County of Santa Cruz

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ENVIRONMENTAL HEALTH

Site Mitigation Program Standards
Santa Cruz County Environmental Health Services

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Introduction

The purpose of these standards is to provide information to responsible parties, consultants, and the public regarding our current, typical site-mitigation project requirements. These standards do not address all site mitigation issues. Instead, they focus on aspects of site-mitigation for which the regulated community frequently has uncertainty regarding the requirements and expectations of our agency. Responsible parties and consultants must also remain in compliance with all local, state, and federal regulations. For topics not addressed in this document, responsible parties and consultants should refer to and implement the numerous other applicable state and federal guidance documents or regulations. These standards are subject to revision as needed, so the regulated community is encouraged to check for updates on a regular basis.

The following two documents provide additional requirements and information related to these standards: (1) County Code Chapter 7.100, Hazardous Materials/ Hazardous Wastes/Underground Storage Tanks and (2) County Code Chapter 7.70, Water Wells. It is also important to recognize that the County of Santa Cruz Health Officer has discretion to require additional, modify existing, or reduce requirements, where such action would be appropriate and consistent with achieving the general obligation of County Code for protecting human health, safety, or the environment.

Advance Notification Requirement

- Field work must be scheduled with our agency by direct contact with the lead case worker at least 5 business days in advance of **all** field activities related to site-investigation, remediation, or monitoring at any site with known or suspected soil or groundwater contamination or where a release of a hazardous material to the environment has occurred (whether sudden or gradual).

- Advance notification must include field dates, estimated start and end times, field contact person, and contact-person phone number.

- Any modifications to the field schedule or contact information should be reported in advance and approved by our agency before work is initiated.

- Notification to our agency is required regardless of the lead oversight agency.

- Our agency does not accept work done without proper notification and, at the very least, the opportunity to witness and inspect the work. The results of such work are considered non-credible and invalid and the work will need to be redone.

Chemical Analyses

- All chemical analyses shall be performed by an analytical laboratory certified to perform the specified analyses by the State of California.

- The chemical analyses, laboratory methods, and method detection limits must be proposed in advance in the project work plan and included in the project report.

- When proposing chemical analyses, the current version of applicable guidance documents shall be considered including the (1) *Interim List of Gasoline Related Constituents and Associated Method Detection Limits* (California Regional Water Quality Control Board, Central Coast Region), (2) *Interim Guidance for Sampling Agricultural Properties* (Department of Toxic Substances Control), and (3) *Interim Final, Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (DTSC, 2005),.

- Appropriate Quality Control/Quality Assurance must be performed and included along with all laboratory results in the project report.

Confirmation Sampling and Profiling for Excavations

- To characterize chemical concentrations remaining in-situ following soil excavation, our agency requires collection and analyses of soil samples from the excavation sidewalls and bottom as well as samples of any groundwater that enters the excavation.

- Soil and groundwater sampling and laboratory analyses must adequately characterize the lateral and vertical distribution of chemical concentrations remaining at the limits of the excavation.

- At minimum, sidewall soil samples should be collected and individually analyzed by a State of California certified laboratory at least every 5 vertical feet, at significant lithologic changes, at the top of any saturated zones, from any soil zones containing field indications of chemical impact, and from the same depth intervals as previously detected elevated concentrations.

- A minimum of one vertical set of soil samples should be collected every 20 lateral feet along each excavation sidewall

- For excavations with sidewalls less than 20-feet long, a minimum of one vertical set of soil samples should be collected from each excavation sidewall.

- In addition, at least one excavation bottom sample should be collected for every 400 square feet of area exposed at the bottom of an excavation.

- If groundwater is encountered in the excavation, at least one grab groundwater sample should be collected to characterize this water.

- Depending on the size of the excavation and actual field conditions, more than one grab groundwater sample may be prudent.

- It is permissible to evacuate the water from the excavation and allow the excavation to recharge prior to groundwater sampling, as long as the evacuated water is properly handled, characterized, treated, and/or disposed.

Construction Over Chemically Impacted Areas

- Our agency typically does not approve construction of new buildings above contaminated soil if this construction limits the ability to investigate or remediate the soil.

- In addition, prior to new construction above contaminated soil, we would require professionally prepared recommendations, specifications, and/or plans that will assure our agency that human health and the environment are protected.

- When subsurface contamination is present, an evaluation is required to assess the health and safety conditions for the occupants of any proposed or existing buildings.

