Region 9 San Juan River

Data Summary August 2015

Observations

- Results highly variable but clear peaks and subsequent downward trends observed, some anomalies.
- Concentrations of most metals consistent with pre-impact concentrations when compared to pre-event data
- Currently, total lead and dissolved Al may exceed NN livestock and agricultural supply screening levels on given days
- Exceedences may result from confounding factors such as storms and flows from contaminated washes
- R9 calculating Background Threshold Values for metals in NNEPA data set

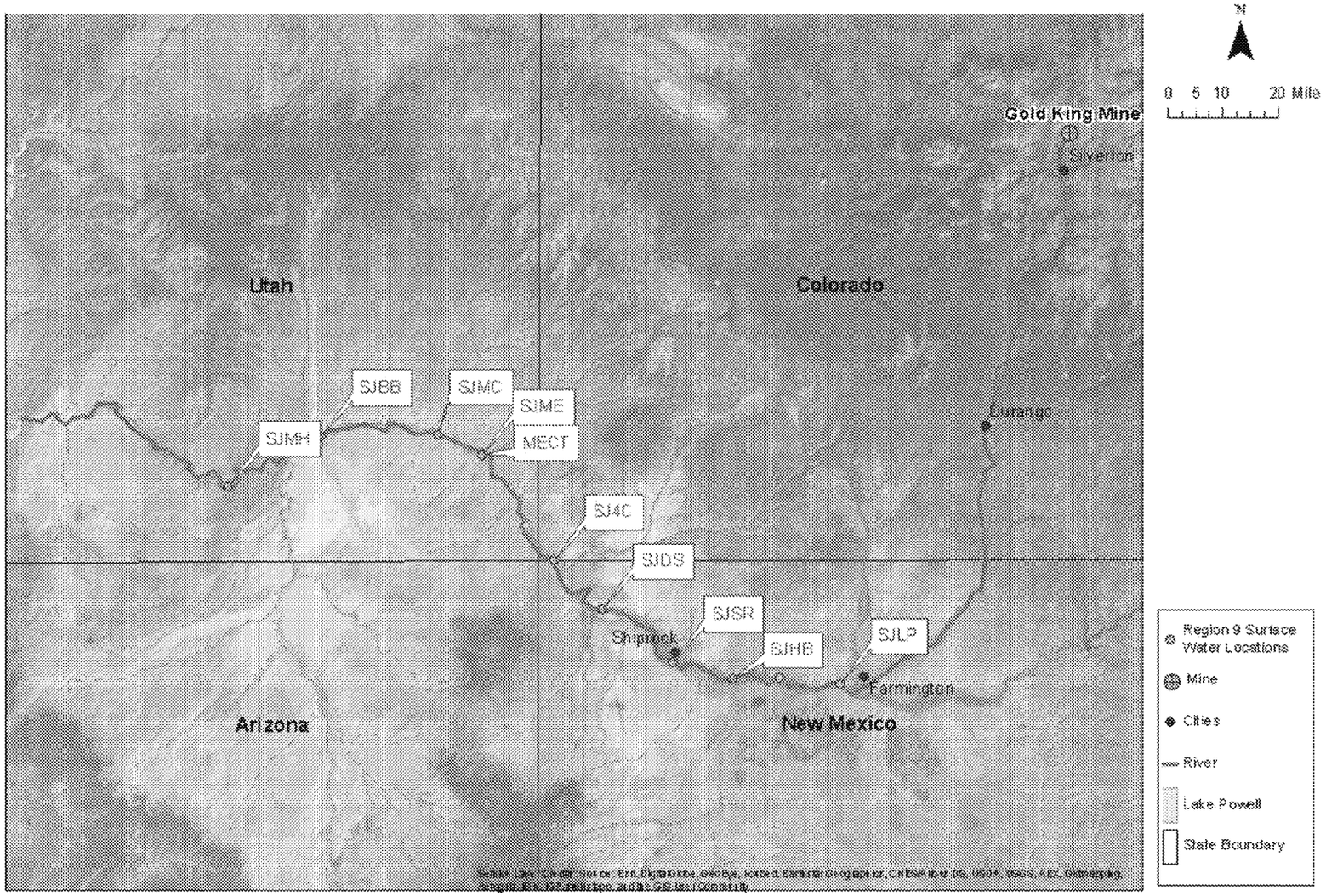
Pre-event Data Set

- Dissolved and Total metal concentrations from the San Juan River Sep 2011 – Sep 2013 used to estimate pre-event conditions
- Data collected by NNEPA and provided as part of the Navajo Generating Station permit application. Includes SW results only (no sediment).
- Total lead data ranged from ND – 330 ug/l,
  - NN Ag Screening Level: 100 ug/l
- Total aluminum ranged from 14 – 150,000 ug/l
- Dissolved aluminum ranged from ND – 4,300 ug/l,
  - NN Ag Screening level: 5,000 ug/l

