

DEPARTMENT OF THE AIR FORCE
27TH CIVIL ENGINEERING SQUADRON (ACC)
CANNON AIR FORCE BASE NM 88103-5136

27 CES/CEVR
111 Engineers Way
Cannon AFB NM 88103

Ms. Stephanie Stoddard
525 Camino de los Marquez
Suite 4
PO Box 26110
Santa Fe NM 87502

Dear Ms. Stoddard

Attached is the December 29, 1993 letter from NMEID to Cannon AFB concerning the ground water monitoring results. Please let me know if this is the format you would like us to use for submittal of our results.

As I discussed with you, I did not find this particular document until this week so the results submitted on August 25, 1993 do not conform to this reporting method. Please let me know if you would like those results (from June 1992 through April 1993) to be resubmitted in this form.

I may be reached at (505)784-4348 for concerns regarding this issue.

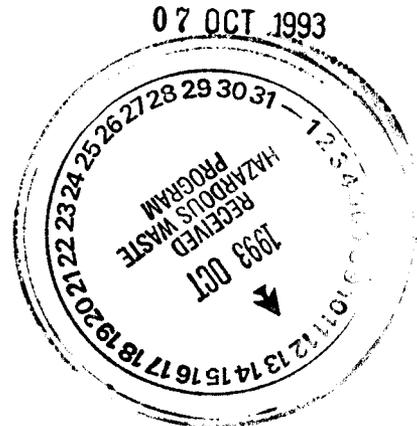
Sincerely

Janice P. Stowell
Janice P. Stowell, PhD, GS-11
IRP Remedial Project Manager

1 Atch
December 29, 1993
letter and attachments

VIII

1988





1190 St. Francis Drive
Santa Fe, New Mexico 87503

GARREY CARRUTHERS
Governor

CARLA L. MUTH
Secretary

DEPUTY SECRETARY
Deputy Secretary

December 29, 1988

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Col. David Benson, Commander
Cannon Air Force Base
27th Combat Support Group DEEV
Cannon AFB, New Mexico 88100

Dear Col. Benson:

We are providing the enclosed forms for recording and reporting monitoring well data so that all RCRA facilities will provide data to the New Mexico Environmental Improvement Division (NMEID) in the same format. This will greatly reduce the time required for NMEID review of monitoring well data, and should enable facilities to better evaluate their own data.

We have prepared these forms as carefully as possible, but undetected errors or inconsistencies may remain. For this reason we suggest you do not delay transcribing the 1988 data onto the forms for your ground water monitoring annual report. This data is required to be submitted by March 1, 1989, pursuant to HWMR-5, Part VI, Section 265.94(a)(2)(ii) and (iii). NMEID may be required to institute enforcement action should your facility fail to submit the enclosed forms and the raw laboratory data by that date. We have attempted to ensure that you receive this package by January 3, 1989, allowing you 60 days to submit your annual report using the enclosed forms. Reports not on these forms will not be acceptable.

Following is a description of each enclosure in this package.

1. Monitoring Well Identification Report Instructions (3 pages) and the Monitoring Well Identification Report (2 pages). One form must be submitted for each upgradient and downgradient RCRA well at your facility.
2. Instructions for Completing the Background and Semi-Annual Indicator Parameter Worksheets (3 pages), the Background Indicator Parameter Calculation Sheet (3 pages) and the Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters for Annual Report (1 page). All facilities with RCRA monitoring wells must submit one "Background" form for each RCRA monitoring well to document its initial indicator parameter statistics (established during the first year of RCRA monitoring) and two "Semi-Annual Evaluation" forms for

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each RCRA well which was in detection during the previous calendar year.

3. Interim Status Monitoring Well Sampling and Data Sheet Instructions (6 pages) and the Interim Status Monitoring Well Sampling and Data Sheets - Detection Semi-Annual Report (6 pages). One form must be submitted for each RCRA monitoring well at each RCRA unit at your facility which was in detection monitoring during any sampling event in the previous calendar year.
4. Interim Status Monitoring Well Sampling and Data Sheet Instructions - Background Quarterly Report and Annual Summary (6 pages) and the Interim Status Monitoring Well Sampling and Data Sheets Background Quarterly Reports (6 pages). One form must be submitted for each RCRA monitoring well at each RCRA unit at your facility which was establishing its first year of background data during any sampling event in the previous calendar year.
5. Interim Status Monitoring Well Sampling and Data Sheet Instructions (6 pages) and the Interim Status Monitoring Well Sampling and Data Sheets Assessment Quarterly Report (6 pages). One form must be submitted for each RCRA monitoring well at each RCRA unit at your facility which was in assessment during any sampling event in the previous calendar year.

Enclosures 1 and 2 must be submitted by all facilities with RCRA monitoring wells. If the RCRA units served by monitoring wells at your facility were in detection status from January 1 of last year to January 1 of 1989, you must submit one copy of Enclosure 3 for each RCRA monitoring well. Changes in status may have occurred during the calendar year. For example, if a RCRA unit changed from detection status to assessment status during the calendar year you would submit the detection data sheets for those sampling events which occurred during detection status and submit assessment data sheets for the period during which the unit was in assessment status. Other such changes in status during a calendar year should be dealt with in the same manner.

Enclosures 3-5 are complete with respect to the information required by the annual report, excepting that the raw lab data sheets containing all chemical evaluation data for each RCRA monitoring well must also be included. In order to be acceptable, these raw lab data sheets must include 1) the date the sample was taken, 2) the extraction date (if any) of the sample prior to analysis, and 3) the date of analysis.

Many of the forms include the column heading "Storet Code". Storet is a federal database dedicated to groundwater data. NMEID has copies of the guidance document on Storet which can be provided upon request. Should you have any questions regarding the enclosed forms please contact the NMEID/Hazardous Waste Hydrogeology Section at 872-2929.

Sincerely,

for *Kelley Crossman*
Boyd Hamilton
Program Manager
Hazardous Waste Section

BS/bs

MONITORING WELL IDENTIFICATION REPORT
INSTRUCTION MANUAL

Facility Name:

Enter the facility's official or legal name.

EPA I.D. Number:

Enter the facility's EPA identification number.

County:

Enter the New Mexico county where the facility is located.

Well Number:

Enter the well number or well name that corresponds with the data being entered.

Well Location:

Enter the longitude and latitude coordinates of the well number being identified to the nearest 0.1 second.

Aquifer Name:

Give the name of the aquifer from which groundwater is being extracted by the monitor well.

Aquifer Confined/Unconfined:

Please indicate if the aquifer is confined or unconfined by entering an X in the space provided.

Well Installation Date:

Enter the month/day/year the monitor well was installed.

Drilling Method:

Please look at Table 1 and enter the applicable abbreviation in the space provided.

TABLE 1

<u>Drilling Method</u>	<u>Abbreviation</u>
Air rotary.....	AIRRT
Bored or augered.....	BORF
cable-tool.....	CABLE
Dug.....	DUG
Hydraulic rotary.....	HYDRT
Jetted.....	JET
Air percussion.....	AIRPR
Reverse rotary.....	RVRT
Driven.....	DRIVN
Drive - wash.....	DWASH
Trenching.....	TRNCH
Solid auger.....	SLDAG
Bucket auger.....	BKTAG
Hollow auger.....	HLWAG
wire line.....	WLINE
*Other	

*Please type in the drilling method used.

Inner Casing Diameter:

Enter the inner diameter of the casing to the nearest 0.1 inch. Do not give the diameter of the outer protective casing.

Borehole Diameter

Enter the inner diameter of the borehole as it was initially drilled.

