Shell Oil Products US (Shell) Kennan Penrose "A" Site
Case #1R299, Lea County, New Mexico
New Mexico Oil Conservation Division (NMOCD) & SOPUS Meeting Minutes

Date: August 11, 2010
Time: 1:00 – 4:30 PM CDT
Location: NM OCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico

Attendees:

NMOCD**:**
Mr. Glen von Gonten, Hydrogeologist, Remediation Division
Mr. Jim Griswold, Supervisor, Team 3, ECS II, Remediation Division

Shell:
Mr. Ken Springer, Project Manager, Shell Oil Products US
Mr. Shailendra Ganna, Engineer, Shell Global Solutions
Mr. Iain Olness, Project Manager, URS
Mr. Mike Hawthorne, Principal Remediation Geoscientist, H_2A Environmental, Ltd.

Purpose: Meeting to update the NMOCD on the status of the site and look at options for closure including, but not limited to, closure under the Technical Infeasibility (TI) option (19.15.30.9 Part E).

Meeting began with introductions, description of the site, an overview of the site ownership history, release and investigation chronology and general discussion by all participants.

- NMOCD agreed that SOPUS has aggressively remediated the site and that aspect would be beneficial for proposing alternative abatement standards.
- There was discussions about remediation activities implemented, current site conditions and feasibility (effectiveness, TI, etc) of implementation of additional remediation activities for the impacts at the site.
- The group discussed the applicability of TI and noted that the rules provision granting alternative abatement standards should apply to the qualitative closure standards (e.g., absence of measurable LNAPL closure standard); however, the site doesn't meet the requirement regarding the numerical closure standards (demonstration of water contaminant levels below 200 percent of the abatement standard). Alternatively, the group can still pursue TI by seeking approval of an alternate abatement standard pursuant to Subsection F of 19.15.30.9 NMAC

19.15.30. Abatement Standards and Requirements:

…E. *Technical infeasibility.*

(1) *If a responsible person is unable to meet the abatement standards set forth in Subsections A and B of 19.15.30.9 NMAC using commercially accepted abatement technology pursuant to an approved abatement plan, the responsible person may propose that abatement standards*

compliance is technically infeasible.

(a) *The director may consider technical infeasibility proposals involving the use of experimental abatement technology.*

(b) *The responsible person may demonstrate technical infeasibility by a statistically valid extrapolation of the decrease in concentrations of a water contaminant over the remainder of a 20 year period, such that projected future reductions during that time would be less than 20 percent of the concentration at the time the responsible person proposes technical infeasibility. A statistically valid decrease cannot be demonstrated by fewer than eight consecutive quarters.*

(c) *The technical infeasibility proposal shall include a substitute abatement standard for those contaminants that is technically feasible. The responsible person shall meet abatement standards for other water contaminants not demonstrated to be technically infeasible.*

(2) *The director shall not approve a proposed technical infeasibility demonstration for a water contaminant if its concentration is greater than 200 percent of the abatement standard for the contaminant.*

(3) *If the director cannot approve any or all portions of a proposed technical infeasibility demonstration because the water contaminant concentration is greater than 300 percent of the abatement standard for each contaminant, the responsible person may further pursue the issue of technical infeasibility by filing a petition with the division seeking approval of alternate abatement standards pursuant to Subsection F of 19.15.30.9 NMAC.*

F. *Alternative abatement standards.*

(1) *At any time during or after the stage 2 abatement plan's submission, the responsible person may file a petition seeking approval of alternative abatement standards for the standards set forth in Subsections A and B of 19.15.30.9 NMAC. The division may approve alternative abatement standards if the petitioner demonstrates that:*

(a) *either compliance with the abatement standards is not feasible, by the maximum use of technology within the responsible person's economic capability; or there is no reasonable relationship between the economic and social costs and benefits, including attainment of the standards set forth in 19.15.30.9 NMAC to be obtained;*

(b) *the proposed alternative abatement standards are technically achievable and cost-benefit justifiable; and*

(c) *compliance with the proposed alternative abatement standard will not create a present or future hazard to public health or undue damage to property.*

- During the discussions, the following plan was developed and agreed upon to move site towards closure under either the TI option or providing alternative abatement standards (19.15.30.9 Part F):
    - Determine the TDS in the source well (i.e. MW-1) and a background well (i.e., MW-3 or MW-4);
    - Collect a water sample from groundwater monitoring well MW-1 to determine petroleum constituent concentrations, if present. The sample will be submitted for quantification of the following constituents:
        - Benzene, toluene, ethylbenzene and total xylenes via EPA Method 8260B; and,

        - Total Dissolved Solids (TDS) via Standard Method (SM) 2540C, pH via SM4500H B, and chlorides via EPA Method E300.0.

    - Should analytical results indicate no detectable concentrations of petroleum constituents or levels below the water quality standards as set forth in 20.6.2.3103 NMAC, then an additional sample should be collected to confirm results. If the second round of samples confirms that no petroleum constituents are present at or above the water quality standards, the site may be eligible for closure although LNAPL is present on the water table.
    - Prepare and submit a closure request package;
    - Should analytical results indicate detectable concentrations of petroleum constituents at levels exceeding water quality standards as set forth in 20.6.2.3103, continue site monitoring to confirm stable/declining trends in samples collected from groundwater monitoring well MW-1 to ensure a stable / declining overall trend exists.