Pre-event conditions

- Dissolved Aluminum and diss Iron are best predictors of the plume
  - peak on 8/11 at 4C – four corners
- Max Lead (total) result in this event was 180 ug/l (six background results at 200 or greater)
- Lead Peaks prior to expected/measured plume front on 8/11 at 4C
  - Reasons unknown but phenomenon occurred in UT data collected near 4 corners
- Max Aluminum (total) result for this event 210,000 ug/l at MH
  - Seems to have occurred *before* the plume reached MH on 8/11 (approx 70 river miles ahead of predicted plume front);
  - DS also above 150,000 *after* the plume passed that station
- Max Al (diss) result for this event 13,000 at BB & MH after the plume passed; DS at 5,400 after the plume passed

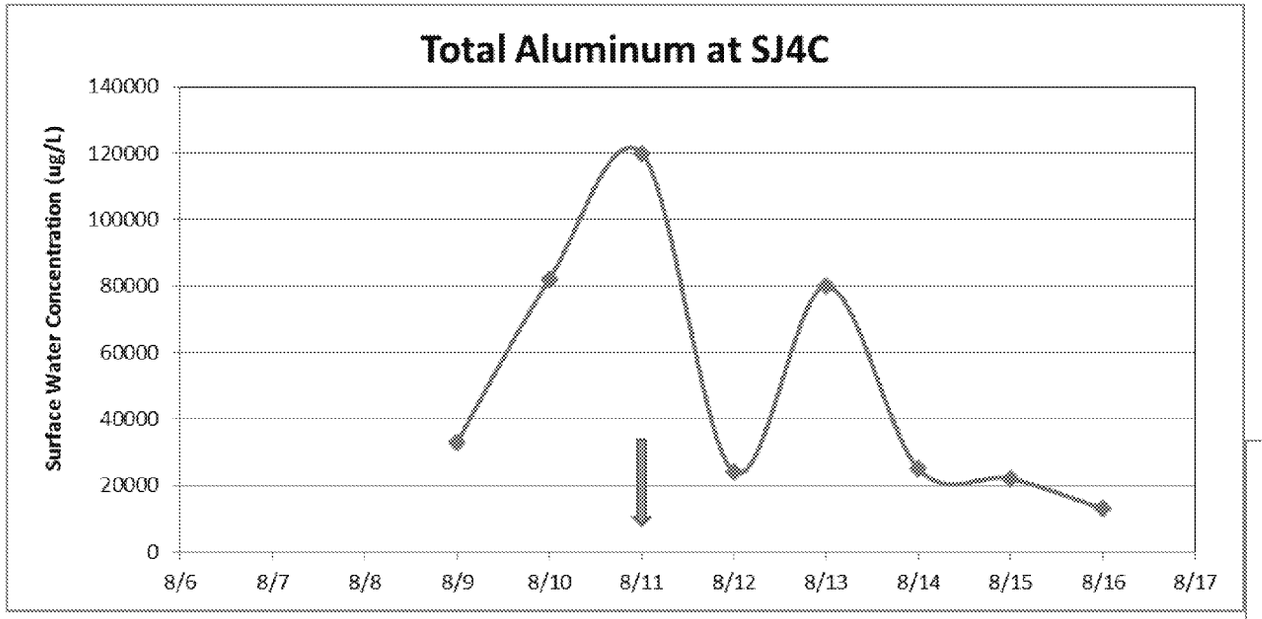
Site Map for Gold King Mine Release



SRC

EPA

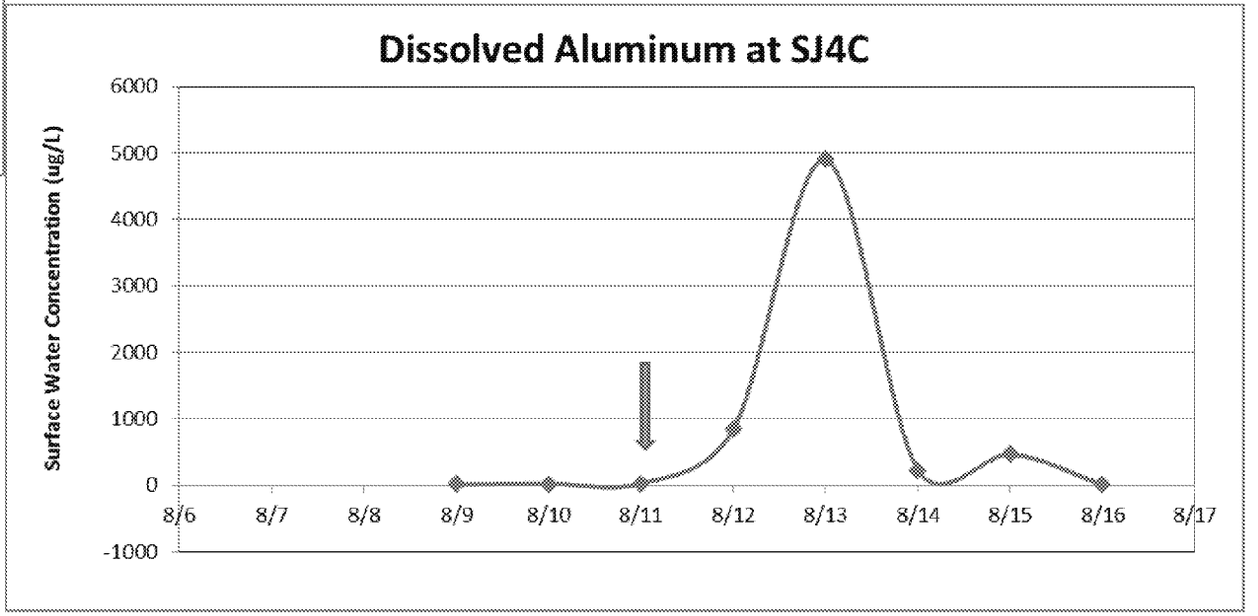
Total & Diss Al at the Four Corners Sampling Station



