

STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor
Leo M. Drozdoff, P.E., Director
Colleen Cripps, Ph.D., Administrator

January 21, 2014

Mark Paris
Basic Remediation Company
875 West Warm Springs Road
Henderson, NV 89011

Curt Richards
Olin Corporation
3855 North Ocoee Street, Suite 200
Cleveland, TN 37312

Jay Steinberg
NV Environmental Trust
35 East Wacker Drive, Suite 1550
Chicago, IL 60601

Joe Kelly
Montrose Chemical Corp of CA
600 Ericksen Ave NE, Suite 380
Bainbridge Island, WA 98110

Charles Elmendorf
Stauffer Management Co LLC
1800 Concord Pike
Wilmington, DE 19850-6438

Richard Pfarrer
c/o TIMET – HSEA Dept.
PO Box 2128
Henderson, NV 89009

Re: **BMI Plant Sites, Regional Area and Common Areas Projects, Henderson, Nevada**
NDEP BMI Regional Groundwater Goals and Directives

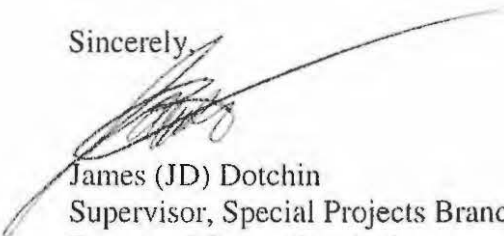
Dear Messrs.:

All of the parties listed above shall be referred to as “the Companies” for the purposes of this letter. The Nevada Division of Environmental Protection (NDEP) is providing guidance in the form of the BMI Regional Groundwater Goals and Directives (Goals and Directives) found in Attachment A of this letter. The NDEP will use the Goals and Directives to evaluate all final groundwater remedial selections proposed by the Companies. As stated in Attachment A of this letter the NDEP has a schedule for developing up-gradient groundwater concentrations that will begin in the summer of 2014. The NDEP will share the proposed up-gradient groundwater quality work plan with the Companies prior to any work being completed.

NDEP has included all submitted comments to the Goals and Directives and the NDEP responses to these comments as attachments B and C to this letter.

Please contact the undersigned with any questions or comments at jdotchin@ndep.nv.gov or 702-486-2850 Ext. 235.

Sincerely,



James (JD) Dotchin
Supervisor, Special Projects Branch
Bureau of Corrective Actions
NDEP-Las Vegas

JD:jd



Attachments (3)

ec: Greg Lovato, Bureau of Corrective Actions, NDEP
Weiquan Dong, Bureau of Corrective Actions, NDEP
Michael Friend, Bureau of Corrective Actions, NDEP
Adam Baas, Edgcomb Law Group
Allan Delorme, ENVIRON
Andrew Barnes, Geosyntec
Andrew Steinberg, Nevada Environmental Response Trust
Brenda Pohlmann, City of Henderson
Brian Waggle, Hargis + Associates
Dave Share, Olin
Cassandra Joseph, AG's Office
Ebrahim Juma , Clean Water Team
Ed Modiano, de maximis, inc.
George Crouse, Syngenta Crop Protection, Inc.
Wayne Klomp, AG's Office
Jeff Gibson, AMPAC
Jeanette Daniels, AMPAC.
Joanne Otani
Joe Leedy, Clean Water Team
Joe McGinley, McGinley & Associates
John Pekala, Environcorp
Kirk Stowers, Broadbent & Associates
Kurt Fehling, The Fehling Group
Kyle Gadley, Geosyntec
Lee Farris, BRC
Mark Travers, ENVIRON
Matt Pocernich, Neptune & Company Inc
Michael Long, Hargis + Associates
Nicholas Pogoncheff, PES Environmental, Inc.
Paul Black, Neptune and Company, Inc.
Paul Hackenberry, Hackenberry Associates, LLC
Paul Sundberg,
Ranajit Sahu, BRC
Rebecca Shirclif, Neptune and Company, Inc.
Rick Kellogg, BRC
Stephen Tyahla, U.S. Environmental Protection Agency, Region 9
Tanya O'Neill, Foley & Lardner LLP
Teri Copeland

cc: David Sadoff, AIG Consultants, Inc., 121 Spear Street, 3rd Floor, San Francisco, CA 94105
Robert Infelise, Cox Castle Nicholson, 555 California Street, 10th Floor, San Francisco, CA 94104-1513

