



RINGWOOD MINES/LANDFILL SITE COMMUNITY ADVISORY GROUP MEETING

March 1, 2016

Summary of 2015 Groundwater Investigations

Presence of 1,4-Dioxane at the Site

- Identification of 1,4-Dioxane at the site has lead to concerns within the community that its presence indicates a threat to human health.
- 1,4-Dioxane does not present a significant threat human health under current Site circumstances; no one is drinking the groundwater at the site or otherwise exposed to significant levels of 1,4-Dioxane.
- Residents receive their water from public water supplies. These supplies routinely test their water; tests reveal the water meets all appropriate standards.
- EPA regrets not having made the information regarding the presence of 1,4-Dioxane available to the CAG sooner.
- Had EPA identified new contamination that indicated an imminent health threat, EPA would have immediately notified the community.
- EPA will work with the CAG to identify an appropriate means of distributing data routinely such as posting on the EPA website with notification of posting.

2015 GROUNDWATER INVESTIGATION - CHRONOLOGY

- March 2015 – Groundwater samples collected from some of the monitoring wells in the Peter's Mine Pit Area of the site and analyzed for Volatile Organic Contaminants (VOCs).
- April 2015 – Groundwater and surface water samples collected in the Peter's Mine Pit Area of the site and analyzed for VOCs. Splits of these samples were collected by the Borough of Ringwood's consultant for independent analysis.
- June 2015 – Groundwater samples and surface water samples collected in the Peter's Mine Pit Area of the site and analyzed for VOCs.
- August 2015 – The annual comprehensive groundwater and surface water sampling event is conducted at the site. Groundwater and surface water samples are analyzed for VOCs, semivolatile organic compounds (SVOCs), metals and polychlorinated biphenyls (PCBs). Splits of some of these samples were collected by EPA for independent analysis.
- December 2015 - Groundwater samples and surface water samples collected in the Peter's Mine Pit Area of the site and analyzed for VOCs.

1,4-Dioxane

- 1,4-Dioxane **is not** Dioxin. Dioxin is a different family of compounds.
- Used as a stabilizer for chlorinated solvent like 1,1,1-trichloroethane, and may be found at sites with elevated levels of these chlorinated solvents.
- Used in many products including paint strippers, dyes, greases, varnishes and waxes and is also found in consumer products such as deodorants, shampoos and cosmetics.
- A federal maximum contaminant level (MCL) has not been established for 1,4-dioxane in drinking water.
- EPA has established a lifetime health advisory of 200 ug/L for 1,4-dioxane in drinking water.
- In November 2015, the State of New Jersey revised its Interim Groundwater Quality Standard from 10 ug/L to 0.4 ug/L.

1,4-Dioxane – Groundwater Sampling Results

- April 2015 Sampling Event – 1,4-Dioxane was not specifically analyzed for in ground water samples collected by Ford's consultant. 1,4-Dioxane was analyzed for in the split samples collected by the Borough's consultant and only detected in a mine water sample collected from the Peter's Mine Pit Airshaft at a concentration of 25 ug/L.
- June 2015 Sampling Event – 1,4-Dioxane was tentatively identified in a mine water sample collected from the Peter's Mine Pit Airshaft at an estimated concentration of 150 ug/L.
- August 2015 Sampling Event – 1,4-Dioxane was detected in site monitoring wells at concentrations up to 38 ug/L and in mine water from the Peter's Mine Pit Airshaft at a concentration of 140 ug/L.
- December 2015 Sampling Event – First sampling event that 1,4-dioxane was analyzed for with EPA's latest recommended method (EPA Method 8270 SIM). 1,4-dioxane was detected in site monitoring wells at concentrations up to 17.9 ug/L and in mine water from the Peter's Mine Pit Airshaft at concentrations up to 31.1 ug/L.

1,4-Dioxane – Surface Water Sampling Results

- August 2015 Sampling Event – Surface water samples were collected from groundwater seeps and the four brooks present at the site. 1,4-Dioxane was detected at concentrations up to 2.3 ug/L at on-site brook locations, and up to 0.44 ug/L at off-site locations in these brooks.
- December 2015 Sampling Event – Surface water samples were collected from groundwater seeps and the Park Brook. 1,4-Dioxane was detected at concentrations up to 3.56 ug/L in seep samples and up to 0.82 ug/L in on-site brook locations during this sampling event.