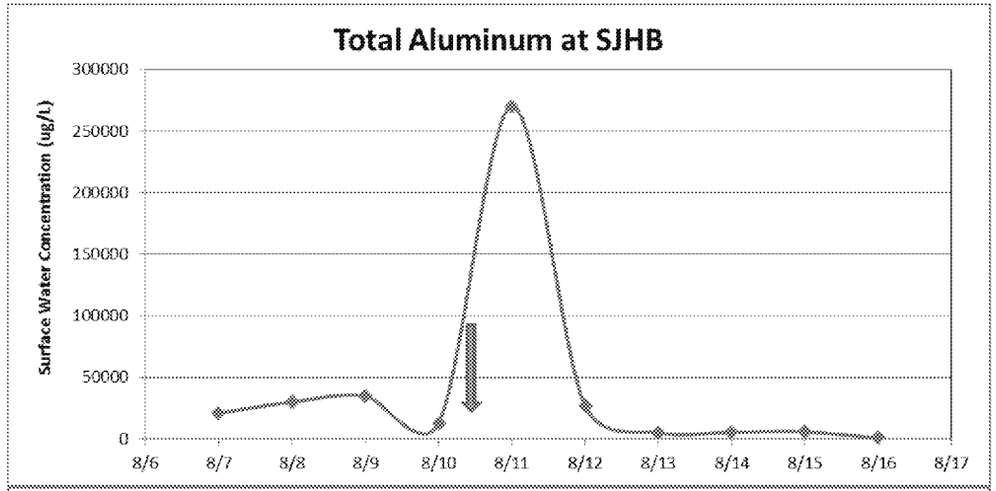
Blue arrow indicates estimated date of plume front at given location

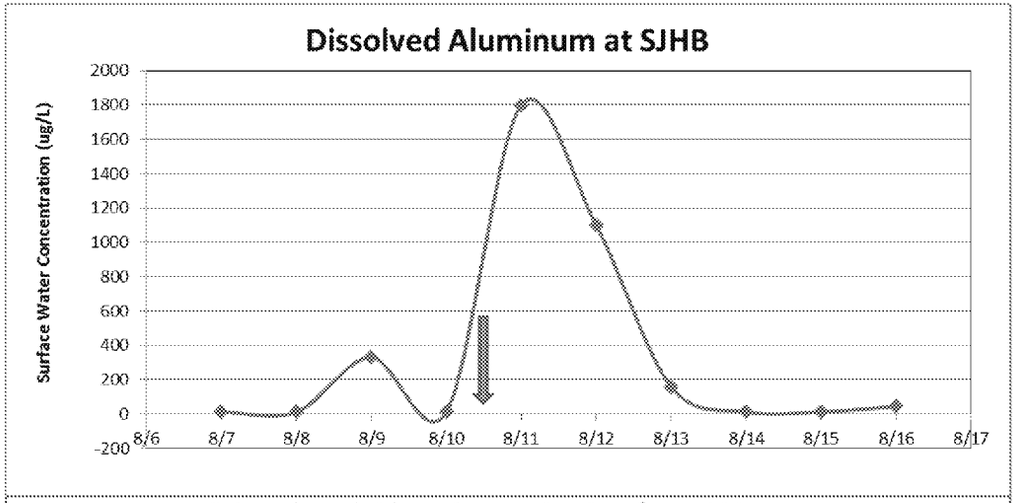
Total present in turbid waters, perhaps 1st front, dissolved may follow

