

Sediment Laboratory Chief Meeting
March 28, 2011, 8:15 a.m. -5:45 p.m. EDT
Tampa Waterside Marriott Hotel and Marina
Tampa, Florida

These summaries/recommendations relate to six of the issues presented at the USGS National Sediment Laboratory Workshop, March 28, 2011, held as prelude to March 29-April 1 Office of Surface Water National Surface Water Meeting. This workshop was the fourth since 1991, held on an approximately 7-year cycle; the preceding three are listed below:

1. **1991:** Reference is made OSW Technical Memorandum 91.11 to upcoming sediment laboratory training in Iowa City, Iowa (<http://water.usgs.gov/admin/memo/SW/sw91.11.html>).
2. **1998:** This workshop was held in Baton Rouge, Louisiana. Results were codified via a website (<http://water.usgs.gov/osw/techniques/USGSsedlab98.html>), and as OSW Technical Memorandum 99.04 (<http://water.usgs.gov/admin/memo/SW/sw99.04.html>)
3. **2004:** This workshop was held in Louisville, KY. No summary was distributed from this workshop.

A list of participants and the agenda for the 2011 workshop appear in appendix A.

Summaries of each of 11 topics considered pertinent to USGS sediment laboratories were drafted and posted for review by all prospective participants' weeks before the workshop. Those 11 topical summaries are available by clicking on the title below

- [Sediment Laboratory Review](#)
- [Certification of Sediment Laboratory Chiefs and Reviewer](#)
- [Laboratory Needs and Concerns](#)
- [Laboratory Services Matrix](#)
- [OSW Webpage Updates/Concerns](#)
- [Information Sheet for MYUSGS](#)
- [Future of the Sediment Laboratory Environmental Data System \(SLEDS\)](#)
- [SedLOGIN and SLEDS](#)
- [QW Data Sediment Parameter Codes](#)
- [FISP Workgroup](#)
- [Laboratory Chief Meeting Presentation](#)

These topics and other discussions led to drafting of a dozen issue statements with associated recommendations. Those appear in the ensuing pages.

Summaries and Recommendations from the USGS Sediment Laboratory Workshop, March 28, 2011, Tampa, Florida

I. ISSUE: OSW website—sediment section and updates that are needed

Background (see: <http://water.usgs.gov/osw/techniques/sediment.html>): The “USGS Water Discipline Sediment Laboratories” section of the public OSW Fluvial Sediment web page is an important information link to the sediment community that needs to be current and relevant. Issues include:

1. Information currently on the page is out-of-date.
2. A mechanism and Point of Contact (POC) are needed to keep the site current.

Recommendations:

- Designate John Gray (OSW) as the POC for the “**USGS Sediment Laboratories**” section of the public OSW Fluvial Sediment web page and make the OSW responsible for all updates.
- Have Aimee Downs scope out an updated design and content for the page based on feedback received from lab chiefs and customers.
- Provide a link to each of the external Sediment Laboratories pages. It will be the responsibility of each Laboratory Chief to maintain and update this page. A template will be provided to assist in consistency.
- Each Laboratory should provide an internal and external page. The internal page will provide such content as services provided, cost, and contact info. A Quality Summary Report based on the SLQA and the Laboratory Review would be included on the web page.

I. ISSUE: Sample Tracking for customers of the USGS Sediment Laboratories

Background: The USGS operates eight Sediment Laboratories across the country. A wide variety of analyses are performed at these laboratories that can take between two and eight weeks to complete. The need exists for the Laboratory customers to track their samples as they move through the lab operation.

Recommendations:

- All USGS Sediment Laboratories are encouraged to provide this information in a maximally consistent, efficient, and timely manner to their customers.
- Consider using the MyUSGS application/template developed by Aimee Downs, Kentucky Laboratory chief.

II. ISSUE: Certification of USGS Sediment Laboratory Chiefs

Background:

- This subject has been addressed in OSW Tech. Memo 91.11 (Certification Training for Sediment Laboratories); and 98.05 (A National Quality Assurance Program for Sediment Laboratories Operated or Used by the Water Resources Division).
- Perceived difficulties holding all-hands training due to future fiscal restraints seems to render that requirement (expressed in 91.11) intractable. Additionally, sediment lab meetings have been held on less-than the desired 3-year cycle (1992; 1998; 2004; 2011).
- The advent of the national Sediment Laboratory Quality Assurance (SLQA) Program (<http://bqs.usgs.gov/slqa/>) in the later 1990's has provided a results-based performance assessment of participating sediment labs, which is an indirect evaluation of sediment lab chiefs.
- The 8 operating USGS production sediment laboratories are the only sediment laboratories approved to produce sediment and ancillary data for storage in the National Water Information System. The CA WSC laboratory in Marina is currently without an experienced/certified laboratory chief following the 2011 retirement of Allan Mlodnosky.

