

From: Kevin Kratina
To: Cozzi, Tom; Czock, Gary; Romino, Len; SRP DRMR ADs_BCs; SRP DRS ADs_BCs
Date: 3/8/2006 8:15:37 AM
Subject: Guidance for the Management of Low Level GW Cases

All, A Committee, consisting of representatives from most of the DRMR Bureaus and OBR, was formed over a year ago to address the above topic. A final Committee draft was produced in Feb. '05. No activity occurred pending a long awaited meeting with DOL that occurred yesterday; at which DOL identified no reason why we could not move forward with this Guidance. Please review the attached and provide comments to me by 3-15-06. Thanks Kevin

(Please note: This will also be an agenda item for discussion at the DRMR Director's Meeting today. Also, the attached GWQSS chart still needs to be updated with the new numbers from the 2005 readpotion)

CC: GW Case Closeout Committee; Seebode, Joe

2-22-05

FINAL COMMITTEE DRAFT - FOR DISCUSSION PURPOSES ONLY
Guidance for the Management of Low-level Groundwater Contamination Cases

Pursuant to the amended portions of the *Spill Act* (N.J.S.A. 58:10B et seq. and the *Brownfield and Contaminated Sites Remediation Act* (P.L. 1997 c.39), NJDEP utilizes risk-based decision making for sites with contaminated soils, groundwater and other environmental media. This is accomplished by applying institutional controls and/or engineering controls to manage residual contamination and any potential risks when contaminants are present above unrestricted use criteria. The NJDEP recognizes that many sites have collected reliable groundwater data to indicate that groundwater is impacted at concentrations exceeding the *Ground Water Quality Standards* (GWQS, N.J.A.C. 7:9 et seq.) but is not posing a threat to human or other ecological receptors. As a result, a Committee was established to develop the "Guidance for the Management of Low-level Groundwater Contamination Cases" as a strategy to manage these cases.

The long-term management of cases with groundwater contamination that does not represent a current risk to public health or other ecological receptors is not new to the Department. For these cases, a Classification Exception Area (CEA) is issued with a Limited Restricted Use No Further Action Letter (LRUNFA). The LRUNFA is expressly allowed under the *Brownfield and Contaminated Sites Remediation Act* (N.J.S.A. 58:10B-1 et seq.) and CEAs have been used throughout the state as an institutional control to manage cases with groundwater contamination above the GWQS, including those with low levels of groundwater contaminants that do not pose a threat to human or other ecological receptors. Cases with groundwater contamination exceeding the levels in this guidance have been issued LRUNFAs with CEAs based on information demonstrating no current risk and decreasing contamination trends as defined pursuant to the *Technical Requirements for Site Remediation* N.J.A.C. 7:26E-6.3. Biennial certifications, required under the Brownfield Act and the Technical Requirements for Site Remediation (N.J.A.C. 7:26E et seq.), provide ongoing verification that contaminated groundwater managed under a CEA continues to be protective of human or other ecological receptors.

By applying this guidance, the Department is making an administrative policy change only and this guidance does not impact the remedy selection applied for site cleanup. The Department will issue a variance (in accordance with the *Technical Requirements for Site Remediation*, N.J.A.C. 7:26E-1.6(d)) from the requirements to establish a decreasing groundwater contamination trend (per N.J.A.C. 7:26E-6.3(e)3iii) before a LRUNFA letter is issued. In some cases statistical analysis does not verify a decreasing concentration trend, but the site data can confirm that the existing groundwater contamination does not pose a threat to human or other ecological receptors when institutional and/or engineering controls are applied. Through this variance, the Department is not modifying the Ground Water Quality Standards or applying these values as default groundwater cleanup criteria. All CEAs established or revised pursuant to this guidance would require a CEA duration estimate and will establish a 6-year timeframe for the resampling of ground water to insure compliance with the Ground Water Quality Standards.

DRAFT FOR DISCUSSION PURPOSES ONLY Page 3 of 4
Guidance for the Management of Low-level Groundwater Contamination Cases

Contaminant	Existing GWQS or interim criterion or MCL (in ug/l or ppb) (6)	Added Factor (10x) Demonstrated No Threat to Receptors (1)
Tetrachloroethene	1	10
Trichloroethene	1	10
Cis-1,2-dichloroethene	70	700
Vinyl chloride	2	20
1,1,1-trichloroethane	30	300
1,1-dichloroethene	2	20
Carbon tetrachloride	2	20
Methylene chloride	2	20
Benzene	1	10
Toluene (2)	1000	(1000)
Ethylbenzene (2)	700	(1000)
Xylenes (total) (2)	1000	(1000)
MTBE (3)	70	140
TBA (3)	100	200
Petroleum TICs (ind)(4,5)	100	1000
Petroleum TICs (total) (4)	500	5000
Arsenic (5)	8	80
→ Chromium (5)	100	1000
Iron (5)	300	3000
Lead (5)	10	100
Mercury (5)	2	20