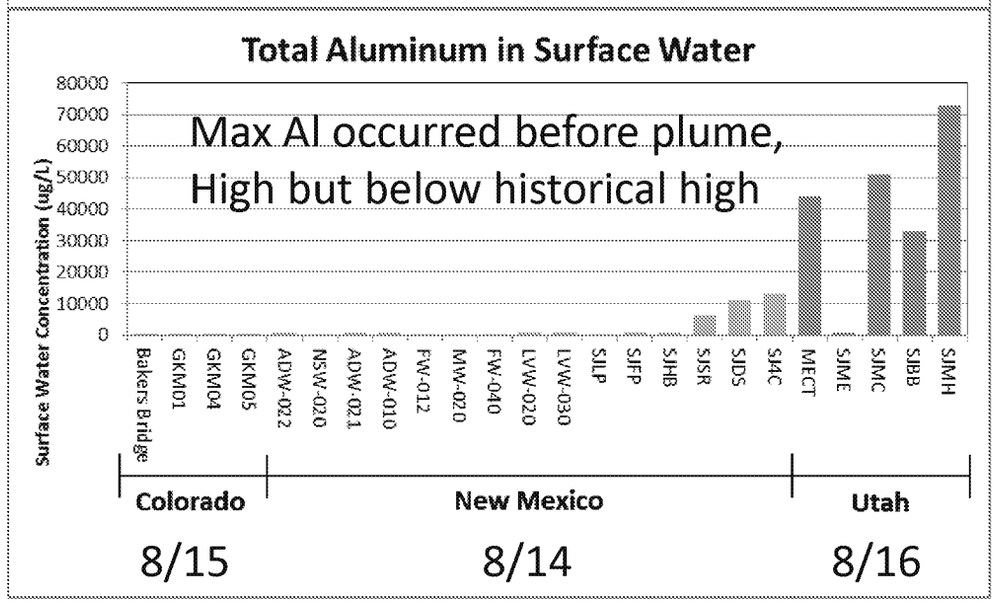
Total peaks at this location between 8/10 & 8/13
Dissolved peaks between 8/11-13
Levels remain comparable to 8/15 & 16 on 8/17 & 18 for both total (8600 – 5900 ug/l) & diss (240-1300 ug/l)

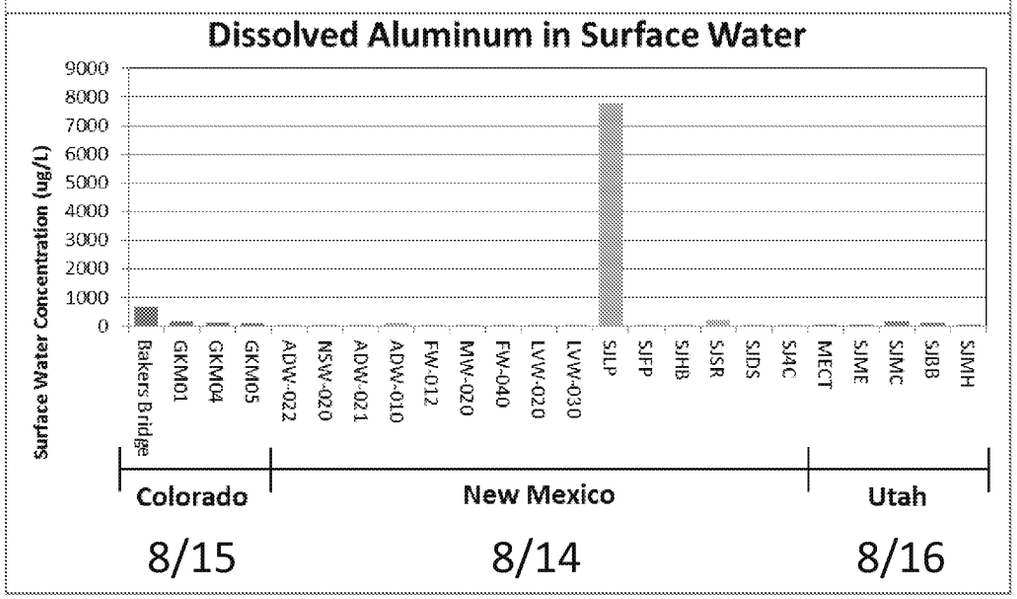


Al at upstream stations (Hogback)

