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Via email: wavramen@cdphe.state.co.us

Re: Comments on CDPHE HMWMD's Draft *Guidance for Closure of Low-Threat Sites with Residual Ground Water Contamination, August 13, 2010*

General Comments

The Board of Directors of Colorado Citizens Against ToxicWaste, Inc. (CCAT) thanks you for the opportunity to comment on the above referenced draft Policy and Guidance. It took multiple readings of this Guidance before it became evident that a finding of "No Further Action" meant just that. Though we can appreciate the intention of saving State and industry resources in these economic times, and realize the difficulty of your position, we don't want the economic and environmental burden shifted to innocent citizens that may encounter this contamination now or in the future. It appears that CDPHE is defining and legitimizing a "walk away and don't look back" strategy and policy for contamination cleanup. A major problem with the proposed Guidance is the claim that ultimately these sites will reach cleanup goals, State groundwater standards, while no avenue of validation is provided.

The Guidance document Introduction uses the word "**Monitored**" natural attenuation. This is misleading, as the outcome of this Guidance is actually "**Unmonitored** Natural Attenuation." The first four references in this Guidance all relate to "**Monitored** Natural Attenuation," not "**Unmonitored** Natural Attenuation."

Anywhere in the Guidance that the term natural attenuation is used beyond the first paragraph of the Introduction must instead state "unmonitored natural attenuation." This document as it stands easily misleads at first glance. **Monitored** Natural Attenuation should be the first step to scientifically defend transitioning to **Unmonitored or No Further Action** (NFA).

1. Public Mistrust & Engagement

In our opinion, in the majority of cases, contamination is caused by overt, willful, irresponsible acts of responsible parties. Contamination is caused by ill defined processes which fail, by inadequate regulations/laws, and by failure of agencies to enforce them. The public should not be made the

victims of contamination, nor should they be deprived of resources that contamination has taken from them, in this case clean, safe ground water meeting Colorado State Ground Water Standards.

A finding of "No Further Action" and frequent use or misuse of it, which we are highly apprehensive will become the norm, is akin to letting the responsible party go free. It is neither right nor just, and it will only promulgate irresponsibility on the part of the polluter: ineffective monitoring, management, and enforcement by the regulating agencies; and, impotent regulation/law enforcement and enactment.

Use of NFA will foster public hostility and mistrust of the entire process. The Division staff that design and approve an NFA strategy for a groundwater plume will be long gone by the date at which remedial objectives are expected to be reached, but most of the residents or their descendants will still have to live with the results. This is especially true wherever the rest of the remediation program has been suspect or inadequate.

If CDPHE wishes to adopt this Guidance, then public engagement must be significantly increased. Public engagement in the screening and selection of remedial alternatives and involvement in decisions of this nature should occur early in the process, not after the fact when everything has been largely decided. Public engagement should be transparent. Agencies should recognize that public stakeholders bring to the table local expertise, access to electronic and internet research, and site-specific institutional memory that scientific or regulatory experts sometimes lack.

This guidance fails to adequately explain or define how the Division intends to involve-the public, and it fails to offer sufficient or timely participation. Unfortunately, once a "draft" for public comment is offered, authors of it will tend to defend their positions. The section title heading "Public Notice" clearly conveys a lack of interest in engaging the public, and instead offers an intent to "Notify," leaving a decision to "initiate and participate in community or public meetings" up to "Division staff" who "may choose" this action, or not. There can be no "may" or "should" as it pertains to public involvement. It must be "shall" and "must."

2. Risk Management

The guidance document presents Lines of Evidence as the mechanisms for a risk management based approach to the process of reaching an NFA decision. We believe additional mechanisms need to be added prior to a NFA decision as well as additional mechanisms to manage risks arising after the implementation of a NFA decision.

There must be strict entrance criteria into the NFA application process. It is evident from inspection of the references in this document that EPA documents contain far more specifics than does this Guidance document when it comes to certain Lines of Evidence. This Guidance document must have traceability back to EPA defined criteria. Anything short of that leads one to conclude that the Division criteria have been made less stringent, and more risky. The Guidance document contains far too many instances of the words "may", "should", and "could" with regards to specific exhibits and data supporting Lines of Evidence. There need to be stringent, exact steps and data requirements for this decision process, with no flexibility in

allowing something not to be provided based upon the discretion of the responsible party who may have a desire to provide that which is of minimal cost and minimally acceptable.

