



NATURAL RESOURCES DEFENSE COUNCIL
THE EARTH'S BEST DEFENSE

October 3, 2011

Administrator Lisa Jackson
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 1101A
Washington, DC 20460

Dear Administrator Jackson:

The EPA Integrated Risk Information System (IRIS) has seen many substantial improvements under your leadership. Since 2009, the program has significantly increased its output of completed assessments, improved its public transparency, and maintained its high level of scientific quality. The IRIS program has committed to go even further to improve its communication and presentation of its assessments, making them shorter, clearer, and with a more transparent presentation of the scientific rationale underpinning the scientific evaluations.¹

We are writing you today concerning EPA's pending assessment of hexavalent chromium (Cr6), which has recently been the subject of criticism from the chemical industry and its paid consultants. For its assessment of Cr6 via ingestion, EPA was correct to rely on the scientific study of the National Toxicology Program (NTP) showing in rodents that a lifetime of drinking Cr6 contaminated drinking water causes cancer of the intestine.^{2,3} Cr6 inhalation has long been known to cause cancer in humans.⁴ Despite this evidence of harm, and widespread Cr6 contamination of the nation's drinking water supply, we are concerned that chemical industry pressure is delaying the IRIS assessment of Cr6, and frustrating your ability to "address the immediate and long-term concerns over chromium-6, and ... seek to ensure that our water is safe".⁵

The chemical industry has called for EPA's assessment to be halted until new industry-sponsored studies can be completed.⁶ The industry is critical of EPA's work on a number of fronts, all with no scientific merit. We rebut these arguments here:

First, the industry is arguing that there are insufficient data to support EPA's conclusion that chromium causes cancer by DNA mutations (a mutagenic mode of action, MOA), and therefore that a safe level or threshold of exposure may exist for Cr6, below which no risk would be incurred. However, at a May 12th public meeting, the EPA expert peer review panel agreed that although a mutagenic MOA is not proved, neither could a non-linear or threshold dose-response be described with confidence based on the available data.⁷ Therefore, according to EPA's Cancer Guidelines (2005), a linear dose-response model must be employed, which presumes that there is no safe level (no threshold) of exposure to Cr6 via the oral route. This is scientifically sound, consistent with EPA guidelines, and consistent with the clear guidance of the National Academy of Sciences.⁸

Second, the industry concedes that Cr6 causes cancer, but argues that it is completely converted to harmless Cr3 in the stomach, and therefore poses no risk from drinking water. However, this argument presumes that everyone in the population has a stomach that is capable of rapidly reducing Cr6 to Cr3 prior to any contact with cells. Such an assumption is almost certainly false, because the reduction process is reliant on a very acidic gastric environment, which is not present in newborn babies and in the millions of people that take antacid medications or prescription medications to treat gastritis, ulcers, and gastrointestinal reflux disease. The California EPA considered this same industry argument about rapid reduction of Cr6 to Cr3 in the stomach, and rejected it on the basis of the widespread use of acid-reducing medications, and data on the pH of the stomach in babies.⁹ Members of the EPA expert peer review panel found these scientific arguments compelling when raised by NRDC during the May 12th public meeting, and urged EPA to consider this further.

Third, the industry is calling for EPA to stall its assessment of hexavalent chromium (Cr6) in drinking water until it can include promised but still incomplete industry-sponsored studies.¹⁰ Similar recommendations came from two members of the peer review panel, whose research is funded by the chromium industry. Drs. Joshua Hamilton and Steven Patierno are both funded by the chromium industry through ToxStrategies Inc, a consulting firm that is coordinating the industry research, and also coordinated the suite of scientists that provided public comments to the peer review panel at the May 12th public meeting. Dr. Patierno has also testified as an expert on behalf of industry in chromium litigation and presumably will again.¹¹ Dr. Joshua Hamilton is a litigation witness for PG&E, the utility responsible for the chromium ground water contamination in the Hinkley case made famous in the Erin Brockovich movie.¹² It is a common industry strategy to claim that an important new study is pending, and to demand a delay of agency action until the study is complete. In fact, science is constantly developing, and EPA cannot await the completion of every conceivable scientific study before acting to protect public health, especially when the existing science is so strong.

