

**B.4.PS -Interviews**

**Procedure Step:** B.4.1 (b)(6) 090508 Testimonial ebal celz, 1/26/2010 elew,  
**Type: Assigned To:** 1/26/2010

**Prepared By:**

**Reviewed By:**

**PROPERTIES:**

**Location:**

**Frequency: Visit:**

**Category:**

**Sampling Type of  
Sample**

## Procedure Standard Report

**SCORECARD:**

**Rating: Sample: 0**

**Step/Purpose:**

To discuss with (b)(6), a technical staff member delegated to prepare a technical response to CANM's 22 questions, what did the team analyze and what questions they believed CANM had a valid argument.

ELL 12/4/2009 The conclusion does not provide the details expected when looking at the purpose. However, we were able to obtain the detail from other source documents and use it in the report.

CEZ 1/21/2010 All text in the details, source, scope/methodology, and conclusion sections of this workpaper was written by the original audit team. The new audit team has added no information to this workpaper. The new audit team has provided highlighting and changed the color of fonts associated with indexing requirements. For more information on staffing associated with this assignment, please see workpapers C.1.PS.8 and C.1.PS.7.

**Source:**

October 15, 2008 meeting in OIG confrence room, Dallas Texas. Individuals at the meeting were:

Larry Dare, Project Manager, EPA OIG, Washington, DC Edward Baldinger,  
Auditor, EPA OIG, Chicago, IL (b)(6) Geologist, EPA Region 6  
Federal Facilities

**Scope/Methodology:**

Discuss with (b)(6) his observation, thoughts, and comments as to the response to CANM's 22 questions and obtain his opinion on certain matters related the MWL monitoring system..

**Details/Summary:**



# Procedure Standard Report

(b)(6) stated that he has talked frequently to CANM, especially Mr. Gilkerson, CANM's technical advisor regarding the MWL. He believes Mr. Gilkerson has brought up valid comments about the monitoring wells.

(b)(6) stated that (b)(6) reviewed the existing MWL monitoring data for groundwater. He also stated that he talked to (b)(6) at the NMRL EPA Laboratory in Ada about several issues related to the construction and installation of the wells. According to (b)(6) reviewed the draft comments EPA had prepared in response to CANM's 22 questions, however, (b)(6) did not look at the documents to support the Region's responses. (b)(6) also stated that he was responsible to maintain and coordinate the comments from (b)(6)

## Moats Report

(b)(6) stated that OIG should go to the EPA Laboratory in Ada, Oklahoma get answers related to the chromium issues that CANM has raised. Ada has the expertise to address the issue.

(b)(6) noted that CANM previously requested that Region 6 have Ada perform an analysis of a report performed at Los Alamos site. Region 6 requested an analysis. Ada's analysis raised questions about the monitoring wells at Los Alamos..

## Monitoring Wells Inside Boundaries of MWL

(b)(6) disagrees with CANM's position. He believes that monitoring wells within the MWL boundaries do not cause a pathway for the contamination to go into the groundwater. **He also stated that the technical staff found some monitoring wells were in the wrong location and others had stopped functioning.**

## **NMED Comments**

(b)(6) stated that EPA's draft comments were sent to NMED in August 2007. Other than some minor points NMED did not have any heartburn with Region's comments.

## ***Conclusion:***

not applicable

LD\_2009-05-28: (b)(6) agreed that some issues could be better handled by the EPA lab in Ada, Oklahoma but did not agree with all issues raised by CANM. He also noted that the Region has been working with NMED, sent them comments in 2007 regarding the site, and is generally satisfied with NMED's handling of the site.



#### **B.4.PS -Interviews**



**Procedure Step:** B.4.2 (b)(6)  
**Type:** Testimonial  
**Assigned To:** ebal  
**Prepared By:** celz, 1/25/2010  
**Reviewed By:** elew, 1/26/2010  
**PROPERTIES:**  
**Location:**  
**Frequency:**  
**Visit:**  
**Category:**  
**Sampling**  
**Type of Sample**

## Procedure Standard Report

**SCORECARD:**  
**Rating: Sample:** 0

**Step/Purpose:**

To discuss with a (b)(6), a technical staff member who was elegated to prepare a technical response to CANM's 22 questions, his review and findings..