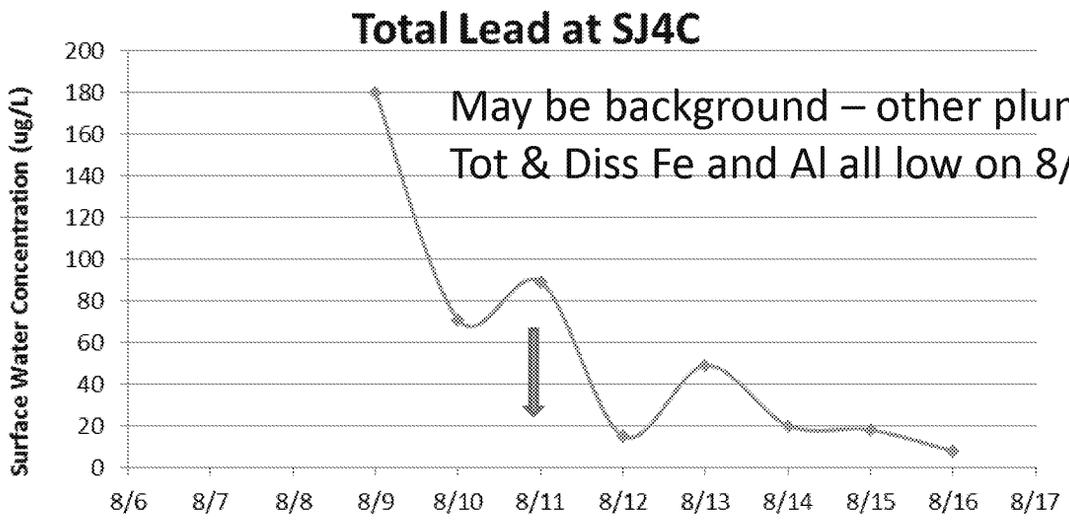






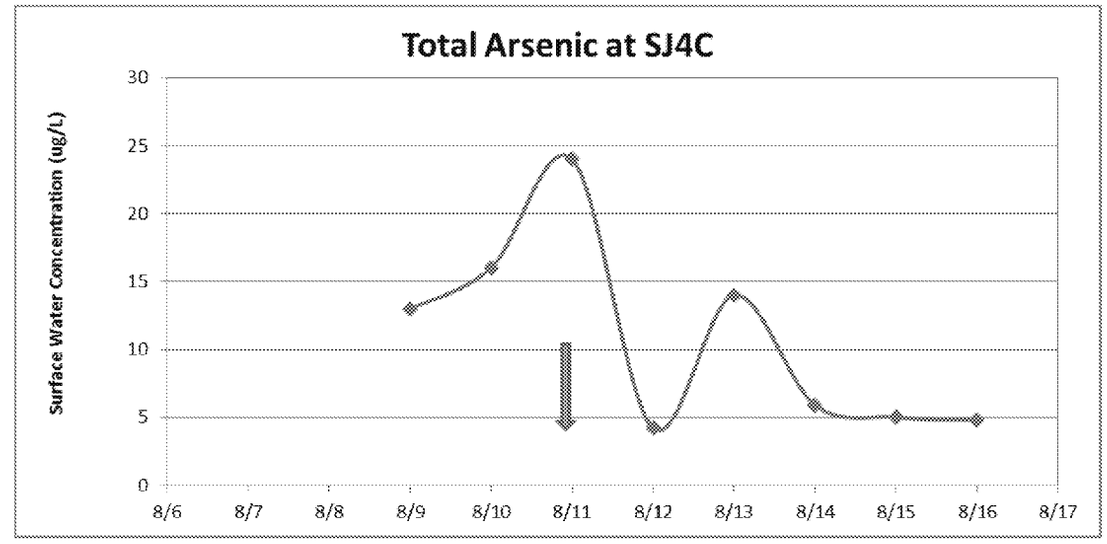


Total Lead & As at Four Corners Sampling Station

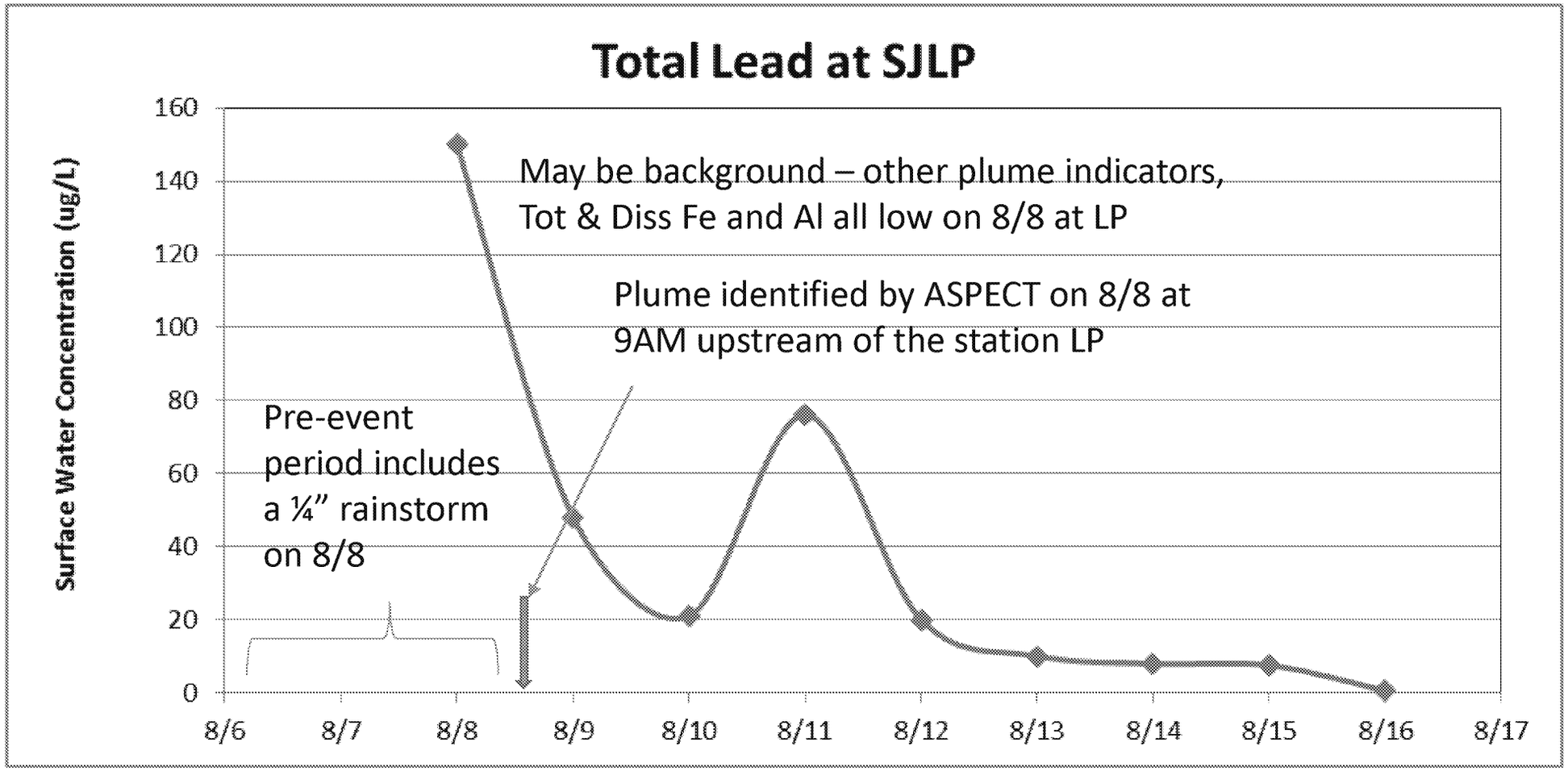


May be background – other plume indicators,
Tot & Diss Fe and Al all low on 8/8 at 4C