Casing Material:

Please look at Table 2 and enter the applicable abbreviation in the space provided.

Table 2

<u>Well Casing Material</u>	<u>Abbreviation</u>
Brass or bronze.....	BRSBZ
Stainless steel 305.....	SS305
Stainless steel 316.....	SS316
Steel.....	STEEL
Galvanized iron.....	GALFE
Wrought iron.....	WRIFE
Concrete.....	CNCRT
PVC.....	PVC
Fiberglass.....	FBRGL
Teflon.....	TEFLN
*Other	

* Please type in the well casing material used so that the New Mexico Environmental Improvement Division may assign an abbreviated value.

Method of Development:

Please look at Table 3 and enter the applicable abbreviation in the space provided.

TABLE 3

<u>Method of Development</u>	<u>Abbreviation</u>
Air lift.....	AIRFT
Bailed.....	BAILD
Blown or surged with compressed air.....	COMPR
Washed or jetted.....	WJTTD
Pumped.....	PUMPD
Surged with surge block.....	SRGBL
None.....	NONE
*Other	

* Please type in the method of well development used so that NMEID may assign an abbreviated value.

Elevation of Bottom of Borehole:

Give the elevation of the bottom of borehole in feet, tenths and hundredths of feet above mean sea level.

Elevation Bottom of Well Casing:

Give the elevation of the bottom of well casing in feet, tenths and hundredths of feet above mean sea level.

Elevation Bottom of Screened Int:

Give the elevation of the bottom of screened interval in feet, tenths and hundredths of feet above mean sea level.

Elevation Top of Screened Int:

Give the elevation of the top of screened interval in feet, tenths and hundredths of feet above mean sea level.

Elevation of Casing Top:

Give the surveyed elevation of the top of the monitor well casing above mean sea level to the nearest 0.01 foot. Do not give the elevation of the top of the outer protective casing.

Date of Report:

Enter the date in which the report was completed.

Signature:

Please put your signature in the space provided.

Name (Typed):

Please type your name in the space provided.

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DR./HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME _____

EPA I.D. NUMBER _____

COUNTY _____

WELL NUMBER _____

WELL LOCATION (LONGITUDE) _____

WELL LOCATION (LATITUDE) _____

AQUIFER NAME _____

AQUIFER CONFINED _____ UNCONFINED _____

WELL INSTALLATION DATE _____

DRILLING METHOD _____

INNER CASING DIAMETER _____

BOREHOLE DIAMETER _____

CASING MATERIAL _____

METHOD OF DEVELOPMENT _____

ELEV BOTTOM OF BOREHOLE _____

ELEV BOTTOM OF WELL CASING _____

ELEV BOTTOM OF SCREENED INT _____

ELEVATION OF SCREENED INT _____

SURVEYED ELEV OF CASING TOP _____

DATE OF REPORT _____

SIGNATURE _____

NAME (TYPED) _____

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Instructions for Completing the Background and
Semi-Annual Indicator Parameter Worksheets

Background Indicator Parameter Calculation Sheet

1. This sheet provides space for two upgradient wells being used to establish the background data against which all future comparisons will be made for all downgradient as well as upgradient monitoring wells. You may use the sheet for either one or two upgradient wells during the first year's quarterly establishment of background data. If you have more than two upgradient wells, please call EID.
2. The left-hand set of columns is for one upgradient well. Indicate the well code number on the line provided above the two left-hand columns. The sixteen lines will accommodate four replicate sample values for each of four quarters.
3. The right-hand set of columns is for the second upgradient well, if there is one. If the RCRA facility has only one upgradient well, ignore the two right-hand columns.
4. As per the instructions on the sheet, enter values which the laboratory has reported as below the minimum detection limit as one-half the minimum detection limit stated on the analysis form. For example, if the minimum detection limit for TOC is listed as 0.5 ppm, and the value found for a particular sample is listed as zero, enter the value for that sample as 0.25 ppm.
5. After the final quarter's data has been recorded in the Sample Value column, total the sixteen values as Total #1. If there is a second upgradient well, total the values for that well as Total #2.
6. On page 2, find \bar{X}_b by dividing the grand total (Total #1 + Total #2) by the total number of samples, n_b , to get the average value, \bar{X}_b .
7. For each Sample Value on page 1, subtract from it \bar{X}_b , square the result, and enter this value on the $(\text{Value} - \bar{X}_b)^2$ line. Total these values as Total #3 and Total #4 (if any). The variance (S_b^2) is found by dividing this grand total by $n_b - 1$.

NOTE: You may have a statistical calculator which will compute the background data variance, S_b^2 , from the raw data. If you use such a calculator, run through the example data set given at the end of these instructions using your statistical calculator and verify that the variance you compute agrees with our listed result for s^2 .

8. Next calculate the background correction factor, W_b .
9. Finally, locate the t-test statistic for the background data, t_b , in the tables on page 2, which list t values at the 0.01 level of significance. The second table lists values of t_b to be used for the statistical evaluation of pH. Using the first table, for example, if you had a total of 16 sample values, t_b would be 2.602. (If you have used t-test statistic tables before, note that this one is different in that you don't have to locate the test statistic value by using a "n-1 degrees of freedom" value column. The table has been altered to allow you to select the t-value directly from the sample size number, n_b .)
10. List the four background data values on the lines provided. It is suggested that you make copies of page 3 of the completed Background Indicator Parameter Calculation Sheet, as you will be using these four data values for each semi-annual evaluation of both upgradient and downgradient wells for each indicator parameter, and we request you to submit the background data sheets with each annual report.
11. If you are using a statistical calculator to determine the variance (S_b^2) of the background data set, test your calculator against the following set of data:

1. 0.25
2. 0.43
3. 1.01
4. 0.54
5. 1.23
6. 0.25
7. 0.98
8. 0.59
9. 0.63
10. 0.25

The variance of this data set is 0.123. If your calculations resulted in the value 0.351, you have calculated S_b , not S_b^2 .

Semi-Annual Evaluation of Indicator Parameters

1. We recommend you use the form provided by EID, "Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters". Write in the spaces provided the facility's name and EPA ID# plus the values for \bar{X}_b , S_b^2 , W_b , and t_b as calculated for the background data. We recommend you make multiple copies of this sheet and retain the master copy for future inclusion in the facility's annual reports. Don't include the name of the person completing the form or his/her telephone contact number, as over time various people may be responsible for the semi-annual monitoring well data evaluations.

2. List date the samples were taken, the parameter for which the samples were evaluated, the well code number and indicate whether the well is an upgradient (U) or a downgradient (D) monitoring well.
3. Calculate the values \bar{X}_m (the mean sample value for the given parameter for the monitoring well), S_m^2 (the variance for the monitoring well data), and W_m (the correction factor for the monitoring well data set). As you must always take one sample from each of four bailers, you must always have four data points for each parameter for each monitoring well. Consequently t_m for pH (two-tailed t-test, 0.01 level of significance) will always be 5.841, and for TOX, TOC or Specific Conductivity (one-tailed, 0.01 level of significance) will always be 4.541.
4. Calculate t^* and t_c as indicated on the form, and follow the instructions given at the bottom of the form. Note that you must evaluate semi-annually both upgradient and downgradient monitoring wells for significant differences in indicator parameters versus the background data. Before March 1 of every year you must report 1) all statistical evaluations for the indicator parameters for all downgradient wells, and 2) separately report any significant differences between any upgradient well and the background data.

