APPENDIX A: HYDROLOGIC, TECHNICAL AND FINANCIAL CAPABILITY REPORT FOR AN UNDERGROUND STORAGE AND RECOVERY PERMIT

The state engineer requires a hydrologic, technical, and financial capability report to be submitted with an application for an Underground Storage and Recovery Permit. This appendix sets forth the information the state engineer requires in the capability report. The report shall be submitted in a format acceptable to the state engineer and shall include a table of contents.

The capability report must demonstrate that the applicant has the technical and financial capability to plan, construct, and operate the project, that the project is hydrologically feasible, and that the project will not impair water rights or cause harm to land owners within the area of hydrologic effect. The report must also contain all hydrogeologic information applicable to the project.

1.0 HYDROLOGIC, TECHNICAL AND FINANCIAL CAPABILITY REPORT - CONTENTS

The capability report shall contain the sections listed below. The applicant shall make all reasonable efforts to provide the information requested in each of the following sections. The state engineer may require additional information from the applicant if such information is required to review the application.

1.1 Executive Summary: The information presented in the capability report should be summarized in the executive summary. The executive summary should include an overview of the project that briefly describes the location of the project, the method of artificial recharge, storage, and recovery, and the project goals and objectives.

1.2 Project Objectives: An applicant must discuss the goals and objectives of the project. The applicant must also fully describe the methods that will be followed to achieve the goals and objectives of the project. Secondary uses associated with the proposed facility that are not related to Underground Storage and Recovery should also be described.

1.3 Financial Capability: An applicant must discuss their financial capability to design, construct, operate, and maintain the project. Proof of financial capability for a governmental entity requesting a permit may include, but are not necessarily limited to, current debt ratings for municipalities, public authorities and other such tax-exempt obligors, cash or security reserves, methods of financing for the project including user revenues to be dedicated to repay bonds or other financial instruments proposed for issuance to construct the project, previous credit history, coverage ratios showing ability to issue new debt, and other relevant financial information.

1.4 Technical Capability: An applicant must discuss their technical capability to design, construct, operate, and maintain the project. Proof of technical capability should include, but are not necessarily limited to, evidence of professional training, licensing, certification, and work experience relevant to the design, construction, operation, or maintenance of the project. An applicant must also discuss their technical capability to install and maintain the facility's control measures and to comply with monitoring requirements.

1.5 Hydrologic Feasibility: An applicant must discuss the hydrologic feasibility of the project. Considerations for hydrologic feasibility may include, but are not necessarily limited to, demonstration that the project will not impair water rights or cause harm to owners of land within the area of hydrologic effect, demonstration that there is adequate storage potential for the proposed recharge volume, evidence of ability to recharge the volume of water requested in the application, evidence that the recharged water will not migrate to an area where it will not be available for recovery, and evidence that the stored water can be recovered. The applicant must also demonstrate that the recharge water and the native water are chemically compatible. The design of the facility, site layout, infiltration rates, injection rates, evaporation and transpiration rates, storage potential, recovery rates, and site characterization (geologic and hydrologic) should be used to determine if a project is hydrologically feasible.

1.6 No Impairment to Water Rights and no Harm to Owners of Land Within the Area of Hydrologic Effect: A project may not impair water rights or cause harm to owners of land within the area of hydrologic effect. An applicant must address any potential impairment or harm created by the project. Such impairment or harm may

include the rise in water levels that cause localized flooding of basements, septic systems, or other features, subsidence, the migration of a contaminant plume or poor quality ground water, the leaching of contaminants from the vadose zone such the water quality of an aquifer is degraded, and reducing the available supply of water to owners of valid water rights. Ground water intrusion into landfills or sand and gravel operations may also constitute harm. Changes in the ground water quality due to the addition of the recharged waters (degradation and/or mobilization) are also a consideration for determining harm or impairment. The state engineer will work with the New Mexico Environmental Department to evaluate harm or impairment due to the degradation of ground water quality.