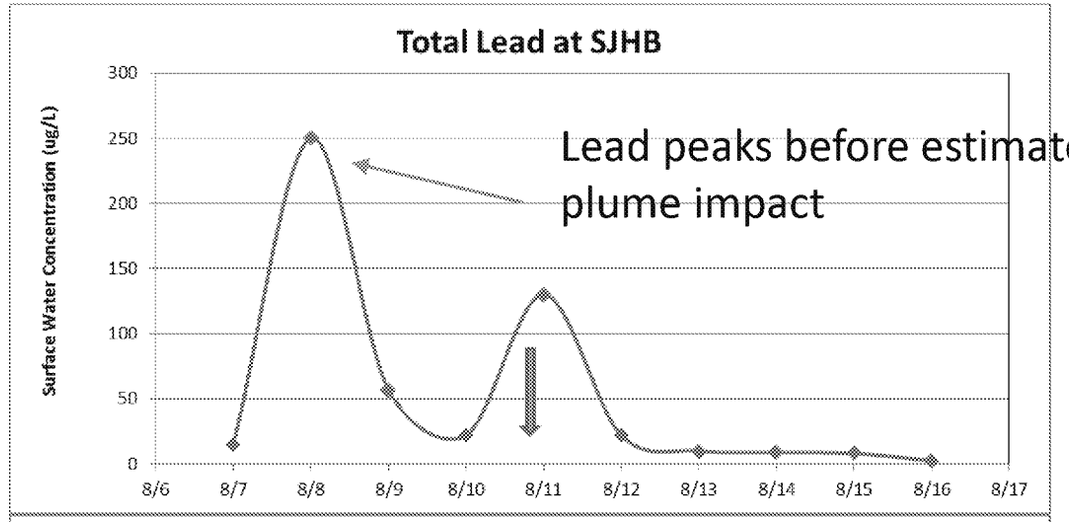
Total Pb peaks between 8/9 & 8/11
Total As peaks at this location between 8/10 & 8/13
Levels remain comparable to 8/15 & 16 on 8/17 & 18
for arsenic (2.1 – 5 ug/l) and lead (5.9 – 7.2 ug/l)