We would urge the Division to first adopt a policy of approving "monitored" natural attenuation. Based on the references in the Guidance document, this seems to be where other agencies have begun. In this fashion, risk can significantly be managed through monitoring. History can be established, assumptions can be tested, and contingency plans can be identified and implemented. The entire process can be managed and controlled into the initial period of the natural attenuation. Assumptions on estimated time intervals can be validated. Valuable knowledge can be gained.

If unmonitored natural attenuation becomes the Division policy, then we strongly feel that mechanisms for validation through some initial period must be added to insure that the attenuation is occurring according to data provided in the Lines of Evidence. We would also suggest that surety/performance bonds on the part of responsible parties, along with contingency plans, be part of any decision for the beginning interval of any NFA decision. In the beginning there will be mistakes, process failures, invalid assumptions, etc. Risk management mechanisms must exist to account for this.

We would also request that natural attenuation (monitored or unmonitored) only be considered and allowed for those sites where contaminants have not yet reached receptors, are breaking down faster than they are migrating, and have not migrated beyond the site boundary. We would also request that no form of natural attenuation be allowed in off-site locations where the contamination has left the source of contamination or the facility property. Natural attenuation is not visible to the public. Digging and hauling away, pumping and treating are visible signs of proactive remedial steps. They must occur at the site, and off the site, first and foremost to remove the contamination and sources as completely as possible using the best technology available.

3. Guidance Document Relative to EPA Jurisdiction and Superfund Sites

Nearly all of the references cited by this Guidance document are from the EPA. This begs the question, why is the Division taking this step to develop this guidance at all? How many other states are implementing such Guidance Documents on using unmonitored natural attenuation as a NFA decision? It seems this is a duplication of effort and likely will increase government agency inefficiency while at the same time increase confusion and conflict through what seems to be an overlap in powers, jurisdiction, and competing guidelines.

Nowhere in the Division Policy Statement or in this Guidance Draft document was made mention of applicability to Superfund Sites. From the document, it is unclear if this Division Policy and Guidance apply to Superfund Sites; and if so, how the overlap in authority will be managed. Mr. Avramenko stated in a November 12, 2010 email response to a question about this, "The P&G applies to any site the Division regulates." Therefore, RCRA and CERCLA (Superfund) sites would be applicable. The Draft document should make this clear, along with giving details on how the Guidance and Policy will adhere to federal laws and regulations.

Comments and Questions Specific to The Draft Guidance Document

1. pg 2. Introduction: *"Widespread implementation of those technologies was followed by awareness that monitored natural attenuation could address contamination at some sites"*

Comment: The awareness that followed was that "**monitored**" natural attenuation could address contamination at some sites, not "**unmonitored.**" Furthermore the first four references in this Guidance all relate to "**Monitored Natural Attenuation.**"

Request 1: Please present the scientific evidence and proof that "unmonitored" natural attenuation has justification. This seems to be a high risk approach and requires a leap of faith that needs to be proven. There must exist case history across the United States or the world. What is it?

Request 2: Anywhere in the Guidance that the term natural attenuation is used, beyond the first paragraph of the Introduction, must instead state "unmonitored natural attenuation." This document as it stands, at first glance misleads the reader into thinking this is a proposal for monitored natural attenuation.

Request 3: It is further requested that **monitored** natural attenuation be selected as the first step by the Division in moving toward unmonitored natural attenuation. Taking this as a first step allows for

- better management of risk
- gaining experience and data
- developing a history of what works and doesn't
- testing Lines of Evidence data provided by responsible parties against actual results
- incorporation of surety bonds and contingency plans should natural attenuation not deliver the results purported in Lines of Evidence
- not leaving contamination plumes behind unless truly they can be
- greater likelihood of public acceptance

Request 4: If natural attenuation is to be selected as a remedy option, then it must at minimum be periodically monitored over the time interval estimated to achieve Colorado State Groundwater Standards, to insure that the desired result is in fact being achieved.

