Semiannual Update on the Status of Los Alamos National Laboratory Environmental Surveillance Activities
Environmental Monitoring Programs Governed by State/Federal Permits

Environmental Monitoring Program	DOE/LASO POC LANL POC	Governing Document Containing Scope of Environmental Surveillance Activities	LANL Web Location of Governing Document	Updates to Program during 10/01/11–03/31/12	Stakeholder Concerns, Data Trends, and/or Assessment Results. Required Program Changes	Summary of Upcoming Monitoring Activities
Radionuclide NESHAP (stack emissions monitoring)	DOE/LASO POC: Steve Fong LANL POC: David Fuehne, ENV-ES	ENV-ES-RN R6, January 27, 2011, QAPP for the Rad-NESHAP Compliance Team	http://int.lanl.gov/training/env-courses/56169/env-es-rn.pdf	1. Series of elevated emissions measured at TA-21 MDA B; communications with project, LASO, & EPA Region 6 followed. Rolling 12-month total dose = 3.1 mrem. 2. 2010 annual emissions report to EPA submitted in June 2011. Off-site dose for 2010 operations was 0.33 mrem; EPA limit for Lab as a whole is 10 mrem.	1 Team is addressing findings from 2011 assessment; upgrading the stack flow tracking program and stack sample system documentation packages. 2 Team is working with FOD reps to prepare for two new rad stacks for operations; TA-54-375 and RLUOB. 3. Working with RLWTF representatives to address Rad-NESHAP needs for new LLW facility.	1. Existing routine monitoring is ongoing at 28 radionuclide stacks and 1 beryllium stack. 2. New radiological monitoring at TA-3-141 (Beryllium Tech. Facility) to accommodate DU operations is on hold.
AIRNET (environmental monitoring for radioactive air contaminants)	DOE/LASO POC: Cassandra Begay LANL POC: Andrew Green, ENV-ES	EP-WES-SOP 5140, R1, 03/10/11, AIRNET - Quality Assurance Project Plan for the Radiological Air Sampling Network	http://int.lanl.gov/training/v-courses/56614/SOP-5140.pdf	None	With the cessation of digging operations at MDA B and all operations at TA-21, dedicated coverage of these activities has been reduced significantly.	1. Ongoing operation of 21 compliance stations, 4 background stations, and 16 surveillance stations 2. No additional stations planned at present.
NPDES Industrial Point Source Monitoring	DOE/LASO POC: Gene Turner LANL POC: Marc Bailey, ENV-RCRA	1. Locations, analytes, frequencies: LANL NPDES Outfall Permit No. NM 0028355, 08/01/07 2. QA/QC samples: ENV-RCRA-QAPP-NPDES IPSP, R4 (03/04/08),QAPP for the NPDES Industrial Point Source Permit (IPSP) Self-Monitoring Program	1. http://www.lanl.gov/environment/h2o/docs/NM0028355_NPDESPermitMod_070717.pdf 2. http://int.lanl.gov/orgs/env/rcra/docs/qa/ENV-RCRA-QAPP-NPDES_IPSP-R4.pdf		LANL's NPDES Point Source Self-Monitoring Program demonstrates protection of water quality by complying with NPDES Permit No. NM0028355 (Clean Water Act) and the New Mexico Water Quality Standards for Interstate and Intrastate Surface Waters (NMAC 20.6.4). Compliance is demonstrated through required monitoring and reporting of analytical results including exceedances to the permitting authority, EPA Region 6 in Dallas, Texas. 1. Effluent exceedances of NPDES permit limits (09/14/11–03/13/12): • TRC at the LANSCE cooling tower (09/26/11) • Total copper at the NHMFL cooling tower (12/12/11) 2. NPDES Permit No. NM0028355 expires 07/31/12. Permit reapplication submitted to EPA Region 6 and NMED-SWQB on 02/02/12. 3. LANS requested the withdrawal of the permit application for an NPDES permit covering three springs to be treated for HE contamination (Permit No. NM0031054). 4. TA-50 RLWTF has not discharged to Outfall 051 since November 2010 and continues to evaporate effluent. Toxicity study to restore hardness to RLW effluent began in December 2011. Preliminary results (five samples, December 2011–February 2012) demonstrate restored hardness in the RLW effluent significantly reduces toxicity. 5. The TA-46 Sanitary Wastewater System (SWWS) Plant began experiencing problems with the microorganisms in the sewage treatment process starting in January 2012. During this time frame, a dramatic increase in flow has been recorded at the SWWS Plant due to "clean" water (not sewage), possibly from unknown industrial sources. Investigation ongoing. 6. LANS deleted four (4) outfalls from the NPDES Permit No. NM0028355 on October 11, 2011.	1. Toxic Reduction Evaluation (TRE) completed at RLWTF. Final report on TRE activities submitted to EPA 03/20/10. Additional evaluations requested by EPA. Corrections pending. 2. Existing routine weekly, monthly, quarterly, and yearly sampling of 11 permitted NPDES outfalls continues. 3. DCG monthly monitoring sampling continues.

