

October 16, 2018

Mr. David Castro  
SRC Energy, Inc.  
West 11<sup>th</sup> Street, Suite C  
Greeley, CO 80634

Subject:       **Enhanced Fluid Recovery/Air Sparge Remediation Plan  
SRC Energy, Inc.  
Stephens 7-11, 12 Site**

Dear Mr. Castro:

Below please find a description of the proposed Enhanced Fluid Recovery (EFR)/Air Sparge (AS) Remediation Plan for the Stephens 7-11, 12 site (Site) in Weld County, Colorado. The text below describes a remediation plan involving proposed mobile EFR and AS events to be conducted at the Site by Tasman Geosciences, Inc. (Tasman), on behalf of SRC Energy, Inc. (SRC).

### **Remediation Scope**

Tasman proposes to introduce compressed atmospheric air into the subsurface to address remaining petroleum hydrocarbon impacts in groundwater at the Site. The existing monitoring wells at the site will be treated with AS and/or EFR on a weekly basis using a mobile, trailer mounted remediation system. EFR/AS events are planned to be conducted at the Site through the end of 2018. EFR/AS events will be conducted at the Site at least once a week.

Data will be evaluated after completing several of the EFR/AS events to determine if this remedial approach is effectively addressing petroleum hydrocarbon impacts at the Site. In addition to completing the EFR/AS events at the Site, Tasman will continue to monitor groundwater on a quarterly basis until four consecutive quarters of groundwater data that is compliant with COGCC Table 910-1 groundwater standards is achieved.

### **Remediation System Description**

Sparge air will be generated from a sparge blower located on a mobile remediation trailer. The sparge air will be controlled through a multi-leg manifold that will allow the operator to control air flow and pressure to each sparge well. The blower and manifold are equipped with instrumentation and ports to monitor system parameters including pressure, air flow, and temperature. The sparge wells will emit 0.25 cubic feet of air per foot at a minimum well pressure of 5 pounds per square inch (psi). The remediation system is also equipped with a total fluids piping network and vacuum blower to gather vapors generated during sparging.

### **Proposed Air Sparge Well Points**

Based on dissolved phase petroleum hydrocarbon concentrations, AS will be implemented initially at wells BH04, BH09-BH11 and BH12, BH15, BH18. EFR may also be implemented at these locations to further address dissolved phase impacts more efficiently.

## **Proposed Enhanced Fluid Recovery Well Points**

Vapors generated from AS operation will be monitored at nearby venting monitoring wells utilizing a photoionizing detector. Positive influence of the AS events will be evaluated after the next quarterly sampling event, at which time monitoring wells may be treated with EFR to collect a combination of released vapors and impacted groundwater. The next quarterly groundwater sampling event at the Site is planned for December 2018. Laboratory analytical data collected during this event will be used to evaluate the effectiveness of the EFR/AS events. Additional groundwater laboratory analytical samples may be collected before the December 2018 groundwater sampling event to refine the EFR/AS approach and maximize effectiveness.

Tasman looks forward to working with you on this project.

Sincerely,

Sincerely,  
Tasman Geosciences, Inc.