2. pg 2. Introduction: *"Additionally, there is a growing awareness that resources required to install and operate remedial systems in order to meet numeric standards in low-threat cases can be out of proportion to the threat actually posed to human health and the environment. These factors raise the question of whether the public good is served by requiring the expenditure of resources to actively cleanup low-threat sites."*

Comment: Resources required are those of the responsible party, the polluting party. There should be no leniency toward polluters relative to the threat actually posed to human health and the environment. Population growth is exploding, making it more difficult to estimate who will or won't develop an area within twenty to fifty years, potentially exposing people to a forgotten problem, especially when all monitoring has ceased. The public good is only adequately served by restoring that which was polluted back to its state prior to the act, no matter the cost. Someone must pay, and it should be the polluter, not the citizen or environment. Most of this pollution is not accidental, but due to choosing profits over safety and pollution prevention measures.

Request: Low-threat sites must be limited to those sites where contaminants

- have not yet reached receptors
- are breaking down at a faster pace than they are migrating
- have not migrated beyond the site boundary

3. pg 2. Introduction: *"These factors were discussed within in the Division and with outside parties, leading to the development of this guidance."*

Request: Please list the "outside parties" the Division discussed these factors with.

4. pg 2. Introduction: *"It should be emphasized that the ultimate goal and expectation of any cleanup action, including the risk management-based approach being outlined in this guidance, is the eventual achievement these Colorado ground water standards ("CGWS")."*

Comment: Please explain how this risk is going to be "managed" when both the agency and the responsible party are essentially "leaving the plume behind" per the Guidance document, and assigning its remaining cleanup to unmonitored natural attenuation on some complex, difficult to estimate time interval with a tremendous amount of uncertainty, risk, and no overt steps to follow-up or validate?

Request: We strongly request that monitored natural attenuation be adopted as a first step so that learning can occur on all party's parts.

5. pg 3. Introduction: *"State considers the closure process outlined in this guidance to be of limited application, and used only when it has been demonstrated with scientific rigor that reasonable means, using the best available technologies, will not result in a significant improvement in ground water quality. This guidance will be applied only in situations where the expenditure of additional resources yields no increased benefit to human health and the environment and where all other conditions noted in this guidance are satisfied."*

Request 1: Please define "limited application." What are the explicit entry criteria for "limited application"?

Request 2: If contamination has left the site and the ground water plume extends beyond the site boundaries, a NFA application or decision should not be entertained or allowed as an option for addressing off-site contamination. The complexity of implementing institutional controls or environmental covenants in residential areas, and the process of achieving off-site property owner agreement to such environmental restrictions on their property deeds does not warrant nor justify doing so.

Request 3: A formal, rigorous business case and socioeconomic analysis, showing and proving that the public good is not served by further expenditure to clean up a polluted site, should be an additional Line of Evidence; and, it should be added to the application for NFA. This business case must be part of the NFA Decision Record and must go through a public review along with the Decision Record itself.

Request 4: The Division should formally define and track an annual metric that consists of the number of applications submitted for NFA, and how many applications were approved. Further, an upper limit should be defined so that all Division staff are aligned on what is expected by "limited application." That which gets measured, gets done. The concern is that there will be a flood of such applications, and it would also be informative with regard to "limited application," to compare the number of Division NFA approvals to the total number of contaminated sites in the State.

Request 5: It is further requested that the Division prepare a current Fact Sheet showing how many sites exist for reclamation/remediation in the state of Colorado, how many are in some state of remediation, what remediation steps are being taken for each site, and how many sites already exist that have been approved as No Further Action prior to this Guidance.

Request 6: It should also be explicitly stated that any and all contractors used by the responsible party in preparing any part of the scientific or business case rigor need to be screened in advance and approved by the Division. It is a common concern and source of public mistrust that responsible parties hire and pay firms to give them the answers they want and need, and that the agency does not play a major role in who is selected.