1,4-Dioxane - Conclusions

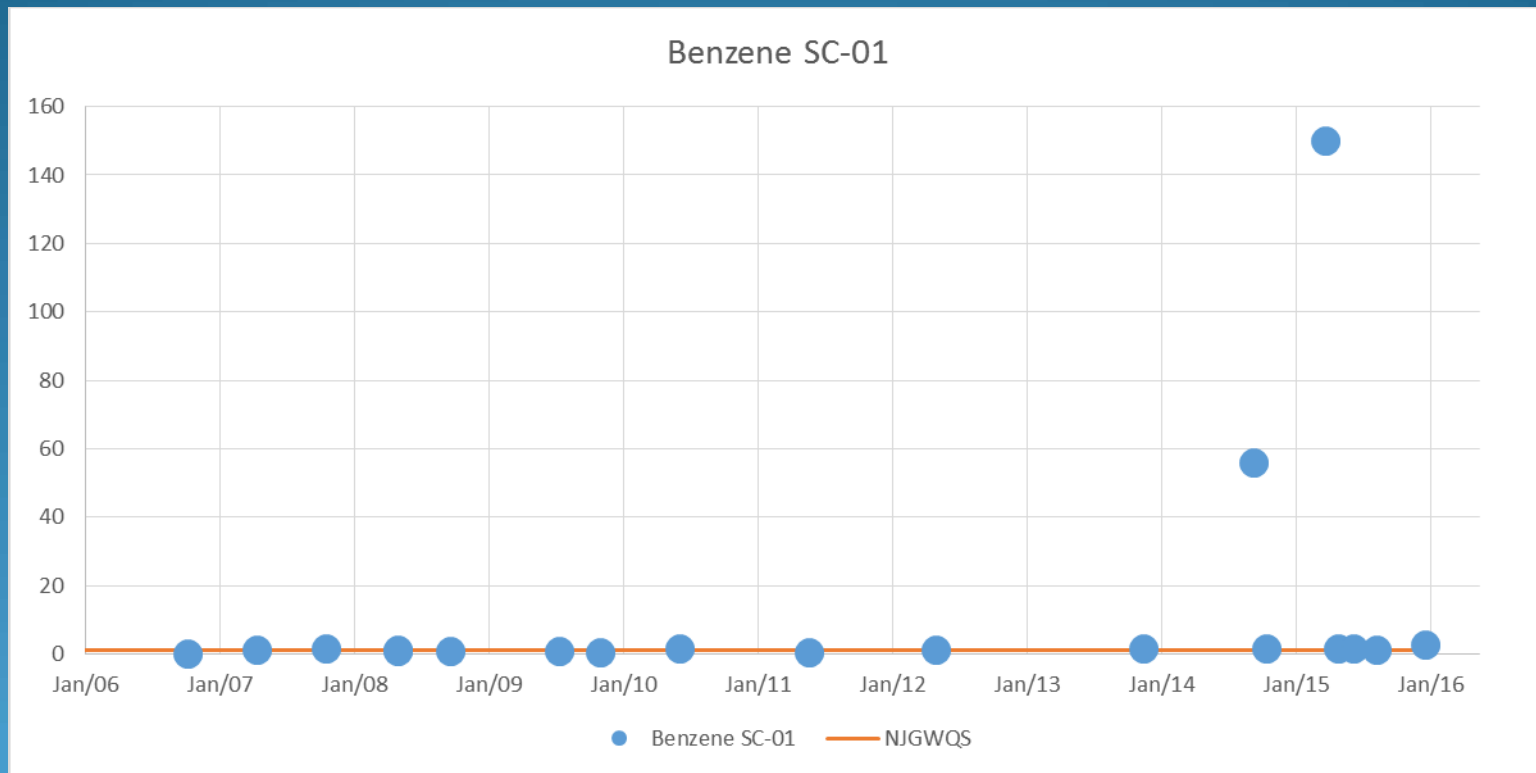
- 1,4-Dioxane has not been detected in **any** groundwater or surface water sample from the site at concentrations in excess of EPA's lifetime health advisory of 200 ug/L for drinking water.
- 1,4-Dioxane was not detected in water samples collected from the Wanaque Reservoir by the North Jersey District Water Supply Commission in 2013.
- EPA will continue to monitor for 1,4-Dioxane during future groundwater and surface water sampling events at the site.
- 1,4-Dioxane is not Dioxin. Dioxin is a different family of compounds.

