

GW - 032

MEETINGS

Chavez, Carl J, EMNRD

Subject: Accepted: Gallup Refinery (GW-32) Sanitary Treatment Pond - 1 (STP-1) Design and Approval
Location: OCD Conference Room 3rd Floor; 1220 South St. Francis Dr. Santa Fe NM 87505 (Wendell Chino Bldg.)
Start: Wed 8/10/2011 1:15 PM
End: Wed 8/10/2011 3:15 PM
Recurrence: (none)
Meeting Status: Meeting organizer
Organizer: Chavez, Carl J, EMNRD
Required Attendees: Hains, Allen; Riege, Ed; Cobrain, Dave, NMENV; VanHorn, Kristen, NMENV; Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Gerholt, Gabrielle, EMNRD

Attendees: Please modify the agenda below if you have topics to communicate about at the meeting or discuss under agenda item #4.

Western requests the above referenced meeting to present a "minor modification" to the NMOCD Discharge Plan for construction and operation of the Sanitary Treatment Pond-1 (STP-1) at the Gallup Refinery (GW-32). The minor modification was conceptually approved by NMOCD on October 14, 2010.

AGENDA

1. STP-1 Minor Modification to GW-32 for Sanitary System (CAFO Schedule Requirement)
 - Introduction (Review Complete WW Treatment System with STP-1 location and STP-1 Engineering Drawings)
 - Review of Submittal
 - Submittal Q and A
2. OCD Draft Gallup Refinery Discharge Permit (GW-032) Review
 - General Discussion of upcoming NMOCD Discharge Plan Requirements
3. Evaporation Pond Design & Construction Work Plan and Beneficial Reuse of Remediated Landfarm Soils
4. Miscellaneous

Allen S. Hains
Manager
Remediation Projects

Western Refining
123 W. Mills Ave.
El Paso, Texas 79901

915 534-1483
915 490-1594 (cell)

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, October 14, 2010 4:10 PM
To: 'Lieb, Jim'
Cc: Riege, Ed; Leute, Alan; Van Horn, Kristen, NMENV
Subject: RE: Telephone call request- 24 in. Sewer Line Questions & Final Communication

Hey guys, the OCD will need the certified engineering drawings to issue final approval of EP-0; however, the OCD approves of Western's conceptual plan with location to construct the new aeration lagoon (double lined w/ leak detection and properly engineered spray system with backup to ensure aggressive biological treatment occurs 24/7. OCD submitted meeting minutes from the October 6, 2010 meeting, which also clarifies OCD's conceptual approval of EP-0. We need to ensure by a PE that it can be designed as conceptualized by Western. Also, NMED and OCD will likely require permeability testing of soils at the final EP-0 location to ensure it meets acceptable permeability limits for use as a cap for SWMU 1, but NMED is the lead on the SWMUs.

OCD is following up with review comments on the 24 in. sewer line soon. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Lieb, Jim [mailto:Jim.Lieb@wnr.com]
Sent: Thursday, October 14, 2010 4:04 PM
To: Chavez, Carl J, EMNRD
Cc: Riege, Ed; Leute, Alan
Subject: RE: Telephone call request- 24 in. Sewer Line Questions & Final Communication

Carl:

I hope Alan and I were able to answer all of your questions to your satisfaction. Thank you for the OCD approval of our conceptual plans for EP-0. We will submit to you an alternative underground pipe test method for your approval soon.
Regards,

Jim Lieb
Environmental Engineer
Western Refining, Inc.
Gallup Refinery
I-40, Exit 39
Route 3, Box 7
Gallup, NM 87301

Safety Starts With An "S", But Always Begins With "You"

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, October 14, 2010 1:33 PM
To: Riege, Ed
Cc: Lieb, Jim; VonGonten, Glenn, EMNRD
Subject: Telephone call request- 24 in. Sewer Line Questions & Final Communication

Ed:

Could you and Jim give me a call at my office about 3:30 p.m. today. I have some questions (see below some gen. comments).

OCD Observations:

Drawing Z84-34-017:

- 1) 24 in. storm sewer line is "HDPE", and 16 in. process sewer line is listed as "CI". If we are focusing on the 24 in. line, I don't think Scotchkote-TM coats Polyken- TM apply to HDPE lines. Should the 24 in. line be carbon steel (0.5 in. wall thick)? If the 24 in. line is carbon steel, I believe it will be externally and internally scotchkoted right? Also, the Polyken tape would be used at welded joints and fittings right?
- 2) Should there be a sharp elbow turn in the line into T-35 and cleanout(s) near this location due to the flow direction change and potential for problems?
- 3) Are 4 in. cleanouts big enough? Shouldn't there be cleanout locations at certain spatial distances along the line or sharp bends?

Underground Sewer Piping Specification:

- 1) The "Static head water test" is not an acceptable testing method on the pipe under the OCD discharge permit. Testing requirements for pipelines are specified in the discharge permit.
- 2) Pipeline material specification is "API Grade 5L, carbon steel pipe" and I believe this relates to the 24 in line, which in drawing in No. 1 above is listed as "HDPE."

Drawing C-3:


- 1) The sewer line does not appear to be connected to the proposed double lined w/ leak detection aeration lagoon EP-0 in the drawing. Why? I recall at the 10/6 meeting that both comingled process and sewer fluids would be routed along with treated effluent into EP-0 before discharging into EP-2?
- 2) There is a sharp bend in line before entering T-35 Equal. Tank (see associated comments above). Sharp bends in flow lines have been areas where leakage can occur, accelerated corrosion, blockage, etc.

I look forward to speaking with you today.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
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1220 South St. Francis Dr., Santa Fe, New Mexico 87505
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(Pollution Prevention Guidance is under "Publications")

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New Mexico Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

John H. Bemis
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey
Division Director
Oil Conservation Division



July 29, 2011

Mr. Mark B. Turri
Refinery General Manager
Western Refining Southwest, Inc. - Gallup Refinery
Interstate I-40, Exit 39
Jamestown, New Mexico 87347

RE: DRAFT Discharge Permit Renewal (GW-032) Gallup Refinery (Abatement of Ground Water and Vadose Zone Contamination) Section 28, UL: H, Township 15 North, Range 15 West, NMPM, McKinley County, New Mexico

Dear Mr. Turri:

Pursuant to Water Quality Control Commission (WQCC) Regulations 20.6.2.3104 - 20.6.2.3114 NMAC, the Oil Conservation Division (OCD) hereby approves the discharge permit for the Western Refining Southwest- Gallup Refinery contingent upon the conditions specified in the enclosed "Attachment to the Discharge Permit". Enclosed are two copies of the conditions of approval. Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 45 days of receipt of this letter including permit fees.

Please be advised that approval of this permit does not relieve the owner/operator of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does approval of the permit relieve the owner/operator of its responsibility to comply with any other applicable governmental authority's rules and regulations.

The final permit should be issued in approximately 45 days. If you have any questions, please contact Carl Chavez of my staff at (505-476-3490) or E-mail: CarlJ.Chavez@state.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge permit review.

Sincerely,

Glenn von Gonten
Acting Environmental Bureau Chief

GvG/cc
Attachments-1

xc: OCD District III Office, Aztec



**ATTACHMENT TO THE DISCHARGE PERMIT
WESTERN REFINING SOUTHWEST, INC. - GALLUP REFINERY (GW-032)
DISCHARGE PERMIT APPROVAL CONDITIONS**

June 29, 2011

Please remit a check for \$2,600.00 made payable to Water Quality Management Fund:

**Water Quality Management Fund
C/o: Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, New Mexico 87505**

1. GENERAL PROVISIONS:

A. PERMITTEE AND PERMITTED FACILITY: The Oil Conservation Division (OCD) of the Energy, Minerals and Natural Resources Department issues Discharge Permit GW-032 (Discharge Permit) to Western Refining Southwest, Inc. - Gallup Refinery (Owner/Operator) located at Interstate I-40, Exit 39, Jamestown, New Mexico 87347 (Section 28, Township 15 North, Range 15 West, NMPM, McKinley County, about 18 mile east of Gallup, New Mexico just north of I-40) to operate the Refinery (Facility) with abatement of ground water and vadose zone contamination.

The Facility provides oil and gas refining. The Facility operates and produces approximately 23,000 barrels per day of refined product. Ground water that may be affected by a spill, leak, or accidental discharge occurs at a depth of approximately 50 feet below ground surface, with a total dissolved solids concentration of approximately 1,700 mg/L.

B. SCOPE OF PERMIT: OCD has been granted authority to administer the Water Quality Act (Chapter 74, Article 6 NMSA 1978) as it applies to refineries by statute and by delegation from the Water Quality Control Commission pursuant to Section 74-6-4(E) NMSA 1978.

The Water Quality Act and the rules issued under that Act protect ground water and surface water of the State of New Mexico by providing that, unless otherwise allowed by rule, no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless such discharge is pursuant to an approved discharge permit (see WQCC Regulations: 20.6.2.3104 NMAC and 20.6.2.3106 NMAC).

This Discharge Permit does not convey any property rights of any sort nor any exclusive privilege, and does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of state, federal, or local laws, rules or regulations.

The Owner/Operator shall operate in accordance with the Discharge Permit conditions to comply with the Water Quality Act and the rules issued pursuant to that Act, so that neither a hazard to public health nor undue risk to property will result (see 20.6.2.3109C NMAC); so that no discharge will cause or may cause any stream standard to be violated (see 20.6.2.3109H(2) NMAC); so that no discharge of any water contaminant will result in a hazard to public health, (see 20.6.2.3109H(3) NMAC); and so that the numerical standards specified of 20.6.2.3103 NMAC are not exceeded.

The Owner/Operator shall not allow or cause water pollution, discharge, or release of any water contaminant that exceeds the Water Quality Control Commission (WQCC) standards specified at 20.6.2.3101 NMAC and 20.6.2.3103 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams).

C. DISCHARGE PERMIT CONDITIONS: By signing this Discharge Permit, the Owner/Operator agrees to the specific provisions set out in this document, and the commitments made in the approved Discharge Permit Application and the attachments to that application, which are incorporated into the Discharge Permit by reference.

If this Discharge Permit is a permit renewal, it replaces the permit being renewed. Replacement of a prior permit does not relieve the Owner/Operator of its responsibility to comply with the terms of that prior permit while that permit was in effect.

D. DEFINITIONS: Terms not specifically defined in this Discharge Permit shall have the same meanings as those in the Water Quality Act or the rules adopted pursuant to the Act, as the context requires.

E. FILING FEES AND PERMIT FEES: Pursuant to 20.6.2.3114 NMAC, every facility that submits a discharge permit application for initial approval or renewal shall pay the permit fees specified in Table 1 and the filing fee specified in Table 2 of 20.6.2.3114 NMAC. OCD has already received the required \$100.00 filing fee for this application. The flat fee for the abatement of Ground Water and Vadose Zone Contamination is \$2,600.00. The Owner/Operator shall submit this amount along with the signed Discharge Permit. Checks should be payable to the **"New Mexico Water Quality Management Fund,"** and not the Oil Conservation Division.

F. EFFECTIVE DATE, EXPIRATION, RENEWAL CONDITIONS, AND PENALTIES FOR OPERATING WITHOUT A DISCHARGE PERMIT: This Discharge Permit is effective when the Division's Environmental Bureau receives the signed Discharge Permit from the Owner/Operator and the \$2,600.00 fee or until the permit is terminated. **This Discharge Permit will expire on August 1, 2016.** The Owner/Operator shall submit an application for renewal no later than 120 calendar days before that expiration date, pursuant to 20.6.2.3106F NMAC. If an Owner/Operator submits a renewal application at least 120 calendar days before the Discharge Permit expires and is in compliance with the approved Discharge Permit, then the existing Discharge Permit will not expire until OCD has approved or disapproved the renewal application. Operating with an expired Discharge Permit may subject

the Owner/Operator to civil and/or criminal penalties. See Section 74-6-10.1 NMSA 1978 and Section 74-6-10.2 NMSA 1978.

G. MODIFICATIONS: The Owner/Operator shall notify the Division's Environmental Bureau of any facility expansion, production increase, or process modification that would result in any significant modification in the discharge of water contaminants (see 20.6.2.3107C NMAC). The Division's Environmental Bureau may require the Owner/Operator to submit a permit modification pursuant to 20.6.2.3109E NMAC and may modify or terminate a permit pursuant to Section 74-6-5(M) through (N) NMSA 1978.

H. TRANSFER OF DISCHARGE PERMIT: Prior to any transfer of ownership, control, or possession (whether by lease, conveyance or otherwise) of the Facility, the transferor shall notify the transferee in writing of the existence of the Discharge Permit, and shall deliver or send by certified mail to the Division's Environmental Bureau a copy of such written notification, together with a certification or other proof that such notification has been received by the transferee pursuant to 20.6.2.3111 NMAC. Upon receipt of such notification, the transferee shall inquire into all of the provisions and requirements contained in the Discharge Permit, and the transferee shall be charged with notice of all such provisions and requirements as they appear of record in the Division's file or files concerning the Discharge Permit. Upon assuming either ownership or possession of the Facility the transferee shall have the same rights and responsibilities under the Discharge Permit as were applicable to the transferor (see 20.6.2.3111 NMAC).

Transfer of the ownership, control, or possession of the Facility does not relieve the transferor of responsibility or liability for any act or omission which occurred while the transferor owned, controlled, or was in possession of the Facility (see 20.6.2.3111E NMAC).

I. CLOSURE PLAN AND FINANCIAL ASSURANCE: The Owner/Operator shall notify the Division's Environmental Bureau in writing when any operations of its Facility are to be discontinued for a period in excess of six months. Upon review of the Owner/Operator's notice, the Division's Environmental Bureau will determine whether to modify this permit, pursuant to 20.6.2.3107 NMAC and 20.6.2.3109E NMAC, to require the Owner/Operator to submit a closure plan and/or post-closure plan, including financial assurance.

J. COMPLIANCE AND ENFORCEMENT: If the Owner/Operator violates or is violating a condition of this Discharge Permit, the Division's Environmental Bureau may issue a compliance order requiring compliance immediately or within a specified time period, suspending or terminating this Discharge Permit, and/or assessing a civil penalty. See Section 74-6-10 NMSA 1978. The Division's Environmental Bureau may also commence a civil action in district court for appropriate relief, including injunctive relief. See Section 74-6-10(A)(2) NMSA 1978 and Section 74-6-11 NMSA 1978. The Owner/Operator may be subject to criminal penalties for discharging a water contaminant without a discharge permit or in violation of a condition of a discharge permit; making any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed,

submitted or required to be maintained under the Water Quality Act; falsifying, tampering with or rendering inaccurate any monitoring device, method or record required to be maintained under the Water Quality Act; or failing to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation. See Section 74-6-10.2 NMSA 1978.

2. GENERAL FACILITY OPERATIONS:

A. OPERATIONAL MONITORING: The Owner/Operator shall comply with its approved monitoring programs pursuant 20.6.2.3107 NMAC.

1. Ground Water Monitoring System: The Owner/Operator shall monitor and remediation ground water in accordance with the Facility-Wide Ground Water Monitoring Plan (FWGWMP). The Owner/Operator shall monitor for all of the constituents listed in 20.6.2.3103 NMAC following the procedures specified in the FWGWMP.

2. Effluent Monitoring System: A wastewater treatment system operations report shall be completed by January 31, 2013 or within 11 months of system start-up (includes 3 month grace period after start-up) with the maximum and operational waste loading capacity and efficiency of the treatment system under variable flow rate conditions documented for system operations. Permanently installed flow meters shall be placed at all waste water treatment locations necessary to record flow rates through the treatment system along with BOD, COD and Phenol monitoring of influent into the Sewage Treatment Pond 1 (STP-1).

a. The Owner/Operator shall monitor its waste water treatment system in accordance with its approved FWGWMP and/or as specified herein.

b. The Owner/Operator shall monitor and record flow rates at totalizing flow meters set at all influent lines on a weekly basis or as often as needed to measure and determine the monthly volumes of water discharged throughout the waste water treatment system to monitor and determine the operational and maximum treatment capacity of the system based on pollutant loading under variable flow rate conditions. The Owner/Operator shall submit monthly meter readings including units of measurement, calculations, and monthly discharge volumes in its Annual Report. The Owner/Operator shall ensure that the flow meters are fully operational or replaced to maintain accuracy at all times.

c. The Owner/Operator shall collect grab samples for BOD (Method 405.1), COD (Method 410.1) and Phenol (Method 8270) on a monthly or more frequent basis for the first 6 months after installation of the new treatment system of influent and effluent into and Sewage Treatment Pond 1 (STP-1). Grab samples for VOC, BOD, COD, Chlorides (300.1), DRO, GRO, MTBE, pH and Phenol shall be monitored monthly at Evaporation Pond 2 (EP-2) for 6 months (similar to the above) to assess the treatment efficiency to chemicals of concern of the waste water treatment system.

B. POST-CLOSURE MONITORING: The Owner/Operator shall comply with its approved post-closure monitoring program pursuant 20.6.2.3107 NMAC (Continuation of monitoring after cessation of operations).

C. CONTINGENCY PLANS: The Owner/Operator shall implement its approved Contingency Plans to cope with failure of the discharge permit or system in accordance with Permit Condition 2.F.

D. CLOSURE PLAN: After completing abatement of all ground water and vadose contamination required under Permit Condition 2.G, the Owner/Operator shall perform the following closure measures:

1. Remove or plug all lines leading to and from the extraction wells and the injection wells so that a discharge can no longer occur.
2. Remove all remediation system components from the site, if applicable.
3. After receiving notification from the Division's Environmental Bureau that post-closure monitoring may cease, the Owner/Operator shall plug and abandon the monitoring well(s).

E. RECORD KEEPING: The Owner/Operator shall maintain records of all inspections required by this Discharge Permit at its Facility office for a minimum of five years and shall make those records available for inspection by the Division's Environmental Bureau and/or New Mexico Environment Department.

F. RELEASE REPORTING: The Owner/Operator shall comply with the following permit conditions, pursuant to 20.6.2.1203 NMAC, and submittal of an ~~OCD C-141~~ to report releases, if it determines that a release of oil or other water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property, has occurred. The Owner/Operator shall report unauthorized releases of water contaminants in accordance with any additional commitments made in its approved Contingency Plan. If the Owner/Operator determines that any constituent exceeds the standards specified at 20.6.2.3103 NMAC, then it shall report a release to the Division's Environmental Bureau.

1. Oral Notification: As soon as possible after learning of such a discharge, but in no event more than twenty-four (24) hours thereafter, the Owner/Operator shall orally notify the Division's Environmental Bureau. The Owner/Operator shall provide the following:

- the name, address, and telephone number of the person or persons in charge of the facility, as well as of the Owner/Operator of the facility;
- the name and location of the facility;
- the date, time, location, and duration of the discharge;

- the source and cause of discharge;
- a description of the discharge, including its chemical composition;
- the estimated volume of the discharge; and,
- any actions taken to mitigate immediate damage from the discharge.

2. Written Notification: Within one week after the Owner/Operator has learned of the discovered a discharge, the Owner/Operator shall send written notification (may use a C-141 form with attachments) to the Division's Environmental Bureau verifying the prior oral notification as to each of the foregoing items and providing any appropriate additions or corrections to the information contained in the prior oral notification.

G. ABATEMENT PLAN: Pursuant to 20.6.2.4105A(6) NMAC, an Owner/Operator is exempt from the requirement to obtain and implement an Abatement Plan, as required in 20.6.2.4104 NMAC. However, an Owner/Operator's Discharge Permit must address abatement of contaminated ground water and be consistent with the requirements and provisions of Sections 20.6.2.4101, 20.6.2.4103, Subsections C and E of Section 20.6.2.4106, Sections 20.6.2.4107 and 20.6.2.4112 NMAC.

1. Purpose of Abatement Plan: The Owner/Operator shall abate polluted ground water so as to either remediate or protect the ground water for use as domestic and agricultural water supply.

2. Abatement Standards and Requirements: The Owner/Operator shall abate the vadose zone so that water contaminants in the vadose zone shall not contaminate ground water or surface water through leaching, percolation or as the water table elevation fluctuates. The Owner/Operator, where the Total Dissolved Solids concentration is 10,000 mg/L or less, shall abate contaminated ground water so that toxic pollutant(s), as defined in 20.6.2.7WW NMAC, shall not be present and so that the standards of 20.6.2.3103 NMAC shall be met.

3. Stage 1 Abatement Plan: The Owner/Operator shall continue to implement its approved Stage 1 abatement under the Facility-Wide Ground Water Monitoring Plan (FWGWMP). Pursuant to 20.6.2.4106C NMAC, the purpose of a Stage 1 Abatement Plan is to design and conduct a site investigation that will adequately define site conditions, and provide the data necessary to select and design an effective abatement option.

4. Stage 2 Abatement Plan: The Owner/Operator shall to implement its approved Stage 2 abatement under the FWGWMP. OCD will allow the Owner/Operator to abate pollution under its FWGWMP for good cause. Pursuant to 20.6.2.4106E NMAC, the purpose of the Stage 2 Abatement Plan is for the Owner/Operator to select and design, if necessary, an abatement option that, when implemented, will result in attainment of the abatement standards and requirements set forth in Section 20.6.2.4103 NMAC, including post-closure maintenance activities.

5. Completion and Termination: Pursuant to 20.6.2.4112 NMAC, abatement shall be considered complete when the standards and requirements specified in 20.6.2.4103 NMAC are met. At that time, the Owner/Operator shall submit an abatement completion report, documenting compliance with the standards and requirements set forth in 20.6.2.4103 NMAC and this Discharge Permit, to Division's Environmental Bureau for approval. The abatement completion report also shall propose any changes to long term monitoring and site maintenance activities, if needed, to be performed after termination of the abatement plan.

H. OTHER REQUIREMENTS:

1. Inspection and Entry: Pursuant to 20.6.2.4107A NMAC, the Owner/Operator shall allow the Division's Environmental Bureau, upon the presentation of proper credentials, to:

- enter the facility at reasonable times;
- inspect and copy records required by this discharge permit;
- inspect any treatment units or systems, monitoring or abatement systems, and analytical equipment;
- sample or witness Owner/Operator sampling of any wastes, contaminated vadose zone, ground water, surface water, stream sediment, plants, animals, or vadose-zone material including vadose-zone vapor;
- use the Owner/Operator's monitoring systems and wells in order to collect environmental samples; and
- gain access to off-site property not owned or controlled by the Owner/Operator, but accessible to the Owner/Operator through a third-party access agreement, provided that it is allowed by the agreement.

2. Advance Notice: Pursuant to 20.6.2.4107B NMAC, The Owner/Operator shall provide the Division's Environmental Bureau with at least four (4) working days advance notice of any environmental sampling to be performed pursuant to this Discharge Permit, or any well plugging, abandonment or destruction at the facility site.

3. Plugging and Abandonment: Pursuant to 20.6.2.4107C NMAC, the Owner/Operator shall propose to plug and abandon a monitor well by certified mail to the Division's Environmental Bureau for approval, unless such approval is required from the State Engineer. The proposed action shall be designed to prevent water pollution that could result from water contaminants migrating through the well or borehole. The proposed action shall not take place without written approval from the Division's Environmental Bureau, unless written approval or disapproval is not received by the Owner/Operator within thirty (30) days of the date of receipt of the proposal.

4. Underground Process/Wastewater Lines:

A. The owner/operator shall test all underground process/wastewater pipelines at least once every five (5) years to demonstrate their mechanical integrity, except lines containing fresh water or fluids that are gases at atmospheric temperature and pressure. Pressure rated pipe shall be tested by pressuring up to one and one-half times the normal operating pressure, if possible, or for atmospheric drain systems, to 3 pounds per square inch greater than normal operating pressure, and pressure held for a minimum of 30 minutes with no more than a 1% loss/gain in pressure. The owner/operator may use other methods for testing, if approved by the OCD. The owner/operator shall report any leak or loss of integrity to the OCD within 15 days of discovery. The owner/operator shall maintain the results of all testing at the facility covered by this discharge permit and shall be made available for OCD inspection upon request. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

B. The owner/operator shall maintain underground process and wastewater pipeline schematic diagrams or plans showing all drains, vents, risers, valves, underground piping, pipe type, rating, size, and approximate location. All new underground piping must be approved by the OCD prior to installation and as a "Modification" request under the permit.

5. Housekeeping: The owner/operator shall inspect all systems designed for spill collection/ prevention and leak detection at least monthly to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices shall be emptied of fluids within 72 hours of discovery. The owner/operator shall maintain all records at the facility and be made available for OCD upon request or during an inspection.

6. OCD Inspections: The OCD may place additional requirements on the facility and modify the permit conditions as needed based on OCD inspections.

7. Sewage Treatment Pond (STP-1): Aerator(s) failure in the pond lasting more than 24 hours and/or if design capacity is not being met, notification to the NMED and OCD within 24 hours of having knowledge of system failure.

The Sewage Treatment Pond shall be double-lined with aeration and leak detection systems. Also, an oil trap to prevent oil flow into STP-1, EP2 and the rest of the evaporation pond treatment network shall be installed. Individual sprinklers (atomizers) in the spray system will be oriented to direct the fluid spray so that no direct spray or windblown draft will leave the confines of the pond. The spray system will not be operated when wind conditions will allow spray or salt precipitates to drift outside the confines of the pond.

STP-1 shall include a properly designed and constructed leak detection and aeration system operated to contain, remove, and/or further remediate sanitary and treated refinery effluent in a manner that will prevent untreated refinery waste from entering the pond network to

protect fresh water, public health, safety and the environment for the foreseeable future. The STP-1 aeration system in addition to remediating residual organic contamination from treated effluent shall provide for enhanced biological treatment of any sanitary waste effluent discharge to the evaporation pond network. *Note: Under no circumstance shall any refinery process water be discharged into STP-1 unless it has been treated by the refinery waste water treatment system.*

8. Temporary Landfarm: The temporary landfarm or land treatment area shall be closed by approval of the OCD on or before December 31, 2011.
9. Storm Water: The owner/operator shall implement and maintain run-on and run-off plans and controls. The owner/operator shall separate or isolate contact (refinery process) from non-contact (storm water) drainage and/or effluent lines at the plant except where comingling is allowed before treatment. The owner/operator shall not discharge any water contaminant that exceeds the WQCC standards specified in 20.6.2.7(WW) NMAC, 20.6.2.3101 NMAC and 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) including any oil sheen in any storm water run-off and/or "Waters of the State". The owner/operator shall notify the OCD within 24 hours of discovery of any contaminated storm water releases and/or discharges to "Waters of the State" and shall take immediate corrective action(s) to remediate and prevent the discharge from migrating off-property.
10. National Pollutant Discharge Elimination System (NPDES) Notice of Intent (NOI) to discharge to "Waters of the State" must be submitted to the OCD as a "Major Modification" request for OCD consideration, communication and approval with any conditions for the United States Environmental Protection Agency (EPA) to consider.
11. Wastewater from Pilot Travel Center and Truck Stop Facility: In order for OCD to allow sanitary wastewater from the Pilot Travel Center and Truck Stop Facility to continue to be disposed of at the Gallup Refinery, the Owner/Operator shall incorporate the following conditions and controls into the discharge permit:
 - A. All wastewater received from the Pilot Travel Center and Truck Stop as influent into the waste water treatment system shall be EPA RCRA Non-Hazardous as defined in 40 CFR Part 261 and shall not contain phase separated hydrocarbons or solids.
 - B. Owner/operator shall design, implement and maintain a sampling and metering station on the incoming line. At a minimum, weekly flow rates from flow meters shall be recorded to assist with the treatability study and future evaluations of the treatment system. Grab samples shall be collected quarterly and analyzed for Hazardous Characteristics (TCLP) by EPA Method 1311, COD by EPA Method 410.1 and BOD by Method 405.1. All emergency up-sets or an exceedance of

RCRA Standards shall be reported to OCD within 24 hours and immediate corrective actions taken.

C. The biohazard operation and maintenance plan or bio-safety plan for the waste treatment facility and evaporation ponds shall be updated as needed to identify all possible bio-hazards, treatment, proper handling and disposal, protection for workers, visitors, public and wildlife.

I. ANNUAL REPORT: The Owner/Operator shall submit its annual report pursuant to 20.6.2.3107 NMAC to the Division's Environmental Bureau by September 1st of each year. The annual report shall include the following:

1. A summary of all major refinery activities or events including: a description of the monitoring and remediation activities, which occurred during the year with any conclusions and recommendations.
2. A summary of discovery of new groundwater contamination with all leaks, spills and releases and corrective actions taken. Also include recommendations for investigation and abatement.
3. Summary tables listing laboratory analytic results of all water quality sampling for each monitoring point and plots of concentration vs. time for contaminants of concern from each monitoring point. Any WQCC constituent found to exceed the groundwater standard shall be highlighted and noted in the annual report. Copies of the most recent year's laboratory analytical data sheets with QA/QC shall also be included.
4. An annual water table (piezometric) and potentiometric elevation map per aquifer system(s) using the water table elevation(s) from associated monitor wells in each aquifer system(s). A corrected water table elevation shall be determined for all wells containing phase-separated hydrocarbons. This map shall show well locations, pertinent site features, and the ground water flow direction and hydraulic gradient. Include plots of water table elevation vs. time for each ground water monitoring well over time.
5. An annual product thickness map based on the thickness of free phase product on ground water in all monitoring and recovery wells. This map shall include isopleths or iso-concentration lines for products and contaminants of concern within each aquifer system.
6. Summary of the volume and quality of free product removed and the discharged treated ground water from the recovery wells during each quarter and the total recovered to date.
7. Results of ground water monitoring program with any recommendations based on contaminant hydrogeology. Include any recommended abatement or approved Contingency Plan.

8. Summary of all waste and wastewater disposed of, sold, or treated on-site, including a refinery wastewater balance sheet and mass balance of the evaporation pond rates.
9. Electronic filing: Owner/Operator shall file this report in an acceptable electronic format with hard copy submittals to the NMED and OCD.
10. Summary and copies of all EPA/NMED RCRA activity.

3. CLASS V WELLS: Pursuant to 20.6.2.5002B NMAC, leach fields and other wastewater disposal systems at Division-regulated facilities that inject non-hazardous fluid into or above an underground source of drinking water are UIC Class V injection wells. This Discharge Permit does not authorize the use of a Class V injection well for the disposal of industrial waste at the Facility, except for the disposal of contaminated ground water. Pursuant to 20.6.2.5005 NMAC, the Owner/Operator shall close any Class V industrial waste injection wells at its Facility that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes (*e.g.*, septic systems, leach fields, dry wells, *etc.*) other than contaminated ground water within 90 calendar days of the issuance of this Discharge Permit. The Owner/Operator shall document the closure of any Class V wells used for the disposal of non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes other than contaminated ground water in its Annual Report.

Other Class V wells, including wells used only for the injection of domestic wastes, must be permitted by the New Mexico Environment Department.

4. SCHEDULE OF COMPLIANCE:

A. PERMIT CERTIFICATION: The Owner/Operator shall sign and return this Permit to the Division's Environmental Bureau within 30 days of its receipt of this Permit.

B. SUBMISSION OF THE PERMIT FEES: As specified in Permit Condition 1.F, the Owner/Operator shall submit the permit fee of \$2,600.00 along with the signed Discharge Permit within 30 days of the receipt of the Discharge Permit. Checks should be payable to the "**New Mexico Water Quality Management Fund,**" not the Oil Conservation Division.

E. ANNUAL REPORT: As specified in Permit Condition 2.I, the Owner/Operator shall submit its annual report to the Division's Environmental Bureau by September 1st of each year.

5. CERTIFICATION: (OWNER/OPERATOR) by the officer whose signature appears below, acknowledges receipt of this Discharge Permit, and has reviewed its terms and conditions.

Mr. Mark Turri

DRAFT

Western Refining Southwest, Inc.

July 29, 2011

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Company Name - print name

Company Representative - print name

Company Representative - Signature

Title: _____

Date: _____

REVISED OCD DISCHARGE PLAN PERMIT REQUIREMENTS

The Oil Conservation Division (OCD) has reviewed its authority to regulate the disposition of non-domestic waste from the activities described in NMSA 1978, Section 70-2-12(B)(22) under the Oil and Gas Act and the Water Quality Act, and has revised its permitting policies. These changes may affect the renewal of your discharge permit.

Previously, the OCD issued discharge permits under the Water Quality Act covering all processes at a facility that may impact ground water, even if those processes did not have intentional discharges, and were not designed or operated to allow discharges. The discharge permits often covered processes that would otherwise be subject to regulation under the Oil and Gas Act, such as pits, below-grade tanks, sumps, and surface waste management facilities, such as landfarms and landfills. In addition, discharge permits typically included requirements imposed under the Oil and Gas Act, such as the hydrogen sulfide contingency plans required by 19.15.11 NMAC.

Going forward, the OCD will issue new Water Quality Act discharge permits and renew existing Water Quality Act Discharge permits for the activities described in NMSA 1978, Section 70-2-12(B)(22) to cover the following:

- Processes that intentionally discharge or allow the discharge of a water contaminant in the form of effluent or leachate so that it may move directly or indirectly into ground water. OCD-regulated processes that intentionally discharge water contaminants are rare. An example of a process that allows the discharge of a water contaminant would be a compressor station that steam-cleans its machinery and allows the contaminated run-off to reach the ground. However, if the compressor station designed its facility to contain the run-off and properly dispose of the contaminated fluids at a commercial disposal facility, the steam-cleaning activity would not require a discharge permit.
- Class I non-hazardous waste wells, as defined in 20.6.2.5002(B)(1) NMAC. A well used at a refinery to inject non-hazardous, non-domestic waste would be an example of a Class I well regulated by the OCD under the Water Quality Act.
- Class III wells, as defined in 20.6.2.5002(B)(3) NMAC. A solution mining well for the production of brine is an example of a Class III well regulated by the OCD under the Water Quality Act.
- Class V wells, as defined in 20.6.2.5002(B)(5) NMAC. A ground water remediation injection well used to inject contaminated ground water that has been treated to ground water quality standards is an example of a Class V well regulated by the OCD under the Water Quality Act.
- Abatement. An operator may abate contamination pursuant to an abatement plan, provided that the abatement is consistent with the abatement requirements set out in the Water Quality Control Commission rules. See 20.6.2.4105(A)(6) NMAC.

Water Quality Act discharge permits and discharge permit renewals issued by the OCD will not cover the following:

- Pits, below-grade tanks, sumps, surface waste management facilities, such as landfarms and landfills associated with the facility, unless those processes intentionally discharge or allow the discharge of a water contaminant. This means that operators who hold Water Quality Act discharge permits may also be subject to permit requirements under the Oil and Gas Act for pits and below-grade tanks (*see* 19.15.17 NMAC) and surface waste management facilities, such as landfarms and landfills (*see* 19.15.36 NMAC).
- Hydrogen sulfide contingency plans, and other requirements imposed under the Oil and Gas Act. If the facility requires a hydrogen sulfide contingency plan pursuant to 19.15.11 NMAC, that plan will be addressed separately from the discharge permit.

As discharge permits come up for renewal, the OCD will review the permit with the operator to determine which processes must be covered by a discharge plan and which processes must be covered by a permit or plan issued pursuant to the Oil and Gas Act. If your current discharge permit covers processes subject to Oil and Gas Act permit requirements, such as pits, below-grade tanks, and surface waste management facilities (landfarms or landfills), you may continue to operate under your current discharge permit until its normal expiration date or November 15, 2012, whichever is later. By November 16, 2012 you must have a Water Quality Act discharge permit for processes subject to the Water Quality Act, Oil and Gas Act permits for processes subject to permitting under the Oil and Gas Act, and an approved hydrogen sulfide contingency plan if your facility requires a plan pursuant to 19.15.11 NMAC.

Currently, many discharge plans are awaiting renewal and others will reach their renewal date within the next six months. So that we can address the backlog in an orderly manner, we are asking permittees of these discharge plans to respond by July 15, 2011 to a questionnaire designed to determine if a facility may be required to have a WQCC discharge permit, based on this announcement. After review, we will rescind or modify many discharge permits and may require plans and permits, based on Oil and Gas Act and OCD regulations, such as Part 11 (hydrogen sulfide contingency plans), Part 17 (pits, below-grade tanks, and sumps), and Part 36 (surface waste management facilities).

New Mexico Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

John H. Bemis
Cabinet Secretary-Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey
Division Director
Oil Conservation Division



May 12, 2011

Oil & Gas Facilities Questionnaire for Determination of a WQCC Discharge Permit

Only Water Quality Control Commission- regulated systems will be incorporated into the OCD's WQCC Permits, while OCD regulated systems will be handled under separate permit(s). A current discharge permit is valid until its normal expiration date or November 15, 2012, whichever is later. All facilities with processes subject to the Water Quality Act must have permits in place by November 16, 2012. H2S Contingency Plans; pits, ponds, above and/or below-grade tanks; waste treatment, storage and disposal; and landfarms and landfills may require separate permitting under the OCD Oil, Gas, and Geothermal regulations.

