U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Blacktail Creek Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VIII

Subject: **POLREP #4**
Progress
Blacktail Creek Spill

Marmon, ND
Latitude: 48.3872474 Longitude: -103.6560305

To:
From: Steven Way, On-Scene Coordinator
Date: 2/2/2015
Reporting Period:

1. Introduction

1.1 Background

Site Number:		**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	PRP Oversight
Response Lead:	PRP	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	1/23/2015	**Start Date:**	1/8/2015
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E15805	**Reimbursable Account #:**	

1.1.1 Incident Category

Emergency Response – OPA Removal and CERCLA Removal Assessment

1.1.2 Site Description

The response action underway by the RP follows a reported 70,000 barrel release of produced water including oil from a 4 inch pipeline that conveys produced water from a reported 37 (note corrected number) oil well pads to a disposal well. The release impacted a small creek (Blacktail Ck) a tributary to the Little Muddy River north of Williston, ND. Reportedly the potential line break was discovered on January 6, 2015, and the line was shut-down. No volume of discharge was reported in the original NRC report on January 7th.

1.1.2.1 Location

1.1.2.2 Description of Threat

Impacts to surface water quality observed as far as the Little Muddy River near the confluence with the Missouri River.

1.1.2.3 Site Evaluation Results

- Trenching to a depth of 10 feet ground surface on 1/28/15 down gradient of the pipeline break and up gradient of Blacktail Creek revealed both apparent brine (based on strong odors) and a layer of oil within the gravel layer at the water surface.
- **The groundwater in the domestic drinking water well on the east side of Hwy 85 was sampled by both the state and RP. The drinking water data obtained by the RP was provided to the property owner on 1/30/15.**
- **The OSC (Way) and the RP representative met onsite with the property owners on 1/30/15 and toured the cleanup operations.**
- **NDDOH was on-site sampling water downstream in Blacktail Creek and downstream during the week of 1/26/15.**
- **Federal and state agency representatives toured the Site and the river system from Williston upstream to the site on Tuesday, January 28, 2015.**
- **SCAT investigations including Stantec and USCG extended from about 1,000 feet downstream of Highway 2 on the Little Muddy River and back to the confluence of Little**

Muddy and Blacktail Creek.
- **EPA also collected sediment samples from Blacktail Creek between the spill site and Highway 85 and from the Little Muddy River below the crossing of Highway 2 (This was completed between 1/24 and 1/26).**
- Exploratory test pits were completed 1/25 to determine if subsurface free-phase oil is migrating from the source area to Blacktail Creek. Investigations revealed that produced water/oil sheen exists on the alluvial groundwater adjacent to the creek. However, free-phase oil did not accumulate in the test pits. Groundwater tested by the RP using Chloride Test Strips reportedly indicated high concentrations, i.e. greater than maximum range.
- **Test Pits (1/30/15): An additional 6 test pits were excavated Friday to the east and south east and south east of the spill site, in between and outside of the recently installed monitoring well locations. Chloride test strips and conductivity were used to measure for potential brine contamination. Test pit locations were obtained with GPS coordinates by Stantec personnel. Field analysis was performed by both Stantec and NDDOH personnel. Results show the brine migrates to the southeast of the creek channel. Hover, it generally trends with the channel alignment. Additional characterization is required.**
- **The RP's contractor is performing geophysical surveys (EM-31) and push-probe monitoring and sampling to define the extent of the brine plume and soil contamination. A report of this effort is to be provided to the state by Wednesday, 2/4/15.**

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Reportedly, as of 1/28/15 more than 140,000 barrels of water (brine, oil and surface water) have been pumped and transported for disposal. Additional pumping has been performed as required to remove water with concentrations above 1,000 mg/L. Chloride levels in the creek were reported to be 100 and 300 mg/L on 2/1/15. This is a substantial reduction from the previous week.