NOTES: Decisions to utilize these criteria are made by NJDEP on a case-by-case basis. [N/A = not applicable]

- (1) All minimum criteria must apply to site and receive NJDEP approval, including:
 - (a) no receptors impacted or threatened (e.g., potable wells, surface water bodies, vapor intrusion to buildings);
 - (b) all sources of groundwater contamination are removed (including residual product and soils exceeding Impact to Ground Water Soil Cleanup criteria, IGWSCC);
 - (c) site is candidate for a natural remediation program pursuant to *N.J.A.C. 7:26E-6.3(e)* including sentinel well placement and delineation to the *Ground Water Quality Standards (N.J.A.C. 7:9)* per Department policy (see *SRP Newsletter* dated May 2001);
 - (d) data set is representative of groundwater elevation fluctuations (e. g., seasonal, tidal, water-use changes) and,
 - (e) a minimum of eight rounds of ground water data has been collected from key monitoring wells following source removal and an attempt has been made to demonstrate a decreasing trend.

- (2) Individual organic compounds are “capped” at 1,000 ppb and total organic compounds are “capped” at 10,000 ppb due to aesthetic qualities and potential vapor migration.
- (3) Due to their very high mobility, gasoline additives MTBE and TBA are limited to an added factor of 2.
- (4) Petroleum-related Tentatively Identified Compounds (TICs) are those compounds that are demonstrated to be associated with fuel or gasoline spills that have been identified as non-carcinogenic compounds.
- (5) Inorganic constituent levels are based on analysis of unfiltered samples.
- (6) Ground Water Quality Standard (*N.J.A.C. 7:9*) may be modified by repromulgation, NJDEP interim criterion or Safe Drinking Water Act (*N.J.A.C. 7:10*) Maximum Contaminant Level (MCL).

DRAFT FOR DISCUSSION PURPOSES ONLY Page 2 of 4
Guidance for the Management of Low-level Groundwater Contamination Cases

This Guidance is exclusively intended to be utilized for sites that have groundwater constituents at concentrations no greater than 10 times the applicable standards, 1,000 parts per billion (ppb) for individual organic compounds or 10,000 ppb for total organic compounds that do not pose a threat to human or other ecological receptors and contaminant levels have not demonstrated a decreasing trend pursuant to N.J.A.C. 7:26E-6.3(e). Specifically, for cases to be eligible for this guidance, the following minimum criteria must be met:

- (a) no receptors are impacted or threatened (e.g., potable wells, wellhead protection areas, surface water, vapor intrusion to indoor air);
- (b) all sources of groundwater contamination have been identified and remediated (includes both product and soils exceeding the Impact to Ground Water Soil Cleanup Criteria (IGWSCC)). This may include a re-evaluation of soils above and below the water table to insure no source of ground water contamination remains;
- (c) site is candidate for a natural remediation program pursuant to *N.J.A.C. 7:26E-6.3(e)* including sentinel well placement and delineation to the *Ground Water Quality Standards (N.J.A.C. 7:9)* per Department policy (see *SRP Newsletter* dated May 2001);
- (d) data set is representative of groundwater elevation fluctuations (e. g., seasonal, tidal, water-use changes) and,
- (e) a minimum of eight rounds of ground water data has been collected from key monitoring wells following source removal and an attempt has been made to demonstrate a decreasing trend.

If the above conditions are met and groundwater contaminant levels are below the criteria in Table 1, the NJDEP will evaluate issuing a variance as noted above and may issue a LRUNFA with a CEA. The concentrations noted in Table 1 were established by applying a 10 times factors to the existing groundwater standard (or NJDEP-approved interim criteria or Maximum Contaminant Levels, MCLs) provided that there are no threats to human or other ecological receptors. If all of the minimum criteria (a through e) listed above are met, an added factor of 10 will be multiplied to the existing groundwater standard. Due to the unique behavior of the gasoline additives methyl tertiary butyl ether (MTBE) and tertiary butyl alcohol (TBA) in groundwater, particularly their very high solubility, limited biodegradation and frequent releases from USTs, a total factor of two will be multiplied to the groundwater standard of MTBE and TBA. Due to aesthetic considerations (see Safe Drinking Water Act, *N.J.A.C. 7:10*) and/or potential vapor migration concerns, this guidance “caps” the total levels of organic contaminants at 1,000 ppb for individual organic contaminants and at 10,000 ppb for total organic concentrations.

TABLE 1: Guidance Concentrations (in parts per billion, ppb) for Groundwater Constituents. These Guidance Concentrations can be used only through a variance and these Guidance Concentrations are not to be used as default groundwater cleanup criteria.