“Attachment A”
Proposed BMI Regional Goals and Directives

1. Containment of identified contaminants of potential concern (COPCs) at site property boundaries for groundwater above remediation standards will be a required performance measure for any selected long term groundwater remedy.
 - a. Property boundary is the legal property boundary
 - b. Remediation Standards will be defined as either BCL's or Background
2. Ultimate Remedial Action Objective (RAO) is to permanently restore the down gradient aquifer from site property boundaries to the Las Vegas Wash (the Wash) to below remediation standards.
3. All remedy evaluations must address all contaminants of potential concern (COPCs) discovered on the individual properties regardless of origin of these chemicals, including alleged trespass contaminants.
 - a. All COPC's on site including regional indicator chemicals must be considered when evaluating and selecting a groundwater remedy
 - b. Shallow water bearing zone should be the focus of the groundwater remedy, Middle and Deeper water bearing zones will be evaluated for potential vertical migration and impact to the Shallow water bearing zone. If these deeper water bearing zones are shown to significantly impact the Shallow Zone a groundwater remedy may be required for these deeper zones or locations where they interface with the Shallow Zone.
 - c. Responsibility for implementation and/or cost of ultimate long term groundwater remedy implementation operation and maintenance for alleged trespass contaminants will be addressed on a site by site basis, after remedy evaluation is completed.
4. Long term remedy evaluations can assume containment of COPC's at the up-gradient property boundaries for additional trespass contaminants. Alternatively the NDEP would consider a joint remedial option.
5. Up-gradient groundwater quality (i.e. CLO₄, As, TDS)
 - a. NDEP will develop and defend the definition of up-gradient groundwater quality.
 - b. Costs for this activity may be apportioned as an All Company Task.
 - c. Up-gradient groundwater quality may be different at each facility/property and may influence complex wide RAOs.
 - d. If up-gradient GW exceeds remediation standards this will be considered with regards to site wide and downgradient RAOs.
6. In off-property areas where plumes are likely co-mingled, NDEP is developing a list of regional indicator chemicals, to serve as surrogates and drivers for determining whether individual plant site remedies are cumulatively protective and will achieve the off-site remedial action objective of aquifer restoration
7. In downgradient areas, NDEP will be evaluating the performance of achieving the remedial action objective along certain transect points of compliance. Performance metrics will likely include statistical evaluation of groundwater concentration trends, annual estimates of contaminant flux, hydraulic containment evaluations, mass discharge, and mass removal rates. Current transects being considered are:
 1. Property boundaries,
 2. Warm Springs Road,
 3. Galleria Drive/Athens Road (likely), and

4. Immediately up-gradient of the Las Vegas Wash.
8. Downgradient areas of the facilities site boundaries will be evaluated to determine the need for additional assessment or corrective actions after groundwater remedies are in place. If allocations are not developed by the companies; NDEP may perform work and seek reimbursement from the companies.
 - a. Ecological risk would be considered after restoration of downgradient aquifer has been demonstrated or as a portion of the feasibility study (FS) under protectiveness and effectiveness.
 - b. The groundwater (GW) remedy evaluation must also consider the vapor intrusion pathway in off-site areas.

“Attachment B”

**Olin Stauffer, Syngenta, Montrose (OSSM) Comments and Response to Comments
NDEP Goal and Directive 1: *Containment of identified contaminants of potential concern (COPCs) at site property boundaries for groundwater above remediation standards will be a required performance measure for any selected long term groundwater remedy.***

- a. *Property boundary is the legal property boundary*
- b. *Remediation Standards will be defined as either BCL 's or Background*

