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November 10, 2010

Reference: CMEI Action Plan 2009

In March 2010 the Fundy Region Solid Waste Commission received CMEI's "Independent External Review of Crane Mountain Landfill" by ADI (hereafter the 2009 Report). This document is an update on the original 2005 report. The report and presentation are clear that Crane Mountain is not in violation of any of its obligations under the current Certificate of Approval to operate, but does offer suggestions and opinions for further improvement.

The Commission does not agree with all of the report, but as with the past report will endeavor to evaluate and implement those suggestions with significant merit. An action plan on the recommendations is below. It is reiterated that these are not commitment to completion, but a commitment to an evaluation timeline. Based on information from the evaluation the Commission will decide on further commitment.

The Action Plan is a checklist based on and referencing the three priorities listed in the 2009 Report under section 2.2.2 pages 6-9:

- Priority 1 - Groundwater Resource Protection
- Priority 2 - Landfill Construction, Operation and Management
- Priority 3 - Landfill Life and Perpetual Care

Under these priorities, the 2009 Report recommendations are listed in bullet form in Table 8-1 page 38-39. The Action Plan is organized so that:

1. Directly references these bullets in the order they appear in the report and assigns a number as they appear in order under the priority.
2. Each number is assigned a summary title that represents the recommendation in the 2009 report.
3. Each number is assigned a 'year' for evaluation, 'current' for actions we already do to our satisfaction or 'no' for actions we feel have already been addressed in the past and without new information we do not plan to revisit.
4. Each number is assigned a summary line below to explain what evaluation will take place.

This action plan was approved by the Commission during the March 11, 2010 public meeting. The recommendations and action plan are below.

Priority 1: Groundwater Resource Protection

1	Intermediate Well Locations	Target Date:	2013
	The installation of deeper groundwater monitoring wells at intermediate locations will be considered as per the results from the study of Geochemical evolution (Priority 1 - #2) and/or development of a numerical model (Priority 1 - #3) representing groundwater flow and contaminant transport. Based on the timing requirements to complete these studies, the timeline of this recommendation may be pushed out for a longer period.		
2	Geochemical Evolution	Target Date:	2012
	Seek partnership with UNB (preferred for location) or other institution to evaluate our current understanding of the system to determine the need for this action. If it is determined as a need then a recommendation for a graduate program would be developed with timelines and funding requirements. Other programs will be considered based on the expertise available, and a private firm may also be considered.		
3	Numerical Model	Target Date:	2012
	Seek partnership with UNB (preferred for location) or other institution to evaluate our current understanding of the system to determine the need for this action. If it is determined as a need then a recommendation for a graduate program would be developed with timelines and funding requirements. Other programs will be considered based on the expertise available, and a private firm may also be considered.		
4	Trigger Concentrations (new)	Target Date:	2011
	Work with SJ Laboratory to finalize. The data being generated from our monitoring system need to have 'trigger' parameters defined that will obligate the Commission to action if there are groundwater exceedances for contaminants from the landfill. SJ Laboratory have the analytical chemistry background to help develop this approach including triggers for acute events and cumulative trends. There are current trigger parameters recommended to the Commission from Gemtec, but these need to be further scrutinized.		
5	Standard statistical data interpretation	Target Date:	2011
	Work with SJ Laboratory to finalize as per Priority 1- #4		
6	Underdrain for each cell	Target Date:	Current
	We independently test each underdrain section 5 times per year. The underdrain system flow is tested as a whole hourly. We consider this sufficient for both cumulative and acute events. We are also revamping the system for ease of use in 2011.		

Priority 2: Landfill Construction, Operation and Management

1	Domestic Wells in GIS	Target Date:	No
	The Commission will treat this data on an individual basis as it is not part of the monitoring program for landfill performance. As such the information is recorded in the GIS and reviewed, but will only be available to the owner. Data is submitted to the Department of Public Health with each testing period. Ready access to this information was removed in 2009 and shows only data and a generic identification. Making the owner information more user friendly will be reviewed.		
2	Selection of domestic wells	Target Date:	2011
	Our research indicates there is statistical representation of hydrogeologic formations despite the random method of choosing the domestic wells. This may change with the results of Priority 1 - #2 and #3. New deep well to be reviewed closer to the site as a new well, but additional domestic wells are not considered needed as they are not part of the landfill monitoring program.		
3	Representative criteria	Target Date:	Current
	OK. As per Priority 2 - #2		
4	Domestic well sampling into facility monitoring	Target Date:	No
	Disagree that the domestic wells can represent site performance. The use of closer wells to the potential source of contamination is most effective. The further from the epicenter the more dilution and less likelihood of identifying a problem earlier. A deeper well may be considered. Also Priority 1 - #2 and #3 may generate new information that can be considered for this		
5	General Chemistry suite as per #94	Target Date:	Current
	All criteria covered.		
6	EMP and Domestic Well Response	Target Date:	2012
	Review funding plan verses insurance. The current 1997 EMP is in place. A revision will be complete in 2011 including the landfill gas collection and utilization system; a preliminary draft was submitted in 2008. Currently any remediation is covered by insurance. A business case for a funding model can be reviewed.		
7	Leachate level reporting	Target Date:	2011
	To be reviewed if this is necessary		
8	Leachate leakage rate	Target Date:	Current
	Reviewed with the construction of each cell		
9	Change management system records	Target Date:	No
	Disagree as records are adequate; however alternatives are always considered for improvement.		
10	Storm water management plans per new construction	Target Date:	Current
	Reviewed per construction project		

11	Mitigation of TSS measures	Target Date:	2012
Review exceedance trending verses storm levels and implementation of new systems. This will be done upon completion of sedimentation pond cleaning and ditch work seeding with cattails for filtration. Any exceedance events have been minimal compared to surrounding communities.			

Priority 3: Landfill Life and Perpetual Care

1	Impact in post closure	Target Date:	2013
We will review insurance verses funding models.			
2	Perpetual care plan detailed economic analysis	Target Date:	2013
Current Report completed, but will be reviewed again in three years.			
3	30 year post closure	Target Date:	Current
Current industry standard, but will review cell 1 performance for end date. This will allow us to use actual data to predict end of life for future cells including leachate production and landfill gas production.			

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Attached: Action Plan
2009 Report Table 8.1 Recommendations (numbers added)