

# SITE STATUS UPDATE

March 2, 2010

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## TOP STOP PETROLEUM RELEASE SITE GUNNISON, UTAH



*Utah Department of*  
**Environmental Quality**

Morgan Atkinson – Division of Environmental Response and Remediation, Project Manager

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# Work Completed Since September 2009 Gunnison City Council Meeting

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- Air Monitoring
    - Indoor Air Monitoring
    - Sub-surface vapor monitoring
  
  - Continued Abatement/Corrective Action
  
  - Continued Groundwater Monitoring
    - Additional Monitoring Well Installation
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# Indoor Air Monitoring

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- 8 locations sampled since September '09
    - Two businesses and six homes sampled
    - Most locations have good results, but a couple need additional work or detailed information
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# Indoor Air Monitoring (cont.)

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- Additional indoor air monitoring will be required if:
    - Noticeable odors and/or complaints
    - Installed abatement systems are not functioning
    - Continued sub-surface soil vapor monitoring indicates a need for indoor air monitoring
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# Sub-Surface Soil Vapor Monitoring

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- Vapor probes sampled at 14 homes and 9 businesses
    - Two events each since September 2009
  
  - Data from most locations indicate
    - Petroleum vapors are not accumulating beneath most structures
    - Vapor extraction systems are properly functioning
    - Sources of petroleum-related indoor air vapors are better defined
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# Sub-Surface Soil Vapor Monitoring (continued)

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- Is one sub-surface sample location sufficient for each home or business?
    - Sample locations were well thought out with defined criteria prior to placement. The intent was to get the worse case scenario.
    - Additional sample locations may be justified for specific buildings.
  
  - Additional sampling will be required prior to No Further Action for the release site.
    - Soil, groundwater and soil vapor data must indicate that any residual contamination that remains after the cleanup is complete meets applicable State standards.
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05.13.2009



06.22.2009

# “Draft Indoor Air and Sub-Surface Soil Vapor Monitoring Status Report”

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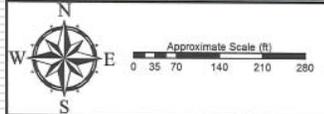
- Updated report emailed to DERR, January 6, 2010
    - Details all indoor, outdoor and sub-surface vapor data collected to date. Will be available on the DERR - Gunnison website.
  
  - Recommendations include –
    - Risk-based screening levels for indoor air (0.39/0.49 ug/m<sup>3</sup> Benzene residential/commercial)
    - Conservative slab attenuation factor of 0.1 to establish target sub-surface concentrations (3.9 & 4.9 ug/m<sup>3</sup> Benzene)
    - Proposed quarterly sub-surface sampling if below target sub-surface levels
    - Proposed monthly sub-surface sampling if exceeding target sub-surface levels.
  
  - *DERR will require continued monthly indoor air sampling where target sub-slab levels are exceeded*
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**Legend**

- Building or Home Where Subsurface Soil Gas Sample Collected
- 2.1 ug/m<sup>3</sup> Subsurface Benzene Concentration
- 2.1 ug/m<sup>3</sup> Subsurface Benzene Concentration > RSL
- 2.1 ug/m<sup>3</sup> Subsurface Benzene Concentration > CSL

NOTE: Benzene Screening Levels  
 Residential (RSL) 3.0 ug/m<sup>3</sup>  
 Commercial (CSL) 4.0 ug/m<sup>3</sup>



Subsurface Benzene Concentrations		
Gunnison, Utah		
PROJECT NO.	DRAWING DATE	FIGURE
1241-026A	September 11, 2009	2

# Continued Abatement & Corrective Action

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- 5 soil vapor extraction (SVE) systems operating
    - Wind River estimates ~13,000 gallons of gasoline removed by SVE – No Change Since Last Report – DERR cannot verify this volume with data provided
    - Vapor removal is minimal at this time most systems because groundwater level remains high
  
  - South SVE system shut-down in early February to evaluate effects on Taylor home
    - Attempt to better define impacts to the home and if the groundwater plume will continue to impact the home with the system off
    - DERR has not received any data for the shut-down test
  