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Background Indicator Parameter Calculation Sheet

Please Print Your Name: _____ Your Telephone #: _____

Facility Name: _____ EPA ID#: _____

Date: _____ Parameter: _____

List all values found during each quarterly monitoring for all upgradient wells. If the laboratory has listed a value as less than the detection limit, enter one-half the value listed as the minimum detectable concentration. This form can be used for up to two upgradient wells. Contact The hazardous waste section if your facility has more than two upgradient wells. Complete the calculations only after the completion of one year of background data.

Well Number: _____ Well Number: _____

<u>Sample Value</u>	<u>(Value - \bar{X}_B)²</u>	<u>Sample Value</u>	<u>(Value - \bar{X}_B)²</u>
1. _____	_____	17. _____	_____
2. _____	_____	18. _____	_____
3. _____	_____	19. _____	_____
4. _____	_____	20. _____	_____
5. _____	_____	21. _____	_____
6. _____	_____	22. _____	_____
7. _____	_____	23. _____	_____
8. _____	_____	24. _____	_____
9. _____	_____	25. _____	_____
10. _____	_____	26. _____	_____
11. _____	_____	27. _____	_____
12. _____	_____	28. _____	_____
13. _____	_____	29. _____	_____
14. _____	_____	30. _____	_____
15. _____	_____	31. _____	_____
16. _____	_____	32. _____	_____

Total #1: _____ Total #3: _____ Total #2: _____ Total #4: _____

Background Indicator Parameter Calculation Sheet (continued)

Date _____ Parameter _____

n_b = Total number of sample background samples (up to 32 for two upgradient wells, up to 16 for one).

\bar{X}_b = (Total #1 + Total #2)/ n_b = _____

S_b^2 = (Total #3 + Total #4)/($n_b - 1$) = _____

$$W_b = \frac{S_b^2}{n_b} = \underline{\hspace{2cm}}$$

For TOC, TOX or specific conductance, use the following table to locate the appropriate value for t_b , found next to the number of values in your data set, n_b .

n_b	t_b	n_b	t_b	n_b	t_b	n_b	t_b
1	-----	11	2.764	21	2.528	31	2.457
2	31.821	12	2.718	22	2.518	32	2.452
3	6.965	13	2.681	23	2.508		
4	4.541	14	2.650	24	2.500		
5	3.747	15	2.624	25	2.492		
6	3.365	16	2.602	26	2.485		
7	3.143	17	2.583	27	2.479		
8	2.998	18	2.567	28	2.473		
9	2.896	19	2.552	29	2.467		
10	2.821	20	2.539	30	2.462		

For pH, use the following table to locate the value for t_b .

n_b	t_b	n_b	t_b	n_b	t_b	n_b	t_b
1	-----	11	3.169	21	2.845	31	2.750
2	63.657	12	3.106	22	2.836	32	2.745
3	9.925	13	3.055	23	2.819		
4	5.841	14	3.012	24	2.807		
5	4.604	15	2.977	25	2.797		
6	4.032	16	2.947	26	2.787		
7	3.707	17	2.921	27	2.779		
8	3.499	18	2.898	28	2.772		
9	3.355	19	2.878	29	2.766		
10	3.250	20	2.861	30	2.759		

The values for \bar{X}_b , S_b^2 , W_b and t_b , as found above, will be used in all subsequent evaluations of monitoring wells for significant increases in the indicator parameters.

Background Indicator Parameter Calculation Sheet (continued)

Date _____ Parameter _____

Please list these four values below:

\bar{X}_b = _____

S_b^2 = _____

W_b = _____

t_b = _____

Your Signature

Calculation Sheet for Semi-Annual Evaluation
of Indicator Parameters for Annual Report

Print Your Name: _____ Your Telephone #: _____

Facility Name: _____ EPA ID#: _____

Date: _____ Parameter: _____

Well Number: _____ Up or Downgradient? (U or D): _____

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

$$\bar{X}_b = \underline{\hspace{2cm}} \quad S_b^2 = \underline{\hspace{2cm}}$$

$$W_b = \underline{\hspace{2cm}} \quad t_b = \underline{\hspace{2cm}}$$

Please list the current values for this upgradient or downgradient monitoring well.

	Value	(Value - \bar{X}_m) ²
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____

Total #1: _____ Total #2: _____

$$\bar{X}_m = (\text{Total \#1})/4 = \underline{\hspace{2cm}}$$

$$t_m (\text{TOC, TOX, S.C}) = 4.541$$

$$t_m (\text{pH}) = 5.841$$

$$S_m^2 = (\text{Total \#2})/3 = \underline{\hspace{2cm}}$$

$$W_m = S_m^2/n_m = \underline{\hspace{2cm}}$$

$$t^* = \frac{\bar{X}_m - \bar{X}_b}{\sqrt{W_m + W_b}} = \frac{\quad - \quad}{\quad + \quad} = \underline{\hspace{2cm}}$$

$$t_o = \frac{W_b \times t_b + W_m \times t_m}{W_b + W_m} = \frac{\quad + \quad}{\quad + \quad} = \underline{\hspace{2cm}}$$

For pH values, treat the value for t_o as if it is positive in all cases. If t^* is greater than t_o for any of the indicator parameters, you must immediately resample all monitoring wells for this unit. If the t^* value for the reevaluation is still greater than t_o , the RCRA unit served by the monitoring wells is in assessment, and you must notify EID within 7 days.

_____ please sign here

INTERIM STATUS MONITORING WELL SAMPLING AND
DATA SHEET INSTRUCTIONS

BACKGROUND QUARTERLY REPORT
AND ANNUAL SUMMARY

This set of instructions applies to the "Interim Status Monitoring Well Sampling and Data Sheets, Background Quarterly Reports". This set of forms also includes "Annual Summary of Monitor Well Data for Background Data" as pages 5 and 6. The forms are "well-specific", each well having its own set of forms for a given report.

During background monitoring, by regulation HWMR-5, Part VI, Section 265.94(a)(2)(i), your facility must submit the raw laboratory analytical reports to EID within 15 days of receiving each quarterly analysis from the laboratory. In addition, the quarterly background data sheets in this package must be filled out within 30 days of receiving the raw data from your lab.

GENERAL REPORT INFORMATION

Facility Name:

Enter the facility's official or legal name.

EPA ID Number:

Enter the facility's EPA identification number.

Well Number:

Enter the well number or well name that corresponds with the data being entered.

Date Sampled:

Enter the date the monitoring well's sample was collected, in a month, day, year format.

Time sampled:

Enter the time of sample collection in 24 hour clock time.

Sample Collection by:

Give the name of the person who collected the sample. If the name will not fit in the space provided please enter the collector's initials.

Laboratory Name:

Give the name of the laboratory that analyzed the sample. If the name will not fit in the space provided please enter the laboratory's initial's.

Laboratory Sample ID Number:

Labs typically assign a sample number to the samples as they come in. Usually this is a combination of the day, date and time. Record the code assigned by the lab to each sample here.

Date Received by Lab:

Enter the date the sample was received by the laboratory.

The following describes each column of the data sheets.

- 1) Parameters - are physical and chemical characteristics pertinent to the RCRA groundwater monitoring program.
- 2) Storet Code - are codes used for the storage and retrieval of RCRA groundwater monitoring data.
- 3) Units - are the units that each parameter's value are to be reported in.
- 4) Value - is the analytical results provided by your laboratory.
- 5) Date Analyzed - is the date on which the sample was analyzed (in the field or laboratory) for each parameter.

Following are the monitoring well and sampling protocol parameter instructions.

Elevation of Ground Water:

Give the elevation of the groundwater table (the upper surface of a zone of saturation) to the nearest 0.01 foot above mean sea level under the value column. Enter the date it was determined under the date analyzed column.