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NPDES Industrial Point Source Monitoring (cont.)					**Group 1** • **TA-03 SERF/TA-46 SWWS (Outfall 13S):** SERF Expansion Project is designed to reduce PCB concentrations and recycle all treated wastewater from the SWWS for reuse in the Strategic Computing Complex cooling towers. Construction of the SERF expansion and the new evaporation basins continues. • **TA-03 Power Plant (Outfall 001):** Construction is in progress connecting the Power Plant to SERF Expansion Project. • **TA-03 Strategic Computing Complex (SCC) and the Laboratory Data Communication Center (LDCC) Cooling Towers, (Outfalls 03A027 and 03A199, respectively):** The SCC effluent pipeline continues to experience blockage to the outfall requiring temporary discharge to SWWS while the blockage is removed. **Group 2** • **TA-35 Cooling Towers (Outfall 03A160):** The metals interim measure has been completed; however, a discharge in December 2011 exceeded the copper permit limit. Additional operational sampling has been implemented by the facility. • **TA-50 RLWTF Process Upgrades (Outfall 051):** The RLWTF has not discharged to the environment since November 2010. Effluent continues to be mechanically evaporated. A Notice of Planned Change was submitted to EPA at the end of September 2011 providing information regarding the operational use of perchlorate ion exchange units, design for a seawater reverse osmosis treatment unit to replace the existing waste evaporator, and updated information about the installation of zero liquid discharge (ZLD) tanks. • **TA-55 Cooling Towers (Outfall 03A181):** Design work to tie in the cooling tower effluent from the SWWS plant to the SERF cross-country line has been completed. **Group 3** • **TA-53 LANSCE Cooling Towers (Outfall 03A048):** The As analyzer is operational. The interim measure for metals compliance is complete. An alternatives analysis for a final remedy solution to eliminate discharges at LANSCE has been prepared and submitted for funding consideration.	

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NPDES Industrial Point Source Monitoring (cont.)					**Group 4** • **TA-03 CMR Air Washers (Outfall 03A021):** This outfall was deleted from the permit on October 11, 2011. • **TA-03 SIGMA Cooling Tower (Outfall 03A022):** TA-03 Sigma cooling tower began discharging to sanitary collection system in November 2011. The outfall will remain in the NPDES permit. **Group 5** • **TA-15 DARHT Cooling Tower and Septic Tank (Outfall 03A185):** This outfall was deleted from the permit on October 11, 2011. **Group 6 – Misc. Other Outfalls** • **TA-11 Cooling Tower (Outfall 03A130):** This outfall was deleted from the permit on October 11, 2011. • **TA-21 Steam Plant (Outfall 02A129):** This outfall was deleted from the permit on October 11, 2011. **Program Management** ENV-RCRA continued to provide periodic updates to LASO Environmental Permits Manager regarding compliance status and progress of projects for LANL's water quality programs. Bioenhancement of the SWWS is in place; however, the SWWS plant has been experiencing problems maintaining biomass and productive levels.	
NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity	DOE/LASO POC: Gene Turner LANL POC: Holly Wheeler, ENV-RCRA	1. Facilities, analytes and frequencies: LANL NPDES Permit No. NMR05GB21 2. QA/QC: ENV-RCRA Quality Assurance Project Plan, Storm Water Multi-Sector General Permit for Industrial Activities Program	1. http://cfpub.epa.gov/npdes/stormwater/msgp.cfm 2. http://int.lanl.gov/training/env-courses/43337/env-rcra-qapp-msgp.pdf	Completion of the last quarter of benchmark monitoring for the 2011 monitoring year. Completion and submittal of the 2011 MSGP Annual Report to EPA by the required due date. Completion and submittal of 21 MSGP Discharge Monitoring Reports containing monitoring data for 40 stormwater discharge events by the required due date(s) Completion of the Sampling and Analysis Plan for the 2012 monitoring year.	The 2011 calendar year monitoring data indicate that LANL exceeded the benchmark and background concentration for zinc at three industrial facilities. Benchmark exceedances are not a permit violation, but rather an indication that corrective action may be needed. ENV-RCRA is providing guidance for collection of proposed stormwater runoff samples from a roof and associated down spout(s) to identify whether the source of zinc could be from equipment and material on the roof (galvanized ducting, roof fasteners, etc.) rather than the permitted industrial activities conducted at the facility. LANL exceeded benchmark for COD at two facilities. COD exceedances are originating from facilities with asphalt millings or runoff from asphalt areas. Benchmark was exceeded for nitrate-nitrite as nitrogen and total suspended solids at one facility. Action is underway to address rodent infestation that is believed to be the source of the nitrate-nitrite as nitrogen. The water quality standard for copper was exceeded at two facilities, and administrative changes have been implemented to address these exceedances. The effluent limitation guideline (ELG) was exceeded for TSS at one facility. Corrective action relative to this exceedance was completed within 14 days.	ENV-RCRA will conduct stormwater monitoring for benchmark, impaired waters, and ELG constituents as specified by the MSGP. The 2012 MSGP monitoring season is April 1, 2012, through November 30, 2012.