<p><i>It is unclear what the Nevada Division of Environmental Protection (“NDEP”) means by “legal property boundary.” This term is vague and should be further defined in the specific context of the Pioneer and Henderson Groundwater LLC properties. As identified on the map included as Attachment B, depending on the intended application of the Goal and Directive, the Companies propose that the “legal property boundary” is defined to collectively include the property owned by Pioneer and the property owned by the Henderson Groundwater LLC.</i></p>	<p>The NDEP’s definition of the “legal property boundary” was intended to be broad enough to include all of the BMI plant facilities and the former Pepcon facility. The NDEP intends for the legal property boundary to be the Olin/Pioneer property lines.</p>
<p><i>In the April 1983 Consent Order between NDEP, Montrose Chemical Corporation of California, and Stauffer Chemical Company, the parties agreed upon the ideal location for the groundwater treatment system based on complex hydrogeologic conditions. The 1983 Consent Order remains an enforceable agreement and any proposed goals or directives should be consistent with the obligations of the parties to that Consent Order, including the limited releases provided therein.</i></p>	<p>The NDEP has reviewed and has not found any specific inconsistencies between the 1983 Consent Order and the Regional Groundwater Goals and Directives. The 1983 Consent Order scope was limited to a specific interim response action to address immediate concerns and did not constitute a final remedy decision by NDEP. A final remedy decision by NDEP will consider all applicable criteria that are required to be included as part of the groundwater Remedial Alternative Study.</p>
<p><i>BCLs are not legally enforceable action levels or cleanup standards. BCLs are instead used as a technical screening tool to assist users in risk assessment components. See User’s Guide and Background Technical Document for Nevada Division of Environmental Protection BCLs for Human Health for the BMI Complex Common Areas (Dec. 2008). The Companies would like to discuss the interplay between BCLs and the legally enforceable standards in the 1983 Consent Order and Administrative Order on Consent. Additionally, there are specific procedures under NAC 445A.22735 for setting remediation standards and action levels. The Companies request clarification regarding how NDEP intends to follow these protocols when it sets the standards for each COPC, and the Companies would like to discuss the methodology to be used by NDEP to select a cleanup level for each COPC.</i></p>	<p>NDEP considers the BCLs to have been developed consistent with the broad direction provided at Nevada Administrative Code section 445A.22735 Contamination of groundwater: Establishment of action levels and 445A.2274 Contamination of groundwater: Remediation standard. In general, NDEP also considers the process used to develop BCLs to be consistent with that adopted by the US Environmental Protection Agency, National Contingency Plan regulations at 40 CFR 300.430 for setting remedial action objectives and preliminary remediation goals for groundwater. The Companies can provide input on alternative cleanup levels as part of the Remedial Alternatives Study.</p>
<p><i>Instead of utilizing generic environmental standards, the Companies would like to work with NDEP to determine risk-based discharge criteria that are tailored to the specific conditions at the Henderson Site. Specifically, groundwater downgradient of the groundwater treatment system is not used as a drinking water source and is not likely to be developed as such in the future. Additionally, there is no potential for exposure of people or ecological receptors to constituents in groundwater until groundwater discharges to the surface. The nearest receptor for groundwater discharged to the surface is aquatic life in the Las Vegas Wash. These factors should be considered as part of a site-specific risk-based approach to developing treatment concentration limits for the groundwater treatment system.</i></p>	<p>As you are aware the NDEP developed the BCL’s for common human health exposure pathways specifically at the BMI complex and the Common Areas in Henderson and are not “generic environmental standards”. The BCL’s were designed as an initial screening tool to compare to site specific data and assist in risk assessment components such as the evaluation of data usability, determination of extent of contamination, identification of COPCs, and identification of preliminary remediation goals.</p> <p>The NDEP methodology for setting action levels and remediation standards for groundwater is consistent with NAC 445A.22735 and NAC 445A.274, which do not specify exposure as a prerequisite for setting a remediation standard at the maximum contaminant level or equivalent developed under NAC 445A.22735.1.(d). The NDEP disagrees that there are no receptors to constituents in groundwater; examples include the vapor intrusion pathway to a downgradient receptor, current and potential future quasi municipal groundwater wells downgradient of the Olin/Pioneer facility, the future construction worker for inhalation or dermal contact, etc.</p>