Recommendations:

1. Require a new/incoming sediment laboratory chief to have worked in a sediment laboratory (one that performs all of the analytical procedures as the home lab) for at least one year.
2. Require a new/incoming sediment laboratory chief to train for a cumulative five days in another laboratory under the tutelage of a certified sediment laboratory chief within three months of becoming the sediment lab chief.
3. Require within the first year of becoming a sediment laboratory chief to accompany a certified sediment lab reviewer on an external OSW sediment lab review if the new/incoming chief has not previously participated in such a review.
4. Continue the requirement for laboratory chiefs to participate in periodic meetings of sediment laboratory personnel.
5. Enable variations from these procedures to certify a sediment laboratory chief by written request to the Office of Surface Water.

III. ISSUE: Certification of USGS Sediment Laboratory Reviewers

Background:

- This subject has been addressed in OSW Tech. Memo 98.05 (A National Quality Assurance Program for Sediment Laboratories Operated or Used by the Water Resources Division).
- There are currently seven Certified Sediment Laboratory Reviewers: Miya Barr, MO; Kent Dodge, MT; Aimee Downs, KY; Dan Gooding, CVO; Cheryl Joseph, LA; Julie Nason, IA; and Jessica Stiles, NM (note that each certified lab reviewer is qualified only to review methods performed in their home laboratories unless convincing evidence of proficiency can be produced for other analytic methods).
- Other lab personnel who have worked for years in some sediment labs, such as Marlon Johnson, LA; and Arlene Sondergaard and Kate Norton, CVO, might be considered

Recommendations:

1. Identify experienced laboratory personnel considered to be sufficiently proficient at their duties that might be nominated to participate in an OSW sediment lab review as an understudy to a Certified Sediment Lab Reviewer.
2. Require a new/incoming Sediment Lab Chiefs to understudy in an OSW sediment lab review in the first year of her/his tenure.

IV. ISSUE: Reviews of Sediment Laboratories Providing Data to the NWIS

Background:

- This subject has been addressed in OSW Tech. Memo 98.05 (A National Quality Assurance Program for Sediment Laboratories Operated or Used by the Water Resources Division).
- A standard check-list form is available to aid in reviews; however, the form might be somewhat out-of-date.
- All labs that analyze data for storage in the NWIS must (a) be reviewed on a 3-year cycle, and (b) participate in the SLQA Program.

Recommendations:

1. Form a workgroup to evaluate the standard lab review form and update it for posting on the OSW website and for use. The workgroup is led by Kent Dodge with Cheryl Joseph, Miya Barr, Aimee Downs, and Julie Nason.
2. OSW and BQS collaborate to list all labs providing data for storage in NWIS, and verify that they are being reviewed on a triennial basis, and are performing adequately in the SLQA Program.

V. ISSUE: Sediment Lab Services, Techniques, and Websites

Background:

- In the 2004 National Sediment Lab meeting, a recommendation was made for each lab to maintain its own website (some of them had websites in 2004) and for OSW to link to them.
- Some level of standardization of information is sought: Services, personnel, location, contact info, and results from the SLQA Program for that lab.
- Software non-extant in 2004, such as my.usgs.gov, might be used as a ‘tie-together’ for sediment lab information.
- Interest in developing training video of sediment-lab procedures was expressed. Such training videos could range from formal (see, for example, Introduction to Suspended-Sediment Sampling, SIR 2005-5091) to informal, which might be placed on You Tube once vetted among USGS sediment lab chiefs and OSW.

Recommendations:

1. Accept Aimee Downs gracious offer to “sort out” sediment lab website issues. This might include developing a “matrix of sediment lab services” that would include potential-customer-centric information from the 8 production USGS sediment labs (and other labs?).
2. Accept Miya Barr’s gracious offer to be a focal point for development of laboratory technique training videos.