Benzene

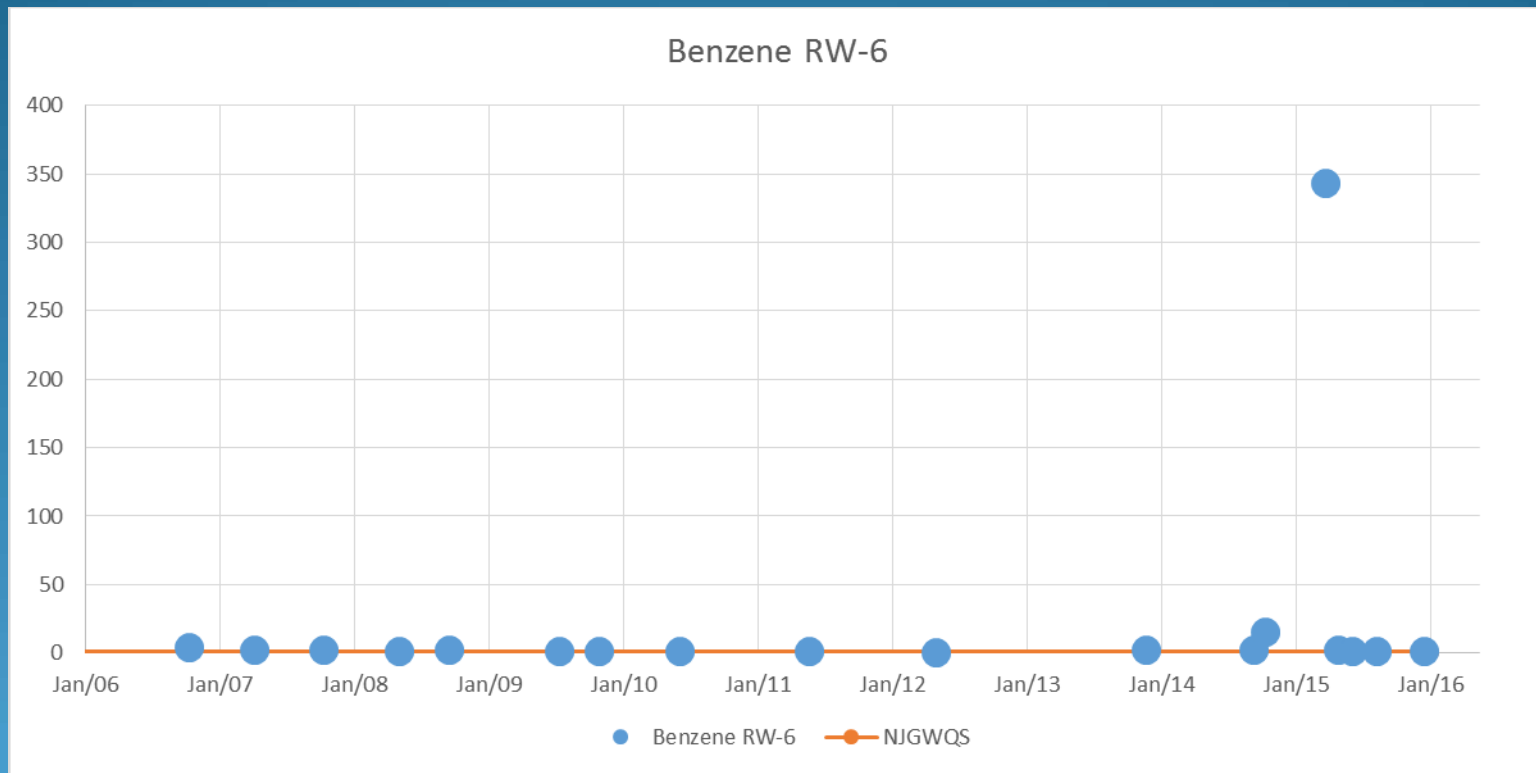
- Benzene has frequently been detected in groundwater samples collected from the Peter's Mine Pit Area of the site at levels in excess of the federal drinking water standard of 1 ug/L.
- During the September 2014 groundwater sampling event anomalously high levels of benzene were detected in monitoring well SC-01 (56 ug/L) in the Peter's Mine Pit and monitoring well RW-6A (88.1 ug/L), which is located adjacent to the pit.
- Additional groundwater sampling was conducted in these wells in October 2014. Benzene was detected at historic levels during this sampling event.
- In March 2015 additional groundwater sampling was conducted in the Peter's Mine Pit Area to further evaluate benzene levels in groundwater. During this sampling event anomalously high levels of benzene were detected in monitoring well SC-01 (150 ug/L) and monitoring well RW-6 (344 ug/L).
- Additional groundwater sampling events were conducted in April, June, August and December 2015. Benzene was detected at historic levels in wells SC-01, RW-6 and RW-6A during these sampling events.

