GW - 160

WORK PLANS

MAXIM TECHNOLOGIES INC®

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August 26, 2003

Mr. Wayne Price
New Mexico Oil Conservation Division
Environmental Bureau
1220 S. Saint Francis Drive
Santa Fe, New Mexico 87505

RE: Bright Federal Compressor Station, Lea County, New Mexico
Discharge Permit GW-160 Closure Plan

Dear Mr. Price:

On behalf ConocoPhillips, Maxim Technologies Inc. (Maxim) submits this request for closure for the Llano, Inc. Bright Federal Compressor Station located in NE/4, NW/4 of Section 21, Township 19 South, Range 33 East, NMPM, Lea County, New Mexico (Site). The original discharge plan was approved January 14, 1994 and renewed April 28, 1999. Conoco, Inc. purchased the compressor facility from LGE Resources, who bought it from Llano, Inc. Conoco requested permit transfer during November 2000. Since that time Conoco merged with Phillips, Inc., ceased compressor operations and removed almost all equipment associated with its operation, including the blow-down sump. The Site is approximately 31 miles southwest of Hobbs, off US Highway 62/180 in the eastern portion Lea County, New Mexico (Figure 1).

In support of this request for closure, Maxim conducted a subsurface investigation to determine the horizontal and vertical extent of potential effects of hydrocarbon and brine water releases on the Site.

1.1 Scope of Work

The investigation program entailed hand augering 6 shallow borings (approximately 3 feet deep) for collection of soils from each boring. Soil samples were field screened with a photo-ionization detector (PID) to detect the presence of volatile organic compounds (VOCs) within the headspace atmosphere of bagged soil samples. The sampling locations in the immediate vicinity of the Site are shown on Figure 2. Each sample was bagged, labeled, and solar heated for approximately 15 minutes. After the waiting period, the bags were penetrated with the tip of the PID and a measurement taken of the organic vapors present within the bag. Soil samples from 5 of the 6 borings were also analyzed for total petroleum hydrocarbons (TPH), both diesel range organics (DRO) and gasoline range organics (GRO); benzene, toluene, ethyl benzene and total xylene (BTEX), and chloride.

2.0 TOPOGRAPHY, GEOLOGY AND HYDROGEOLOGY

The Site is located in the sand dune area of the Querecho Plains. In the area of the Site, approximately two feet of blow sand overlays clay soil. The Bureau of Land Management (BLM) administers most of this land (Figure 1).

The Site is located in the northern portion of the Delaware Basin, a structural basin underlying present-day southeastern New Mexico and western Texas which contains a thick sequence of sandstones, shales, carbonates, and evaporites. The sediments accumulated during the Permian period and represent the thickest portion of the sequence in the northern Delaware Basin. Generally, the Rustler and Dewey Lake Formations are water bearing and where located at shallow depths are sources of groundwater. The Rustler Formation includes the Culebra and Magenta Dolomites, two units containing water of low quality (brine to brackish) (DOE 2002). In this area, the Permian rocks are overlain by sediments of the Triassic Dockum Group undivided. The Dockum Group is water bearing from sandstones interbedded in the essentially shale unit.

In a 6-mile area of the Site, three water wells completed in the Triassic Santa Rosa formation were found to have the following depth to water information.

Depth to Water (feet below ground surface [fbgs])	Distance from Site (miles)	Direction
342	2.4	northwest
244	4.5	northeast
246	5.2	southwest

There are five other water wells within 3 miles of the Site with no depth to water information.

- Well 1 located approximately 1.4 miles to the northwest,
- Well 2 located approximately 2.5 miles to the northwest,
- Well 3 located approximately 2.6 miles to the southwest,
- Well 4 located approximately 2.9 miles to the southeast, and
- Well 5 located approximately 3.0 miles to the southeast.

Also, on the US Geological Survey, 1984 topographic map, 1:24000 scale, entitled "LAGUNA GATUNA NW, N. MEX" one water well is noted approximately 1.6 miles northwest of the Site, but there is no water information on this well.