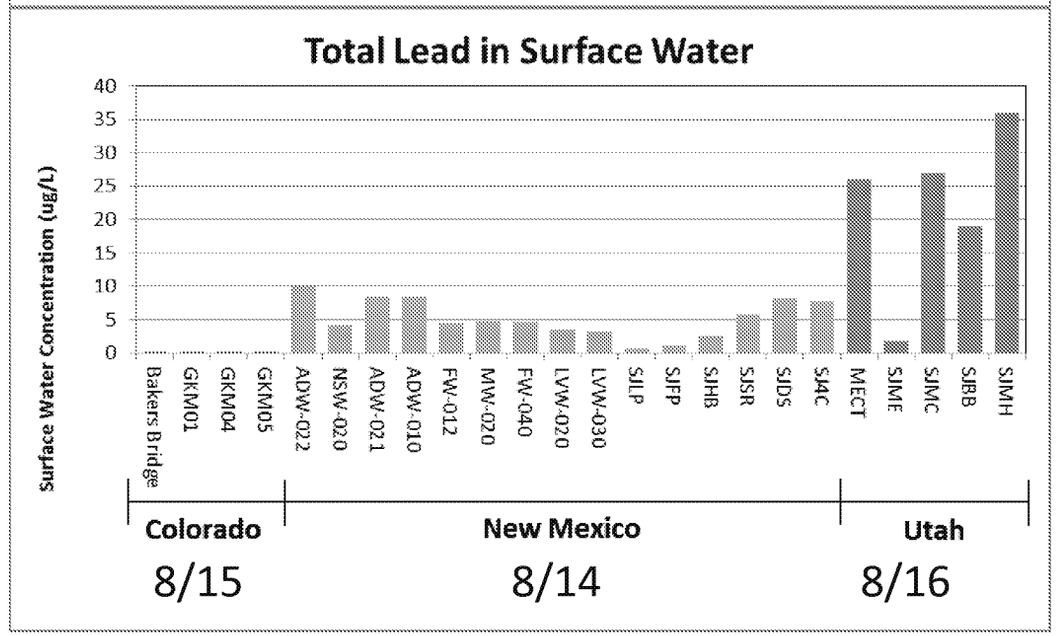


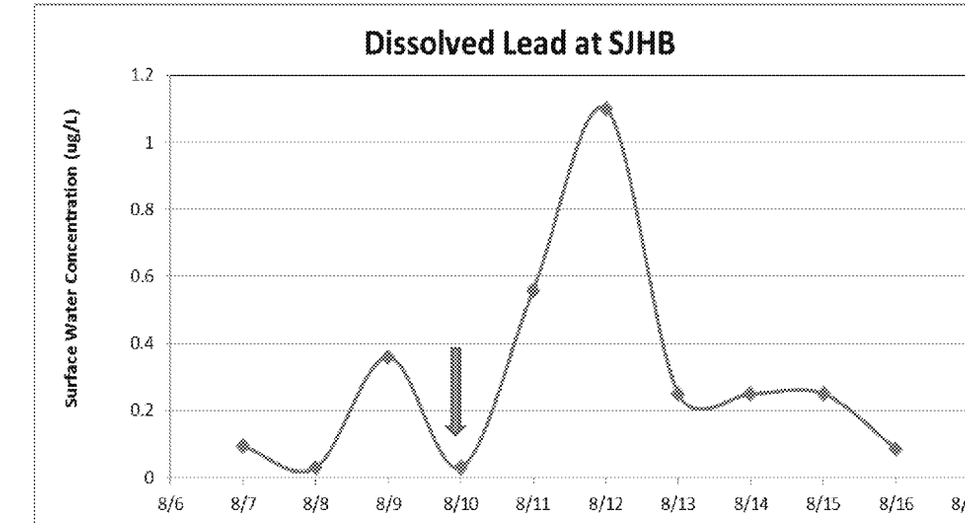
Total Lead at LP – near confluence w Animas

