U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Canadian Pacific Brownsville Derailment - Removal Polrep
Final Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: **POLREP #5**
Final
Canadian Pacific Brownsville Derailment

Brownsville, MN
Latitude: 43.6524939 Longitude: -91.2750713

To:
From: David Morrison, OSC
Date: 6/20/2016
Reporting Period: 01/31/2016 - 06/14/2016

1. Introduction

1.1 Background

Site Number:	Z5QK	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:		**Operable Unit:**	
Mobilization Date:	1/27/2016	**Start Date:**	1/27/2016
Demob Date:	1/31/2016	**Completion Date:**	6/14/2016
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	MPCA / MN DNR
FPN#:	E16509	**Reimbursable Account #:**	

1.1.1 Incident Category

Emergency Response

1.1.2 Site Description

1.1.2.1 Location

A Canadian Pacific train derailment occurred at approximately 2230 hours on January 26, 2016, along the Upper Mississippi River National Wildlife and Fish Refuge approximately 4 miles south of Brownsville, MN. A total of fifteen cars derailed along the banks of the Mississippi River.

1.1.2.2 Description of Threat

Of the fifteen cars that derailed, six cars of vegetable oil went through the ice into the Mississippi River, two were found to have been leaking oil. The releases occurred through damaged vent valves. In addition, three cars of sodium chlorate derailed on the embankment. One of the hopper cars containing sodium chlorate released a limited quantity of sodium chlorate from the top of the car. A grain hopper car also released grain which was next to the River.

This pool of the Mississippi River is home to the endangered Higgins eye pearly mussel. USFWS was concerned about potential impacts to the mussel bed. There was also concern that any oil film from the release would endanger waterfowl and other wildlife downstream in open water. Any significant release of sodium chlorate could also have caused saline stress to aquatic life.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Initial Response: Air boat operations were conducted to drill sampling locations in the ice with ice augers. YSI meters were used at these sample locations and in open-water near the downstream Lock and Dam to monitor for conductivity (salinity surrogate), pH, and dissolved oxygen. Ice auger investigations also included depth to bottom measurements, flow metering, and visual sheen inspections. Water quality sampling was conducted on 1/27/16 through 2/02/16 upstream, downstream, and around the rail cars along with visible inspections for oil sheen. Water samples were collected on 1/27/16 through 2/02/16 for Oil and Grease (EPA 1664) and Chlorides (SW 9056). A few sample locations had low level detections for oil and grease. Most of these were from samples taken near the leaking cars and one from a considerable distance downstream at the dam spillway (open water).

Following the offloading and removal of the tanker cars from the river, USFWS inspected the cars and the shoreline and found four species of mussels and one fish in the sediment brought up with the derailed vegetable oil cars on 1/29/16 and 1/30/16.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Following the derailment, USCG arrived and conducted an assessment of the incident, handing-off the federal response lead to EPA. The incident IC was initially a CP representative as the fire department had demobilized from the scene by early morning on 01/27/16. There was a transition to unified command on 1/28 at 11:00am including representatives from the County Sheriff's Office, MPCA, USFWS, EPA and the Railroad IC. Among the objectives set were the safe offloading and recovery of the oil cars, installing containment safeguards, ensuring no secondary releases, product recovery from the river, ice-operations safety, and safe transfer of the sodium chlorate.

2.1.2 Response Actions to Date

Sodium Chlorate Response:

A small amount of sodium chlorate was released from the top of a hopper car; none of the cars containing the sodium chlorate had a critical breach. Three 55-gallon drums of material were initially recovered from that release; an additional 1/2 drum of sodium chlorate impacted soil was collected and containerized on 1/29/16. Sodium chlorate is a strong oxidizer and poses significant health and safety issues during trans-loading. Canadian Pacific hired a contractor with specialized equipment to conduct the trans-loading. This operation required a separate health and safety plan for responder/contractor safety. On 1/30/16, the specialized equipment for sodium chlorate transfer was staged and the process began and one of the two compartments in the rail car was transferred. The northernmost (upland) sodium chlorate car was the first to be emptied into a new transfer railcar. By the afternoon of the 31st, the second compartment was offloaded, one car was done. Offloading required air monitoring for respirable dust during operations. The average reading on top of the receiving sodium chlorate railcar was 0.245 mg/m3 with a one-time peak of 3.7 mg/m3. The ceiling for upgrades to level C respiratory protection is 5 mg/m3. Train traffic blockages were limited to 8-hour windows for the work crews. Tents had to be constructed to protect the product from getting wet during transfer in sleeting rain conditions. The cars on the embankment could not be moved to a safer location for offloading because they are aluminum. A major blizzard was predicted to arrive the morning of Feb. 2 requiring discussions on suspension of operations. However, operations continued on the last remaining sodium chlorate car and off-loading was completed safely during the inclement weather.

Vegetable Oil Release Response:

All six vegetable oil cars that were in the River were pumped out on 1/28/16 and 1/29/16. The three northernmost cars were removed from the water and loaded out onto semi-trailers on 1/29/16 and the three southernmost cars were removed on 1/30/16. A major safety concern noted was that the cars would float and shift as they were being transloaded while mostly submerged through the ice. Inventory reconciliation from transloading indicated that approximately 657 gallons of vegetable was released from the cars. There were sheens observed where the derailed cars were in the water, clean-up crews were deployed with pompoms and oil rags to absorb any free product. By the end of the day on the 30th, there was only remnant drops of oil entrained in and under the ice and no recoverable product was left at the site. The collection sumps at the plywood containment exhibited only a faint sheen and absorbent pads would not readily absorb any more oil. Pompom oil collection efforts were suspended at nightfall on 1/30/16. The plywood containment was removed from the river on 1/31/16. Downstream visual inspections for oil and oiled wildlife continued through ice-breakup. On-Water follow up inspections were conducted until 03/16/16. Land-side observations were continued through 03/18/16.

Water Quality Sampling:

CP sampling crews collected water quality samples at 20 locations selected upstream, downstream and at the tanker car sites. Sampling efforts were conducted daily through 02/03/16 then in March after Ice-out. Initial sampling efforts included three downstream locations in the vicinity of Lock & Dam No. 8 where there was open water. The sites were modified based upon findings and included moving additional points closer to the site on the downstream end, and moving sites away from the cars to prevent unsafe ice conditions for response around the rail cars. The samples were screened in the field for visual signs of oil sheen and conductivity/pH/dissolved oxygen and sent in for analyses for oil and grease and chlorides.

EPA START collected 4 surface water samples (SW-01, SW-04, SW-09, and SW-13) on 1/28, 1/29, 1/30, and 1/31. Duplicate samples were also collected. Sample SW-13 was collected approximately 100 meters from the furthest downstream railcar (car #TILX270683). START also collected the real-time water quality parameter readings from these locations with a YSI meter.

Site Restoration & Mussel Survey.

The railcars fell into waters of the Wildlife and Fish Refuge and the derailment affected terrestrial areas at the USFWS overlook. Subsequent damage occurred where constructed rock pads and response drive areas had to be utilized. CP Railroad is working with the local wetland authority as well as the USFWS to restore and revegetate the derailment/overlook area. Rock removal and site restoration work was completed and a vegetative cover was seeded and matted on June 8, 2016. Consultants for CP have submitted plans to the USFWS to conduct a mussel survey to assess potential damage to mussel bed(s) as a result of the derailment.

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

EPA enforcement staff have been informed of site response progress.

2.1.4 Progress Metrics

- 165,475 gallons of vegetable oil were off loaded from cars in the river without a secondary release.

- Approximately 657 gallons of oil were released into the river, only a small percentage was recovered with absorbent pompoms.

- approximately 288,000 pounds of sodium chlorate have been safely offloaded from three derailed cars.

- one partial carload release of grain/oats was recovered from the river embankment.

- Approximately 1.7 acres of disturbed lands have been regraded with topsoil and seeding. Erosion control BMPs are in place until permanent vegetation is established.