- Look at option of completing a Stage II Abatement Plan and proposing alternative abatement standards.
    - A Stage II Abatement Plan would have to go for public review; however, NMOCD indicated they could support alternative abatement standards based on the work previously completed by SOPUS.

20.6.2.3103 STANDARDS FOR GROUND WATER OF 10,000 mg/l TDS CONCENTRATION OR LESS: The following standards are the allowable pH range and the maximum allowable concentration in ground water for the contaminants specified unless the existing condition exceeds the standard or unless otherwise provided in Subsection D of Section 20.6.2.3109 NMAC. Regardless of whether there is one contaminant or more than one contaminant present in ground water, when an existing pH or concentration of any water contaminant exceeds the standard specified in Subsection A, B, or C of this section, the existing pH or concentration shall be the allowable limit, provided that the discharge at such concentrations will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section. These standards shall apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "*methods for chemical analysis of water and waste of the U.S. environmental protection agency*," with the exception that standards for mercury, organic compounds and non-aqueous phase liquids shall apply to the total unfiltered concentrations of the contaminants.

A. Human Health Standards-Ground water shall meet the standards of Subsection A and B of this section unless otherwise provided. If more than one water contaminant affecting human health is present, the toxic pollutant criteria as set forth in the definition of toxic pollutant in Section 20.6.2.1101 NMAC for the combination of contaminants, or the Human Health Standard of Subsection A of Section 20.6.2.3103 NMAC for each contaminant shall apply, whichever is more stringent. Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.

(1) Arsenic (As)…….……0.1 mg/l
(2) Barium (Ba)……...……...1.0 mg/l
(3) Cadmium (Cd)……..……...0.01 mg/l
(4) Chromium (Cr)……...…….0.05 mg/l
(5) Cyanide (CN)……..……..0.2 mg/l
(6) Fluoride (F)……..…….1.6 mg/l
(7) Lead (Pb)…….0.05 mg/l
(8) Total Mercury (Hg)……...0.002 mg/l
(9) Nitrate (NO_3 as N)……...10.0 mg/l
(10) Selenium (Se)……0.05 mg/l
(11) Silver (Ag)…….0.05 mg/l
(12) Uranium (U)……....0.03 mg/l
(13) Radioactivity: Combined Radium-226 & Radium-228…….30 pCi/l
(14) Benzene…..……...0.01 mg/l
(15) Polychlorinated biphenyls (PCB's)……..0.001 mg/l
(16) Toluene……...0.75 mg/l
(17) Carbon Tetrachloride……..0.01 mg/l
(18) 1,2-dichloroethane (EDC) ……..…0.01 mg/l
(19) 1,1-dichloroethylene (1,1-DCE) ……...0.005 mg/l
(20) 1,1,2,2-tetrachloroethylene (PCE) ……..0.02 mg/l
(21) 1,1,2-trichloroethylene (TCE) ……...0.1 mg/l
(22) ethylbenzene…….……0.75 mg/l
(23) total xylenes…….…….....0.62 mg/l
(24) methylene chloride……..……0.1 mg/l
(25) chloroform……..…….0.1 mg/l
(26) 1,1-dichloroethane…….……0.025 mg/l
(27) ethylene dibromide (EDB) ……..…0.0001 mg/l
(28) 1,1,1-trichloroethane…….……...…0.06 mg/l
(29) 1,1,2-trichloroethane…….……...0.01 mg/l
(30) 1,1,2,2-tetrachloroethane…….…….0.01 mg/l
(31) vinyl chloride…….…….0.001 mg/l
(32) PAHs: total naphthalene plus monomethylnaphthalenes…….0.03 mg/l
(33) benzo-a-pyrene…….……0.0007 mg/l

B. Other Standards for Domestic Water Supply

(1) Chloride (Cl) …….……...250.0 mg/l
(2) Copper (Cu) …….……....1.0 mg/l
(3) Iron (Fe) …….……..…1.0 mg/l
(4) Manganese (Mn) …….……..…0.2 mg/l

(6) Phenols……..……..…0.005 mg/l
(7) Sulfate (SO_4) ……..……..600.0 mg/l
(8) Total Dissolved Solids (TDS) ……..…...……1000.0 mg/l
(9) Zinc (Zn) ……..……...……10.0 mg/l
(10) pH……..……..…….between 6 and 9

C. Standards for Irrigation Use - Ground water shall meet the standards of Subsection A, B, and C of this section unless otherwise provided.

(1) Aluminum (Al)…….. ……..……..…5.0 mg/l
(2) Boron (B) ……..……...0.75 mg/l
(3) Cobalt (Co) ……..…….0.05 mg/l
(4) Molybdenum (Mo) ……..……...1.0 mg/l
(5) Nickel (Ni) ……..……....0.2 mg/l

[2-18-77, 1-29-82, 11-17-83, 3-3-86, 12-1-95; 20.6.2.3103 NMAC - Rn, 20 NMAC 6.2.III.3103, 1-15-01; A, 9-26-04]

[Note: For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007. For any new water discharges, the uranium standard is effective 9-26-04.]