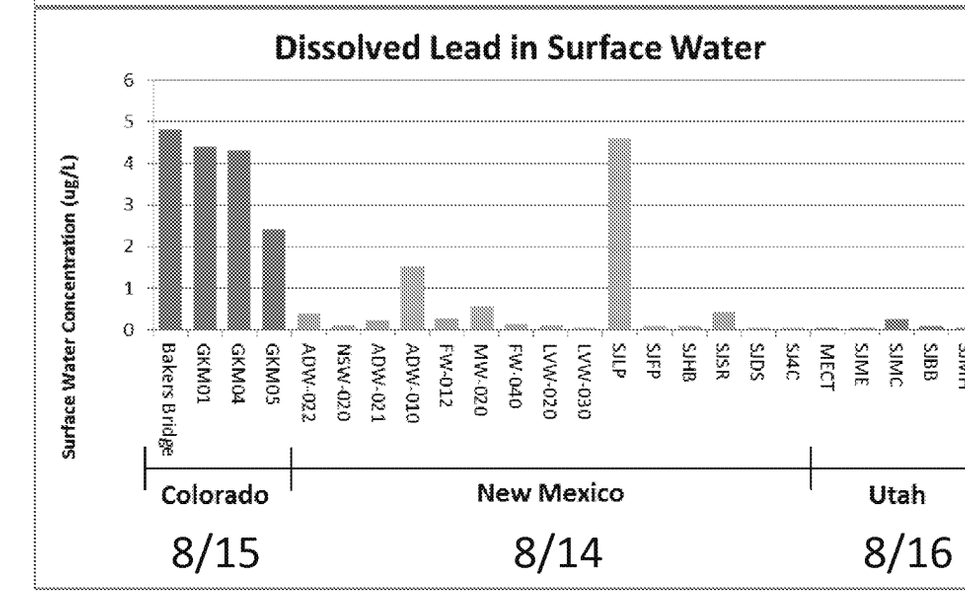


Lead at upstream stations

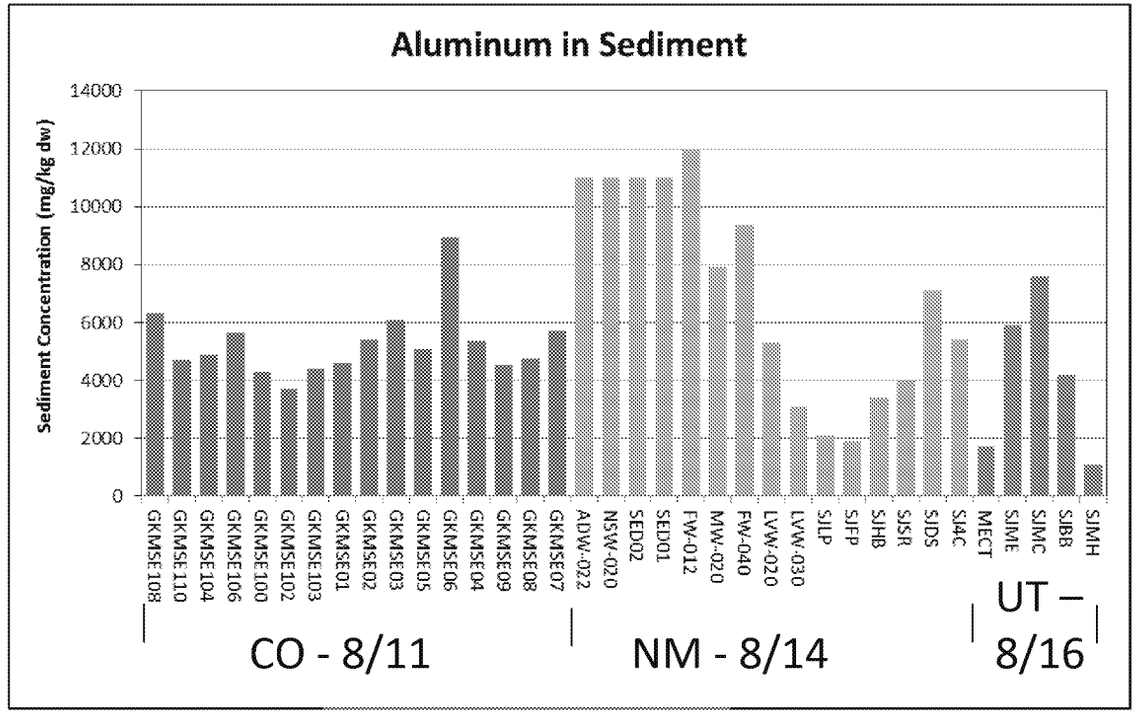
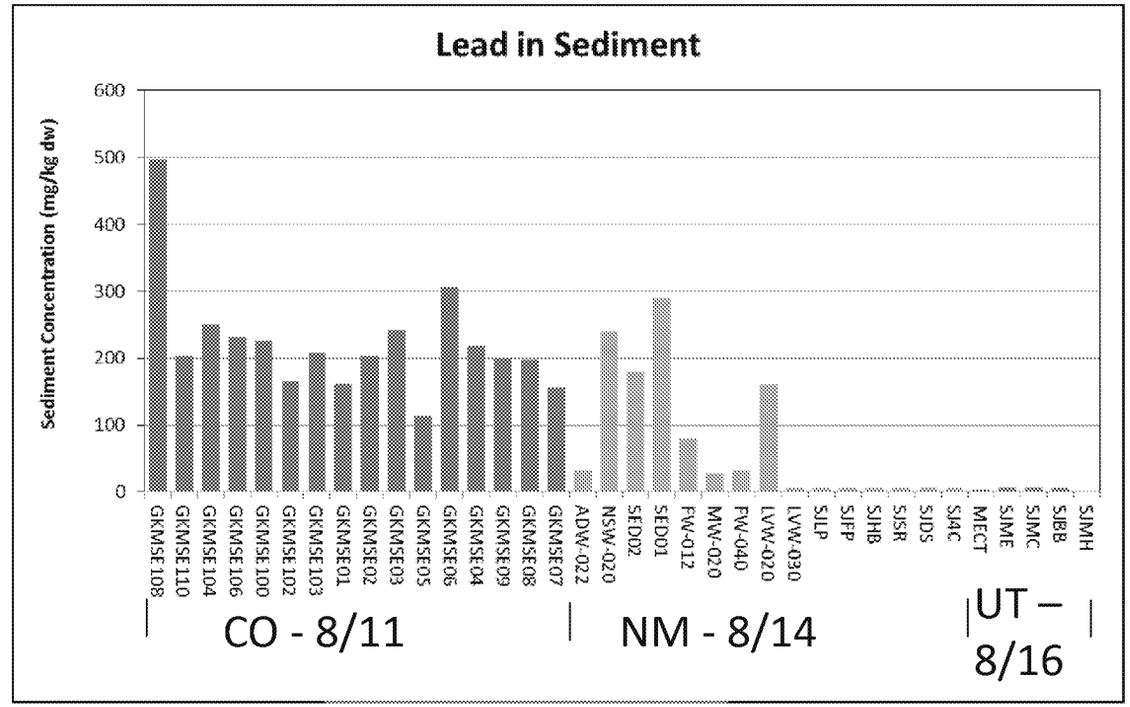








Lead & Al in sediment



All sediment results in SJR below RSLs
Al sediment results comparable
Lead results much lower in SJR than in the Animas River