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NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (cont.)					Since compliance monitoring under the 2008 MSGP began in April 2009, ENV-RCRA has discontinued monitoring for 439 of the original 485 individual outfall/parameter requirements. The permit allows discontinuation of monitoring where constituents are found to either not be present or present below permit-defined levels (276 outfall/parameter requirements). Additionally, four industrial facilities have achieved "no exposure" status and therefore no longer require monitoring, and five facilities were allowed to discontinue monitoring under the MSGP due to duplicative monitoring requirements by two different NPDES permits. Outfall/parameter requirements were further reduced due to a reduction of impaired water monitoring requirements (163 outfall/parameter requirements). There were no required program changes.	
Groundwater, Surface Water	DOE/LASO POCs: Hai Shen Gene Turner LANL POC: Steve Paris, PMFS-DO	1. Locations, analytes, frequencies, QA/QC samples, and monitoring strategies: 2011 Interim Facility-Wide Groundwater Monitoring Plan, Revision 1, (LANL 2011, 208810)	2011 Interim Monitoring Plan Revision 1 is posted at: http://permalink.lanl.gov/object/tr?what=info:lanl-repo/eprr/ERID-208811	1. The 2011 Monitoring Year was shifted out 3 months to be consistent with LANL and DOE's fiscal year. As a result, the 2011 Monitoring Year started on 10/01/11. 2. DOE and LANS refocused environmental priorities as part of a risk-reduction initiative to support environmental priorities established by NMED and the State of New Mexico. The refocused priorities are on accelerating the shipment of aboveground transuranic waste from TA-54, Area G, to the Waste Isolation Pilot Plant. 3. The scope of the Groundwater Monitoring program was reduced to reflect the refocused environmental priorities, and the 2011 Interim Facility-Wide Groundwater Monitoring Plan (Interim Plan) was revised accordingly. The revised Interim Plan was submitted to NMED on December 14, 2011. 4. Under the revised Interim Plan, the scope of the groundwater monitoring program was reduced by incorporating efficiencies through focusing on area-specific monitoring groups, and reducing monitoring frequencies and the number of analytes sampled. The revised monitoring plan became effective on 01/01/12.	NMED provided an Approval with Modifications for the Groundwater Background Investigation Report, Revision 4. LANL developed a response to the NMED comments on the report and submitted an update to Revision 4 of the Groundwater Background Investigation Report to NMED on 11/03/11. Groundwater sampling results at well R-20 continue to demonstrate TCE in the regional aquifer. Detected since December 2008—decreasing since December 2009. Other VOC compounds have followed the same pattern. R-20 is next to water supply well PM-2 in Pajarito Canyon; the source could be TA-54, TA-03, or TA-18. TCE has also been occasionally detected in samples collected at nearby R-40 Screen 1, completed in perched-intermediate groundwater just above the regional aquifer. The geochemistry of samples from recently installed regional monitoring well R-61, located on the mesa south of Mortandad Canyon, has changed, and the well is planned for redevelopment to address reducing, nonrepresentative conditions within both well screens. Early sampling data from R-61 screen 1 showed the presence of chromium, nitrate, and perchlorate at concentrations exceeding background for the regional aquifer, with filtered chromium detected at a concentration of 16.8 µg/L. However, recently collected data have shown these same constituents within the range of regional background and have shown the presence of significantly elevated concentrations of iron and manganese. The source for these changes in chemistry is unknown, but data suggest the inadvertent introduction of some unknown organic material into the well during construction or development. R-61 will be redeveloped in spring 2012.	1. Groundwater and surface-water monitoring will continue to be conducted in accordance with the 2011 Interim Facility-Wide Groundwater Monitoring Plan, Revision 1. 2. The following monitoring wells were installed since 09/30/11 and will initially be sampled for full "characterization suite" analyses: • R-62 – Dual-screened monitoring well located on a ridge between Sandia and Mortandad Canyons at the east end of Sigma Mesa. Completed 10/03/11. • R-66 – Single-completion regional monitoring well installed near LA County production well Otowi-4 to replace TW-3. Well monitors for potential contaminants from upper Los Alamos and DP Canyons. Completed 11/16/11.

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Groundwater, Surface Water (cont.)					Screening samples of development water from recently installed regional monitoring well R-62, located on a ridge between Sandia and Mortandad Canyons at the east end of Sigma Mesa, show hexavalent chromium concentrations on the order of 220 µg/L. By comparison, the State of New Mexico Groundwater Standard for chromium is 50 µg/L. This well was expected to show background concentrations of chromium (~10.6 µg/L). Between 2008 and 2010, LANL began using a new analytical laboratory for the low-level tritium method. During that period, in some wells sampled under the Interim Plan and MOU, tritium was either detected at locations usually showing no tritium or detected at values much above earlier results. These detections were found to result from analytical data processing errors. The results for all of the samples were reevaluated, the original erroneous results were updated in the database to show they were rejected, instrument readings from the erroneous results were reprocessed, and the corresponding updated analytical results were loaded into the database.	
NPDES Storm Water Discharges from SWMUs and AOCs	DOE/LASO POC: Gene Turner LANL POC: Steve Veenis, PMFS	1. LANL NPDES Permit No. NM 0030759, "Individual Permit (IP)" Monitoring locations: Appendix A Analytes: Appendix B 2. Site Discharge Pollution Prevention Plan (SDPPP): Volume 1, Los Alamos/Pueblo watershed Volume 2, Sandia/Mortandad watershed Volume 3, Pajarito watershed Volume 4, Water/Cañon de Valle watershed Volume 5, Ancho/Chaquehui watershed	ftp://ftp.nmenv.state.nm.us/www/swqb/NPDES/Permits/NM0030759-LANLStormwater.pdf LANL IP website: www.lanl.gov/environment/h2o/ip.shtml	1. Baseline confirmation monitoring ended on 12/31/11 for the 2011 field season. There were 106 unique sampling events at 73 SMAs. (There are a total of 250 SMAs on the Permit). 2. Corrective Action activities are being planned for 37 SMAs where TAL exceedances were observed. 3. Two (2) SMAs with no TAL exceedances have completed monitoring and will not enter corrective action. 4. Seven (7) SMAs have received Certificates of Completion from NMED at all sites within the SMA. 5. 204 samplers will be installed at SMAs, beginning in March, to continue baseline monitoring. 6. The 5 volume SDPPP update will be available on the public website in May.	1. The second public meeting was conducted on 01/26/12. The agenda and presentations are available on the IP website. 2. The Citizen's Group lawsuit settlement requires one technical meeting per year. The last meeting was held on 03/12/12. 3. Stakeholders at the public meeting and technical meeting stated that they are very happy with the progress to date.	1. Baseline confirmation monitoring will end at 31 SMAs on April 30. These samplers will be removed at that time and corrective action status will be determined. 2. Baseline confirmation monitoring will continue at 173 SMAs until 1 sample is collected. 3. Status updates for all IP field activities, including sampling results, will be available on the website under the "Documents" tab on a quarterly basis. 4. The Annual Report and Compliance Status Report for 2011 was submitted to EPA on 03/01/12.