Well Depth:

Give the depth from the point of reference above the land surface to the well casing bottom to the nearest 0.01 foot. This determination must be made at every sampling event.

Well Casing Volume:

Enter the volume of water (in gallons) that is in the well casing when groundwater is at static level. This evaluation must be made at every sampling event.

Pump rate:

If the well has a pump or if a submersible pump is being used, enter the amount of water (in gallons per minute) the pump is delivering prior to sampling.

Pump period:

Enter the amount of time (in minutes) the well was pumped prior to sample collection.

Volume Evacuated:

Enter the volume of water (in gallons) evacuated from the well prior to sample collection.

Sampler Material:

Please look at Table 1 and enter the applicable code in the value column.

Well Sampling Method:

Please look at Table 2 and enter the applicable code in the method used column.

TABLE 1

<u>Sampler Material</u>	<u>Code</u>
PVC.....	PVC
Stainless Steel.....	SS
Teflon.....	TEFLN
*Other	

* Please type in the sampler material used so that NMEID may assign a code.

TABLE 2

<u>Monitor Well Sampling Method</u>	<u>Code</u>
Air lift pump.....	APUM
Bailed.....	BAIL
Compressed Air.....	COMPA
Jetted.....	JETD
Peristaltic pump.....	PERP
Centrifugal pump.....	CENP
Pitcher pump.....	PITP
Sampler.....	SMPL
Bucket.....	BUCKT
Rotary pump.....	RTPMP
Submersible pump.....	SBPMP
Turbine pump.....	TBPMP
Piston pump.....	PSPMP
Bottom valve bailer.....	BOTUB
Syringe bailer.....	SRGB
Dual valve bailer.....	DULVB
Bladder pump.....	BLDRP
Nitrogen lift pump.....	NLFTP
Compressed nitrogen.....	COMPN
*Other	

*Please type in the sampling method used so that NMEID may assign a code.

The following additional column descriptions apply to the chemical analysis data.

- 1) Detection Limit - is the value reported on the lab data sheets as the threshold below which the compound cannot be detected.
- 2) Date Extracted - Used only for the compounds listed on the lower half of page 4 of the Assessment or Background Report. Record the date on which the sample was extracted by your lab prior to analysis.
- 3) Method Used - is the analytical method that was used to determine a parameter value (e.g. method 9040).

For those column heading(s) that are not applicable to an individual parameter please enter an N/A in the appropriate column.

CHEMICAL EVALUATION DATA

The remaining parameters are the values obtained either by field instrumentation or laboratory analysis. It is highly recommended that some parameters such as pH and specific conductivity be run immediately. If these or any other parameters were obtained by field analysis, please indicate this by placing an (f) after the

data entry in the value column.

Indicator Parameters

RCRA require's each of these parameters to be analyzed in quadruplicate. Please enter the four values for each parameter in the spaces provided under the value column. Please include the date of analysis and method used for each value.

<u>Parameter</u>	<u>Units</u>
pH.....	standard pH units
specific conductivity.....	micromhos/centimeter
T.O.X.....	micrograms/liter
T.O.C.....	milligrams/liter

There are four entry lines for each of the four indicator parameters on page 2. Each data entry will be the individual value of one of the four replicate measurements from the well for the quarterly sampling event. Detection limits and the date of analysis may not be the same within a given group of indicators due to analytical problems at the lab, but the analytical method must always be the same for a set of samples. The form provides only one line for "Method Used" for this reason.

Ground Water Quality Standards

The regulations governing the evaluation of these parameters require only a single sample, thus there is only one line given for each of these parameters. Note the units given in the second column. If your lab gives the values in other units, these must be converted to the units listed for each parameter. Note that metals must be evaluated as total, not dissolved metals.

<u>Parameter</u>	<u>Units</u>
Chloride.....	milligrams/liter
Iron.....	micrograms/liter
Manganese.....	micrograms/liter
Phenols.....	micrograms/liter
Sodium.....	milligrams/liter
Sulfate.....	milligrams/liter

Primary Drinking Water Standards

The above also applies to the Primary Drinking Water parameters listed on page 3. On page 4, midway down the page, note that "Date Extracted" appears as a new column heading. These compounds require that a chemical extraction be performed within a set time period after the sample has been taken. After the listing of the six parameters in this section one line is given for listing the analytical method used. Laboratories use one method for evaluating

this group of compounds.

<u>Parameter</u>	<u>Units</u>
Arsenic.....	micrograms/liter
Barium.....	micrograms/liter
Cadmium.....	micrograms/liter
Chromium.....	micrograms/liter
Lead.....	micrograms/liter
Mercury.....	micrograms/liter
Selenium.....	micrograms/liter
Silver.....	micrograms/liter
Fluoride.....	milligrams/liter
Nitrate.....	milligrams/liter
Total Coliform.....	colonies/100 milliliter
Turbidity.....	turbidity units
Radium 226.....	picocuries/liter
Radium 228.....	picocuries/liter
Gross Alpha.....	picocuries/liter
Gross Beta.....	picocuries/liter
*Lindane.....	micrograms/liter
*Methoxychlor.....	micrograms/liter
*Toxaphene.....	micrograms/liter
*2,4-D.....	micrograms/liter
*2,4,5-TP.....	micrograms/liter

*Enter the value, date the sample was extracted prior to analysis, date analyzed, and method used for each parameter in the appropriate column.

ANNUAL SUMMARY

The annual report should be received by NMEID no later than March 1 each year and must summarize the monitoring well data from January 1 of the previous year to January 1 of the current year. After a monitoring well has been completed, your facility must sample the well within 14 days. Regardless of the time of the year, this is considered your first quarterly sampling event. The next sampling event must follow the first within approximately 90 days. For example, if a well were first sampled on July 1, the second quarterly sampling would be about October 1, and the third event would fall on about January 1. Since the annual report is due on March 1, your facility could not complete the sampling and evaluation of the samples for the fourth quarter for this first year. Thus, your Annual Summary of Monitor Well Data would include data for only three quarters and only three of the four data columns on page 5 would be used. For the indicator parameters, each value listed is the average value for the four replicates taken during the quarterly sampling.

INTERIM STATUS MONITORING WELL
SAMPLING AND DATA SHEETS

BACKGROUND QUARTERLY REPORTS

This set of forms is to be completed for each of your facility's quarterly evaluations during establishment of the background data for each well. The forms are to be submitted in addition to the raw data sheets provided by your laboratory. In order to be acceptable, the raw lab data sheets must include 1) the date the sample was taken, 2) the extraction date, if any, and 3) the date of analysis.

