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GENERAL CORRESPONDENCE

YEAR(S): 2006-2003

Chevron

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July 13, 2006

James D. Walker
Environmental Engineer
Groundwater Office
Environmental Protection Agency
1235 La Plata Highway, Suite A
Farmington, NM 87401

RE: CHEVRON GALLEGOS-GALLUP SAND PIT
SAN JUAN COUNTY, NM
OGRID NO. 4323

Dear Mr. Walker:

Both Ronnie J. Kallus, Jr. and I appreciate the time you and your colleagues set aside for us on June 15, 2006 to discuss the Chevron Gallegos-Gallup Sand Pit site history, current status and future closure status. Chevron enjoys keeping the lines of communication open with all parties involved for discussion of all project matters of concern.

This letter will serve to document our meeting discussion topics and summarize the agreed path forward.

Meeting Discussion Topics

- General site history of pit excavation chronology.
- August 9, 2005 SECOR report summarizing Envirotech's *MW-8, 9, 10 Installation and Groundwater Sampling Report.*
- June 2006 SECOR *Groundwater Monitoring and Site Closure Report* and subsequent groundwater monitoring plans.
- Analytical method most suitable for accurately quantifying naphthalene, 1-methylnaphthalene and 2-methylnaphthalene concentrations in groundwater needs to be clarified by Chevron
- Risk-based closure usage and acceptance by NMOCD, USEPA and NNEPA on a case by case, non-precedent setting, basis.

Paths Forward

- Four (4) additional quarters of groundwater sampling will be conducted 3Q06 through 2Q07 by SECOR beginning in September 2006.
- Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene will be monitored in the groundwater during the aforementioned four (4) quarterly groundwater sampling events.
- Lancaster Laboratories in Lancaster, PA suggests USEPA Method 8270 as the most suitable method to accurately quantify naphthalene, 1-methylnaphthalene and 2-methylnaphthalene concentrations in groundwater.
- Prior to each groundwater sampling event, SECOR will make contact with your office a minimum of seven (7) working days prior to mobilizing to the field.

- During the next groundwater sampling event, the SECOR groundwater sampling crew will visit your office to pick up a copy of the Unlined Pit Closure Guidance NTL94-1.
- A summary groundwater monitoring and site closure report will be authored and submitted by SECOR on or before August 10, 2007 summarizing groundwater conditions.
- Benzene, toluene, ethylbenzene, and xylene have met appropriate USEPA and NMEPA closure criteria and are no longer necessary in the groundwater monitoring plan. These constituents have been below applicable criteria for four consecutive quarters as documented in the June 2006 SECOR *Groundwater Monitoring and Site Closure Report*.
- Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene, although declining in concentration, remain above applicable standards and remain contaminants of concern.

If you have any questions or clarifications to the above meeting discussion topics and paths forward cited, please do not hesitate to call me at 281.561.4995.

Sincerely,

Steve Huddleson, P.G., C.P.G.
Senior Environmental Project Manager

CC:
William E. Freeman
Senior Hydrogeologist
Navajo Nation Environmental Protection Agency – Underground Injection Control
POB 1999
Shiprock, NM 87420

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Michelle Cowherd
Senior Specialist

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NOV 30 2004

OIL CONSERVATION DIVISION

Chevron

November 22, 2004

NEW MEXICO OCD
OIL & GAS DIVISION
1220 South St. Francis Dr.
Santa Fe, NM. 87505

Attn: Mr. Wayne Price

RE: CHEVRONTEXACO GALLEGOS GALLUP SAND UNIT – SAN JUAN COUNTY, NEW MEXICO

Dear Mr. Price:

This letter is in response to the one sent by Mr. Bill Olson, dated September 30, 2004 requesting a workplan for the remediation and monitoring of impacted groundwater. During Pit excavation activities, we had received concurrence from both Mr. Bill Freeman (NNEPA) & Mr. Jim Walker (EPA Region 9) on no further excavation and application of liquid nutrient - potassium permanganate (KNO4) to the pit walls and bottom prior to backfilling and closure of the pit. This method of remediation has worked well at other sites and is expected to have good results here. KNO4 is an industrial strength oxygen release compound which encourages bioremediation and natural attenuation.

Further agreement was received to install a monitor well (MW-7) in the center of the pit, after it is backfilled, to determine if the hydrocarbon impacted soil poses any further threat to groundwater. We then commenced semi-annual monitoring of this well. Past monitoring activities of the 6 wells had indicated no impact to groundwater.