Proper completion and timely submission of this questionnaire is requested for all facilities with discharge permit expiration dates before November 15, 2012. Please complete and submit a separate questionnaire for each facility before July 15, 2011.

• Name of the owner or operator of the facility

• Point of contact

Name _____
Telephone _____
Email _____
Mailing address _____

• Facility name

• Facility location

Unit Letter, Section, Township, Range _____
Street address (if any) _____

- Facility type ☐ Refinery ☐ Gas Plant ☐ Compressor
☐ Crude Oil Pump Station ☐ Injection Well ☐ Service Company
☐ Geothermal ☐ Abatement
☐ Other (describe) _____

• Current and Past Operations (please check all that apply)

☐ Impoundments ☐ Treatment Plant ☐ Waterflood
☐ Disposal Well ☐ Brine Well ☐ Wash Bay

Oil Conservation Division * 1220 South St. Francis Drive

* Santa Fe, New Mexico 87505

* Phone: (505) 476-3440 * Fax (505) 476-3462 * <http://www.emnrd.state.nm.us>

☐ Steam Cleaning

☐ Groundwater Remediation

• **Facility Status** ☐ Active ☐ Idle ☐ Closed

• **Does this facility currently have a discharge permit?** ☐ Yes ☐ No

If so, what is the permit number? _____

• **Are there any routine activities at the facility which intentionally result in materials other than potable water being released either onto the ground or directly into surface or ground water?**

(This includes process activities, equipment maintenance, or the cleanup of historic spills.)

☐ Yes ☐ No

If so, describe those activities including the materials involved, the frequency of discharge, and the estimated volume per discharge event.

• **What is the depth below surface to shallowest ground water in the area?** _____

• **Are there any water supply, groundwater monitoring, or recovery wells at the facility?**

Water supply ☐ Monitoring ☐ Recovery ☐

If these wells are registered with the Office of the State Engineer (OSE), what are the OSE well numbers? _____

• **Are abatement actions ongoing?** _____

• **Are there any active or inactive UIC wells present as part of the federal Underground Injection Control program associated with this facility?** ☐ Yes ☐ No

If so, what are the API numbers assigned to those wells?

• **Are there any sumps at the facility?** ☐ Yes ☐ No

Number of sumps with volume less than 500 gallons _____

Use and contents _____

Is secondary containment incorporated into the design? ☐ Yes ☐ No

Number of sumps with volume greater than 500 gallons _____

Use and contents _____

Is secondary containment incorporated into the design? ☐ Yes ☐ No

- Does the facility incorporate any underground lines other than electrical conduits, freshwater, natural gas for heating, or sanitary sewers? ☐ Yes ☐ No

If so, what do those buried lines contain?

THIS FORM IS DUE TO THE OIL CONSERVATION DIVISION BY JULY 15, 2011.

Questions? Please contact Glenn VonGonten at 505-476-3488 or Carl Chavez at 505-476-3490.

Thank you for your cooperation.

JAMI BAILEY
Director

[illegible]

**TABLE 1. PROPOSED BASELINE VALUES, OIL CONSERVATION DIVISION LANDFARMS
WESTERN REFINING SOUTHWEST, GALLUP REFINERY, GALLUP, NEW MEXICO**

Analyte	Analytic Method	Reporting Units	Sample ID "Background" Collected February 2010			Sample ID "BG-NE-033011" Collected March 2011			Sample ID "BG-W-033011" Collect March 2011			Sample ID "BG-S-033011" Collected March 2011			Proposed Baseline Value
			Result	PQL	Sample Baseline Value	Result	PQL	Sample Baseline Value	Result	PQL	Sample Baseline Value	Result	PQL	Sample Baseline Value	
Chloride	E300	mg/kg	ND	7.500	7.500	7.600	7.500	7.600	ND	7.500	7.500	ND	7.500	7.500	7.525
Fluoride	E300	mg/kg	3.300	1.500	3.300	4.300	1.500	4.300	2.400	1.500	2.400	1.800	1.500	1.800	2.950
Nitrogen, Nitrate (As N)	E300	mg/kg	2.200	1.500	2.200	ND	1.500	1.500	3.000	1.500	3.000	2.100	1.500	2.100	2.200
Sulfate	E300	mg/kg	18.000	7.500	18.000	42.000	7.500	42.000	15.000	7.500	15.000	11.000	7.500	11.000	21.500
Radium-226	E901.1	pCi/g	1.500	NA	1.500	1.290	NA	1.290	NA	NA	NA	NA	NA	NA	1.395
Radium-228	E901.1	pCi/g	1.100	NA	1.100	1.400	NA	1.400	NA	NA	NA	NA	NA	NA	1.250
Radium-226+Radium-228	E901.1	pCi/g	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.645
Arsenic	SW6010A	mg/kg	ND	13.000	13.000	ND	13.000	13.000	ND	13.000	13.000	ND	13.000	13.000	13.000
Barium	SW6010A	mg/kg	310.000	1.000	310.000	380.000	1.000	380.000	380.000	1.000	380.000	390.000	1.000	390.000	365.000
Cadmium	SW6010A	mg/kg	ND	0.500	0.500	ND	0.500	0.500	ND	0.500	0.500	ND	0.500	0.500	0.500
Chromium	SW6010A	mg/kg	8.000	1.500	8.000	17.000	1.500	17.000	16.000	1.500	16.000	9.800	1.500	9.800	12.700
Copper	SW6010A	mg/kg	4.000	1.500	4.000	4.200	1.500	4.200	1.700	1.500	1.700	1.900	1.500	1.900	2.950
Iron	SW6010A	mg/kg	NA	NA	NA	20000.000	500.000	20000.000	19000.000	500.000	19000.000	13000.000	500.000	13000.000	17333.333
Lead	SW6010A	mg/kg	NA	NA	NA	6.000	1.300	6.000	8.200	1.300	8.200	2.400	1.300	2.400	5.533
Manganese	SW6010A	mg/kg	NA	NA	NA	370.000	1.000	370.000	370.000	1.000	370.000	820.000	50.000	820.000	520.000
Selenium	SW6010A	mg/kg	ND	13.000	13.000	ND	13.000	13.000	ND	13.000	13.000	ND	13.000	13.000	13.000
Silver	SW6010A	mg/kg	ND	1.300	1.300	ND	1.300	1.300	ND	1.300	1.300	ND	1.300	1.300	1.300
Uranium	SW6010A	mg/kg	ND	25.000	25.000	ND	50.000	50.000	ND	50.000	50.000	ND	50.000	50.000	43.750
Zinc	SW6010A	mg/kg	NA	NA	NA	23.000	13.000	23.000	20.000	13.000	20.000	21.000	13.000	21.000	21.333
Mercury	SW7471	mg/kg	ND	0.033	0.033	ND	0.033	0.033	ND	0.033	0.033	ND	0.033	0.033	0.107
Aroclor 1016	SW8082	mg/kg	NA	NA	NA	ND	0.020	0.020	NA	NA	NA	NA	NA	NA	0.020
Aroclor 1221	SW8082	mg/kg	NA	NA	NA	ND	0.020	0.020	NA	NA	NA	NA	NA	NA	0.020
Aroclor 1232	SW8082	mg/kg	NA	NA	NA	ND	0.020	0.020	NA	NA	NA	NA	NA	NA	0.020
Aroclor 1242	SW8082	mg/kg	NA	NA	NA	ND	0.020	0.020	NA	NA	NA	NA	NA	NA	0.020
Aroclor 1248	SW8082	mg/kg	NA	NA	NA	ND	0.020	0.020	NA	NA	NA	NA	NA	NA	0.020
Aroclor 1254	SW8082	mg/kg	NA	NA	NA	ND	0.020	0.020	NA	NA	NA	NA	NA	NA	0.020
Aroclor 1260	SW8082	mg/kg	NA	NA	NA	ND	0.020	0.020	NA	NA	NA	NA	NA	NA	0.020
1,1,1-Trichloroethane	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
1,1,2-Trichloroethane	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
1,1-Dichloroethane	SW8260B	mg/kg	ND	0.100	0.100	ND	0.100	0.100	NA	NA	NA	NA	NA	NA	0.100
1,1-Dichloroethene	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
1,2-Dichloroethane	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
Benzene	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
Carbon tetrachloride	SW8260B	mg/kg	ND	0.100	0.100	ND	0.100	0.100	NA	NA	NA	NA	NA	NA	0.100
Chloroform	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
Dibromomethane	SW8260B	mg/kg	ND	0.100	0.100	ND	0.100	0.100	NA	NA	NA	NA	NA	NA	0.100
Ethylbenzene	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
Methylene chloride	SW8260B	mg/kg	ND	0.150	0.150	ND	0.150	0.150	NA	NA	NA	NA	NA	NA	0.150
Tetrachloroethene	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
Toluene	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
Trichloroethene	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
Vinyl chloride	SW8260B	mg/kg	ND	0.050	0.050	ND	0.050	0.050	NA	NA	NA	NA	NA	NA	0.050
Xylenes, Total	SW8260B	mg/kg	ND	0.100	0.100	ND	0.100	0.100	NA	NA	NA	NA	NA	NA	0.100

**TABLE 1. PROPOSED BASELINE VALUES, OIL CONSERVATION DIVISION LANDFARMS
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			Result	PQL	Sample Baseline Value	Result	PQL	Sample Baseline Value	Result	PQL	Sample Baseline Value	Result	PQL	Sample Baseline Value	
2,4,5-Trichlorophenol	SW8270C	mg/kg	ND	0.200	0.200	ND	0.200	0.200	NA	NA	NA	NA	NA	NA	0.200
2,4,6-Trichlorophenol	SW8270C	mg/kg	ND	0.200	0.200	ND	0.200	0.200	NA	NA	NA	NA	NA	NA	0.200
2,4-Dichlorophenol	SW8270C	mg/kg	ND	0.400	0.400	ND	0.400	0.400	NA	NA	NA	NA	NA	NA	0.400
2,4-Dimethylphenol	SW8270C	mg/kg	ND	0.300	0.300	ND	0.300	0.300	NA	NA	NA	NA	NA	NA	0.300
2,4-Dinitrophenol	SW8270C	mg/kg	ND	0.400	0.400	ND	0.400	0.400	NA	NA	NA	NA	NA	NA	0.400
2-Chlorophenol	SW8270C	mg/kg	ND	0.200	0.200	ND	0.200	0.200	NA	NA	NA	NA	NA	NA	0.200
2-Methylphenol	SW8270C	mg/kg	ND	0.500	0.500	ND	0.500	0.500	NA	NA	NA	NA	NA	NA	0.500
2-Nitrophenol	SW8270C	mg/kg	ND	0.200	0.200	ND	0.200	0.200	NA	NA	NA	NA	NA	NA	0.200
3+4-Methylphenol	SW8270C	mg/kg	ND	0.200	0.200	ND	0.200	0.200	NA	NA	NA	NA	NA	NA	0.200
4,6-Dinitro-2-methylphenol	SW8270C	mg/kg	ND	0.500	0.500	ND	0.500	0.500	NA	NA	NA	NA	NA	NA	0.500
4-Chloro-3-methylphenol	SW8270C	mg/kg	ND	0.500	0.500	ND	0.500	0.500	NA	NA	NA	NA	NA	NA	0.500
4-Nitrophenol	SW8270C	mg/kg	ND	0.200	0.200	ND	0.250	0.250	NA	NA	NA	NA	NA	NA	0.225
Pentachlorophenol	SW8270C	mg/kg	ND	0.400	0.400	ND	0.400	0.400	NA	NA	NA	NA	NA	NA	0.400
Phenol	SW8270C	mg/kg	ND	0.200	0.200	ND	0.200	0.200	NA	NA	NA	NA	NA	NA	0.200
1-Methylnaphthalene	SW8310/8260B	mg/kg	NA	NA	NA	ND	0.250	0.250	NA	NA	NA	NA	NA	NA	0.200*
2-Methylnaphthalene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.250	0.250	NA	NA	NA	NA	NA	NA	0.200*
Acenaphthene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.250	0.250	NA	NA	NA	NA	NA	NA	0.200*
Acenaphthylene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.250	0.250	NA	NA	NA	NA	NA	NA	0.200*
Anthracene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.015	0.015	NA	NA	NA	NA	NA	NA	0.200*
Benzo(a)anthracene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.010	0.010	NA	NA	NA	NA	NA	NA	0.200*
Benzo(a)pyrene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.010	0.010	NA	NA	NA	NA	NA	NA	0.200*
Benzo(b)fluoranthene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.010	0.010	NA	NA	NA	NA	NA	NA	0.200*
Benzo(g,h,i)perylene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.010	0.010	NA	NA	NA	NA	NA	NA	0.200*
Benzo(k)fluoranthene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.010	0.010	NA	NA	NA	NA	NA	NA	0.200*
Chrysene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.011	0.011	NA	NA	NA	NA	NA	NA	0.200*
Dibenz(a,h)anthracene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.010	0.010	NA	NA	NA	NA	NA	NA	0.200*
Fluoranthene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.020	0.020	NA	NA	NA	NA	NA	NA	0.200*
Fluorene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.030	0.030	NA	NA	NA	NA	NA	NA	0.200*
Indeno(1,2,3-c,d)pyrene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.100	0.100	NA	NA	NA	NA	NA	NA	0.200*
Naphthalene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.250	0.250	NA	NA	NA	NA	NA	NA	0.200*
Phenanthrene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.015	0.015	NA	NA	NA	NA	NA	NA	0.200*
Pyrene	SW8310/8270C	mg/kg	NA	NA	NA	ND	0.025	0.025	NA	NA	NA	NA	NA	NA	0.200*
Cyanide	SW9012	mg/kg	ND	0.500	0.500	ND	0.350	0.350	NA	NA	NA	NA	NA	NA	0.425
Diesel Range Organics (DRO)	SW8015	mg/kg	ND	10.000	10.000	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.000
Gasoline Range Organics (GRO)	SW8015	mg/kg	ND	5.000	5.000	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.000
Total BTEX	SW8260B	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.250
Petroleum Hydrocarbons, TR	E418.1	mg/kg	ND	20.000	20.000	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.000
DRO+GRO	SW8015	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.000

Notes

PQL = practical quantitation limit
 ND = Not detected above the PQL
 NA = Data not available.

PAHs = polycyclic aromatic hydrocarbons.

The "Proposed Baseline Values" shown above are the average of the data available from the four baseline samples with the exception mentioned below:

The Proposed Baseline Value for Total BTEX = the sum of the Proposed Baseline Values for each of the four individual analytes.

The Proposed Baseline Value for DRO+GRO = the sum of the Proposed Baseline Values for DRO and GRO.

The Proposed Baseline Value for Radium-226+Radium-228 = the sum of the Proposed Baseline Values for Radium-226 and Radium-228.

*PAHs were only analyzed for one of four baseline sample locations utilizing SIM analysis (SW8310).

A lower PQL is achieved utilizing SIM analysis than standard analysis (SW8270C).

Western intends to analyze future soil samples using the standard analysis.

Therefore, the SIM analysis PQLs would not be achievable.

The PQLs utilized above for PAH Proposed Baseline Values are the PQLs provided from Hall Environmental for the standard analysis (SW8270C).

TABLE 2. NORTHEAST OIL CONSERVATION DIVISION LANDFARM CLOSURE EVALUATION
WESTERN REFINING SOUTHWEST, GALLUP REFINERY, GALLUP, NEW MEXICO

Analyte	Analytic Method	Reporting Units	Sample ID "NEOCD Closure" Collected November 2010			Screening Standards										
						Screening Standard 1		Screening Standard 2		Screening Standard 3		Screening Standard 4		Screening Standard 5		
			Result	PQL	Value used for Screening Comparison (Result if detected, PQL if not)	Proposed Baseline Value (from Table 1)	Exceedance (Yes/No)	Industrial/ Occupational Soil (mg/kg)	Exceedance (Yes/No)	Construction Worker Soil (mg/kg)	Exceedance (Yes/No)	C-137	Exceedance (Yes/No)	NMAC 3103 (mg/L) (no dilution)	NMAC 3103 (20X dilution)	Exceedance (Yes/No)
Chloride	E300	mg/kg	100.000	30.000	100.000	7.525	YES	NA	NA	NA	NA	500	no	250	5000	no
Fluoride	E300	mg/kg	8.900	6.000	8.900	2.950	YES	68100	no	18600	no	NA	NA	1.6	32	no
Nitrogen, Nitrate (As N)	E300	mg/kg	14.000	6.000	14.000	2.200	YES	1820000	no	496000	no	NA	NA	10	200	no
Sulfate	E300	mg/kg	670.000	30.000	670.000	21.500	YES	NA	NA	NA	NA	NA	NA	600	12000	no
Radium-226	E901.1	pCi/g	0.500	NA	0.500	1.395	no	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-228	E901.1	pCi/g	1.000	NA	1.000	1.250	no	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226+Radium-228	E901.1	pCi/g	NA	NA	1.500	2.645	no	NA	NA	NA	NA	NA	NA	30	600	no
Arsenic	SW6010A	mg/kg	ND	13.000	13.000	13.000	no	17.7	no	65.4	no	NA	NA	0.1	2	YES
Barium	SW6010A	mg/kg	300.000	1.000	300.000	365.000	no	224000	no	4350	no	NA	NA	1	20	YES
Cadmium	SW6010A	mg/kg	ND	0.500	0.500	0.500	no	1120	no	309	no	NA	NA	0.01	0.2	YES
Chromium	SW6010A	mg/kg	15.000	1.500	15.000	12.700	YES	1570000	no	447000	no	NA	NA	0.05	1	YES
Copper	SW6010A	mg/kg	3.600	1.500	3.600	2.950	YES	45400	no	12400	no	NA	NA	1	20	no
Iron	SW6010A	mg/kg	16000.000	500.000	16000.000	17333.333	no	795000	no	217000	no	NA	NA	1	20	YES
Lead	SW6010A	mg/kg	8.400	1.300	8.400	5.533	YES	800	no	800	no	NA	NA	0.05	1	YES
Manganese	SW6010A	mg/kg	460.000	1.000	460.000	520.000	no	145000	no	463	no	NA	NA	0.2	4	YES
Selenium	SW6010A	mg/kg	ND	13.000	13.000	13.000	no	5680	no	1550	no	NA	NA	0.05	1	YES
Silver	SW6010A	mg/kg	ND	1.300	1.300	1.300	no	5680	no	1550	no	NA	NA	0.05	1	YES
Uranium	SW6010A	mg/kg	ND	50.000	50.000	43.750	YES	3410	no	929	no	NA	NA	0.03	0.6	YES
Zinc	SW6010A	mg/kg	24.000	13.000	24.000	21.333	YES	341000	no	92900	no	NA	NA	10	200	no
Mercury	SW7471	mg/kg	ND	0.033	0.033	0.107	no	49.9	no	63.6	no	NA	NA	0.002	0.04	no
Aroclor 1016	SW8082	mg/kg	ND	0.100	0.100	0.020	YES	41.3	no	15.3	no	NA	NA	0.001	0.02	YES
Aroclor 1221	SW8082	mg/kg	ND	0.100	0.100	0.020	YES	7.06	no	71.3	no	NA	NA	0.001	0.02	YES
Aroclor 1232	SW8082	mg/kg	ND	0.100	0.100	0.020	YES	7.06	no	71.3	no	NA	NA	0.001	0.02	YES
Aroclor 1242	SW8082	mg/kg	ND	0.100	0.100	0.020	YES	8.26	no	75.8	no	NA	NA	0.001	0.02	YES
Aroclor 1248	SW8082	mg/kg	ND	0.100	0.100	0.020	YES	8.26	no	75.8	no	NA	NA	0.001	0.02	YES
Aroclor 1254	SW8082	mg/kg	ND	0.100	0.100	0.020	YES	8.26	no	4.36	no	NA	NA	0.001	0.02	YES
Aroclor 1260	SW8082	mg/kg	ND	0.100	0.100	0.020	YES	8.26	no	75.8	no	NA	NA	0.001	0.02	YES
1,1,1-Trichloroethane	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	77100	no	64300	no	NA	NA	0.06	1.2	no
1,1,2-Trichloroethane	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	94.3	no	1240	no	NA	NA	0.01	0.2	no
1,1-Dichloroethane	SW8260B	mg/kg	ND	0.100	0.100	0.100	no	350	no	6880	no	NA	NA	0.025	0.5	no
1,1-Dichloroethene	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	2220	no	1830	no	NA	NA	0.005	0.1	no
1,2-Dichloroethane	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	42.8	no	751	no	NA	NA	0.01	0.2	no
Benzene	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	85.4	no	471	no	0.2	no	0.01	0.2	no
Carbon tetrachloride	SW8260B	mg/kg	ND	0.100	0.100	0.100	no	24.3	no	199	no	NA	NA	0.01	0.2	no
Chloroform	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	31.9	no	671	no	NA	NA	0.1	2	no
Dibromomethane	SW8260B	mg/kg	ND	0.100	0.100	0.100	no	NA	NA	NA	NA	NA	NA	0.0001	0.002	YES
Ethylbenzene	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	385	no	6630	no	NA	NA	0.75	15	no
Methylene chloride	SW8260B	mg/kg	ND	0.150	0.150	0.150	no	1090	no	10600	no	NA	NA	0.1	2	no
Tetrachloroethene	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	36.4	no	338	no	NA	NA	0.02	0.4	no
Toluene	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	57900	no	21100	no	NA	NA	0.75	15	no
Trichloroethene	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	253	no	4600	no	NA	NA	0.1	2	no
Vinyl chloride	SW8260B	mg/kg	ND	0.050	0.050	0.050	no	25.9	no	248	no	NA	NA	0.001	0.02	YES
Xylenes, Total	SW8260B	mg/kg	ND	0.100	0.100	0.100	no	3610	no	3130	no	NA	NA	0.62	12.4	no

TABLE 2. NORTHEAST OIL CONSERVATION DIVISION LANDFARM CLOSURE EVALUATION
WESTERN REFINING SOUTHWEST, GALLUP REFINERY, GALLUP, NEW MEXICO

Analyte	Analytic Method	Reporting Units	Sample ID "NEOCD Closure" Collected November 2010			Screening Standards										
						Screening Standard 1		Screening Standard 2		Screening Standard 3		Screening Standard 4		Screening Standard 5		
			Result	PQL	Value used for Screening Comparison (Result if detected; PQL if not)	Proposed Baseline Value (from Table 1)	Exceedance (Yes/No)	Industrial/Occupational Soil (mg/kg)	Exceedance (Yes/No)	Construction Worker Soil (mg/kg)	Exceedance (Yes/No)	C-137	Exceedance (Yes/No)	NMAC 3103 (mg/L) (no dilution)	NMAC 3103 (20X dilution)	Exceedance (Yes/No)
2,4,5-Trichlorophenol	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	68400	no	23800	no	NA	NA	0.005	0.1	YES
2,4,6-Trichlorophenol	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	684	no	238	no	NA	NA	0.005	0.1	YES
2,4-Dichlorophenol	SW8270C	mg/kg	ND	0.400	0.400	0.400	no	2050	no	715	no	NA	NA	0.005	0.1	YES
2,4-Dimethylphenol	SW8270C	mg/kg	ND	0.300	0.300	0.300	no	13700	no	4760	no	NA	NA	0.005	0.1	YES
2,4-Dinitrophenol	SW8270C	mg/kg	ND	0.400	0.400	0.400	no	1370	no	476	no	NA	NA	0.005	0.1	YES
2-Chlorophenol	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	5680	no	1550	no	NA	NA	0.005	0.1	YES
2-Methylphenol	SW8270C	mg/kg	ND	0.500	0.500	0.500	no	NA	NA	NA	NA	NA	NA	0.005	0.1	YES
2-Nitrophenol	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	NA	NA	NA	NA	NA	NA	0.005	0.1	YES
3+4-Methylphenol	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	NA	NA	NA	NA	NA	NA	0.005	0.1	YES
4,6-Dinitro-2-methylphenol	SW8270C	mg/kg	ND	0.500	0.500	0.500	no	68.4	no	23.8	no	NA	NA	0.005	0.1	YES
4-Chloro-3-methylphenol	SW8270C	mg/kg	ND	0.500	0.500	0.500	no	NA	NA	NA	NA	NA	NA	0.005	0.1	YES
4-Nitrophenol	SW8270C	mg/kg	ND	0.200	0.200	0.225	no	NA	NA	NA	NA	NA	NA	0.005	0.1	YES
Pentachlorophenol	SW8270C	mg/kg	ND	0.400	0.400	0.400	no	100	no	1030	no	NA	NA	0.005	0.1	YES
Phenol	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	205000	no	68800	no	NA	NA	0.005	0.1	YES
1-Methylnaphthalene	SW8260B	mg/kg	ND	0.200	0.200	0.200	no	NA	NA	NA	NA	NA	NA	0.03	0.6	no
2-Methylnaphthalene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	NA	NA	NA	NA	NA	NA	0.03	0.6	no
Acenaphthene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	36700	no	18600	no	NA	NA	0.03	0.6	no
Acenaphthylene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	NA	NA	NA	NA	NA	NA	0.03	0.6	no
Anthracene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	183000	no	66800	no	NA	NA	0.03	0.6	no
Benzo(a)anthracene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	23.4	no	213	no	NA	NA	0.03	0.6	no
Benzo(a)pyrene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	2.34	no	21.3	no	NA	NA	0.0007	0.014	YES
Benzo(b)fluoranthene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	23.4	no	213	no	NA	NA	0.03	0.6	no
Benzo(g,h,i)perylene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	NA	NA	NA	NA	NA	NA	0.03	0.6	no
Benzo(k)fluoranthene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	234	no	2060	no	NA	NA	0.03	0.6	no
Chrysene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	2340	no	20600	no	NA	NA	0.03	0.6	no
Dibenz(a,h)anthracene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	2.34	no	21.3	no	NA	NA	0.03	0.6	no
Fluoranthene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	24400	no	8910	no	NA	NA	0.03	0.6	no
Fluorene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	24400	no	8910	no	NA	NA	0.03	0.6	no
Indeno(1,2,3-c,d)pyrene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	23.4	no	213	no	NA	NA	0.03	0.6	no
Naphthalene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	252	no	702	no	NA	NA	0.03	0.6	no
Phenanthrene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	20500	no	7150	no	NA	NA	0.03	0.6	no
Pyrene	SW8270C	mg/kg	ND	0.200	0.200	0.200	no	18300	no	6680	no	NA	NA	0.03	0.6	no
Cyanide	SW9012	mg/kg	ND	0.500	0.500	0.425	YES	22700	no	6190	no	NA	NA	0.2	4	no
Diesel Range Organics (DRO)	SW8015	mg/kg	210.000	10.000	210.000	10.000	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gasoline Range Organics (GRO)	SW8015	mg/kg	ND	5.000	5.000	5.000	no	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total BTEX	SW8260B	mg/kg	NA	NA	0.250	0.250	no	NA	NA	NA	NA	50	no	2.13	42.6	no
Petroleum Hydrocarbons, TR	E418.1	mg/kg	90.000	20.000	90.000	20.000	YES	NA	NA	NA	NA	2500	no	NA	NA	NA
DRO+GRO	SW8015	mg/kg	NA	NA	215.000	15.000	YES	NA	NA	NA	NA	500	no	NA	NA	NA

Notes:

PQL = practical quantitation limit
ND = Not detected above the PQL
NA = Data not available.
PCBs = polychlorinated biphenyls.

Of the screening standards considered for comparison, the Proposed Baseline Value is the only standard with a value for DRO (10 mg/kg). However, Form C-137 has a screening value for DRO+GRO combined (500 mg/kg). While the NEOCD Closure sample DRO value (210 mg/kg) exceeds the Proposed Baseline DRO Value, the NEOCD Closure sample DRO+GRO combined value (215 mg/kg - including the detection limit for GRO) is well below the Form C-137 combined screening value.

For the NEOCD Closure Sample, the Value used for Screening Comparison equals the higher of the PQL and the result with the following exceptions:

For Total BTEX, the sum of the values of the four individual analytes was utilized.

For DRO+GRO, the sum of the values DRO and GRO were utilized.

Industrial/Occupational and Construction Worker Soil Screening Standards from the New Mexico Environment Department Soil Screening Standards.

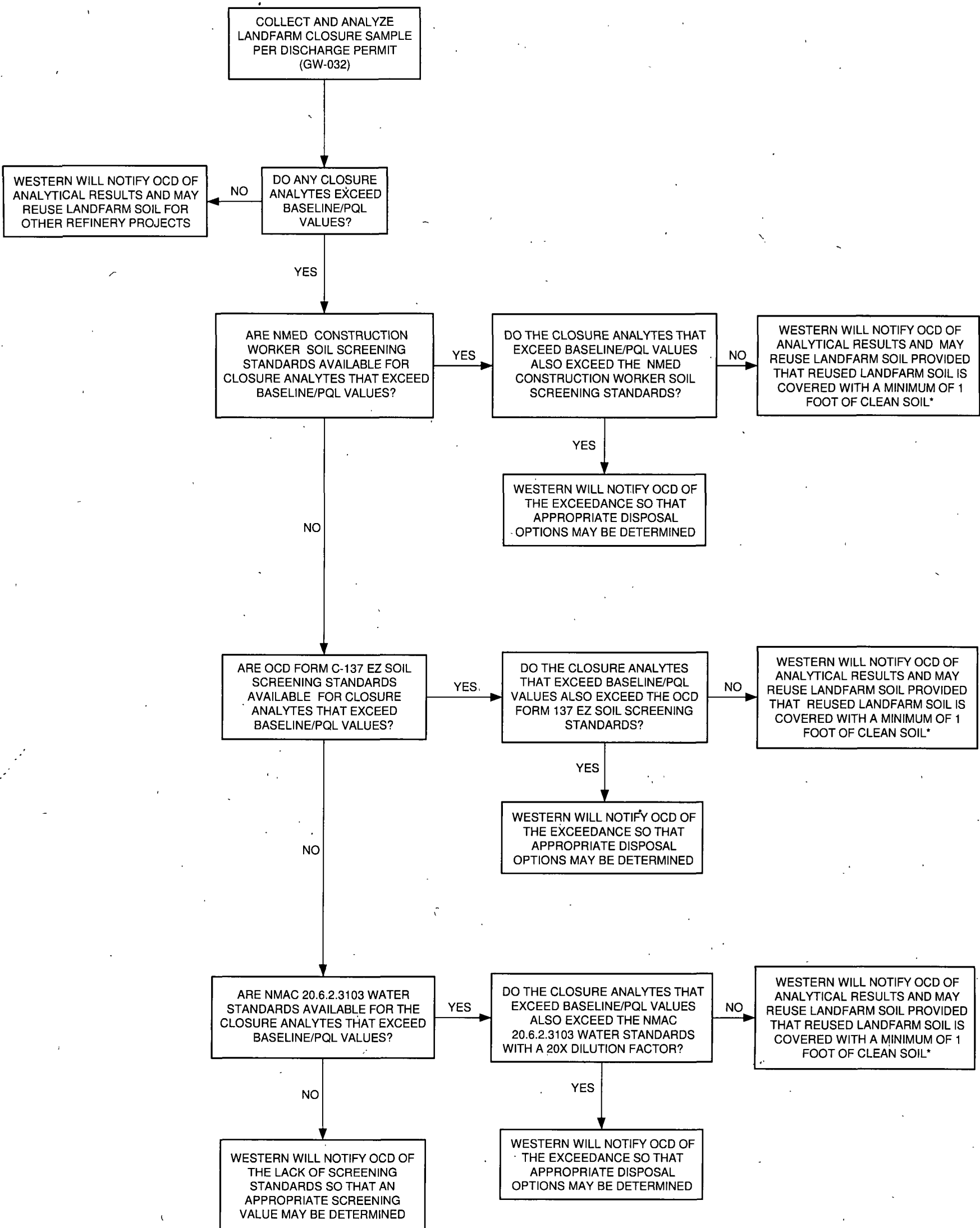
C-137 Screening Standards from New Mexico Oil Conservation Form C-137 EZ.

NMAC 3103 Screening Standards from NMAC 20.6.2.3103 Subsections A and B (NMAC 3103 list).

OCD advised that the NMAC 3103 list water standards (presented in mg/l with the exception of radioactivity) could be multiplied by 20 to approximate soil standards (mg/kg).

The 20X approximation was also utilized for radioactivity even though the NMAC 3103 standard for radioactivity is presented in pCi/l.

PCB Proposed Baseline Value exceedances were caused by elevated PQLs in the NEOCD Closure sample due to sample dilution; PCBs were not detected in the NEOCD Closure sample.



NOTE:

* DEPENDING ON LANDFARM CLOSURE SAMPLE CONCENTRATIONS AND THE INTENDED REUSE OF THE SOIL, 1-FOOT OF CLEAN SOIL COVER MAY NOT BE NECESSARY. WESTERN WILL OBTAIN OCD APPROVAL PRIOR TO REUSING SOILS WITHOUT A 1-FOOT CLEAN SOIL COVER.

Trihydro
CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 1

SOIL DISPOSAL OPTIONS AND CRITERIA

WESTERN REFINING COMPANY L.L.C.
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP

Checked By: GP

Scale: NONE

Date: 7/14/11

File: 697-OCD-FLOW-201107

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, April 08, 2011 6:43 AM
To: 'Hains, Allen'; 'Riege, Ed'
Cc: VonGonten, Glenn, EMNRD
Subject: RE: Pilot Diesel Line Release Jurisdiction

Allen and Ed:

Please submit "Modification" to the discharge permit with a engineering drawing and specs of the pipeline within the refinery property that Western needs to incorporate into the pipeline testing provision of the OCD discharge permit. Please submit it to the OCD within 90 days of this message with the MIT results on the pipeline for our record . Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/o cd/index.htm>

"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:

<http://www.emnrd.state.nm.us/o cd/environmental.htm#environmental>)

From: Hains, Allen [<mailto:Allen.Hains@wnr.com>]

Sent: Friday, April 01, 2011 4:02 PM

To: Reuter, Stephen, NMENV; Joey Cupp

Cc: Martin, Calvin, NMENV; Shearer, Joyce, NMENV; Chavez, Carl J, EMNRD; VonGonten, Glenn, EMNRD; Riege, Ed

Subject: Pilot Diesel Line Release Jurisdiction

Stephen,

Thank you for the productive meeting on March 29th.

During the meeting we were asked, "If Western has had a similar situation somewhere else?" and, "If so, which agency had jurisdiction?"

According to Western's pipeline personnel and Western's spill reporting protocol, releases from a product pipeline, such as diesel, are reported to the NMED Ground Water Quality Bureau.

Hopefully, this fact will help you confirm jurisdiction.

Thanks again,

Allen

Allen S. Hains
Manager
Remediation Projects

Chavez, Carl J, EMNRD

From: Hains, Allen [Allen.Hains@wnr.com]
Sent: Friday, April 01, 2011 4:02 PM
To: Reuter, Stephen, NMENV; Joey Cupp
Cc: Martin, Calvin, NMENV; Shearer, Joyce, NMENV; Chavez, Carl J, EMNRD; VonGonten, Glenn, EMNRD; Riege, Ed
Subject: Pilot Diesel Line Release Jurisdiction

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Allen

Allen S. Hains
Manager
Remediation Projects

Western Refining
123 W. Mills Ave.
El Paso, Texas 79901
915 534-1483
915 490-1594 (cell)

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, April 01, 2011 3:07 PM
To: 'Hains, Allen'; 'Riege, Ed'
Subject: FW: Western Refining SW, Inc.- Gallup Refinery (GW-032) Archives Center Visit & File Review

FYI.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/index.htm>

"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Romero, Lawrence S., EMNRD
Sent: Friday, April 01, 2011 2:45 PM
To: Chavez, Carl J, EMNRD
Subject: RE: Western Refining SW, Inc.- Gallup Refinery (GW-032) Archives Center Visit & File Review

Carl we don't have anything on GW-32 at Archives it is in the system or we have the hard copy in your Area.

From: Chavez, Carl J, EMNRD
Sent: Friday, April 01, 2011 2:28 PM
To: Romero, Lawrence S., EMNRD
Subject: RE: Western Refining SW, Inc.- Gallup Refinery (GW-032) Archives Center Visit & File Review

You know, like what you arranged for Wayne to review the archives for the Key UICI- 5 Disposal Well. Right? Thx.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/index.htm>

"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Romero, Lawrence S., EMNRD
Sent: Friday, April 01, 2011 2:02 PM
To: Chavez, Carl J, EMNRD
Subject: RE: Western Refining SW, Inc.- Gallup Refinery (GW-032) Archives Center Visit & File Review

No idea what you talking about

From: Chavez, Carl J, EMNRD
Sent: Friday, April 01, 2011 1:49 PM
To: Romero, Lawrence S., EMNRD
Cc: Hains, Allen; Riege, Ed
Subject: Western Refining SW, Inc.- Gallup Refinery (GW-032) Archives Center Visit & File Review

Lawrence:

Could you please arrange for a visitation to the State of NM Archives or Record Center for the above subject facility formerly known as Giant.