There are three salt playas between 2.5 and 5 miles to the southwest of the Site.

3.0 RESULTS

In order to delineate the Site, Maxim collected soil samples in the area of the known brine water/hydrocarbon release. Soil samples were collected around existing soil staining to a depth of three feet or until rejection using a hand auger. The sandy nature of the soil facilitated the use of the hand auger. Figure 2 presents a site map showing the Site layout and location of soil samples. A portion of each soil sample was sealed in a plastic bag and headspace measurements made with a photo-ionization detector (PID). Soil samples were also analyzed for TPH DRO and GRO (Method 8015 modified), BTEX (Method 8260), and chloride (Method 300). The headspace and analytical results are presented in Table 1.

Facility locations on-site were visually inspected for evidence of hydrocarbon/brine water releases. Other than soil staining shown in Figure 2, there was no evidence of soil degradation.

Organic vapor concentrations in the soils are presented in Table 1. Locations BY-4 and BY-6 were used to describe the condition of the affected zone at the Site. All samples exhibited the presence of volatile organic carbon vapors at concentrations less than 100 parts per million (ppm).

The concentrations of hydrocarbon in the soils are presented in Table 2. Concentrations were higher in the surface samples taken in the immediately release area. Borings in the affected area noted the presence of hydrocarbons at sampling locations BY-4 (0-5 feet, 13 milligrams per kilogram [mg/kg] TPH diesel range), BY-5 (0-5 feet, 260 mg/kg TPH diesel range) and at BY-6 (0-5 feet, 4,200 mg/kg TPH diesel range; and at 3 feet 2.8 mg/kg TPH diesel range). Two boring samples from the zero to five-foot interval at BY-5 and BY-6 noted the presence of toluene (0.016 and 0.028 mg/kg, respectively).

Chloride concentrations in the soils are presented in Table 2. Chloride was detected in borings BY-2 at 2 and 3 feet sampling depths (36.1 and 143 mg/kg, respectively). BY-3 at the 3-foot sampling depth (64.9 mg/kg) and BY-4 at zero to 0.5-foot interval and 3-foot sampling depths (86.9 and 57.5 mg/kg, respectively).

The soils present at the Site consist of excessively drained, non-calcareous loose sands of the Kermit-Palomas series. These soils formed in wind deposited sands in the Southern Desertic Plains. The landscape is one of large, irregularly sloping, duny areas of Kermit fine sand and intervening concave areas of Palomas fine sands. The dunes are typically 8 to 12 feet or more high. The concave areas are sandy to a depth of 2 to 4 feet. Below the sand is red light sandy clay. Typically the surface layer is light brown, fine sand about 8 inches thick. It is underlain by pale reddish-brown, fine sand to a depth of 72 inches. Below this is moderate reddish-orange, slightly sandy clay to a depth of 120 inches. Underlying the clay is white, moderate to well indurated cliché. The soil encountered during boring activities consisted of 2 feet of red dune sand overlying red clay.

After the auger holes served the purpose of delineating the Site, each hole was plugged with native soil so that no boring was left open for more than a few hours.

4.0 CONCLUSIONS

According to visual observation, PID field screening and laboratory analysis, detectable concentrations of petroleum hydrocarbons are present at the Site. Based on the risk-based ranking criteria presented in the New Mexico Oil Conservation Division (NMOCD) *Guidelines for Remediation of Leaks, Spills and Releases*, the following risk factors are applied to the subject Site:

Depth to Groundwater > 100 feet	Ranking score of 0
Wellhead Protection Area >1000 feet from a water source >200 feet from private domestic water source	Ranking score of 0
Distance to Surface Water Body >1000 horizontal ft	Ranking score of 0

Based on a total ranking score of 0, the site-specific remediation levels are 5,000 mg/kg for TPH and 100 ppm measured by a PID for BTEX.

