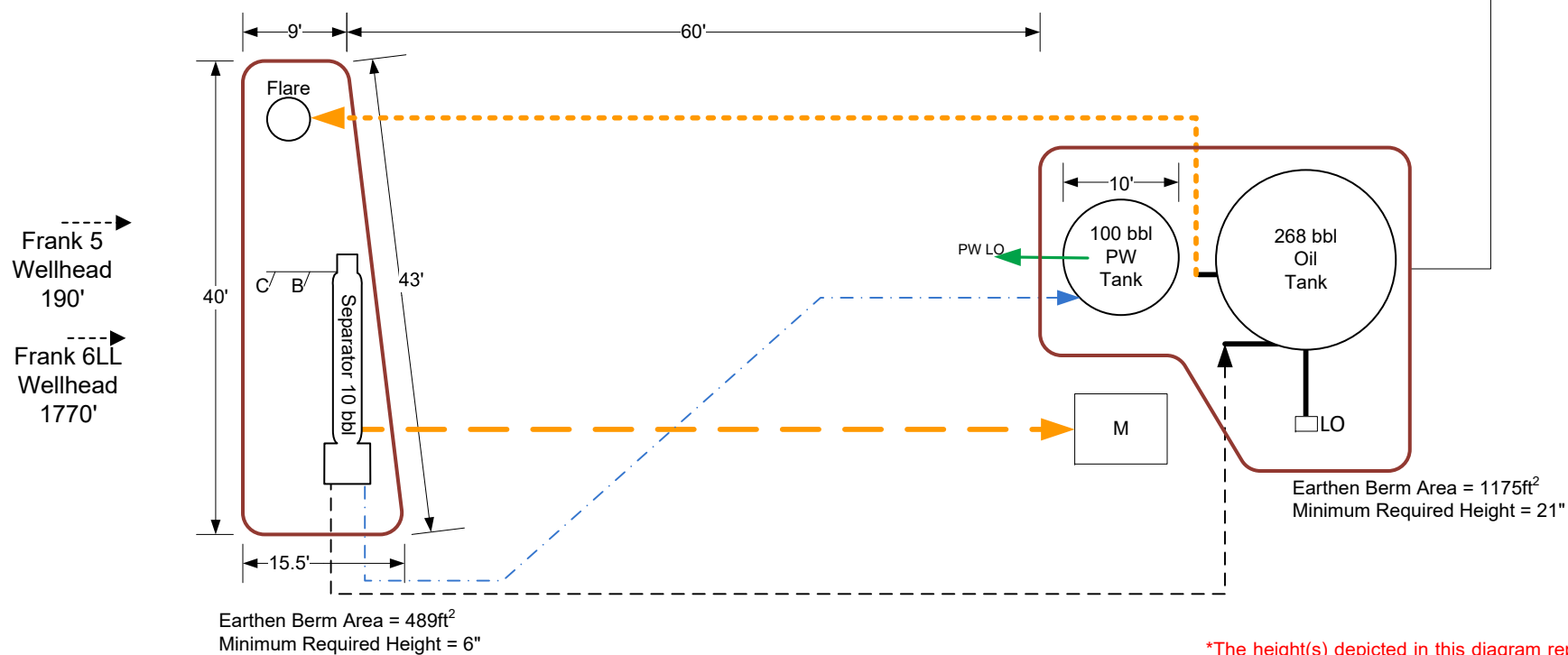
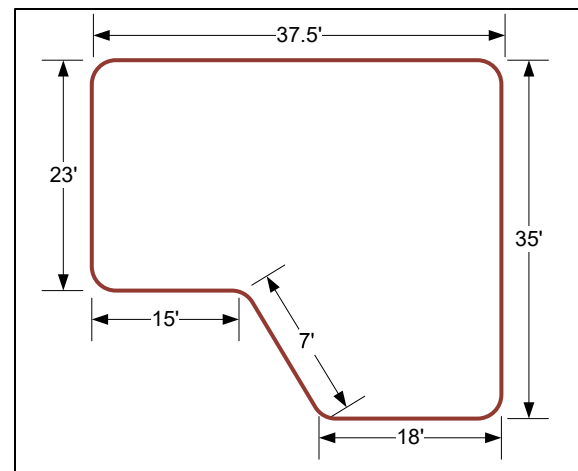
Lat: 40.274626 Long: -104.807785



### Inlet Monitoring Key

Well	Direction	Distance From Tank Battery
B Frank 5	S	190ft.
C Frank 6LL	S	1770ft.

Surface  
Drainage



\*The height(s) depicted in this diagram represent the minimum earthen berm design height(s) necessary for compliance with federal and state regulations. It is the Operator's responsibility to maintain the berm(s) at or above the minimum design height.