- Our agency does not typically object to construction of a new building over an area of chemically impacted groundwater as long as human health and safety are protected, this construction does not impede the ability to investigate and/or remediate the impacted water or soil, and the lead groundwater oversight agency does not object.

Cost Recovery

- In accordance with Santa Cruz County Code Chapter 7.100 (Hazardous Materials/Hazardous Waste/Underground Storage Tanks), which allows the Health Officer to recover costs for oversight of hazardous materials issues, our department will bill the Responsible party for our time spent in oversight of Site Mitigation Program cases.

Deed Restrictions

- In most cases, deed restrictions will only be considered by our agency after accessible contaminants have been actively remediated, all residual contamination is inaccessible, and it has been determined that there is no significant risk to human health or the environment under the conditions specified in the deed restriction.

Duty to Report an Unauthorized Release of Hazardous Material

- Any person who has knowledge of soil or groundwater contamination or a release of hazardous material of which he or she knows or reasonably suspects to be unauthorized shall report the contamination or known or suspected release to the County of Santa Cruz Health Officer or SCCEHS staff immediately or as soon as practically possible in accordance with Chapter 7.100, Hazardous Materials/Hazardous Waste/Underground Storage Tanks, of the Santa Cruz County Code.

Environmental Screening Concentrations

- Detected chemical concentrations should be compared at minimum to the current version of each of the following applicable guidance screening concentrations: (1) residential Environmental Screening Levels (ESLs) where groundwater is a current or potential source of drinking water published by the California Regional Water Quality Control Board, San Francisco Bay Region; (2) residential California Human Health Screening Levels (CHHSLs) prepared by the California Environmental Protection Agency; and (3) groundwater cleanup goals specified by the California Regional Water Quality Control Board, Central Coast Region. Chemicals not listed in these references should be compared with residential Regional Screening Levels for Chemical Contaminants at Superfund Sites (RSLs) developed by the US Environmental Protection Agency, Region 9.

- Chemical concentrations above any of the applicable environmental screening concentrations indicate to our agency that additional investigation, assessment, and/or remediation may be warranted.

- Concentrations greater than any of the applicable environmental screening concentrations are subject to active remediation unless site-specific evaluation (typically, a formal risk assessment) shows that the concentrations do not pose a significant risk to human health and the environment.

- Groundwater concentrations above any of the applicable environmental screening concentrations are generally referred to the California Regional Water Quality Control Board, Central Coast Region, for review.

- Remediation standards and objectives will be subject to site-specific assessment.

Indoor-Air Conditions

- It may be necessary to consider chemical concentrations in indoor air to evaluate the vapor-emissions-to-indoor-air pathway.

- Indoor-air investigations should be performed in accordance with the *Interim Final, Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (DTSC, 2005), or the latest revision to this document.

- Analytes for indoor-air investigations should include the broad suite of volatile organic chemicals (VOCs) typically covered by the United States EPA (USEPA) Method 8260B and/or USEPA Method TO-14/15, including chlorinated solvents (Table 1, DTSC, 2005).

- The analytical method(s) used for indoor-air analyses should have sufficiently low reporting limits for comparison with applicable screening levels and/or for meeting Health Risk Assessment (HRA) criteria.

- In accordance with DTSC, 2005, it is likely to be necessary to perform a minimum of two indoor-air sampling events approximately six months apart to account for seasonal and temporal transience before a final risk determination is made.

- When an indoor-air assessment is conducted, background ambient air data (outdoor samples) should also be collected.

- Our agency recommends collecting a minimum of two background ambient air samples, one each on the apparent upwind and downwind sides of the study structure, to help facilitate a more representative background data set and provide useful information if wind-direction changes occur during the sample-collection period.

- Collection of background ambient air samples should begin at least one hour, and preferably two hours, before the indoor-air sampling begins, and continue until at least thirty minutes prior to the end of the indoor-air sampling event.

- The background ambient air sampling points should be at least five feet off the ground, at the approximate midpoint of the ground story level of the building, and about 5 to 15 feet away from the building.

Investigation-Derived Wastes

- Soil, water, and other wastes generated during on-site activities that may contain chemicals of concern must be properly characterized, handled, treated, and disposed of in accordance with all applicable regulations.

- Appropriate labels must be attached to the containers for investigation-derived wastes, and completed with information in accordance with state and federal requirements and that at minimum identifies the containerized materials, accumulation dates, and contact information

- The characterization, handling, treatment, and disposal of investigation-derived wastes shall be described in the project report, which must include a copy of all applicable manifests signed by the facility receiving the shipments or other applicable documentation verifying proper transportation and disposal.