	<p>As stated in the 8th item in the October 2013 Regional Groundwater Goals and Directives, ecological risk will not be considered until after groundwater remedies are in place.</p> <p>The NDEP does agree that a site-specific risk-based decision making process to regional groundwater is necessary for the Companies. The NDEP looks forward to working with the Companies on this approach.</p>
<p><i>It is the Companies' understanding and belief that the NDEP shall take into consideration background (or up-gradient) COPC concentrations when determining what COPCs must be remediated by the Companies and when setting groundwater "remediation standards" for COPCs. The Companies will not be liable for remediating any background and/or trespass contaminants that migrate to the Pioneer property.</i></p>	<p>The NDEP agrees and will take background concentrations for all COPCs into account when setting the remediation standards for the Companies facility. The intent of the Goals and Directives is to have <u>all</u> BMI related facilities show containment of COPCs in groundwater at their individual property boundaries and to eliminate the continued trespass of COPCs in groundwater from their property.</p> <p>As stated in the Goals and Directives, the NDEP will request the Companies to consider all trespass contaminants in the development of the groundwater Remedial Alternative Study (RAS) and the proposal of the groundwater remedy. Responsibility for remediating these trespass contaminants has not been decided on at this time. The NDEP looks forward to working with the Companies on the development of a strategy for remediation of trespass contaminants both to and from the Pioneer/Olin property.</p>
<p><i>In determining what COPCs must be remediated by the Companies, and when setting groundwater "remediation standards," NDEP should also take into account remedial activities already being performed by companies downgradient of the Henderson Groundwater LLC property boundary, including but not limited to: 1) the groundwater extraction well fields and large-scale fluidized bed bioreactor (FBR) system that American Pacific Corporation installed and recently began operating to achieve the biodegradation of perchlorate and other COPCs; 2) the three groundwater extraction well fields, on-site treatment system being operated by the Nevada Environmental Response Trust to achieve the biodegradation of perchlorate and treatment of other COPCs; and 3) whatever groundwater remediation operations Basic Remediation Company (BRC), TIMET and/or any other party is conducting or planning to conduct, if any. For example, even if perchlorate in the effluent of the Companies' groundwater treatment system is quantified above action levels, the Companies believe that treatment for perchlorate by the groundwater treatment system would be a futile activity because effluent would quickly merge with the perchlorate-laden groundwater migrating through the paleochannels exiting the NERT property just downgradient of the groundwater treatment system. Any perchlorate discharged from the groundwater treatment system will be captured by the NERT treatment system; therefore there is no practical reason to require additional pre-treatment for perchlorate by the Companies' groundwater treatment system.</i></p>	<p>The NDEP will consider all COPCs when evaluating remediation standards and groundwater treatment systems. Effluent from all groundwater treatment systems will be required to meet any and all permit requirements in place.</p>
<p><i>Does NDEP intend for the Goals and Directives to be binding and legally enforceable standards, or at they intended only to be guidelines? If the former, will NDEP go through a formal rulemaking process? How do the Goals and Directives relate to the Phase III Consent Order?</i></p>	<p>NDEP plans to utilize the Regional Groundwater Goals and Directives in evaluating the adequacy of the proposed remedy provided in the Groundwater Remedial Alternatives Study or other final remedy analysis document. NDEP does not intend to go through a formal rulemaking process and does not consider such a process necessary for making decisions about the adequacy of a proposed remedy for a specific site. As contemplated in the Phase II Consent Orders, the Phase III Consent Order will lay out a schedule and process for implementing the selected remedy.</p>

--	--

NDEP Goal and Directive 2: Ultimate Remedial Action Objective (RAO) is to permanently restore the down gradient aquifer from site property boundaries to the Las Vegas Wash (the Wash) to below remediation standards.

<i>This area up-gradient to the Las Vegas Wash is an extremely large area. Additionally, the groundwater in this area moves very slowly. The Companies suggest revising the Goals and Directives to make clear that NDEP's goals are to restore the aquifer over time, including through the use of efforts such as monitored natural attenuation.</i>	The NDEP understands the comment but considers the term "ultimate RAO" to mean long term or over time as stated in your comment. Monitored Natural Attenuation could be evaluated as a method to meet this RAO. The NDEP suggests that the application of this comment for the subject sites be discussed during the pending January/February 2014 meeting.
<i>As set forth above, the Companies propose establishing a distinction between remediation standards and background levels when addressing the ultimate RAO.</i>	The NDEP agrees that there should be a distinction between the background numbers and the Ultimate RAO
<i>The Companies would like to discuss issues related to the Las Vegas Wash Total Maximum Daily Load ("TMDL") and related regulations.</i>	The NDEP would be open to discussing how this affects future decisions at the site during the January/February 2014 meeting.
<i>The Companies request clarification that this Goal and Directive relates to the Shallow aquifer.</i>	Please see Goal and Directive 3b.