Benzene Concentrations with Time

Well SC-01

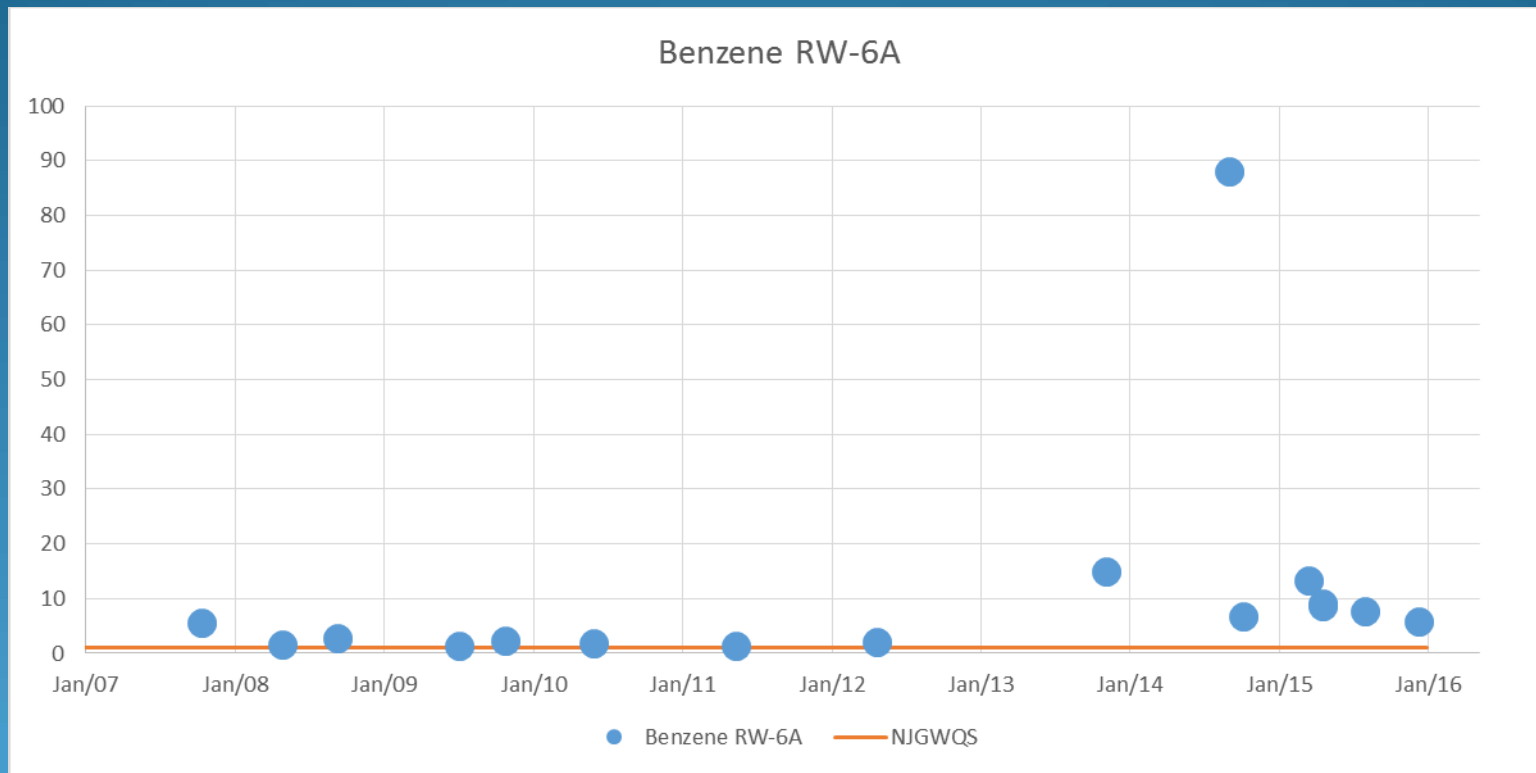


Benzene Concentrations with Time Well RW-6



Benzene Concentrations with Time