6. pg 4. Line of Evidence 1:

- *Nature and quantitative distribution of the source areas and ground water plume*
 - *Data collection in three spatial dimensions over time, where appropriate*
 - *Pollutant distribution within the environment (i.e., nature and extent)*
 - *Sources of pollution, primary and secondary*
 - *Source mass*

- *Contaminant phase distribution and partitioning between soil, ground water, and soil gas*
- *Physical and chemical characteristics of the discharge, including its potential for migration*
- *Existing quality of ground water and surface water, including other sources of pollution and their cumulative impact on water quality*
- *Potential for the pollutants to attenuate or degrade and the nature of the breakdown products*
- *How all of these factors are likely to vary with time*

Request: Above is what is contained in the Guidance document. Below is what is contained in the EPA document which is likely to have been the source for the above. Explain why items contained in the EPA document were left out of this Guidance Document. It must be insured that the absolute best possible inventory of contaminants in the groundwater are taken and understood, and a standardized EPA profile of such is what should be used for both organic and inorganic contaminants.

- data on the location, nature, and extent of contaminant sources
- data on the location, nature, extent, and concentrations of dissolved contamination
- chemical properties of the contaminants and the subsurface materials which the contaminants migrate through
- contaminant phase distribution and partitioning (such as presence of *NAPL*, gaseous phases, dissolved phases)
- rates of biological and non-biological transformation
- ground-water geochemical data (major anions and cations, organic carbon, pH, etc.)
- geologic information on the type and distribution of subsurface materials (transmissive vs. non-transmissive materials, thicknesses and horizontal extent)
- aquifer hydraulics and characteristics, including *hydraulic conductivity* and *hydraulic gradients*, particularly preferred flow pathways
- location of areas of recharge and discharge and rates
- potential contaminant migration pathways to points of exposure to human or ecological receptors
- flux of water through areas of recharge and discharge
- toxicity versus carcinogenicity (risk, concentration limits, etc.)
- an understanding of how all of these factors are likely to vary with time

7. pg 7. Line of Evidence 1: *"Data collection in three spatial dimensions over time, where appropriate"*

Request: Please define when data collection in three spatial dimensions over time is not "appropriate." It should always be appropriate.

8. pg 5. Line of Evidence 1: *"There is no quantitative method for determining whether a site has been adequately characterized. Division personnel will apply professional judgment in each case, factoring in such elements as: the cause of the suspected release, the chemicals of concern, the complexity of the site hydrology and hydrogeology, the magnitude of the problem, and the potential for future exposures."*

Request: Any Division decision that leads to a finding of NFA should include the resumes and credentials of Division staff who were primary contributors to the decision so that the public can be made aware of their professional credentials which enabled them to apply professional judgment in matters such as this.

9. pg 5. Lines of Evidence 2: *"It is the Division's expectation that the CGWS or health-based remediation goals approved by the Division in the absence of a CGWS will eventually be achieved at some future date."*

Comment: "Eventually be achieved at some future date" is not acceptable as a definitive statement of finality and closure. If sufficient remediation data does not exist across the United States or world from "monitored" natural attenuation sites to establish estimated timeframes for completion, then the Division is premature in implementing the remedy of unmonitored natural attenuation.

If the Division cannot cite examples from monitored natural attenuation cases and give typical intervals and ranges of time for final remediation, then something is wrong. Either the approximate intervals are known (and known to be very long) and are being withheld to prevent negative reaction, or time intervals are unknown and this approach is truly not proven and should therefore not be used.

The Division staff that design and approve a NFA strategy for a groundwater plume will likely be long gone by the time remedial objectives are expected to be reached, while most of the residents or their descendants will be living with the results. Additionally, with unmonitored natural attenuation, the results will never be known, because there is no follow-up or validation designed into the plan or these Lines of Evidence.

Request: We need transparency from the Division. We need to know reasonable estimates for ranges of intervals. The Division needs to gather and make available representative data from across the United States and the world comparing cases where monitored natural attenuation plans were implemented. What were the actual time intervals to achieve the objectives as compared to the estimates?