ELL 12/4/2009 These were used as source data but the conclusions have issues that were discussed with the former team.

CEZ 1/21/2010 All text in the details, source, and scope/methodology sections of this workpaper was written by the original audit team. The new audit team has added no information to this workpaper. The new audit team has provided highlighting and changed the color of fonts in some cases in order to meet internal quality assurance indexing requirements. For more information on staffing associated with this assignment, please see workpapers C.1.PS.8 and C.1.PS.7. In the case of this workpaper, the new audit team also added a conclusion in the conclusion tab in order to meet internal quality assurance indexing requirements. The original audit team's conclusion is found below the horizontal blue line in the conclusion tab while the new audit team's conclusion is provided in red font above the blue line.

In the details are example of poor EPA oversight but we fail to reach a conclusion of our own.

ELL 12/14/2009 we provide more substantive conclusions in wps provided by CEZ

**Source:**

October 15, 2008 meeting in OIG confrence room, Dallas Texas. Individuals at the meeting were: Larry Dare, Project Manager, EPA OIG, Washington, DC

Edward Baldinger, Auditor, EPA OIG, Chicago, IL (b)(6), Hyrdologist, EPA Region 6, Federal Facilities, Dallas, Texas Documents provided by (b)(6) Schematic of the Monitoring wells and hydrogeologic (B.4.1) B.4.1

(b)(6) 102207 Draft - Mixed Waste Landfilll Comments (B.4.2) B.4.2 (b)(6) 101207 comments Mixed



Waste Landfill (B.4.5) [B.4.5](#) and (b)(6) Response (B.4.3) [B.4.3](#) (b)(6) 092407 comments Mixed Wast Landfill  
(B.4.6) **B.4.6**



# Procedure Standard Report

(b)(6) 72407 comments Mixed Waste Landfill (B.4.7) B.4.7

July 9, 2007 (b)(6) comments to (b)(6) re: Questions pertaining to Sandia MWL Groundwater Monitoring System (B.4.4) B.4.4

## *Scope/Methodology:*

Discuss with (b)(6) his observation, thoughts, and comments as to the response to CANM's 22 questions and obtain his opinion on certain matters related the MWL monitoring system..

## *Details/Summary:*

(b)(6) stated that he was a member of a team delegated to review the technical aspects of CANM's 22 questions presented to Region 6 through Senator Bingham. The other members of the team were (b)(6)

(b)(6) stated that many of the issues CANM has raised in its request have been known for 10 years. NMED and EPA Region 6 chose to ignore the issues regarding well construction and sampling procedures. However, the steps NMED has recently taken to replace the monitoring wells at MWL look alright but are not the best.

(b)(6) stated that he looked at the tapes that looked at the inside of the wells and the wells bore logs. He also stated that he looked at the chromium issue that CANM included in its complaint. He believed that the chromium and nickel issue issues raised by the complainant were maybe a result of the stainless steel well screens in some of the MWL wells. **The corrosion from the well screens may have had a large impact on the reasons why the water sample results included elevated levels of chromium and nickel.**

Replacing the stainless steel well screens with plastic screens and then taking a new round of samples will provide information if the elevated levels were from the stainless steel well screens or another source.

## Well Locations

Region 6 has told NMED that 3 downgradient wells are needed to accurately assess the amount of contamination percolating into the groundwater or leaving the containment area. **He also stated that the downgradient wells were located in the wrong position by 90 degrees.**

## Moats Report

(b)(6) stated that NMED's Moats Report should be sent to EPA's Laboratory in Ada, Oklahoma. Moat's report in a scientific paper that has not been peer reviewed. He further stated that he or the team (b)(6) did not review of the report. (b)(6) stated that Ada is the preeminent laboratory within EPA regarding well monitoring. Ada should be able to provide information about the issues surrounding nickel and chromium in the wells.

