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REPORTS

DATE:

JAN. 7 1998

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January 5, 1998

Mr. Bill Olson
New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco St.
Santa Fe, NM 87505-5472

RE: Work Plan to Remediate Red Lake Leak Site, Eddy County, NM

Dear Bill,

Enclosed, please find the work plan to remediate Navajo's Red Lake spill in Unit C, Sec 29, T17S, R29E. This spill was from Navajo's gathering system and impacted Red Lake Arroyo on April 7, 1997. This work plan presents a systematic approach to the remediation of this spill.

Contaminated soil will be excavated and moved upgradient to be blended. In the upgradient area, clean soil will be removed to backfill the arroyo excavation. Since there have been other historical leaks in the area, newly contaminated soil and historical contaminated soil will be differentiated based on BTEX results from the bottom and sides of the excavation. No contamination greater than 100 ppm PID will remain. The contaminated soil will be blended with clean soil from the area to a level below 5000 ppm TPH. It will then be contoured into the remediation area. All clean-up levels are based on OCD's "Guidelines for Remediation of Leaks, Spills, and Releases".

After clean-up is complete, OCD will be provided with a closure document with appropriate analytical information. If there are any questions concerning this matter, please feel free to call me at 505-748-3311 or write me at the letter-head address. Thank you for your time in this matter.

Sincerely,
NAVAJO REFINING COMPANY

Darrell Moore

Darrell Moore
Environmental Manager for Water and Waste

Encl.

cc: Mr. Albert Reyes Navajo Pipeline

July 31, 1997

Work Plan & Cost Estimate
Navajo Refining Company
Red Lake Leak Site

Purpose

The purpose of this work plan is to present a systemic approach to the bioremediation of the crude oil spill located at NE¼, NW¼, Section 29, 17 South, 29 East, in Eddy County, New Mexico. GPS coordinates of the site are as follows: 32° 48' 75" North Latitude
104° 11' 97" West Longitude

Background

Crude oil was accidentally released from a gathering system leak into the red lake arroyo on approximately April 7, 1997.

Action Plan

The newly contaminated soil will be excavated and moved up gradient to a less environmentally sensitive area, where it will be blended and spread with clean soil from the area to NMOCD guidelines. Clean soil will be moved into the leak area to backfill the excavation. The purpose in moving the contaminated soil and replacing it with clean soil is to protect the surface waters and ground water in the area.

Navajo proposes to move the newly contaminated soil out of the area in order to avoid an extensive cleanup resulting from historical contamination already present at the site when the leak occurred. We propose to differentiate between newly contaminated soil and historical contamination based on BTEX results taken from the bottom and sides of the excavation. All of the newly contaminated soil will be removed and remediated based on a BTEX level of no greater than 100 ppm (PID) remaining in the hole. The area affected by the spill will, therefore, have no reading of greater than 100 ppm BTEX as determined by Photo ionization Detector (PID).
The contaminated soil will be transported to a less environmentally sensitive area and blended with surrounding clean soils to NMOCD guidelines.

The blending of the contaminated soil will:

1. Aid in the aeration of the contaminated soil.
2. Reduce the TPH to a level less likely to move downward and contaminate additional soils.
3. Add indigenous microbes to the contaminated soil in order to biodegrade the crude oil in a shorter length of time.

The excavation will be performed with a bulldozer, backhoe, grader or combination thereof, with a minimum of disturbance to the existing location. When the contaminated soil has been excavated and transported, TPH will be conducted on soil samples obtained from the blends to insure all contaminated soil has been remediated to appropriate levels. Once acceptable levels are achieved, the soil will be spread and contoured at the remediation area.

Standard Operating Procedures

Standard operating procedures (SOPs) were obtained from the Environmental Protection Agency, New Mexico Oil Conservation Division guidelines, and standard operating procedures for sampling and testing of soils accepted by industry.

Sampling Procedure

1. Clear the area to be sampled of any surface debris.
2. Sample at desired depth and location.
3. Place sample in sample container. Check that a Teflon liner is present in the cap if required. Secure the cap tightly.
4. Label the sample container with appropriate sample tag. Complete all chain-of-custody forms and record in the field log book.
5. Perform field test or alternately refrigerate and transport to laboratory.
6. Decontaminate equipment after use and between samples.

Site Safety

There are a number of health and safety concerns associated with the excavation of trenches at these types of sites. Compliance with the following OSHA standards will be required at all sites:

- Trenching and Shoring - 29 CFR 1926.650 - 653
- Hazwoper/Atmospheric Testing - 29 CFR 1910.120
- Respiratory Protection - 29 CFR 1910.134
- Personal Protective Equipment - 29 CFR 1910.132 - 140

After excavation of the leak site and replacement of excavated soils is completed, appropriate analytical information and closure documents will be furnished with a request for closure of the site. Additionally, analytical information and closure documents will be furnished for the remediation area of the contaminated soil and closure will be requested on that site.

Cost Estimate for the Job

Equipment	Cost/hour	Cost/day (10 hours)
2 Bulldozers D-6 or larger (w/operator)	$75	$750
1 Backhoe (w/operator)	$45	$450
1 Trackhoe (w/operator)	$90	$900
1 24 yard belly dump truck (w/operator)	$75	$750
Soil Extraction TPH Testing		$60/test

In addition to the above expense, travel time for the equipment will be charged at $15/hour less than the working rates. Otherwise, equipment will only be charged for when in use. Consulting/supervision services (including sampling, and recordkeeping) will be billed at $500/day. TPH testing done to verify the extent of the contamination and also done to verify the levels of contaminants re-introduced to the site will be done by Infrared Spectrophotometry onsite (EPA 418.1) at $60/test. Mileage to and from the site will be charged for the consultant at $.50/mile.

Any additional costs incurred during the remediation will be billed through exactly as charged. (This would include third party laboratory analyses for closure purposes) All additional expenses would be approved by Navajo before they were incurred.

Based on preliminary survey of the site, we estimate 10 full working days to complete closure on this site.

Cost estimates are as follows:

Dirt Equipment Travel Time	$350.00
Dozers (2 dozers for 7 days)	$10500.00
Backhoe (4 days)	$1800
Trackhoe (2 days)	$1800
Dump Truck (6 days)	$4500
Consultant Time	$5000.00
Mileage	$750.00
TPH Testing (25 tests)	$1500.00
Total	$26,200.00

All documentation and reporting is completed and maintained free of charge by Safety &Environmental Solutions, Inc., as part of the consulting fee.

Thanks for the opportunity to work with Navajo on this remediation project. Please give us a call when you would like to get started.

Sincerely,

Dyke A. Browning - CEI, REM
SES, Inc.