Regional Metrics		
This is an Integrated River Assessment. The numbers should overlap.	Miles of river systems cleaned and/or restored	670 feet (0.12 mi.)
	Cubic yards of contaminated sediments removed and/or capped	0.5
	Gallons of oil/water recovered	100
	Acres of soil/sediment cleaned up in floodplains and riverbanks	1.7 Acres
Stand Alone Assessment	Number of contaminated residential yards cleaned up	0
	Number of workers on site	50
Contaminant(s) of Concern	Vegetable oil, Sodium Chlorate	
Oil Response Tracking		
Estimated volume	Initial amount released	657 gallons
	Final amount collected	minimal, 10s of gallons
CANAPS Info	FPN Ceiling Amount	$50,000
	FPN Number	E16509
	Body of Water affected	Mississippi River

Administrative and Logistical Factors (Place X where applicable)					
	Precedent-Setting HQ Consultations (e.g., fracking, asbestos)		Community challenges or high involvement		Radiological
	More than one PRP	X	Endangered Species Act / Essential Fish Habitat issues		Explosives
	AOC		Historic preservation issues		Residential impacts
	UAO		NPL site		Relocation
	DOJ involved	X	Remote location		Drinking water impacted
	Criminal Charges Have Been Filed*	X	Extreme weather or abnormal field season		Environmental justice
	Tribal consultation or coordination or other issues		Congressional involvement	X	High media interest
	Statutory Exemption for $2 Million		Statutory Exemption for 1 Year		Active fire present
	Hazmat Entry Conducted – Level A, B or C	X	Incident or Unified Command established		Actual air release (not threatened)

Green Metrics			
Metric	**Amount**	**Units**	
Solid waste recycled	30	Cubic Yards	Response Rock reused by USFWS at another location.

2.2 Planning Section

2.2.1 Anticipated Activities

Wetland Act, NPDES Construction Stormwater, and Army Corps of Engineers (ACOE) permitting activity is being conducted for site restoration efforts. USFWS are reviewing mussel survey plans.

2.2.1.1 Planned Response Activities

This Emergency Response has been completed, No further EPA efforts pending.

2.2.1.2 Next Steps

EPA will provide support to USFWS and State of Minnesota as requested.

2.2.2 Issues

None at this time.

2.3 Logistics Section

N/A

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

2.5.1 Safety Officer

OSC Morrison and OSC Thomas (night shift) served as Safety Officers for EPA.

2.5.2 Liaison Officer

N/A

2.5.3 Information Officer

N/A

3. Participating Entities

3.1 Unified Command

UC consisted of : Houston County Sheriff's Office/Emergency Management, Minnesota Pollution Control Agency,
U.S. EPA, U.S. Fish and Wildlife Service and a Canadian Pacific Representative.

3.2 Cooperating Agencies

Canadian Pacific and affiliated consultants & contractors,
Houston County Sheriff's Office/Emergency Management,
Houston County Soil and Water Conservation District
Winona Fire Department,
Minnesota Department of Natural Resources
Wisconsin Department of Natural Resources
Minnesota Pollution Control Agency,
U. S. Coast Guard
U.S. EPA,
U.S. Fish and Wildlife Service,
U.S. Army Corps of Engineers,
Upper Mississippi River Basin Association, Hazardous Materials Spills Group

4. Personnel On Site

During Response Action:

EPA 3

START 2

No Personnel on scene at this time

5. Definition of Terms

ACOE – United States Army Corps of Engineers
BMP – Best Management Practices
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
FPN – Federal Project Number issued by National Pollution Fund Center
HASP - Health and Safety Plan
IC – Incident Commander
MPCA – Minnesota Pollution Control Agency
NPDES – National Pollutant Discharge Elimination System
OPA – Oil Pollution Act of 1990
OSC - On Scene Coordinator

PRP - Potentially Responsible Party
START - Superfund Technical Assistance & Response Team
UC – Unified Command
USCG – United States Coast Guard
USEPA - United States Environmental Protection Agency
USFWS – United States Fish and Wildlife Service

6. Additional sources of information

6.1 Internet location of additional information/report

www.epaosc.org

6.2 Reporting Schedule

This is the Final Pollution Report for this Incident.

7. Situational Reference Materials

No information available at this time.