NDEP Goal and Directive 3: All remedy evaluations must address all contaminants of potential concern (COPCs) discovered on the individual properties regardless of origin of these chemicals, including alleged trespass contaminants.

- a. *All COPC 's on site including regional indicator chemicals must be considered when evaluating and selecting a groundwater remedy*
- b. *Shallow water bearing zone should be the focus of the groundwater remedy, Middle and Deeper water bearing zones will be evaluated for potential vertical migration and impact to the Shallow water bearing zone. If these deeper water bearing zones are shown to significantly impact the Shallow Zone a groundwater remedy may be required for these deeper zones or locations where they interface with the Shallow Zone.*
- c. *The NDEP will determine the responsibility for implementation and/or cost of ultimate long term groundwater remedy implementation operation and maintenance for alleged trespass contaminants on a site by site basis.*

<i>This Goal and Directive appears to conflict with Goal and Directive 4, which indicates that the parties need not remediate trespass chemicals. The Companies request clarification on the relationship between Goal and Directive 3 and Goal and Directive 4. If this Goal and Directive is intended to require the Companies to remediate other BMI Companies' COPCs, what is the legal basis for this requirement?</i>	The NDEP disagrees that there is any conflict with Goal and directive 4. The NDEP will require all groundwater remedies submitted to the NDEP for consideration be able to address all COPCs found on site. The NDEP's intent for Goal and Directive 4 was to provide criteria that will be required for NDEP approval of a submitted groundwater RAS, including the proposed remedy.
<i>Allocation of responsibilities for implementation and/or costs of groundwater remedies for alleged trespass contaminants is not typically determined by regulatory agencies. The Companies would like to discuss NDEP's intentions regarding this Goal and Directive, and its contemplated methodology. The Companies have devoted considerable resources to evaluating the Middle and Deep Zones at the Companies' properties and in the vicinity of the groundwater treatment system. Based on those evaluations, further assessment of the Middle and Deep Zones is unnecessary.</i>	The NDEP would like to discuss how this impacts the Companies during the January/February 2014 meeting. The NDEP's preference is to allow All Companies to attempt to determine an appropriation method that would be amicable to all parties without the direct participation of the NDEP. As stated in Goal and Directive 3b the NDEP will require the continued assessment of the middle and deep zones to determine if the impacts encountered in these zones significantly impacts the shallow zone. The NDEP recognizes and appreciates the continued level of effort the Companies have placed on

	evaluation of the middle and deep zones. It is the NDEP's intent to have All Companies in the BMI complex area evaluate these zones. If these deeper zones do not pose a significant impact to the shallow zone the future groundwater remedy may not need to focus on the deeper zones.
<i>As noted above, this Goal and Directive should be modified to take into account the remedial activities already being conducted downgradient by American Pacific Company and the Nevada Environmental Response Trust, and additional activities that are, or may in the future, possibly be conducted by BRC, TIMET and/or other third parties.</i>	The NDEP will consider any active groundwater remediation systems in place while evaluating all future groundwater remedies.
<i>What will constitute "significant impact" to the shallow aquifer as referenced in this proposed Goal and Directive?</i>	The NDEP constitutes a significant impact to mean a source of groundwater contaminants from the deeper zones that replenishes contaminants in the shallow zone to above an RAO at designated transects and points of compliance.

NDEP Goal and Directive 4: Long term remedy evaluations can assume containment of COPC's at the up-gradient property boundaries for additional trespass contaminants. Alternatively the NDEP would consider a joint remedial option.