  - Sub-slab ventilation systems operating in 2 businesses and 9 homes above plume
    - Monthly operation and maintenance conducted
    - No vapors detected in any ventilation stacks since September '09
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# Continued Abatement & Corrective Action

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- Corrective Action Plan (CAP) Addendum submitted to DERR, January 26, 2010
  - The CAP Addendum will be subject to Public Notice/Comment prior to DERR approval
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# Future Corrective Action Alternatives

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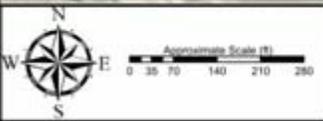
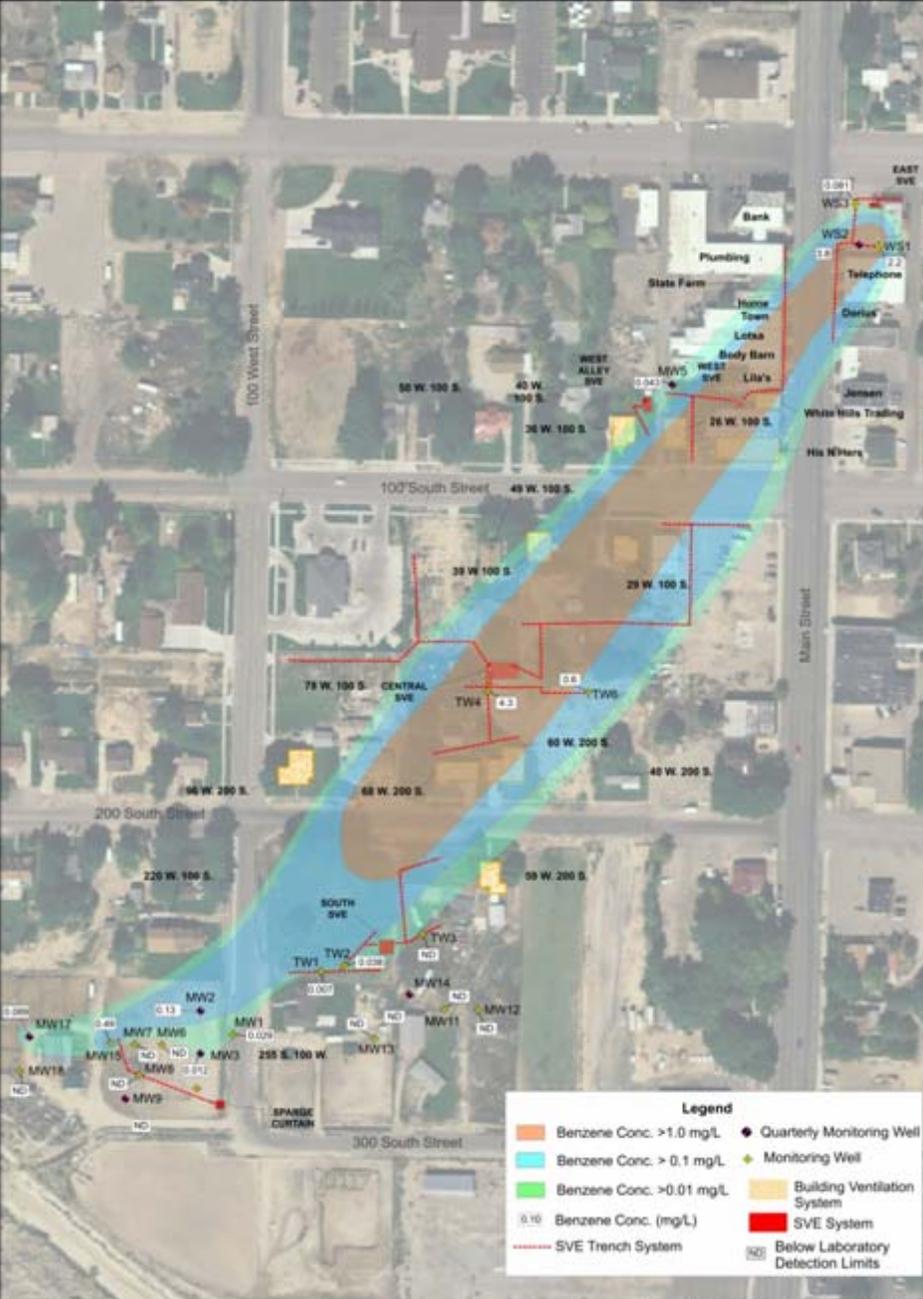
## □ Nitrate Injection

