POLICY AND PROCEDURES FOR ENVIRONMENTAL EVALUATION OF ABANDONED OIL AND GAS WELLS AND FORMER OIL AND GAS PRODUCTION SITES

The Public Health Division of Broomfield Health and Human Services to evaluate contamination and the need for remedial measures at abandoned oil and gas well sites and former oil and gas production sites will use this policy and procedure.

- (1) Upon referral from Community Development, the Environmental Health Division of HHS, (Division) will review available information on the abandoned well site and/or former production site, and any accompanying information to determine if site characterization for nature and extent of contamination or site remediation is required.
- (2) If the Division determines that site characterization or remediation of the site is required, the Division will notify Community Development of such, as well as the owner/developer of the property.
- (3) The Division must review and approve any proposed site characterization or remediation plans prior to implementation to ensure that they meet the criteria as outlined in paragraph (5) below. Approval of the plan will be determined based upon this measure. Approval or disapproval will be reported to Community Development, as well as the owner/developer.
- (4) The Division must approve all work plans and will supervise the remediation process until completed, and will notify Community Development of such approvals and the achievement of acceptable remediation objectives.
- (5) Criteria for site characterization and remediation work plans and reports:
 - a. A Sampling and Analysis Work Plan detailing site characterization work to be performed shall be submitted for review and approval. Biased or targeted sampling as opposed to random sampling shall be conducted of soils and wastes. Samples of soils and wastes from contaminated areas shall be collected and analyzed from within the area of a defined abandoned well site, site proposed to be abandoned or former production site. The horizontal and vertical extent of contamination shall be determined. The number and location of samples shall be appropriate to site conditions. Samples shall be collected, preserved, documented and shipped using standard environmental sampling procedures in a manner to ensure accurate representation of site conditions. Site characterization work shall be conducted under the direction of and certified by a professional engineer registered in the State of Colorado.

- b. Laboratories shall analyze samples for target analytes using Standard methods such as those found in EPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. Target analytes are volatile organic compounds and polynuclear aromatic compounds typically found in oil and gas exploration and production wastes. Laboratory detection limits shall be an order of magnitude less than the allowable soil remediation objectives found in: Colorado Department of Public Health and Environment Hazardous Materials and Waste Management Division Residential and Industrial Scenario Soil Remediation Objectives with 1000 mg/kg cap, as amended from time to time.
- c. Risk assessment will not be required as a part site characterization when the future land use is either **residential or industrial/commercial**. The appropriate land use scenario to be used shall be determined by the City. For residential and industrial land use, site contamination levels may not exceed Colorado Department of Public Health and Environment Hazardous Materials and Waste Management Division Residential and Industrial Scenario Soil Remediation Objectives with 1000 mg/kg cap (as amended from time to time). Before the site is approved for development, the site shall be remediated to meet soil remediation objectives in accordance with all applicable City, State, and Federal requirements. When future land use is open space designated for wildlife relocation, a site-specific ecological risk assessment shall be performed to determine appropriate soil remediation objectives.
- d. A report detailing the rationale of the number and locations of samples, and providing laboratory results and comparisons to the above stated soil remediation objectives shall be submitted to the Environmental Health Unit of Broomfield Health and Human Services for its review and approval. The Report shall include recommended remedial actions.
- e. If the Division determines that remedial actions are required, a work plan shall be submitted to the Division for review and approval that details remedial measures which will be undertaken.
- f. Previously taken soil test results from the former production site or well site which are equivalent in nature and scope to the program detailed in paragraphs (a) through (c) above and which are acceptable to the Division may be submitted in lieu of taking new samples.