VI. ISSUE: SedLOGIN

Background:

- SedLOGIN was released in February, 2010, and has been well used since then. Since inception, 61 users have submitted samples for 97 projects, totaling 19,474 samples (as of May 10, 2011).
- SedLOGIN does not interface well with PCFF or other field computing software. It also does not serve sediment samples of the type, “Water-quality samples with suspended sediment concentration”.

Recommendations:

1. Pursue building a software connection between PCFF and SedLOGIN, so PCFF can transfer water-quality sample information to SedLOGIN, including the sample details needed for a suspended sediment concentration analysis as part of a wider water-quality sample.
2. Form an ad hoc subgroup to elicit requirements for such a connection between PCFF and SedLOGIN: The subgroup is composed of Ken Skach, Kent Dodge, Yvonne Stoker, and Stan Skrobialowski.

VII. ISSUE: Need to Update the Form for Reviewing the Performance of Sediment Laboratories

Background:

- Certified Sediment Lab Reviewers use a standard checklist-format form as part of their reviews. The form formerly under: <http://water.usgs.gov/osw/techniques/sediment.html> is dated April 8, 2005, and is in need up updating.

Recommendation:

1. Form a workgroup to review and update the subject form. The workgroup, lead by Kent Dodge, is composed of Cheryl Joseph, Aimee Downs, and Julie Nason.
2. Replace the old form with the revised one under:
<http://water.usgs.gov/osw/techniques/sediment.html>

VIII. ISSUE: Set and Event average data entered into NWIS from SLEDS.

Background:

Set and Event average data with the wrong date.

1. Samples affected:

Samples processed in 2010 and 2011, entered into SLEDS with SedLOGIN, using SLEDS version 5.71.

2. Problem:

The sample date for the set average and the event average are off by 10 years.

Samples from 2010 are dated 2000 and samples from 2011 are dated 2001.

Recommendations:

- The samples are identified and their dates corrected in SLEDS during the installation of SLEDS version 5.72. The samples can be retrieved in SLEDS Reports using the big search list, 'SedLOGIN date correction'. A report can then be generated with the correct station and dates which can be used to determine the identity of the samples that need to be removed from NWIS.

IX. ISSUE: Set and Event average values entered into NWIS calculated with the wrong formula.

Background:

- Samples affected:

Samples processed in 2010 and 2011, entered into SLEDS with SedLOGIN, using SLEDS version 5.71.

- Problem:

Some of the averages were calculated using the wrong formula.

Recommendations:

- All of the samples from the events containing these averages need to be updated in SLEDS to calculate the correct average values. These samples are identified in SLEDS during the installation of SLEDS version 5.72 and can be retrieved using the big search list, 'SedLOGIN update'. Once retrieved in SLEDS Reports they can be updated using the Update button. Then an NWIS report can be generated for use with QWDX with the corrected values. Since the incorrect values were stored in NWIS with the wrong dates, these average values are not technically being updated in NWIS but rather being entered for the first time.

X. ISSUE: Values entered into NWIS with the wrong parameter and/or method code

Background:

- Samples affected:

Particle size samples of Bed material wet sieved.

- Problem:

Until recently, the necessary parameters for wet sieved particle size did not exist. Thus there was no way to enter them into NWIS. Some wet sieved samples were being called dry sieve so that they could be entered into NWIS. In 2009, starting with SLEDS version 5.70 the blank method was used with the parameter code for bed material dry sieved for bed material wet sieved samples.

Recommendations:

- The necessary parameter codes for bed material wet sieved samples have been added to NWIS for the normal phi sizes. In the short term, these parameter codes could be used for current wet sieved samples. Also samples from 2009 to 2011 stored in bed material dry sieved parameters but with the blank method code could be moved to wet sieved parameters. They still would have the blank method code since there are no other method codes for these parameters.
- For the long term, there should be a set of parameter codes for bed material sieve diameter that does not mention the method in the name and there should be two methods: dry sieve and wet sieve. As soon as the proper parameter and method codes are created new samples can use them and later perhaps older samples can be converted.