Monitoring Well Purging and Sampling

- Downhole equipment, including water-level and well-depth-measurement equipment, purging equipment, and sampling equipment, must be decontaminated between and prior to use in each well to ensure sample integrity and to prevent cross-contamination of groundwater.

- Monitoring well purging and sampling equipment must not be allowed to contact the ground or other potentially contaminated surfaces during monitoring activities.

- Upon collection of samples in containers to be analyzed for volatile organic compounds, the containers should be inverted and tapped/rapped appropriately to confirm that bubbles or headspace are not present.

- Disposable purging and sampling equipment that may be impacted with chemicals of concern must be decontaminated prior to disposal.

- Groundwater samples must be maintained at appropriate temperatures from the time of sample collection until laboratory submittal.

Other Agency Requirements

- Responsible parties and project consultants are responsible for performing projects in accordance with all applicable regulatory requirements including those of other agencies.

Permit Requirements

- Responsible parties and project consultants are responsible for obtaining and maintaining compliance with any required permits including those of other agencies.

Professional Evaluations or Judgments

- All work requiring engineering, geologic, and/or other professional evaluations or judgments must be performed by or under the direction of a responsible licensed engineer, geologist, and/or other applicable professional(s).

Profiling Fill Material

- If excavated or imported soil is proposed for on-site fill, and this soil reasonably could be anticipated to contain chemical contamination based on previous or current source-area uses, this soil must be profiled prior to placement.

- For profiling, the responsible party should collect one composite sample for each 50 cubic yards of soil. Each composite sample should consist of at least four separate cylinders of soil collected from representative portions of the 50-cubic-yards volume. These samples must be collected, handled, transported, and analyzed in accordance with regulatory guidelines.

- The representative cylinders from each 50 cubic yards of material should be combined by a State of California certified laboratory and analyzed for all chemical contaminants that reasonably could be expected to be present.

- Depending on the variability of the soil, the volume of the soil, and field observations, less frequent verification sampling may be acceptable to our agency, but generally not less than one composite per 100 cubic-yards of soil will be acceptable.

- For project planning, the Responsible party may wish to pre-profile chemical concentrations in in-situ soil that is planned for use as fill. For pre-profiling, the responsible party will typically drill holes into the in-situ soil and collect subsurface samples for analyses. These activities are generally acceptable to our agency, however, we typically require confirmatory composite samples of the excavated or stockpiled soil prior to actual approval for placement as fill.

- A work plan for profiling or pre-profiling activities should be submitted to our agency for review and approval prior to site activities. A project report describing the profiling or pre-profiling activities and results should also be submitted to our agency for review and approval prior to placement of the soil.

Profiling for Off-Site Disposal

- A responsible party may wish to dispose of excavated soil at an offsite location. If the excavated soil reasonably could be anticipated to contain chemical contamination based on previous or current site uses, this soil must be profiled prior to being off-hauled.

- If the offsite disposal location is a permitted treatment, storage, or disposal facility, the responsible party will be required to profile the soil in accordance with the requirements of the disposal facility. For a permitted disposal facility, our agency will not typically have any additional sampling or analyses requirement for the soil to be off-hauled. We may, however, require sampling and analyses of excavation sidewall and bottom samples to characterize the chemical concentrations of soil remaining in the excavation area.

- If the offsite location is not a permitted treatment, storage, or disposal facility, our agency will require that the material proposed for off-haul is properly profiled and confirmed to be free of chemicals of concern prior to off-haul to that location. In that case, the profiling requirements described under the section of these guidelines titled "*Profiling Fill Material"* would apply. In addition, we may require sampling and analyses of excavation sidewall and bottom samples to characterize the chemical concentrations of soil remaining in the excavation area.

- In all cases, a work plan describing any profiling or off-hauling plans should be submitted to our agency for review and approval prior to site activities. If the offsite location is not a permitted treatment, storage, or disposal facility, a project report describing the profiling results must also be submitted to our agency for review and approval prior to off-hauling. A project report describing the off-hauling activities must also submitted to our agency. The final report should include applicable manifests and/or transportation and disposal documentation that demonstrates the soil was properly disposed.

Re-Characterization of Soil Concentrations Following Remediation

- Re-characterization of soil concentrations following site remediation can be critical for some sites because residual concentrations in soil can continue to create risks to human health and the environment.