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DR./HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME _____ EPA I.D. # _____

WELL NUMBER _____ SAMPLE COLLECTION BY _____

LABORATORY NAME _____ DATE SAMPLED _____

LABORATORY SAMPLE I.D. # _____ TIME SAMPLED _____

DATE RECIEVED BY LAB. _____

PARAMETERS	STORET CODE	UNITS	VALUE	DATE ANALYZED
Elevation of G.Water	71993	ft.	_____	_____
Well Depth	-----	ft.	_____	_____
Well Casing Volume	-----	gal.	_____	_____
Pump Rate	-----	gal/min	_____	_____
Pump Period	72004	min.	_____	_____
Volume Evacuated	73675	gal.	_____	_____
Sampler Material	-----	---	_____	N/A

Well Sampling Method: _____

INDICATOR PARAMETERS [HWMR-5 Part VI, Section 265.92(b)(3)]

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	_____	_____	_____	
	00400	S.U.	_____	_____	_____	
	00400	S.U.	_____	_____	_____	_____
	00400	S.U.	_____	_____	_____	
Specific Conductivity	00095	umhos/cm	_____	_____	_____	
	00095	umhos/cm	_____	_____	_____	
	00095	umhos/cm	_____	_____	_____	_____
	00095	umhos/cm	_____	_____	_____	
T.O.X.	70354	ug/l	_____	_____	_____	
	70354	ug/l	_____	_____	_____	
	70354	ug/l	_____	_____	_____	_____
	70354	ug/l	_____	_____	_____	
T.O.C.	00680	mg/l	_____	_____	_____	
	00680	mg/l	_____	_____	_____	
	00680	mg/l	_____	_____	_____	_____
	00680	mg/l	_____	_____	_____	

GROUND WATER QUALITY STANDARDS [HWMR-5 Part VI Section 265.92(b)(2)]

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
(Values for metals must be for <u>total</u> metals.)						
Chloride	00940	mg/l	_____	_____	_____	_____
Iron	01045	ug/l	_____	_____	_____	_____
Manganese	71883	ug/l	_____	_____	_____	_____
Phenols	32730	ug/l	_____	_____	_____	_____
Sodium	00929	mg/l	_____	_____	_____	_____
Sulfate	00945	mg/l	_____	_____	_____	_____

PRIMARY DRINKING WATER STANDARDS [HWMR-5 Part VI, Appendix III]

(Values for metals must be for total metals)

Arsenic	01002	ug/l	_____	_____	_____	_____
Barium	01007	ug/l	_____	_____	_____	_____
Cadmium	01027	ug/l	_____	_____	_____	_____
Chromium	01034	ug/l	_____	_____	_____	_____
Lead	01051	ug/l	_____	_____	_____	_____
Mercury	71900	ug/l	_____	_____	_____	_____
Selenium	01149	ug/l	_____	_____	_____	_____
Silver	01077	ug/l	_____	_____	_____	_____
Fluoride	00950	mg/l	_____	_____	_____	_____
Nitrate	00620	mg/l	_____	_____	_____	_____
Total Coliform	31501	col/100ml	_____	_____	_____	_____

PRIMARY DRINKING WATER STANDARDS (continued)

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
Turbidity	00076	T.U.	_____	_____	_____	_____
Radium 226	09501	pCi/l	_____	_____	_____	_____
Radium 228	11501	pCi/l	_____	_____	_____	_____
Gross Alpha	01501	pCi/l	_____	_____	_____	_____
Gross Beta	03501	pCi/l	_____	_____	_____	_____

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED
Endrin	39390	ug/l	_____	_____	_____	_____
Lindane	39782	ug/l	_____	_____	_____	_____
Methoxychlor	39480	ug/l	_____	_____	_____	_____
Toxaphene	39400	ug/l	_____	_____	_____	_____
2,4-D	39730	ug/l	_____	_____	_____	_____
2,4,5-TP	39045	ug/l	_____	_____	_____	_____

Analytical method used for the above six parameters: _____

DATE OF REPORT _____

SIGNATURE: _____

NAME (PRINTED): _____

ANNUAL SUMMARY OF MONITOR WELL DATA
BACKGROUND BACKGROUND MONITORING

This form is to be used by facilities currently establishing their background monitoring well values or which have just completed their first year of data collection. This form must be submitted to NMEID before March 1. The annual report should be filled out by all facilities with RCRA monitoring wells as per HWMR-5, Part VI, Section 265.94(a) and (b).

ENVIRONMENTAL IMPROVEMENT DIVISION
 HAZARDOUS WASTE SECTION
 1190 ST. FRANCIS DR./HAROLD RUNNELS BLDG.
 SANTA FE, NEW MEXICO 87503

FACILITY NAME _____

EPA I.D. NUMBER _____

WELL NUMBER _____

SAMPLE DATES

<u>PARAMETERS</u>	<u>UNITS</u>	<u>VALUE</u>			
Elev. of G.Water	ft.	_____	_____	_____	_____
pH (Avg)	S.U.	_____	_____	_____	_____
Spec Cond (Avg)	umhos/cm	_____	_____	_____	_____
T.O.X. (Avg)	ug/l	_____	_____	_____	_____
T.O.C. (Avg)	mg/l	_____	_____	_____	_____
Chloride	mg/l	_____	_____	_____	_____
Iron	ug/l	_____	_____	_____	_____
Manganese	ug/l	_____	_____	_____	_____
Phenols	ug/l	_____	_____	_____	_____
Sodium	mg/l	_____	_____	_____	_____
Sulfate	mg/l	_____	_____	_____	_____



<u>PARAMETERS</u>	<u>UNITS</u>	<u>VALUE</u>
Arsenic	ug/l	
Barium	ug/l	
Cadmium	ug/l	
Chromium	ug/l	
Lead	ug/l	
Mercury	ug/l	
Selenium	ug/l	
Silver	ug/l	
Fluoride	mg/l	
Nitrate	mg/l	
Total Coliform	col/100ml	
Turbidity	T.U.	
Radium 226	pCi/l	
Radium 228	pCi/l	
Gross Alpha	pCi/l	
Gross Beta	pCi/l	
Endrin	ug/l	
Lindane	ug/l	
Methoxychlor	ug/l	
Toxaphene	ug/l	
2,4-D	ug/l	
2,4,5-TP	ug/l	

DATE OF REPORT: _____

SIGNATURE: _____

NAME (TYPED): _____

b:backqr.2/bas

**INTERIM STATUS MONITORING WELL SAMPLING AND
DATA SHEET INSTRUCTIONS**

DETECTION MONITORING

The following instructions pertain to the Semi-Annual Report, pages 1-5, and the Annual Report, page 6. The forms are "well-specific", each well having its own set of forms for a given report.

Copies of the raw lab data sheets must be submitted in addition to the NMEID forms in this package. In order to be acceptable the raw lab data sheets must include the date of sampling, the date of sample extraction (if any), and the date of analysis.

GENERAL REPORT INFORMATION

Facility Name:

Enter the facility's official or legal name.

EPA ID Number:

Enter the facility's EPA identification number.

Well Number:

Enter the well number or well name that corresponds with the data being entered. All six pages of this form will contain information about or data from this well only.

FIRST AND SECOND SAMPLING EVENTS

Following the first year of well monitoring your facility must evaluate the indicator parameters semi-annually, and must evaluate the ground water quality parameters annually [HWMR-5, Part VI, Section 265.93(d)(1) and (2)]. The first and second semi-annual evaluations are referred to on the data sheets as "First Sampling Event" and "Second Sampling Event", respectively. You may perform your annual evaluation of the six ground water quality parameters during either one of your semi-annual samplings. NMEID must know during which of these sampling events the ground water quality parameter samples were taken, thus the date asked for at the top of page 5 will be the same date as one of your semi-annual sampling events.

Laboratory Name:

Enter the name of the lab which evaluated the samples.

Date Sampled:

Enter the date the monitoring well's sample was collected, in a month, day, year format.

Sample by:

Give the name of the person who collected the sample. If the name will not fit in the space provided please enter the collector's initial's and write the complete name on the margin of the form.

Laboratory Sample ID Number:

Labs typically assign a sample code to the samples as they come in. Frequently this code involves the date and time the sample was taken. Enter the code the lab assigns to each sample.

Time sampled:

Enter the time of sample collection in 24 hour clock time.

Date Received by Lab:

Enter the date the sample was received by the laboratory.

The following describes each column of the sampling protocol.