10. pg 6. Lines of Evidence 2: *"Therefore, the primary source area (waste and contaminated soil where the release occurred) and secondary source areas (contaminated ground water and formation materials causing re-entrainment) must be remediated to the extent practicable to ensure they are no longer acting as a source. More specifically, this includes remediation of*

residual contaminants entrained within or sorbed to soil, sediment, or bedrock that could continue to contribute to ground water contamination, to the extent that the CGWS or health-based remediation goals remain unattainable over time. Remediation of sources and plumes to the extent feasible is therefore required before natural attenuation can be considered a long-term remedy. A good faith effort must be made to remediate source area waste material still residing in the environment and any associated soil and ground water contamination using appropriate technologies that are considered feasible."

Comment: Polluters violate the environment. They do it because every dollar spent preventing pollution is a dollar taken from the bottom line of their income statements. Did they make a "good faith effort" not to pollute? Did they do everything to the "extent practicable" not to pollute? Did they do that to the "extent feasible"? No, they likely chose expedient and profitable operation methods, and they will attempt to choose similar profitable and expedient methods in cleanup as well, especially at closure when no additional revenue stream is to come from whatever enterprise that caused the pollution in the first place. These words smack at letting the polluter off the hook. They smack at what the public interprets, whether correctly or not, as a cozy relationship between industry and regulator.

Request: The polluter must be required to remove all primary and secondary contaminants from the site. The site characterization has a 3 dimensional model of the damage. That 3 dimensional model must be extracted, dug up, hauled away and removed permanently from the site. That is a good faith effort, practicable, and feasible. Cost for cleanup to the polluter doesn't matter, especially when cost to prevent it in the first place did matter to that same responsible party. That is why contamination happened. Cost to remove it is the penalty for not having done it right in the first place. There should be no degrees of freedom within the Division when it comes to this.

11. pg 6: Line of Evidence 2: *"If the ground water is already contaminated, any residual source material that may still exist in the subsurface must not leach/diffuse at a rate that will impede natural attenuation processes from causing contaminant concentrations to decline at a speed that will allow for the timely achievement of the CGWS or health-based remediation goals approved by the Division in the absence of a CGWS."*

Comment: In answer to a question by email about the need for this Guidance, Mr. Avramenko stated in a November 12, 2010 response, "In general, existing statutes and regulations are not specific with regard to making such technical decisions. They simply provide a broad framework within which we operate. Specific decisions are left up to individual project managers, using their professional judgement and operating within that broad framework of statutory and regulatory requirements. The draft policy and guidance would provide those project managers with specific considerations when making an NFA determination, ensuring consistency between individuals, Units, Programs." Line of Evidence

2 is an example, found numerous times throughout the Guidance, where specifics are not given to staff for their decision making.

Request: Please define "timely achievement."

12. pg 7. Line of Evidence 3: *"Impacts to downgradient ground water."*

Request: For cases where impacts to downgradient ground water exist both on and off of the site, application for NFA should not be allowed or entertained.

13. pg 7. Line of Evidence 3: *"The availability and feasibility of institutional controls to mitigate potential threats posed by the residual contamination. These controls must be durable over time."*

Comment: Our experience in Canon City, Fremont County (with contaminated property off-site of the Cotter Uranium Mill), has proven that institutional controls are very difficult to establish on off-site private properties. Sellers and Realtors have successfully resisted establishment of institutional controls in County zoning regulations or in Recorded Deeds. No local, State, or Federal institutional controls have been established here since becoming a Superfund site in 1984. After years of complaining that unsuspecting newcomers have been exposed to contaminated well water, in 2009 the EPA finally requested that notification be given to anyone requesting a State permit for a new well, which still leaves exposure from existing wells hit and miss, and unresolved. Further, the only resolution offered by this Guidance is a very complicated procedure of polluter and local agreements, or possible State intervention, a resolution that will be difficult and time consuming for the Division to enforce, and difficult for the public to follow and monitor. We suspect this problem is statewide, and that a more protective solution is available.

Request 1: Institutional controls should only be applicable to the site specific facility land itself, where rigorous State and Federal institutional controls can be established. If contamination has gone off-site, an application for NFA should not be allowed as a remedy option on-site or off-site.

Request 2: Please explain what the Division decision will be on a NFA application if institutional controls are required for significant amounts of residential property due to off-site groundwater contamination?