Enclosed are the recent lab results and table for MW-7 from the sampling event conducted by Envirotech Inc. on October 22, 2004. The results indicate that the groundwater quality is continuing to improve. Only total naphthalenes at 128 ppb were detected above the EPA & NNEPA action level of 30 ppb. All other analytes were below action levels. The next scheduled sampling event will be conducted April, 2005.

We believe at this time that continuation of the current GWM program is appropriate as a mechanism to evaluate natural attenuation.

Feel free to contact me should you have any questions or require any additional information.

Sincerely,

Michelle Cowherd

Michelle O. Cowherd

Cc: Mr. Denny Foust, OCD
1000 Rio Brazos Rd.
Aztec, NM. 87410
Mr. Jack Collins, Envirotech
Mr. Bill Freeman, NNEPA
Mr. Jim Walker, USEPA

ENGINEERING MANAGEMENT SUPPORT INC.

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emsidenver@uswest.net

February 18, 2003

Mr. William Freeman
Navajo Nation Environmental Protection Agency
P.O. Box 1999
Shiprock, NM 87420

Mr. James Walker
U.S. Environmental Protection Agency
1235 La Plata Hwy, Suite B
Farmington, NM 87401

RE: Gallegos Gallup Sand Unit Pit Closure
Section 7, T26N, R11W, San Juan County, NM

Gentlemen:

This letter transmits the installation and ground-water sampling results for a deep monitoring well (MW-6) that was recently installed at the above referenced site at the request of the Navajo Nation EPA. The condition of the deep ground water near the pit was of particular concern to the Navajo EPA. The enclosed report by Envirotech Inc. (Envirotech) documents that the ground water within the Nacimiento bedrock has not been adversely impacted by hydrocarbons from the former pit and therefore requires no action. Previously, data were provided that showed that shallow ground water in the area has not been adversely impacted by hydrocarbons from the pit and also requires no action. Based on soil and ground-water data for this site indicating a lack of impact to ground water, it is concluded that remediation of soil beneath the pit to a 5,000 mg/Kg TPH level is adequate to protect the environment. Navajo EPA approval of a 5,000 mg/Kg soil remediation level is requested for this site.

The recent geochemical data indicate that there are extremely low levels of BTEX constituents detected in the water from well MW-6, a deep monitoring well that is completed within the upper portion of the Nacimiento bedrock. An elevated pH was measured in water samples from this well suggesting that there may be the presence of some grout within the sand pack that surrounds the screen. However, the elevated pH does not impact the analytical results for BTEX (see attached letter from Envirotech's chemist). The water-quality data (see Table 1 in Envirotech's

report) indicate that the residual hydrocarbons encountered within and beneath the former pit are not having an adverse impact on deep or shallow ground-water quality.

On November 25, 2002 while Envirotech was installing MW-6, Environmental Management Support, Inc. (EMSI) completed an additional shallow soil boring (SB-3) within the pit (see Figure 2 of Envirotech's report). This boring was installed using a hand auger to a depth of 9 feet below the base of the pit. Soil samples were collected at depths of 3, 6 and 9 feet below the base of the pit. The samples were analyzed for BTEX, gasoline-range hydrocarbons (Method 8015B), diesel-range hydrocarbons (Method 8015B), and total petroleum hydrocarbons (Method 418.1). The petroleum hydrocarbon analyses for the soil samples collected from SB-3, as well as previous data collected by Envirotech in September 2001 at two other shallow soil boring locations within the pit, are summarized in Table A of this letter. Table 2 in the Envirotech report also provides the total hydrocarbon and BTEX analyses for samples from all three borings. Soil boring SB-3 is located approximately 10 feet from the boring labeled as the North Side @ 9'. As noted in Table A of this letter, there is a significant difference in the total TPH (8015 Method) results (116 mg/Kg versus 6,270 mg/Kg) between the North Side and the SB-3 soil samples collected at 9 feet. This difference is probably due to heterogeneities within the geologic materials that lead to differences in the concentrations of hydrocarbons.

The total petroleum hydrocarbon analysis by Method 418.1 measures the full range of petroleum hydrocarbons within a soil sample as well as some organic compounds that are unrelated to petroleum (e.g. humic acids). The difference between the concentrations measured by Method 418.1 and Method 8015B generally reflects the amount of hydrocarbons that are greater than C28 (28 carbon atoms in number). In the last column of Table A is the percentage of hydrocarbons that are greater than C28 in number. The values in this column were calculated by dividing the values of Total TPH (Method 8015B) by the values of Total TPH (Method 418.1) and then multiplying by 100. As noted in the table the majority of hydrocarbons in a sample are greater than C28 in number. Also, the data indicate that the hydrocarbons with higher number of carbon atoms are found closer to the base of the pit, and that the lighter (e.g. fewer carbon atoms) hydrocarbons are found deeper within the pit. This is not uncommon, as the lighter hydrocarbons are more mobile than the heavier hydrocarbons.