1.7 Valid Source Water Right: The report must include a discussion of the legal basis of the source water right(s) that will be used for recharge at the facility. The applicant must set forth the legal basis of the right, with accompanying exhibits, based on one of the legal processes set forth in NMAC 19.25.8.22.F. A description of the source water type, for each source of water, should be described as follows:

A. Seasonal, annual, and long-term availability
B. Minimum and maximum available supply
C. Probability that the required volumes of water for artificial recharge will be available

It is important to specify when during the project operation that each source of water will be artificially recharged.

2.0 FACILITY DESCRIPTION

The description of the project facilities must contain a detailed explanation of the physical design of the facility. The project facilities should be designed, constructed, and operated specifically to recharge water, store the water in an aquifer or system of aquifers, and recover the stored water pursuant to the Underground Storage and Recovery Regulations. Such facilities may include recharge basins, injection wells, recovery wells, aquifer storage and recovery wells, trenches, levees, berms, dikes, and other man-made structures that facilitate the artificial recharge, storage, and recovery of water.

2.1 Site Description: A site description and map of the proposed area of hydrologic effect must be provided. The general site description map must clearly show the following items:

A. Facility location and legal description
B. Map scale with north arrow
C. Areal layout of all major components of the project
D. Delineation of the area of hydrologic effect of the project
E. Land ownership and land use information for the area of hydrologic effect (Additional land ownership and use information may be required, depending on the specific features of the site.)
F. Surface water bodies, including canals, ditches, streams, springs, seeps, wetlands, washes, reservoirs, and lakes located within the area of hydrologic effect
G. Other recharge operations located in the area of hydrologic effect
H. Wells within the area of hydrological effect
I. Landfills, underground storage tanks, industrial sites, agricultural areas, and any other possible sources of contamination within the area of hydrologic effect
J. Depth, location, and ownership of any subsurface structures located within the area of hydrologic effect

A narrative describing the regional and local topography and physiography, range in land surface elevations, and bedrock exposures must accompany the map. Regional and local climate must be discussed including average local monthly and annual precipitation and evaporation data. A description of the precipitation gage types and locations must also be included.

2.2 Facility Design: A copy of the facility layout and design drawings showing proposed or as-built construction details must be submitted with the capability report and must include the schedule during which each phase of the project will be completed. Engineered drawings are preferable, and all design plans should be accurate,

legible, and drawn to scale or annotated with dimensions and surface elevation contours. The design drawings should give both plan and cross-sectional views of elements of the facility. Final design plans must be submitted to the state engineer for review and endorsement prior to issuance of a permit. Major changes made to these plans may require publication of a new notice. Contingencies should be included in the plan and should address any possible deviations from the final design plan.

As applicable, the following must be shown in plan view and in cross-section:

A. Basins, trenches, and other artificial recharge structures (including their outer and inner edges)
B. Levees, berms, dikes, and similar structures
C. Conveyance and/or diversion structures, including the capacity, shape, type of construction material, and whether the structure is open or closed
D. Pumping stations, indicating the primary function, location, and capacity of the station
E. Water treatment facilities
F. All injection wells, recovery wells, aquifer storage and recovery wells, dry wells, and monitoring wells associated with the facility
G. All water quantity measurement equipment associated with the project, including channel weirs, flumes, flow meters
H. Water inflow and outflow points
I. Water level monitoring points within the area of hydrologic effect
J. Water quality sampling points within the area of hydrologic effect
K. Storm water diversion features
L. Bypass facilities
M. Other relevant information relating to the operation of the facility

2.3 Well Design: Construction details of all wells associated with the recharge, storage, and recovery facility must be provided, including recharge wells, recovery wells, aquifer storage and recovery wells, monitoring wells, and any existing wells on site which will be used for recharge, recovery, or monitoring purposes. A description of the installation method, construction features, and the specifications for the materials to be used should be included. A permittee must comply with all state engineer rules and regulations for the drilling and use of wells.