- Following site remediation, such as after soil overexcavation or after shutdown of a soil vapor extraction and treatment system, our agency typically requires verification soil sampling and risk assessment to characterize current soil conditions and determine whether or not the remaining soil chemical concentrations are protective of human health and the environment.

Report Requirements

- For each phase of investigation and/or remediation for a Site-Mitigation-Program site, a project report typically should be submitted that describes the current project and provides a cohesive understanding of site conditions.

- The report text should provide background information describing in chronological order all previous remedial investigation activities including all site investigation activities and laboratory results; all remediation activities and confirmation laboratory results; and, resultant site conditions and supporting laboratory results.

- The report should explain the geology and hydrogeology; describe current project activities and procedures; present and evaluate all applicable project results; discuss and interpret soil, soil-gas, groundwater, chemical, and environmental health conditions; include an evaluation of the completeness of the soil and groundwater characterization and remedial actions performed to date, identify any remaining data gaps, and present comprehensive conclusions and recommendations.

- The report should include summary tables that include all current and historical laboratory results for all media as well as any gradient information.

- All detected chemical concentrations should be included in the report summary tables and discussed in the report.

- The report should include a compilation map that depicts all previous sampling locations, any other areas of investigation, and any remedial action locations including the footprint and depth of any soil excavation areas. The map should clearly identify areas with remaining elevated chemical concentrations and areas with data gaps.

- Field data sheets such as groundwater monitoring and sampling logs should be included in the report.

- The report should include elevations, construction information, and screen intervals for any monitoring wells.

- For any new monitoring wells, the report should include latitude, longitude, and elevation data surveyed by a licensed land surveyor in accordance with GeoTracker requirements.

- All applicable site technical reports, including site assessments and work plans, shall be submitted in the portable data format (PDF) to the State Water Resources Control Board's (SWRCB) GeoTracker database. All reports should confirm submittal to the SWRCB GeoTracker database. Refer to the SWRCB web page for electronic reporting requirements.

- Until further notice, printed copies of all project reports, including site assessments and work plans, shall also be submitted to our agency.

Report Signatures

- All reports and documents containing engineering, geologic, and/or other professional evaluations or judgments must be signed and wet stamped by the responsible licensed engineer, geologist, and/or other applicable professional(s).

Soil Borings Under the Site Mitigation Program

- Site-Mitigation-Program soil borings are typically drilled, hand augered, or driven with direct-push technology to investigate soil and/or groundwater conditions at sites with known, suspected, or potential chemical contamination. These soil borings are temporary and are sealed within 24-hour or they are considered to be Site-Mitigation-Program wells (see section below titled “Wells Under the Site-Mitigation-Program”).

- Site-Mitigation-Program soil borings are subject to the statewide standards of the California Department of Water Resources Bulletins No. 74-81 and 74-90, any instructions by a SCCEHS inspector, and any additional requirements of the County of Santa Cruz Health Officer.

- Site-Mitigation-Program soil borings within the County of Santa Cruz do not require a permit through the SCCEHS at this time.

- In some areas of the County, other agencies or water districts may require permits for Site-Mitigation-Program soil borings. It is the responsibility of the property owner, driller, and responsible professional to obtain all required permits.

- Prior to drilling, a work plan describing the purpose of the drilling and the drilling and sealing methodologies is required by the SCCEHS.

- The property owner, driller, and responsible professional assume responsibility for all soil-boring activities, including compliance with Worker’s Compensation Laws, and indemnify, defend and save the County of Santa Cruz, its' officers, agents and employees, free and harmless from any and all expense, cost, or liability in connection with or resulting from work or stopped-work associated with the soil borings, including, but not limited to, property damage, personal injury, wrongful death, and loss of income.

- Our agency requires notification of all field dates, estimated start and end times, field contact person, and contact-person phone number at least 5 business days in advance of all field activities.

- The SCCEHS field inspector should be provided with the opportunity to observe field procedures for drilling, soil and groundwater sampling, sample handling, and sealing of the soil boring, including confirming the depth of the soil boring to be sealed, witnessing the preparation of sealing material if it is mixed onsite, checking the load receipts if the sealing material is trucked in, and witnessing the placement of the sealing material.

- No changes in the soil boring location or procedures, as described in the associated work plan, shall be allowed except upon specific approval from the SCCEHS.