Interestingly, although the industry-sponsored studies are not yet done, the outcome appears to be pre-determined. An August 8th story in the beltway press, Risk Policy Report, quoted a source as saying that the upcoming study results would help industry make its case.¹³ The same source argued that the NTP study is inappropriate as a basis of risk assessment because it treated the test rodents with high doses whereas the industry studies find that Cr6 is safe at lower doses. Further, although the draft IRIS assessment provides evidence that Cr6 causes mutations of the genetic DNA, the industry studies will apparently conclude that it does not.

“Product Defense is a lucrative business”. These are the words that begin an article titled, *Don't Let Mercenaries Advise EPA on Asbestos Science* by your colleague, Dr. David Michaels, Assistant Secretary of Labor.¹⁴ The article warns EPA against appointing “product defense scientist[s]” to advisory panels, comparing it to appointing a member of the defendant’s legal team to a jury that is deciding the guilt or innocence of the defendant. It is likely that even EPA staff did not know of the conflicts of Drs. Patierno and Hamilton, because EPA’s contractor (ERG, Inc) that assembled the review panel and convened the meeting, not EPA, reviewed and retained all panel member disclosures.¹⁵ This information is now being shielded from the public; further eroding trust and transparency in the review process.¹⁶

EPA should not delay its release of the Cr6 assessment. According to the 2009 EPA Toxics Release Inventory (the most recent data available), forty-four million pounds of chromium and chromium compounds were released to the environment that year, including almost 2 million pounds into underground wells, almost ninety-nine thousand pounds as surface water discharges, and 1 million pounds into the air as fugitive and point source air emissions.¹⁷ It is not surprising that a now-functioning IRIS program has attracted significant criticism from chemical industries whose products are being scrutinized.

Chromium alloys and compounds have been in widespread commercial use for over 100 years, and have been polluting our soil and water supplies for far too long, resulting in uncountable illnesses and deaths. Industry has had plenty of time to prove its case for safety. We urge you to move ahead with finalizing the EPA Cr6 Assessment, so that water providers will have a clear mandate to reduce chromium contamination in drinking water.

Sincerely,

Jen Sass

Jennifer Sass, Ph.D. Senior Scientist, NRDC

The following health, environmental, and environmental justice groups also support this letter:

1. Autism Society of America (Donna Ferullo, Director)
2. Breast Cancer Fund (Jeanne Rizzo, RN. President)
3. Center for International Environmental Law (Daryl Ditz, Ph.D.)
4. Center for Media and Democracy (Lisa Graves, Executive Director)
5. Center for Public Environmental Oversight (Lenny Siegel, Executive Director)
6. Citizens' Environmental Coalition (Barbara Warren, Executive Director)
7. Clean Production Action (Mark Rossi, Ph.D.)
8. Clean and Healthy New York (Kathy Curtis, Executive Director)
9. Cleanuprocketdyne.org (Christina Walsh, Executive Director)
10. Clean Water Action (Lynn Thorp)
11. Connecticut Coalition for Environmental Justice (Tom Colligan, Executive Director)
12. Deep South Center for Environmental Justice (Beverly Wright, Ph.D.)
13. Don't Waste Arizona (Steve Brittle, President)
14. Edison Wetlands Association (Robert Spiegel, Executive Director)
15. Environmental Health Fund (Judith Robinson, Assoc Director)
16. Environmental Health Strategy Center (Steve Taylor, Program Director)
17. Environmental Working Group (Rebecca Sutton, Ph.D.)
18. Erin Brockovich, Inc. (Erin Brockovich)
19. Glynn Environmental Coalition (Daniel Parshley, Project Manager)
20. Hillcrest Environmental Action Team (Bruce Oldfield, Chair)
21. Healthy Child Healthy World (Rachel Lincoln Sarnoff, Executive Director)
22. Integrated Resource Management, LLC (Robert W. Bowcock)
23. Ithaca South Hill Industrial Pollution (Ken Deschere)
24. Lindon Park Neighborhood Assoc, Phoenix AZ (Mary Moore)
25. Mitchell Environmental Health Associates (Mark Mitchell, MD MPH, President)
26. New York Vapor Intrusion Alliance (Bruce Oldfield, Co-Chair)
27. NYCOSH - New York Committee for Occupational Safety and Health (Joel Shufro, Exec Dir)
28. Physicians for Social Responsibility (Peter Wilk, MD)
29. Public Employees for Environmental Responsibility (PEER, Jeff Ruch, Executive Director)
30. Science and Environmental Health Network (Ted Schettler, MD)
31. Sciencecorps (Kathy Burns, Director)
32. Steinzor, Rena. President of Center for Progressive Reform (CPR) and Professor, Univ of Maryland School of Law
33. TEDX, The Endocrine Disruptor Exchange (Lynn Carroll, Ph.D.)
34. Union of Concerned Scientists (Francesca Grifo, Ph.D.Senior Scientist)