- First pilot test injection conducted today using the network of SVE trenches to deliver nitrate to the groundwater
  - The nitrate encourages growth and reproduction of naturally occurring microorganisms to enhance biodegradation of the gasoline.
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# Groundwater Monitoring & Updated Plume Maps

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- Groundwater concentration maps prepared by Wasatch Environmental and Lance Hess display Benzene concentrations over time
    - Maps do not include soil contamination – requested to be in the CAP Addendum
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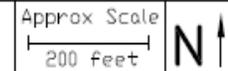
**WASATCH ENVIRONMENTAL**  
Environmental Science and Engineering

Estimated Benzene Concentration in Groundwater February 2008 - June 2008		
Gunnison, Utah		
PROJECT NO.	DRAWING DATE	FIGURE
1091-0204	September 8, 2009	2



**Remedy, Inc**

November 2009 Benzene Concentrations In Ground Water (ppb or ug/l)	
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# New Groundwater Monitoring Wells

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- 3 additional monitoring wells installed around 100 West 200 South
    - Groundwater plume appears to be well defined at this time
  
  - Data gaps may exist within the plume boundaries (WS-2 to MW-27) and some assumptions are made about the plume
    - Soil, groundwater and soil vapor data must indicate the release is completely cleaned up across the entire plume area – including areas where previous sampling has not been conducted
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**Remedy, Inc**

**November 2009 Benzene Concentrations  
In Ground Water (ppb or ug/l)**





**Legend**

- equivalent concentrations
- - - dashed where approx
- ◆ MW-37 1300 ug/l (ppb) TPH gro
- monitoring well
- ND no detected
- NS not sampled
- Target ISL 1000 ppb

**Remedy, Inc**

**November 2009 Total Petroleum Hydrocarbons as Gasoline Range Organics (TPH gro) ppb or ug/l**

Approx Scale  
200 feet

N ↓

# DERR ACTIONS

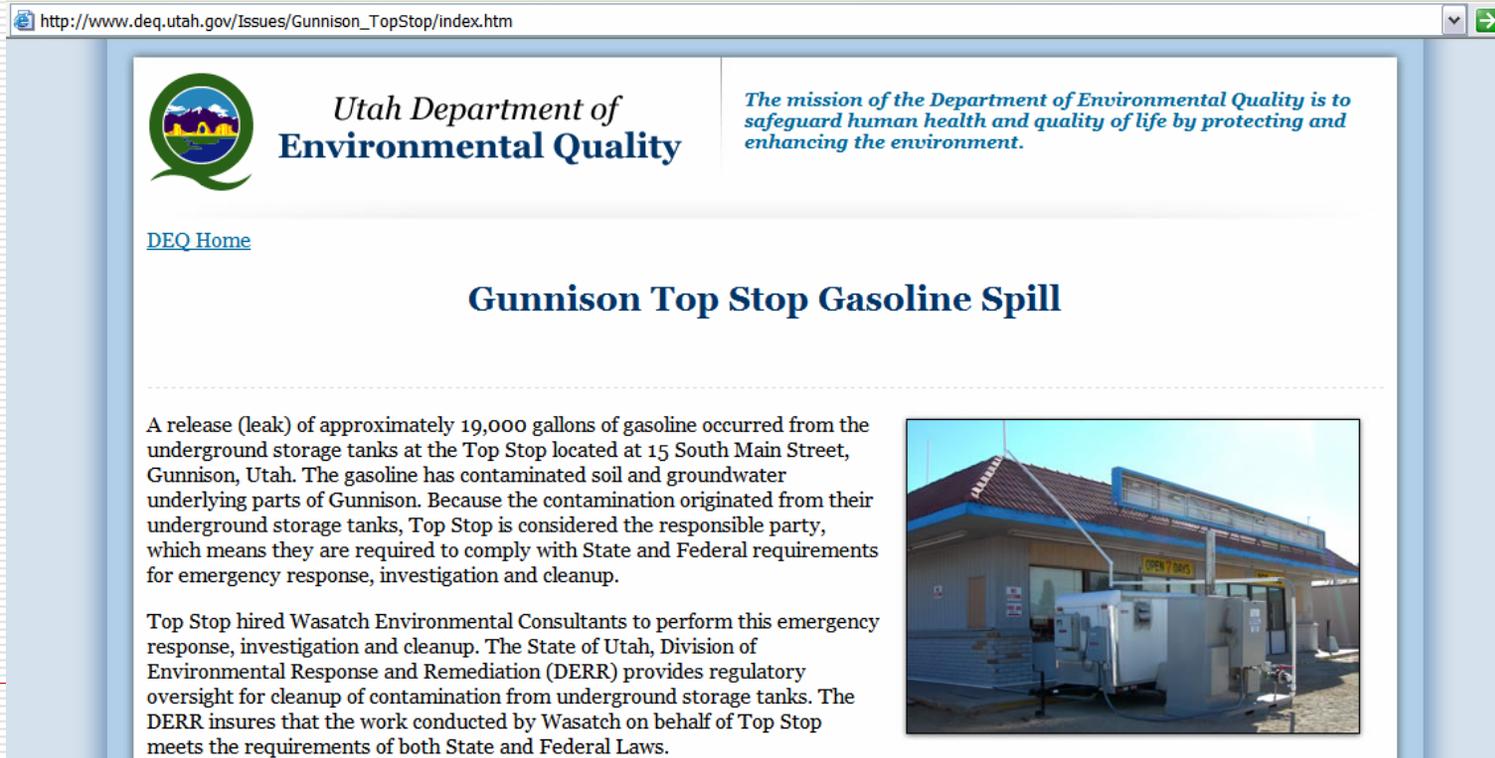
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- ❑ Require Wind River to actively clean-up release
  - ❑ Have staff available for meetings and discussions about clean-up activities and progress
  - ❑ Establish remediation goals
    - Soil and groundwater samples that meet remediation goals must be obtained throughout the full extent of the plume area before closure considered
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# Stay up to date...