A time frame from the second and third week in April (i.e., T – TH) if you could make the Archives available to Western to review the file for a diesel pipeline diagram.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
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<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

Chavez, Carl J, EMNRD

Subject: WG-032 Diesel Pipeline to Pilot Travel Center Issue
Location: PSTB Office: 1301 Siler Road Building B
Start: Tue 3/29/2011 2:00 PM
End: Tue 3/29/2011 3:30 PM
Recurrence: (none)
Meeting Status: Meeting organizer
Organizer: Chavez, Carl J, EMNRD
Required Attendees: VonGonten, Glenn, EMNRD; Chavez, Carl J, EMNRD

Attend meeting with WRSW and PSTB on Pilot Travel Center Release & PSTB requirement to discontinue or abandon pipeline.

***1301 Siler Road, Building B
Santa Fe, NM 87507***

WRSW make case for why PSTB has no jurisdiction over this pipeline and why it may fall under the OCD GW-032 Discharge Permit.

OCD wants to know if there are anymore pipelines like this that we need to know about that need to be added to DP? If not already included in drawings, OCD could review a "Modification" request with drawing for diesel pipeline for consideration of the permit and to make sure it is MIT'd under the permit from now on. Regardless of any "Modification" request(s), the pipeline should be MIT'd soon and independent of any decision by the agencies on the matter. The agencies will listen to the presentation and later discuss the position of the agencies. Ok.

Attachment II

Water Quality Control Commission

DELEGATION OF RESPONSIBILITIES TO ENVIRONMENTAL IMPROVEMENT DIVISION AND OIL CONSERVATION DIVISION

In an effort to prevent duplication of effort and to clarify the division of responsibilities pursuant to the provisions of the Water Quality Act, NMSA Sections 74-6-1 et seq. (1978), as administered and enforced by the Water Quality Control Commission, the Commission hereby approves the following list of delegated duties and responsibilities for two of the agencies that are constituent agencies to which authority can be delegated, the Environmental Improvement Division ("EID") and the Oil Conservation Division ("OCD"). The Commission is specifically authorized to take this action by NMSA Section 74-6-4E (1978) and by other general provisions of the Water Quality Act. The Commission notes that pursuant to NMSA Section 74-6-9C (1978), constituent agencies may "report to the Commission and to other constituent agencies water pollution conditions that are believed to require action where the circumstances are such that the responsibility appears to be outside the responsibility assigned to the agency making the report." The Commission encourages OCD and EID to continue close communication and cooperation where responsibility is unclear, to ensure that water pollution is prevented or abated quickly, efficiently and consistently. In situations involving discharges or facilities under the jurisdiction of both agencies, the agencies shall mutually agree which shall be the lead agency and shall determine the method by which the discharge plan shall be evaluated and approved. In preparing this delegation statement, the Commission is cognizant of the limitations imposed on its authority by the Water Quality Act, especially NMSA Section 74-6-12G (1978) which prohibits it from taking any action which would "interfere with the exclusive authority of the Oil Conservation Commission over all persons and things necessary to prevent water pollution as a result of oil or gas operations...."

This delegation shall supersede all previous delegations to EID and OCD; reference to the dates and minutes of Commission meetings in which previous delegations were made are in parentheses and the minutes are attached. The specific grants of authority are not intended to be comprehensive. When a question of authority and jurisdiction arises, which is not specifically delegated, the general provisions below shall control.

1. General Provisions

As a general rule, OCD will administer and enforce applicable Commission regulations pertaining to surface and ground water discharges at oil and natural gas production sites, oil refineries, natural gas processing plants, geothermal installations, carbon dioxide facilities, natural gas transmission lines, and discharges associated with activities of the oil field service industry. The Commission recognizes that OCD also administers regulations under both the Oil and Gas Act and the Geothermal Resources Act, and that OCD shall have discretion as to which regulations to enforce in any given situation. OCD shall have jurisdiction over all activities associated with exploration for or development, production, transportation before refinement, refinement, storage or treatment of unrefined oil and natural gas, or oil or gas products on refinery premises.

EID will administer and enforce Commission regulations regarding discharges from transmission, transportation and storage facilities for oil or oil by-products after refinement (including but not limited to gasoline stations), except those within refinery premises. EID will administer and enforce all

Commission regulations pertaining to all other discharges to surface and ground water which are not specifically delegated to other departments and agencies. (Source: 1/13/69 and 5/8/84 Commission minutes)

2. Specific Grants of Authority

A. EID shall certify Section 404 dredge and fill material permits under the Clean Water Act ("CWA"). (Source: 1/13/76 and 6/14/83 Commission minutes)

B. EID shall administer the Wastewater Construction Grants program pursuant to Section 205 of the CWA. (Source: 6/14/83 Commission minutes)

C. EID shall certify NPDES permits pursuant to Title IV of the Federal Water Pollution Control Act Amendments of 1972 and S402 of the CWA. (Source: 10/1/74 and 8/14/84 Commission minutes)

D. EID shall certify hydropower licenses issued by the Federal Energy Regulatory Commission. (Source: 8/14/84 Commission minutes)

E. EID shall administer and enforce Commission regulations pertaining to the disposal of human excrement and bath water at oil and natural gas production sites, oil refineries, natural gas processing plants, geothermal installations, carbon dioxide facilities and natural gas transmission lines when the treatment facilities for the sewage are a separate and isolated discharge unmixed with any produced water, oil field waste or oil field service waste. (Such an isolated discharge would include: a small sewage treatment plant, package plant, or septic tank and drainfield.) If, on the other hand, sewage is in a discharge combined or mixed with produced water, oil field waste or oil field service waste, OCD shall have jurisdiction. (Source: 5/8/84 Commission minutes)

F. OCD shall administer and enforce Commission regulations at brine manufacturing operations and concerning discharges to ground or surface water at brine manufacturing operations, including all brine production wells, holding ponds and tanks. OCD shall have jurisdiction over all manufactured brine once it is transported, used or disposed of off brine plant premises for use in or directly related to oil and gas operations regulated by OCD. OCD shall regulate brine injection through its Class II Underground Injection control (UIC) Program if the brine is used in the drilling for or production of oil and gas. EID shall regulate brine injection through its UIC Program if the brine is used for other purposes. (Source: 6/13/89 Commission minutes)

G. EID shall administer and enforce all programs implemented by the state under PL 92-500 (The Federal Water Pollution Control Act) and its Amendments, unless directed otherwise by the Commission. (Source: 7/8/75 Commission minutes)

H. OCD shall have general jurisdiction over the oil field service industry. Many activities that would ordinarily be regulated by EID are regulated by OCD when those activities occur in the oil field service industry. The following list, which is not intended to be inclusive, serves to help clarify this delegation:

OCD

waste oil handled or processed by
oil field service companies or
treating plants

all underground and above-ground
tanks on refinery premises, un-

EID

used motor oil handlers

all underground and above-
ground tanks not on refinery

less the tanks contain unmixed sewage; all underground and above-ground tanks not on refinery premises which contain crude petroleum, produced water or oil field service chemicals

premises, unless the tanks contain crude petroleum, produced water or oil field service chemicals

tanker trucks hauling, spilling or disposing of well-service chemicals, kill water, produced water, crude oil tank bottom sludge and other oil field wastes and oil field service materials

trucks spilling or disposing of non-oil and gas production wastes, non-oil and gas service materials, or refined petroleum products

washings from trucks and other equipment used in the transport, production or refining of oil and gas crude products, production wastes or service materials

washings from trucks and other equipment not used for oil and gas production related purposes

Both EID and OCD are authorized to continue to take appropriate legal action in their respective areas of delegation (including initiating proceedings in court) on behalf of the Commission on a finding of good cause to believe any person is violating or is threatening to violate a Commission regulation or the Water Quality Act. The agencies shall send a copy of each Complaint, Settlement Agreement and Judgment to the Commission Secretary for distribution to Commission members. (Source: NMSA Section 74-1-8.2(B) (1978), 2/8/71 and 1/11/83 Commission minutes)

WATER QUALITY CONTROL COMMISSION

Signed By:

Richard Mitzelfelt, Chairman

Date:

July 21, 1989

Pilot Travel Centers # 305
Jamestown, NM

A release from the Pilot Travel Center was reported to PSTB (Bureau) on August 11, 2011. The source of the release is from corrosion and noted holes along a 4 inch steel fill pipeline that connects Pilot diesel UST tanks with an AST at Western Refining. The noted corrosion and holes were discovered during soil excavation on or about August 19 in the area north of the pump house.



To date, an unknown amount of diesel fuel has been recovered from standing water pools and from a PVC stand pipe in the area between the pump house and the old lube shop. Diesel fuel was recovered using a vacuum truck. Soil excavation along the pipe line has removed contaminated soil and the extent of the soil removal is unknown. Surface pooling with fuel, surface soil staining and stressed vegetation (dead trees) marks the surface extent of the release up to 1,000 feet in a north-south direction. The noted surface contamination features follows the approximate position of the piping run and surface depressions. However, the full extent of surface and shallow soil contamination is unknown. The depth to ground water in a nearby ground water monitoring well was gauged at 13 feet deep in 2007. Ground water levels appear to be 2 ft below the ground surface at the release area.

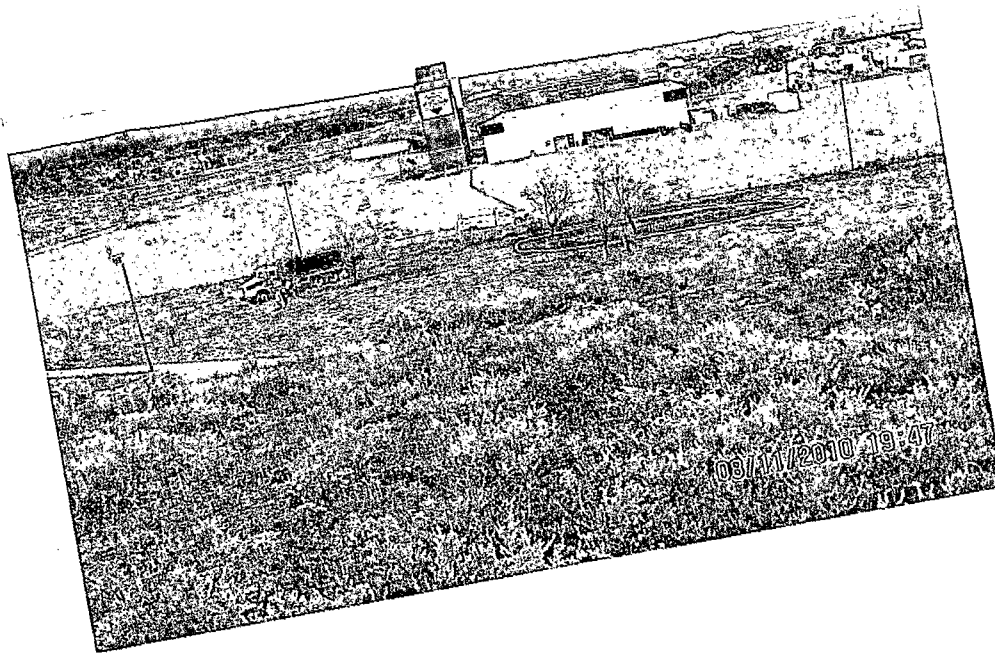
Other Notes:

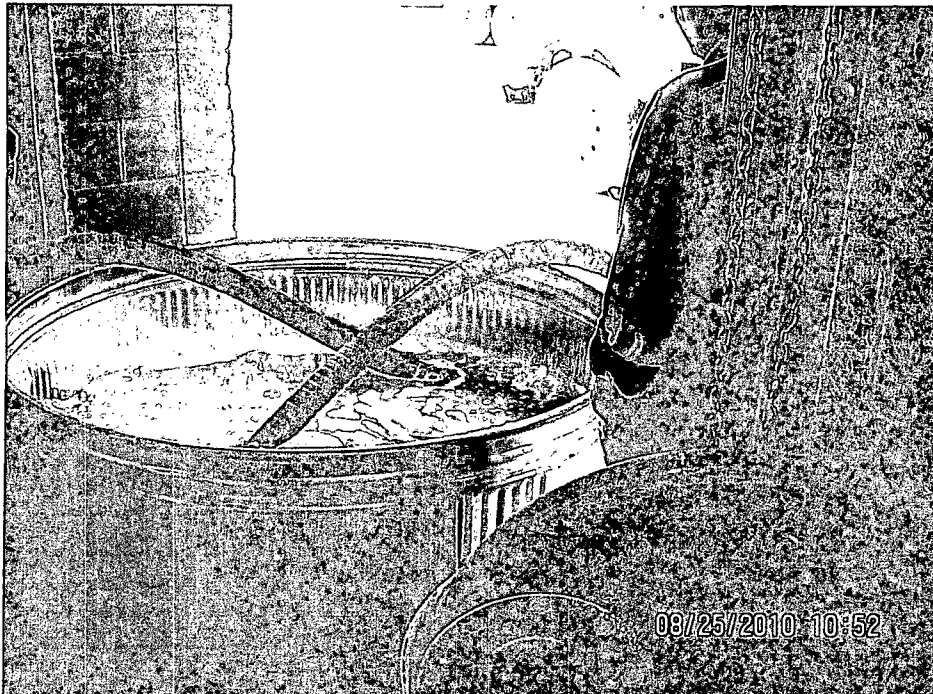
The PSTB has requested that the piping be evacuated and tested for the length of the piping run to investigate possible other leaks along the pipeline and to take the pipeline out of service.

Attempts to evacuate the line utilizing air, water and compressed nitrogen resulted in recovering 1750 gallons of fuel and water at the pump house. The Bureau is not certain if the line has been completely purged.

In October 2010, Mr. Turri of Western Refining requested that we meet in order to better understand our regulations (PSTB) and talk with us about Western's plans.

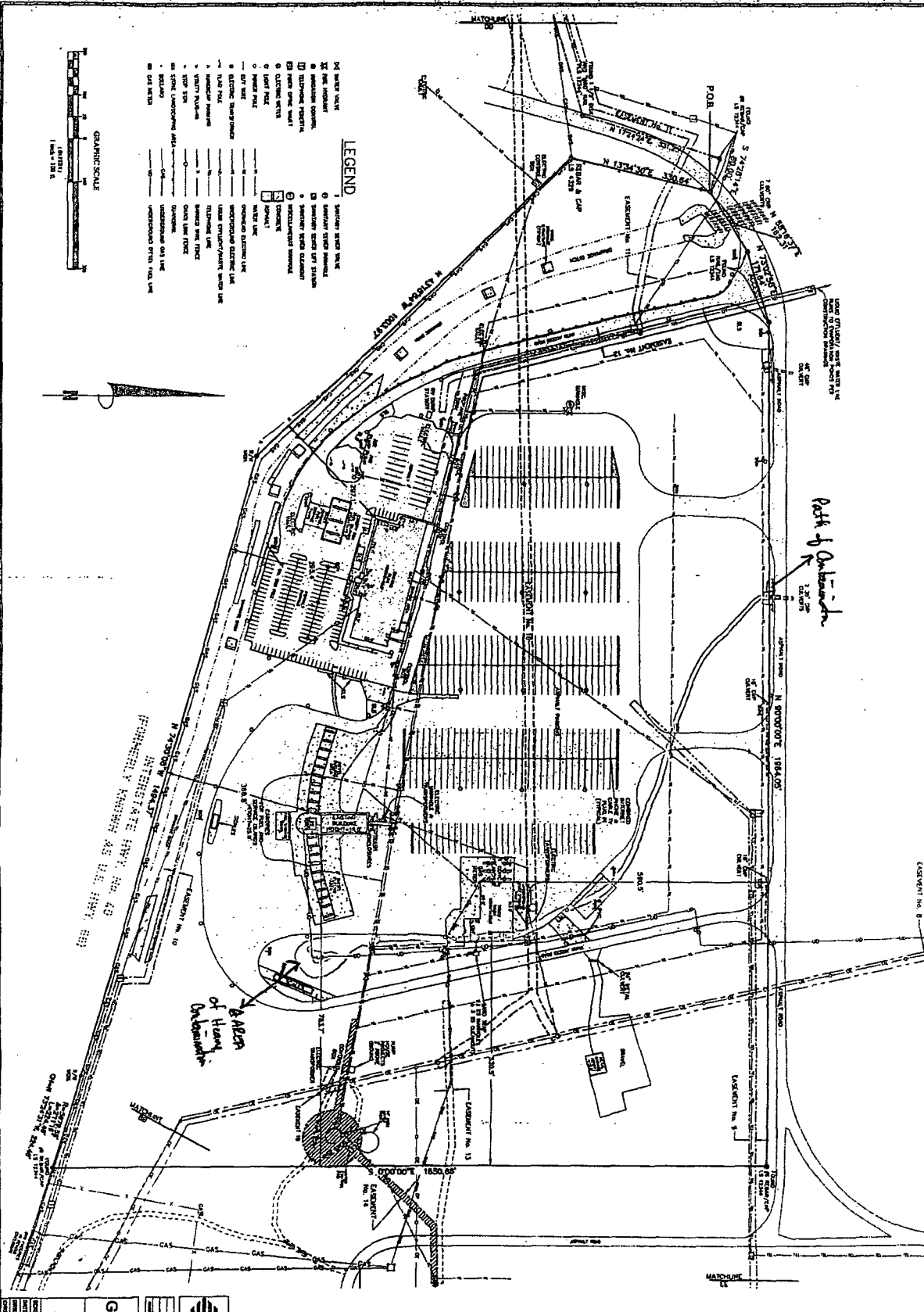
Pilot also informed the Bureau in October 2010 that Pilot cannot remove the pipeline because the pipeline is owned by Western Refining.





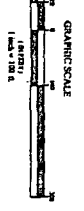
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ALTACSM LAND TITLE SURVEY

PREPARED FOR:

GIANT INDUSTRIES, INC.

East 29, Interstate 40
Jefferson, NM 87537
(Tribal Center)

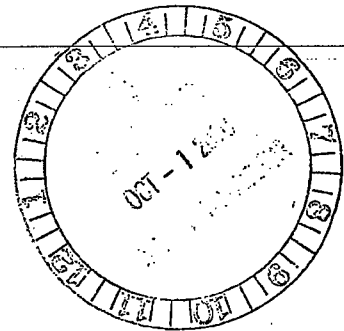
THE SURVEYOR'S CERTIFICATE

I, the undersigned, being a duly licensed Surveyor under the laws of the State of New Mexico, do hereby certify that the foregoing is a true and correct copy of the original survey as the same appears in my records.

DATE: 10/1/88

SURVEYOR: [Signature]

September 29, 2010

POSTED

Bruce Furst
Petroleum Storage Tank Bureau
New Mexico Environment Department
1301 Siler Road
Santa Fe, NM 87507

Re: NMED's Request for Workplan

Dear Mr. Furst:

This workplan explains the work that has been completed by Western Refining on a 6 inch steel product line which has historically delivered diesel to the Pilot Travel Center #305 in Jamestown, NM.

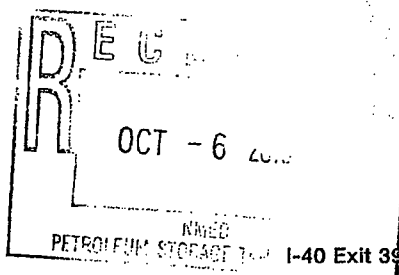
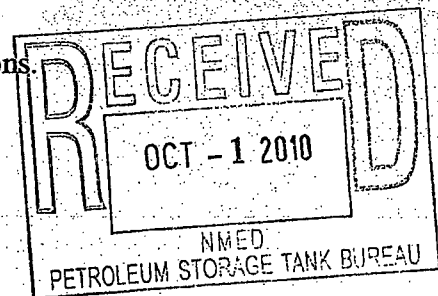
- The refinery shut down the line.
- Utilizing a cut off valve on the Western Refinery side of the line, nitrogen was pushed through the pressurized 6 inch line until no hydrocarbon appeared on the pilot end.
- The line was then steamed out from the Western Refining side pushing any vapors and remaining hydrocarbon residues out the Pilot side.
- Approximately 4500 gallons of hydrocarbon was removed from the line and collected with a vacuum truck on the Pilot side. This product was then reprocessed at the refinery.
- The Western Refining side of the line was then blinded with a flange.
- According to the Pilot Travel Center Workplan dated September 24, 2010 the line will be cut by Pilot at the northern property line, a small section of line removed, steel flanges welded to both ends of the existing pipe, and both sections of the pipe will be closed with a blind flange cover.

Please contact me at 505-722-0202, if you have any questions.

Sincerely,

Mark B. Turri

Refinery Manager



the Fund.

5.2.1.7.1.1 Accomplishments of the Corrective Action Fund

By September 2003, a total of \$124.58 million in state funds had been spent on corrective action at leak sites. Using state contractors, PSTB has taken direct action at over 100 sites, and PSTB has made over 13,000 payments to or on behalf of tank owners who took corrective action. NMED currently processes from 55 to 60 payments per month. Maintaining their eligibility for benefits from the Fund acts as a powerful incentive to tank owners to remain in compliance with the storage tank regulations, which, in turn, prevents pollution of New Mexico's water resources from leaking storage tanks.

5.2.1.8 Emergency Management Act

The Emergency Management Act, (§§ 74-4B-1 et seq., NMSA 1978) as amended in 1986 and again in 1989, is the statutory authority for New Mexico's hazardous materials emergency response program. Under the Act, the state government has the primary responsibility for management of hazardous materials incidents, including incidents contaminating surface or ground waters. Local governments assist the state in performing emergency response functions in their respective jurisdictions. The 1989 amendments provided that the Secretary of the New Mexico Department of Public Safety shall have the final authority to administer the provisions of the Act, and shall serve as the central coordinator to direct the response function of the state agencies which may be involved in a hazardous materials or radiological incident.

Under the authority of the Act, New Mexico developed a Hazardous Materials Emergency Response Plan (New Mexico Emergency Management Task Force 1986), which defines procedures and response functions of various state agencies. NMED is one of the agencies with responsibility for providing information necessary to control and mitigate hazardous materials and radiological discharge incidents.

NMED attempts to provide such information to those on-site entities at any incident that threatens the quality of the environment, or poses a threat to public health or safety. NMED contracts with the New Mexico Health Department's Epidemiology unit to receive and properly refer emergency incident reports. During a hazardous materials or radiological incident, NMED may provide technical assistance and advice, provide for environmental monitoring and sampling when necessary, ensure that adequate cleanup is performed, and take appropriate enforcement action. NMED staff, however, do not enter the exclusion zone during a hazardous materials or radiological incident. A contract is maintained with one or more firms with emergency response capability to furnish immediate response to emergency incidents. Work under contract is funded through the Hazardous Waste Emergency Fund established by § 74-4-8 of the New Mexico Hazardous Waste Act.

5.2.1.9 New Mexico Environmental Improvement Act

The New Mexico Environmental Improvement Act (§§ 74-1-1 et seq., NMSA 1978) was enacted in 1971. It established the Environmental Improvement Division (EID) of the Health and Environment Department. In 1991 EID was elevated to executive office cabinet-level status and redesignated the New Mexico Environment Department by the first session of the 40th Legislature. The Environmental Improvement Act also established the Environmental Improvement Board, consisting of seven members appointed by the Governor for terms not to exceed five years, and gave the Board authority to promulgate regulations in numerous areas relevant to environmental management and consumer protection. Among regulations adopted by the Board are several affecting ground water quality, including those described above in the section on the Hazardous Waste Act, as well as Liquid Waste Disposal Regulations, Solid Waste Management Regulations, and Regulations Governing Water Supplies.

5.2.1.9.1 Liquid Waste Program Regulations

Liquid waste is the wastewater discharged from homes and other establishments and normally includes wastes from toilets, baths, dishwashers, clothes washers, sinks, and garbage disposals. In situations where such wastes cannot be disposed of through a community sewage treatment plant, treatment and disposal must be accomplished through individual facilities. The potential problems from such systems vary

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, February 15, 2011 10:52 AM
To: 'Hains, Allen'
Cc: Riege, Ed; Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD
Subject: RE: Gallup - NMOCD Jurisdiction Transportation Pipeline to Pilot

Allen, et al.:

The OCD has conducted a preliminary review of your submittal.

The OCD would like to participate in the telephone conference or physical meeting in Santa Fe with the Petroleum Storage Tank Bureau.(PSTB). Based on your preliminary research, it would appear that the PSTB does not regulate the pipeline and Western did provide some schematic diagrams of the pipeline. OCD is awaiting any additional pipeline diagrams that Western can find that would indicated it was considered part of the refinery discharge permit, but somehow was not tested along with the rest of the process lines under the discharge permit. OCD would also like to know about similar pipelines that have not been tested, but should be similar to this incident.

I have provided OCD Contact to attend with an optional attendee: Mandatory: Carl Chavez and Glenn von Gonten; and Optional: Daniel Sanchez. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/o cd/index.htm>
(Pollution Prevention and Waste Minimization Guidance is under "About Us- Environmental Bureau"
<http://www.emnrd.state.nm.us/o cd/environmental.htm#environmental>)

From: Hains, Allen [<mailto:Allen.Hains@wnr.com>]
Sent: Friday, February 11, 2011 3:13 PM
To: Chavez, Carl J, EMNRD
Cc: Riege, Ed
Subject: Gallup - NMOCD Jurisdiction Transportation Pipeline to Pilot

Carl,

Western would like to return to service the diesel transportation line from our Gallup refinery to the adjacent Pilot Travel Center. As we discussed via telephone, there was a release on Pilot Travel Center property. The release was reported to NMED PSTB. The line has been cleaned and temporarily placed out-of service. We believe that this line is under NMOCD jurisdiction.

Pipeline Description

The pipeline originates at the Gallup Refinery and terminates at the Pilot Travel Center. Western Refining Southwest, Inc. (Western) - Gallup Refinery owns the portion of the pipeline located on refinery property. This transportation pipeline is not to be confused with refinery process lines or Pilot's motor fuel dispensing lines. This type of transportation pipeline is uncommon because refineries are rarely within close proximity of motor fuel dispensing facility with high demand.

Jurisdiction

The refinery, including underground lines, is under the jurisdiction of New Mexico Oil Conservation Division (NMOCD). This transportation pipeline is not subject to the Federal Hazardous Liquid Pipeline Safety Act of 1979 because it is less than a mile in length. The regulation and a summary are attached.

This transportation line is not subject to PSTB regulations, 20.5.1 NMAC, because there is an exclusion from the Scope [NMAC 20.5.1.2] for "related pipelines and facilities owned by a refinery" [NMAC 20.5.1.7.B.(8)] and "pipes connected to any tank exempted by Paragraphs (1) through (9) [NMAC 20.5.1.7.B.(10)]. The regulations are attached.

Path Forward

Western would like to include this pipeline in the NMOCD Discharge Permit (GW-032) in the form of a minor modification. Western will provide a work plan to test the line, make any necessary repairs, and return to service, if possible. Any discovered releases greater than a RQ will be reported to NMOCD. Western is conducting a search for complete drawings of the pipeline. There are two drawings of each end of the pipeline attached to this email. Also, we will invite you to a meeting with PSTB to discuss our path forward.

Thank you,

Allen

Allen S. Hains
Manager
Remediation Projects

Western Refining
123 W. Mills Ave.
El Paso, Texas 79901
915 534-1483
915 490-1594 (cell)

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e-CFR Data is current as of January 19, 2011

Title 49: Transportation

PART 195—TRANSPORTATION OF HAZARDOUS LIQUIDS BY PIPELINE

Subpart A—General

[Browse Previous](#) | [Browse Next](#)

§ 195.1 Which pipelines are covered by this part?

(a) *Covered.* Except for the pipelines listed in paragraph (b) of this section, this part applies to pipeline facilities and the transportation of hazardous liquids or carbon dioxide associated with those facilities in or affecting interstate or foreign commerce, including pipeline facilities on the Outer Continental Shelf (OCS). This includes:

- (1) Any pipeline that transports a highly volatile liquid (HVL);
 - (2) Transportation through any pipeline, other than a gathering line, that has a maximum operating pressure (MOP) greater than 20-percent of the specified minimum yield strength;
 - (3) Any pipeline segment that crosses a waterway currently used for commercial navigation;
 - (4) Transportation of petroleum in any of the following onshore gathering lines:
 - (i) A pipeline located in a non-rural area;
 - (ii) To the extent provided in §195.11, a regulated rural gathering line defined in §195.11; or
 - (iii) To the extent provided in §195.413, a pipeline located in an inlet of the Gulf of Mexico.
 - (5) Transportation of a hazardous liquid or carbon dioxide through a low-stress pipeline or segment of pipeline that:
 - (i) Is in a non-rural area; or
 - (ii) Meets the criteria defined in §195.12(a).
 - (6) For purposes of the reporting requirements in subpart B, a rural low-stress pipeline of any diameter.
- (b) *Excepted.* This part does not apply to any of the following:
- (1) Transportation of a hazardous liquid transported in a gaseous state;
 - (2) Transportation of a hazardous liquid through a pipeline by gravity;
 - (3) A pipeline subject to safety regulations of the U.S. Coast Guard;
 - (4) A low-stress pipeline that serves refining, manufacturing, or truck, rail, or vessel terminal facilities, if

the pipeline is less than one mile long (measured outside facility grounds) and does not cross an offshore area or a waterway currently used for commercial navigation;

(5) Transportation of hazardous liquid or carbon dioxide in an offshore pipeline in State waters where the pipeline is located upstream from the outlet flange of the following farthest downstream facility: The facility where hydrocarbons or carbon dioxide are produced or the facility where produced hydrocarbons or carbon dioxide are first separated, dehydrated, or otherwise processed;

(6) Transportation of hazardous liquid or carbon dioxide in a pipeline on the OCS where the pipeline is located upstream of the point at which operating responsibility transfers from a producing operator to a transporting operator;

(7) A pipeline segment upstream (generally seaward) of the last valve on the last production facility on the OCS where a pipeline on the OCS is producer-operated and crosses into State waters without first connecting to a transporting operator's facility on the OCS. Safety equipment protecting PHMSA-regulated pipeline segments is not excluded. A producing operator of a segment falling within this exception may petition the Administrator, under §190.9 of this chapter, for approval to operate under PHMSA regulations governing pipeline design, construction, operation, and maintenance;

(8) Transportation of a hazardous liquid or carbon dioxide through onshore production (including flow lines), refining, or manufacturing facilities or storage or in-plant piping systems associated with such facilities;

(9) Transportation of a hazardous liquid or carbon dioxide:

(i) By vessel, aircraft, tank truck, tank car, or other non-pipeline mode of transportation; or

(ii) Through facilities located on the grounds of a materials transportation terminal if the facilities are used exclusively to transfer hazardous liquid or carbon dioxide between non-pipeline modes of transportation or between a non-pipeline mode and a pipeline. These facilities do not include any device and associated piping that are necessary to control pressure in the pipeline under §195.406(b); or

(10) Transportation of carbon dioxide downstream from the applicable following point:

(i) The inlet of a compressor used in the injection of carbon dioxide for oil recovery operations, or the point where recycled carbon dioxide enters the injection system, whichever is farther upstream; or

(ii) The connection of the first branch pipeline in the production field where the pipeline transports carbon dioxide to an injection well or to a header or manifold from which a pipeline branches to an injection well.

(c) *Breakout tanks.* Breakout tanks subject to this part must comply with requirements that apply specifically to breakout tanks and, to the extent applicable, with requirements that apply to pipeline systems and pipeline facilities. If a conflict exists between a requirement that applies specifically to breakout tanks and a requirement that applies to pipeline systems or pipeline facilities, the requirement that applies specifically to breakout tanks prevails. Anhydrous ammonia breakout tanks need not comply with §§195.132(b), 195.205(b), 195.242 (c) and (d), 195.264(b) and (e), 195.307, 195.428(c) and (d), and 195.432(b) and (c).

[73 FR 31644, June 3, 2008]

Editorial Note: For Federal Register citations affecting §195.1, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

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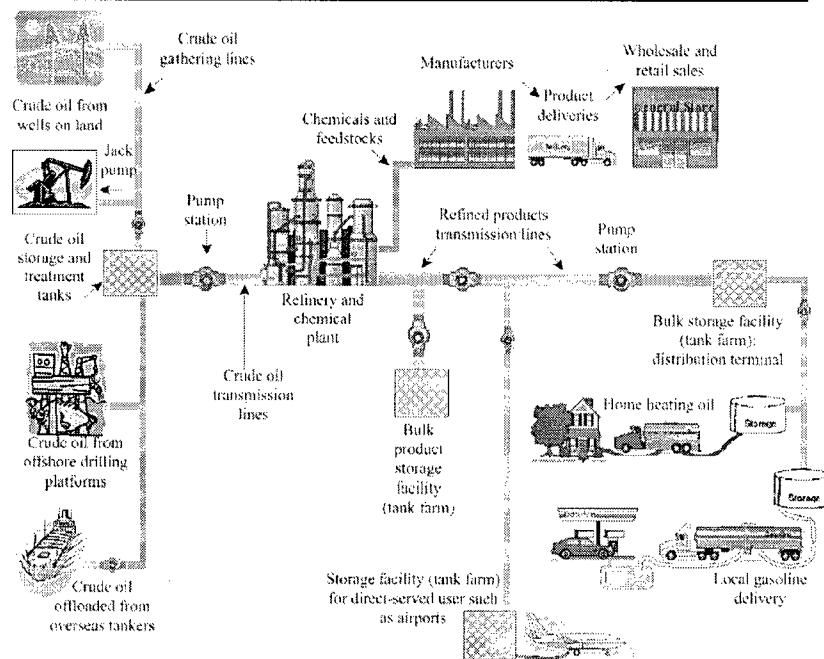


**WRITTEN STATEMENT OF CYNTHIA L. QUARTERMAN
ADMINISTRATOR
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
U.S. DEPARTMENT OF TRANSPORTATION**

June 29, 2010

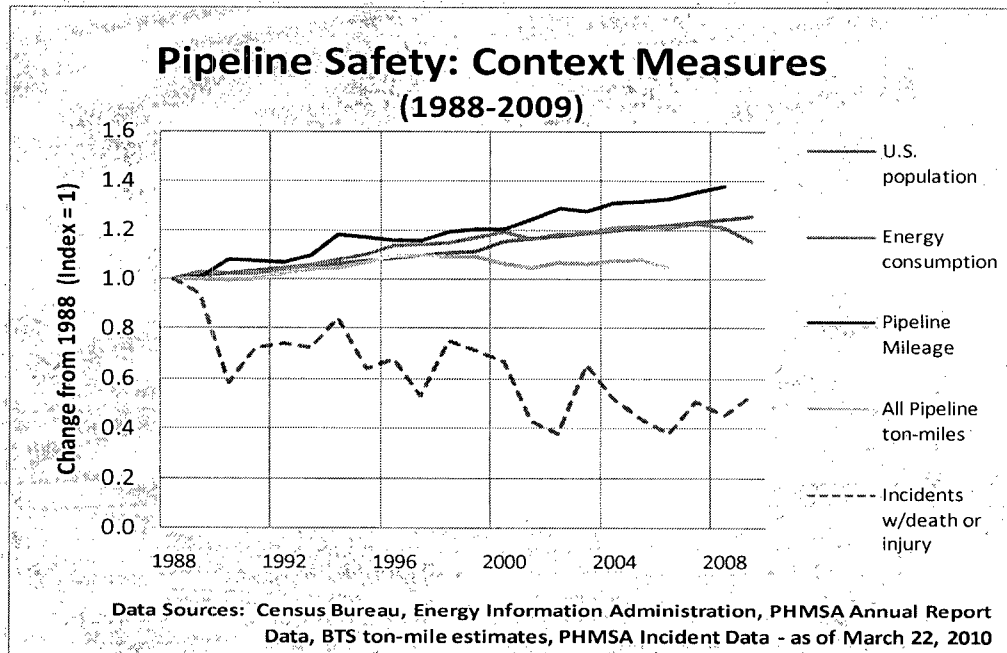
Chairwoman Brown, Ranking Member Shuster, members of the Subcommittee, thank you for the opportunity to appear today to discuss the Pipeline and Hazardous Materials Safety Administration's (PHMSA) oversight of America's hazardous liquid pipeline system. The top priority for Secretary LaHood and all of us at PHMSA is safety. We have strong commitments to reducing transportation risks to the public and environment. Our Nation's reliance on the safe and environmentally sound transportation of energy fuels and hazardous materials is increasing. PHMSA's safety oversight of the pipeline network that delivers these products is providing critical protections for the American people. The diagram below illustrates how hazardous liquids move through our pipelines from the well to the consumer:

Hazardous Liquid Pipelines – From Well to Consumer



For years, PHMSA has worked aggressively to utilize the authority given to it by Congress to enhance the safety of hazardous liquid pipelines. To do this, the agency has used responsible and methodical approaches to focus on high-risk infrastructure issues first, and provide effective solutions through enforcement and rulemakings. This tiered approach has helped PHMSA devise and implement effective rulemakings, like the ones now in place for Low Stress lines. With Congressional support, PHMSA has also built and deployed a consensus-based, collaborative research and development program that is bringing new technologies to market and helping to strengthen and maintain pipeline integrity.