- If previously unknown contamination is discovered during drilling, verbal notification to the SCCEHS by the responsible professional is required immediately or as soon as practically possible and a written report notifying the SCCEHS of the findings is required within 5 days in accordance with Chapter 7.100, Hazardous Materials/Hazardous Waste/Underground Storage Tanks, of the Santa Cruz County Code.

- Once the soil boring is completed, it must be sealed with acceptable sealing material from the true bottom of the soil boring to the ground surface, depending on the site conditions, in accordance with California Department of Water Resources Bulletins No. 74-81 and 74-90 and as approved by the County of Santa Cruz Health Officer. Sealing procedures must be described in the project report.

- The sealing-material measurements (such as pounds of cement, gallons of water, and total volume of material) must be able to be demonstrated in the field upon request from the SCCEHS inspector.

- Appropriate sealing materials for soil borings may include neat cement composed of 5 to 6 gallons of water per 94-lb sack of Type I or II Portland cement, sand cement composed of not more than 188 lbs of sand per 94 lbs of Type I or II Portland cement with about 7 gallons of water (“10.3 sack mix”), hydrated high solids 20 percent bentonite slurry, or any other compound approved by the Health Officer.

- When neat cement is hand mixed such as in a drum with a hand shovel, the SCCEHS may require passing the cement through a wire grate prior to placement in the soil boring to prevent large unmixed cement "clumps" from going down the boring.

- A tremie pipe or other method approved by the Health Officer shall be used to pump the sealing material into the soil boring if the soil boring is unstable, extends greater than 20-feet deep, contains more than two feet of water, or contains water over more than 10% of the well length.

- During destruction of chemically impacted soil borings, any water displaced from the soil boring must be captured and containerized for proper characterization and disposal.

- Investigation-derived wastes such as soil and groundwater must be properly stored, labeled, and disposed of in accordance with the section of these Standards titled Investigation-Derived Wastes.

- Analytical results of all soil, soil-gas, and groundwater samples collected during the execution of drilling under the approved work plan must be submitted to the SCCEHS by the responsible professional within 60 days of sample collection.

- Unless specified otherwise, within 60 days of drilling, a complete project report must be submitted to the SCCEHS by the property owner or responsible professional that includes a description of field procedures, a copy of a scaled soil boring location map, boring logs, soil and groundwater laboratory results, and conclusions and recommendations (see section above titled "Report Requirements").

Soil and Groundwater Sampling During Drilling

- To characterize chemical concentrations during drilling, our agency requires collection and analyses of undisturbed soil samples as well as samples of any groundwater that enters the boring.

- Soil and groundwater sampling and laboratory analyses must adequately characterize the lateral and vertical distribution of chemical concentrations.

- At minimum, soil samples should be collected and individually analyzed by a state certified laboratory at least every 5 vertical feet, at significant lithologic changes, at the top of any saturated zones, from any soil zones containing field indications of chemical impact, and from the same depth intervals as previously detected elevated concentrations.

- If groundwater is encountered, a groundwater sample should be collected to characterize this water.

- Less frequent soil sampling and laboratory analyses may be allowed by our agency generally only if the chemical concentrations are already adequately characterized and less frequent sampling and analyses is specifically proposed in the project work plan or if required based on field conditions.

- Analyses of composite drill-hole samples generally will not be satisfactory for characterizing the distribution of subsurface chemical concentrations in soil.

- When possible, undisturbed soil samples should be collected instead of disturbed soil samples.

- When samples are to be analyzed for VOCs, the sampling method least likely to result in loss of VOCs should be implemented for sample collection.

Soil-Gas Conditions

- It may be necessary to consider chemical concentrations in soil gas to evaluate the vapor emissions to indoor air pathway.

- Soil-gas sampling procedures should be performed in accordance with the *Interim Final, Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (DTSC, 2005) and the joint *Advisory—Active Soil Gas Investigations* (DTSC/LARWQCB, 2003), or the latest revision to these documents.

- Unless a different depth is justified, the shallowest soil-gas sample should be collected at 5 feet below the ground surface.

- For soil-gas sampling, adequate leak detection methods must be performed and documented to show that no leakage has occurred or to identify the specific percentage of leakage.

- For soil-gas sampling, adequate step purge volume tests should be conducted for each sampling depth to determine the appropriate purge volume to be applied at the sampling points.