Well RW-6A

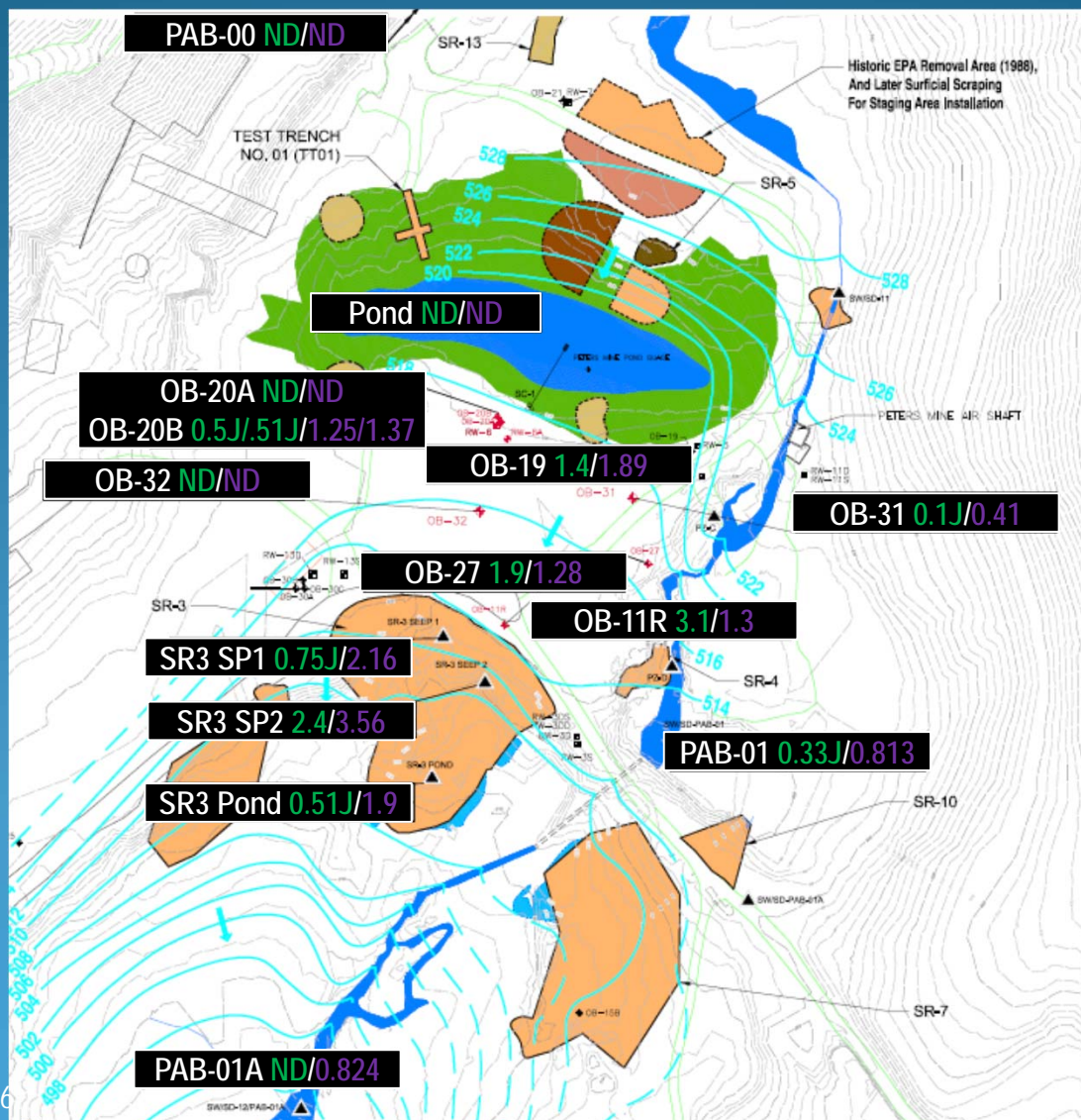


Benzene and 1,4-Dioxane in Shallow Groundwater & Surface Water Peters Mine Pit

Legend:

0.5J - Benzene

1.25 - 1,4-dioxane



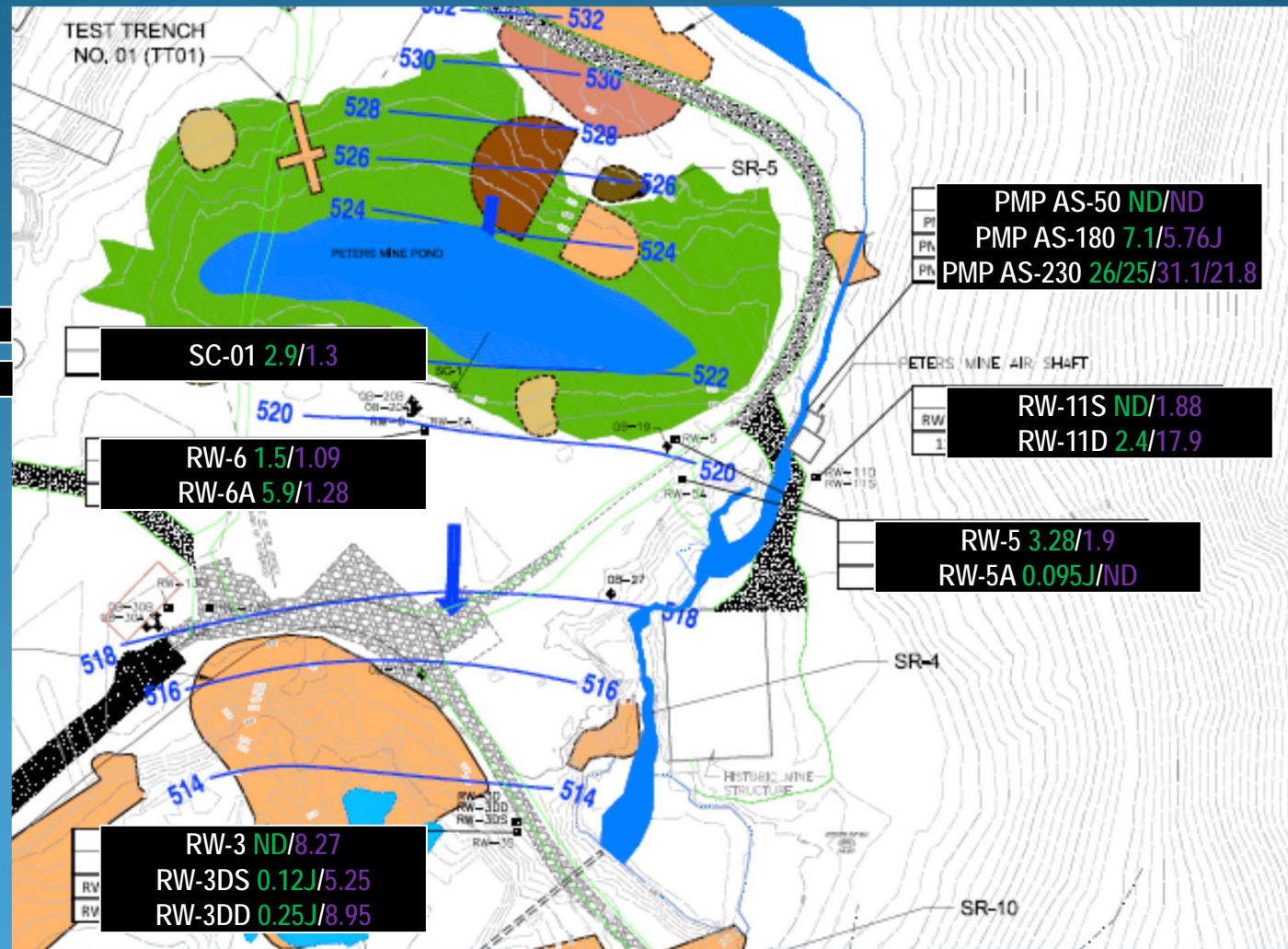
Data: December 2015/January 2016

Benzene and 1,4-Dioxane in Bedrock Groundwater - Peters Mine Pit

Legend:

2.4 - Benzene

1.09 - 1,4-dioxane



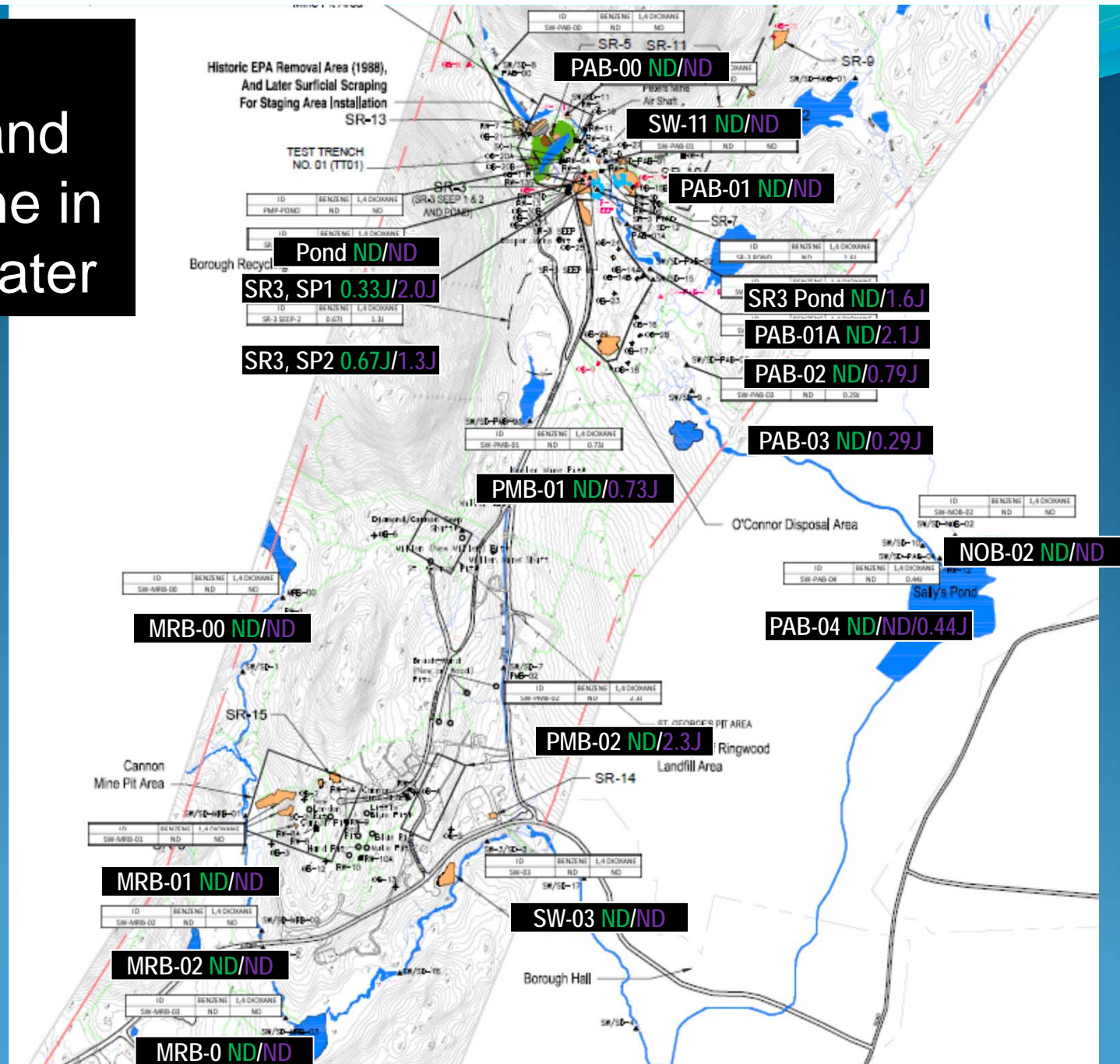
Data: December 2015

Site Wide Benzene and 1,4-Dioxane in Surface Water

Legend:

0.67J - Benzene

1.3J - 1,4-dioxane



Data: August 2015

Next Steps

- Boreholes for the installation of three additional bedrock monitoring wells are currently being drilled. Once installed these wells will be used to help define the extent of 1,4-dioxane in groundwater at the site.
- Groundwater and surface water sampling results collected in 2015 and 2016 will be incorporated into an Addendum to the approved Groundwater Remedial Investigation Report.
- Groundwater Risk Assessment Reports will be finalized or amended, as appropriate.
- A Feasibility Study Report will be prepared to evaluate cleanup alternatives for groundwater.
- A Proposed Plan to address groundwater at the site will be presented to the public.
- A Record of Decision will be issued to document EPA's selected remedy for site-related groundwater.