These initiatives have been successful. PHMSA has driven down the number of serious pipeline incidents over the past 20 years, while all the traditional measures of risk exposure have been rising – population, energy consumption, and pipeline ton-miles. Pipeline incidents involving death or injury have declined by 50% over the last two decades. As indicated in the chart below, we aim to continue this long-term trend.



The Pipeline Safety Law and regulations apply to the transportation of hazardous liquids by pipeline under the statutory jurisdiction of PHMSA and the States. That combined jurisdiction is broad and covers any pipeline in or affecting interstate or foreign commerce, including wholly intrastate pipelines and pipelines located on the Outer Continental Shelf (OCS). PHMSA jurisdiction encompasses any pipeline that transports a highly volatile liquid (e.g., propylene, ethylene, butylene, and anhydrous ammonia) or other hazardous liquids through a non-gathering line pipeline that has a maximum operating pressure greater than 20 percent of its specified minimum yield strength. In addition, PHMSA has jurisdiction over any pipeline that crosses a waterway used for commercial navigation, certain onshore petroleum gathering lines, and certain hazardous liquids or carbon dioxide low-stress pipelines.

PHMSA can only provide oversight and ensure the safety of hazardous liquid pipelines under its jurisdiction. As requested by this Subcommittee, I will provide a brief description of the statutory and regulatory authorities held and exercised by PHMSA and its State partners to oversee the safety of hazardous liquid pipelines. My testimony today will explain PHMSA's authority over hazardous liquid pipelines and how it uses this authority to minimize safety risks.

I. CONSTITUTIONAL AUTHORITY

The Commerce Clause of the U.S. Constitution is the authority underlying the Pipeline Safety Laws.¹ It permits federal regulation of the transportation of hazardous liquids by pipeline. Pursuant to that authority, Congress may mandate federal regulation of the use of the channels of interstate commerce, the instrumentalities of and persons or things in interstate commerce, and any activity that has a substantial effect on interstate commerce².

II. STATUTORY AUTHORITY AND PHMSA'S REGULATORY EXCLUSIONS

A. Congress Provided PHMSA and States Authority to Regulate the Transportation of Hazardous Liquids by Pipeline.

1. PHMSA Has Broad, but not Unlimited, Statutory Authority to Regulate the Transportation of Hazardous Liquids by Pipeline.

PHMSA has statutory authority over "transporting hazardous liquids." "Hazardous liquid," is defined in the Pipeline Safety Laws as petroleum or a petroleum product, or any substance in a liquid state that the Secretary of Transportation decides may pose an unreasonable risk to life or property, including carbon dioxide.³ "Transporting hazardous liquid," is defined in the Pipeline Safety Laws as the movement (or storage incidental to such movement) of a hazardous liquid by pipeline in or affecting interstate commerce; but excluding the movement of a hazardous liquid through gathering lines in rural areas; onshore production, refining, or manufacturing facilities; or storage or in-plant piping facilities associated with onshore production, refining or manufacturing facilities.⁴

Congress has further defined PHMSA's jurisdiction by including a statutory meaning of gathering lines. A "regulated gathering line" must be defined in regulation by PHMSA based upon consideration of certain physical and functional factors. These factors include location, length from the well site, operating pressure, throughput, and composition of the product transported. Whereas a crude oil gathering line that is less than 6 inches in diameter, operates at low pressure, and is located in a rural area that is not unusually sensitive to environmental damage, is explicitly excluded from regulation by statute.⁵

¹ The Pipeline Safety Act (PSA), 49 U.S.C.A. § 60101 et seq., enacted in 1994, combined and recodified, without substantive changes, the two then existing pipeline safety statutes, the Hazardous Liquid Pipeline Safety Act of 1979 (former 49 U.S.C.A. § § 2001 to 2014) (HLPESA) and the Natural Gas Pipeline Safety Act of 1968 (former 49 U.S.C.A. § § 1671 et seq.) (NGPSA).

² Gonzales v. Raich, 545 U.S. 1, 16-17 (2005).

³ *Id.* § 60101(a)(4).

⁴ *Id.* § 60101(a)(22).

⁵ *Id.* § 60101(b)(2).

Moreover, low-stress hazardous liquid pipelines (i.e., those operating at a relatively low pressure) that are regulated by the U.S. Coast Guard, or that serve refining, manufacturing, or truck, rail, or vessel terminals, which are less than one mile long and do not cross an offshore or commercially navigable waterway, are excluded from PHMSA oversight (at least until PHMSA completes the Low Stress Rulemaking).⁶ The transportation of hazardous liquids or carbon dioxide through onshore production, refining, or manufacturing facilities (and any associated storage or in-plant piping systems) is also excluded.⁷ The Occupational Safety and Health Administration regulates some of these facilities to ensure safety of workers, and others are regulated by State agencies. These facilities and associated piping are considered non-transportation-related pursuant to Executive Order 12777 and are regulated by the Environmental Protection Agency (EPA).⁸

While PHMSA is responsible for ensuring the safety of hazardous liquid pipeline transportation, it does not have the authority to determine the site or route of those facilities.⁹ Other Federal agencies, including the Department of the Interior, the Department of State, the EPA, and State agencies make those decisions.

PHMSA's rulemaking authority is also prescribed by the Pipeline Safety Laws. Specifically, PHMSA must consider certain factors in those proceedings by statute, including any relevant hazardous liquid pipeline safety information, the appropriateness and reasonableness of any proposed standard, and the reasonably-identified costs and benefits of any new regulation,¹⁰ and except where otherwise provided by statute, can only issue a regulation if its benefits justify its costs.¹¹

Finally, there are other laws of more general applicability that PHMSA must comply with in exercising its regulatory responsibilities, for example: (1) the National Environmental Policy Act of 1969,¹² a statute that requires Federal agencies to consider the environmental impacts of and proposed alternatives to certain regulations, (2) the Paperwork Reduction Act of 1995,¹³ a statute that imposes certain requirements on the collection of information, and (3) the National Technology Transfer and Advancement Act of 1995,¹⁴ a statute that encourages federal agencies to use consensus industry standards.

2. The States Have Statutory Authority to Regulate the Transportation of Hazardous Liquids by Pipeline.

Congress has preserved a role for the States in regulating the intrastate transportation of hazardous liquids by pipeline. In particular, a State is allowed to regulate exclusively a pipeline if located wholly within its borders, provided that State has a current certification or agreement with PHMSA and has adopted standards that are compatible with the minimum federal

⁶ *Id.* § 60102(k).

⁷ *See id.* § 60101(a)(22).

⁸ *See* 40 C.F.R. § 112.

⁹ 49 U.S.C. § 60104(e).

¹⁰ 49 U.S.C. § 60102(b)(2).

¹¹ 49 U.S.C. § 60102(b)(5).

¹² Pub. L. No. 91-190, 83 Stat. 852 (1970) (amended by Pub. L. No. 94-52 (1975); Pub. L. No. 94-83 (1975); Pub. L. No. 97-258, § 4(b) (1982); currently codified at 42 U.S.C. §§ 4321-4347).

¹³ 44 U.S.C. §§ 3501-3520.

¹⁴ Pub. L. No. 104-113, 110 Stat. 775 (1996).

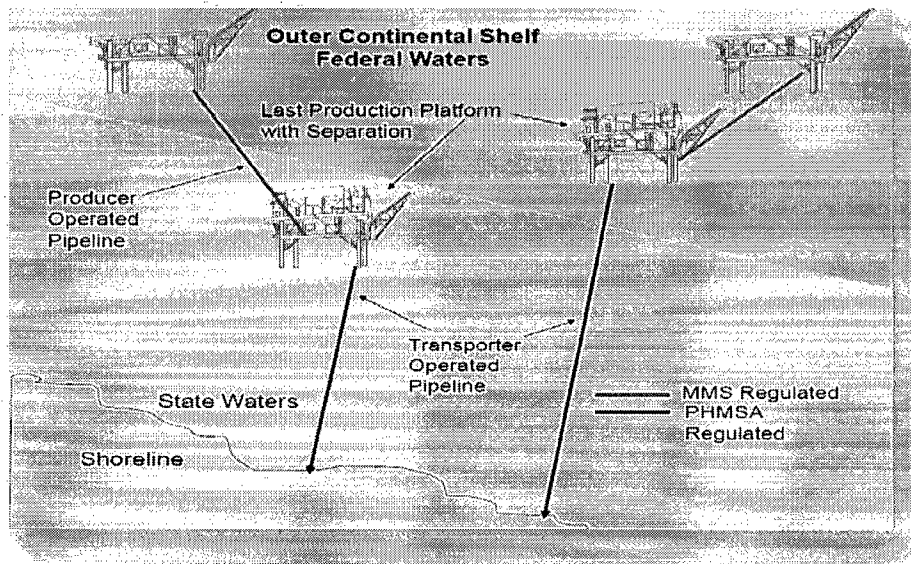
requirements.¹⁵ A State may also serve as PHMSA's agent for purposes of inspecting interstate hazardous liquid pipeline facilities.¹⁶ States cannot adopt or apply any of its own regulations to those facilities.¹⁷

B. There are Hazardous Liquids Pipelines that PHMSA Does Not Have Statutory Authority to Regulate.

As is obvious, the Pipeline Safety Regulations do not apply to the transportation of hazardous liquids where precluded by statute. That includes the movement of hazardous liquids by pipeline through certain gathering lines in rural areas, and storage associated with onshore production, refining or other manufacturing facilities or non-pipeline modes of transportation.¹⁸ These pipelines typically move unprocessed crude oil from producing well areas to processing facilities and are considered non-transportation related activities that are subject to the EPA's spill prevention and response regulations.

C. In Some Cases, PHMSA Has Historically Not Regulated Certain Hazardous Liquid Pipelines for Policy Reasons.

Certain exclusions exist to avoid jurisdictional conflicts and the application of duplicative Federal or State regulations. In particular, most producer-operated pipeline facilities on the OCS are regulated by the U.S. Department of the Interior, pursuant to the terms of a Memorandum of Understanding with DOT¹⁹ and non-transportation related facilities, including intra-facility piping, are regulated by the EPA pursuant to the Clean Water Act.



¹⁵ 49 U.S.C. § 60105 (2006).

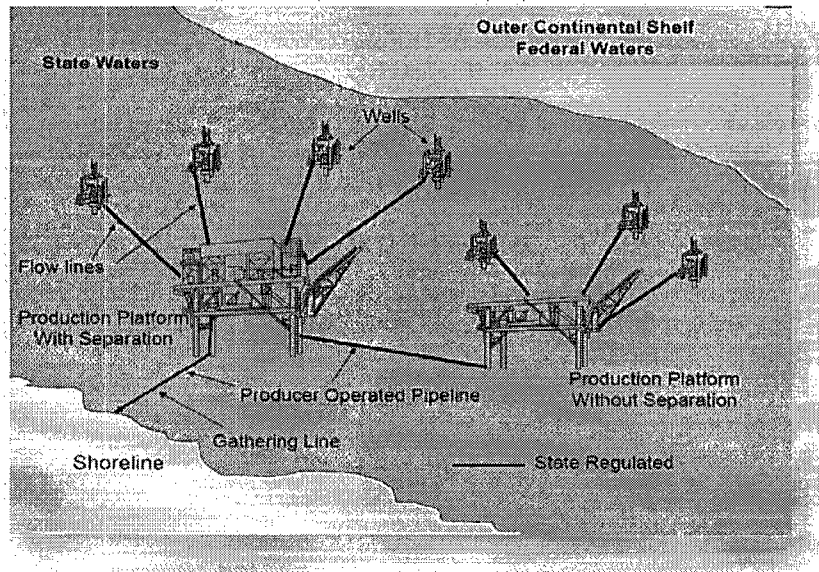
¹⁶ *Id.* § 60106(b)(1).

¹⁷ *Id.* § 60104(c).

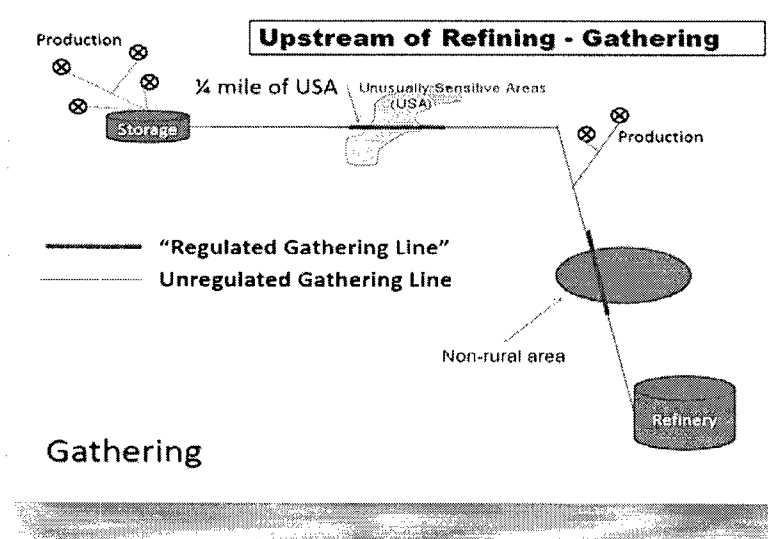
¹⁸ *See id.* § 60101(a)(22).

¹⁹ *See* 49 C.F.R. § 195.1(b)(6)-(7) (2010); Pipeline Safety: Regulations Implementing Memorandum of Understanding With the Department of the Interior, 62 Fed. Reg. 61692 (Nov. 19, 1997); 33 U.S.C. § 1520; *see also* Memorandum of Understanding Among the Secretary of the Interior, Secretary of Transportation, and Administrator of the Environmental Protection Agency (1994); Oil Pollution Prevention; Non-Transportation-Related Onshore Facilities, 59 Fed. Reg. 34070 (July 1, 1994).

There are also certain offshore pipelines in State waters that are reserved for regulation by the States.²⁰



Other exclusions in our regulations exist for historical reasons, including for pipelines that transport hazardous liquids by gravity,²¹ or for lack of a sufficient basis for imposing a potential regulation, as in the case of certain small (less than 6") and medium (6" to 8") diameter rural gathering lines.²² The diagram below illustrates the gathering lines that are currently unregulated:



²⁰ 49 C.F.R. § 195.1(b)(5).

²¹ Explosives and Other Dangerous Articles: Pipeline Transportation, 32 Fed. Reg. 1098 (Jan. 31, 1967).

²² See 49 U.S.C. § 60101(b)(2)(B)(ii).

In summary, PHMSA's statutory and regulatory exclusions are specified in the following provisions:

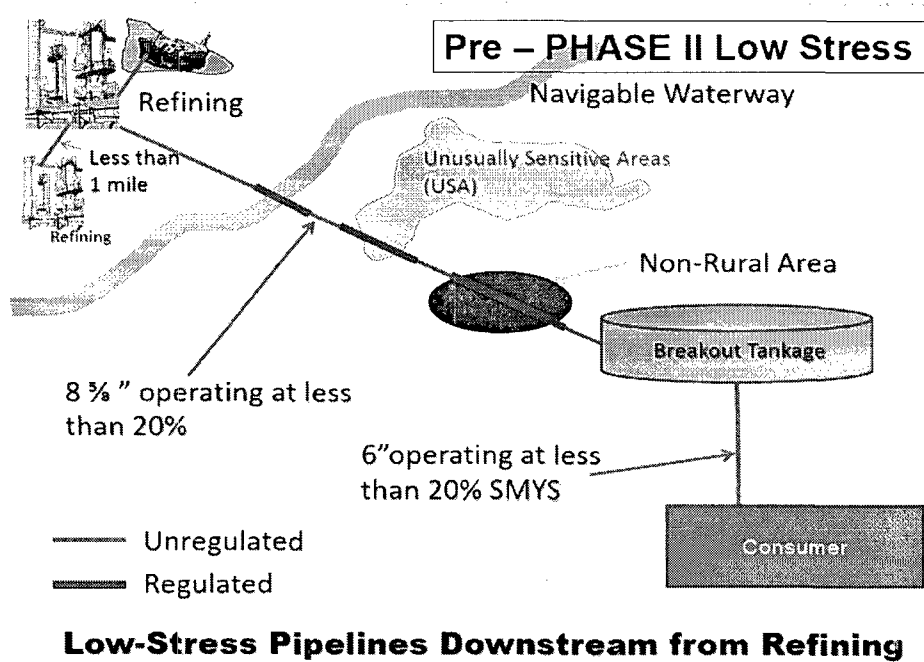
Unregulated pipelines:	Statutory Provisions	Regulatory Provisions
Transportation of a hazardous liquid transported in a gaseous state.	60101(a)(4)(B)	49 CFR 195.1(b)(1)
Transportation of a hazardous liquid through a pipeline by gravity.	60101(a)(22)	49 CFR 195.1(b)(2)
A pipeline subject to safety regulations of the U.S. Coast Guard.	60102(k)(3)(A)	49 CFR 195.1(b)(3)
A low-stress pipeline that serves refining, manufacturing, or truck, rail, or vessel terminal facilities, if the pipeline is less than one mile long and does not cross navigable waterway.	60102(k)(3)(B)	49 CFR 195.1(b)(4)
Transportation of hazardous liquid or carbon dioxide in an offshore pipeline in State waters where the pipeline is located upstream from the outlet flange of the following farthest downstream facility.	60101(a)(22)	49 CFR 195.1(b)(5)
Transportation of hazardous liquid or carbon dioxide in a pipeline on the OCS where the pipeline is located upstream of the point at which operating responsibility transfers from a producing operator to a transporting operator.	33 U.S.C. 1520	49 CFR 195.1(b)(6)
A pipeline segment upstream (generally seaward) of the last valve on the last producer-operated facility on the OCS where a pipeline on the OCS is producer-operated and crosses into State waters without first connecting to a transporting operator's facility on the OCS.	33 U.S.C. 1520	49 CFR 195.1(b)(7)
Transportation of a hazardous liquid or carbon dioxide through onshore production (including flow lines), refining, or manufacturing facilities, and associated storage or in-plant piping systems.	60101(a)(22)(B)(ii) and (iii)	49 CFR 195.1(b)(8)
Transportation of a hazardous liquid or carbon dioxide by means other than pipeline.	60101(a)(22)(A)	49 CFR 195.1(b)(9)
Transportation of carbon dioxide downstream from the defined applicable injection points.	60101(a)(22)(B)(ii)	49 CFR 195.1(b)(10)
Not more than 6 inches in diameter, is low pressure, is in rural area, and not unusually sensitive to environmental damage.	60101(b)(2)(B)	49 CFR 195.1(a)(4)
Less than 6 inches, greater than 20% SMYS, in rural area, and is within ¼ mile of an unusually sensitive area.	60101(b)	49 CFR 195.1(a)(4)
Less than 8 inches, less than 20% SMYS, and is within ¼ mile of an unusually sensitive area.	60101(b)	49 CFR 195.1(a)(4)

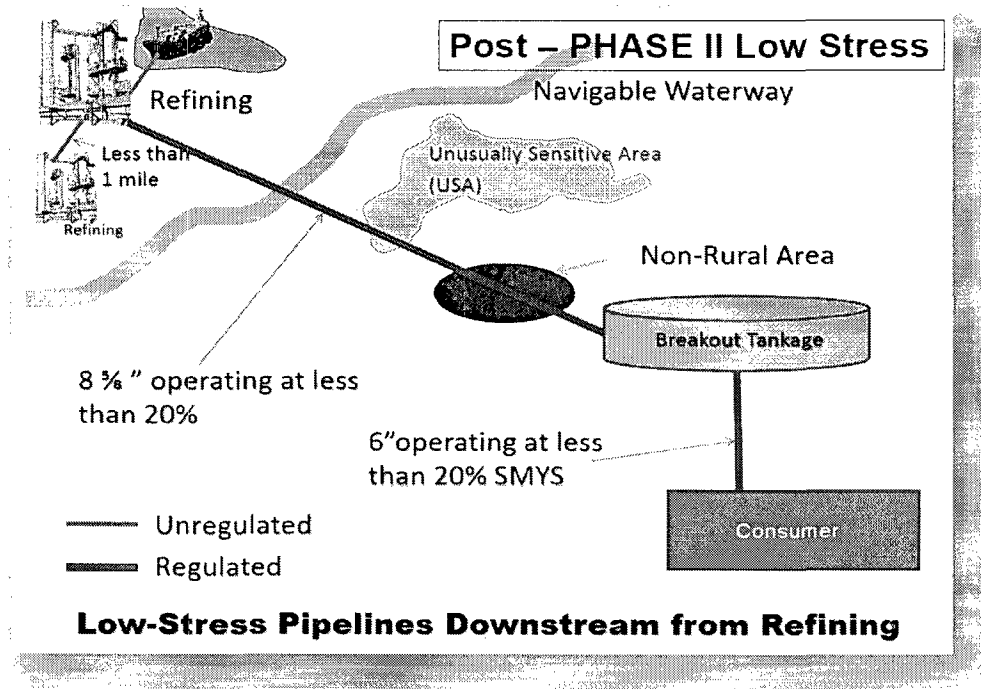
III. IMPROVING PHMSA'S STATUTORY JURISDICTION

A. PHMSA is Aggressively, but Appropriately, Administering the Nation's Pipeline Safety Laws.

PHMSA has completed nearly all of the mandates and recommendations in the Pipeline Inspection, Protection, Enforcement and Safety Act of 2006. That includes issuing regulations for low-stress pipelines and control room management and completing reports on petroleum market capacity, leak detection technologies, and liquid internal corrosion measures. In addition, PHMSA has sought to improve its relationships with State and local officials and increase its public awareness and outreach program. All States participate in the pipeline safety program, with the exception of Alaska and Hawaii. PHMSA also sponsored the launch of the a nationwide telephonic notice system for damage prevention, the 811 Call-Before-You-Dig Program, and supported the National Association of State Fire Marshals in developing and disseminating training materials for responding to pipeline emergencies.

PHMSA has taken steps to ensure that these efforts continue in the future. For instance, PHMSA has issued a new notice of proposed rulemaking for low-stress pipelines and has plans to bolster its damage prevention program. As indicated in the two diagrams that follow, this closes a significant regulatory gap in pipeline safety:





B. PHMSA and Congress Can Work Together to Improve the Regulation of Transporting Hazardous Liquids by Pipeline.

The support of Congress is critical to the safe and effective regulation of the transportation of hazardous liquids by pipeline. PHMSA is in the process of developing legislation that would address our jurisdiction over the transportation of hazardous liquids by pipeline in the future. We look forward to working with Congress to address any issues you may have concerning PHMSA's pipeline safety program and the regulation of hazardous liquid pipelines. PHMSA very much appreciates the opportunity to report on our authority over these pipelines and the opportunities that exist to strengthen oversight.

Thank you. I would be pleased to answer any questions you may have.

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TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 5 PETROLEUM STORAGE TANKS
PART 1 GENERAL PROVISIONS

20.5.1.1 ISSUING AGENCY: New Mexico Environmental Improvement Board.
 [20.5.1.1 NMAC - Rp, 20.5.1.1 NMAC, 6/15/2009]

20.5.1.2 SCOPE:

- A. 20.5.1 through 20.5.16 NMAC apply to owners and operators of storage tanks as defined in 20.5.1.7 NMAC except as otherwise provided in Subsections B and C of this section.
- B. Any UST system holding hazardous wastes that are listed or identified under Subtitle C of the federal *Resource Conservation and Recovery Act*, or a mixture of such hazardous waste and other hazardous regulated substances, is excluded from these regulations. This subsection does not apply to any UST system containing petroleum.
- C. The following types of storage tank systems are excluded from the requirements of 20.5.2 through 20.5.16 NMAC:
- (1) any wastewater treatment tank systems and any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the federal Clean Water Act;
 - (2) equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
 - (3) any UST system with a capacity of 110 gallons or less or any AST system with a capacity of 1,320 gallons or less, or any AST system with a capacity of 55,000 gallons or more;
 - (4) any UST system that contains a de minimis concentration of regulated substances;
 - (5) any emergency spill or overflow containment UST system that is expeditiously emptied after use;
 - (6) any storage tank systems containing radioactive material that are regulated under the Atomic Energy Act of 1954;
 - (7) any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the nuclear regulatory commission under 10 CFR part 50 appendix A;
 - (8) airport hydrant fuel distribution systems;
 - (9) UST systems with field-constructed tanks; and
 - (10) any UST or AST system that stores fuel solely for use by emergency power generators.
- D. Notwithstanding the foregoing exclusions, no person may install a storage tank system listed in Subsection C of this section for the purpose of storing regulated substances unless such storage tank system (whether of single or double-walled construction):
- (1) will prevent releases due to corrosion or structural failure for the operational life of the tank; and
 - (2) is cathodically protected against corrosion, constructed of noncorrosive material, steel clad with a noncorrosive material or designed in a manner to prevent the release or threatened release of any stored substance; and
 - (3) the material used in the construction or lining of the tank is compatible with the substance to be stored.
- E. Parts 20.5.4 through 20.5.9 NMAC shall not apply to an existing AST or UST system which has never contained a regulated substance until the system is placed in service.
 [20.5.1.2 NMAC - Rp, 20.5.1.2 NMAC, 6/15/2009]

20.5.1.3 STATUTORY AUTHORITY: Parts 20.5.1 through 20.5.16 NMAC are promulgated pursuant to the provisions of the Hazardous Waste Act, Sections 74-4-1 through 74-4-14 NMSA 1978; the Ground Water Protection Act, Sections 74-6B-1 through 74-6B-14 NMSA 1978; and the general provisions of the Environmental Improvement Act, Sections 74-1-1 through 74-1-16 NMSA 1978.
 [20.5.1.3 NMAC - Rp, 20.5.1.3 NMAC, 6/15/2009]

20.5.1.4 DURATION: Permanent.
 [20.5.1.4 NMAC - Rp, 20.5.1.4 NMAC, 6/15/2009]

20.5.1.5 EFFECTIVE DATE: June 15, 2009, unless a later date is indicated in the bracketed history note at the end of a section.
 [20.5.1.5 NMAC - Rp, 20.5.1.5 NMAC, 6/15/2009]

20.5.1.6 OBJECTIVE: The purpose of 20.5.1 through 20.5.16 NMAC is to regulate storage tank systems in order to protect the public health, safety and welfare and the environment of the state.
 [20.5.1.6 NMAC - Rp, 20.5.1.6 NMAC, 6/15/2009]

20.5.1.7 DEFINITIONS:

- A. "Above ground release" means any release to the surface of the land or to surface water. This includes, but is not limited to, releases from the above ground portion of an underground storage tank system and releases associated

with overfills and transfer operations during regulated substance deliveries to or dispensing from an UST system.

B. "Above ground storage tank" or "AST" means a single tank or combination of manifolded tanks, including pipes connected thereto, that is 1,320 gallons or more, and less than 55,000 gallons, is permanently installed, and is used to contain petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure of 60 degrees Fahrenheit and fourteen and seven tenths pounds per square inch absolute, and the volume of which is more than ninety percent above the surface of the ground. Tanks in vaults and special enclosures are ASTs. A compartment tank with combined total capacity greater than 1,320 gallons and less than 55,000 gallons is an AST and for purposes of these regulations is considered to be one tank regardless of the number of compartments and the number of regulated substances contained. Above ground storage tank does not include (regardless of size) any:

- (1) farm, ranch or residential tank used for storing motor fuel or heating oil for noncommercial purposes;
- (2) pipeline facility, including gathering lines regulated under the federal Natural Gas Pipeline Safety Act of 1968 or the federal Hazardous Liquid Pipeline Safety Act of 1979, or that is an intrastate pipeline facility regulated under state laws comparable to either act;
- (3) surface impoundment, pit, pond or lagoon;
- (4) storm water or wastewater collection system;
- (5) flow-through process tank;
- (6) liquid trap, tank or associated gathering lines or other storage methods or devices related to oil, gas or mining exploration, production, transportation, refining, processing or storage, or the oil field service industry operations;
- (7) tank associated with an emergency generator system;
- (8) tanks, bulk terminals, or related pipelines and facilities owned or used by a refinery, natural gas processing plant or pipeline company in the regular course of their refining, processing or pipeline business; bulk plants are not included in the exemption;
- (9) multiple tanks at a facility, that are individually less than 1,320 gallons, unless tanks that are siphoned together have a cumulative total capacity greater than 1,320 gallons;
- (10) pipes connected to any tank exempted by Paragraphs (1) through (9) of this subsection.

C. "Accidental release" means any sudden or non-sudden release neither expected nor intended by the tank owner or operator of petroleum or other regulated substance from a storage tank that results in a need for corrective action or compensation for bodily injury or property damage.

D. "Ancillary equipment" means any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps associated with a storage tank.

E. "Applicable standards" means the most relevant target concentrations that legally apply to a site.

F. "AST system" means an above ground storage tank and its associated ancillary equipment and containment system, if any.

G. "Basin sump" means a liquid-tight collection container with no valves, joints or other penetrations.

H. "Below ground release" means any release to the subsurface of the land or to groundwater. This includes, but is not limited to, releases from the below ground portions of a storage tank system and releases associated with overfills and transfer operations as the regulated substance is delivered to or dispensed from a storage tank.

I. "Beneath the surface of the ground" means beneath the ground surface or otherwise covered with materials so that physical inspection is precluded.

J. "Bodily injury" shall have the meaning given to this term by applicable state law; however, this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for bodily injury.

K. "Bulk plant" means a facility which is not a bulk terminal, and which is used for the temporary storage of petroleum products prior to delivery to gasoline stations, convenience stores, and commercial accounts, which is smaller than a bulk terminal and is not equipped with any processing equipment.

L. "Bulk terminal" means a large facility for storing and handling petroleum products that receives and stores bulk deliveries of gasoline and other products from a pipeline, barges, or directly from a nearby refinery. Equipment at the terminal facility is usually capable of further processing the product, including but not limited to: injection of additives or conversion of gasoline vapors received from transports after making deliveries using stage one vapor recovery back to liquid form.

M. "Bureau" means the New Mexico petroleum storage tank bureau.

N. "Cathodic protection" is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. A tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

O. "Certified installer" refers generally to both AST and UST certified installers.

P. "Certified installer-AST" means an individual who has been certified by the department after August 15, 2003 under 20.5.14 NMAC to install, replace, repair and modify AST systems in this state.

Q. "Certified installer-UST" means an individual who has been certified by the department after August 15, 2003 under 20.5.14 NMAC to install, replace, repair, and modify UST systems in this state.

R. "Certified operator" means a class A, B, or C operator trained and certified according to the requirements of 20.5.18 NMAC.

S. "Change in service" means removing a regulated substance from a storage tank system and placing something in the system that is not a regulated substance.

T. "Chief financial officer," in the case of local government owners and operators, means the individual with the overall authority and responsibility for the collection, disbursement, and use of funds by the local government.

U. "Community water system" means a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

V. "Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for extended periods of time and under varied environmental conditions (i.e., at different temperatures).

W. "Connected piping" means all above ground and underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual storage tank system, the piping which joins the two storage tank systems should be allocated equally between them.

X. "Consumptive use" with respect to heating oil means the oil is burned on the premises.

Y. "Contain" means the stopping of further migration of a regulated substance from a release into or through groundwater, surface water or soil.

Z. "Containment" means that contamination from a release has been contained and is not spreading, migrating, spilling, infiltrating or otherwise traveling into uncontaminated areas. Verification of containment requires the performance of physical measurements that provide positive proof that contamination is contained.

AA. "Containment sump" means a liquid-tight collection container, which may have valves, joints or penetrations, such as piping penetrations.

AB. "Contaminant" means any regulated substance as defined in this section, any constituent of a regulated substance, or any combination of a regulated substance or constituent thereof with any other substance or matter.

AC. "Contaminant of concern" means any contaminant which is suspected of being released at the site based on site history for which:

(1) the New Mexico water quality control commission has adopted standards pursuant to the Water Quality Act, Sections 74-6-1- through 74-6-17 NMSA 1978;

(2) the New Mexico environmental improvement board has adopted standards, action levels, risk-based screening levels or site specific target levels pursuant to the Hazardous Waste Act, the Ground Water Protection Act, or the Environmental Improvement Act; or

(3) the New Mexico environment department has established or approved site-specific target levels pursuant to the Hazardous Waste Act, the Ground Water Protection Act, or the Environmental Improvement Act.

AD. "Contaminant saturated soil" means soil exclusive of the water table and capillary fringe in which non-aqueous phase liquid is observable in the soil or, if sufficiently liquid, drains from the soil when the soil is suspended on filter paper or its equivalent.

AE. "Contaminated soil" means soil containing detectable quantities of contaminants of concern.

AF. "Contracting company" means a corporation, partnership, or duly constituted individual proprietorship which contracts to install or repair storage tank systems for third parties.

AG. "Controlling interest" means direct ownership or other legal control of at least fifty percent of the voting stock of another entity.

AH. "Corrective action" means an action taken to investigate, minimize, eliminate, or clean up a release to protect the public health, safety, and welfare or the environment.

AI. "Corrective action fund" or "fund" means the fund created pursuant to the Ground Water Protection Act, Section 74-6B-7 NMSA 1978, to pay or reimburse for corrective action performed pursuant to 20.5 NMAC and the Ground Water Protection Act.

AJ. "Corrosion expert" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the national association of corrosion engineers international (NACE). A corrosion expert shall only perform the specific activities required by these rules for which he is qualified, certified, registered or licensed; for example, a NACE licensed cathodic protection tester shall not design a cathodic protection system unless he is also a NACE licensed cathodic protection technologist, specialist or has another equivalent qualification, certification, registration or license.

AK. "Corrosion prevention plan" means a plan approved in writing by a corrosion expert for a UST or AST or associated piping, or secondary containment, which plan is designed to maintain the integrity of the tank or piping for its useful life.

AL. "Critical junctures" means the steps of an installation, replacement, modification, repair or removal of a tank system or any part of a tank system, which are important to the prevention of releases and which are more specifically described in 20.5.5 and 20.5.8 NMAC.

AM. "Deductible" means the first ten thousand dollars (\$10,000) of minimum site assessment costs, or any lesser amount determined in accordance with 20.5.17.20 NMAC.

AN. "Department" means the New Mexico environment department, also known as the New Mexico department of environment.

AO. "Dielectric material" means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate storage tank systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of storage tank systems, such as tank from piping.

AP. "Director" means the director of the environmental protection division of the department.

AQ. "Direct responsible supervisory control" means responsibility for the direction, control, or supervision of investigation and remediation activities to assure that the work is performed in accordance with appropriate industry and regulatory quality standards.

AR. "Effectively mitigating" means that the approach taken to corrective action has contained the release and is achieving reductions in contamination levels such that the standards described in 20.5.12 and 20.5.13 NMAC will be met in a manner protective of public health, safety and welfare and the environment, within the period of time specified in the plan for remediation by monitored natural attenuation or otherwise.

AS. "EIB" means the environmental improvement board.

AT. "EIB standards" means standards set forth in 20.5.12, 20.5.13 and 20.7.10 NMAC.

AU. "Electrical equipment" means equipment which contains dielectric fluid which is necessary for the operation of equipment such as transformers and buried electrical cable.

AV. "Emergency repair" means a repair required by immediate danger of a release, or by an immediate threat to public health, safety and welfare, or to the environment.

AW. "Environmental improvement board" (EIB) means the board created in the Environmental Improvement Act, Sections 74-1-1 through 74-1-16 NMSA 1978.

AX. "Environmental Improvement Act" means the Environmental Improvement Act, Sections 74-1-1 through 74-1-16 NMSA 1978.

AY. "Excavation zone" means the area containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.

AZ. "Existing AST system" means an AST system which is used to contain an accumulation of regulated substances or for which installation commenced on or before June 14, 2002. Installation will be considered to have commenced if the owner or operator has obtained all federal, state and local approvals or permits necessary to begin physical construction at the site or installation of the tank system, and if either:

- (1) a continuous on-site physical construction or installation program has begun, or
- (2) the owner or operator has entered into contractual obligations, which cannot be canceled or modified without substantial loss, for physical construction at the site or installation of the tank system to be completed within a reasonable time.

BA. "Existing UST system" means a UST system which is used to contain an accumulation of regulated substances or for which installation has commenced on or before December 22, 1988. Installation will be considered to have commenced if the owner or operator has obtained all federal, state and local approvals or permits necessary to begin physical construction of the site or installation of the tank system, and if either:

- (1) a continuous on-site physical construction or installation program has begun, or
- (2) the owner or operator has entered into contractual obligations, which cannot be canceled or modified without substantial loss, for physical construction at the site or installation of the tank system to be completed within a reasonable time.

BB. "Exposed petroleum products" means petroleum that is present in the non-aqueous phase (i.e. not dissolved in water) on the surface of the ground, on surface water, or in any surface or subsurface structures such as utility corridors, basements and manholes.

BC. "Exposed hazardous substance" means a regulated substance other than petroleum that is present on the surface of the ground, on surface water, or in any surface or subsurface structures such as utility corridors, basements or manholes.

BD. "Facility" means a property location that contains storage tanks.

BE. "Farm tank" is a tank located on a tract of land devoted to the production of crops, or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. "Farm" includes fish hatcheries, range land and nurseries with growing operations.