## CANM's Issues



# Procedure Standard Report

(b)(6) stated that the issues CANM and specifically those that Mr. Gilkseron raised about the monitoring wells at MWL should be considered by NMED but (b)(6) does not believe that they rise to a major level of concern.

## Depths of Wells

(b)(6) stated that several of the wells have cross contamination because the stainless steel well screens are in two different stratas; therefore the wells are functioning as intended because the screens should only be in one strata.

Moreover, MWL does not have any wells in the deeper strata to analyze if the contamination has filtered down. He cautioned that samples from the other wells should have caught the contamination provided the wells were placed in the correct location.

## Chromium and Nickel in wells

(b)(6) stated that he looked at the chromium issue that CANM included in its complaint. He believes that the nickel and chromium contamination should not be a product coming from the stainless steel screens. He believed that we should contact the EPA Laboratory in Las Vegas for confirmation.

## Samples from wells

(b)(6) believed that the samples taken from the wells were representative of the contaminants at the site even though the wells had corrosion problems, the wells are going dry, and screening in some wells are in more than one strata. He admitted that the stainless screen corrosion was a problem for MW1, MW2, and MW3. He also stated that MW1 and MW2 should be relocated further west and downgradient as a downgradient detection monitoring well. He also stated that MW1, MW2, and MW3 should be replaced and the stainless steel screen for each well is corroded. MW1 and MW2 should be removed because they have the potential to contaminate the aquifer with chromium and nickel (See B.4.4 items 2-4).

## *Conclusion:*

**[OIG Second Team Note: The conclusions below in red were added by the second team, drawing exclusively on the information in the Details/Summary section of this workpaper. The conclusions below the blue line were found and documented by the initial research team. No conclusions from this section have been used in the draft or final reports for this project, although the content of the Details/Summary has.]**

(b)(6), a member of the Region 6 team that examined CANM's complaints about the Sandia mixed waste landfill, found that some of CANM's issues were valid. However, this information was not provided to CANM in the letter sent by Region 6. The OIG team will examine whether the Region 6 response to CANM was misleading in workpaper C.3.PS.6 **C.3.PS)**

ELL 1/11/2010 The former team should not have documented the beliefs of (b)(6) in the conclusion section. That is reserved for the evaluators to make their own determination with the appropriate evidence. The team fails to reach a conclusion. Disciplinary actions were taken to ensure the team does not make this error in the future.

(b)(6) conducted a technical evaluation of the wells and he found that certain wells at MWL needed to be relocated and other monitoring wells need replacement because of corrosion.



# Procedure Standard Report

(b)(6) believed that the Moats Report should be sent to EPA's Laboratory in Ada for evaluation. OIG should send the report to Ada for its evaluation. We should also consider contacting EPA's Las Vegas Laboratory for confirmation. about the corrosion problem with the stainless steel wells screens and the impact on determining nickel and chromium levels in water samples.

LD, 2009-05-28: Also, (b)(6) stated that the issues CANM and specifically those that Mr. Gilkseron raised about the monitoring wells at MWL should be considered by NMED but (b)(6) **does not believe that they rise to a major level of concern.** (b)(6) **believed the Region had conducted its oversight role appropriately.**



#### **B.4.PS -Interviews**

**Procedure Step:** B.4.3 (b)(6) **Type:** Testimonial **Assigned To:** ebal **Prepared By:** celz, 1/25/2010 **Reviewed By:** elew, 1/26/2010

#### **PROPERTIES:**

**Location:** **Frequency:** **Visit:** **Category:** *Sampling Type of Sample*

#### **SCORECARD:**

**Rating:** **Sample:** 0

#### ***Step/Purpose:***

To discuss with a (b)(6) a technical staff member who was delegated to help prepare a technical response to CANM's 22 questions, his analysis.

ELL 12/4/2009 as we tried to discuss with the former team the issue is how effective was EPA oversight. This source clearly indicates he believes there are problems when you read the details sections. We can use the source data but not the conclusions

CEZ 1/21/2010 All text in the details, source, scope/methodology, and conclusion sections of this workpaper was written by the original audit team. The new audit team has added no information to this workpaper. The new audit team has provided highlighting and changed the color of fonts associated



# Procedure Standard Report

with indexing requirements. For more information on staffing associated with this assignment, please see workpapers C.1.PS.8 and C.1.PS.7.