<i>This Goal and Directive is vague and ambiguous and requires further definition. Does this mean that the Companies can assume that the up-gradient property owners/sources will contain and/or remediate the trespass contaminants currently migrating onto the Companies' properties? If so, can the Companies assume that this Goal and Directive does not propose that the Companies remediate trespass contaminants? If this is what NDEP intended with this Goal and Directive, will the NDEP be issuing orders to the up-gradient and/or side-gradient potentially responsible parties that are not subject to the existing consent orders?</i>	<p>The NDEP understands that this Goal and Directive is not specific, it was designed to be relative to All Companies in the BMI area.</p> <p>For purposes of the remedial alternatives study and proposed remedy, the Companies can assume that the up-gradient property owners/sources will contain or remediate the trespass contaminants above background levels.</p> <p>The NDEP will consider and at its discretion and in consultation with the Office of the Attorney General use any and all options at its disposal to ensure implementation of remedies selected.</p>
---	--

NDEP Goal and Directive 5: Up-gradient groundwater quality (i.e. CL04, As, TDS)

- a. *NDEP will develop and defend the definition of up-gradient groundwater quality.*
- b. *Costs for this activity may be apportioned as an All Company Task.*
- c. *Up-gradient groundwater quality may be different at each facility/property and may influence complex wide RAOs.*
- d. *If up-gradient GW exceeds remediation standards this will be considered with regards to site wide and downgradient RAOs.*

<i>The Companies would like to discuss with NDEP the process for performing any background/up gradient concentration study necessary to develop the definition of up-gradient groundwater quality.</i>	Agreed. The NDEP will ensure that the Companies have input in the development and definition of up-gradient groundwater quality.
<i>The Companies request clarification as to what is meant by "up-gradient."</i>	The NDEP considers Up-gradient for the Companies to be groundwater quality to the south of Lake Mead Parkway.

NDEP Goal and Directive 6: In off-property areas where plumes are likely co-mingled, NDEP is developing a list of regional indicator chemicals, to serve as surrogates and drivers for determining whether individual plant site remedies are cumulatively protective and will achieve the off-site remedial action objective of aquifer restoration.

<p>The "off-property" area is extremely large, which will make this undertaking incredibly complex. The Companies suggest revising the Goals and Directives to make clear that NDEP's goals are to meet this Goal and Directive over time.</p>	<p>Please see NDEP's earlier response to Goal and Directive 2.</p>
<p>The Companies would like to discuss the process for creation of the regional indicator chemicals list.</p>	<p>The NDEP will discuss this during the January/February 2014 meeting and directs the Companies to the January 11, 2011: <i>Evaluation of Regional Groundwater</i>, prepared and submitted by McGinley & Associates as well as Attachment B of the October 1, 2013 NDEP Regional Groundwater Response to Comments .</p>

NDEP Goal and Directive 7: *In downgradient areas, NDEP will be evaluating the performance of achieving the remedial action objective along certain transect points of compliance.*

Performance metrics will likely include statistical evaluation of groundwater concentration trends, annual estimates of contaminant flux, hydraulic containment evaluations, mass discharge, and mass removal rates. Current transects being considered are:

1. *Property boundaries,*
2. *Warm Springs Road,*
3. *Galleria Drive/Athens Road (likely), and*
4. *Immediately up-gradient of the Las Vegas Wash.*

<p>The Companies understand that there is no exposure pathway through the downgradient area until groundwater intersects the Las Vegas Wash. Accordingly, and given the potentially high costs of this program, the Companies request additional information regarding the objectives and benefits of evaluating RAOs along these multiple transect lines.</p>	<p>The NDEP considers groundwater between the property boundary and Las Vegas Wash a resource that should be restored in accordance with NAC 445A.22735 and NAC 445A.2274. The multiple transect lines provide a consistent methodology for assessing groundwater plume stability and trend analysis across the BMI Complex.</p>
<p>The Companies would like to discuss specific details regarding the transect monitoring concept (identification of wells, spacing of wells, monitoring, and funding mechanisms). It is the Companies' understanding that transect points have already been established by the various BMI area companies for their programs. Can the Companies therefore use and/or enhance existing monitoring well transects?</p>	<p>Yes, it is not the NDEP's intent to create entirely new transect lines. If data gaps are found to exist additional groundwater monitoring wells would be requested.</p>
<p>The Companies request clarification as to how the current system of multiple Site-specific monitoring programs would be transitioned into regional monitoring and still serve Site-specific purposes.</p>	<p>By incorporating data from all of the sites at and around the BMI complex the NDEP will be evaluating these performance metrics on a regional scale. The NDEP does not intend to eliminate any site specific programs.</p>

NDEP Goal and Directive 8: *Downgradient areas of the facilities site boundaries will be evaluated to determine the need for additional assessment or corrective actions after groundwater remedies are in place. If allocations are not developed by the companies, NDEP may perform work and seek reimbursement from the companies.*