- 1) Parameters - are physical and chemical characteristics pertinent to the RCRA groundwater monitoring program.
- 2) Storet Code - are codes used for the storage and retrieval of RCRA groundwater monitoring data.
- 3) Units - are the units that each parameter's value are to be reported in.
- 4) Value - is the analytical results provided by your laboratory. Supply the code for "Sampler Material" from Table 2.
- 5) Date Analyzed - is the date on which the sample was analyzed (in the field or laboratory) for each parameter.

Following are the monitoring well and sampling protocol parameter instructions.

Elevation of Ground Water:

Give the elevation of the groundwater table (the upper surface of a zone of saturation) to the nearest 0.01 foot above mean sea level under the value column. Enter the date it was determined under the date analyzed column.

Well Depth:

Give the depth from the point of reference above the land surface to the well casing bottom to the nearest 0.01 foot.

Well Casing Volume:

Enter the volume of water (in gallons) that is in the well casing when groundwater is at static level.

Pump rate:

If the well has a pump or if a submersible pump is being used, enter the amount of water (in gallons per minute) the pump is delivering prior to sampling.

Pump period:

Enter the amount of time (in minutes) the well was pumped prior to sample collection.

Volume Evacuated:

Enter the volume of water (in gallons) evacuated from the well prior to sample collection.

Sampler Material:

Please look at Table 1 and enter the applicable code in the value column.

Well Sampling Method:

Please look at Table 2 and enter the applicable code in the method used column.

TABLE 1

<u>Sampler Material</u>	<u>Code</u>
PVC.....	PVC
Stainless Steel.....	SS
Teflon.....	TEFLN
*Other	

* Please type in the sampler material used so that NMEID may assign a code.

TABLE 2

<u>Monitor Well Sampling Method</u>	<u>Code</u>
Air lift pump.....	APUM
Bailed.....	BAIL
Compressed Air.....	COMPA
Jetted.....	JETD
Peristaltic pump.....	PERP
Centrifugal pump.....	CENP
Pitcher pump.....	PITP
Sampler.....	SMPL
Bucket.....	BUCKT
Rotary pump.....	RTPMP
Submersible pump.....	SBPMP
Turbine pump.....	TBPMP
Piston pump.....	PSPMP
Bottom valve bailer.....	BOTUB
Syringe bailer.....	SRNGB
Dual valve bailer.....	DULVB
Bladder pump.....	BLDRP
Nitrogen lift pump.....	NLFTP
Compressed nitrogen.....	COMPN
*Other	

*Please type in the sampling method used so that NMEID may assign a code.

Chemical Evaluation Data

The remaining parameters are the values obtained either by field instrumentation or laboratory analysis. It is highly recommended that some parameters such as pH and specific conductivity be run immediately. If these or any other parameters were obtained by field analysis, please indicate this by placing an (f) after the data entry in the value column.

The following additional column descriptions apply to the chemical analysis data.

- 6) Detection Limit - is the value reported on the lab data sheets as the threshold below which the compound cannot be detected.
- 7) Method Used - is the analytical method that was used to determine a parameter value (i.e. method 9040).

For those column heading(s) that are not applicable to an individual parameter please enter an N/A in the appropriate column.

Indicator Parameters

There are four entry lines for each of the four indicator parameters on pages 2 and 4. Your facility must evaluate each of four replicate samples for each of these parameters semi-annually as per HWMR-5, Part VI, Section 265.93(d)(2). Thus each data value on these pages is not an average, but the specific value for each of four replicate samples. Please include the data of analysis, and method used for each value.

The method used for a set of replicates must be the same, so only one line is given here. Due to laboratory problems, however, the date analyzed and the detection limit can sometimes change over a set of replicates. In most cases, however, these will be the same within the replicate set.

<u>Parameter</u>	<u>Units</u>
pH.....	standard pH units
specific conductivity.....	micromhos/centimeter
T.O.X.....	micrograms/liter
T.O.C.....	milligrams/liter

Pages 3 and 4 pertain to the second semi-annual sampling event and are otherwise identical to pages 1 and 2. Note that the elevation of ground water must be determined prior to each sampling event, and may change during the year. The remaining information in this section may also have changed (pump rate, laboratory used, etc.), and so must be entered on page 3.

Signature

The person whose name and signature appears on pages 2, 4 and 5 accepts responsibility for the accurate transcription of data from the raw-lab data sheets as well as the accuracy of the information regarding monitoring well descriptions and measurements.

Ground Water Quality Parameters

NMEID requires the following parameters to be sampled once annually:

<u>Parameter</u>	<u>Units</u>
Chloride.....	milligrams/liter
Iron.....	micrograms/liter
Manganese.....	micrograms/liter
Phenols.....	micrograms/liter
Sodium.....	milligrams/liter
Sulfate.....	milligrams/liter

Each data value you enter on page 5 will be the specific value for one analysis per parameter. Metals must be evaluated as total metals, not dissolved metals.

Annual Summary of Monitor Well Data

Sample Dates

The annual report includes all monitoring data collected between January 1 of the previous year and January 1 of the current year and must be received by NMEID by March 1 of the current year. This form comprises part of the annual reporting requirement, and summarizes the data on pages 1-5.

List the sampling dates for the two semi-annual evaluations above their appropriate columns. List the single sampling date during which the ground water quality parameters (chloride, iron, etc.) were sampled for above the single data column.

Signature

Your signature on this form signifies your responsibility for the accurate transcription of the summary data.

INTERIM STATUS MONITORING WELL
SAMPLING AND DATA SHEETS

DETECTION SEMI-ANNUAL REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DR./HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

This set of data sheets should be completed by facilities in semi-annual detection monitoring. HWMR-5, Part VI, Section 265.92(d) and (e). These data sheets should be completed semi-annually and submitted annually. The raw lab data sheets should be submitted in addition to the Semi-Annual Report. **In order to be acceptable** the raw lab data sheets must include 1) the date the sample was taken, 2) the sample extraction date, if any, and 3) the date of analysis.

FACILITY NAME _____ EPA I.D. NUMBER _____

WELL NUMBER _____

FIRST SAMPLING EVENT
SEMI-ANNUAL REPORT

LABORATORY NAME _____ DATE SAMPLED _____

SAMPLED BY _____ LABORATORY SAMPLE I.D. # _____

TIME SAMPLED _____ DATE RECEIVED BY LAB. _____

PARAMETERS	STORET CODE	UNITS	VALUE	DATE ANALYZED
Elevation of G.Water	71993	ft.	_____	_____
Well Depth	-----	ft.	_____	_____
Well Casing Volume	-----	gal.	_____	_____
Pump Rate	-----	gal/min	_____	_____
Pump Period	72004	min.	_____	_____
Volume Evacuated	73675	gal.	_____	_____
Sampler Material	_____	---	_____	_____

Well Sampling Method: _____

FIRST SAMPLING EVENT
SEMI-ANNUAL REPORT
(continued)

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	_____	_____	_____	_____
	00400	S.U.	_____	_____	_____	_____
	00400	S.U.	_____	_____	_____	_____
	00400	S.U.	_____	_____	_____	_____
Specific Conductivity	00095	umhos/cm	_____	_____	_____	_____
	00095	umhos/cm	_____	_____	_____	_____
	00095	umhos/cm	_____	_____	_____	_____
	00095	umhos/cm	_____	_____	_____	_____
T.O.X.	70354	ug/l	_____	_____	_____	_____
	70354	ug/l	_____	_____	_____	_____
	70354	ug/l	_____	_____	_____	_____
	70354	ug/l	_____	_____	_____	_____
T.O.C.	00680	mg/l	_____	_____	_____	_____
	00680	mg/l	_____	_____	_____	_____
	00680	mg/l	_____	_____	_____	_____
	00680	mg/l	_____	_____	_____	_____