## **Source:**

October 15, 2008 meeting in OIG conference room, Dallas Texas. Individuals at the meeting were:

Larry Dare, Project Manager, EPA OIG, Washington, DC Edward Baldinger, Auditor, EPA OIG, Chicago, IL (b)(6)  
(b)(6) Hyrdologist, EPA Region 6, Federal Facilities, Dallas, Texas

Kathrn Hess OIG Questions -- Kathryn Hess, EPA OIG, Boston Ma (B.4.8) **B.4.8**

## **Scope/Methodology:**

Discuss with (b)(6) his observation, thoughts, and comments as to the response to CANM's 22 questions and obtain his opinion on certain matters related the MWL monitoring system..

## **Details/Summary:**

ELL 12/14/2009 We provide more substantive conclusions in wps prepared by CEZ

(b)(6) stated that he did not have any prior connection with the site. In fact he does not report to (b)(6). He also stated that Region 6 had its results preconcieved. Region 6 management did not want to NMED doing anything wrong. Therefore, management created a structure to ensure the appropriate outcome would result. Furhtermore, **as the writing and draft comments progressed to a final letter, the team was pushed more and more to agree with NMED's position. He also stated that the teams' initial evaluation would have changed the soultion at Sandia MWL. NMED pushed extremly hard for EPA Region 6 not to even question the past results or the viability of past test results. Finally ,he stated that CANM got short changed by Region 6.**

(b)(6) stated that EPA Region 6's December 13, 2007, 6 letter (**A.2.2 A.2.2**) to CANM and Mr. Gilkerson did not answer their questions or included (b)(6) and his analysis because they did not entirely agree with NMED's position. He also believed that CANM's and Mr. Gilkerson's analysis of MWL's groundwater flow and groundwater monitoring well network was through, well documented, and included some stretches but none-the-less thorough.

(b)(6) **stated that the old wells, prior to the new installation of 3 wells, were located in the wrong location, wrong depths, stainless steel well screens were corroded, and several had problems with obtaining sufficient water [gone dry] to collect samples. He also stated that the corrision to the stainless steel screens within some of the MWL monitoring wells and factors such as the well going dry may have may have skewed the sample results for some of the monitoring wells. Thus, the stated that the data is questionable from the 2 improperly screened and located wells. He strongly believed that the new wells should be located at the north end of the landfill because of dispersion and to compensate for the possibility that the flow direction could be slightly off**

## **Bentonite in Wells**



# Procedure Standard Report

(b)(6) stated that the issue CANM raised about bentonite being in the wells was not as big a deal as CANM has described. Because of the geology in that part of the state, the driller has to do something to keep the hole opened in order to put in the casing and screening.

EPA OIG list of questions about Moats Report and CANM's July 4, 2008 letter to NMED

OIG asked (b)(6) if he believed the questions prepared by the OIG Hydrologist would address the inconsistencies between the reports. (b)(6) looked at the questions and stated that conceptually and intellectually he agreed with the questions.

## Moats Report

(b)(6) stated that he did not evaluate the Moats report. He believed that the EPA Laboratory is capable of the review but USGS would be better for questions regarding drilling methods and the EPA Laboratory in Las Vegas regarding corrosion issues.

## Conclusion:

**[OIG Second Team Note: The conclusions below in red were added by the second team, drawing exclusively on the information in the Details/Summary section of this workpaper. The conclusions below the blue line were found and documented by the initial research team. No conclusions from this section have been used in the draft or final reports for this project, although the content of the Details/Summary has.]**

(b)(6) reports that in his opinion the Region 6 team asked to investigate the CANM claims of mismanagement at Sandia were pushed to agree with NMED in their findings. He also notes that in his opinion, the information provided by Region 6 to CANM in its letter (see workpaper A.2.PS.6 A.2.PS) did not fully respond to CANM's questions.

**ELL 1/11//2010 the former team's analysis fails to capture the concerns offered by**

(b)(6) The issue of oversight is not moot according to this testimony. Disciplinary action were taken to ensure this error is not repeated.