- a. *Ecological risk would be considered after restoration of downgradient aquifer has been demonstrated or as a portion of the feasibility study (FS) under protectiveness and effectiveness.*
- b. *The groundwater (GW) remedy evaluation must also consider the vapor intrusion pathway in off-site areas.*

<p><i>Please provide clarification regarding who will perform the evaluations, as well as the scope, management process, and funding sources for the evaluations. Please clarify NDEP's intent and proposed process for evaluating downgradient areas to determine the need for corrective actions.</i></p>	<p>The NDEP would not act upon this Goal and Directive without prior notification. If action by the NDEP is deemed appropriate and necessary a work plan clarifying the intent, scope and funding sources would be provided to the Companies for review and comment.</p>
<p><i>Under this Goal and Directive, how will contaminants that are already downgradient of the facilities' site boundaries be regulated? The Companies request confirmation that monitored natural attenuation will be utilized.</i></p>	<p>Contaminants that are already downgradient of the facilities' site boundaries will be assessed to determine the source and responsible party. Once evaluated if corrective actions are deemed necessary monitored natural attenuation could be considered. At this time NDEP acknowledges that monitored natural attenuation is a part of the remedial approach for the downgradient area.</p>
<p><i>What are the ecological receptors in the Las Vegas Wash area?</i></p>	<p>Some information on ecological receptors in the Las Vegas Wash areas can be found in the September 28, 2006 document <i>Screening Level Ecological Risk Assessment Guidelines for the BMI Complex, Henderson, Nevada</i> and references therein. This document can be found at http://ndep.nv.gov/bmi/docs/060928_slera-bm-final.pdf.</p>
<p><i>It is the Companies' understanding that NDEP previously investigated the risk of vapor intrusion, and found such risk to be non-existent. Accordingly, the Companies' request an explanation as to why the groundwater remedy evaluation must (re)consider the vapor intrusion pathway.</i></p>	<p>The NDEP previously determined that there was not an imminent risk to home owners through the vapor intrusion pathway based upon information that was available at that time. The NDEP will continue to evaluate the vapor intrusion pathway as more information is collected.</p>

“Attachment C”

TIMET Comments and Response to Comments

NDEP Goal and Directive 1: *Containment of identified contaminants of potential concern (COPCs) at site property boundaries for groundwater above remediation standards will be a required performance measure for any selected long term groundwater remedy.*

- a. *Property boundary is the legal property boundary*
- b. *Remediation Standards will be defined as either BCL 's or Background*

<p><i>A requirement for 100% containment of naturally occurring compounds at the margin of the plumes will be highly dependent on the background levels selected. If NDEP intends to utilize a statistical approach, such as developing confidence intervals for the background data set mean, the “acceptable background concentration” will be a concentration below (the upper end of) the range of actual concentrations in groundwater migrating onto the sites. For some parameters, such as TDS and arsenic, such an approach could set a remediation standard below the levels present in up-gradient groundwater. Termination criteria should consider the range of background concentrations rather than a single value.</i></p>	<p>The NDEP will include TIMET in the selection of Background contaminant concentrations. The NDEP will provide TIMET with a work plan for up-gradient evaluation of Background contaminants and will request a review and comment prior to the start of any work.</p>
--	--

NDEP Goal and Directive 2: *Ultimate Remedial Action Objective (RAO) is to permanently restore the down gradient aquifer from site property boundaries to the Las Vegas Wash (the Wash) to below remediation standards.*

<p><i>TIMET requests the opportunity to review the basis for the selection of the remediation standards and termination criteria.</i></p>	<p>NDEP will provide TIMET the opportunity to review the basis for the selection of remediation standards and termination criteria.</p>
---	---

NDEP Goal and Directive 3: *All remedy evaluations must address all contaminants of potential concern (COPCs) discovered on the individual properties regardless of origin of these chemicals, including alleged trespass contaminants.*