2.4 Design of Basins and Other Infiltration Systems: Detailed design plans for infiltration basins must be submitted with the capability report. Construction details such as the method of construction, the materials used, dimensions, wall height, freeboard allowance, depth, gradients and elevations, inflow and outflow/overflow points, and measurement points must be described. The description must also address, if applicable, how storm water runoff and/or surface water flows will affect the physical integrity of the structure. Flood control features such as spillways or fuse plugs should be discussed. For other recharge methodologies, all design plans must be submitted for review.

Short-term field infiltration tests should be conducted to assist in the design of infiltration systems. Infiltration rates can be determined by one of the following methods:

A. Single and double ring infiltrometer tests
B. Laboratory column tests
C. Percolation trench tests
D. Small basin infiltration tests (area less than ten acres)

It is assumed with both single and double ring infiltrometer testing that infiltration rates are generally overestimated. To help minimize the error when testing, it is recommended that the applicant use a test area of one hundred (100) square feet or larger to reduce any error in the estimation. Column tests and percolation trench testing have the potential for higher accuracy in estimating long-term infiltration rates. All of the above short-term infiltration testing procedures can estimate and establish a benchmark for the upper range of long-term infiltration rates, which may be expected at the site. The lowest infiltration rate observed can be the controlling factor for the determination of the capacity of the recharge facility. If a highly stratified subsurface with zones of varying permeability, it may be necessary to perform infiltration testing on each of the layers.

3.0 FACILITY OPERATION AND MAINTENANCE

The capability report must include an operation and maintenance plan. The plan shall describe how the project facilities will be operated and maintained during periods of recharge, storage, and recovery. The state engineer recognizes that it may be difficult to pre-determine all aspects of the operation and maintenance of the project prior to actual operation. Therefore, once a project has been permitted, the original operation and maintenance plan may be amended in the annual report. Operation and maintenance necessary for optimizing recharge may be fine-tuned during facility operations.

3.1 Operating Parameters: Anticipated operating parameters must be described for all recharge, storage, and recovery facilities. The following operating parameters, as applicable, should be estimated for the proposed facility:

A. Anticipated discharge rate into the facility and schedule of availability of source water
B. Estimated infiltration and/or injection rates for each well or basin
C. Estimated recovery rates for each well
D. Estimation of the hydraulic loading rate for basins, trenches, and other infiltration structures. The hydraulic loading rate, or the long-term infiltration rate, is the rate of infiltration that takes into account the time when the basins are dry or undergoing maintenance.
E. Surface area of infiltration basins and the maximum wetted perimeter
F. Planned duration of wet/dry cycling for infiltration basins
G. Maximum and minimum water depth in the basins
H. Number and type of infiltration and injection structures
I. Number and type of recovery wells
J. Estimated annual precipitation, evaporation, and transpiration in the area of hydrologic effect

3.2 Maintenance of Surface Recharge Systems: The method and schedule for maintaining all surface recharge systems must be included in the report. Development of clogging layers is an impediment to the operation of most surface infiltration systems and must be addressed in the operation and maintenance plan. Maintenance techniques may include periodic drying, scraping, discing, or scarifying. The frequency at which maintenance will be performed shall be discussed in relation to site-specific variables such as soil characteristics, source water chemistry, and facility design.

3.3 Maintenance of Wells: The method and schedule for maintaining injection, recharge, and aquifer storage and recovery wells must be included in the report. The applicant shall discuss the plans for maintaining the well for optimum performance. Well performance can be hindered by the accumulation of suspended solids, biological and chemical impurities, dissolved air and gases, and entrained air from turbulence. Proper treatment of the recharge water can prevent most clogging; however, redevelopment procedures may be necessary when clogging has occurred. Common redevelopment procedures for injection wells include pumping and surging the well and/or adding chemical treatments. Specific potential additives to be used should be identified.

3.4 Other Facility Operation and Maintenance: When applicable, other operation and maintenance unique to each facility, such as the operation and maintenance of a water treatment plant for the water to be recharged or recovered, weed control, vector control, or flood control, must be discussed in the report.