BF. "Financial reporting year" means the latest consecutive twelve-month period for which any of the following reports used to support a financial test is prepared:

- (1) a 10-K report submitted to the SEC;
- (2) an annual report of tangible net worth submitted to Dun and Bradstreet; or
- (3) annual reports submitted to the energy information administration or the rural electrification administration; "financial reporting year" may thus comprise a fiscal or a calendar year period.

BG. "Flow-through process tank" is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

BH. "Functionality test" means a test for automatic line leak detectors which determines whether they are operating correctly.

BI. "Fund" means the corrective action fund which was created pursuant to Section 74-6B-7 NMSA 1978, to pay or reimburse for corrective action required at leaking storage tank sites.

BJ. "Gathering lines" means any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.

BK. "Ground Water Protection Act" means the Ground Water Protection Act, Sections 74-6B-1 through 74-6B-14 NMSA 1978.

BL. "Guidelines for corrective action" means any written guidance developed by the New Mexico petroleum storage tank bureau, approved by the secretary for use and distribution to the public, and pertaining to the technical or financial requirements in 20.5.7, 20.5.12, 20.5.13 and 20.5.15 through 20.5.17 NMAC.

BM. "Hazardous substance UST system" or "hazardous substance UST" means an underground storage tank system that contains an accumulation of hazardous substances defined in Section 101(14) of the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) but not including any substance regulated as a hazardous waste under Subtitle C of the federal Resource Conservation and Recovery Act (RCRA). Hazardous substance UST includes a tank with a mixture of such substances and petroleum, but which is not a petroleum UST system.

BN. "Hazardous Waste Act" means the Hazardous Waste Act, Sections 74-4-1 through 74-4-14 NMSA 1978.

BO. "Heating oil" refers to a type of fuel oil that is one of eight technical grades. These grades are: No. 1; No. 2; No. 4--light; No. 4--heavy; No. 5-light; No. 5-heavy; No. 6; and residual. Heating oil also refers to fuel oil substitutes such as kerosene or diesel when used for heating purposes.

BP. "Hydraulic lift tank" means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.

BQ. "Incurred" means billed to the owner or operator.

BR. "Initiation of containment" means the point in time at which a system designed to achieve containment is put into continuous operation.

BS. "Install" or "installation" means the work involved in placing a storage tank system or any part thereof in, on or above the ground and preparing it to be placed in service.

BT. "Integrity test" means an evaluation process that has been independently tested and approved by a nationally recognized association or independent testing laboratory to determine, in the case of a UST, the suitability of the tank for continuous containment of a regulated substance, or, in the case of an AST, both the suitability of the tank for continuous containment of a regulated substance and the necessary hydraulic properties of the tank to contain the outward pressure of the regulated substance.

BU. "Internal inspection" means a formal inspection of an AST by an inspector authorized by the American petroleum institute or certified by the steel tank institute. The inspection shall determine whether the AST tank bottom or shell is severely corroded and leaking, and shall include an evaluation of the tank bottom and shell thickness to see whether they meet minimum thickness requirements. The inspector shall visually examine all tanks included in the inspection and, if applicable, check for tank bottom settlement.

BV. "Interstitial monitoring" is a leak detection method which surveys the space between a storage tank system's walls and the secondary containment system for a change in steady state conditions.

BW. "Inventory controls" are techniques used to identify a loss of product that are based on volumetric measurements in the tank and reconciliation of those measurements with product delivery and withdrawal records.

BX. "Landfarming" is the remediation of petroleum contaminated soils on or at ground surface using natural aeration and volatilization, disking and natural and enhanced bioremediation to reduce the concentrations of petroleum hydrocarbons to regulatory levels; requires a groundwater discharge permit.

BY. "Legal defense cost" is any expense that an owner or operator or provider of financial assurance incurs in defending against claims or actions brought:

- (1) by EPA or a state to require corrective action or to recover the costs of corrective action;
- (2) by or on behalf of a third party for bodily injury or property damage caused by an accidental release; or
- (3) by any person to enforce the terms of a financial assurance mechanism.

BZ. "Liquid" means any material that has a fluidity greater than that of 300 penetration asphalt when tested in accordance with ASTM D 5, test for penetration for bituminous materials. When not otherwise identified, the term liquid shall mean both flammable and combustible liquids.

CA. "Liquid trap" means sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. Such liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.

CB. "Loading rack" means the area around and including loading arms, pumps, meters, shutoff valves, relief valves, and other equipment used to load and unload fuel cargo tanks, trucks, tank trucks, railroad cars, cars, other distribution containers or other transport vehicles, if the loading rack services or is attached to one or more storage tank(s) regulated in 20.5 NMAC.

CC. "Local government" shall have the meaning given this term by applicable state law. The term is

generally intended to include counties, municipalities, school districts, and special districts, including flood control and conservancy districts.

CD. "Lower explosive limit" means the lowest percentage of a substance in an airspace that is explosive.

CE. "LST ranking system" means the leaking storage tank ranking system, the ranking or site prioritization system developed for and modified by the department using the analytical hierarchy process to rank sites where a release from a storage tank has occurred based upon public health, safety and welfare and environmental concerns.

CF. "Magnitude of contamination" means the maximum concentrations of contaminants of concern that resulted from a release.

CG. "Minimum site assessment" or "MSA" means the sum total of all of the following activities:

- (1) reporting, investigating and confirming a release pursuant to 20.5.7 NMAC; and
- (2) determining the on-site extent, magnitude and impact of contamination by conducting investigations and reporting to the department pursuant to 20.5.12.11 NMAC or 20.5.13.10 NMAC (initial abatement), 20.5.12.12 NMAC or 20.5.13.11 NMAC (report on initial abatement), 20.5.12.16 NMAC or 20.5.13.15 NMAC (preliminary investigation), and 20.5.12.18 NMAC or 20.5.13.17 NMAC (report on the preliminary investigation).

CH. "Mobile AST" means an above ground storage tank that is not field-erected, and which is capable of changes in location.

CI. "Modification" means any change to any portion of a storage tank system that is not a repair. For purposes of 20.5.14 NMAC, the term does not include the process of relining a tank through the application of such materials as epoxy resins.

CJ. "Monitored natural attenuation" means a methodology for remediation that relies upon a variety of naturally occurring chemical, physical and biological processes to achieve target concentrations in a manner that is equally as protective of public health, safety and welfare, and the environment as other methods, and that is accompanied by a program of monitoring to document the progress and results of the above mentioned processes.

CK. "Monthly" means once per month, not to exceed 35 days.

CL. "Motor fuel" is a petroleum-based fuel used in the operation of an engine that propels a vehicle for transportation of people or cargo.

CM. "Motor fuel dispenser system" means a motor fuel dispenser and the equipment necessary to connect the dispenser to a storage tank system. The equipment necessary to connect the motor fuel dispenser to the storage tank may include check valves, shear valves, unburied risers of flexible connectors, or other transitional components that are beneath the dispenser and connect the dispenser to the piping.

CN. "NAPL" means non-aqueous phase liquid as defined in this section.

CO. "New AST system" means an AST system for which installation has commenced after June 14, 2002. Installation will be considered to have commenced if the owner or operator has obtained all federal, state and local approvals or permits necessary to begin physical construction at the site or installation of the tank, and if either (1) a continuous on-site physical construction or installation program has begun, or (2) the owner or operator has entered into contractual obligations which cannot be canceled or modified without substantial loss for physical construction at the site or installation of the tank system to be completed within a reasonable time.

CP. "New storage tank system" means a new AST system or a new UST system.

CQ. "New UST tank system" means an UST system for which installation has commenced after December 22, 1988. Installation will be considered to have commenced if the owner or operator has obtained all federal, state and local approvals, or permits necessary to begin physical construction at the site or installation of the tank, and if either:

- (1) a continuous on-site physical construction or installation program has begun, or
- (2) the owner or operator has entered into contractual obligations which cannot be canceled or modified without substantial loss for physical construction at the site or installation of the tank system to be completed within a reasonable time.

CR. "Non-aqueous phase liquid" (NAPL) means an interstitial body of liquid oil, petroleum product or organic solvent or other organic substance, including an emulsion containing such material; in the case of liquid oil or a petroleum product, the term is synonymous with "phase separated hydrocarbon" and "free product."

CS. "Non-commercial purposes" with respect to motor fuel means not for resale.

CT. "Non-community water system" means a public water system that is not a community water system.

CU. "Normal maintenance" means an activity involving work on a storage tank system that is not a repair, replacement, or installation, which may include but is not limited to: painting, replacing fuses, or touchup. Any time an activity involves disconnecting or affecting the integrity of the piping, tank, spill or overfill systems, or work on line or tank leak detection systems, then the activity is not normal maintenance but is instead a repair.

CV. "Occurrence" means an accident, including continuous or repeated exposure to conditions, which results in a release from a storage tank. This definition is intended to assist in the understanding of 20.5.9 NMAC and is not intended either to limit the meaning of "occurrence" in a way that conflicts with standard insurance usage or to prevent the use of other standard insurance terms in place of "occurrence."

CW. "On the premises where stored" with respect to heating oil means storage tank systems located on the same property where the stored heating oil is used.

CX. "Operational life" is the period beginning from the time when the installation of the tank system is

commenced until it is properly closed pursuant to 20.5.8 NMAC.

CY. "Operator" means any person in control of, or having responsibility for, the daily operation of a storage tank system.

CZ. "Overfill release" is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.

DA. "Owner" means, in the case of a storage tank in use on November 8, 1984 or brought into use after that date, any person who owns a storage tank used for storage, use, or dispensing of regulated substances; and in the case of a storage tank in use before November 8, 1984 but no longer in use after that date, any person who owned such tank immediately before the discontinuation of its use. For purposes of the registration requirements of 20.5.2 NMAC only, the term "owner" excludes any person who:

- (1) had a UST taken out of operation on or before January 1, 1974;
- (2) had a UST taken out of operation after January 1, 1974 and removed from the ground prior to November 8, 1984; or
- (3) had an AST taken out of operation on or before July 1, 2001.

DB. "Permanently installed AST" means an AST that is on site for more than 365 consecutive days and dispensing or storing a regulated substance for distribution at any time during that period.

DC. "Person" means any individual, trust, firm, joint stock company, federal agency, corporation including a government corporation, partnership, association, state, municipality, commission, political subdivision of a state, or any interstate body. "Person" includes a consortium, a joint venture, a commercial entity, and the United States Government.

DD. "Petroleum" means crude oil, crude oil fractions, and refined petroleum fractions, including gasoline, kerosene, heating oils, and diesel fuels.

DE. "Petroleum marketing facilities" include all facilities at which petroleum is produced or refined and all facilities from which petroleum is sold or transferred to other petroleum marketers or to the public.

DF. "Petroleum marketing firms" are all firms owning petroleum marketing facilities. Firms owning other types of facilities with storage tank systems as well as petroleum marketing facilities are considered to be petroleum marketing firms.

DG. "Petroleum tank system," "petroleum storage tank" or "petroleum UST" means a storage tank system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

DH. "Pipeline facilities, including gathering lines," are new and existing pipe rights-of-way and any equipment, facilities, or buildings regulated under the federal Natural Gas Pipeline Safety Act of 1968, 49 U.S.C. App. 1671, et seq., or the federal Hazardous Liquid Pipeline Safety Act of 1979, 49 U.S.C. App. 2001, et seq., or which is an intrastate pipeline facility regulated under state laws comparable to either act.

DI. "Piping" means the hollow cylinder or the tubular conduit constructed of non-earthen materials that routinely contains and conveys regulated substances within a storage tank system. Such piping includes any elbows, couplings, unions, valves, or other in-line fixtures that contain and convey regulated substances from the storage tank to the dispenser or other end-use equipment.

DJ. "Positive sampling, testing or monitoring results" refers to the results of sampling, testing or monitoring using a method described in 20.5.6 NMAC that indicate a release from a storage tank system has occurred.

DK. "Potable drinking water well" means any hole (dug, driven, drilled, or bored) that extends into the earth until it meets groundwater which may supply water for a community water system, a non-community public water system, or otherwise may supply water for human consumption (consisting of drinking, bathing, cooking, or other similar uses). Such wells may provide water to entities such as a single-family residence, group of residences, businesses, schools, parks, campgrounds, and other permanent or seasonal communities.

DL. "Potentially explosive levels of petroleum hydrocarbon vapors" means vapors which register in excess of twenty percent LEL (lower explosive limit) on a combustible gas indicator properly calibrated for pentane.

DM. "Potentially harmful petroleum hydrocarbon vapors" means vapors which register a reading of five whole units above ambient concentrations total aromatic hydrocarbons in any structure in the vicinity of the release site, on a photoionization detector, flame ionization detector or an equivalent device properly calibrated to detect hydrocarbon vapors at a minimum detection limit of at least one ppm.

DN. "Professional engineer" is an individual licensed in New Mexico to engage in the practice of engineering under the New Mexico Engineering and Surveying Practices Act, Sections 61-23-1 through 61-23-32 NMSA 1978.

DO. "Project drawings" means schematic drawings of tanks, piping, and ancillary equipment, which need not be prepared, stamped or signed by a professional engineer.

DP. "Property damage" shall have the meaning given this term by applicable state law. This term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for property damage. However, such exclusions for property damage shall not include corrective action associated with releases from tanks which are covered by the policy.

DQ. "Provider of financial assurance" means an entity that provides financial assurance to an owner or operator of a storage tank system through one of the mechanisms listed in 20.5.9.905 through 20.5.9.916 NMAC, including a guarantor, insurer, risk retention group, surety, issuer of a letter of credit, issuer of a state-required mechanism, or a state.

DR. "Public water system" means a system for the provision to the public of piped water for human consumption (consisting of drinking, bathing, cooking, or other similar uses) if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Such term includes any collection, treatment, storage, and distribution facilities under the control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system is either a "community water system" or a "non-community water system."

DS. "Qualified firm" means a person, as defined in this section, qualified by the department under 20.5.16 NMAC to undertake corrective action.

DT. "RBSL" means risk-based screening level as used in 20.5.12 NMAC.

DU. "Receptor" means a person, plant or animal community, structure, utility, surface water, designated wellhead or source water protection area or water supply well that is or may be adversely affected by a release.

DV. "Regulated substance" means:

(1) for USTs: any substance defined in Section 101(14) of the federal Comprehensive Environmental Response, Compensation and Liability Act, but not including any substance regulated as a hazardous waste under Subtitle C of the federal Resource Conservation and Recovery Act, as amended; and

(2) for ASTs and USTs: petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure of 60 degrees fahrenheit and fourteen and seven tenths pounds per square inch absolute; asphalt is not a regulated substance; the term "regulated substance" includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading and finishing, such as motor fuels (including ethanol-based motor fuels), jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

DW. "Release" means any spilling, leaking, emitting, discharging, escaping, leaching or disposing of a regulated substance from a storage tank system into groundwater, surface water or soil.

DX. "Release detection" means determining whether a release of a regulated substance has occurred from a storage tank system into the environment or into the interstitial area between a storage tank system and a secondary barrier around it.

DY. "Remediation" is the process of reducing the concentration of contaminants in air, water or soil to a level that poses an acceptable risk to public health, safety and welfare and the environment.

DZ. "Repair" means to restore any defective or damaged part of a storage tank system. Repair does not include normal maintenance. For these purposes, normal maintenance shall include but is not limited to: painting, replacing fuses, or touchup. Any time an activity involves disconnecting or affecting the integrity of the piping, tank, spill or overfill systems, or work on line or tank leak detection systems, then the activity is not normal maintenance and is a repair.

EA. "Replace" means:

(1) for a storage tank or dispenser, to remove an existing tank or dispenser and install a new tank or dispenser; and

(2) for piping, to remove and put back in any amount of piping connected to a single tank that is installed after April 4, 2008 or to a single tank that is replaced after April 4, 2008; replacing piping also means removing five or more feet of piping and installing new piping within 30 days.

EB. "Residential tank" is a tank located on property used primarily for dwelling purposes.

EC. "Responsible party-lead site" means a site where the owner or operator takes corrective action and applies to the fund for payment of corrective action costs, as distinct from a site where the state takes corrective action.

ED. "Return to service" means to bring a storage tank into operation after the tank has been in temporary or permanent closure.

EE. "Risk-based screening level" (RBSL) means an action level or target level for a contaminant of concern determined using default criteria set by the department and site specific data for thickness of the contaminated zone and depth to groundwater in the tier one evaluation in accordance with 20.5.12 NMAC and the bureau's guidelines for corrective action.

EF. "Rural and remote area" means that a storage tank facility is located in an area that is more than 20 miles from another facility that sells fuel to the public and that is open year round.

EG. "Secondary containment" means a release prevention and release detection system for a storage tank its piping and associated ancillary equipment that is designed to prevent a release from migrating beyond the secondary containment system outer wall (in the case of a double-walled tank system) or excavation area (in the case of a liner or vault system) before the release can be detected. Such a system may include, but is not limited to, synthetic impervious liners.

EH. "Secretary" means the secretary of the New Mexico environment department also known as the secretary of the environment.

EI. "Septic tank" is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed for disposal through the soil and settled solids and scum from the tank are pumped out periodically and hauled to a treatment facility.

EJ. "Site" means a place where there is or was at a previous time one or more storage tanks and may include areas contiguous to the actual location or previous location of the tanks.

EK. "Site conceptual exposure scenario" means a qualitative evaluation of exposure information for a site that identifies the relevant contaminant source, release mechanisms, media of concern, complete and incomplete exposure pathways, and receptors.

EL. "Site-specific target level" (SSTL) means an action level or target level for a contaminant of concern determined using more site-specific data than the tier one evaluation in the tier two or tier three evaluations in 20.5.12 NMAC.

EM. "Source water" means water that could be used for domestic purposes, including but not limited to ground water, natural springs, and surface water, even if such water is not current being used for domestic purposes.

EN. "Special enclosure" means an above or below grade AST installation that surrounds an AST or ASTs, including but not limited to pits, cellars, and basements.

EO. "Spill" means:

- (1) any spill or overfill of a regulated substance that exceeds its reportable quantity under CERCLA (40 CFR 302);
- (2) any spill or overfill of petroleum that exceeds 25 gallons or causes a sheen on surface water or reaches groundwater; or
- (3) any spill or overfill of petroleum of 25 gallons or less the clean up of which cannot be accomplished within 24 hours.

EP. "SSTL" means site-specific target level as used in 20.5.12 NMAC.

EQ. "State-lead site" means a site where the department takes corrective action using the fund because the owners and operators are unknown, unable or unwilling to take corrective action as described in 20.5.15.10 NMAC or because the department determines that a single entity is necessary to lead the corrective action.

ER. "Storage tank" means any above ground storage tank or underground storage tank.

ES. "Storage tank fee" means fees required by Section 74-4-4.4 NMSA 1978 and Section 74-6B-9 NMSA 1978.

ET. "Storage tank system" means a storage tank and its associated ancillary equipment and containment system, if any.

EU. "Stormwater or wastewater collection system" means piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off resulting from precipitation or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur.

EV. "Substantial business relationship" means the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from and depends on existing economic transactions between the guarantor and the owner or operator.

EW. "Substantial governmental relationship" means the extent of a governmental relationship necessary under applicable state law to make an added guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from a clear commonality of interest in the event of a storage tank release such as coterminous boundaries, overlapping constituencies, common ground-water aquifer, or other relationship other than monetary compensation that provides a motivation for the guarantor to provide a guarantee.

EX. "Sump" means any pit or reservoir that meets the definition of tank (including troughs or trenches connected to it that serves to temporarily collect regulated substances.

EY. "Surface impoundment" is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials) that is designed to hold an accumulation of regulated substances and that is not an injection well.

EZ. "Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets do not include intangibles such as goodwill and rights to patents or royalties. For purposes of this definition, "assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity as a result of past transactions.

FA. "Tank" is a stationary device designed to contain an accumulation of regulated substances which is constructed of non-earthen materials (e.g., concrete, steel, plastic) that provide structural support.

FB. "Target concentrations" means any concentration of a contaminant to which a medium is required to be remediated under any provision of 20.5 NMAC protective of human health, safety and welfare, and the environment. For purposes of 20.5.13 NMAC, target concentrations as they apply to soil contamination shall be based on standards prescribed by applicable law or, if there are no applicable standards, the standard set forth in 20.6.3.110 NMAC.

FC. "Termination" under Subsections A and B of 20.5.9.957 NMAC means only those changes that could result in a gap in coverage as where the insured has not obtained substitute coverage or has obtained substitute coverage with a different retroactive date than the retroactive date of the original policy.

FD. "Tightness testing" means a procedure for testing the ability of a tank system to prevent an inadvertent release of any stored substance into the environment (or, in the case of an UST system, intrusion of groundwater into a tank system).

FE. "Underground area" means an underground room, such as a basement, cellar, shaft or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.

FF. "Underground release" means any below ground release.

FG. "Underground storage tank" or "UST" means a single tank or combination of tanks, including pipes connected thereto, that are used to contain an accumulation of regulated substances and the volume of which, including the volume of the underground pipes connected thereto, is ten percent or more beneath the surface of the ground. A compartment tank with combined total capacity greater than 110 gallons is a UST and for purposes of these regulations is considered to be one tank regardless of the number of compartments and the number of regulated substances contained. The term does not include any:

- (1) farm, ranch or residential tank of 1,100 gallons or less capacity used for storing motor fuel or heating oil for noncommercial purposes;
- (2) septic tank;
- (3) pipeline facility, including gathering lines which are regulated under the federal Natural Gas Pipeline Safety Act of 1968, 49 U.S.C. App. 1671, et seq., or the federal Hazardous Liquid Pipeline Safety Act of 1979, 49 U.S.C. App. 2001, et seq., or which is an intrastate pipeline facility regulated under state laws comparable to either act;
- (4) surface impoundment, pit, pond or lagoon;
- (5) storm water or wastewater collection system;
- (6) flow-through process tank;
- (7) liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
- (8) storage tank situated in an underground area, such as a basement, cellar, mineworking drift, shaft or tunnel, if the storage tank is situated upon or above the surface of the undesignated floor;
- (9) tank associated with an emergency generator system;
- (10) tank exempted by rule of the EIB after finding that the type of tank is adequately regulated under another federal or state law; or
- (11) pipes connected to any tank exempted by Paragraphs (1) through (10) of this subsection.

FH. "Un-manned facility" means a storage tank system without a sales office, store or other business establishment associated with it. Examples of un-manned facilities include but are not limited to: a card-lock fueling station with no attendant and a tank serving an emergency generator at a utility transfer station.

FI. "Unsaturated zone" is the subsurface zone containing water under pressure less than that of the atmosphere, including water held by capillary forces within the soil and containing air or gases generally under atmospheric pressure. This zone is limited above by the ground surface and below by the upper surface of the zone of saturation (i.e., the water table).

FJ. "USTR" means the version of the environmental improvement board's underground storage tank regulations in effect prior to adoption of the standard format in the New Mexico Administrative Code in 1995.

FK. "UST system" means an underground storage tank and its associated ancillary equipment and containment system, if any.

FL. "Vault" means a liquid-tight structure that completely surrounds a tank, that is above, below or partially above or below the ground surface.

FM. "Wastewater treatment tank" means a tank that is part of a wastewater treatment facility regulated under either Section 402 or 307(b) of the federal Clean Water Act and which receives and treats or stores an influent wastewater which contains regulated substances.

FN. "WQCC" means the New Mexico water quality control commission.

FO. "WQCC standards" means standards set forth in 20.6.4 NMAC, standards for interstate and intrastate streams, and 20.6.2 NMAC, ground and surface water protection.
[20.5.1.7 NMAC - Rp, 20.5.1.7 NMAC, 6/15/2009]

20.5.1.8 SAVINGS CLAUSE: This rule shall not affect any administrative or judicial enforcement action pending on the effective date of 20.5.1 through 20.5.16 NMAC.

[20.5.1.8 NMAC - Rp, 20.5.1.8 NMAC, 6/15/2009]

20.5.1.9 COMPLIANCE WITH OTHER REGULATIONS: Compliance with 20.5 NMAC does not relieve a person of the obligation to comply with other applicable state and federal regulations.

[20.5.1.9 NMAC - Rp, 20.5.1.9 NMAC, 6/15/2009]

20.5.1.10 CONSTRUCTION: The petroleum storage tank regulations, 20.5 NMAC, shall be liberally construed to effectuate the purposes of the Hazardous Waste Act and the Ground Water Protection Act.

[20.5.1.10 NMAC - Rp, 20.5.1.10 NMAC, 6/15/2009]

20.5.1.11 SEVERABILITY: If any part, section or application of 20.5 NMAC is held invalid, the remainder, or its application to other situations or persons, shall not be affected.

[20.5.1.11 NMAC - Rp, 20.5.1.11 NMAC, 6/15/2009]

HISTORY OF 20.5.1 NMAC:

Pre-NMAC History: The material in this part was derived from that previously filed with the commission of public records

- state records center and archives:

EIB/USTR-1, Underground Storage Tank Regulations - Part I - General Provisions, filed 3/15/88;

EIB/USTR-1, Underground Storage Tank Regulations - Part I - General Provisions, filed 9/12/88;

EIB/USTR-1, Underground Storage Tank Regulations - Part I - General Provisions, filed 2/14/89;

EIB/USTR-1, Underground Storage Tank Regulations - Part I - General Provisions, filed 8/4/89;

EIB/USTR 11, Underground Storage Tank Regulations - Part XI - Miscellaneous, filed 9/12/88.

History of Repealed Material:

20 NMAC 5.1, Underground Storage Tanks - General Provisions (filed 10/6/95), repealed 2/2/00;

20.5.1 NMAC, Petroleum Storage Tank Regulations - General Provisions (filed 12/30/99), repealed 6/14/02;

20.5.1 NMAC, Petroleum Storage Tank Regulations - General Provisions, (filed 4/30/02), repealed 8/15/03.

20.5.1 NMAC, Petroleum Storage Tanks - General Provisions, (filed 7/16/03), repealed 4/4/08.

20.5.1 NMAC, Petroleum Storage Tanks - General Provisions, (filed 3/5/08), repealed 6/15/09.

Other History:

EIB/USTR-1, Underground Storage Tank Regulations - Part I - General Provisions, filed 8/4/89 and EIB/USTR 11, Underground Storage Tank Regulations - Part XI - Miscellaneous (filed 9/12/88) both renumbered, reformatted and replaced by 20 NMAC 5.1, Underground Storage Tanks - General Provisions, effective 11/5/95;

20 NMAC 5.1, Underground Storage Tanks - General Provisions (filed 10/6/95), was replaced by 20 NMAC 5.1, Underground Storage Tanks - General Provisions, effective 2/2/00;

20 NMAC 5.1, Underground Storage Tanks - General Provisions (filed 12/30/99), was replaced by 20.5.1 NMAC, Petroleum Storage Tanks - General Provisions, effective 6/14/02

20.5.1 NMAC, Petroleum Storage Tanks - General Provisions (filed 4/30/02), was replaced by 20.5.1 NMAC, Petroleum Storage Tanks - General Provisions, effective 8/15/03.

20.5.1 NMAC, Petroleum Storage Tanks - General Provisions (filed 7/16/03), replaced by 20.5.1 NMAC, Petroleum Storage Tanks - General Provisions, effective 4/4/08.

20.5.1 NMAC, Petroleum Storage Tanks - General Provisions (filed 3/5/08), replaced by 20.5.1 NMAC, Petroleum Storage Tanks - General Provisions, effective 6/15/09.

TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 5 PETROLEUM STORAGE TANKS
PART 5 GENERAL OPERATING REQUIREMENTS

20.5.5.1 ISSUING AGENCY: New Mexico Environmental Improvement Board.
 [20.5.5.1 NMAC - Rp, 20.5.5.1 NMAC, 04/04/2008]

→ **20.5.5.2 SCOPE:** This part applies to owners and operators of storage tanks as provided in 20.5.1 NMAC. If the owner and operator of a storage tank are separate persons, only one person is required to comply with the requirements of this part, including any notice and reporting requirements; however, both parties are liable in the event of noncompliance.
 [20.5.5.2 NMAC - Rp, 20.5.5.2 NMAC, 04/04/2008]

20.5.5.3 STATUTORY AUTHORITY: This part is promulgated pursuant to the provisions of the Hazardous Waste Act, NMSA 1978, Sections 74-4-1 through 74-4-14, and the general provisions of the Environmental Improvement Act, NMSA 1978, Sections 74-1-1 through 74-1-16.
 [20.5.5.3 NMAC - Rp, 20.5.5.3 NMAC, 04/04/2008]

20.5.5.4 DURATION: Permanent.
 [20.5.5.4 NMAC - Rp, 20.5.5.4 NMAC, 04/04/2008]

20.5.5.5 EFFECTIVE DATE: April 4, 2008, unless a later date is indicated in the bracketed history note at the end of a section.
 [20.5.5.5 NMAC - Rp, 20.5.5.5 NMAC, 04/04/2008]

20.5.5.6 OBJECTIVE: The purpose of 20.5.5 NMAC is to ensure that the operation and maintenance of storage tanks will prevent releases and to protect the public health, safety and welfare and the environment of the state.
 [20.5.5.6 NMAC - Rp, 20.5.5.6 NMAC, 04/04/2008]

20.5.5.7 DEFINITIONS: The definitions in 20.5.1 NMAC apply to this part.
 [20.5.5.7 NMAC - Rp, 20.5.5.7 NMAC, 04/04/2008]

20.5.5.8 OPERATION AND MAINTENANCE OF STORAGE TANK SYSTEMS: Owners and operators shall properly maintain all tanks, piping, secondary containment and other associated equipment required in 20.5.4 NMAC, and shall ensure that all tanks, piping, secondary containment and other associated equipment for all storage tank systems are fully operational at all times.

A. Owners and operators shall visually inspect monthly an AST and all its components that are readily accessible to visual inspection.

B. Owners and operators shall maintain the exterior coating of an AST and ancillary equipment not in contact with soil in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

- (1) society of protective coatings SSPC-PA 1, "*shop, field, and maintenance painting of steel*;"
- (2) society of protective coatings, "*the inspection of coatings and linings: a handbook of basic practice for inspectors, owners and specifiers*;"
- (3) society of protective coatings SSPC-PA Guide 4, "*guide to maintenance repainting with oil base or alkyd painting systems*;" or
- (4) society of protective coatings SSPC-PA Guide 5, "*guide to maintenance coating of steel structures in atmospheric service*."

C. Owners and operators shall mark fill port lids of ASTs and USTs in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement: American petroleum institute RP1637, "*using the API color-symbol system to mark equipment and vehicles for product identification at service stations and distribution terminals*." Owners and operators shall clearly label the contents of all storage tanks.

D. If any steel piping installed in a trench is used in an AST or UST system, owners and operators shall visually inspect the trench monthly. Owners and operators shall draw off any water that has accumulated in the trench within one week of a rainfall event, and shall remove any other debris that has accumulated inside the trench. Owners and operators shall properly treat and dispose of any accumulated water with a visible sheen. If a basin sump is located in the trench, owners and operators shall keep the basin sump free of water and debris. Owners and operators shall not install any valves in any basin sump in a piping trench.

E. Owners and operators shall maintain all sumps (including, but not limited to: turbine sumps, STP and submersible pumps), and draw off water that has accumulated in the sumps within one week of a rainfall event, and shall remove any other debris that has accumulated inside the containment sumps. Owners and operators shall properly treat and

dispose of any accumulated water with a visible sheen. If gravity drain valves are used to remove water from the containment sumps, owners and operators shall keep all valves closed except during the process of draining water.

F. Owners and operators shall check ASTs monthly for the presence of water at the lowest possible point inside the tank, and remove any water found to the extent technically possible. Owners and operators shall properly dispose of any and all water removed from an AST.

[20.5.5.8 NMAC - Rp, 20.5.5.400 NMAC, 04/04/2008]

20.5.5.9 OPERATIONS AND MAINTENANCE PLAN: Owners and operators of all storage tank systems shall adopt and implement a written operations and maintenance plan, which they shall keep at the facility for the life of the storage tank system. The operations and maintenance plan shall be as specific as possible for each facility and shall include the piping and ancillary equipment that routinely contains regulated substances, or controls the flow of regulated substances. Owners and operators may use, by reference, operational and maintenance guidance from the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory. Owners and operators who reference a current edition of an industry standard or code of practice shall maintain a copy of the code or standard they reference. Owners and operators shall not implement the plan until it has been approved by the department.

A. At a minimum the operations and maintenance plan shall include the following:

(1) a detailed plan showing what inspections, operations, testing and maintenance shall be done on a daily, monthly, quarterly and annual basis in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department; the plan shall include a description of how owners and operators properly dispose of regulated substances spilled at the facility, and any water or soil removed from any part of the storage tank system where there is any indication it might be or have been contaminated with a regulated substance; and

(2) responses to emergency situations; this information shall be readily accessible at the facility; responses to emergency situations shall include the following:

(a) the location of equipment to be shut down during an emergency and how to safely perform these tasks;

(b) actions to be taken in the event of a fire, flooding, a spill, or a release of regulated substances;

(c) a site diagram; and

(d) a list of whom to notify or call during or after an emergency situation.

B. The following may be used to comply with the requirements of this section:

(1) American petroleum institute 570, *"pipe inspection code: inspection repair, alteration, and rerating of in-service piping systems;"*

(2) American petroleum institute standard 653, *"tank inspection, repair, alteration, and reconstruction;"* or

(3) steel tank institute standard SP001, *"standard for inspection of in-service shop fabricated aboveground tanks for storage of combustible and flammable liquids."*

C. Owners and operators may submit to the department for approval an alternate plan which contains all the information requested in this section.

[20.5.5.9 NMAC - Rp, 20.5.5.400 NMAC, 04/04/2008]

20.5.5.10 OPERATION, MAINTENANCE, REPAIR AND REPLACEMENT OF SECONDARY CONTAINMENT FOR ASTS:

A. Owners and operators shall operate, maintain and repair secondary containment in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department.

B. Owners and operators shall not store inside the secondary containment any material which is chemically reactive with the regulated substance stored in the AST system, or with the AST itself. Owners and operators shall not store any material in the secondary containment that reduces the capacity of the secondary containment below the requirements in 20.5.4.29 NMAC.

C. Owners and operators shall draw off water that has accumulated in the secondary containment, including all sumps, within one week of a rainfall event, and shall remove any other debris that has accumulated inside the secondary containment. Owners and operators shall properly treat and dispose of any accumulated water with a visible sheen. If gravity drain valves are used to remove water from the secondary containment, owners and operators shall keep all valves closed except during the process of draining water.

D. In order to maintain the highest level of secondary containment in case of a discharge from, or an overflow of, an AST system, owners and operators shall keep the spill containment buckets, catchment basins, containment sumps, basin sumps, and piping trenches free of water, regulated substances and debris.

E. Owners and operators shall maintain, repair and replace any concrete secondary containment systems in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

(1) society of protective coating and national association of corrosion experts SSPC-TU2/NACE 6G197, *"design, installation and maintenance of coating systems for concrete used in secondary containment;"*

- (2) American concrete institute 224R, "*control of cracking in concrete structures*;" or
- (3) American concrete institute "*concrete repair manual*."

F. Owners and operators shall maintain, repair and replace any geo-synthetic liner according to manufacturer's instructions, which owners and operators shall keep readily available at the facility for the life of the liner.

G. Owners and operators shall protect from corrosion any secondary containment constructed of steel, and shall cathodically protect any portion of the steel secondary containment that is in contact with soil or water. Owners and operators shall maintain the exterior of any steel secondary containment in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement: society of protective coatings SSPC-PA-1, "*shop, field, and maintenance painting of steel*."

H. Owners and operators of above ground storage tanks which are either double-walled or which have an interstitial space that is monitored as a method of release detection shall comply with the following requirements:

- (1) where design and release detection method allow the interstice of a double-walled above ground storage tank to be visually inspected without disturbance of the release detection system, owners and operators shall monthly visually inspect for the presence of water, regulated substances or debris;
- (2) owners and operators shall notify the department in accordance with 20.5.7 NMAC if a visual inspection, other inspection or testing conducted in accordance with 20.5.5 or 20.5.6 NMAC indicate that a release may have occurred;
- (3) if testing conducted in accordance with 20.5.4, 20.5.5 or 20.5.6 NMAC indicates that the stored regulated substance is leaking into the interstice of the AST, then owners and operators shall have the tank repaired in accordance with the tank manufacturer's instructions or specifications, or with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory;
- (4) owners and operators shall monitor all vertical ASTs with an interstitial space between the tank bottom and secondary containment for the presence of water or regulated substances; if gravity drain valves are used for monitoring and removal of water or regulated substances, owners and operators shall keep them closed except during the process of monitoring and draining;
- (5) owners and operators shall keep all sumps associated with interstitial monitoring free of water;
- (6) owners and operators shall inspect all sensors used to monitor interstitial spaces annually in accordance with manufacturer's recommendations, or in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department;
- (7) owners and operators shall remove all liquid found in interstitial spaces, and dispose of it properly.