- a.) *All COPC 's on site including regional indicator chemicals must be considered when evaluating and selecting a groundwater remedy*
- b.) *Shallow water bearing zone should be the focus of the groundwater remedy, Middle and Deeper water bearing zones will be evaluated for potential vertical migration and impact to the Shallow water bearing zone. If these deeper water bearing zones are shown to significantly impact the Shallow Zone a groundwater remedy may be required for these deeper zones or locations where they interface with the Shallow Zone.*
- c.) *The NDEP will determine the responsibility for implementation and/or cost of ultimate long term groundwater remedy implementation operation and maintenance for alleged trespass contaminants on a site by site basis.*

<p><i>TIMET has considered all COPCs in the selection of the groundwater remedy approved by NDEP. TIMET is initially addressing trespass chemicals and requests NDEP's determination regarding its continuing obligations under this policy for extraction and treatment of trespass chemicals.</i></p> <p><i>While all BMI sites are associated with large TDS plumes, only TIMET is being required to treat groundwater for TDS. OSM re-injects groundwater without TDS treatment. On the other hand, NERT pumps most solids directly to the wash. Based on data posted on the NDEP website for December 2010 (the most recent data posted), NERT discharged, on average, 944 gpm to the Las Vegas Wash containing a concentration of 6,540 mg/L TDS. The NERT groundwater treatment system outfall discharges directly to the Las Vegas Wash. During December 2010, at the reported flow rate and concentrations, the NERT system discharged 74,180 lbs per day (37 tons per day) of</i></p>	<p>NDEP has not made a determination as to which portion of the COPCs underlying the TIMET site are from off-site releases. NDEP is requesting that TIMET evaluate how the existing remedy handles all COPCs underlying the TIMET site, including those considered by TIMET to be trespass chemicals. NDEP will consider TIMET's request and discuss the requirements for TDS discharge with the Bureau of Water Pollution Control.</p>
---	---

dissolved solids directly to the Las Vegas Wash (1,150 tons of dissolved solids for the month). TIMET requests NDEP consider revision of the TIMET NPDES Permit for non-contact cooling water (Outfall 001) to allow discharge of groundwater without TDS treatment consistent with NERT's current permit. TIMET expects the total solids loading rate from its planned treatment system to generate less than 1/10th the solids loading rate discharged by NERT directly to the Wash.

NDEP Goal and Directive 4: Long term remedy evaluations can assume containment of COPC's at the up-gradient property boundaries for additional trespass contaminants. Alternatively the NDEP would consider a joint remedial option.

TIMET's interpretation of this directive is that it bears responsibility for trespass chemicals present in groundwater on its site at the time of groundwater extraction system start-up. Therefore, TIMET understands this obligation continues only for the time required for migration of these chemicals from their location on the site (at start-up) to the extraction system. TIMET requests clarification on the time limit for this obligation. TIMET notes that the NERT Interceptor Well Field has been fully operational for more than 10 years and the OSM system has been operating three times that long; however, the perchlorate and chloroform plumes from these sites continue to migrate to the TIMET property.

NDEP Directive 4 was designed to be generic enough to include facilities with existing groundwater remediation systems, interim systems and facilities with no systems installed at present. Currently existing remedial systems do not entirely meet this goal including OSSM and NERT. The NDEP is currently working with all companies involved to meet this goal. NDEP intends to have all companies meet this directive going forward. As each facility (including TIMET) installs or modifies its groundwater remedial system during the FS process the NDEP will ensure that the evaluation of the remedy includes the goal of containment of COPC's at property boundary. The NDEP will not set a hard date universally for the entire BMI facility and neighboring areas at this time but will accept an estimated date for purposes of completing this evaluation.

NDEP Goal and Directive 5: Up-gradient groundwater quality (i.e. CL04, As, TDS)

- a. NDEP will develop and defend the definition of up-gradient groundwater quality.
- b. Costs for this activity may be apportioned as an All Company Task.
- c. Up-gradient groundwater quality may be different at each facility/property and may influence complex wide RAOs.
- d. If up-gradient GW exceeds remediation standards this will be considered with regards to site wide and downgradient RAOs.

TIMET would like the opportunity to provide comment on the NDEP evaluations being conducted pursuant to NDEP Directives 6, 7 and 8 when the work plans or evaluations are available for review.

The NDEP will provide TIMET and all Companies the opportunity to provide comment on both the up-gradient and down-gradient groundwater quality decisions. The NDEP will notify all Companies prior to the initiation of any work related to these decisions.