**Regional technical staff determined that several old monitoring wells at MWL, prior to the new installation of 3 new wells, were located in the wrong location and not functioning because the wells had gone dry and the wells screens were corroded.**



## Procedure Standard Report

**LD, 2009-05-28:** (b)(6) also noted that Sandia has installed three new wells and the issue is not moot.



**B.4. -Interviews**

To

PS

*Procedure Step:* B.4.4 CANM Testimonial ebal ebal, 3/31/2009 elew, 12/4/2009

*Type: Assigned To:*

*Prepared By:*

*Reviewed By:*

**PROPERTIES:**

*Location:*

*Frequency: Visit:*

*Category:*

*Sampling Type of  
Sample*

**SCORECARD:**

*Rating: Sample:* 0

*Step/Purpose:*

interview the complainant's regarding the issue that they believe should be addressed during our review.

ELL 12/4/2009 as we told the former team the issue is EPA oversight over the MWL and not what CANM wants us to review. There are a lot of errors in the document but it is still understandable but not that useful.

***Source:***

OIG met with CAM at their Albuquerque, New Mexico office on October 18, 2008, Individuals who attended the meeting were:

David McCoy, Executive Director, Citizen Action New Mexico (CANM), Albuquerque, NM (505) Robert Gilkeson, Technical Advisor to CANM, Albuquerque, NM Larry Dare, Project Manager, EPA OIG, Washington, DC Edward Baldinger, Auditor, EPA OIG, Chicago, IL John Coll, Field Engineer, EPA OIG, Chicago, IL



# Procedure Standard Report

## Documents

Citizen Action New Mexico Request to the US EPA National Risk Management Research Laboratory ("Kerr Lab") to Analyze the Well Monitoring Network at Sandia National Laboratories Mixed Waste Landfill (**B.6.1 and 6.2**) [B.6.1](#) [B.6.2](#)

Evaluation of Representativeness and Reliability of Groundwater Monitoring Data, Mixed Waste Landfill, Sandia National Laboratories, by William Moats, David Myerson, and Brian Salem, (November 2006) (called Moats Report) (**B.7.1**) [B.7.1](#)

History of Regulatory and Monitoring Failure at the Sandia Laboratories' Mixed waste Landfill (MWL Dump) (**B.6.3**) [B.6.3](#)

Nickel Contamination in the Regional Aquifer from Nickel Wastes Buried in the Sandia Mixed Waste Landfill, Version January 23, 2007 prepared by Robert Gilkeson, Registered Geologist ([B.4.9](#)) [B.4.9](#) also see a more comprehensive study performed by Gilkeson - September 16, 2007 email to Region 6, re: Nickel Data from the MWL wells (**B.4.13**) [B.4.13](#)

The Failure of the Groundwater Monitoring Program at the Sandia MWL Dump; A report to the US Environmental Protection Agency Region 6, June 24, 2007 by prepared by Robert H. Gilkeson, Registered Geologist (**B.4.10**) [B.4.10](#)

June 28, 1991 Los Alamos email re: Technical Review: Compliance Activities Workplan for the Mixed Waste Landfill - Sandia National Laboratory - June 1991 prepared by the Environmental Restoration a Technical Support Office ([B.4.11](#)) [B.4.11](#)

Sandia National Laboratories Mixed Waste Landfill RFI Workplan - Approval with Modifications - NMED Administrative Record Page 007751 - obtained by CANM under FOIA ([B.4.12](#)) [B.4.12](#)

### ***Scope/Methodology:***

OIG interviewed the complainants, reviewed documents they provided, and discussed with them our next steps in the review.