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Storm Water Discharge and Precipitation Measurements	DOE/LASO POC: Gene Turner LANL POC: Steve Veenis, PMFS	Locations, frequencies: discharge data at LANL for 2012 water year; precipitation data at LANL and Las Conchas fire burn areas for summer.	The SOP, "Operation and Maintenance of Gage Stations for Storm Water Projects," is being revised and will be finalized by 03/30/12. http://permalink.lanl.gov/object/tr?what=info:lanl-repo/eprr/ERID-205446	The performance report, "Stormwater Performance Monitoring Report in the LA/Pueblo Watershed during 2011" was delivered to NMED 02/28/12. The draft SOP, "Managing Electronic Stage Height and Discharge Data from Stream Gages" will be finalized by 03/30/12.	Annual technical support meetings are held with BDD to update the MOU, as needed. The 2012 Monitoring Plan for Los Alamos and Pueblo Canyons Sediment Transport Mitigation Project was delivered to NMED 03/30/12. The plan was updated to (1) include monitoring targeting post Las Conchas fire effects; (2) remove the sampler in Graduation Canyon, and (3) remove gross alpha/beta, radium-226, and radium-228 at all Los Alamos/Pueblo stations except the three BDDs (E050.1, E060.1, and E109.9). Post–Las Conchas fire flash flooding rendered inoperable seven discharge gage stations (E256, E252.5, E262, E265, E350, E243, E244) and one rain gage (E265). E265 (discharge and rain gage) has been repaired.	Discharge monitoring for the FY12 Environmental Surveillance Program started 05/01/12 and will run through 10/31/12. Discharge monitoring for the Los Alamos/Pueblo watershed under the consent order will start 06/01/12 and will run through 10/31/12. Precipitation monitoring for the Individual Permit will start 04/01/12 and will run through 10/31/12.
Groundwater Discharge Monitoring	DOE/LASO POC: Gene Turner LANL POC: Bob Beers, ENV-RCRA	1. Locations, frequencies, analytes: • Discharge Permit DP-857 for the TA-46 SWWS Plant (expired January 2003 but administratively continued by NMED). Discharge Plan • On February 16, 2012, LANS/DOE submitted a new Discharge Permit Application for the TA-50 RLWTF and the TA-52 ZLD Solar Evaporation Tanks (DP-1132). Additional information due April 2, 2012	1. Previously provided to LASO 07/20/08	• Aside from one minor request from NMED for additional information, there was no significant progress by NMED towards issuing a discharge permit for the TA-46 SWWS Plant. ENV-RCRA expected NMED to issue a draft permit in early 2012 but, to date, none has been released. • On November 18, 2011, NMED requested from LANL a comprehensive and up-to-date Discharge Permit Application for the TA-50 RLWTF and the TA-52 ZLD Solar Evaporation Tanks. Application due date was February 16, 2012. On December 12, 2011, LANS/DOE submitted to NMED a request for a 90-day extension of time. The extension of time request was denied by NMED on December 20, 2011. LANS/DOE submitted a 2nd request for a 45-day time extension for certain select items and this was approved by NMED on January 17, 2012. On February 16, 2012, LANS/DOE submitted the above referenced application. The balance of the application—those items receiving the 45-day time extension—will be submitted on April 2, 2012. Additionally, on March 2, 2012, NMED notified LANL that the February 16th Discharge Permit Application for DP-1132 was Administratively Complete and that LANS/DOE must initiate Public Notice	NMED informally indicated (personal communication, February 2012) that a draft discharge permit has been completed and is under management review. If there is significant stakeholder concern about the draft permit, then a public hearing may be ordered by the Secretary. • NMED is showing its intention to expeditiously process and permit the new Discharge Permit Application DP-1132. LANS/DOE will provide public notice of the new Discharge Permit Application in late March 2012. If there is significant public concern, then NMED will be required to conduct a public hearing on the permit application. • NMED GWQB is scheduled to conduct an inspection of the TA-50 RLWTF and TA-52 ZLD Solar Evaporation Tanks on March 20, 2012.	Effluent and groundwater monitoring will continue per current permit requirements and voluntary commitments.

