

SECTION 7.0 COMPUTER HARDWARE AND SOFTWARE

7.1 Computer Hardware

UDEQ runs on a Local Area Network (LAN). Access onto the LAN and its data is through validation via an ID security password. All users are required to change their passwords every 90 days. All users are required to annually complete online security awareness training. The State's Department of Information Technology Services (DTS) maintains the network. The data on LAN servers are backed-up and checked daily for computer viruses by the UDEQ computer system administrator. Real-time virus checking is also employed. UDEQ's IT services are located with EDO.

DTS establishes policies and standards for purchasing network hardware and network software. Personal computers used by UDEQ staff are procured and maintained by DTS staff assigned to UDEQ.

UDEQ annually prepares an information technology plan budgeting and planning purposes. An Information Technology Service Level Agreement between UDEQ and DTS determines how each Division is supplied with adequate and appropriate hardware and software technology. A copy of this plan is posted at <http://dts.utah.gov/services/agency/index.html>.

7.2 General Computer Software

Computer software for completing basic office tasks is available through the LAN and is maintained by UDEQ system administrators. Applications are centrally administered and controlled through an application launcher. This launcher provides word processing, database, programmatic-specific applications, and internal communication functions. UDEQ has a steering committee which recommends policies relating to hardware, software, and data standards. These recommendations are then approved or modified and approved by UDEQ Quality Council.

7.3 Electronic Document Management Systems (EDMS)

UDEQ environmental project documents are being scanned and stored in an EDMS called eDocs. This system is a Department-wide approach to give all UDEQ employees access to all department documents. This approach will allow employees to have a cross-media view of environmentally regulated facilities and sites. The end goal of this project is to allow all public documents to be viewable from the GIS based application on the UDEQ webpage.

7.4 Environmental Database Systems

Environmental data base systems are maintained by UDEQ. Each system is fully backed up every Wednesday. There are incremental back-ups which occur on other days. Access is controlled by the responsible Database System Administrator.

A list of software used by UDEQ to supply EPA with data and information or to locally archive data follows:

Laboratory Services:

Chemistry	Northwest Analytical LIMS
Microbiology	StarLIMS version 9.0
Drinking Water	SDWIS version 2.3
Surface Water 319 Watershed Projects	GRTS Database (direct entry)
Surface Water	WQX
Sample Identification Database (SID)	Access 2003
Ecological Data Application System (EDAS)	Access 2003
Assessment Database (ADB)	Access 2003
Water Quality	ICIS
Air Quality	Tempo
UST and LUST programs	UST
Hazardous Waste	RCRAInfo
Asbestos Control	ACTS version

Documentation, development and training are provided by the respective Database Systems Administrators in each Division/Program.

7.5 **Specialized Computer Models**

The specific QS for control of electronic data are contained in Section 3.4 of this document.

Computer modeling is used to predict outcomes, based on the current conditions and on extrapolations or measurements of previous conditions. Modeling programs have been developed to predict migration routes and rates, and estimate contaminant distribution and concentrations for use with several fluid media, including ground water and air. Such models are prepared with site-specific parameters, and are calibrated using known data before predictions are attempted.

Briefly, a model's suitability can be ascertained based on:

- the suitability of model's conceptual approach;

- the logic of a model's simplifying assumptions;
- the presence of well-defined, understandable limitations;
- data needs and data quality needs consistent with the project objectives;
- EPA peer review and/or stakeholder acceptance of model output; and,
- compliance with relevant guidance.

7.5.1 Requirements for Modeling Efforts

UDEQ uses mathematical models to make systematic regulatory assessments and environmental decisions; determine environmental fate and transport, and estimate pollutant loadings; develop protection zones; assess exposure, hazards, damage, and health risk; and to make projections and predictions. For these reasons UDEQ must assure itself of the quality of all modeling systems. All information regarding the suitability of a model and its outputs must be documented in writing and contained in the project records. The use of SOPs is recommended for:

- the selection of a model for use; and
- the assessment of results for all environmental model data generated.

7.5.2 Responsibilities, Authorities, and Personnel Qualifications

Individual DPMs with direct or oversight authority for any project are responsible for assuring the suitability of all models and data received by UDEQ.

To the extent possible, DPMs should be familiar with the qualifications of all contractor or grantee personnel conducting modeling efforts. All personnel conducting modeling exercises must have the education and experience appropriate for the job.