In addition, BTEX laboratory analysis (Table 2) indicates the following risk factors would apply:

Total Ranking Score	>19	10 - 19	0 - 9
Benzene (ppm)	10	10	10
BTEX (ppm)	50	50	50
TPH (ppm)	100	1000	5000

All samples exhibiting BTEX were below the Ranking Score of 0 – 9. Therefore the Site-specific remediation for BTEX through laboratory analysis is 50 ppm.

Chloride concentrations detected in soil at the Site were lower than the suggested remediation level of 250 mg/kg concentration in soil by the New Mexico Pit Working Group of which NMOCD is a member.

5.0 RECOMMENDATIONS

Based on the NMOCD ranking scores, Maxim recommends no further action is required at this Site. The underground blow-down tank has been subsequently removed from the Site. Rainwater overflow from this tank is believed to be the source of soil staining shown on Figure 2,

and it is planned that this area will be disked to remove surface staining and open the surface soil to aeration.

On behalf of ConocoPhillips, Maxim requests closure for Discharge Permit GW-160. If you have any questions concerning this investigation, please contact myself or Mark Bishop at ConocoPhillips (505) 391-1956.

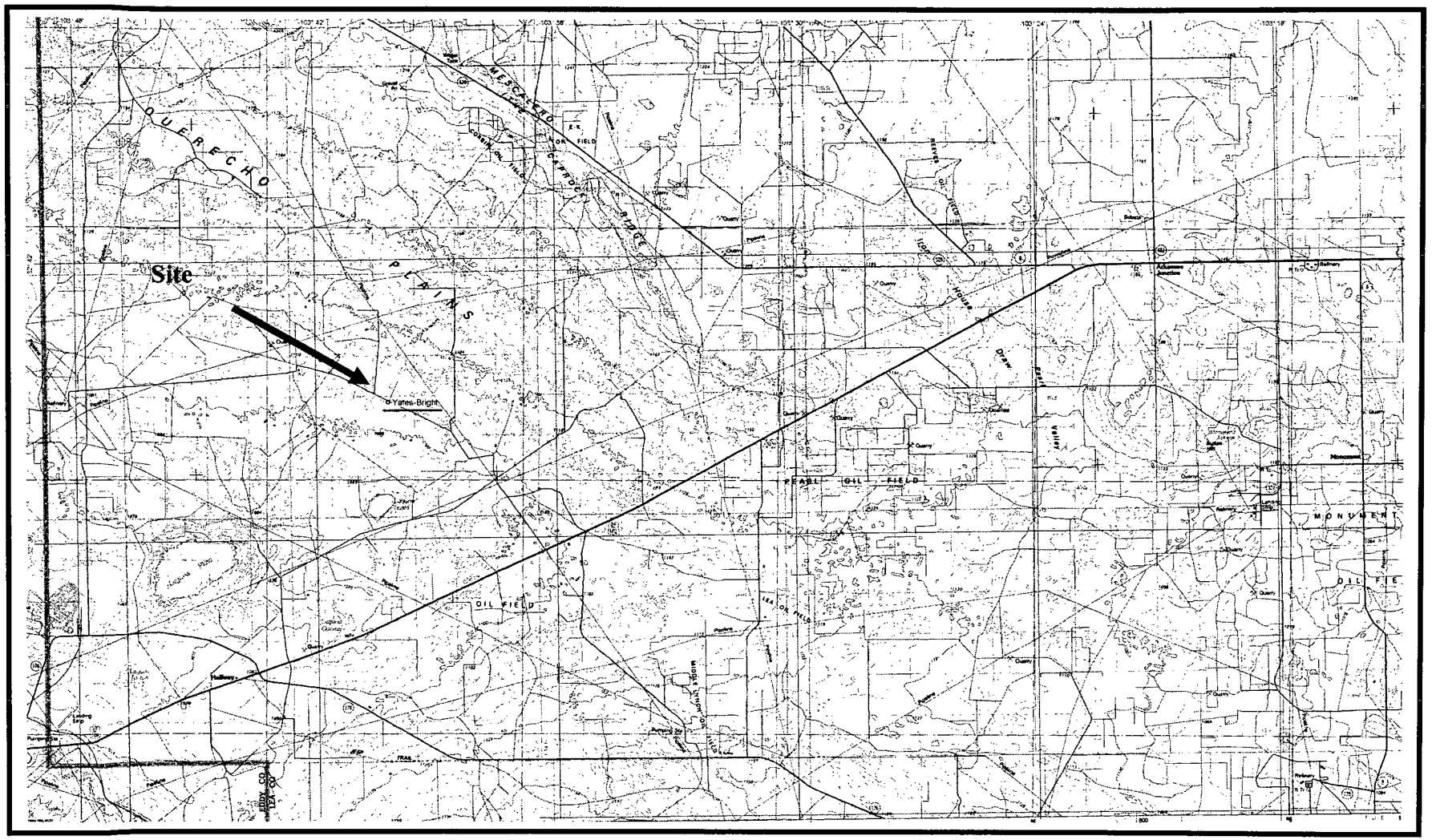
Sincerely,

MAXIM TECHNOLOGIES, INC.

Charles Durrett
Sr. Project Manager

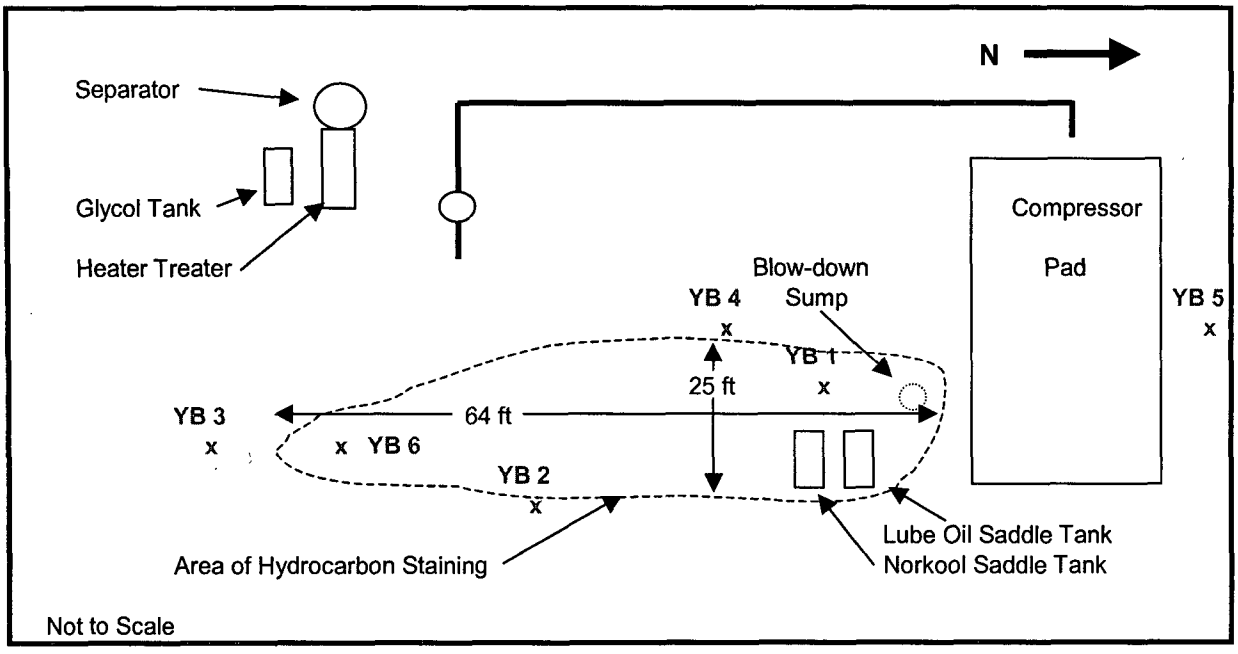
Enclosures

FIGURES



Source: USGS 1978 Hobbs, New Mexico-Texas 1:250,000 Scale

Figure 1. ConocoPhillips Yates-Bright Compressor Station



MAXIM Technologies, Inc.	
ConocoPhillips	Southeastern New Mexico Operation Unit

Figure 2. Yates-Bright Compressor Station Site Drawing and Sampling Locations (x)
Lea County, NM; NE, NW Sec 21 T19S, R33E