- Analytes for soil-vapor analyses should include the broad suite of volatile organic chemicals (VOCs) covered by the United States EPA (USEPA) Method 8260B and/or USEPA Method TO-14/15, including chlorinated solvents (Table 1, DTSC, 2005).

- The analytical method(s) used for soil-vapor analyses should have sufficiently low reporting limits for comparison with applicable screening levels and/or for meeting Health Risk Assessment (HRA) criteria.

- It may be necessary to perform a minimum of two soil-gas sampling events approximately six months apart to account for seasonal and temporal transience of soil gas before a final risk determination is made.

Wells Under the Site Mitigation Program

Overview

- Site-Mitigation-Program wells include all of the following types of wells installed for the purposes of investigation or remediation of soil or groundwater contamination: groundwater monitoring wells, groundwater extraction wells, remediation wells, vadose-zone wells, air-sparge wells, soil-vapor-extraction wells, test wells, and all other subsurface drill holes or direct-push borings that will remain in the ground for more than 24 hours.

- Site-Mitigation-Program wells may not be used for domestic, municipal, commercial, or irrigation water supply.

- Construction, replacement, repair, reconstruction, and destruction of Site-Mitigation-Program wells are subject to the requirements of Chapter 7.70, Water Wells, of the Santa Cruz County Code, the statewide standards of the California Department of Water Resources Bulletins No. 74-81 and 74-90, any instructions by a SCCEHS inspector, and any requirements of the County of Santa Cruz Health Officer.

- Construction, replacement, repair, reconstruction, and destruction of all Site-Mitigation-Program wells within the County of Santa Cruz require a permit through the SCCEHS. An "Application for Well Permit" form is available from the SCCEHS for this purpose. The form must be filled out in its entirety for approval.

- In some areas of the County, other agencies or water districts may also require permits for Site-Mitigation-Program wells. It is the responsibility of the well owner to obtain all required permits.

- Prior to permit approval, a work plan describing the drilling and construction, replacement, repair, reconstruction, or destruction methodology is required by the SCCEHS.

Selected Instructions for the Application for Well Permit Form

- Each permit application should identify the site address and property owner's name of the parcel on which the well is situated as well as the address of the Site-Mitigation-Program case that is associated with the well, if different. The property owner's name needs to match the name listed with the County Assessor's Office for the property. For wells situated in a public right-of-way, the site address would simply be the name of the specific section of the public right-of-way (such as Central Avenue adjacent to 101 Central Avenue).

- The property owner for the parcel on which the well is to be installed and the licensed drilling contractor that will install the well must both sign the well application or provide written authorization to the SCCEHS for another to sign the application on their behalf.

- For wells constructed in a public right-of-way, an access authorization agreement or encroachment permit signed by the appropriate public agency must accompany the well application.

- The intent of the four categories under "Construction" on the permit application are as follows: (1) "Depth" refers to the proposed depth in feet below the ground surface for the well; (2) "Diameter" refers to the proposed diameter in inches for the well casing; (3) "Depth of Seal" refers to the proposed depth in feet below the ground surface for the well seal including the typical cement and bentonite portions of the seal; and (4) "Width of Seal" refers to the proposed full diameter of the bore hole that will be sealed (it is understood that the well casing occupies the central portion of the seal).

- A proposed well number should be clearly indicated in the upper right area of the well permit application and shown on the plot plan that is submitted with the permit application.

- Two copies of a plot plan shall be submitted along with each "Application for Well Permit" in accordance with the requirements specified on the back of the permit application.

General Well Permit Conditions

- Upon review of the well permit application and the submitted work plan, and subject to approval requirements noted below, a permit will be issued allowing the well owner, driller, and responsible professional (consultant) to perform the specified work.

- The well owner, driller, and responsible professional assume responsibility for all activities and uses under the permit, including compliance with Worker's Compensation Laws, and indemnify, defend and save the County of Santa Cruz, its' officers, agents and employees, free and harmless from any and all expense, cost, or liability in connection with or resulting from work or stopped-work associated with the permit, including, but not limited to, property damage, personal injury, wrongful death, and loss of income.

- Each well permit issued shall expire and become null and void if the work authorized has not been completed in one year following the issuance of the permit in accordance with Chapter 7.70 of the Santa Cruz County Code, Water Wells.

- If the SCCEHS permit review and inspection time exceed the time allotted for these purposes by the permit fee due to well application inadequacies and/or field inspection delays, the well owner will be billed directly for additional SCCEHS staff time at the applicable staff billing rate.