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Groundwater Discharge Monitoring (cont.)		• Discharge plan for domestic wastewater septic tank/leach field systems (DP-1589). No monitoring conducted.		(PN1) by April 2, 2012. In March 2011, LANL submitted a Minor Modification letter to NMED for changes to the treatment process at the RLWTF. LANL received no formal communications from NMED regarding DP-1132 during the review period. In August 2011, LANL submitted to the NMED Ground Water Quality Bureau the 60% complete plans and specifications for the ZLD Evaporation Tanks Project. By submitting these plans & specifications, LANL has fulfilled all of the required elements of its November 2007 Notice of Intent (NOI) to discharge; in the 2007 NOI, LANL requested a determination from NMED if a discharge permit was required for the evaporation tanks. LANL has asserted to NMED that no discharge is required for these tanks. • On September 19, 2011, LANL submitted additional information to NMED (in response to a September 9, 2011, email) providing copies of the permits/license agreements between DOE and the Los Alamos Sportsman's Club and the TA-49 Interagency Fire Center. On December 12, 2011, NMED informed LANS/DOE that the septic systems at the Sportsman's Club and TA-49 Interagency Fire Center would not be listed in DP-1589 but would be permitted separately by the individual owners. On January 17, 2012, LANS/DOE submitted an amendment to Discharge Permit Application DP-1589 to remove four septic systems no longer in operation, add one new septic system at TA-33, and modify one septic system. On January 25, 2012, LANS/DOE submitted a request to NMED to renew a previously issued Temporary Permission to Discharge for the new septic system at TA-33. On February 21, 2012, NMED granted the Temporary Permission to Discharge request.	• The addition of septic tank/leach field systems owned and operated by others to the LANS/DOE LASO discharge permit (DP-1589) would present a liability for DOE. The permits/agreements between DOE and the user groups (Los Alamos Sportsmen's Club and Bandelier National Monument) specifically state that each entity is responsible for complying with all state and federal environmental regulations. This issue was resolved through NMED's December 12, 2011, letter. • With public notification complete, the next step for NMED is to complete a draft discharge permit and then determine if there is sufficient public concern to hold a public hearing. The pending discharge permit for LANL's septic systems may require one-time and/or ongoing monitoring. Currently no monitoring is conducted.	

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Groundwater Discharge Monitoring (continued)		Discharge Permit Application DP-1793 for the Land Application of Treated Groundwater From a Pumping Test at R-28 2. QA/QC samples: ENV-RCRA-QAPP-WQCC, R4 (12/10/07): QAPP for the NMWQCC Program 3. NOI Decision Tree for the land application of drilling, development, rehabilitation, and sampling purge water	2. http://int.lanl.gov/training/env-courses/41175/env-rcra-qapp-wqcc.pdf	On August 24, 2011, LANS submitted an NOI for the land application of treated groundwater from a pumping test at R-28. NMED responded on November 9, 2011, with a request for a Discharge Permit Application. LANS/DOE submitted the required application on December 20, 2011. On January 13, 2012, NMED granted LANS/DOE temporary permission to discharge treated groundwater from the R-28 pumping test and also requested supplemental information for the Discharge Permit Application; the information requested was intended to broaden the scope of the Discharge Permit to include all future similar pump-treat-discharge activities. Supplemental information is due on March 13, 2012; LANS/DOE are on schedule to meet the deadline. Additionally, on January 23, 2012, NMED notified LANL that the December 20th Discharge Permit Application for DP-1793 was Administratively Complete and that LANS/DOE must initiate Public Notice (PN1) by February 23, 2012. However, at a February 21, 2012, meeting in Santa Fe with NMED, it was agreed that the public notice would be postponed until the supplemental information due by LANS on March 13th was received and processed by NMED.		
Beryllium NESHAP (Stack Emissions Monitoring)	DOE/LASO POC: Hai Shen LANL POC: Steve Story, ENV-ES	ENV-ES-Be NESHAP: QAPP for the Air Quality Compliance Beryllium NESHAP, R3, 04/06/11	http://int.lanl.gov/training/env-courses/48382/eaq-btf.pdf	None	NMED's Operating Permit inspection in September 2011 included all of LANL's beryllium sources. No issues or concerns were identified.	Beryllium activities at TA-03-66, TA-03-141, TA-35-213, and TA-55 PF4. Monitoring of TA-03-141 stack is ongoing.
Non-Rad Stack Emissions	DOE/LASO POC: Hai Shen LANL POC: Steve Story, ENV-ES	ENV-EAQ-OP: QAPP for the Title V Operating Permit, R3, 01/07/10	http://int.lanl.gov/training/env-courses/52815/env-eaq-op.pdf	None	On 10/06/10, LANL submitted an application to modify the Operating Permit to add the CMRR Facility. NMED has 18 months to issue a revised permit. NMED inspected LANL's Title V permitted sources in September 2011. No issues or concerns were identified.	1. Monitoring of larger sources is ongoing. 2. Routine updates to sources require emissions tracking (e.g., generators). 3. LANL will begin preparing the Title V permit renewal application this summer/fall. The renewal application is due to NMED in August 2013.