### ***Details/Summary:***

See J. Coll's additions to wp [B.4.15](#)

## **Overall Concerns**

David McCoy, Executive Director for Citizen Action New Mexico (CANM) and Robert Gilkeson, Technical Advisor to CANM, have on several occasions filed complaints with the EPA OIG, DOE-OIG, EPA Region 6, and U.S. Senator Bingham's office about activities at the Sandia National Laboratories (SNL) Mixed Waste Landfill (MWL) in Albuquerque, New Mexico. Mr. McCoy and Gilkeson believe that the landfill is polluting the ground water, SNL and the Department of Energy (DOE) have mismanaged the site, and the New Mexico Environmental Department [who has been delegated by EPA to run the RCRA in the State] has allowed SNL and DOE to do whatever they want to do at the site. CANM presented a review of information it obtained from DOE, SNL, NMED, and EPA records to support its contention ([B.6.3](#)).

The following items are a summary of the issues that McCoy and Gilkeson discussed with the OIG during our meeting.

### **NMED "Moats" Report**



# Procedure Standard Report

The Moats report (**B.7.1**) prepared by NMED's project officer for the Sandia MWL incorrectly concluded that the monitoring wells at MWL produced reliable and representative water quality data. NMED used the report as its basis for the selected remedy, a dirt cover, to remediate the site. The report also did not address all the factors that prevented the MWL monitoring wells from producing reliable and representative samples. The report or study was an unsound presentation of a limited water quality data from MWL's network of monitoring wells. Also, the Moats report is NMED's attempt to whitewash the problems of unreliable monitoring wells at the MWL.

The Moats Report was modeled after the Los Alamos National Laboratory (LANL) report "Well Screen Analysis" (LANL Report LA-UR-05-8615, November 2005) that was flawed study of the water quality data produced from LANL's network of monitoring wells. EPA's National Risk Management Research Laboratory in Ada, OK, reviewed the LANL well screen analysis report [US EPA NRMRL, Ada, OK, LANL, Screen Well Analysis, Ford and Acree February 10, 2006] and it found the LANL report to be flawed.

Mr. McCoy stated that Mr. Gilkeson prepared a report (B.6.2) that outlined the problems with the Moats report which he, McCoy, forwarded to EPA Region 6 and U.S. Senator Bingham for action. The report requested that Region 6 forward CANM's (McCoy and Gilkeson) to the Ada Laboratory to address the problems with the monitoring well network at the MWL. Gilkeson's report listed 22 issues questions that he believed the Ada Laboratory needed too answer regarding the Moats Report [3 specific questions] and the MWL monitoring wells [19 questions] (**B.6.2 Page 24-25**).

## Monitoring Wells Cannot Produce Representative and Reliable Samples

Mr. Gilkeson provided OIG with three primary reasons that the monitoring wells at the MWL do not provide representative and reliable data to make decisions for the MWL. Mr. Gilkeson also provided OIG with his analysis of the each wells shortcomings (B.4.10). In addition, **the direction of groundwater flow at MWL was incorrectly assumed to be northwest rather than southwest**. This means the that three of the four wells installed at MWL were cross-gradient to the flow of groundwater.

### 1. MWL Monitoring Wells

MWL does not have a sufficient network of monitoring of background and down gradient monitoring wells installed at MWL. MWL has seven wells that are compromised because of drilling the drilling methods employed at the time of installation and the monitoring wells were incorrectly located on the north and south side of the site when the groundwater flow was to the west southwest. Moreover SNL and NMED knew since 1991 that the wells were in the wrong locations because the initial water level samples from two wells installed several year before showed that the groundwater flow was to the west-southwest. Mr. McCoy added to the discussion that DOE and SNL knew in 1991, through an assessment of SNL that monitoring wells, that wells were insufficient to characterize the effects of the contamination from MWL into the groundwater. Mr. McCoy referred us to a May 1991 Tiger Assessment Report as support for his statement. He further stated the report acknowledged this fact. Mr. Gilkeson added that in May 1995, NMED's DOE Oversight Bureau's memorandum to then NMED Chief of the Hazardous Waste Bureau, Benito Garcia, NMED, recognized more detailed information was needed to determine with reasonable assurance the direction and gradient of the groundwater flow at the MWL.