Oil is present on the surface water and additional containment and oil recovery operations continue. Lower temperatures are causing ice build-up on the surface water, which has impeded oil skimming and boom maintenance. Oil saturated ice is being removed from the channel for off-site disposal. It is uncertain as to what volume of oil may be present and discharging from the subsurface/alluvial system.

A groundwater Interceptor Trench was installed to capture concentrated brine-contaminated water downgradient of the pipeline break point before reaching the creek.

Temperatures on site are reported to be negative 12 degrees on Sunday.

2.1.2 Response Actions to Date

The RP has mobilized several contractors with vacuum trucks, oil containment boom, and various heavy equipment.

- Reportedly, as of 1/28/15 more than 140,000 barrels of produced water/creek water/oil mixture have been pumped from the surface water and sent for injection well disposal. Creek water levels remained high through 1/31/15. Additional pumping to remove water has been performed intermittently based on the chloride values exceeding 1,000 mg/L.
- **Interceptor Trench: The groundwater pumping operation at the Interceptor Trench, in a two day period, has removed an estimated 460 barrels (approximately 20,000 gallons) of brine/oil-contaminated groundwater. (The chloride test strips indicate the chloride levels are in excess of 7,000 mg/L). Pumping rates are lower than experienced in the first two days due to lower recharge rates in the trench**.
- **The Interceptor Trench was extended 70 feet to the northwest with two additional recovery sumps added on 1/30/15. This was based on the initial success with removing concentrated brine and the evidence from test pits (1/25) that the groundwater was contaminated to the north of the Phase 1 (80 foot) trench. Initial observations in the sumps show minimal water levels insufficient to pump. Lower pumping rates are being experienced in the first two sumps. Groundwater levels may be expected to drop with freezing temperatures and lower creek flow.**
- **Oil recovery operations continue at the first collection site (Station 1) using both absorbents and skimming (rope skimmer). However recovery rates were reduced as temperatures decreased and the rope skimmer became less effective.**
- **Additional containment-boom sites were added below Station #1 to control oil migration. Oil saturated ice was observed downstream on 1/29 that was not previously visible in the snow and below the elevated water levels.**
- **Removal of oil saturated ice began on 1/31/15. The oiled ice is being trucked off-site. This operation will continue until the bulk of the oiled ice is removed from Blacktail Creek**.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

2.1.4 Progress Metrics

Waste Stream	***Medium***	***Quantity***	***Manifest #***	***Treatment***	***Disposal***

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

- **The OSC advised the RP to remove oiled ice from the channel to more effectively remove the oil pollution from the waterway. As significantly lower temperatures set in, the ground conditions are more favorable for excavator access.**
- **Weather conditions (extreme low temperatures) will largely influence the ability to recover oil. Continued monitoring of the oil removal operations is planned.**
- **Total fluids recovery / pumping will continue at the Interception Trench to remove brine and oil from the subsurface before it enters the surface water. Monitoring wells near the trench will be measured during this process.**
- **Interceptor Trench expansion to the south (southwest or southeast) needs to be evaluated based on Test Pit investigations and groundwater contour data from monitoring wells.**

2.2.1.2 Next Step

- EPA-OSC and USCG Strike Team personnel will continue overseeing the oil removal operations over the next several days and determine if continued oversight is necessary.
- Evaluate the subsurface produced water source to determine if measurable free-phase oil is observed during recovery.

2.2.2 Issues

- Chloride concentrations are below the levels that disposal wells will accept in many cases. If chloride levels in the surface water remain elevated as compared to water quality standards, but too low for acceptance at disposal wells, this will require adjustments in the approach.

2.3 Logistics Section

2.3.1 Disposition of Wastes:

- Deep well injection for oil production waste water.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

Summit Midstream Partners LLC
ND DOH
EPA

3.2 Cooperating Agencies

USFWS
DOI
USACE

4. Personnel On Site

1 OSC on-scene (mobilized 1/23) - **demob 1/31/15. Replacement to be on 2/2/15.**
2 START on-scene (demobilized 1/26/15)
2 USCG onsite 1/26/15

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.