[20.5.5.10 NMAC - Rp, 20.5.5.401 NMAC, 04/04/2008]

20.5.5.11 OPERATION, REPAIR AND MAINTENANCE OF SECONDARY CONTAINMENT FOR USTS:

A. Owners and operators of underground storage tank systems shall operate, maintain and repair secondary containment in accordance with the manufacturer's instructions or specifications, or with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

- (1) U.S. environmental protection agency #510-R-05-001, "*ust systems: inspecting and maintaining sumps and spill buckets*;" or
- (2) U.S. environmental protection agency #510-B-05-002, "*operating and maintaining underground storage tank systems: practical help and checklists*."

B. Owners and operators shall draw off water that has accumulated in the secondary containment, including all sumps, within one week of a rainfall event, and shall remove any other debris that has accumulated inside the secondary containment. Owners and operators shall properly treat and dispose of any accumulated water with a visible sheen.

[20.5.5.11 NMAC - N, 04/04/2008]

20.5.5.12 OPERATION, REPAIR AND MAINTENANCE OF VAULTS:

A. Owners and operators shall operate, maintain and repair the walls and floor of a vault in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

- (1) society of protective coating and national association of corrosion experts SSPC-TU2/NACE 6G197, "*design, installation and maintenance of coating systems for concrete used in secondary containment*;"
- (2) American concrete institute 224R, "*control of cracking in concrete structures*;" or
- (3) American concrete institute "*concrete repair manual*."

B. Owners and operators shall visually inspect the interior of any vault from the outside monthly, and annually shall enter and inspect the interior of the vault. Owners and operators shall draw off any water that has accumulated in a vault within one week of a rainfall event if the water is in contact with the tank or piping (but need not draw off water only in contact with a tank's saddles, skid or other support), and shall remove any other debris that has accumulated inside the vault and which is in contact with the tank, piping or saddle, skid or other support. Owners and operators shall properly treat and dispose of any accumulated water with a visible sheen. If a sump is located in the vault, owners and operators shall keep the liquid trap free of water and debris. Owners and operators shall not install any valves in any sump in a vault.

C. Owners and operators shall not store inside a vault any material which is chemically reactive with the

regulated substance stored in the AST system, or with the AST itself.

D. Owners and operators shall ensure that a vault is well vented before any fuel transfer begins, and shall keep open all vents during the transfer.

E. For vaults with roofs, owners and operators shall properly maintain and repair the roof of a vault in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department.

[20.5.5.12 NMAC - Rp, 20.5.5.402 NMAC, 04/04/2008]

20.5.5.13 OPERATION, REPAIR AND MAINTENANCE OF VENTING SYSTEMS: Owners and operators shall operate, maintain and repair venting systems in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. At least monthly, owners and operators shall check emergency vents to ensure they are operational. The following may be used to comply with this requirement: national fire protection association standard 91, *“standard for exhaust systems for air conveying of vapors, gases, mists, and noncombustible particulate solids.”*

[20.5.5.13 NMAC - Rp, 20.5.5.403 NMAC, 04/04/2008]

20.5.5.14 OPERATION AND MAINTENANCE OF SPILL AND OVERFILL PREVENTION:

A. Owners and operators shall ensure that releases due to spilling or overfilling do not occur. Owners and operators shall ensure that all spill and overfill equipment required in 20.5.4.33 NMAC is properly maintained and fully operational at all times. Owners and operators shall ensure that the volume available in a tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling. Owners and operators shall comply with the transfer procedures described in the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

- (1) national fire protection association standard 385, *“standard for tank vehicles for flammable and combustible liquids;”*
- (2) American petroleum institute publication RP 1621, *“bulk liquid stock control at retail outlets;”*
- (3) national fire protection association 30, *“flammable and combustible liquids code;”*
- (4) national fire protection association 30A, *“code for motor fuel dispensing facilities and repair garages;”*
- (5) petroleum equipment institute publication RP200, *“recommended practices for installation of above ground storage systems for motor vehicle fueling;”* or
- (6) international code council, *“international fire code.”*

B. Owners and operators shall report, investigate, and clean up any spills and overfills in accordance with 20.5.7 NMAC.

[20.5.5.14 NMAC - Rp, 20.5.5.500 NMAC, 04/04/2008]

20.5.5.15 OPERATION AND MAINTENANCE OF CORROSION PROTECTION: Owners and operators of steel storage tank systems with any steel tank or piping with corrosion protection shall comply with the following requirements to ensure that releases due to corrosion are prevented for as long as the storage tank system is used to store regulated substances.

A. Owners and operators shall operate and maintain corrosion protection systems to continuously provide corrosion protection to all metal components of the system that routinely contain regulated substances and are in contact with the ground or water. Owners and operators shall operate and maintain corrosion protection systems in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

- (1) steel tank institute, *“specification for sti-P3 system of external corrosion protection of underground steel storage tanks;”*
- (2) underwriters laboratories standard 1746, *“external corrosion protection system for steel underground storage tanks;”*
- (3) underwriters’ laboratories of Canada CAN4-S603-N85, *“standard for steel underground tanks for flammable and combustible liquids;”*
- (4) underwriters’ laboratories of Canada CAN4-G03.1-M85, *“standard for galvanic corrosion protection systems for underground tanks for flammable and combustible liquids;”*
- (5) underwriters’ laboratories of Canada CAN4-S631-M84, *“isolating bushings for steel underground tanks protected with coatings and galvanic systems;”*
- (6) national association of corrosion engineers international standard RP0-0285, *“corrosion control of underground storage tanks systems by cathodic protection;”* or
- (7) underwriters laboratories standard 58, *“standard for safety for steel underground tanks for flammable and combustible liquids.”*

B. Owners and operators shall ensure that all storage tank systems equipped with cathodic protection are inspected for proper operation by a qualified corrosion expert in accordance with the following requirements:

- (1) frequency: owners and operators shall test all cathodic protection systems within six months of installation

and at least every three years thereafter or according to another reasonable time frame approved in advance by the department; and

(2) inspection criteria: the criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department;

(3) the following may be used to comply with this requirement:

(a) national association of corrosion engineers international RP0285, "*corrosion control of underground storage tank systems by cathodic protection*;"

(b) national fire protection association 30, "*flammable and combustible liquids code*;"

(c) national fire protection association 30A "*code for motor fuel dispensing facilities and repair garages*;"

(d) American petroleum institute publication RP 1615, "*installation of underground petroleum storage systems*;"

(e) American petroleum institute publication RP 1632, "*cathodic protection of underground petroleum storage tanks and piping systems*;"

(f) national association of corrosion engineers international RP0169, "*control of external corrosion on underground or submerged metallic piping systems*;" or

(g) international code council, "*international fire code*."

C. Owners and operators shall inspect storage tank systems with impressed current cathodic protection systems every 60 days to ensure the equipment is running properly. Owners and operators shall record the date, time, readings and results of each inspection in a log kept at the facility, and indicate who performed each inspection.

D. For storage tank systems using cathodic protection, owners and operators shall maintain records of the operation of the cathodic protection in accordance with 20.5.5.19 NMAC to demonstrate compliance with the performance standards in this section. These records shall provide the following:

(1) the results of the last three inspections required in Subsection C of this section; and

(2) the results of testing from the last two inspections required in Subsection B of this section.

[20.5.5.15 NMAC - Rp, 20.5.5.501 NMAC, 04/04/2008]

20.5.5.16 COMPATIBILITY: Owners and operators shall use a storage tank system made of or lined with materials that are compatible with the substance stored in the storage tank system. Owners and operators storing alcohol blends shall use the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

A. American petroleum institute publication RP1626, "*storing and handling ethanol and gasoline-ethanol blends at distribution terminals and service stations*;" or

B. American petroleum institute publication RP1627, "*storage and handling of gasoline-methanol/cosolvent blends at distribution terminals and service stations*."

[20.5.5.16 NMAC - Rp, 20.5.5.502 NMAC, 04/04/2008]

20.5.5.17 REPAIRS, REPLACEMENTS AND MODIFICATIONS: Owners and operators of a storage tank system shall ensure that repairs, replacements and modifications will prevent releases due to structural failure or corrosion as long as the storage tank system is used to store regulated substances.

A. Determining whether repair, replacement or modification is necessary. Owners and operators shall determine whether a repair, replacement or modification to a storage tank system is necessary in consultation with a department inspector, after providing notice required by this part.

(1) If owners and operators are repairing, replacing or modifying piping of any kind that is connected to a storage tank, the determination shall be made during an on-site inspection that provides the inspector the opportunity to view the piping while it is exposed.

(2) If, during an on-site inspection, the inspector determines that:

(a) any steel piping connected to a tank indicates corrosion;

(b) any rigid fiberglass-reinforced piping connected to a tank shows signs of deterioration or failure; or

(c) any flexible piping connected to a tank shows any signs of deterioration or failure,

(3) Then the owner and operator shall replace all piping connected to that tank, and shall inspect all other piping at the same facility that is made of the same material to determine its condition prior to returning the facility to operation.

B. Owners and operators shall properly conduct repairs, replacements and modifications to storage tank systems in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department, and in accordance with the manufacturer's instructions and recommended practices. The following may be used to comply with this requirement:

(1) national fire protection association 30, "*flammable and combustible liquids code*;"

(2) American petroleum institute publication RP 2200, "*repairing crude oil, liquified petroleum gas, and product pipelines*;"

(3) American petroleum institute publication RP 1631, "*interior lining and periodic inspection of underground*

storage tanks;"

(4) national leak prevention association standard 631, "*spill prevention, minimum 10 year life extension of existing steel underground tanks by lining without the addition of cathodic protection*;"

(5) national fire protection association 30A, "*code for motor fuel dispensing facilities and repair garages*;"

(6) petroleum equipment institute publication RP200, "*recommended practices for installation of above ground storage systems for motor vehicle fueling*;"

(7) American society for testing and materials ES40, "*emergency standard practice for alternative procedures for the assessment of buried steel tanks prior to the addition of cathodic protection*;"

(8) American petroleum institute 570, "*pipng inspection code: inspection, repair, alteration and rerating of in-service piping systems*;"

(9) American petroleum institute standard 653, "*tank inspection, repair, alteration, and reconstruction*;"

(10) American society of mechanical engineering standard B31.1, "*process piping*;" or

(11) international code council, "*international fire code*."

C. Owners and operators shall not internally line ASTs as a means of repair.

D. Owners and operators shall tightness test a storage tank system that has been replaced, modified or repaired, prior to returning the system to service, in accordance with 20.5.6.15 and 20.5.6.10 NMAC and 20.5.6.23 NMAC except as provided below:

(1) the repaired or modified tank is internally inspected in accordance with the current edition of an industry standard or code of practice approved in advance by the department;

(2) the repaired or modified portion of the storage tank system is monitored monthly for releases in accordance with a method specified in 20.5.6.16, 17, 18, 19, 20, 21, or 22 NMAC; or

(3) owners and operators shall use an equivalent test method, which complies with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance in writing by the department.

E. Upon completion of a modification or repair of any cathodically protected storage tank system, owners and operators shall test the cathodic protection system in accordance with Subsections B and C of 20.5.5.15 NMAC to ensure that it is operating properly.

F. Owners and operators of a storage tank system shall maintain records of each repair, replacement and modification for the remaining operating life of the storage tank system that demonstrate compliance with the requirements of this section.

G. Owners and operators shall repair an above ground storage tank if an internal inspection determines that a release is occurring or that the tank bottom or shell thickness is below minimum thickness requirements. Owners and operators shall keep the records of internal inspections for the life of the tank. Minimum thickness requirements shall be determined by one of the following:

(1) manufacturer's specifications;

(2) current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department; or

(3) minimum thickness for the tank bottom shall never be less than one half of the original bottom plate thickness and minimum thickness for the tank shall never be less than 0.1 inch.

H. Owners and operators shall meet all applicable installation requirements of 20.5.4 NMAC, including testing requirements, when repairing, replacing or modifying a storage tank system involves installing new components. If any tank or piping of a tank system is replaced, owners and operators shall follow all requirements for properly assessing the site for contamination in compliance with 20.5.8 NMAC prior to installing the new components.

[20.5.5.17 NMAC - Rp, 20.5.5.503 NMAC, 04/04/2008]

20.5.5.18 REPORTING: Owners and operators of a storage tank system shall cooperate fully with inspections, monitoring and testing conducted by the department, as well as requests for document submission, testing, and monitoring by the owner or operator pursuant to Section 9005 of Subtitle I of the federal Resource Conservation and Recovery Act, as amended. Owners and operators shall submit the following information to the department:

A. registration for all storage tank systems in accordance with 20.5.2 NMAC, which includes certification of installation for new UST and AST systems in accordance with Subsection C of 20.5.4.37 NMAC;

B. reports of all releases in accordance with 20.5.2 NMAC and the requirements in 20.5.7 NMAC for reporting suspected releases, spills and overfills and confirmed releases;

C. corrective actions planned or taken as required by 20.5.12 and 20.5.13 NMAC;

D. notification before storage tank system installation, replacement, repair or modification in accordance with 20.5.5 NMAC, and before permanent closure or change-in-service in accordance with 20.5.8 NMAC; it may not be feasible for owners and operators to provide advance notice of emergency repairs; however, owners and operators shall provide notice of emergency repairs as soon as possible after completing emergency repairs; and

E. updated project drawings for any addition, replacement or modification of a storage tank system.

[20.5.5.18 NMAC - Rp, 20.5.5.504 NMAC, 04/04/2008]

20.5.5.19 RECORD KEEPING:

- A. Owners and operators shall maintain the following information:
- (1) a corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used, in accordance with 20.5.4.12 NMAC and 20.5.4.22 NMAC;
 - (2) documentation of operation of corrosion protection equipment that demonstrate compliance with 20.5.5.15 NMAC;
 - (3) documentation of storage tank system repairs, replacements and modifications that demonstrate compliance with 20.5 NMAC;
 - (4) recent compliance with release detection requirements in accordance with 20.5.6 NMAC;
 - (5) results of the site investigation conducted at permanent closure in accordance with 20.5.8 NMAC;
 - (6) inspection logs required by 20.5.5 NMAC and 20.5.6 NMAC;
 - (7) tank tightness, internal inspection and integrity test documents required by 20.5 NMAC;
 - (8) any document approving any alternate method; and
 - (9) any other record or written approval required in 20.5 NMAC.
- B. Availability and maintenance of records. Owners and operators shall keep the required records for the operational life of a tank, piping and tank system either:
- (1) at the storage tank site and immediately available for inspection by the department; or
 - (2) at a readily available alternative site and the records shall be provided for inspection to the department upon request; if records are not available at a site during inspection, owners and operators shall mail or send by facsimile transmission to the inspector within 10 working days all records requested by the inspector;
 - (3) in the case of permanent closure records required under 20.5.8 NMAC, owners and operators are also provided with the additional alternative of mailing closure records to the department if they cannot be kept at the site or an alternative site as indicated above.
- C. If the owner and operator of a storage tank are separate persons, only one person is required to comply with the requirements of this section; however, both parties are liable in the event of noncompliance.
[20.5.5.19 NMAC - Rp, 20.5.5.504 NMAC, 04/04/2008]

20.5.5.20 INSPECTIONS, MONITORING AND TESTING:

- A. For the purpose of enforcing the provisions of these regulations, all owners and operators of storage tanks shall, upon the request of the secretary or authorized department representatives, furnish information relating to such tanks, including tank equipment and contents, conduct monitoring or testing, and permit any department representative at all reasonable times to have access to, and to copy all records relating to such tanks. Owners and operators shall comply with all applicable and appropriate Occupational Health and Safety Act requirements, NMSA 1978, Sections 50-9-1 through 50-9-25, so that storage tanks may be safely inspected. For the purpose of enforcing these regulations, department officers, employees, or representatives are authorized to:
- (1) enter at reasonable times any establishment or place where a storage tank is located;
 - (2) inspect the storage tank system and obtain samples of its contents; and
 - (3) conduct monitoring or testing of the tanks, associated equipment, contents, or surrounding soils, air, surface water, or groundwater.
- B. The department shall commence and complete each inspection with reasonable promptness. If the secretary or department representative obtains any samples, prior to leaving the premises he shall give to the owner, operator or agent in charge a receipt describing the sample obtained and, if requested, a portion of each sample equal in volume or weight to the portion retained. If any analysis is made of the samples, a copy of the results of the analysis shall be furnished promptly to the owner, operator or agent in charge.
- C. Owners and operators shall permit the department or authorized department representative to be present at and inspect all storage tank system installations, replacements, repairs, substantial modifications, installations of leak detection systems and storage tank system closures.
[20.5.5.20 NMAC - Rp, 20.5.5.505 NMAC, 04/04/2008]

20.5.5.21 REQUIRED NOTIFICATION PRIOR TO REPLACEMENT, REPAIR AND MODIFICATION: To ensure that an inspector has an opportunity to be present during the steps in procedures which are important to the prevention of releases, owners, operators, and certified tank installers shall give the department notice of the dates on which critical junctures in the replacement, repair, and modification of the storage tank system are to take place. Notice need not be provided for normal maintenance. The inspector may require that critical junctures be performed from Monday through Friday during regular business hours.

- A. For replacements, modifications (including internal lining or changes to cathodic protection systems), and repairs, the term "critical junctures" means:
- (1) completion of the excavation of existing tanks or piping;
 - (2) actual performance of the repair, lining or modification;
 - (3) any time during the project in which components of piping are connected; and
 - (4) any time during the project in which a tank or its associated piping is tested.
- B. Owners, operators and certified tank installers shall give at least 30 days written notice before the replacement, modification or repair of a storage tank system. It may not be feasible for owners, operators, and certified tank

installers to provide advance notice of emergency repairs; however, owners, operators, and certified tank installers shall provide notice of emergency repairs as soon as possible after completing emergency repairs. At a minimum, the notice for replacements, modifications, and repairs shall contain the following information:

- (1) date the form is completed;
- (2) facility name, number, address (with county), and telephone number;
- (3) owner name, number, address, and telephone number;
- (4) contractor name, address, and telephone number;
- (5) description of type of replacement, modification or repair to be performed (such as spill containment, overspill prevention, release detection, piping or other);
- (6) expected date on which replacement, modification or repair will be performed;
- (7) whether any part of the system is within 1,000 feet of a community water system or a potable drinking water well; and
- (8) signature of owner, operator or an authorized representative.

C. In addition to the written notices described in this section, owners, operators and certified tank installers shall give oral notice at least 24 hours in advance of the commencement of the procedure. In the oral notice, owners, operators and certified tank installers shall describe any changes to the 30-day written notice required in Subsection B of this section, such as different equipment or installation methods.

D. If owners, operators and certified tank installers are separate persons, only one person is required to comply with the notice requirements of this section; however, all parties are liable in the event of noncompliance.

[20.5.5.21 NMAC - Rp, 20.5.5.505 NMAC, 04/04/2008]

[The bureau provides an optional form that may be used for notification of replacement, repair and modification.]

20.5.5.22 DEPARTMENT REVIEW AND APPROVAL OF PLANS, INSTALLATION, OPERATION AND

MAINTENANCE: Owners and operators shall view any inspection, review or approval by the department as permission to proceed in accordance with all applicable rules, codes and standards. Review and approval by the department shall not relieve any owner, operator, or certified tank installer of his responsibility for compliance. If the department overlooks any deficiencies or violations in the course of plan review or inspection provided in 20.5 NMAC, the department may later require correction and compliance.

[20.5.5.22 NMAC - N, 04/04/2008]

20.5.5.23 ALTERNATE METHODS:

A. If owners and operators want to operate, maintain, replace, repair or modify any part of a storage tank system by another method, other than that specified in this part, in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory, owners and operators shall apply in writing to the department, shall provide supporting documentation, and shall not begin to operate, maintain, replace, repair or modify the system, unless and until the department approves the request in writing. At a minimum, the request for an alternate method shall contain the following:

- (1) date the form is completed;
- (2) facility name, number, address (with county) and telephone number;
- (3) owner name, number, address and telephone number;
- (4) citation to regulation for which alternate method or material (such as type of piping) is requested;
- (5) brief description of the proposed alternate method or material; and
- (6) justification of proposed alternate method or material, including citation to the standard or code supporting its use, and demonstration of its equivalent protection of public health, safety and welfare and the environment.

B. The department shall not grant the request unless owners and operators demonstrate that the request will provide equivalent protection of public health, safety and welfare and the environment.

[20.5.4.23 NMAC - N, 04/04/2008]

[The bureau provides an optional form that may be used for notification of replacement, repair and modification.]

HISTORY OF 20.5.5 NMAC:

Pre-NMAC History: The material in this part was derived from that previously filed with the commission of public records - state records center and archives.

EIB/USTR-5, Underground Storage Tank Regulations-Part V-General Operating Requirements, filed 9/12/88.

EIB/USTR-5, Underground Storage Tank Regulations-Part V-General Operating Requirements, filed 2/14/89.

EIB/USTR-5, Underground Storage Tank Regulations-Part V-General Operating Requirements, filed 8/4/89.

EIB/USTR-5, Underground Storage Tank Regulations-Part V-General Operating Requirements, filed 6/12/90.

History of Repealed Material: 20 NMAC 5.5, Underground Storage Tanks - General Operating Requirements (filed 2/27/97), repealed 8/15/03.

20.5.5 NMAC, Petroleum Storage Tanks, General Operating Requirements (filed 7/16/03) repealed 4/4/08.

Other History:

EIB/USTR-5, Underground Storage Tank Regulations - Part V - General Operating Requirements, filed 6/12/90, renumbered, reformatted and replaced by 20 NMAC 5.5, Underground Storage Tanks - General Operating Requirements, effective 11/5/95;
20 NMAC 5.5, Underground Storage Tanks - General Operating Requirements filed 10/6/95 replaced by 20 NMAC 5.5, Underground Storage Tanks - General Operating Requirements, effective 4/1/97;
20 NMAC 5.5, Underground Storage Tanks - General Operating Requirements, filed 2/27/97 was renumbered, reformatted and replaced by 20.5.5 NMAC, Petroleum Storage Tanks, General Operating Requirements, effective 8/15/03.
20.5.5 NMAC, Petroleum Storage Tanks, General Operating Requirements (filed 7/16/03) replaced by 20.5.5 NMAC, Petroleum Storage Tanks, General Operating Requirements, effective 4/4/08.

GALLUP REFINERY: PRODUCTS TERMINAL
DIESEL SYSTEM FLOW SCHEMATIC

TERMINAL LIMITS

REFINERY SIDE:

- DIESEL 575, 577, 579** (Storage Tanks)
- Pumps:** P-1 (500 GPM), P-2 (500 GPM), P-16 (1600 GPM), P-20 (500 GPM), P-31 (800 GPM)
- Valves:** V-1, V-10, V-11
- Flow Lines:** 6" (from tanks to P-1/P-2), 4" (from T-1 to P-16/P-31), 8" (from P-16/P-31 to LANE 1/2), 4" (from T-1 to LANE 3/4/5), 6" (from T-1 to TRAVEL CENTER)

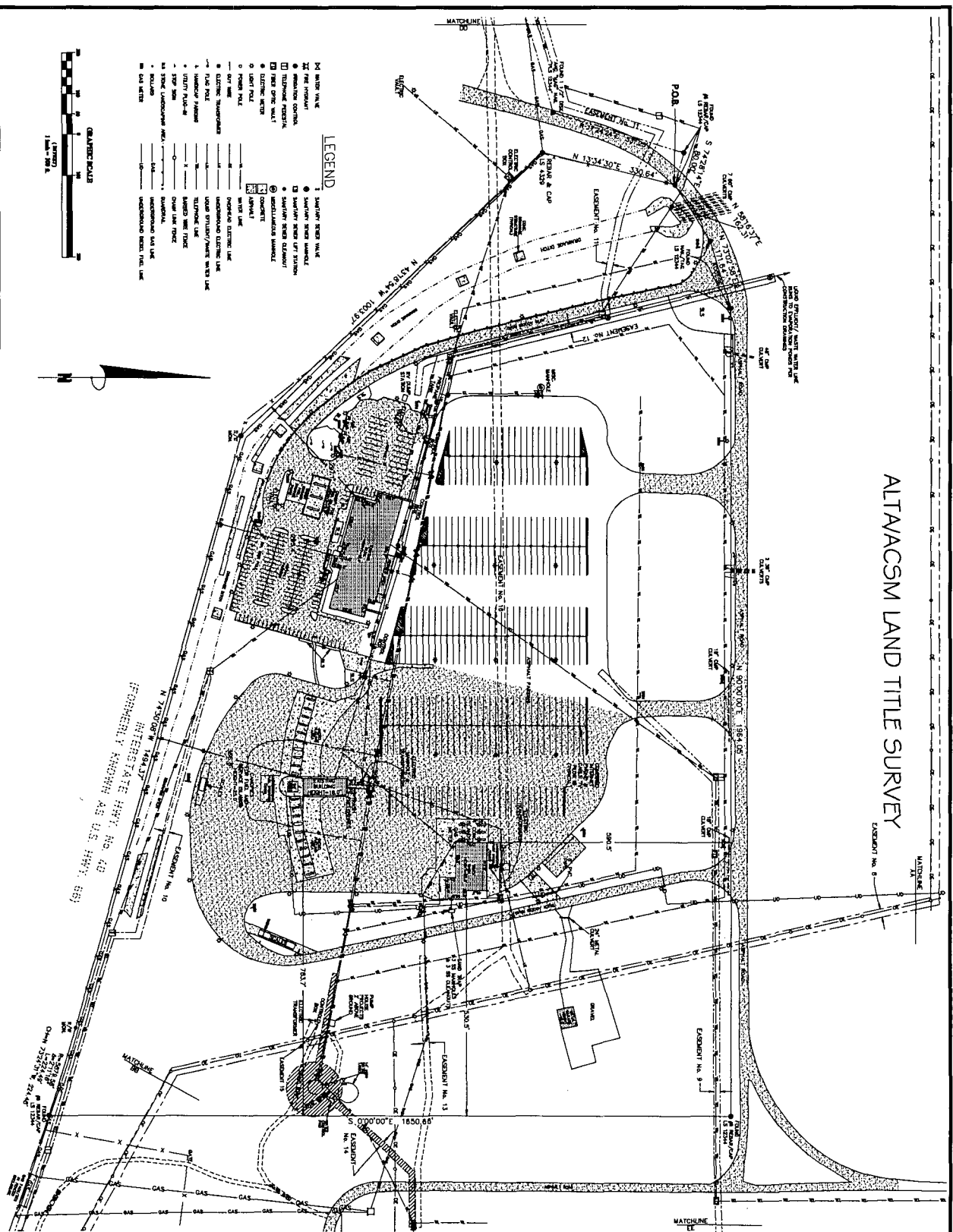
LOADING LANE DETAILS:

- LANE 1:** 1-1 (Pump), 8" line to P-16
- LANE 2:** 2-1 (Pump), 8" line to P-16
- LANE 3:** 3-1, 3-2 (Pumps), 4" line to T-1
- LANE 4:** 4-1, 4-2 (Pumps), 4" line to T-1
- LANE 5:** 5-1 (Pump), 4" line to T-1

TO TRAVEL CENTER: 6" PIPELINE, V-10, FROM STG. 4"

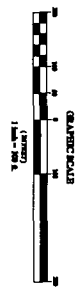
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ALTACSM LAND TITLE SURVEY



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GIANT INDUSTRIES, INC.

Box 39, Interstate 40
Jarrattown, NM 87347
(Trenton, Colorado)

DATE: 11/11/83
BY: JLM

WATKINS LAND TITLE SURVEY

PREPARED FOR:

The Watkins Company, Inc.

1000 North 1st Street
Trenton, Colorado 80131

CDS 3000, 11/11/83, Sheet 1 of 4

JLM 10/83

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, October 14, 2010 5:03 PM
To: 'Riege, Ed'
Cc: Leute, Alan; 'Lieb, Jim'; VonGonten, Glenn, EMNRD; Van Horn, Kristen, NMENV
Subject: Gallup Refinery (GW-032) Waste Water Treatment System Design Telephone call request-
OCD 24 in. Sewer Line Submittal Questions

Ed:

OCD hereby **approves** the 24 in. sewer construction submittal related to the OCD discharge permit waste water treatment system and EPA CAFO by Western Refining Southwest, Inc. (Western).

OCD just completed its telephone communication call with Alan Leute and Jim Lieb regarding my review comments below and subsequent communication with clarifications in red text below based on OCD's comments / recommendations.

Some comments / recommendations from the call are provided below:

- 1) OCD commented that it issued its conceptual approval of the aeration lagoon (EP-0) up gradient from EP-2 with the meeting minutes from our October 6, 2010 meeting in Santa Fe that was forwarded to you yesterday. Western may want to examine the minutes. OCD recommends changing the nomenclature of "EP-0" to "AL-0" that better reflects that it is a double-lined with leak detection and properly engineered spray system with backup aeration lagoon.
- 2) OCD commented that it prefers to receive OCD permit waste water treatment system approval requests similar to this submittal in order to review, discuss, and issue any approval/disapprovals. Jim Lieb said if Western continues to provide submittals, he expects at least 3 more OCD Discharge Permit related approvals will be needed and to stay within the timeline of the CAFO.
- 3) Excavated soil from the final EP-0 location is planned to be used as the impermeable cap for SWMU 1 remediation. OCD mentioned that permeability tests of the soils would likely be needed to show 10-6 cm/sec or less, but NMED would make the call under RCRA.
- 4) The 4 in. clean-out locations are not aerially depicted in the diagrams, but should be strategically located to fix any blockage, scale buildup in the line over time will reduce the capacity of the system. Alan Leute indicated that the cleanouts would facilitate sprayer washout, but scale buildup and blockage would likely require more aggressive removal processes. There is magnetic technology that may help reduce scale buildup without the use of chemical additives to control scale buildup.

The OCD requests at least 5 working days to review and approve/disapprove any future submittals related to the Waste Water Treatment System Design of the OCD permit. Please contact me if you have questions. Thank you.

Please be advised that OCD approval of this submittal with preliminary design drawings with final does not relieve Western Refining Southwest, Inc. of responsibility should its operations fail to adequately investigate and remediate contamination that poses a threat ground water, surface water, human health or the environment. In addition, the final design and construction shall adequately address the terms and conditions of the OCD discharge permit. OCD approval does not relieve Western Refining Southwest, Inc. of responsibility for compliance with other federal, state or local laws and/or regulations.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>

(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Thursday, October 14, 2010 1:33 PM
To: 'Riege, Ed'
Cc: 'Lieb, Jim'; VonGonten, Glenn, EMNRD
Subject: Telephone call request- 24 in. Sewer Line Questions & Final Communication

Ed:

Could you and Jim give me a call at my office about 3:30 p.m. today. I have some questions (see below some gen. comments).

OCD Observations:

Drawing Z84-34-017 (Preliminary Drawing- final changes yet to be made):

- 1) 24 in. storm sewer line is "HDPE", and 16 in. process sewer line is listed as "CI". If we are focusing on the 24 in. line, I don't think Scotchkote-TM coats Polyken- TM apply to HDPE lines. Should the 24 in. line be carbon steel (0.5 in. wall thick)? If the 24 in. line is carbon steel, I believe it will be externally and internally scotchkoted right? Also, the Polyken tape would be used at welded joints and fittings right?

The 24 in. carbon steel line is immediately down gradient of the manhole and up gradient of the tanks in the diagram. The line will be externally coated with tape placed at welded fittings, joints, etc. along the pipeline.

- 2) Should there be a sharp elbow turn in the line into T-35 and cleanout(s) near this location due to the flow direction change and potential for problems?

Due to the EP-9 (former sanitary effluent pond) berm (large) transecting the pipeline, a 45 degree elbow joint had to be installed. A cleanout will be strategically located to address any blockage(s) that may occur there.

- 3) Are 4 in. cleanouts big enough? Shouldn't there be cleanout locations at certain spatial distances along the line or sharp bends?

They are large enough to allow jetting action to remove blockages. Yes, the cleanouts depicted in the diagram appear to be centrally located, but will be strategically placed along the line in the final design and construction.

Underground Sewer Piping Specification:

- 1) The "Static head water test" is not an acceptable testing method on the pipe under the OCD discharge permit. Testing requirements for pipelines are specified in the discharge permit.

Western will need to submit for OCD approval an alternative pipeline testing method that will also specify when a "failure" will be determined based on details of the test. The discharge permit requires different testing and perhaps the permit prescribed method will apply after the line is operational?

- 2) Pipeline material specification is "API Grade 5L, carbon steel pipe" and I believe this relates to the 24 in line, which in drawing in No. 1 above is listed as "HDPE."

The line is actually immediately down gradient of the manhole and up gradient of the tanks in drawing Z84-34-017.

Drawing C-3:

- 1) The sewer line does not appear to be connected to the proposed double lined w/ leak detection aeration lagoon EP-0 in the drawing. Why? I recall at the 10/6 meeting that both comingled process and sewer fluids would be routed along with treated effluent into EP-0 before discharging into EP-2?

Remember any drainage to T-35 (Equalization Tank) is excess fluids that has to be diverted and pumped back up to the API Separator for treatment. The oil skimmers, etc. are designed to handle system upsets where oil could likely

end up in the tanks and volumes that make the design necessary and the comingled nature of process and storm water lines will constantly contribute some volume of oil to the tanks.

- 2) There is a sharp bend in line before entering T-35 Equal. Tank (see associated comments above). Sharp bends in flow lines have been areas where leakage can occur, accelerated corrosion, blockage, etc.

See comments addressing this question above.

I look forward to speaking with you today.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, October 14, 2010 4:10 PM
To: 'Lieb, Jim'
Cc: Riege, Ed; Leute, Alan; Van Horn, Kristen, NMENV
Subject: RE: Telephone call request- 24 in. Sewer Line Questions & Final Communication

Hey guys, the OCD will need the certified engineering drawings to issue final approval of EP-0; however, the OCD approves of Western's conceptual plan with location to construct the new aeration lagoon (double lined w/ leak detection and properly engineered spray system with backup to ensure aggressive biological treatment occurs 24/7. OCD submitted meeting minutes from the October 6, 2010 meeting, which also clarifies OCD's conceptual approval of EP-0. We need to ensure by a PE that it can be designed as conceptualized by Western. Also, NMED and OCD will likely require permeability testing of soils at the final EP-0 location to ensure it meets acceptable permeability limits for use as a cap for SWMU 1, but NMED is the lead on the SWMUs.

OCD is following up with review comments on the 24 in. sewer line soon. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
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E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Lieb, Jim [mailto:Jim.Lieb@wnr.com]
Sent: Thursday, October 14, 2010 4:04 PM
To: Chavez, Carl J, EMNRD
Cc: Riege, Ed; Leute, Alan
Subject: RE: Telephone call request- 24 in. Sewer Line Questions & Final Communication

Carl:

I hope Alan and I were able to answer all of your questions to your satisfaction. Thank you for the OCD approval of our conceptual plans for EP-0. We will submit to you an alternative underground pipe test method for your approval soon.
Regards,

Jim Lieb
Environmental Engineer
Western Refining, Inc.
Gallup Refinery
I-40, Exit 39
Route 3, Box 7
Gallup, NM 87301

Safety Starts With An "S", But Always Begins With "You"

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, October 14, 2010 1:33 PM
To: Riege, Ed
Cc: Lieb, Jim; VonGonten, Glenn, EMNRD
Subject: Telephone call request- 24 in. Sewer Line Questions & Final Communication

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- 2) There is a sharp bend in line before entering T-35 Equal. Tank (see associated comments above). Sharp bends in flow lines have been areas where leakage can occur, accelerated corrosion, blockage, etc.

I look forward to speaking with you today.

Thank you.

Carl J. Chavez, CHMM
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Riege, Ed

From: Riege, Ed
Sent: Tuesday, October 12, 2010 8:03 AM
To: Chavez, Carl J, EMNRD; Van Horn, Kristen, NMENV
Cc: Leute, Alan; Hains, Allen; Lieb, Jim; Johnson, Cheryl
Subject: FW: NMOCD Approval to Construct Underground WW Pipeline
Attachments: WNR_24inch_Sewer_P&ID__UG_Pipe_Spec__LineRouting.pdf; Scotchkote_brochure.pdf; Polyken_Brochure.pdf; Polyken_930_1027_Information.pdf

RECEIVED OGD
 22 OCT 13 AM 11:21

Hello Carl,

Western seeks NMOCD approval to construct an underground wastewater pipeline (sewer) as required by Condition 12.B of the GE-032 Discharge Permit Approval Conditions dated August 23, 2007. The attached drawings, and specifications depict the design and construction of the 24 inch sewer. Other NMOCD Discharge Permit conditions, such as Condition 12.A, were considered during the development of this design.

As we discussed during our October 6th meeting, Western is proceeding with the waste water plant construction as approved by NMED and OCD under the CAFO. The underground piping construction is a critical path issue. To maintain our schedule, we would appreciate your approval for the 24 inch sewer construction by Friday October 15, 2010.