TABLES

Table 1
Yates-Bright Compressor Station
Photo-ionization Detector Readings

Depth (ft)	Field Analysis					
	YB - 1	YB - 2	YB - 3	YB - 4	YB - 5	YB - 6
0-0.5	1.7	3.0	3.7	3.2	3.0	6.6
1-2	1.8	4.1	3.5	2.7	2.7	3.1
2-3	1.4	2.1	3.0	2.9	2.9	2.7

Results in parts per million (ppm)

Table 2
Yates-Bright Compressor Station
Delineation of Discharge Line Condensate/Water Release

Parameter	Data Analysis - Sampling Locations									
	YB - 2		YB - 3		YB - 4		YB - 5		YB - 6	
Sampling Depth Interval (ft)	2	3	2	3	0.5	3	0.5	3	0.5	3
Volatile Organics (mg/kg)										
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	**0.016**	ND	**0.028**	ND
Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH (mg/kg)										
Diesel Range	ND	ND	ND	ND	**13**	ND	**260**	ND	**4,200**	**2.8**
Gasoline Range	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloride (mg/kg)	**36.1**	**143**	ND	**64.9**	**86.9**	**57.5**	ND	ND	ND	ND

ND – not detected
Results in milligrams per kilogram (mg/kg)

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LG & E Natural
Gathering and Processing Co.
921 W. Sanger
Hobbs, NM 88240

June 01, 2000

Bright Federal Compressor Station Stormwater Discharge Plan & SPCC Plan Determination

The following is the determination for the need of a *Stormwater Discharge Plan*, and the need for a *Spill Prevention Control and Countermeasure* (SPCC) plan for the Bright Federal Compressor Station. It is prepared in accordance with federal, state, and local laws and regulations.

Storm Water Discharges Associate with Industrial Activity 40 C.F.R. 122.26(b)(14)

The term "Storm Water Discharges Associated with Industrial Activity" defined in federal regulations 40 CFR 122.26(b)(14)(i)-(xi), determined which industrial facilities are potentially subject to Phase I of the storm water program. Facilities subject to the program must apply for a permit. The definition uses either SIC (Standard Industrial Classification) codes or narrative descriptions to characterize the activities. Note that categories iii, viii, and xi have special conditions, or exceptions which may make a facility NOT subject to the program, and therefore not required to apply, even though the facility's activity matches one of the SIC codes category (i) Facilities subject to storm water effluent limitations guideline, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category (xi)). These types of facilities include the following:

40 CFR Subchapter N
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SIC Code
10 metal mining (metallic mineral/ores)
12 coal mining
13 oil and gas extraction
14 non-metallic minerals except fuels

Oil and gas operations that discharge contaminated storm water at any time between November 16, 1987 and October 1, 1992, and that are currently not authorized by an NPDES permit, must apply for a permit. Operators of oil and gas exploration, production, processing, or treatment operations or transmission facilities, that are not required to submit a permit application as of October 1, 1992 in accordance with 40 CFR 122.26(c)(1)(iii), but that after October 1, 1992 have a discharge of a reportable quantity of oil or a hazardous substance (in a storm water discharge)

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for which notification is required pursuant to either 40 CFR 110.6, 117.21, or 302.6, must apply for a permit.

Storm Water Discharge Plan Determination

Since LG & E Natural has not had a discharge at this facility of a reportable quantity of oil or a hazardous substance (in a storm water discharge) for which notification is required pursuant to either 40 CFR 110.6, 117.21, or 302.6, a storm water discharge plan is not required for the Bright Federal Compressor Station.