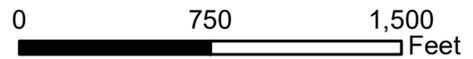
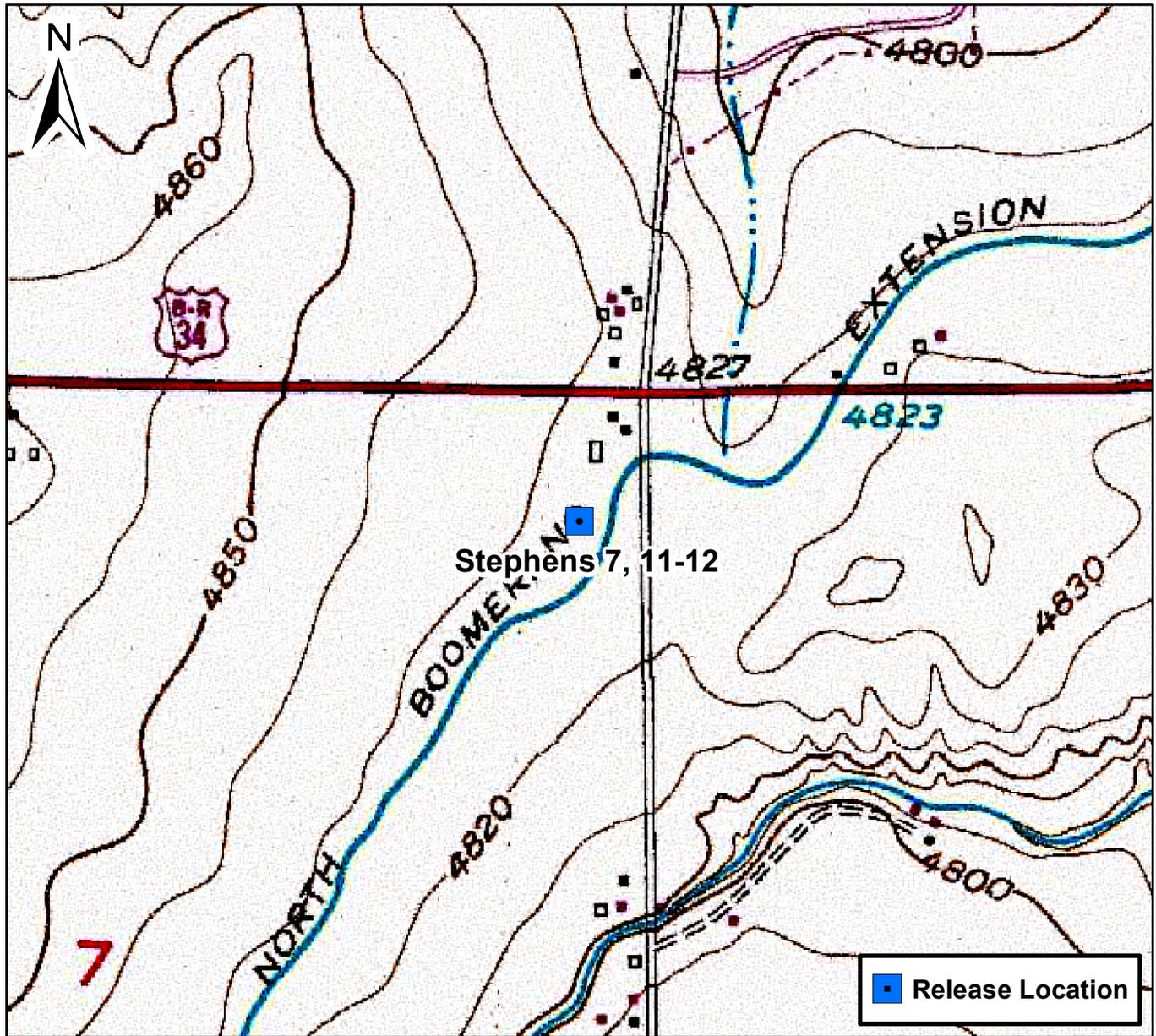


Brandon Bruns, PE  
Principal Engineer

### Attachments

Figure 1 – Site Location Map

Figure 2 – Remediation Layout Map



### Figure 1

Site Location Map  
 Stephens 7, 11-12  
 NENE S7 T5N R66W  
 Weld County, Colorado





**Legend**

- X Release Location
- ◆ Monitoring Well Location (Collected via Trimble GPS)
- Proposed Air Sparge (AS) Well

**Notes**

1) All locations are approximate unless otherwise noted.

GPS – Global Positioning System

0 ft.      15 ft.      30 ft.

Image Source: Google Earth; 2016 Google  
Projection: WGS 84 UTM Zone 13 North



DATE:	10/16/2018
DESIGNED BY:	DA
DRAWN BY:	GB



**TASMAN**  
GEOSCIENCES

Tasman Geosciences, Inc.  
6899 Pecos Street – Unit C  
Denver, CO 80221

**SRC Energy**  
**Stephens 7-11, 12**  
NENE, Section 7, Township 5 North, Range 66 West  
Weld County, Colorado

Proposed Air Sparge  
Locations

FIGURE  
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