XI. ISSUE: NWIS switching to Oracle – How is SLEDS affected

Background:

- SLEDS uses the Ingres database and the OpenRoad graphical user interface for the program. This software has been available because of its use by NWIS. Without NWIS support, the software may become too expensive, although rewriting SLEDS in other software may be too expensive.
- A June 17, 2011, email, Ken Skach, sheds some light on what may be a predicament confronting laboratories using the SLEDS software. It is reproduced as follows:

“Dan, Bill, and John,

I heard back from Chip Nickolett, an Ingres sales rep. Their support packages for Ingres are basically \$10,000 per CPU, per year. Our current version of Ingres (9.1.2) will soon be considered "old", and will therefore cost \$15,000 per CPU, per year, beginning January, 2012. If we upgraded to Ingres 9.2, the cost would again be only \$10,000 per CPU, per year. He also said something about GSA pricing could probably save us 15% savings on this, for a cost of \$8,500 per CPU per year.

I think that, except for CVO, our SLEDS hosts are the same as the NWIS hosts in the sed-lab WSCs. Here are the actual CPU counts of the current NWIS hosts:

CA	placer.wr.usgs.gov	4 cpus
MO	ss01dmorll.er.usgs.gov	4 cpus
KY	kys1dkylsv.er.usgs.gov	4 cpus
LA	fs5dlabrg.er.usgs.gov	4 cpus
NM	pyrite.cr.usgs.gov	4 cpus
MT	s5dmthln.cr.usgs.gov	2 cpus
IA	srv1diaiwc.cr.usgs.gov	2 cpus
CVO	to be determined	?

=====
24 + CVO's (either 26 or 28, total)

So, it looks like supporting Ingres on the existing CPUs would cost \$221,000 - \$238,000 per year (with GSA discount). Susan Trapanese pointed out that we could consider running Ingres in an UNSupported way, to save these costs. There are risks associated with that. This seems to be an issue for OSW management to weigh in on.

An additional issue: Most Water Science Centers will soon be buying new computers to run NWIS with Oracle. Will SLEDS be ported to run on THOSE new machines, with both Ingres running (for SLEDS) and Oracle running (for NWIS)? Or will SLEDS ask the existing 7 WSCs to "keep" their existing Sun Solaris machines, to continue to run Ingres and SLEDS? If those machines are kept for the sole purpose of SLEDS, will there be costs to maintain the machine? Bill and Dan, you probably have some idea of what this costs, because your Sun at CVO is not really an NWIS host, right?"

Recommendations:

- NWIS plans for future support of Ingres and alternate software need to be researched and resolved well in advance of the October 1, 2012, deadline for conversion.
- An informal workgroup should be formed to accomplish this end.

**Appendix A: Attendees and Agenda, Sediment Laboratory Chief Meeting--Tampa, FL
March 28, 2011, 8:15 a.m. -5:45 p.m. EDT**

Attendance					
<u>Attendee</u>	<u>Organization</u>		<u>Attendee</u>	<u>Organization</u>	
Miya Barr	MO WSC		Mark Landers	FISP	
Cheryl Joseph	LA WSC		Julie Nason	IA WSC	
John Gray	OSW		Bill Johnson	CVO	
Aimee Downs	KY WSC		Ken Skach	OR WSC	
Dan Gooding	CVO		Yvonne Stoker	OWQ	
Terry Heinert	MT WSC		Larry Freeman	CA WSC	
Kent Dodge	MT WSC		George Ritz	BQS	
Doug Glysson	OWQ		Stan Skrobialowski	OWQ	
Agenda					
0815-0830	Shuffle in, Get Seated	Y'all			
0830-0900	Intro and Welcome	John/Cheryl/Miya			
0900-0940	BQS/SLQA tests	George Ritz			
0945-1025	OSW Sediment Laboratory Website			Aimee Downs	
1030-1050	Break				
1050-1115	Sediment lab reviews			Miya Barr	
1115-1130	Certified Sediment Lab Reviewers			John Gray	
1130-1200	Emerging technology for lab analyses			Dan Gooding	
1200-1300	Lunch				
1300-1340	MyUSGS for sediment lab use			Aimee Downs	
1340-1410	FISP presentation			Mark Landers	
1410-1430	Break				
1430-1500	Future of SLEDS			Bill Johnson/Dan Gooding	
1500-1540	SedLOGIN			Ken Skach	
1540-1610	Laboratory needs and concerns			Cheryl Joseph	
1610-1730	Discussion -- Topics Off the Floor			All	
1730-1745	Wrap-up and Conclusion			John/Cheryl/Miya	