Please note that the attached drawings and specifications cover only the underground portion of our Stormwater / Process Sewer Collection System (referred to as the 'stormwater management system' in the CAFO milestones # 3 and #4). Attached are:

P&ID Stormwater Diversion tanks, drawing # Z84-34-017 - Piping and Instrumentation Drawing, highlighted for the 24 inch underground sewer portion

Underground Sewer Piping Specification - detailed description of the 24 inch sewer piping design and installation

Stormwater Yard Piping Plan and Profile - routing of the 24 inch sewer and elevation profile

Scotchkote Technical Brochure - factory applied fusion bonded coating for the exterior of the 24 inch pipe

Polyken Technical Brochures - coating system to wrap the joints of the 24 inch pipe after welding

As we finalize our design, Western will provide additional information regarding the above ground portions of the 24 inch sewer, the three tanks, the pumps and the piping to send the water to the API Separator, including 'As Built' drawings upon completion of the installation.

Please feel free to contact us if you have any questions. Thank you for your quick response.

Ed Riege
 Environmental Manager

Western Refining
 Gallup Refinery
 Route 3 Box 7
 Gallup, NM 87301
 (505) 722-0217
ed.riege@wnr.com

Safety starts with "S", but always begins with "You"

10/12/2010

Western Refining - Gallup Refinery
Stormwater / Process Sewer Collection System
Underground Sewer
Piping Specification



Revision 0 10/11/2010

Process Data

Origination	Petroleum Refinery Process Wastewater and Stormwater
Destination	Equalization Tank Z84-T35 (normal flow) Diversion/Stormwater Tanks Z84-T27 and Z84-T28 (high stormwater flow, or T35 out of service for cleaning/maintenance)
Pressure	0 psig
Temperature	Ambient
Reference P&ID	Z84-34-017

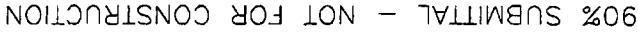
Mechanical

Material Specification	API Grade 5L, carbon steel pipe
Piping Specification	ASME B31.2 Extra Heavy, 0.50 inch wall (exceeds standard wall thickness of 0.375 inch) 100% Welded construction Double Random lengths (approx. 40 ft sections) to minimize welded connections
Coating	Fusion Bonded Epoxy Scotchkote or equivalent Welds to be covered with Polyken Primer # 1027, followed by wrapping with 6 inch wide Polyken # 930-50 Tape, with 50% overlap of tape wraps
Installation	Electrostatic Holiday Test entire coating system to ensure mechanical integrity Repair any holidays/cracks/holes with Polyken tape system or heat sticks (melt material to seal the imperfection) prior to installing pipe in the ground Clean sand fill around entire pipe Eliminates any rocks/sharp objects that could cause localized corrosion
Testing	Static head water test
Cathodic Protection	Passive, sacrificial anode Electrically insulate u
Clean Outs	Provide clean outs with 4 inc

*Static head water test not acceptable
 DP requirement should be met.
 - During 24" HDPE, but
 for spec in contract
 0.5" min. comp. coat
 HDPE?*

and tanks
 for hydroblasting

FOR APPROVAL



PRELIMINARY

- NOTES:
1. VACUUM TRUCK CONNECTION FOR OIL REMOVAL FROM FLOATING ROOF SKIMMER.
2. 24" GATE VALVE WITH GEAR-ASSIST OPERATOR.
3. DOUBLE BOTTOM FOR LEAK DETECTION. LEAK INDICATORS NOT SHOWN.
4. RADAR GAUGE READOUT IN CENTRAL CONTROL ROOM (OCS)
5. MAXIMUM FILL HEIGHT 28'-0" ABOVE PRIMARY (UPPER) FLOOR
6. OVERFLOW SIZED FOR 275GPM NORMAL FLOW. OVERFLOW VALVE NORMALLY CLOSED. OPEN OVERFLOW VALVE ONLY WHEN APPROACHING HIGH TANK LEVEL TO PREVENT INTERNAL FLOATING ROOF FROM HITTING CONE ROOF RAFTERS.
7. OVERFLOW SLOTS ON T-35 SIZED FOR GPM RAINSTORM EVEN TO PREVENT INTERNAL FLOATING ROOF FROM HITTING CONE ROOF RAFTERS.
8. TANKS HAVE PASSIVE ANODE CATHODIC PROTECTION ON BOTH PRIMARY AND SECONDARY BOTTOMS. ELECTRICAL INSULATING FLANGE CONNECTION REQUIRED ON INLET AND OUTLET PIPING.
9. TIE-IN TO MATCH EXISTING 16" CAST IRON PROCESS SEWER AND 24" HDPE STORM WATER SEWER.

CATP Dresser & McKee
 6500 Uptown Boulevard, E. Suite 203
 Arlington, VA 22204
 Tel: (555) 243-3200

$$\text{constituent} = \text{subject} + \text{predicate} + \text{complement}$$

Gallup Refinery

P&ID

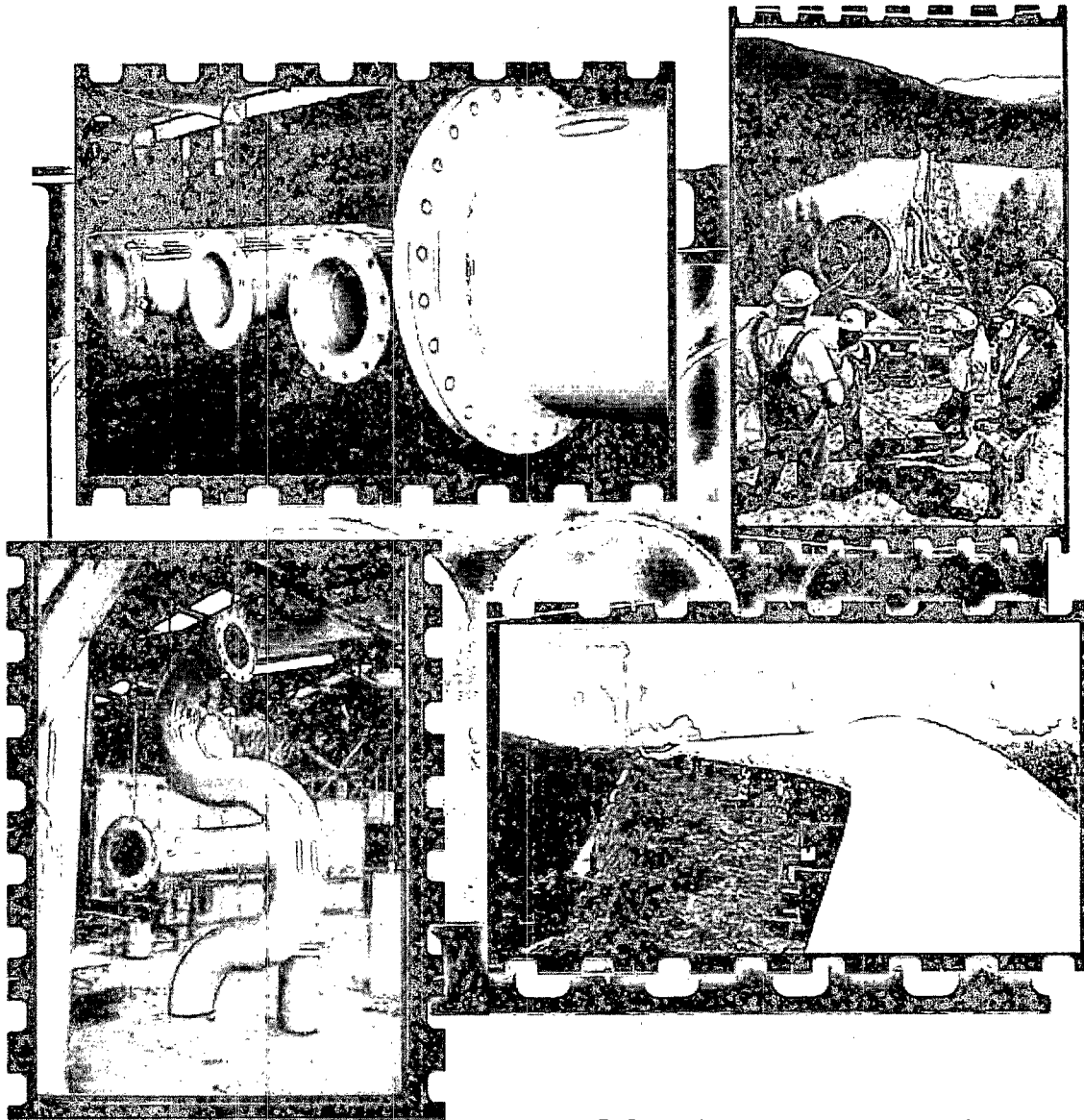
STORM WATER DIVERSION TANKS

DRN. BY: GAF	DATE: AUG. 2010	REF. No: -
CHK'D. BY: -	DATE: -	CAD REF:
APP'D. BY: -	DATE: -	-
DRAWING NO. Z84-34-017		REV C

REV	REVISION DESCRIPTION	RFC No.	DATE
1	ISSUED FOR DESIGN		09/21/2010
2	REVIEW		
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3M[™] Scotchkote[™]

Corrosion Protection Products



*Meeting your coating needs
for more than 40 years.*

3M *Innovation*

Fusion Bonded for Proven Performance

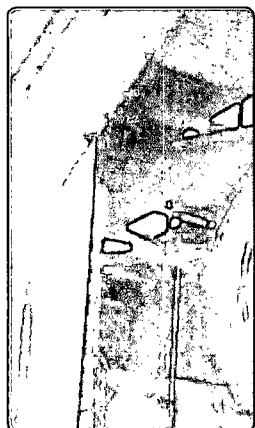
Corrosion Protection

3M, the leader in functional epoxy coating technology, offers a complete line of 3M™ Scotchkote™ powder coatings engineered for optimum corrosion protection of metal in the harshest environments, including saltwater, wastewater, petrochemicals, solvents and corrosive gases. Several of these coatings also provide enhanced properties for operation at elevated temperature, mechanical damage protection, compression, wear, abrasion, and cavitation resistance. Scotchkote heat-cured fusion bonded epoxy coatings are 100 percent-solids; thermosetting materials that achieve a high bond to metal surfaces as a result of a heat generated chemical reaction. They can be applied by fluidized bed, flocking (air spray), or electrostatic spray and are available through a worldwide network of applicators.

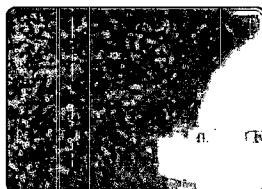
3M also provides several Scotchkote high-build liquid epoxy coatings for field application as primary corrosion protection coatings or as easy field repair materials for Scotchkote Fusion Bonded Epoxy coatings. Surface primers are available to enhance chemical resistance and raise temperature-operating range.

Scotchkote Fusion Bonded Epoxy Coatings

Features	Benefits
Resistant to Cathodic Disbondment	Long term performance under a range of service conditions and temperatures.
Excellent chemical resistance	Long term performance in a variety of soil conditions.
Abrasion, gouge and impact resistant	Added protection for bores, river crossings, rough handling and applications requiring mechanical damage resistance.
High adhesion to metal	Resistant to soil stress.
Thermosetting	Resistant to penetration and will not cold flow under pressure. Does not soften at elevated temperature.
Balanced gel and flow characteristics	Enhanced coating continuity and application on metal.
Sag Resistant	Excellent coverage on sharp edges.
Machinable	Can meet close tolerances.
Lightweight	Lower shipping costs.
Compatible with other coating systems	Can be overcoated with other materials for UV protection. Provides an excellent base coat for multilayer pipe coating systems.
Plant Applied	Controlled application conditions.
NSF and AWWA Standard C213 Approved (Several specific products only)	Good for potable water applications.
Established network of applicators	Widely available for pipeline (external and internal), reinforcing steel and custom coating applications.



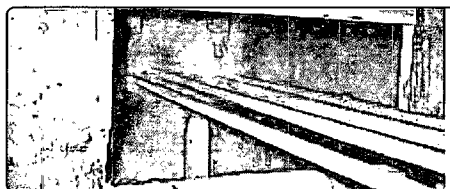
Header piping for a water purification plant illustrates the types of complex shapes that can be coated with 3M™ Scotchkote™ coating. 1



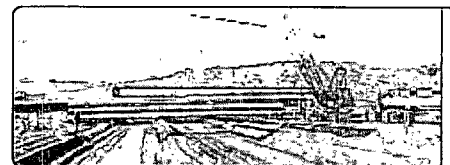
Valve cutaway illustrates total coverage capability of 3M™ Scotchkote™ FBE coating. 2



3M™ Scotchkote™ coating protects this pump housing from salt water and cavitation damage. 3



Application of 3M™ Scotchkote™ epoxy coating on rebar. 4



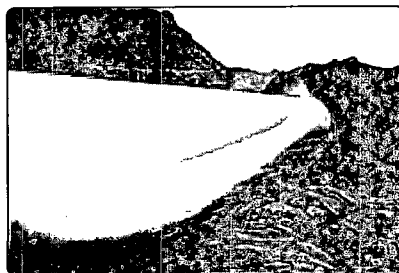
Stacked pipe with 3M™ Scotchkote™ coating ready for installation. 5

To The Specifying Engineer

How to Specify 3M™ Scotchkote™ Coatings

It is possible for applicators to apply powder coatings by various methods. Please consult your 3M Corrosion Protection Products Sales Representative or customer service representative for the names and capabilities of local applicators. Key application steps to consider when writing specifications are as follows:

- Remove oil and grease
- Abrasive blast to near white metal
- Remove blast media dust
- Inspect for surface imperfections, such as weld spatter and smooth by grinding (does not apply to reinforcing steel)
- Acid or deionized water wash (optional) to remove residual inorganic contaminants.
- Preheat parts to suggested application temperature



Pipe rehabilitation project completed using 3M Scotchkote coating — and repaired with Scotchkote hotmelt patchsticks. 6

- Apply Scotchkote coating to the specified thickness
- Electrically inspect for continuity
- Repair as required

Industry Standards and Specifications*

Pipe (External)

- **CSA Z245.20/06** - Canadian Standards Association External Fusion Bond Epoxy Coating for Steel Pipe/External Polyethylene Coating for Pipe
- **NFA 49-711** - French standard for steel tubes, three-layer external coating based on polypropylene by extrusion
- **DIN 30670** - German standard for polyethylene coatings for steel pipe fittings
- **NACE RP0394** - National Association of Corrosion Engineers Standard Recommended Practice, Application, Performance, and Quality Control of Plant-Applied, Fusion bonded Epoxy External Pipe Coating
- **NAPCA Bulletin 12-78** - National Association of Pipe Coating Applicators External Application Procedures for Plant Applied Fusion bonded Epoxy (FBE) To Steel Pipe
- **AWWA C213** - American Water Works Association Standard for Fusion-Bonded Epoxy Coating For The Interior and Exterior of Steel Water Pipelines

Reinforcing Steel

- **AASHTO M 284/M 284M** - Standard Specification for Epoxy Coated Reinforcing Bars
- **AASHTO T 253** - Standard Method of Test for Coated Dowel Bars
- **ASTM A 775/A 775M** - American Society for Testing Materials Standard Specification For Epoxy-Coated Reinforcing Steel
- **ASTM A 884/A 884M** - American Society For Testing Materials Standard Specification For Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcing Steel
- **ASTM A 934/A 934M** - American Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars
- **ASTM D 3963/D 3963M - 01**
- **NACE RP0395** - National Association of Corrosion Engineers Standard Recommended Practice Epoxy-Coated Steel Reinforcing Bars

Piles

- **ASTM A 950/A 950M** - American Society For Testing Materials Standard Specification For Fusion bonded Epoxy-Coated Structural H-Piles and Sheet Piles
- **ASTM A 972/A 972M** - American Society For Testing Materials Standard Specification For Fusion bonded Epoxy-Coated Pipe Piles

Pipes (Internal)

- **NSF/ANSI Standard 61**, Drinking Water System Components, for use with potable water.

**Specifications and Standards usually include the year in which they were last changed as part of the specification designator. These dates have not been included in the list.*

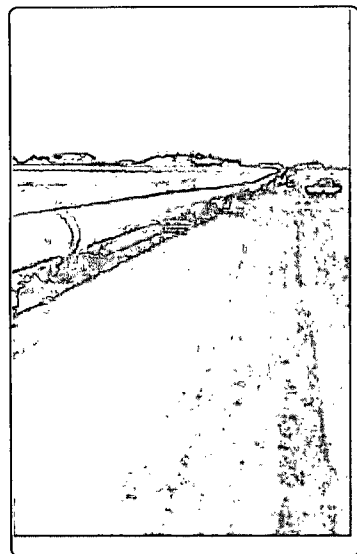
3M™ Scotchkote™ Pipe Coatings

3M has been the primary global supplier of fusion bonded epoxy coatings for pipelines since 1960, and Scotchkote materials have been used to coat more pipelines worldwide than any other fusion bonded epoxy product. Since 1960, the Scotchkote brand of products have changed significantly with major improvements in flexibility, adhesion, high temperature performance and damage protection. New systems are available that provide more choices to handle specific operating conditions than ever before. Application standards and overall quality of the applied coating have also increased substantially, and 3M has been intimately involved in this ongoing process at every step through extensive technical service activities, involvement in industry associations, and end

user support. Take advantage of this expertise by using Scotchkote products on your next pipe coating project.

Scotchkote 6233

Scotchkote 6233 is a significantly advanced, high-performance fusion bonded epoxy coating. It incorporates 3M's latest formulation technology, utilizing special adhesion promoting agents to enhance cathodic disbondment resistance in all conditions, especially elevated temperatures/wet environments.



The Alliance Pipeline in Minnesota, coated with 3M™ Scotchkote™ 6233. 7

Scotchkote 6233 adheres under the stress of changing temperatures and soil compaction. It bonds to line pipe, girth welds and associated fittings, and provides one of the best coatings available for use in corrosive soils, hydrocarbons, harsh chemicals and sea water.

Another important benefit of the coating is its ability to provide consistently high quality control test results under a broad range of application conditions. Comparative test results from The Alberta Research Council* confirm Scotchkote 6233 passes specification test requirements with uniformly higher marks on cathodic disbondment and water immersion testing than other available fusion

bonded epoxy coating evaluated in a 1998 study. These special characteristics provide a substantial upgrade in performance expectations not only from the application but from field performance as well. Scotchkote 6233 meets the requirements of CAN/CSA-Z245.20/06.

Scotchkote 226N/226N+

Scotchkote 226N/226N+ provides the same advanced properties as Scotchkote 6233. It meets the requirements of CAN/CSA-Z245.20/06, BG PS/CW6 without pretreatment.

Scotchkote 6258

Scotchkote 6258 is a one part, heat curable, thermosetting fusion bonded epoxy coating designed for corrosion protection of pipes. Scotchkote 6258 utilizes special ingredients that promote superior adhesion to steel and epoxy novolak resins that significantly raise the glass transition temperature of the coating. These benefits make this a suitable standalone coating and as a liner for downhole tubing.

Scotchkote 206N

Scotchkote 206N, has been a pipe coating benchmark since 1974. It is available in a variety of gel/cure time ranges for automatic or manual application to external and internal surfaces of pipe, associated appurtenances and field joints. The coating exceeds all industry pipe-coating standards. Scotchkote 206N Standard, Extra Long Gel, and Fluid Bed Grade products conform to AWWA C213 and 550, and they meet the requirements of NSF Standard 61 for use as a coating in contact with potable water.

* "Laboratory Evaluation of Seven Fusion Bond Epoxy Pipeline Coatings", December 23, 1998, prepared for Enbridge Pipelines, Inc. and 3M Canada by Alberta Research Council, Advanced Industrial Materials and Process Group, Edmonton, Alberta.

Fusion Bonded Epoxy Overcoating

(Dual Layer Systems)

3M™ Scotchkote™ FBE overcoatings possess select characteristics that impart unique properties for special applications and service conditions. They are compatible with all Scotchkote FBE corrosion protection coatings and are applied immediately after the primary coating in a continuous process. When properly applied, the result is a Dual Layer System that is chemically bonded at the layered interface. Most pipe coating applicators have the capability of providing these systems.

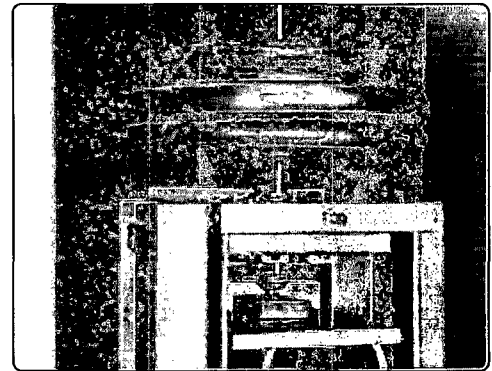
Topcoats consist of:

Scotchkote 6352

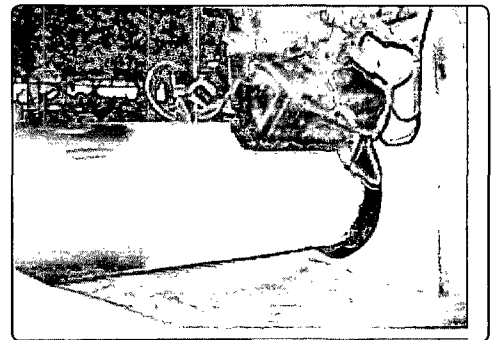
Scotchkote 6352 is an extremely hard, mechanically strong overcoating designed to protect the primary corrosion coat from damage during pipeline directional drilling applications, bores, river crossing, and installation in rough terrain. Gouge (see figure 8) and abrasion-resistance properties have been maximized in the development of this dense coating material. Scotchkote 6352 also retains a high degree of flexibility that easily exceeds specification limits of steel for field bending. Scotchkote 6352 over a corrosion coating also provides enhanced performance in hot wet applications.

Scotchkote 207R

Scotchkote 207R is a rough overcoating. Restricted flow and optimized components produce a granular finish on all Scotchkote pipe-coating products where increased surface roughness is required. Scotchkote 207R overcoating was specifically developed to provide added traction for guide/feed wheels used in the installation of offshore pipelines. It reduces slippage between fusion bonded epoxy and a concrete overcoat and provides safer footing.



Gouge test simulates the stresses on a coating during a horizontal pipe pull. The coating sample is dragged under a weighted bit and the gouge depth is measured. Photo courtesy of Technical Inspection Services, Inc. (TISI), Houston, Texas



Application of topcoat 3M™ Scotchkote™ 207R to pipe.

Multi-layer Polyolefin Coating Systems

Multilayer polyolefin systems consist of a base corrosion-protection layer of fusion bonded epoxy, a polyethylene or polypropylene copolymer adhesive intermediate layer, and a topcoat of polyethylene or polypropylene. These combinations take advantage of the low moisture permeation and toughness characteristics of polyolefins and the low oxygen permeation and adhesion properties of fusion bonded epoxy. Selection of the proper base coating is critical because it is the foundation of the system and significant to its overall performance capability. During application, an adhesive layer is extruded onto 3M™ Scotchkote™ FBE primer.

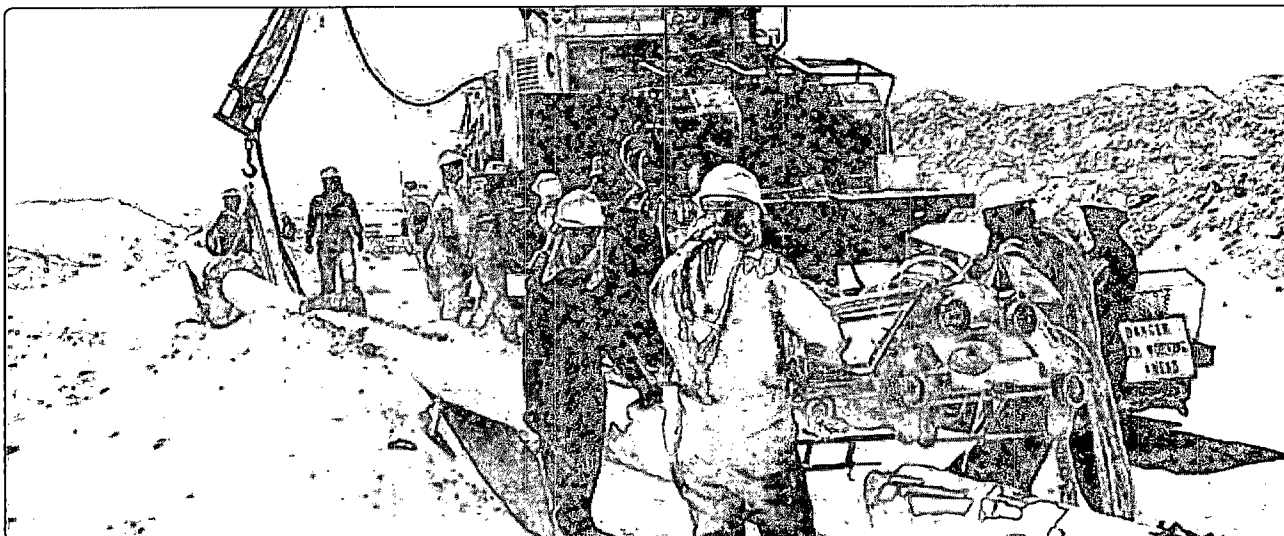
A second extruder applies the topcoat to the specified thickness while the adhesive is still molten.

Suggested Scotchkote Multi-Layer Base Coatings for Best Corrosion Protection Performance

Scotchkote 226N/226N+

Scotchkote 226N/226N+ is the premier, high-performance epoxy coating powder base coating for three-layer polyolefin coating systems. Scotchkote 226N/226N+ employs special adhesion promoting agents that improve cathodic disbondment performance in all service conditions, especially hot, wet environments.

A range of gel and cure times are available for optimum bonding of the polyolefin adhesive layer. Scotchkote 226N/226N+ also offers superior protection as a stand alone coating.



Pipe coated with 3M™ Scotchkote™ Fusion Bonded Epoxy as the primary layer, polypropylene copolymer adhesive and polypropylene overcoating.

Internal Linings

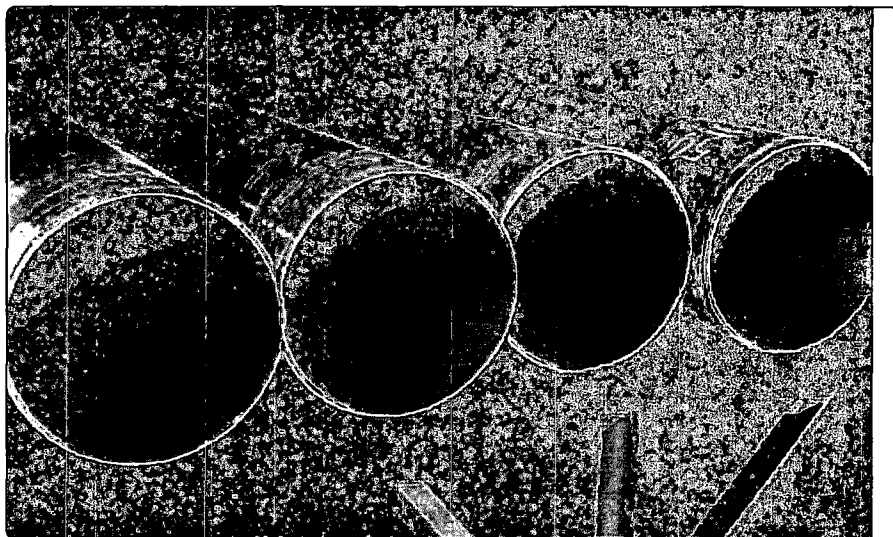
3M™ Scotchkote™ FBE coatings are available with extended gel, flow and cure characteristics for application to the interior surfaces of pipe. In some cases, existing pipeline or custom coating products may have been adapted for internal use by modifying these properties. Scotchkote products that have been adapted for internal pipe coating use and described in other sections of this brochure are Scotchkote 134, 135, and 206N Extra Long Gel and 6258. Other 3M coatings not listed, such as Scotchkote 6171 are available to meet special service requirements. Liquid primers are sometimes used with these coatings to enhance performance properties in particularly severe environments, such as those encountered in downhole oil production. Proper selection of internal coatings depends upon pipe size, type and service conditions. Contact your 3M sales or customer service representative for further information.

Scotchkote 345 Liquid Phenolic Primer

Scotchkote 345 Liquid Phenolic Primer is designed specifically for application to metal surfaces prior to top coating with Scotchkote FBE coatings. When properly applied, Scotchkote 345 primer and topcoat systems provide excellent resistance to CO_2 , H_2S , CH_4 , petroleum distillates, and brine at elevated temperatures and pressures.

Scotchkote 500N Water Base Primer

Scotchkote 500N Water Base Primer is a water-based metal treatment designed to increase adhesion of fusion bonded epoxy coatings. Properly applied to blast-cleaned steel, it provides protection for metal surfaces and a uniform bonding base for increased coating performance. This primer significantly improves hot water resistance, autoclave resistance, and cathodic disbondment and salt spray resistance of the coating. It is easily applied with minimal application equipment and promotes a chemically uniform steel surface condition.



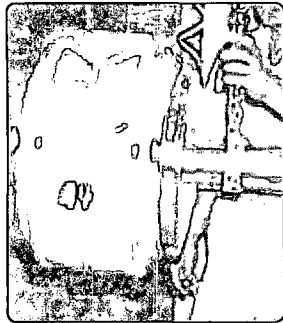
Pipe internally coated with 3M™ Scotchkote™ coating.

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Pump volutes protected against corrosion with 3M™ Scotchkote™ 134.

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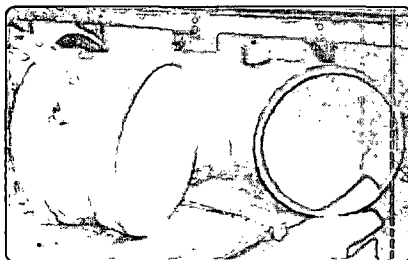
Application of 3M™ Scotchkote™ 134 custom coating on a turbine.

13



Fluid bed dip application of 3M™ Scotchkote™ 206N.

14



Pipe fittings coated with 3M™ Scotchkote™ 206N.

15

Custom Coating

3M™ Scotchkote™ FBE coatings can be applied to a variety of parts for corrosion protection. Example applications include valves, pumps, tapping saddles, pipe appurtenances, manifolds, sewage aerators, tanks, pipe hangars, ladders, hydrants, cast iron risers and flow meters. Coating is accomplished by manual flocking (air spray), electrostatic spray, or fluid bed dip application.

Scotchkote 134 and Scotchkote 135

Scotchkote 134 (green) and Scotchkote 135 (gray) are both designed for flock or electrostatic spray application. Because of their long gel time (upto 2.5 minutes at 350°F/177°C), Scotchkote 134 and 135 maximize the time of application so that large surface areas or parts with complex recesses can be coated without overspray or laminations. Balanced formula and controlled viscosity allow high thickness build and edge coverage without sag or drips. The coatings can also be applied cold electrostatically. Scotchkote 134 conforms to the requirements of NSF Standard 61, for use as a coating in contact with potable water and has been used extensively in the water/wastewater industry since 1965. Scotchkote 134 and 135 meet the requirements of AWWA Standard C213, for valves and appurtenances. A custom coating grade with Scotchkote 6171 is also available.

Scotchkote 206N Fluid Bed Grade

Scotchkote 206N Fluid Bed Grade is specifically designed for the fluidized bed application process. Product gel and flow are carefully controlled to produce a smooth, continuous coating film with high edge coverage. Special fluidizing materials have been thoroughly blended to enable even dispersion of product and optimum fluidization in the largest of fluid beds. The coating cures quickly from residual heat retained in the part and does not usually require postbaking. Scotchkote 206N Fluid Bed Grade has a growing list of international approvals for use as a coating in contact with potable water, including conformance to the requirements of NSF Standard 61.

Reinforcing Steel Coatings

3M has been the market leader for epoxy coated reinforcing steel since its inception in 1972. More reinforcing steel in roads, bridges and structures have been coated with 3M™ Scotchkote™ coatings than any other epoxy coating product. 3M provides materials that exceed prequalification test requirements in accordance with industry standards and apply consistently in all types of coating plants. These important features translate to optimum corrosion protection performance at low cost.

Scotchkote 413

Scotchkote 413 is formulated to provide superior flexibility for shop or field fabrication that exceeds current AASHTO and ASTM bend requirements. Scotchkote 413 is resistant to corrosive agents such as deicing salts, airborne salt spray, seawater, harsh chemicals, acid rain, carbonation, contaminated aggregate and concrete additives. Components have been carefully selected and balanced to maintain consistency and productivity control in all application plants. Cure is by residual heat. Scotchkote 413 meets/exceeds all standards for coating of reinforcing steel prior to fabrication.

Scotchkote 426

Scotchkote 426 meets the rigid prequalification standards of ASTM A 934/934 M for coating of reinforcing steel after fabrication. Like Scotchkote pipe-coating materials, Scotchkote 426 also incorporates special adhesion promoting agents for enhanced corrosion protection and chemical resistance properties. High edge coverage helps protect sharp corners on rebar ends caused by the shearing operation. Scotchkote 426 is available in two gel/cure times for application to straight or prebent rebar sections.

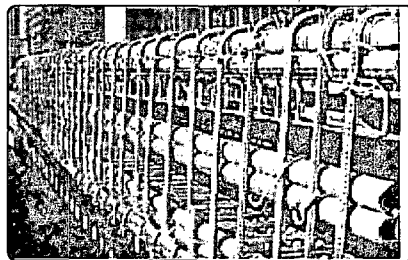
Scotchkote 413SG

Scotchkote 413SG Spray Grade Coating is designed for application on welded wire fabric, mesh, chair assemblies, dowel baskets, cable-tensioning hardware, screw anchors and coupling devices. The coating possesses high flow capability without sag for maximum penetration into wire intersections and coverage on sharp weld cusps. Gel and cure time and have been extended to aid in this process, therefore the coating must be postbaked. Scotchkote 413 Spray Grade meets/exceeds all standards for coating of reinforcing steel prior to fabrication



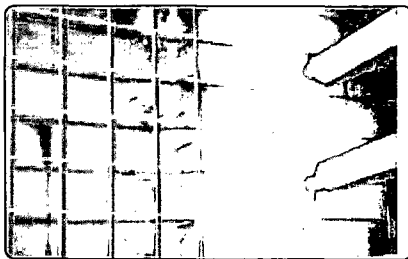
3M™ Scotchkote™ coated rebar ready for installation.

16



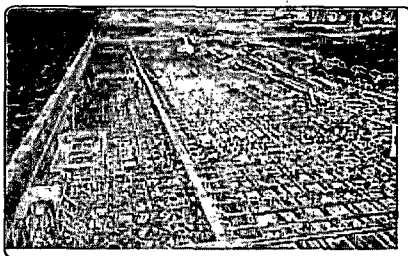
Rebar coated with 3M™ Scotchkote™ 413.

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3M™ Scotchkote™ 413 spray grade being applied to wire mesh.

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3M™ Scotchkote™ 426 coated rebar in naval pier prior to concrete pour.

19

Field Applied Liquids and Patch Compounds

Pipeline Patch, Repair, and Rehabilitation

3M provides a complete line of patch/repair compounds for all 3M™ Scotchkote™ FBE coatings. Some are high build liquid epoxy coatings that may also be used as field applied stand-alone coatings for general corrosion protection. Applications include pipeline rehabilitation, pipe joints, water piping, fittings, valves, structural members, and tanks.

Scotchkote 323/323i are ambient-temperature cure, 100% solids, two-part thermosetting epoxy liquid coatings designed to protect metal, concrete and other surfaces from corrosion deterioration. They may be applied in the field by cartridge, brush, roller, or plural component spray equipment. These products are certified to ANSI/NSF Standard 61, Drinking Water System Components.

Scotchkote 306 & Scotchkote 314 are ambient-temperature cure, two-part thermosetting 80% solids liquid epoxy coatings designed to protect metal and other surfaces from corrosion and deterioration. Scotchkote 306 and 314 may be applied in the field by brush, roller, or conventional or airless spray equipment. Scotchkote 306 is color matched for repair of Scotchkote 206N; Scotchkote 314 for Scotchkote 134. These products are certified to ANSI/NSF Standard 61, Drinking Water System Components.

Scotchkote 324 liquid epoxy coating possesses enhanced corrosion protection capability and is particularly useful in coating tanks, valves, piping and special fabrications. It provides extraordinary chemical resistance, high adhesion, and resists cathodic disbondment. The coating is a heat-cured, 1:1 mix ratio, two-part, thermosetting, 83% solids liquid epoxy applied with conventional air or airless spray equipment. A coating thickness up to 10 mils/254 µm can be obtained in one application without sag. At room temperature, it has a 16-hour potlife. The applied coating B-stages at ambient temperature to a hard gel, allowing inspection and repair prior to cure.

Scotchkote 352 is a plural component coating system designed to protect buried steel structures from the harsh effects of corrosion. It also allows applications to be performed in difficult conditions that require fast turn around time and good chemical resistance.