4.0 HYDROGEOLOGIC CHARACTERIZATION OF THE PROJECT SITE

Geologic and hydrologic conditions at the project site must be thoroughly described in reference to the proposed project. The existing physical ground water conditions of the site must be defined in order to identify and evaluate any possible effects resulting from the project activities and to show that recharge and recovery of the proposed volume of water is hydrologically feasible.

4.1 Geologic Conditions: Regional and local geologic maps and cross-sections must be used to show geologic conditions within the area of hydrologic effect. Ground water models shall be employed to characterize the conditions of the surrounding area. Localized site-specific information is also required. Geologic information for

the area may be obtained from geophysical logs, soil borings, driller's logs, well cores, and technical reports published for the area. In all cases, the data source must be referenced. All logs that are submitted, including geophysical logs, must be accompanied by certified copies of the original field logs and field data.

4.2 Surficial Geology: The report must include a description of the geomorphology of the site, detailing the local topography and drainage. General site soil descriptions including the soil type, horizontal and vertical distribution, infiltration rates, organic content, and mineral content should be described. Land subsidence and earth fissure proximity should also be researched and discussed.

4.3 Subsurface Geology: Geologic cross-sections describing the subsurface geology at the area of hydrologic effect must be included. The cross-sections must identify the thickness and areal extent of any low permeability layers, such as caliche, silt, and clay lenses, which may impede the vertical infiltration of water. Layers with a high permeability, such as sands and gravels, which will enhance infiltration must also be identified. Formation names and lithologic characteristics of each unit must be noted. A structural description of the subsurface materials including the characterization of any major faulting in the area must also be provided. If the local subsurface geology is not sufficiently defined, the applicant may be required to drill additional test holes to better estimate the lithologic properties of the proposed site.

4.4 Hydrologic Characteristics: Specific characteristics of the aquifer and vadose zone within the area of hydrologic effect must be described. This information should be presented in a format that clearly demonstrates its application for well impact analysis, mounding analysis, and contaminant fate capture modeling, if applicable. All aquifer parameters used in the report must include references to the source, the methods used to derive the parameters, and a certified copy of the original field data in tabular or graphical format.

4.5 Vadose Zone Characteristics: The following hydraulic characteristics of the vadose zone, any variation found in the characteristics within the area of hydrologic effect, and the methodologies used to derive the characteristics must be included in the report:

A. Thickness of the vadose zone
B. Lithologic description
C. Vertical and horizontal unsaturated hydraulic conductivity (ft/day) and the method of calculation

4.6 Aquifer Characteristics: The following hydraulic characteristics of the storage aquifer, any variation found in the characteristics within the area of hydrologic effect, and the methodologies used to derive the characteristics must be included in the report:

A. Horizontal (K_h)and vertical (K_v) hydraulic conductivity in feet/day
B. Specific yield (S_y)
C. Storativity / storage coefficient (S)
D. Transmissivity (T) in feet squared/day or gallons/day/foot
E. Estimated boundaries of the aquifer
F. Aquifer thickness

4.7 Ground Water Conditions: The existing and historic ground water conditions must be described in the report. A regional overview of the ground water conditions must be provided with an emphasis on local conditions. Ground water conditions must be characterized through a well inventory, a water level map showing lines of equipotential, flow lines, and direction of ground water flow, a description of ground water velocity, perched water table conditions, water quality characteristics, and historic water level changes.

4.8 Well Inventory: An inventory of wells located within the area of hydrologic effect must be provided. If landfills, Superfund sites, underground storage tanks, waterlogged areas, areas of poor quality ground water, or other hazardous conditions exist (i.e. a contaminated soil zone) near the facility, a more extensive well inventory will be required. The well inventory must be presented in tabular format, with one table listing public and domestic supply wells and a separate table listing wells producing water for other uses. Much of the information required in the well inventory may be obtained from the state engineer database. The well inventory should contain the following information for each well, if available:

A. State engineer permit number
B. Name of owner
C. Surveyed location
D. Water use(s)
E. The adjudicated, permitted, or declared diversion amount
F. Production or discharge rates, including pump capacity
G. Specific capacity
H. Casing type and size
I. Total depth of well, date drilled, and method of drilling
J. Perforated intervals and type of perforation
K. Indication that a driller's log or geophysical log exists for the well
L. Current and historic water levels for the period of record (including dates when the measurements were taken)

4.9 Water Level Mapping: A current water level map depicting the water level elevation, depth to water, perched ground water zones, and total depth of each well must be provided for the area of hydrologic effect. The map must show regional water levels within the area of hydrologic effect. The source of all information must be referenced. The map should clearly define the facility boundary, area of hydrologic effect, map scale, and north arrow. The following information must be depicted on the map and discussed in a supplemental narrative:

A. Surveyed location and state engineer well number
B. Total depth of well, water level elevations, and depth to water of each well
C. Labeled water level contours (msl)
D. Current direction of ground water flow
E. Nearby wells and well fields and a description of how the wells may influence the site
F. Natural or artificial recharge zones and the associated annual recharge rates, if known
G. Streams and surface runoff areas that may affect the storage capability of the proposed project, including a quantification of streamflow infiltration and the resultant changes in storage

4.10 Historic Water Level Changes: Regional and local historic water level changes must be provided in the capability report to the extent data is available. A rising water table may cause waterlogging and affect the feasibility of the project; whereas, a decline in the ground water level may potentially increase subsidence or cause other harm or impairment. The average historical rate of water level change per year must be calculated over the longest period of record available. The running five year average also must be calculated. Hydrographs may be used to illustrate the regional and local water level trends and should be used to project the necessary perforation intervals for monitoring wells. Supporting water level and well data must be provided, referencing the data source.

4.11 Surface Water Conditions: Surface water features within the area of hydrological effect of the project must be identified. The applicant should submit a map that illustrates the following:

A. The facility location in relation to any streams and other surface water bodies, including canals, ditches, washes, springs, reservoirs, and lakes
B. An outline of the 100-year flood plain and its relationship to the proposed facility (It is advisable to submit a FEMA map with an overlay of the proposed project.)

For facilities located in or adjacent to a riverbed, streambed, or wash, a description of the historical surface water flow characteristics and flood frequency must be provided in the report. The relevant flow duration curves should also be included. If there are potential flooding issues, such as potential facility damage due to flooding, or increased erosion and/or other unreasonable harm caused by the project, a surface water modeling analysis may be required.

4.12 Water Quality and Compatibility: The state engineer requires the following information for water quality and compatibility concerns that are not under the administrative authority of the New Mexico Environment Department.

A. Water Quality: Water quality administration of the project shall be in accordance with the New Mexico Water Quality Control Commission Regulations, the rules and regulations of the New Mexico Environment Department, the rules and regulations of the United States Environmental Protection Agency, and the rules and regulations of the state engineer. The state engineer shall review the application and administer a permit in accordance with the Letter of Understanding between the New Mexico Environment Department and the Office of the State Engineer signed on March 30th, 1999. The applicant shall provide a review of how their project is being administered in accordance with all relevant federal and state water quality rules and regulations. Contamination within the area of hydrologic effect, if present, must be documented and discussed in the report. The contaminants and their concentrations in the soil within the area of hydrologic effect must be identified, and their potential for migration must be discussed. If zones of contamination or plumes of poor quality ground water exist that may be mobilized by recharge, the applicant will be required to define the extent and level of this contamination.

B. Compatibility of Recharged and Native Waters: The capability report must document the chemical and biological quality of the proposed source water(s) and must evaluate water chemistry compatibility, temperature compatibility, and density compatibility between the water to be artificially recharged and the native water in the storage aquifer. If treatment is to be used to improve the water quality of the source water, a description of the treatment process and its quality control measures must be presented. Variations in the quality of the source water based on seasonal variations and changes in flow rates must be described.