PROJECT: SPCC

#### Facility Diagram

PDC Energy – DJ Basin  
Frank 5, 6LL  
NWNW Sec 32 T4N R66W  
Weld County, CO



Diagram created by  
Tasman  
Geosciences.  
Updated by:



#### LEGEND

	Oil Dump	PW Produced Water
	Water Dump	LO Load Out
	Gas Line	M Meter Shed
	Load Line	

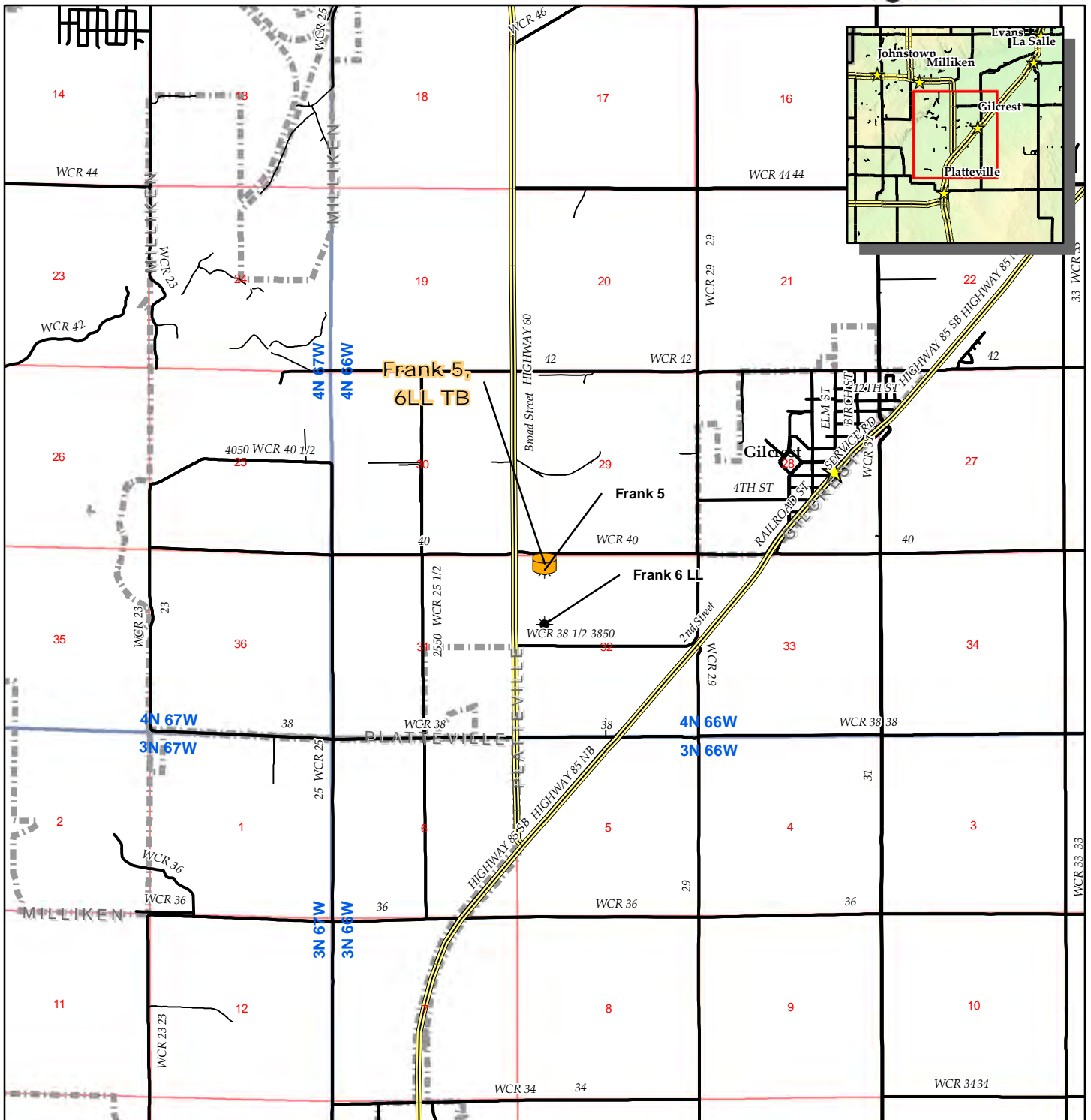
Dashed lines indicate below ground piping

FIGURE 2

Not to Scale

# SPCC Figure 3 - Driving Directions

Frank 5, 6LL TB



Coordinate System: NAD 1983 UTM Zone 13N  
Date Generated: 6/13/2019

Scale: 1:50,000

0 0.25 0.5 1 Miles

- Highway
- County/Local
- Oil/Gas Road
- City Limits
- Township/Range
- Section

Directions: HWY 60 & CR 40, E 0.25, S INTO

Lat 40.274626 Long: -104.807785



Prepared by:



Edited By: nwlson