The latest submittals and reports available online:

[http://www.deq.utah.gov/Issues/Gunnison\\_TopStop/index.htm](http://www.deq.utah.gov/Issues/Gunnison_TopStop/index.htm)



The screenshot shows a web browser window with the address bar containing the URL [http://www.deq.utah.gov/Issues/Gunnison\\_TopStop/index.htm](http://www.deq.utah.gov/Issues/Gunnison_TopStop/index.htm). The page header features the Utah Department of Environmental Quality logo on the left and the mission statement: "The mission of the Department of Environmental Quality is to safeguard human health and quality of life by protecting and enhancing the environment." Below the header is a link for "DEQ Home". The main heading is "Gunnison Top Stop Gasoline Spill". The text describes a release of approximately 19,000 gallons of gasoline from underground storage tanks at the Top Stop located at 15 South Main Street, Gunnison, Utah. It states that the gasoline has contaminated soil and groundwater, and that Top Stop is considered the responsible party. The text also mentions that Top Stop hired Wasatch Environmental Consultants for emergency response, investigation, and cleanup, and that the State of Utah, Division of Environmental Response and Remediation (DERR) provides regulatory oversight for the cleanup work.

**Utah Department of Environmental Quality**

*The mission of the Department of Environmental Quality is to safeguard human health and quality of life by protecting and enhancing the environment.*

[DEQ Home](#)

## Gunnison Top Stop Gasoline Spill

A release (leak) of approximately 19,000 gallons of gasoline occurred from the underground storage tanks at the Top Stop located at 15 South Main Street, Gunnison, Utah. The gasoline has contaminated soil and groundwater underlying parts of Gunnison. Because the contamination originated from their underground storage tanks, Top Stop is considered the responsible party, which means they are required to comply with State and Federal requirements for emergency response, investigation and cleanup.

Top Stop hired Wasatch Environmental Consultants to perform this emergency response, investigation and cleanup. The State of Utah, Division of Environmental Response and Remediation (DERR) provides regulatory oversight for cleanup of contamination from underground storage tanks. The DERR insures that the work conducted by Wasatch on behalf of Top Stop meets the requirements of both State and Federal Laws.