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Greenhouse Gases	DOE/LASO POC: Hai Shen LANL POC: Steve Story, ENV-ES	ENV-EAQ-GHG: QAPP for Greenhouse Gas Emissions Reporting, R1, 05/11/11	http://int.lanl.gov/training/env-courses/57081/env-es-ghg-qapp.pdf	EPA has issued modifications to the Greenhouse Gas (GHG) mandatory reporting rules in 40 CFR 98, and NMED has issued new reporting rules effective CY11. In addition, DOE reporting of GHGs continues to evolve. QAPP developed to address new Federal and State GHG reporting rules. QAPP meets EPA requirements under 40 CFR 98, Mandatory Reporting of Greenhouse Gases, to have a written GHG Monitoring Plan.	NMED repealed the State GHG Reporting rule and the State Cap and Trade rule	EPA's first reporting deadline of 03/31/11 was delayed until 9/30/11 due to problems with EPA's electronic reporting tool (eGRIT). LANL submitted its first GHG report to EPA in September 2011. LANL's next report is due April 2012.
Land Conveyance and Transfer	DOE/LASO POC: Vicki Loucks LANL POCs: Jennifer Payne, ENV-ES, and John Issacson, ENV-DO	Quality Assurance Project Plan for the Land Conveyance and Transfer Project Refer to specific media for governing sampling documents	http://int.lanl.gov/orgs/env/es/docs/qa/ENV-RRO-LCT-R1.pdf	The LC&T project is working with ENV to develop appropriate DQOs for the Real Property Release process.	Sampling for environmental restoration decisions may not provide sufficient detail to support LC&T data quality objectives. Currently a procedure for determining residual dose following cleanup activities is being developed.	Specific recommendations for sampling to support LC&T at TA-74 (Tract A-18A) and TA-21 MDA B (Tract A-16A) and A-8B are being developed.
Soil Gases	DOE/LASO POC: Ed Worth (MDAs H, L, and G). LANL POC: Mitch Goldberg, PMFS (TA-54, MDA H, L, G) DOE/LASO POCs: Ed Worth for MDA T; Woody Woodworth for MDA V LANL POC: John Bennett, PMFS, for MDA T and for MDA V	ER-ERSS-SOP-5074, R2, Sampling Subsurface Vapor	http://permalink.lanl.gov/object/tr?what=info:lanl-repo/eprr/ERID-213386	Letters from NMED dated 11/14/11, stated that the Permittees may discontinue all vapor sampling at MDA G, MDA H, and MDA L. MDA T Letter from NMED dated 11/14/11 stated that the Permittees may discontinue all vapor sampling at MDA T. MDA V Letter from NMED dated 11/10/11 stated that the Permittees may discontinue all vapor sampling at MDA V.	Stakeholder concerns: None MDA G Data Trends: Sampling data show concentrations of VOCs and tritium activities are consistent over the past few years. MDA L Data Trends: Sampling data show VOC concentrations and tritium activities are consistent for each sampling event. MDA H Data Trends: Sampling data shows concentrations of VOCs and tritium activities are consistent over the past few years. MDA T Stakeholder concerns: None Data Trends: VOC and tritium vs depth plots indicate that subsurface conditions are steady state and trends are unchanging over time. MDA V Stakeholder concerns: None Data Trends: Tritium vs depth plots indicates that subsurface conditions are steady state and trends are unchanging over time. Certificates of Completion were issued by NMED. MDA V is now administratively closed—no further vapor monitoring is required.	No sampling of subsurface vapors for VOCs and tritium is planned at TA-54 MDA G. No sampling of subsurface vapors for VOCs and tritium is planned at TA-54 MDA L. No sampling of subsurface vapors for VOCs and tritium is planned at TA-54 MDA H. No sampling of subsurface vapors for VOCs and tritium is planned at TA-21 MDA T. No sampling of subsurface vapors for tritium is planned at TA-21 MDA V.

Environmental Monitoring Programs Required by DOE Orders

Environmental Monitoring Program	DOE/LASO POC LANL POC	Governing Document Containing Scope of Environmental Surveillance Activities	LANL Web Location of Governing Document	Updates to Program during 10/01/11–03/31/12	Stakeholder Concerns, Data Trends, and/or Assessment Results. Required Program Changes.	Summary of Upcoming Monitoring Activities
Direct Penetrating Radiation Monitoring Network (DPRNET)	DOE/LASO POC: Steve Fong LANL POC: Mike McNaughton, ENV-ES	ENV-MAQ-DPRNET, R5 (04/04/02): QAPP for the Direct Penetrating Radiation Network	http://www.lanl.gov/environment/all/docs/qa_wes/RRES-MAQ-DPRNET.pdf	QAPP was reviewed and no updates were required.	During the past 12 months, both gamma and neutron annual doses around Area G have decreased significantly, as a result of TRU waste being moved out of Area G. The decrease in radiation dose is measurable along Pajarito Road and at the boundary with the San Ildefonso Sacred Area, which has been the site of all-pathway most-exposed individual (MEI) for the past 10 years. Details will be included in the annual site Environmental Report.	The ongoing direct-penetrating radiation measurements program will continue. Monitoring is done at 50 AIRNET stations and at an additional 33 stations at the TA-54 area.
Soils, Foodstuffs, Non-foodstuffs Biota	DOE/LASO POC: Cassandra Begay LANL POC: Phil Fresquez, ENV-ES	QAPP-0001: QAPP for the Soil, Foodstuffs, and Nonfoodstuffs Biota Monitoring Project	http://www.lanl.gov/environment/all/docs/qa_wes/QAPP-0001.pdf	Results of Rio Grande related sampling, which include fish, crayfish, and benthic macroinvertebrates (BMIs), in relation to the Las Conchas fire, downstream and upstream of LANL, will be highlighted in the 2011 Environmental Report. Because of the Las Conchas fire and resulting flooding to the Rio Grande, all of the basket samplers used for BMI collections were lost. BMIs were collected using kick net sampling in October; because of the massive flooding and ash, high populations of a very few species is expected.	In general, the results of 2011 sampling showed that fish and crayfish collected downstream of LANL were similar in radionuclide concentrations to regional upstream (background) fish. No differences in mercury concentrations in upstream or downstream fish, but mercury in many fish, particularly the predator fish, are exceeding screening levels (>0.30 mg/kg). One fish from Cochiti exceeded mercury FDA standards of 1 mg/kg. PCBs are about 50% lower in fish in 2011 than in 2008. The data for BMIs have not yet been received.	Based on the triennial sampling (institutional) program for foodstuffs, soils, and biota, soil and native vegetation sampling will be collected during the 2012 summer sampling season. Also, annual soil and biota sampling around the perimeter of Area G and DARHT and the retention basins of the Los Alamos Canyon Weir and the Pajarito Flood Retention structure will continue. Road kills of elk and deer will be collected if they become available.
Dose Assessment	DOE/LASO POCs: Cassandra Begay George Henckel LANL POC: Bill Eisele, ENV-ES	1. Locations, analytes, frequencies: RRES-MAQ-DOSE, R0, QAPP for Environmental Dose Assessment, 12/19/03 2. QA/QC samples are specified in the individual monitoring plans (e.g., soils/foodstuffs/ nonfoodstuffs biota)	http://www.lanl.gov/environment/all/docs/qa_wes/RRES-MAQ-DOSE.pdf	QAPP was reviewed and no substantive updates are required at this time. A new institutional policy document, P412, Environmental Radiation Protection, is being developed to implement the new dose assessment requirements in DOE O 458.1. An Environmental Radiation Protection Program Plan is also being developed to demonstrate compliance with the new DOE O 458.1 CRD and will be submitted to LASO for approval. In addition, new screening action levels (SALs) for soil are being developed, based on ICRP 72 dose conversion factors. None of these initiatives will be implemented during the 10/01/11 to 03/31/12 time frame.	1. The CY10 airborne pathway dose to the hypothetical MEI was approximately 0.33 mrem/yr at the LA Inn-South AIRNET station location 257 (compared with 0.55 mrem/yr at East Gate for CY09). The CY10 all-pathways dose to a hypothetical individual was approximately 0.9 mrem/yr at the boundary of TA-54, Area G, and the Pueblo de San Ildefonso Sacred Area, primarily from direct radiation. During CY10, the population within 80 km of LANL received a collective dose of approximately 0.22 person-rem. Air monitoring performed during the Las Conchas fire did not indicate any doses to the public above those expected from normal LANL operations and re-suspension of legacy radioactive materials (e.g., MDA B operations and LA Inn-South AIRNET station results). 2. No specific stakeholder concerns or adverse data trends were noted for the review period. Required program changes are being developed and vetted with LANS management, based on the implementation plan for DOE O 458.1.	In 2012, the routine dose assessment program will assess the inhalation, ingestion, and direct radiation exposure pathways dose for CY11 for the Environmental Report. In addition, an implementation plan for DOE O 458.1 was submitted to NNSA/LASO on 11/01/11. Implementation of the order will commence in accordance with the schedule included in the plan with full implementation scheduled for 11/01/12.