- Our agency requires notification of all field dates, estimated start and end times, field contact person, and contact-person phone number at least 5 business days in advance of all field activities.

- A copy of the approved well permit must be available on site while work related to the permit is being performed.

- The bentonite, transition well seal should be allowed to hydrate for a minimum of 20 minutes (preferably 30 to 60 minutes) with the addition of 1 gallon of water per 2 lbs. of bentonite prior to placement of the overlying well seal.

- During a field inspection, the SCCEHS inspector should be able to confirm the depth of the interval to be sealed, witness the preparation of sealing material if it is mixed onsite, check the load receipts if the sealing material is trucked in, and witness the placement of the sealing material.

- The sealing-material measurements (such as pounds of cement, gallons of water, and total volume of material) must be able to be demonstrated in the field upon request from the SCCEHS inspector.

- Appropriate sealing materials during well construction or destruction may include neat cement composed of 5 to 6 gallons of water per 94-lb sack of Type I or II Portland cement, sand cement composed of not more than 188 lbs of sand per 94 lbs of Type I or II Portland cement with about 7 gallons of water ("10.3 sack mix"), hydrated high solids 20 percent bentonite slurry, or any other compound approved by the Health Officer.

- When neat cement is hand mixed such as in a drum with a hand shovel, the SCCEHS may require passing the cement through a wire grate prior to placement in the well to prevent large unmixed cement "clumps" from going down the boring.

- No changes in the well location or construction procedures, as described on the well permit application and associated work plan, shall be allowed except upon specific approval from the SCCEHS.

- Site-Mitigation-Program wells shall be secured with locks and maintained in operative vault boxes at all times.

- Analytical results of all soil, soil-gas, and groundwater samples collected during the execution of drilling under this permit must be submitted to the SCCEHS by the responsible professional within 60 days of sample collection.

- If previously unknown contamination is discovered during drilling, verbal notification to the SCCEHS by the responsible professional is required immediately or as soon as practically possible and a written report notifying the SCCEHS of the findings is required within 5 days in accordance with Chapter 7.100, Hazardous Materials/Hazardous Waste/Underground Storage Tanks, of the Santa Cruz County Code.

- Investigation-derived wastes such as soil and groundwater must be properly stored, labeled, and disposed of in accordance with the section of these Standards titled “Investigation-Derived Wastes”.

- Within 60 days of well construction, replacement, repair, reconstruction, or destruction and prior to permit final, a copy of the State DWR 188 Form, scaled well-location map, boring log, and well construction details must be submitted to SCCEHS by the responsible professional.

- The latitude, longitude, and elevation of all applicable wells must be surveyed by a licensed land surveyor in accordance with GeoTracker requirements and reported to our agency within 60 days.

Well Destruction Conditions

- A well construction log must be submitted along with the “Application for Well Permit” for well destructions.

- All well destructions must be performed by overdrilling, with only site-specific exemptions (i.e. safety issues).

- For a well destruction, the complete width of the well must be completely drilled out to the total depth of the well or original well boring, if deeper. A stinger or guide rod should be inserted in the well casing during the drill out to keep the drill auger aligned with the well.

- Once the well is drilled out, it must be sealed with acceptable sealing material from the true bottom of the well to the ground surface, depending on the site conditions.

- A tremie pipe or other method approved by the Health Officer shall be used to pump the sealing material into the well if the well is unstable, extends greater than 20-feet deep, contains more than two feet of water, or contains water over more than 10% of the well length.

- During destruction of chemically impacted wells, any water displaced from the well must be captured and containerized for proper characterization and disposal.

- If drilling out a well is infeasible, pressure grouting may be allowed. For pressure grouting, the sand pack may not be more than 3 feet above the top of the screened interval, the screened interval may not be longer than 25 feet, and the bottom of the original boring may not be more than 2 feet deeper than the bottom of the constructed well. The total depth of the well and the absence of obstructions in the well must be verified in the field. Appropriate sealing material must be tremied into the well, followed by application of 25 psi pressure maintained for 5 minutes, which should be able to be demonstrated in the field.

Work Plans

- Prior to commencing investigation or remediation activities related to a hazardous materials/hazardous wastes release, soil and groundwater contamination, and/or environmental-health issues, a work plan must be submitted to and approved by our agency.

- For some sites, the California Regional Water Quality Control Board, Central Coast Region and/or the California Department of Toxic Substances Control may provide oversight and also require submittal and approval of a work plan prior to field activities.