14. pg 8. Line of Evidence 4: *"Several years worth of monitoring data may be required in order to perform a trend analysis that reliably shows improvements in water quality amidst seasonal and longer-term climactic changes. If monitoring data do not demonstrate that the size and concentration of a plume are decreasing, this may indicate that further source/plume remediation and/or monitoring are necessary."*

For natural attenuation to be proposed as the remedy, declining concentration trends must not be dependent on the continued operation and maintenance of active remediation or containment systems."

Comment: If declining concentration trends are occurring in the face of continued operation and maintenance of active remediation or containment systems and several years of data are required to demonstrate this, then it seems quite reasonable that several years worth of monitoring data be required after active remediation and containment systems are discontinued. This is necessary in order to adequately and quantitatively demonstrate improvements solely attributable to natural attenuation.

Request: Division should require several years worth of monitoring data after active remediation and containment systems are discontinued. No modeling should be allowed. Only actual, real sampling data from monitoring groundwater should be allowed.

15. pg 9. Line of Evidence 5: *"Once it has been demonstrated that the contaminants are naturally attenuating throughout the plume and that the total mass of contamination will be reduced such that the CGWS..."*

Comment: There are cases where the total mass of contamination does not change. This is true largely for anything that is inorganic, eg. heavy metals, uranium, etc. The contaminant is not destroyed. It does not biodegrade. It is likely dispersed in its current form forever. The above statement needs to address this point. While the CGWS may still be met through dispersion of the contaminant, the total mass of contaminant is unchanged and remains. It is not reduced. It's concentration may be reduced by natural attenuation, but it's total mass is unchanged.

16. pg 10: Line of Evidence 5: *"Long-term monitoring of the natural attenuation may be necessary to estimate a time for cleanup."*

Request: For all cases where long term monitoring is necessary to estimate a time for cleanup this Guidance document needs to clearly state that such monitoring of natural attenuation must occur before any application for NFA can be processed or approved.

17. pg 10. Line of Evidence 5: *"Defining a reasonable timeframe is a complex and site-specific decision that does not permit establishing a generic time period that would be applied at all sites or facilities."*

Comment: While defining a reasonable timeframe may be a complex and site-specific decision, it is unacceptable not to provide typical examples from cases across the nation and the world where "monitored natural attenuation" was used to achieve remediation objectives. There should be data available. And it should be gathered, analyzed, understood, and used to give some typical examples.

If this task cannot be accomplished then advocating unmonitored natural attenuation as a remediation alternative is neither appropriate or just, and cannot be supported by real world data as being achievable in a "reasonable timeframe" because the Division simply cannot define reasonable.

Request: Produce the data or amend this Guidance document to adopt monitored natural attenuation, so that the Division, at some time years into the future, can justify unmonitored natural attenuation.

18. pg 10. Line of Evidence 5: *"Public acceptance of the extended time for remediation"*

Comment: This statement makes it evident that natural attenuation will require extended timeframes for remediation relative to other typical alternatives.

Request: Please explain by what formal mechanisms does the Division intend to sincerely solicit, consider, and factor public opinion and public acceptance into the processing of an NFA application? This guidance contains no such explanation of the mechanisms, and it should.

19. pg 10. Line of Evidence 5: *"Reliability of institutional controls over long time periods"*

Request: Please explain by what formal mechanisms does the Division intend to insure that the reliability of institutional controls is maintained over long time periods. Who will be responsible for this? How will it be funded? Will surety bonding be required to insure that a responsible agency is chartered and funded to make sure this happens?

Comment: Long time periods for natural attenuation to achieve CSGW objectives are again being telegraphed in this item.

Request: Please take overt, positive steps to better set public expectations on how long "long" really is likely to be.

20. pg 10-11. Line of Evidence 5: *"The timeframe needed for natural attenuation to achieve the CGWS or other Division approved remediation goals in the absence of a CGWS under the process outlined in this guidance may need to be extended when:*

- *Ground water is shallow, perched, or otherwise isolated.*
- *There are no abandoned wells and other vertical migration routes in proximity to the site.*
- *There is no current ground water use and the potential for future use in proximity to the site is low.*
- *Reliable institutional controls are in place that would tend to limit or preclude future use of the affected water resource.*

Conversely, deeper ground water impacts, lack of a competent aquitard, proximity to nearby ground water resources presently in use, existence of vertical migration pathways, or ground water pumping scenarios may require meeting standards in a shorter timeframe."