Environmental Monitoring Programs Required by DOE Orders (continued)

Environmental Monitoring Program	DOE/LASO POC LANL POC	Governing Document Containing Scope of Environmental Surveillance Activities	LANL Web Location of Governing Document	Updates to Program during 10/01/11–03/31/12	Stakeholder Concerns, Data Trends, and/or Assessment Results. Required Program Changes.	Summary of Upcoming Monitoring Activities
Biota Dose Assessment	DOE/LASO POC: Cassandra Begay George Henkel LANL POC: Mike McNaughton, ENV-ES	1. Locations, analytes, frequencies: QAPP for Biota Dose Assessment, 04/29/09 2. QA/QC samples are specified in the individual monitoring plans (e.g., soils/foodstuffs/nonfood-stuffs biota)	http://www.lanl.gov/environment/all/docs/qa_wes/QAPP-05.pdf	None	In 2011, the routine biota dose assessment program assessed the ingestion and direct radiation exposure pathways for 2010. All doses to biota were below DOE guidelines.	In 2012 the routine biota dose assessment program will assess the ingestion and direct radiation exposure pathways for 2011. LANL anticipates that all doses to biota will be below DOE guidelines.
Meteorology	DOE/LASO POC: Cassandra Begay LANL POC: Jean Dewart, ENV-ES	1. Locations, frequencies, parameters: Meteorological Monitoring at Los Alamos, (LA-UR-08-3032, May, 2008) 2. QA/QC activities: WES-Plan-300, R0: Technical Project Plan for Meteorological Monitoring	1. http://weather.lanl.gov/downloads/LA-UR-08-3032_webcopy.pdf 2. http://int.lanl.gov/orgs/env/qa_wes.shtml	Technical Project Plan for Meteorological Monitoring was updated to reflect changes in atmospheric dispersion models, calibration frequencies, and organization.	1. A radio acoustic sounding system (RASS) was installed at the TA-06 weather tower in November 2011. The RASS processes the reflected sound pulses produced by the existing TA-06 sodar to determine the vertical temperature profile with height. (The existing TA-06 sodar produces wind direction and speed data with height.) The temperature profile can be determined up to 1 km above the surface. 2. The RASS unit was tested and was not able to produce temperature profile data. The sodar manufacturer tested the sodar in January 2012 and found the primary unit to be malfunctioning. 3. Work is ongoing to determine available funding to replace the basic sodar unit.	Ongoing meteorological measurement program continues at tower sites TA-05, TA-06, TA-41, TA-49, TA-53, and TA-54.
Non-RADNET (Environmental Monitoring for Nonradioactive Air Contaminants)	DOE/LASO POC: Steve Fong LANL POC: Andrew Green, ENV-ES	MAQ-NonRadNET: QAPP for the Non-Radiological Air Sampling Network, R0, 09/10/02	http://www.lanl.gov/environment/all/docs/qa_wes/RRES-MAQ-NonRadNet.pdf	None	Successfully provided real-time particulate matter monitoring during the Las Conchas fire. Data were used to assist in planning the reopening of LANL and the Los Alamos townsite. Data were used to provide guidance for outdoor work during the first two weeks in July when smoke was present across Los Alamos County.	Particulate monitoring for particles less than 2.5-µm and less than 10-µm diameter continues at the Los Alamos hospital and the White Rock fire station. http://environweb.lanl.gov/Teom/teom.asp

Environmental Monitoring Programs Required by DOE Orders (continued)