SIGNATURE: _____

NAME (PRINTED): _____

**SECOND SAMPLING EVENT
SEMI-ANNUAL REPORT**

SAMPLE COLLECTED BY _____

LABORATORY NAME _____

WELL DEPTH _____ WELL CASING VOLUME _____

DATE SAMPLED _____ LABORATORY SAMPLE I.D. # _____

TIME SAMPLED _____ DATE RECEIVED BY LAB. _____

PARAMETERS	STORET CODE	UNITS	VALUE	DATE ANALYZED
Elevation of G.Water	71993	ft.	_____	_____
Pump Rate	-----	gal/min	_____	_____
Pump Period	72004	min.	_____	_____
Volume Evacuated	73675	gal.	_____	_____
Well Sampling Method	84077	---	_____	_____
Sampler Material	_____	---	_____	N/A

Well Sampling Method: _____

SECOND SAMPLING EVENT
SEMI-ANNUAL REPORT
(continued)

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	_____	_____	_____	
	00400	S.U.	_____	_____	_____	
	00400	S.U.	_____	_____	_____	_____
	00400	S.U.	_____	_____	_____	
Specific Conductivity	00095	umhos/cm	_____	_____	_____	
	00095	umhos/cm	_____	_____	_____	_____
	00095	umhos/cm	_____	_____	_____	
	00095	umhos/cm	_____	_____	_____	
T.O.X.	70354	ug/l	_____	_____	_____	
	70354	ug/l	_____	_____	_____	
	70354	ug/l	_____	_____	_____	_____
	70354	ug/l	_____	_____	_____	
T.O.C.	00680	mg/l	_____	_____	_____	
	00680	mg/l	_____	_____	_____	
	00680	mg/l	_____	_____	_____	_____
	00680	mg/l	_____	_____	_____	

SIGNATURE: _____

NAME (PRINTED): _____

**GROUND WATER QUALITY PARAMETERS
SEMI-ANNUAL REPORT**

Please indicate the date of the semi-annual sampling event during which samples were taken to evaluate the ground water quality parameters:

Date Sampled: _____

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
Chloride	00940	mg/l	_____	_____	_____	_____
Iron	01045	ug/l	_____	_____	_____	_____
Manganese	71883	ug/l	_____	_____	_____	_____
Phenols	32730	ug/l	_____	_____	_____	_____
Sodium	00929	mg/l	_____	_____	_____	_____
Sulfate	00945	mg/l	_____	_____	_____	_____

SIGNATURE: _____

NAME (PRINTED): _____

ANNUAL SUMMARY OF MONITOR WELL DATA
FOR DETECTION MONITORING

This data sheet must be submitted by March 1 of each year by facilities in detection monitoring and operating under interim status.

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DR./HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME _____

EPA I.D. NUMBER _____

WELL NUMBER _____

=====

SAMPLE DATES: _____

<u>PARAMETERS</u>	<u>UNITS</u>	<u>VALUE</u>
elevation of gw	feet	
pH (Avg)	S.U.	_____
Spec Cond (Avg)	umhos/cm	_____
T.O.X. (Avg)	ug/l	_____
T.O.C. (Avg)	mg/l	
Chloride	mg/l	_____
Iron	ug/l	_____
Manganese	ug/l	_____
Phenols	ug/l	_____
Sodium	mg/l	_____
Sulfate	mg/l	_____

NAME (PRINTED) _____

SIGNATURE _____

**INTERIM STATUS MONITORING WELL SAMPLING AND
DATA SHEET INSTRUCTIONS**

ASSESSMENT MONITORING

The following instructions pertain to the Assessment Quarterly Report (pages 1-3), the Monitoring Well Appendix IX Data for Facilities in Assessment (page 4), and the Annual Summary (pages 5-6). The forms are "well-specific", each well having its own set of forms for a given report.

During quarterly assessment monitoring, NMEID requests that this set of forms be completed within 30 days of receipt of the raw data from the lab. This is not an obligation under the regulations, but all assessment plans should specify this requirement. Copies of the raw lab data sheets must be submitted in addition to the NMEID forms in this package within 15 days of receipt of the data from the lab. In order to be acceptable, the laboratory data sheets must include 1) the sample date, 2) the extraction date, and 3) the analysis date.

GENERAL REPORT INFORMATION

Facility Name:

Enter the facility's official or legal name.

EPA ID Number:

Enter the facility's EPA identification number.

Well Number:

Enter the well number or well name that corresponds with the data being entered. All six pages of this form will contain information about or data from this well only.

Well Depth:

Give the depth from the point of reference above the land surface to the well casing bottom to the nearest 0.01 foot.

Date Sampled:

Enter the date the monitoring well's sample was collected, in a month, day, year format.

Time sampled:

Enter the time of sample collection in 24 hour clock time.

Sample Collection by:

Give the name of the person who collected the sample. If the name will not fit in the space provided please enter the collector's initial's.

Laboratory Name:

Give the name of the laboratory that analyzed the sample. If the name will not fit in the space provided please enter the laboratory's initial's.

Laboratory Sample ID Number:

Labs typically assign a sample number to the samples as they come in. Usually this is a combination of the day, date and time. Record the code assigned by the lab to each sample here.

Date Received by Lab:

Enter the date the sample was received by the laboratory.

The following describes each column of the sampling protocol.

- 1) Parameters - are physical and chemical characteristics pertinent to the RCRA groundwater monitoring program.
- 2) Storet Code - are codes used for the storage and retrieval of RCRA groundwater monitoring data.
- 3) Units - are the units that each parameter's value are to be reported in.
- 4) Value - is the analytical results provided by your laboratory. Supply the code for "Sampler Material" from Table 2.
- 5) Date Analyzed - is the date on which the sample was analyzed (in the field or laboratory) for each parameter.

Following are the monitoring well and sampling protocol parameter variables.

Elevation of Ground Water:

Give the elevation of the groundwater table (the upper surface of a zone of saturation) to the nearest 0.01 foot above mean sea level under the value column. Enter the date it was

determined under the date analyzed column.

Well Casing Volume:

Enter the volume of water (in gallons) that is in the well casing when groundwater is at static level.

Pump rate:

If the well has a pump or if a submersible pump is being used, enter the amount of water (in gallons per minute) the pump is delivering prior to sampling.

Pump period:

Enter the amount of time (in minutes) the well was pumped prior to sample collection.

Volume Evacuated:

Enter the volume of water (in gallons) evacuated from the well prior to sample collection.

Sampler Material:

Please look at Table 1 and enter the applicable code in the value column.

Well Sampling Method:

Please look at Table 2 and enter the applicable code in the method used column.

TABLE 1

<u>Sampler Material</u>	<u>Code</u>
PVC.....	PVC
Stainless Steel.....	SS
Teflon.....	TEFLN
*Other	

* Please type in the sampler material used so that NMEID may assign a code.

TABLE 2

<u>Monitor Well Sampling Method</u>	<u>Code</u>
Air lift pump.....	APUM
Bailed.....	BAIL
Compressed Air.....	COMPA
Jetted.....	JETD
Peristaltic pump.....	PERP
Centrifugal pump.....	CENP
Pitcher pump.....	PITP
Sampler.....	SMPL
Bucket.....	BUCKT
Rotary pump.....	RTPMP
Submersible pump.....	SBPMP
Turbine pump.....	TBPMP
Piston pump.....	PSPMP
Bottom valve bailer.....	BOTUB
Syringe bailer.....	SRNGB
Dual valve bailer.....	DULVB
Bladder pump.....	BLDRP
Nitrogen lift pump.....	NLFTP
Compressed nitrogen.....	COMPN
*Other	

*Please type in the sampling method used so that NMEID may assign an code.