Mr. McCoy stated that SNL recognized the problem with the location of the wells in 1991. He provided OIG with a June 1991 internal letter (B.4.11 page 3) that McCoy obtained through a FOIA states [comment 21/1/5] the data from the present monitoring well network indicates that there is only one down gradient well and no well up gradient of the contamination at MWL. This establishes the inadequacy under RCRA of the present well network. Mr. McCoy also noted that EPA knew, in 2001, that the existing monitoring wells at MWL were not capable of detecting releases of hazardous wastes to the groundwater. He provided a document that he believes supports his statement (**B.4.12**).



# Procedure Standard Report

Mr. Gilkeson also stated that the stainless steel screens located at the bottom of the monitoring well to sample water migrating from the MWL were installed across more than one strata in many of the monitoring wells. This installation causes cross contamination of the samples which makes the samples unreliable and unrepresentative of the water quality and contamination contained underneath the MWL. Mr. McCoy also stated the Administrative Record for the site included a statement that SNL and NMED knew in 1992 that the stainless steel screens were corroding and thus prevented the wells from being able reliably detect contamination emanating from the MWL into the groundwater. Furthermore, in 1997, NMED cited corrosion as a reason for replacing several wells.

Mr. Gilkeson also stated that several of the wells have gone dry and cannot be used to draw samples. He also stated that several of the wells' stainless steel screens are corroded thereby the data quality from the samples are compromised. Also, except for one well that straddles the upper and lower aquifers and thus cross contaminated, no other wells at MWL are located in the uppermost aquifer [note upper aquifer is really the deepest aquifer].

## 2. Construction of the Monitoring Wells at SNL

Mr. Gilkeson enumerated a number of technical mistakes made during the installation of monitoring wells at the MWL. / He stated that boreholes were drilled to the wrong depth and grout was not removed from the wells. He also stated that several of the monitoring wells were drilled using the mud-rotary drilling method that allowed the screens to be invaded with bentonite drilling mud bentonite was used during the installation.

## 3. Method Used to Collect Water Samples Strips VOCs from the Samples

Mr. Gilkeson stated that the wells at MWL recharge its water slowly and many days are needed to purge and sample the monitoring wells. SNL purges each monitoring well prior o sampling to remove stagnant water in the well's casing. The wells are then purged to make them dry, and then allowed to recover, and then samples are collected. The method is used because of the low yields of the wells. However, Mr. Gilkeson believes that this method violates EPA's Groundwater RCRA guidance and allows volatile organic contaminants to be stripped from the samples. He also asserted that other contaminants may be present in the groundwater plume in the MWL but are masked by SNL's improper sampling methods and the corroded screens.

## Amount of Hazardous Waste in MWL

Mr. McCoy stated that SNL, DOR, or NMED have an accurate inventory that characterizes the wastes placed within the MWL. Quantities and types of organic contaminants in MWL trenches and pits are unknown. SNL or DOE have admitted that they do not know exactly how much waste was placed in the MWL. SNL has told the public that MWL contains about 100,000 cubic feet of radioactive and chemical waste generated from its operations prior to December 1988. Mr. McCoy believes that the actual volume of wastes may be 700, 000 cubic feet.

## Nickel Contamination in the Monitoring Wells

Mr Gilkeson that NMED and DOE have not investigated the nature of the of the nickel contaminationon at the MWL. Nickel contamination exceeds the New Mexico state regulatory limit for this contaminant.monitoring

Mr. Gilkeson stated nickel concentrations in the groundwater at MWL exceed the EPA maximum contaminant level. As such the MWL should be a RCRA site instead of a Solid Waste Management Unit that EPA and the State of New Mexico have as the site's current designation. Mr. Gilkeson based his conclusions on his own analysis of the data (B4.9).

Mr. Gilkeson stated that SNL and NMED misrepresent the data regarding nickel contamination in the monitoring wells. SNL and NMED believe that the nickel contamination reading is the result of the



# Procedure Standard Report

stainless steel screens corrosion. Mr. Gilkeson disagrees with this assessment and believes it is a smokescreen to hide the fact that the groundwater at MWL contains high concentrations of nickel.

Mr. Gilkeson elaborated about the dissolved nickel in the groundwater. He explained that if the dissolved nickel were from corrosion of the stainless steel well screens, SNL and NMED would expect to have seen similar concentrations of nickel in all the wells. However, only two wells, MW3 and MW1 have evidence of higher nickel concentrations.