Environmental Monitoring Program	DOE/LASO POC LANL POC	Governing Document Containing Scope of Environmental Surveillance Activities	LANL Web Location of Governing Document	Updates to Program during 10/01/11–03/31/12	Stakeholder Concerns, Data Trends, and/or Assessment Results. Required Program Changes.	Summary of Upcoming Monitoring Activities
Sediment	DOE/LASO POC: Cassandra Begay LANL POC: Steven Reneau, EES-16	1. Locations, analytes, frequencies: Los Alamos National Laboratory Environmental Surveillance Program Sampling and Analysis Plan (SAP) for Sediment, 2012 (planned submission to DOE 03/31/12) 2. QA/QC: QAPP for the Environmental Surveillance Program Sediment Sampling Project (approved 06/11/09)	1. To be Submitted to DOE/LASO 03/31/12 2. https://adep.lanl.gov/epdc/EPDCS/Functional%20Support%20Docs/Quality%20Assurance/QAPP-04.pdf	The annual Environmental Surveillance Program sediment sampling was completed in November and December 2011, which included an expanded set of locations and analytical suites from what was included in the 2011 SAP to help evaluate the effects of the Las Conchas fire. Validated analytical data were received in February 2012. These data was used to prepare the 2012 SAP.	The Las Conchas fire has increased runoff in canyons that head in the Jemez Mountains and cross LANL, including Los Alamos, Pajarito, and Water Canyons and Cañon de Valle. Following the Las Conchas fire, the chemistry of sediment entering LANL has changed due to the presence of ash from the burn area. There has also been locally enhanced mobilization of sediment and associated legacy contaminants on LANL land from floods that originated in the burn area. However, sediment data from 2011 indicate that concentrations of LANL-derived contaminants did not increase in downstream reaches as a result of the post-fire flooding. For example, although there was extensive erosion in Cañon de Valle below the TA-16 Building 260 HE machining facility, no HE was detected in 2011 sediment samples in the Water Canyon reach above NM 4 or in downstream reaches or along the Rio Grande. Nevertheless, because of these changed watershed conditions and stakeholder concerns about off-site transport of contaminants, pending the availability of funding, sediment sampling in 2012 will again include upgradient and downgradient locations in fire-affected canyons where post-fire floods have crossed the eastern LANL boundary or NM 4. Sampling may also occur in other canyons that can serve as baseline areas (e.g., Guaje and Frijoles Canyons).	Ongoing annual surveillance sediment sampling in watersheds draining LANL and along the Rio Grande will be conducted following the 2012 monsoon season. The provisional details of the sampling are presented in the 2012 SAP, to potentially be modified based on the occurrence of floods derived from the Las Conchas burn area and available funding.
Drinking Water Supply Wells and Rio Grande	DOE/LASO POC: Hai Shen LANL POC: Steve Paris, ADEP	1. Locations, analytes, frequencies: • Annual letter agreement between LANL/LAC • Annual letter agreement between LANL/City of SF 2. QA/QC samples: Interim Facility-Wide Groundwater Monitoring Plan	1. Letter to Los Alamos County, 4/12/11, EP2011-0140; Letter to City of Santa Fe, 04/22/10, EP2010-0192 2. http://permalink.lanl.gov/object/tr?what=info:lanl-repo/lareport/LA-UR-10-01777	The scope for sampling and analysis of LA County water-supply wells beginning in FY12 Q2 is to be negotiated in the near future and anticipated to be submitted in April 2012. Discussions with the City of Santa Fe on the scope of sampling their production wells will be initiated soon with a revised sampling and analysis plan anticipated to be submitted in April 2012. The letters document the frequency of sampling, analytes, and protocols for data review and release to the public.	1. LA County: anticipate no changes for FY12 Q2 through FY13 Q1 sampling events. 2. City of SF (Buckman drinking water wells): anticipate no changes for FY12 Q2 through FY13 Q1 sampling events. Between 2008 and 2010, LANL began using a new analytical laboratory for the low-level tritium method. During that period, in some wells sampled under the Interim Plan and MOU, tritium was either detected at locations usually showing no tritium or detected at values much above earlier results. These detections were found to result from analytical data processing errors. The results for all of the samples were reevaluated, the original erroneous results were updated in the database to show they were rejected, instrument readings from the erroneous results were reprocessed, and the corresponding updated analytical results were loaded into the database.	Surveillance sampling of LA County and the City of SF will continue on a quarterly and semiannual basis.

Environmental Monitoring Programs Required by DOE Orders (continued)

Environmental Monitoring Program	DOE/LASO POC LANL POC	Governing Document Containing Scope of Environmental Surveillance Activities	LANL Web Location of Governing Document	Updates to Program during 10/01/11–03/31/12	Stakeholder Concerns, Data Trends, and/or Assessment Results. Required Program Changes.	Summary of Upcoming Monitoring Activities
Monitoring at San Ildefonso Pueblo	DOE/LASO POC: Cassandra Begay LANL POC: Karen Schultz-Paige, ENV-EDA	1. Locations, analytes, frequencies: Appendix A of DOE/BIA MOU 2. QA/QC samples: In governing documents of specific sampling programs	MOU will be sent to San Ildefonso by DOE/LASO in April 2012.	2012 MOU will be finalized in April 2012, following the annual planning meeting with San Ildefonso.	Between 2008 and 2010, LANL began using a new analytical laboratory for the low-level tritium method. During that period, in some wells sampled under the Interim Plan and MOU, tritium was either detected at locations usually showing no tritium or detected at values much above earlier results. These detections were found to result from analytical data processing errors. The results for all of the samples were reevaluated, the original erroneous results were updated in the database to show they were rejected, instrument readings from the erroneous results were reprocessed, and the corresponding updated analytical results were loaded into the database.	Groundwater, surface water, soils, sediments, biota monitoring similar to past years.