Comment: This entire section of the Guidance is very confusing and not at all clear as to its intent. It does not seem to be serving a useful purpose. If groundwater is shallow, perched, or otherwise isolated, such site should not be a viable candidate for natural attenuation. Furthermore if the site is in close proximity to nearby ground water resources presently in use it also should not be a candidate for natural attenuation. It should be a candidate for aggressive, active remediation, given its threat to the public.

Request: Please explain why this verbiage has been included here. At best it should be eliminated from the document. At worst it should be incorporated into the bullets preceding it on page 10.

21. pg 12. Line of Evidence 6: *"Under C.R.S. § 25-15-32(3)(b), the Division, with the assistance of the property owner, may negotiate an agreement with other governmental agencies to enact ordinances to restrict activities in offsite areas."*

Request: Please supply the correct Colorado Revised Statutes number. The number above is incorrect.

22. pg 12. Line of Evidence 6: *"Owners with ground water plumes that have migrated beyond their property boundary have the added burden of needing to place institutional controls on all affected properties if their intent is to seek an NFA determination from the Division. This could consist of having adjoining property owners agree to the placement of an environmental covenant or restrictive notice on their property. Under C.R.S. § 25-15-32(3)(b), the Division, with the assistance of the property owner, may negotiate an agreement with other governmental agencies to enact ordinances to restrict activities in offsite areas. Failure to place effective institutional controls on offsite properties overlying ground water plumes may be grounds for disapproving the request for an NFA determination."*

Comment: Owners with ground water plumes that have migrated beyond their property boundary have caused far reaching damage and they should not be allowed to leave their ground water plumes behind as they leave. They should instead be required to dig up and haul away all of the contaminated soils on their property, pump and treat the ground water, implement any and all of the available, visible remediation alternatives that exist. Then and only then should consideration be given.

Request 1: The Division should not allow owners with ground water plumes that have migrated beyond their property boundary the right to apply for a NFA approval without first having exercised every other known form of active remediation, no matter the cost. The

damage they have caused is far reaching and there should be no “get out of jail free” cards allowed for these cases.

Request 2: Should the Division decide to entertain and allow NFA for sites with off-site ground water contamination, then we request that the Division institute another metric for public display: How many NFA applications with off-site contamination were submitted in a year, and how many were approved?

23. pg 13. Public Notice: *"Prior to formalizing a site closure decision, the property owner must notify building tenants and residents within the footprint of the ground water plume, in accordance with each State program's statutory and/or regulatory requirements. Division staff may choose to initiate and participate in community or public meetings to discuss the pending low-threat closure decision."*

Comment: Decision makers who believe that NFA is the best remedial response must proactively engage and earn the trust of the public, especially residents nearby or over a groundwater plume who are impacted. This should be a requirement when NFA is considered, and not a choice that “may” be made by Division staff. This engagement must occur at the earliest stages of NFA consideration, and long before any decision is reached. The only sure benefit of a NFA decision is the monetary savings to the responsible party, and agency resources. There needs to be a counter balance to that benefit. The responsible party and the agency should not be allowed to turn their backs on the plume without proof that natural attenuation is in fact working. The uncertainty and complexity of natural attenuation only serves to magnify the mistrust found at many contamination sites. Contingency remedies and surety bonds to support them, along with clear time and data driven processes for revisiting the success of natural attenuation must exist. And if natural attenuation is not working according to plan then a mechanism/process to trigger activation of a contingency remedy paid for by the surety bond must be available to safeguard the public interests.

Request: We request that:

- fixed intervals in time be established where the data and scientific evidence presented in the Lines of Evidence are reviewed and validated against real site measurements
- contingency remedies be defined should NFA be failing to meet CSWG standards
- an appropriate surety bond be provided by the responsible party to cover the cost of a contingency remedy
- memorandum of agreements be established to insure that these steps are accounted for and will occur.