## Chromium Contamination

Mr. Gilkeson stated that the water samples from wells **MWL-MW1 and MWL-MW3 in April 2006 exceeded the EPA MCL for chromium at have at times exceeded the MCL since 1992. Samples from MWL-MW1 taken in April 2007 exceeded the EPA MCL for this contaminate by a factor of four.** Mr. Gilkeson continued that NMED, DOE, and Sandia have speculated that the chromium [and nickel] contamination is from only the corrosion of the wells is not proven. **Even if the measured contamination was from the well's screens, then the wells remaining contamination at MWL was inadequate as a monitoring well.**

Mr. Gilkeson linked events at LANL with MWL regarding chromium levels. He also stated that **NMED ordered LANL to replace monitoring wells in 2007 because of high levels this contaminate. NMED in addressing this issue told DOE and Sandia that was speculation and orderd new wells to be installed.**

## Other Contamination in the Groundwater

Mr. Gilkeson also believes that the bentonite clay induced into the monitoring wells during installation mask the detection of cadmium and other chemicals and radionuclide contaminants. He also stated that chromium is present in the wells at levels that exceed EPA levels for the contaminant. NMED or DOE are not investigating the nature of the contamination in the groundwater for chromium coming from MW-1 and MW-3. He also noted that NMED and DOE have required other similar federal facilities uin the state to investigate this type of contamination.

## Placement of New Wells

Mr. Gilkeson stated that the three replacement monitoring wells for MW-1, MW-2, and BW-1 appear to be placed in a more accurate location to capture the contaminates emnating from the MWL. These replacement wells will not solve the need for appropriate monitoring at MWL. He also stated that he had not seen the data to comment at to whether the wells were properly dug, placed in the appropriate vadose zone, and screened properly.

## Hot Spots

NMED recognized the need for addaitional monitoring of contamination at the hot spots beneath the MWL. However, DOE rejected NMED's concern claiming that wells at the hotspots would damage the temporary dirt cover at MWL. Wells should be placed at the the hotspots beneath the MWL through the cover or use angles wells from outside the footprint of the cover.

## Sandia 2007 Annual Ground Water Monitoring Report

Mr. Gilkeson and Mr. MCCoy stated that despite the known lack of a reliable well monitoring network the report takes credit for one background well, five down gradient wells, and one onsite well. However, at the time the report was writtten, SNL had known that the background well was cross gradient, (2) that the only doengradient well, MW-3, had gone dry and had corroded wellsscreens, (3) MW1 and MW-2 were cross gradient nad MW-1 had corroded well screens, and (4) the on site well screen for MW-4 was installed oo deeply to monitor the critical need for knowledge about the contamination at the water table.

## Public Meetings



# Procedure Standard Report

Mr. Gilkeson and Mr. McCoy believe that NMED is violating RCRA because it does not allow public comment on many of its report or gives the public little time to comment. Mr. McCoy in response to an OIG question stated that CANM has attempted to have Region 6 intervene but Region 6 states that NMED is a delegated program therefore CANM has to take issue with NMED's procedures.

## March 1, 2007 Letter from Region 6 to McCoy in Regards to His Complaint

**Mr. McCoy stated that Region 6 did not adequately address his concerns regarding the Mixed Waste Landfill at the Sandia National Laboratory. The Region's letter sluffed off any of his organizations concerens and is unwilling to have the EPA Laboratory in Ada Oklahoma review the information because the Laboratory will side with CANM, as it did for similar issues at Los Alamos.**

### *Conclusion:*

**Regarding Regional oversight of NMED and its responsiveness to CANM:**

## March 1, 2007 Letter from Region 6 to McCoy in Regards to His Complaint

**Mr. McCoy stated that Region 6 did not adequately address his concerns regarding the Mixed Waste Landfill at the Sandia National Laboratory. The Region's letter sluffed off any of his organizations concerens and is unwilling to have the EPA Laboratory in Ada Oklahoma review the information because the Laboratory will side with CANM, as it did for similar issues at Los Alamos.**