5.0 EFFECTS OF A PROPOSED RECHARGE, STORAGE, AND RECOVERY PROJECT

Potential adverse effects to the area surrounding the proposed project, and any actions the applicant will take to mitigate the effects, must be examined in the capability report. The recharge, storage, and recovery project may not cause impairment to water rights, harm to land owners, or cause other harm within the area of hydrologic effect. Problems with waterlogging, subsidence, the mobilization of a contaminant, the migration of a contaminant plume or zone of poor quality ground water, and reducing the availability of water supply to the owners of valid water rights may be determined to be harm or impairment resulting from the project. Environmental effects such as adverse effects to existing riparian areas may also be considered harm. Changes in the hydrology of the area due to the operation of the facility must be quantified. All data and calculations for quantifying the effects from the proposed project must be provided. The applicant shall prepare a ground water mounding analysis. All natural recharge and artificial recharge and recovery features, including other permitted recharge, storage, and recovery facilities, must be included in the analysis when determining the effects of the proposed project. All recharge and recovery features should also be used when making the mounding analysis.

5.1 Area of Hydrologic Effect: The applicant shall determine the area of hydrologic effect and present the criteria, the water level standards, and the water quality standards used to establish the area. The area of hydrologic effect and the methods used to determine the area must be acceptable to the state engineer. The state engineer will examine the area of hydrologic effect of a proposed project to determine if the project will cause impairment to water rights, cause harm to land owners, or cause other harm.

5.2 Calculating Effects: The USGS MODFLOW or other saturated or un-saturated flow model, if appropriate, that has been justified by the applicant and approved by the state engineer shall be used to estimate the effects from an artificial recharge, storage, and recovery project. The model shall be developed to simulate a long-term project. Projected effects to be examined with the model include:

A. Migration and delineation of the stored water
B. Buildup contours
C. Effects on the recharge, storage, and recovery areas
D. Changes in evapotranspiration
E. A determination of the quantity of water stored that is lost to other ground water appropriators and through mingling with aquifer waters
F. A determination of the net effects of the recharge, storage, and recovery project on surface and underground water systems

The model projections will include sensitivity of system response to 0.1, 0.2, 0.5, 2, 5 and 10 times the annual storage volume of the project. The model projections may also include sensitivity to other system parameters such

as storage or hydraulic conductivity if these parameters have a high degree of uncertainty within the estimated area of hydrologic effect.

The parameters used in the model(s) are to be conservative and supportable. Model documentation and run files, calibration information, and key supporting information are to be submitted in a format acceptable to the state engineer. A ground water head monitoring system and a water quality monitoring system, if required, are to be used in conjunction with the model. The monitoring system is to be used to confirm ground water response as modeled. Significant deviations between monitored and modeled response are to be explained in the annual report.

6.0 MONITORING PLAN

An applicant shall submit a monitoring plan for the proposed project with the application. The monitoring plan shall describe the permittee's plans for monitoring changes in water level and, if required, water quality. The goals of the monitoring plan should be clearly stated by the applicant. The state engineer must approve the monitoring plan. The monitoring plan will be used to confirm that the project is not impairing water rights, causing harm to land owners, or causing other harm within the area of hydrologic effect, to determine the storage account for the project, and to allow the state engineer to review the project's operation and maintenance. Information on water level changes and water quality changes during the project shall also be used to define storage potential, flow direction, and rate of ground water movement. Recharge systems are site specific and monitoring needs will vary from site to site. The specifics of each monitoring program should be based on the individual facility features, characteristics of the recharged, stored, and recovered water, and the purpose of the monitoring. If the applicant anticipates any reasonable changes in the monitoring plan, alternate monitoring schemes should be addressed in the plan. In determining monitoring requirements, the state engineer shall cooperate with all governmental entities that regulate and monitor water quality, including the New Mexico Environment Department.