SPCC Regulations

An SPCC plan must be prepared by all facilities subject to regulation. This plan is to help prevent any discharge of oil into navigable waters or adjoining shorelines. The main thrust of the SPCC regulations is prevention as opposed to after-the-fact reactive measures commonly described in Spill Contingency Plans.

Facilities regulated by the SPCC regulations

There are three criteria a facility must meet to be regulated by the SPCC regulations. These criteria are

1. the facility must be non-transportation related,
2. the facility must have an aboveground storage capacity greater than 660 gallons in a single container **or** an aggregate storage capacity greater than 1,320 gallons **or** a total underground storage capacity greater than 42,000 gallons, and
3. there must be a reasonable expectation of a discharge to navigable waters or adjoining shorelines.

Non-transportation related facilities

These facilities (including all equipment and appurtenances) may include, but are not limited to:

- Fixed onshore and offshore oil well drilling facilities;
- Mobile onshore and offshore oil well drilling platforms, barges, trucks or other mobile facilities;
- Fixed onshore and offshore oil production structures, platforms, derricks and rigs;
- Mobile onshore and offshore oil production facilities;
- Oil refining or storage facilities;
- Industrial, commercial, agricultural, or public facilities that use, store, drill for, produce, gather, process, refine or consume oil or oil products;
- Waste treatment facilities;
- Loading areas/racks, transfer hoses, loading arms and other equipment that are appurtenant to a non-transportation related facility;

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- Highway vehicles and railroad cars used to transport oil exclusively within the confines of a non-transportation related facility; and
- Pipeline systems used to transport oil exclusively within the confines of a non-transportation related facility.

Oil storage capacity defined

Oil storage includes all containers storing oil at a facility. The **capacity** of the containers (maximum volume) must be considered and **not** the actual amount of product stored in the container (operational volume). Oil storage containers include, but are not limited to,

- tanks,
- containers,
- pails,
- drums,
- quart containers,
- transformers,
- oil-filled equipment, and
- mobile or portable totes.

A facility may be subject to SPCC regulations if they have at least one of the following oil storage capacities:

- If a facility has one aboveground oil storage container greater than 660 gallons; **or**
- If a facility has a total aboveground oil storage capacity greater than 1,320 gallons; **or**
- If a facility has a total underground oil storage capacity of greater than 42,000 gallons.

Under the SPCC regulations, oil is defined as

> "oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse and oil mixed with wastes other than dredged spoil and oily mixtures."

This also includes non-petroleum oils, animal and vegetable oils.

Discharge of oil into or upon navigable waters or adjoining shorelines

This determination is based upon a consideration of the geographical and locational aspects of the facility. The location of the facility must be considered in relation to streams, ponds and ditches (perennial or intermittent), storm or sanitary sewers, wetlands, mudflats, sandflats or farm tile drains. The distance to navigable waters, volume of material stored, worst case weather conditions, drainage patters, land contours, soil conditions, etc., must also be taken into account. Further, according to the regulations, this determination shall **not** include consideration of man-made features such as dikes, equipment or other structures that may serve to restrain, hinder, contain or **prevent** an oil discharge.

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Determination of Need for SPCC

Under the above definitions (from the regulations) the possibility for the discharge of oil into or upon navigable waters or adjoining shorelines, the Bright Federal Compressor Station does not require a SPCC plan. Considering the location of the facility in relation to streams, ponds and ditches (perennial or intermittent), storm or sanitary sewers, wetlands, mudflats, sandflats or farm tile drains, the distance to navigable waters, volume of material stored, worst case weather conditions, drainage patters, land contours, and soil conditions, a discharge of oil into or upon navigable waters or adjoining shorelines is virtually impossible.

Persons making this determination are:

Dyke Browning
Registered Environmental Manager #7771
Certified Environmental Inspector #12441

Lee Hinman
Registered Professional Engineer
Texas #75230