35. WE ACT for Environmental Justice (Cecil Corbin)

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- ¹ EPA news release. EPA strengthens key scientific database to protect public health. July 12, 2011. <http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/a3fcd60838197067852578cb00666c4d!OpenDocument>
- ² U.S. EPA. IRIS Toxicological Review of Hexavalent Chromium (External Review Draft). U.S. Environmental Protection Agency, Washington, DC, EPA/635/R-10/004A, 2010. http://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=221433
- ³ National Toxicology Program Report on Carcinogens, Twelfth Edition (2011). <http://ntp.niehs.nih.gov/ntp/roc/twelfth/profiles/ChromiumHexavalentCompounds.pdf>
- ⁴ International Agency for Research on Cancer. Chromium and chromium compounds. Volume 49 (1990). <http://www.inchem.org/documents/iarc/vol49/chromium.html>
- ⁵ Lisa Jackson. Addressing chromium-6 in our drinking water. December 23, 2010. Huff Post Green. http://www.huffingtonpost.com/lisa-p-jackson/post_1479_b_800966.html
- ⁶ Calls Mount for EPA to Stall Cr6 Risk Assessment Pending Industry Study. Jenny Hopkins. Risk Policy Report, August 8, 2011.
- ⁷ EPA peer review panel workshop on the draft assessment for Hexavalent Chromium. Arlington, VA. May 12, 2011. http://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=221433
- ⁸ Science and Decisions: Advancing Risk Assessment. Committee on Improving Risk Analysis Approaches Used by the U.S. EPA, National Research Council (2009). National Academies Press, Washington D.C. ISBN: 0-309-12047-0.
- ⁹ Final technical support document on public health goal for hexavalent chromium in drinking water. Cal OEHHA. July 29, 2011. p.78-79. <http://oehha.ca.gov/water/phg/072911Cr6PHG.html>
- ¹⁰ Calls Mount for EPA to Stall Cr6 Risk Assessment Pending Industry Study. Jenny Hopkins. Risk Policy Report, August 8, 2011.
- ¹¹ Testimony of Dr. Steven R. Patierno, before the U.S. Senate Subcommittee on Environment and Public Works: Full committee hearing entitled, "Oversight hearing on the Environmental Protection Agency's implementation of the safe drinking water act's unregulated drinking water contaminants program. Tuesday, July 12, 2011. http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=09c4210a-f6ef-4632-bd11-377fcd07249e
- ¹² Declaration of Joshua Hamilton, July 9, 2011. http://www.swrcb.ca.gov/rwqcb6/water_issues/projects/pge/docs/cmmnts/hamilton.pdf
- ¹³ Calls Mount for EPA to Stall Cr6 Risk Assessment Pending Industry Study. Jenny Hopkins. Risk Policy Report, August 8, 2011.
- ¹⁴ Michaels D. Don't let mercenaries advise EPA on asbestos science. The Pump Handle, May 17, 2007. <http://thepumphandle.wordpress.com/2007/05/17/dont-let-mercenaries-advise-epa-on-asbestos-science/>
- ¹⁵ NRDC filed a request under the FOIA for Patierno's disclosure forms, but was denied because they are solely reviewed and retained by the contractor, not EPA staff. NRDC is not appealing the denial. HQ-FOI-01641-11
- ¹⁶ NRDC filed a request under the FOIA for Patierno's disclosure forms, but was denied because they are solely reviewed and retained by the contractor, not EPA staff. NRDC is now appealing the denial. HQ-FOI-01641-11
- ¹⁷ TRI On-site and Off-site Reported Disposed of or Otherwise Released (in pounds), for facilities in All Industries, for chromium and chromium compounds, US 2009. http://www.epa.gov/cgi-bin/broker?view=USCH&trilib=TRIQ0&sort=_VIEW_&sort_fmt=1&state=All+states&county=All+counties&chemical=007440473&chemical=N090&industry=ALL&year=2009&tab_rpt=1&fld=RELLBY&fld=TSFDSP&_service=oiaa&_program=xp_tri.sasmacr.tristart.macro