6.1 Water Level Monitoring: A water level monitoring plan is required to address the effects of recharge and recovery on the area of hydrologic effect. The plan must describe how data will be gathered and evaluated to optimize the project operations, monitor for harm and impairment, and demonstrate the feasibility of the project. If appropriate, the plan should propose a network of wells and/or piezometers to allow for the observation of composite effects and the effects near the limits of the area of hydrologic effect. The water level monitoring plan must describe the methods that will be used to quantify the volume of project water that is to be artificially recharged, stored, and recovered. The plan must also include a description of the methods for measuring the recoverable amount of stored water, the amount of water recharged and recovered, infiltration and injection rates, evaporation and transpiration rates, and all other gains or losses to the storage aquifer. Measuring devices must be installed and operated in a manner and location that results in reliable accuracy. A water level monitoring plan must also include the following:

A. construction details of monitoring wells and/or piezometers;
B. number, location and justification for monitoring points;
C. ground water use in the area;
D. description of monitoring instrumentation and equipment, including the manufacturer's specifications;
E. frequency of monitoring;
F. establishment of water level standards; and
G. other relevant information required by the state engineer.

The applicant shall propose specific alert levels for the water levels monitored. The state engineer must approve the alert levels. The alert levels should be linked to specific actions the applicant will pursue if the levels are exceeded. Every alert level should be set to ensure that the operation of the project below the alert level will not cause harm or impairment, will not be contrary to the conservation of water in the state, and will not be detrimental to the public welfare of the state.

6.2 Water Quality Monitoring (if required): The state engineer may require a water quality monitoring plan to protect the public welfare of the state, to prevent harm and impairment, and to provide data to optimize the project operation. Any water quality monitoring shall be administered in cooperation with the New Mexico

Environment Department and shall only be required in areas where the New Mexico Environment Department does not have regulatory jurisdiction (such as environmental effects that are directly related to changes in the ground water system caused by the stored water). The applicant shall discuss any water quality monitoring or treatment plan being conducted or planned for the project in accordance with all relevant state and federal rules and regulations.

If the state engineer requires a monitoring plan, the type and degree of water quality monitoring shall depend on the specific concerns at or near the project. Water quality monitoring plans should identify and describe the following:

A. area to be monitored
B. number, location and justification for monitoring points;
C. potential pollution sources and pollutants;
D. ground water use in the area;
E. current ground water quality at each monitoring point;
F. construction details of monitoring wells;
G. type of monitoring instrumentation;
H. type of treatment methods employed;
I. constituents that will be monitored and monitoring frequency;
J. methods of sampling, sample preservation techniques, sampling protocols, and quality control procedures;
K. name of laboratory that will be doing the water quality analysis;
L. establishment of water quality standards;
M. establishment of alert levels for monitored constituents; and
N. other relevant information required by the state engineer.

The applicant should propose a specific alert level for each constituent monitored. The state engineer must approve the alert levels. The alert levels should be linked to specific actions the applicant will pursue if the levels are exceeded. Every alert level should be set to ensure that the operation of the project below the alert level will not cause harm or impairment, will not be contrary to the conservation of water in the state, and will not be detrimental to the public welfare of the state.

7.0 CONTINGENCY PLAN

A contingency plan must be developed to address potential problems that may occur during the operation of the project. The plan should address possible situations (such as equipment failure) that could result in harm or impairment within the area of hydrologic effect or which may negatively impact the hydrologic feasibility of the project. Alert levels for water level monitoring and, if required, water quality monitoring must be established and should be based on site-specific conditions. The alert levels should provide early warning to correct a problem before impairment or harm occurs. The contingency plan shall include a clearly-defined course of action designed to verify and correct the condition that has caused an alert level to be exceeded.

The contingency plan shall include the name and phone number of the coordinator(s) responsible for implementing and managing the contingency plan. When an alert level has been exceeded, the coordinator shall notify the state engineer by telephone or fax within 24 hours and in writing within forty-eight (48) hours. The coordinator shall be responsible for reporting the following if an alert level has been exceeded:

A. Description of the alert level that has been exceeded and the possible effects to the project and the area of hydrologic effect.
B. The date and time when the alert level was exceeded
C. The method used or being used to correct the situation
D. Discussion on possible impairment and harm as a result of the exceedance