Comment: There needs to be honesty, transparency, and a willingness to shape decisions to meet public concerns on the parts of the Division and the responsible party. There needs to be public involvement in evaluating Lines of Evidence and supporting data serving as input to the NFA decision process. Until communities, responsible parties, and regulators better

address the causes and consequences of mistrust, then proposals that rely on unmonitored natural attenuation to address these complex or significant contamination sites will be greeted with resistance, skepticism, and mistrust.

Request: We request that

- the Division produce a formal Decision Record in draft form for public comment.
- the Decision Record contain all of the pertinent data from Lines of Evidence, including a business case with a socioeconomic analysis justifying unmonitored natural attenuation and a finding of NFA
- Division establish a formally defined comment period
- Division be required to review, incorporate, and formally respond to public comments
- Division conduct a public review meeting where impacted residents (those living near and above the groundwater plume) are notified and personally invited in writing to the meeting, along with notification in local newspapers for the general public
- the public meeting be held in advance of the issuance of the Draft Decision Record for public comment
- Division at the public meeting
 - present all pertinent, relevant information and data underlying the basis for entertaining an NFA decision application
 - present and defend the Lines of Evidence
 - explain the logic, rationale, and justification for entertaining the NFA application
 - explain and defend their position on a pending decision

24. pg 13. Documentation: "More data provided that reduces the uncertainty associated with leaving an unmonitored plume behind increases the Division's confidence that the residual contamination will pose little to no threat, that ground water quality will continue to improve and the CGWS or other Division approved remediation goals in the absence of a CGWS will eventually be achieved."

Comment: "Leaving an unmonitored plume behind." We find these words to be of concern. For this Guidance document to actually use such wording is surprising and telling. We have difficulty believing that unmonitored natural attenuation isn't a joint "quickly walk away and don't look back" strategy from the responsible party and Division .

Request: As requested previously, fixed intervals in time should be established where the data and scientific evidence presented in the Lines of Evidence are reviewed and validated against real site measurements after a NFA determination.

25. pg 13. Documentation: *"Any proposal to close a site using the NFA process outlined herein will require adequate documentation summarized in a comprehensive report that all of the lines of evidence noted in the previous sections of this guidance have been satisfactorily demonstrated."*

Request: We request that the Division produce a formal Decision Record Document which

- explains their rationale for making their decision
- contains a business case and socioeconomic analysis supporting unmonitored natural attenuation over other alternatives
- provides an estimate for time interval to achieve CWGS and underlying assumptions
- provides a method for validating that natural attenuation is achieving the objective on the time interval estimated
- defines contingency plans if natural attenuation is failing
- estimates and establishes surety bond requirements
- identifies Division staff by name, along with resume/professional credentials, who were involved in the analysis of the comprehensive report submitted by the NFA applicant

26. pg 14. *"If it is determined that it is technologically or economically infeasible to reasonably attain cleanup objectives after having taken all actions necessary to remediate the release, the responsible party has the option of continuing to monitor ground water quality on a periodic basis until additional work can be completed to help meet lines of evidence that are difficult to achieve or until the CGWS or other Division approved remediation goals in the absence of a CGWS are attained."*

Request: Division should not allow the responsible party to have the "option" to continue to monitor ground water quality. Please make it a requirement that the responsible party continue to monitor ground water quality.

27. pg 14. *"At a minimum, this phase of the cleanup effort must demonstrate that pollutants have not and will not migrate beyond the boundaries of the existing footprint of the ground water plume."*

Request: Please explain how the above is to be demonstrated, especially the "will not migrate" portion.

28. pg 14. *"Request that the Water Quality Control Commission reclassify the affected area to something other domestic or agricultural use that would allow the use of alternate concentration limits for cleanup purposes."*

Request: Please only allow this to occur when the plume is completely contained within the site boundary and it must be demonstrated via Lines of Evidence and ground water monitoring data that the plume will not ever migrate beyond the site boundary.

29. pg 15: Glossary

Request: Please provide in the glossary the Division's legal and regulatory definition of the term "closure."

Once again, we thank you for this opportunity to comment, and we look forward to receiving answers to our questions, and responses to our requests.

FOR THE CCAT BOARD OF DIRECTORS

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