Chemical Evaluation Data

The remaining parameters are the values obtained either by field instrumentation or laboratory analysis. It is highly recommended that some parameters such as pH and specific conductivity be run immediately. If these or any other parameters were obtained by field analysis, please indicate this by placing an (f) after the data entry in the value column.

The following additional column descriptions apply to the chemical analysis data.

- 6) Detection Limit - is the value reported on the lab data sheets as the threshold below which the compound cannot be detected.
- 7) Method Used - is the analytical method that was used to determine a parameter value (i.e. method 9040).

For those column heading(s) that are not applicable to an individual parameter please enter an N/A in the appropriate column.

Indicator Parameters

There are four entry lines for each of the four indicator parameters on page 2. Your facility must evaluate each of four replicate samples for each of these parameters quarterly as per HWMR-5, Part VI, Section 265.93(d)(7)(i). Thus each data value on this page is not an average, but the specific value for each of four replicate samples. Please include the date of analysis, and method used.

The method used for a set of replicates must be the same, so only one line is given for each replicate in the "Method" column. Due to laboratory problems, however, the date analyzed and the detection limit can sometimes change over a set of replicates. In most cases, however, these will be the same within the replicate set.

<u>Parameter</u>	<u>Units</u>
pH.....	standard pH units
specific conductivity.....	micromhos/centimeter
T.O.X.....	micrograms/liter
T.O.C.....	milligrams/liter

Ground Water Quality Parameters

NMEID requires the following parameters to be sampled once annually:

<u>Parameter</u>	<u>Units</u>
Chloride.....	milligrams/liter
Iron.....	micrograms/liter
Manganese.....	micrograms/liter
Phenols.....	micrograms/liter
Sodium.....	milligrams/liter
Sulfate.....	milligrams/liter

Each data value you enter on page 3 will be the specific value for one analysis per parameter. Metals must be evaluated as total metals, not dissolved metals.

Signature

The person whose name and signature appears on pages 3, 4 and 6 accepts responsibility for the accurate transcription of data from the raw-lab data sheets as well as the accuracy of the information regarding monitoring well descriptions and measurements.

MONITORING WELL APPENDIX IX DATA

Two data sheets are provided for the Appendix IX parameters for the annual report for facilities which are in assessment. Please enter complete data on the Appendix IX form (page 4) for all parameters from your Appendix IX scan which appeared in your sample above the detection limit. Note that "Date Extracted" is not applicable for all parameters.

After your facility has received the laboratory evaluations for your complete Appendix IX scan an agreement will be formed between your facility and NMEID regarding the components of the scan your facility will evaluate in subsequent quarters. "Part 2" of the Appendix IX Data form is provided for reporting the data for the subsequent three quarters. The form provides lines numbered 1-3 for each of the three quarter's data values. Each sheet provides room for three parameters.

Annual Summary of Monitor Well Data

Sample Dates

The annual summary includes all monitoring data collected between January 1 of the previous year and January 1 of the current year and must be received by NMEID no later than March 1 of the current year.

This form comprises part of the annual reporting requirement, and summarizes the data on pages 1-5. The indicator parameter values reported on this form are the average value of the four replicates evaluated after each sampling event. The remaining data (water quality and Appendix IX parameters) are to be transcribed onto page 6 from the quarterly evaluations during the past year.

INTERIM STATUS MONITORING WELL
SAMPLING AND DATA SHEETS

ASSESSMENT QUARTERLY REPORT

This set of data sheets is for use by all facilities with RCRA monitoring wells and should be completed by facilities in assessment. HMMR-5, Part VI, Section 265.93(d)(3)(i).

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DR./HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME _____

EPA I.D. NUMBER _____

WELL NUMBER _____ SAMPLE COLLECTION BY _____

WELL DEPTH _____ LABORATORY NAME _____

DATE SAMPLED _____ LABORATORY SAMPLE I.D. # _____

TIME SAMPLED _____ DATE RECIEVED BY LAB. _____

PARAMETERS	STORET CODE	UNITS	VALUE	DATE ANALYZED
Elevation of G.Water	71993	ft.	_____	_____
Well Casing Volume	-----	gal.	_____	_____
Pump Rate	-----	gal/min	_____	_____
Pump Period	72004	min.	_____	_____
Volume Evacuated	73675	gal.	_____	_____
Well Sampling Method	84077	---	_____	_____
Sampler Material	_____	---	_____	N/A

Well Sampling Method: _____

INDICATOR PARAMETERS

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
pH	00400	S.U.	_____	_____	_____	
	00400	S.U.	_____	_____	_____	
	00400	S.U.	_____	_____	_____	_____
	00400	S.U.	_____	_____	_____	
Specific Conductivity	00095	umhos/cm	_____	_____	_____	
	00095	umhos/cm	_____	_____	_____	
	00095	umhos/cm	_____	_____	_____	_____
	00095	umhos/cm	_____	_____	_____	
T.O.X.	70354	ug/l	_____	_____	_____	
	70354	ug/l	_____	_____	_____	
	70354	ug/l	_____	_____	_____	_____
	70354	ug/l	_____	_____	_____	
T.O.C.	00680	mg/l	_____	_____	_____	
	00680	mg/l	_____	_____	_____	
	00680	mg/l	_____	_____	_____	
	00680	mg/l	_____	_____	_____	

GROUND WATER QUALITY PARAMETERS

PARAMETERS	STORET CODE	UNITS	VALUE	DETECTION LIMIT	DATE ANALYZED	METHOD USED
Chloride	00940	mg/l	_____	_____	_____	_____
Iron	01045	ug/l	_____	_____	_____	_____
Manganese	71883	ug/l	_____	_____	_____	_____
Phenols	32730	ug/l	_____	_____	_____	_____
Sodium	00929	mg/l	_____	_____	_____	_____
Sulfate	00945	mg/l	_____	_____	_____	_____

DATE OF THIS REPORT: _____

SIGNATURE: _____

NAME (PRINTED): _____

ANNUAL SUMMARY OF MONITOR WELL DATA

This form is for annual presentation of data by all facilities operating under interim status.

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DR./HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME _____

EPA I.D. NUMBER _____

WELL NUMBER _____

SAMPLE DATES

<u>PARAMETERS</u>	<u>UNITS</u>	<u>VALUE</u>			
Elev. of G.Water	ft.	_____	_____	_____	_____
pH (Avg)	S.U.	_____	_____	_____	_____
Spec Cond (Avg)	umhos/cm	_____	_____	_____	_____
T.O.X. (Avg)	ug/l	_____	_____	_____	_____
T.O.C. (Avg)	mg/l	_____	_____	_____	_____
Chloride	mg/l	_____	_____	_____	_____
Iron	ug/l	_____	_____	_____	_____
Manganese	ug/l	_____	_____	_____	_____
Phenols	ug/l	_____	_____	_____	_____
Sodium	mg/l	_____	_____	_____	_____
Sulfate	mg/l	_____	_____	_____	_____

APPENDIX IX PARAMETERS

SAMPLE DATES

<u>PARAMETERS</u>	<u>UNITS</u>	<u>VALUE</u>			

DATE OF REPORT: _____

SIGNATURE: _____

NAME (TYPED): _____