The analytical results also demonstrate that the hydrocarbons in the soil beneath the pit do not contain significant concentrations of BTEX (see Table 2 of Envirotech's report), and that the residual hydrocarbons are not adversely impacting ground-water quality (see Table 1 in Envirotech's report) even though they may be at higher levels than previously indicated. The issue then becomes what is an appropriate level (concentration) for remediation of the hydrocarbon-impacted soils? This remediation level should be both protective of the environment and cost effective.

The water-quality data that have been collected by Envirotech indicate that the pit, in its current state is not adversely impacting ground-water quality. Given the age of the pit (approximately 40 years old), and because, to our knowledge, it has not been in use for several years, impacts to ground water would not be expected to increase in the future. In fact, the hydrocarbons within the pit would be expected to decrease in concentration due to degradation. As such, because there is no adverse impact to ground-water quality now, it can be reasonably expected that there would be no adverse impact on ground-water quality in the future even if there was no remediation of the pit. Because of the lack of impact to ground-water quality under the current condition of the pit, we request that the maximum remediation level allowed under the NMOCD guidelines (5,000 mg/kg (ppm)TPH), be applied for the closure of the pit. BTEX in soil is not an issue at this site as the total BTEX concentrations for all of the soil samples are significantly below the NMOCD guidance level of 50 mg/kg. The new field data (November and December 2002) that have been collected by Envirotech confirm the analyses collected in September 2001 that the hydrocarbons within and beneath the pit are not having an adverse impact on ground-water quality. In addition, the BTEX concentrations in ground water are significantly below drinking water standards. The data also indicate that ground water within deeper geologic materials is not adversely impacted by hydrocarbons from the pit.

The soil quality data demonstrate that the residual hydrocarbons are primarily longer-chained hydrocarbons (higher numbers of carbons) that are not mobile and have very low solubilities in ground water. For example, heptadecane, a 17-carbon alkane, is the first alkane that is solid at 20° C, a temperature that is generally reflective of room temperatures (safety data from http:// physchem.ox.ac.uk site). We are of the opinion that for the above reasons (no adverse impact to ground-water quality) and the fact that there are no downgradient receptors within 1,000 feet of the site (Gallegos Wash is approximately 6,000 feet to the west of the site), a soil remediation level of 5,000 mg/kg is appropriate. The hydrocarbon-impacted soil would be excavated to a level of 5,000 mg/kg using Method 8015B as the analytical method to assess the extent of soil removal. This method is appropriate as it measures the more mobile fraction of hydrocarbons. This method is conservative in that alkane hydrocarbons greater than C17 are solids at temperatures encountered in the subsurface and thus are immobile. Method 8015B measures hydrocarbons up to C28 in carbon numbers. Given the lack of BTEX measured in the soil samples collect previously, there is no reason to measure BTEX in samples collected for closure.

Upon removal, the excavation will be backfilled with clean soil. The land surface will be contoured to promote precipitation runoff away from the closed pit site. The backfilled area will be vegetated with native vegetation. Prior to undertaking the excavation, a simple workplan will be submitted to you for your approval.

Please contact me if you have questions.

Sincerely,
Engineering Management Support, Inc.

Robert J. Sterrett, Ph.D.
Principal Hydrogeologist

Enclosures: Report by Envirotech
Table A

cc: W. Olsen – NMOCD
J. Rezendes - ChevronTexaco

Table A. Analytical Results for Soil Samples
Gallegos Sand Unit

	Hydrocarbon Analyses (mg/Kg)						
	Gasoline Range	Diesel Range		Total Diesel Range			
Soil Boring Number and Depth	C5-C10	C10-C18	C18-C28	C10-C28	Total TPH (8015B Method)	TPH (418.1 Method)	Percent Hydrocarbons >C28
North Side @ 9'	1.8	NA	NA	114	116	NA	-
South Side @ 9'	643	NA	NA	258	901	NA	-
SB-3 @ 3'	452	1,743	1,108	2,851	3,300	11,890	72
SB-3 @ 6'	376	1,530	670	2,200	2,580	7,850	67
SB-3 @ 9'	787	3,776	1,706	5,482	6,270	14,640	57
NA - Not Analyzed							