Rebar Patch Compound

Scotchkote 413/215 PC and 413/215 PC Cold Weather Grade Patch Compounds

Scotchkote 413/215 PC and 413/215 PC Cold Weather Grade (CWG) Patch Compounds are two-part, ambient-temperature cure, thermosetting, liquid epoxy coatings. They are designed for the repair of damage to Scotchkote 413, 413-spray grade FBE coatings. Scotchkote 413/215 PC can be applied by brush or spray. The coating has a long potlife (8 hrs at 70°F/21°C) and is easily applied in the plant or field. Scotchkote 413/215 PC (CWG) is applied primarily by brush and can used at temperatures as low as 5°F/-15°C.

Hot Melt Patch Compounds

Scotchkote 226P Hot Melt Patch Compound

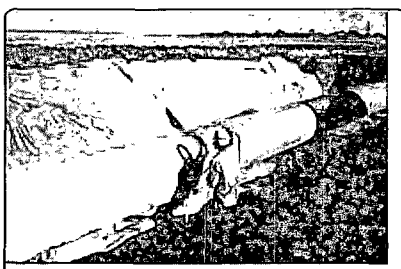
Scotchkote 226P Hot Melt Patch Compound is a heat-bondable polymeric repair material in stick form for plant or field touch up and repair of Scotchkote FBE coatings. It is designed for minor damage, small pinholes and nicks. Scotchkote 226P is easily applied in all conditions and is quick setting for immediate installation and handling.

Girthweld Field Application

Field application of FBE coating on girth welds provides a matching level of performance quality as plant-applied materials-the pipeline can be protected with the same coating from end to end.



Cleaning pipe to a white finish for a rehab project. 20



3M™ Scotchkote™ liquid epoxy being applied to a pipe for a rehabilitation project. 21



Completed pipe coating rehabilitation using 3M™ Scotchkote™. 22

Fusion Bonded Epoxy

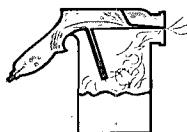
Preheating

After cleaning, parts are normally preheated to a temperature of 350°F/177°C to 488°F/253°C, then coated.

Applying

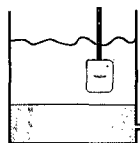
Flocking

Flocking is the application of air atomized powder. Flock spray can be used to maximum advantage when coating parts with deep recesses and crevices. All 3M™ Scotchkote™ FBE coatings readily adapt to this method of forced-air application.



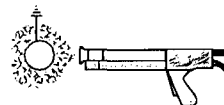
Fluidized Bed

The fluidized bed consists of two chambers separated by a porous membrane that diffuses air throughout the coating powder. In operation, the powder volume expands and preheated objects are coated by a dip process. Scotchkote coatings applied by this method encapsulate parts without sags, runs or pinholes.



Electrostatic Coating

Electrostatic coating is accomplished by charging powder particles with high voltage as they are sprayed onto an object at ground potential. This coating method is ideal for flat, angular, or irregular shaped objects. Scotchkote coatings applied electrostatically have excellent edge coverage and coating continuity.



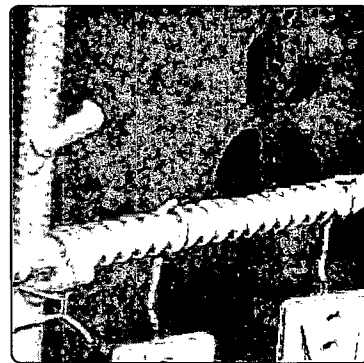
Curing

Curing after application is an easy process with Scotchkote. Many of the coatings are designed for quick cure, high-speed application in automated plants. These products are cured by residual heat imparted during the preheat cycle and do not require a postbake. Coatings that are applied by manually spraying and some internal coatings that have long gel/melt cycles require postbake. Exact temperature and time cycles may vary, depending on the objects coated and the Scotchkote™ coating used.

Testing

3M tests Scotchkote products for properties such as adhesion, impact strength, hardness, thermal shock, abrasion resistance, penetration and chemical resistance.

In many cases, results are confirmed by independent laboratory investigation. For more information on test results please refer to the specific product data sheet. Before use, you must evaluate the coating to determine if it is suitable for your intended application.



Post-tensioning hardware coated in accordance with AASHTO and ASTM specifications with 3M™ Scotchkote™ 413 spray grade.

Shipping and Storage

Scotchkote FBE Powder Coatings are finely ground powders that react when heated. They do not contain solvents. Products are very shelf stable but may become unusable if exposed to temperatures above 80°F/27°C for extended periods of time. Handling precautions for individual Scotchkote coatings are described on product data sheets and materials safety data sheets.

Handling & Safety Precautions

Read all Health Hazard, Precautionary, and First Aid statements found in the Material Safety Data Sheet, and/or product label prior to handling or use.

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

Ordering Information/Customer Service

For ordering technical or product information, or a copy of the Material Safety Data Sheet, call:

Phone: 800/722-6721 or 512/984-9393

Fax: 877/601-1305 or 512/984-6296

Data sheets and MSDS can be found on the website.

Warranty; Limited Remedy; Limited Liability.


This product will be free from defects in material and manufacture for a period of 6 months from the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**



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POLYKEN[®]

Pipeline Coating
Systems

State-of-the-Art
Pipeline Protection
for all Climates
and Environments

www.berrycpg.com

BERRY
PLASTICS[™]
CORPORATION
AND SUBSIDIARIES
CORROSION PROTECTION GROUP

The Leader in Pipeline Protection Technology

The Polyken® brand has been synonymous with pipeline corrosion protection systems worldwide for more than 50 years. Whether in the extreme heat of the Middle East or the forbidding cold of Russia or the more moderate climates of the United States, Berry Plastics CPG is there with the most advanced anti-corrosion pipeline coatings for the oil, gas, water and coal slurry industries.

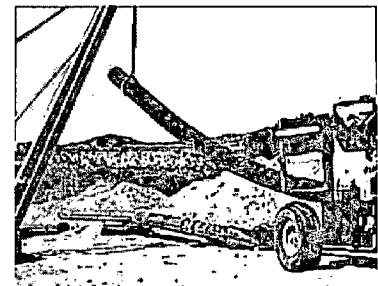
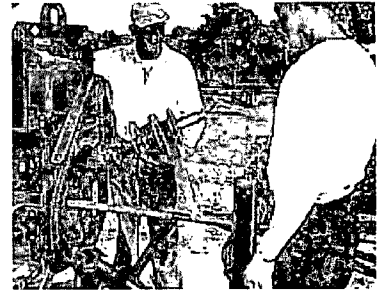
With a full range of multi-layered coating systems and a host of coating accessories, Berry Plastics CPG is ready to respond to customers anywhere around the globe.

PRODUCT INNOVATION AND DEVELOPMENT

Berry Plastics CPG is a leader in innovative products for pipeline corrosion protection. Berry Plastics CPG introduced the first zero-VOC, solvent-based primer in the world and introduced the first polypropylene mesh rockshield system to protect high temperature coated pipe from handling damage that typically occurs during the backfill operation.

LEADING EDGE TECHNOLOGY

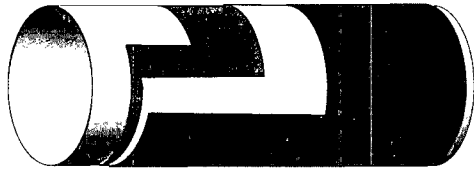
Advanced technical research, development and commercialization are key to Berry Plastics CPG's leading position in coating technology. The company operates an extensive research center in Lexington, Massachusetts to understand corrosion and pipeline technology. With that knowledge base, coating scientists design the most advanced systems to combat pipeline corrosion.



Plant Coating Systems

Berry Plastics CPG offers a wide range of coating systems that meet the rigorous demands of on-land and off-shore pipelines. Through a global network of certified

applicators, the plant coating specifications and quality standards are rigorously monitored, thus ensuring reproducible long-term coating performance to the end-user.

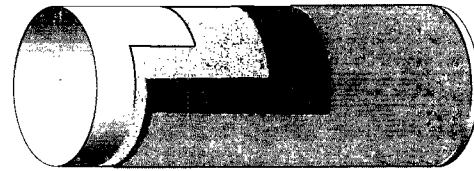


The SYNERGY® System is a fused multi-layer coating system that consists of a thermally activated primer layer, a thermoplastic elastomer layer and a tough polyethylene outer layer. During application the three layers are thermally fused, resulting in strong mechanical and chemical bonds that maximize the system's performance.

The Primer Layer is a solvent-based thermoplastic primer that provides a uniform surface for optimal adhesion. The primer is formulated with stress-corrosion cracking inhibitors.

The Anti Corrosion Layer chemically bonds to the primer layer and fuses to the outer polyethylene layer to anchor it completely to the pipe.

The Mechanical Layer fuses with the elastomer layer and to itself to provide protection from the elements, as well as mechanical protection.



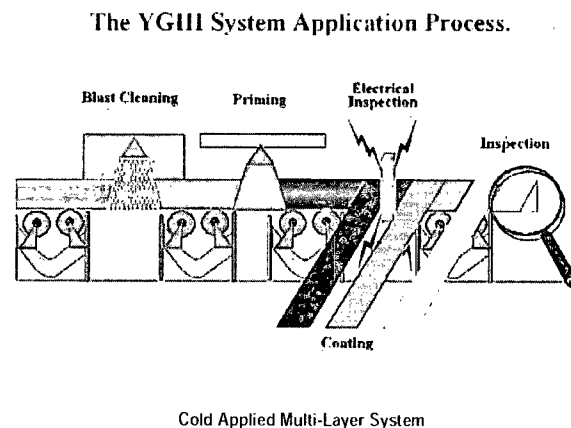
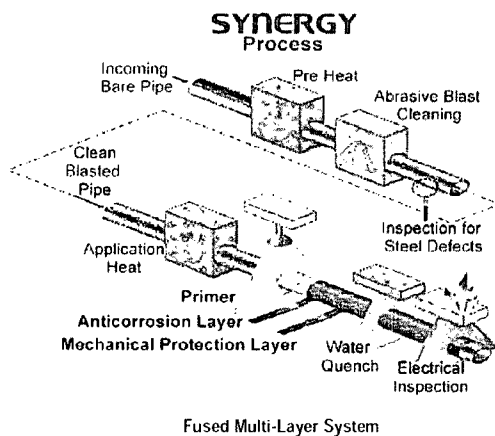
The Polyken® YGIII® System is a cold-applied, multi-layer coating system used primarily for the protection of steel and ductile iron water pipelines.

Low and Zero-VOC, Solvent-Based Primers comply with all air quality standards and regulations. Designed for machine application and formulated with stress-corrosion cracking inhibitors.

The Anti-Corrosion Layer is engineered for maximum adhesion to the primed surface with excellent conformability.

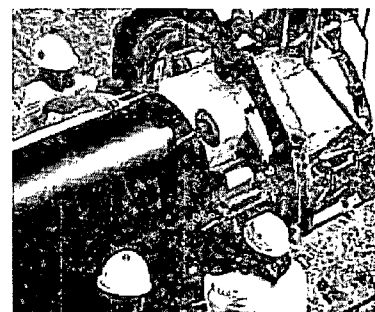
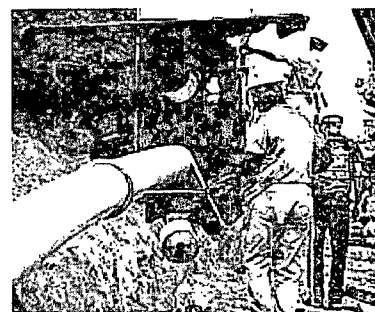
The Middle and Outer Mechanical Protection Layers provide exceptional handling and in-service protection of the coating system.

Weld Stripping Layer is used in the corrosion protection of spiral and longitudinal weld areas.



POLYKEN® On-Site Coating Systems

Berry Plastics CPG offers a series of coating systems designed specifically for in-field applications on new construction pipe or reconditioning of existing pipelines. In-field or in-situ installation is economical and efficient. When Berry Plastics CPG cold applied coating systems are used, a small investment in manpower and application equipment yields a big return in productivity and long-term performance. The reconditioning systems can be applied on existing operating pipelines, which means no loss of revenue and downtime. Berry Plastics CPG non-toxic and environmentally safe materials ensure application friendly conditions along the right-of-way (ROW).



New Construction/Reconditioning Systems

Product	Uses and General Characteristics	Total Thickness		ASTM D1000 Adhesion to Primed Steel Pipe		Maximum Temperature	
		Metric	US Imperial	Metric	US Imperial	Metric	US Imperial
1019	Solvent-based primer designed for machine application on abrasive-cleaned or wire brushed pipe surfaces. Contains stress-corrosion cracking inhibitors.	N/A	N/A	N/A	N/A	100°C	212°F
1027	Solvent-based primer designed for brush, roller or spray application to mechanically-cleaned reconditioned pipe surfaces. Contains stress-corrosion cracking inhibitors.	N/A	N/A	N/A	N/A	100°C	212°F
980 980-20 980-25 980-30	Anti-corrosion layer designed for machine application under various climactic conditions. Excellent conformability to the primed pipe surface with proven long-term in-ground performance.	0.51 mm 0.63 mm 0.76 mm	20 mil 25 mil 30 mil	33 N/10 mm	300 oz/in	85°C *	185°F *
955	Mechanical protection coating layer designed for machine application. Protects Polyken® 980 from backfill and in-ground construction damage.	0.76 mm 0.63 mm	30 mil 25 mil	33 N/10 mm	300 oz/in	85°C	185°F

* For pipe diameters up to 36" or DN900

High Shear System – GO Coat 200[™]

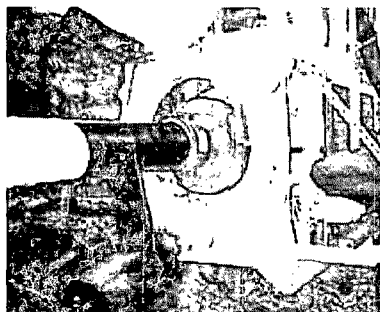
• for pipe where soil stress conditions exist.

Product	Uses and General Characteristics	Total Thickness		ASTM D1000 Adhesion to Primed Steel Pipe		Maximum Temperature	
		Metric	US Imperial	Metric	US Imperial	Metric	US Imperial
2019	High shear primer designed for machine application on mechanically-cleaned pipe surfaces. Formulated with stress-corrosion cracking inhibitors and materials that remain stable at elevated temperatures.	N/A	N/A	N/A	N/A	100°C	212°F
2000	Anti-corrosion layer formulated with a high shear adhesive to work in conjunction with the Polyken® 2019 primer. The polymeric backing is designed to remain pliable at elevated temperatures for long-term corrosion protection.	0.64 mm	25 mil	28 N/10 mm	250 oz/in	93°C	200°F
2055	Mechanical protection layer designed for machine application to protect the Polyken® 2000 layer from backfill and construction damage. The polymeric backing is designed for long-term stability at elevated temperatures.	0.64 mm	25 mil	33 N/10 mm	300 oz/in	93°C	200°F
2036	Hand-applied version of the Polyken® 2000 system for application to field joints, fittings and specialty piping. Also used as an in-field repair coating system.	0.64 mm	25 mil	28 N/10 mm	250 oz/in	93°C	200°F

High Temperature Polypropylene System – GO Coat 250[™]

• for application on high temperature pipelines operating at maximum temperatures up to 121°C (250°F).

Product	Uses and General Characteristics	Total Thickness		ASTM D1000 Adhesion to Primed Steel Pipe		Maximum Temperature	
		Metric	US Imperial	Metric	US Imperial	Metric	US Imperial
1619	Thermally activated solvent-based primer for spray, roller or brush application to mechanically-cleaned new or reconditioned pipe. Formulated for stability at elevated temperatures and contains stress-corrosion cracking inhibitors.	N/A	N/A	N/A	N/A	121°C	250°F
1600	Polypropylene-based coating system with a cross-linked adhesive capable of maintaining long-term protection at high temperatures. The system is applied in multiple layers using commercially available reconditioning equipment.	0.64, 0.76 mm	25, 30 mil	33 N/10 mm	300 oz/in	121°C	250°F
1636	Hand-applied version of the Polyken® 1600 system for application to field joints, fittings and specialty piping. Also used as an in-field repair coating system.	0.76 mm	30 mil	33 N/10 mm	300 oz/in	121°C	250°F





Berry Plastics CPG carries a full line of products to complement the main line coating systems and meet the challenges of modern pipeline activities.

Utility work: hand-applied tape products for gas utility, oil field, and plumbing applications on small diameter pipe.

Coating repair: cold-applied tape products for plant and field repair of main line coating systems.

Specialty fittings and fabrication work: a variety of tape systems and mastics that conform to irregularly-shaped pipe.

Field joints: single-sided and double-sided tape systems that conform to bell and spigot, welded and mechanically-coupled field joints.

ROW construction: Rockshield system, tie-in, and above-ground tape systems for use at the job site by the pipeline contractor.

Offshore Tapes: Whether replacing PVC on welded joints or protecting Pier Pilings, Polyken® has the tape coating for the job.

Pipe Wrap, Joint Coatings and Accessory Products

Product	Uses and General Characteristics	Total Thickness		ASTM D1000 Adhesion to Primed Steel Pipe		Maximum Temperature	
		Metric	US Imperial	Metric	US Imperial	Metric	US Imperial
1027	Solvent-based primer designed for brush, roller or spray application to mechanically-cleaned pipe surfaces. Contains stress-corrosion cracking inhibitors.	N/A	N/A	N/A	N/A	100°C	212°F
908	General utility tape for hand application on small diameter pipe, joints and fittings.	0.20 mm	8 mil	N/A	N/A	66°C	150°F
911	General utility tape for hand application on small diameter pipe, joints and fittings.	0.23 mm	9 mil	11 N/10 mm	100 oz/in	66°C	150°F
910	All purpose tape system for field application in the oil patch.	0.25 mm	10 mil	11 N/10 mm	100 oz/in	66°C	150°F
900	General utility tape for hand application on small diameter pipe, joints and fittings.	0.3 mm	12 mil	11 N/10 mm	100 oz/in	66°C	150°F
920	Utility tape system with increased mechanical integrity for hand or machine application on small diameter pipe.	0.51 mm	20 mil	11 N/10 mm	100 oz/in	66°C	150°F
905(-30) 905(-40)	Cold-applied tape system used for tie-in sections during pipeline construction.	0.75 mm 1.02 mm	30 mil 40 mil	38 N/10 mm	350 oz/in	85°C	185°F
930(-35) 930(-50)	Heavy duty joint wrap tape for hand wrapping in applications where higher shear properties are required. Designed without release liner for less waste and ease of use. EN/DIN B30 Qualified.	0.89 mm 1.27 mm	35 mil 50 mil	27 N/10 mm 33 N/10 mm	250 oz/in 300 oz/in	85°C	185°F
931	Self-adhering, 100% butyl rubber filler used to fill voids and crevices around joints, fittings and specialty piping. Must be over-wrapped with any of the Polyken® joint wrap systems.	0.97 mm	38 mil	27 N/10 mm	250 oz/in	121°C	250°F
932(-35) 932(-50)	Cold-applied tape system with an elevated high-tack adhesive. Provides excellent conformability when hand applied to field joints, fittings and specialty piping. EN/DIN B30 Qualified.	0.89 mm 1.27 mm	35 mil 50 mil	16 N/10 mm 18 N/10 mm	150 oz/in 160 oz/in	50°C 50°C	122°F 122°F

Pipe Wrap, Joint Coatings and Accessory Products (cont.)

Product	Uses and General Characteristics	Total Thickness		ASTM D1000 Adhesion to Primed Steel Pipe		Maximum Temperature	
		Metric	US Imperial	Metric	US Imperial	Metric	US Imperial
933 (-25)	Specifically designed to provide additional protection of the weld seam of a spiral or longitudinally welded pipe.	0.64 mm	25 mil	2.2 Kg/cm	200 oz/in	85°C	185°F
934(-35) 934(-50)	Cold-applied tape system with a high tack adhesive. Used as a patch/repair system and as the primary corrosion protection system on field joints, fittings and specialty piping.	0.89 mm 1.27 mm	35 mil 50 mil	27 N/10 mm 35 N/10 mm	250 oz/in 320 oz/in	66°C 66°C	150°F 150°F
936(-30) 936(-50)	Cold-applied, high tack tape system specifically for above-ground protection on cleaned pipe surfaces. The system is formulated to resist degradation caused by exposure to UV rays and various outdoor conditions. Long-Term UV Resistance.	0.762 mm 1.27 mm	30 mil 50 mil	22 N/10 mm 25 N/10 mm	200 oz/in 225 oz/in	66° C 66° C	150°F 150°F
937	Brush-applied mastic coating to protect irregularly-shaped underground metal surfaces.	N/A	N/A	N/A	N/A	66°C	150°F
938	Trowel-applied mastic coating to protect irregularly-shaped underground metal surfaces.	N/A	N/A	N/A	N/A	66°C	150°F
939	100% solids mastic designed as a self-adhering filler material prior to overcoating with Polyken® joint coating tape systems.	**	**	33 N/10 mm	300 oz/in	93°C	200°F
942	Cold-applied, double-faced tape systems for in-field or plant application on mechanically-cleaned and primed pipe. The Polyken® 942 complies with the DIN 30672 standard when used in conjunction with a mechanical protection layer. EN/DIN C50 Qualified.	0.76 mm	30 mil	33 N/10 mm	300 oz/in	50°C	122°F
955 EN	Mechanical protection layer for use with Polyken® 942 coating product. Easy hand or machine application.	0.76 mm	30 mil	N/A (outerwrap)	N/A (outerwrap)	66°C	150°F
954	Mechanical protection layer for use with all of the Polyken® joint wrap coating products. Easy hand or machine application.	0.38 mm	15 mil	N/A (outerwrap)	N/A (outerwrap)	85°C	185°F
4000(-35)	Cold-applied coating system designed for the corrosion protection of field joints, fittings, and specialty piping. This system does not require a primer or liquid adhesive. EN/DIN B30 Qualified.	0.89 mm	35 mil	17 N/cm 12 N/cm	160 oz/in 110 oz/in	50°C -34°C	122°F -30°F
5000	Rockshield system - polyethylene diamond mesh screen helps protect against backfill and handling damage during construction.	4.0 mm	160 mil	Rockshield	Rockshield	66°C	150°F
5200	Rockshield system - polyethylene mesh laminated to polypropylene fabric padding for the ultimate supplemental coating protection.	6.6 mm	260 mil	Rockshield	Rockshield	66°C	150°F

** See Data Sheet

Offshore Tapes

Product	Uses and General Characteristics	Total Thickness		ASTM D1000 Adhesion to Primed Steel Pipe		Maximum Temperature	
		Metric	US Imperial	Metric	US Imperial	Metric	US Imperial
980-SSJ	Polyken® 980-SSJ Joint Coating has been specifically designed and ideally suited for the corrosion protection of welded joints of Lay-barge installed pipelines.	65 mil	1.66mm	> 4 N/cm (unprimed)	> 20 lbs/in. (unprimed)	85°C	185°F
670	Specifically designed and ideally suited for the corrosion protection of "in-situ" pilings installed in fresh or sea water	1.54mm	60 mil			66°F	150°F
671	Mechanical protection layer for use with Polyken® 670 coating product.	1.54 mm	60 mil	N/A (outerwrap)		66°F	150°F

MEETING GLOBAL STANDARDS

Polyken® Pipeline Coatings are manufactured in a ISO 9000 / QS 9000 certified manufacturing facility and are designed and tested in accordance with the most demanding industry and global standards.

What is a Square?

Polyken® Pipeline Coatings are produced and sold in a universal unit of measure called a Square.

One Square = 100 ft. ² and 9.29 m ²

Formula for determining the area of Pipe:

Area of Pipe = (Diameter)(3.1416)(Length)

Imperial Formula for Pipe Coating Requirements:

$$\frac{(\text{Width of Coating in inches})(\text{Area of pipe in square feet})}{(\text{Width of Coating} - \text{Overlap in inches})(100)} = \text{Squares of Coating Required}$$

Metric Formula for Pipe Coating Requirements:

$$\frac{(\text{Width of Coating in mm})(\text{Area of pipe in square meters})}{(\text{Width of Coating} - \text{Overlap in mm})(9.29)} = \text{Squares of Coating Required}$$

Berry Plastics CPG is a proud member of :



Polyken® products have quality certifications from :



Berry Plastics warrants that the product conforms to its chemical and physical description and is appropriate for the use stated on the technical data sheet when used in compliance with Berry Plastics written instructions. Since many installation factors are beyond the control of Berry Plastics, the user shall determine the suitability of the products for the intended use and assume all risks and liabilities in connection herewith. Berry Plastics liability is stated in the standard terms and conditions of sale. Berry Plastics makes no other warranty either expressed or implied. All information contained in this technical data sheet is to be used as a guide and is subject to change without notice. This technical data sheet supersedes all previous data sheets on this product.



CORROSION PROTECTION GROUP
www.berrycpg.com

Local Distributor / Representative:

For contact details of local Distributors / Representatives
Please visit www.berrycpg.com.

BR-POLYKEN-REV-10-NOV08

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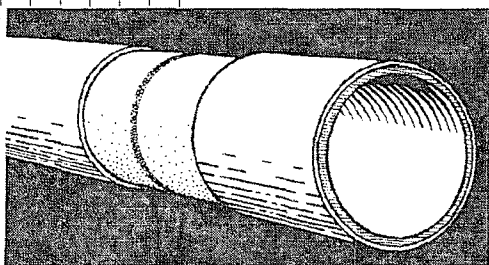
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MACHINE APPLIED POLYKEN® PIPE DIAMETER AND TAPE WIDTH

Pipe Outside Diameter		Tape Width	
inch	mm	inch	mm
.75 - 1.5	19 - 38	2	50.8
2 - 3	51 - 76	≤ 4	≤ 101.6
4	102	≤ 6	≤ 152.4
6 - 14	152 - 356	≤ 9	≤ 228.6
16 - 60	406 - 1524	≤ 12	≤ 304.8

HAND APPLIED POLYKEN® PIPE DIAMETER AND TAPE WIDTH

Pipe Outside Diameter		Tape Width	
inch	mm	inch	mm
.75 - 1.5	19 - 38	2	50.8
2 - 6	51 - 152	≤ 4	≤ 101.6
8 and larger	203	≤ 6	≤ 152.4



POLYKEN® # 930

Tape Coating for Joints & Fittings

System Description

The Polyken #930 is a cold applied tape coating system designed for the corrosion protection of field joints, fittings and specialty piping. The unique adhesive retains conformability over a wide temperature range, yet exhibits an elevated level of shear resistance, which is a key in-ground performance characteristic. Couple with a very maleable polyethylene backing, this versatile tape system can be applied by hand or with a wrapping machine.

Product Features/Benefits

- **Heavy duty adhesive**
Ensures a strong bond & impervious seal
- **Conformable to irregular shapes**
Offers a solution for nearly every application
- **No release liner**
Makes installation fast and easy
- **Worldwide reference lists**
Established in-ground history
- **Complies with AWWA Standard C-209**
Reliable, high performance corrosion protection
- **Compatible with generic plant coating systems**
Versatile

Product Selection Guide

#930

Max operating temperature	85°C (185°F)
Recommended primer	1027 or 1033A
Additional mechanical layer	955 or 954
Compatible line coatings	PE, FBE, Tape & Coal Tar
Recommended pipe preparation	SSPC-SP2, SP3 & SP6 ST 2 1/2 – ST 3
Performance	AWWA C-209, DIN30672 & EN12068 class B30

Product Construction

930-35

930-50

Backing	6.5 mils (0.165 mm)	10 mils (0.254 mm)
Adhesive	28.5 mils (0.724 mm)	40 mils (1.016 mm)
Backing color	Black, White*	Black*

* Other colors are available on request

Product Properties

Test method

Typical Value

Typical Value

		#930-35	#930-50
Tensile Strength	ASTM D1000	15 lbs/in (26 N/cm)	25 lbs/in (44 N/cm)
Elongation	ASTM D1000	340 %	300%
Peel Adhesion to Primed Steel	ASTM D1000	250 oz/in (27 N/cm)	300 oz/in (33 N/cm)
Cathodic Disbondment:	ASTM G8	0.25 in radius (6.4 mm)	0.25 in radius (6.4 mm)
Water Vapor transmission	ASTM E96B	0.07 perm	0.07 perm
Water Vapor Transmission Rate	ASTM F1249 (100°F, 100% RH)	0.04g/100in ² /24hr (0.6g/m ²)	0.04g/100in ² /24hr(0.6g/m ²)
Volume Resistivity	ASTM E257	2.5 x 10 ¹⁶ ohm•cm	2.5 x 10 ¹⁶ ohm•cm
Dielectric Breakdown	ASTM D1000	650 volts/mil (25.6 kV/mm)	600 volts/mil (23.6 kV/mm)
Dielectric Strength	ASTM D149	21 kV	28 kV
Insulation resistance	ASTM D1000	1.4 x 10 ⁷ MOhm	2.0 x 10 ⁷ MOhm
Impact resistance	EN12068	>8 Nm	>8Nm
Penetration resistance	EN12068	Class B30	Class B30

Ordering Information

Polyken 930 Tape Coatings are available in roll form

Example : 930-35 BLK 2X50FT 1.5

930	Product type	Standard Ordering options
35	Total tape thickness in mils	35 mils (0.89 mm), 50 mils (1.27 mm)
BLK	Tape backing color	Black (BLK), White (WHI), Blue (BLU)
2	Tape width in inches	1"(25 mm), 2"(50 mm), 4"(101 mm), 6"(152 mm),
50FT	Tape roll length in feet	50 FT (15M)
1.5	Tape inner core diameter in inch	1.5"(38 mm), 3" (76 mm)

For other ordering options please contact your Berry Plastics representative.

Equation for Pipe Coating Requirements

$$\frac{(\text{Width of Coating in inches}) \times (\text{Area of pipe in square feet})^*}{(\text{Width of Coating in inches} - \text{Overlap in inches}) \times 100} = \text{Squares}^{**} \text{ of Coating Required}$$

* Area of pipe in square feet = (Diameter in inches) / 12 x 3.1416 x (Length in ft)

** One Square = One hundred square feet = 9.29 square meters

$$\frac{(\text{Width of Coating in mm}) \times (\text{Area of pipe in square meter})^*}{(\text{Width of Coating in mm} - \text{Overlap in mm})} = \text{Square meters of Coating Required}$$

* Area of pipe in square meter = (Diameter in mm) / 1000 x 3.1416 x (Length in meter)

DS-930-REV7-0509

Berry Plastics warrants that the product conforms to its chemical and physical description and is appropriate for the use stated on the technical data sheet when used in compliance with Berry Plastics written instructions. Since many installation factors are beyond the control of Berry Plastics, the user shall determine the suitability of the products for the intended use and assume all risks and liabilities in connection herewith. Berry Plastics liability is stated in the standard terms and conditions of sale. Berry Plastics makes no other warranty either expressed or implied. All information contained in this technical data sheet is to be used as a guide and is subject to change without notice. This technical data sheet supersedes all previous data sheets on this product.



CORROSION PROTECTION GROUP
www.berrycpg.com

Local Distributor / Representative:

For contact details of local Distributors / Representatives
Please visit www.berrycpg.com.

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CPGIN@berryplastics.com

MATERIAL SAFETY DATA SHEET
Polyken 1027 Primer

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Polyken 1027 Primer
Product Description	Pipe Corrosion Protection
Manufacturer/Supplier	Berry Plastics Corporation, Tapes and Coatings Division
Address	2320 Bowling Green Road Franklin, Kentucky
Phone Number	(270) 586-3261 (Monday – Friday 8:00 am to 5:00 pm)
Chemtrec Number	(800) 424-9300
Revision Date:	May 16, 2008
MSDS Date:	November 15, 2007

This MSDS has been compiled in accordance with - EC Directive 91/155/EC - OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards

R11 Highly flammable.
R36/38 Irritating to eyes and skin.
R45 May cause cancer.
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R63 Possible risk of harm to the unborn child.
R65 Harmful: may cause lung damage if swallowed.
R67 Vapours may cause drowsiness and dizziness.

Routes of Entry

- Absorption - Eye contact - Ingestion - Inhalation - Skin contact

Carcinogenic Status

See Section 11.

Target Organs

Central Nervous System - Skin - Eye - Liver - Kidney - Respiratory System - Reproductive

Health Effects - Eyes

Liquid, mist or vapor may cause pain, transient irritation and superficial corneal effects.

Health Effects - Skin

Material may cause irritation. Repeated or prolonged contact may produce defatting of the skin leading to irritation and dermatitis. Material can be absorbed through the skin and cause effects similar to those resulting from inhalation.

Health Effects - Ingestion

Swallowing may have the following effects:

- abdominal pain - vomiting - central nervous system depression - kidney damage - liver damage – testis damage – aspiration into the lungs may occur during ingestion or vomiting causing lung damage

A large dose may have the following effects:

- systemic effects similar to those resulting from inhalation

2. HAZARDS IDENTIFICATION

Health Effects - Inhalation

Exposure to vapor may have the following effects:

- irritation of nose, throat and respiratory tract - central nervous system depression - dizziness - drowsiness - headache - mental confusion

Exposure to vapor at high concentrations may have the following effects:

- nerve damage leading to numbness and muscle weakness - lung damage - liver damage - kidney damage - testis damage - adverse reproductive effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	Classification
Aliphatic Petroleum Distillate	64742-89-8 265-192-2	60 - 80%	R45, R65	T, Xn, Carc Cat. 2
Toluene	108-88-3 203-625-9	5 - 10%	R11, R38, R48/20, F, Xn R63, R65, R67	
Carbon Black	1333-86-4 215-609-9	<5%	None	None
Polymers and Resins	N.A.	<25%	None	None

4. FIRST AID MEASURES

Eyes

Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Skin

Immediately flood the skin with large quantities of water for at least 15 minutes, preferably under a shower. Remove contaminated clothing and continue washing. Contaminated clothing should be washed or dry-cleaned before re-use. Obtain medical attention if blistering occurs or redness persists.

Ingestion

Do not induce vomiting, unless directed to do so by a physician. Have victim drink 1-3 glasses of water to dilute stomach contents. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately.

Inhalation

Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately.

Advice to Physicians

Treat symptomatically.

5. FIRE- FIGHTING MEASURES

Extinguishing Media

Use foam, dry chemical or carbon dioxide. Be aware of the possibility of re-ignition. Keep containers and surroundings cool with water spray.

Unusual Fire and Explosion Hazards

Vapors can travel a considerable distance to a source of ignition and flashback. Flashback can occur if air temperature exceeds flash point. Be aware of possibility of re-ignition.

Protective Equipment for Fire-Fighting

Wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Contain and absorb using earth, sand or other inert material. Transfer into suitable containers for recovery or disposal. Wear appropriate protective clothing. Eliminate all sources of ignition. Use non-sparking scoops for flammable materials. Vapors can accumulate in low areas. Consider need for evacuation. Prevent the material from entering drains or watercourses. Notify authorities if spill has entered watercourse or sewer or has contaminated soil or vegetation.

7. HANDLING AND STORAGE

Use in well ventilated area. Use local exhaust ventilation. Avoid inhaling vapor. Avoid contact with eyes, skin and clothing. Keep container tightly closed when not in use.

Store away from sources of heat or ignition. Storage area should be: - cool - dry - well ventilated - out of direct sunlight - away from sources of ignition (heat, sparks, flames, pilot lights) - away from incompatible materials (see Section 10)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards

Exposure limits are listed below, if they exist.

Toluene

ACGIH: TLV 20ppm (75 mg/m³) 8h TWA

OSHA: PEL 200ppm 8h TWA. 300 ppm CEILING, 500 ppm 10-min peak per shift.

Aliphatic Petroleum Distillate

ACGIH: TLV 300ppm (1370 mg/m³) 8h TWA (as VM&P naphtha 8032-32-4)

OSHA: PEL 500ppm (2000 mg/m³) 8h TWA. (as Petroleum distillates)

Carbon Black

ACGIH: TLV 3.5 mg/m³ 8h TWA

OSHA: PEL 3.5 mg/m³ 8h TWA

Polymers and Resins

None assigned.

Engineering Control Measures

Use engineering methods to prevent or control exposure. Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions.

Respiratory Protection

Wear respiratory protection if there is a risk of exposure to high vapor concentrations, aerosols or if applied to hot surfaces. A NIOSH approved full face respirator may be worn. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Hand Protection

Butyl gloves are recommended.

Eye Protection

Chemical goggles or safety glasses with side shields. Consider the use of a face shield if splashing is possible.

Body Protection

If there is danger of splashing, wear: - overall or apron

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Black
Odor	Light Hydrocarbon
pH	No data

9. PHYSICAL AND CHEMICAL PROPERTIES

Density (lbs/gal)	No data
Boiling Range/Point (°C/F)	No data
Melting Point (°C/F)	Not applicable
Flash Point (°F)	Est. 40 – 50 °F
Vapor Pressure	No data
Evaporation Rate	Slower than ether
Solubility in Water	Negligible
Vapor Density	Heavier than air.
VOC	78.9%

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions.

Conditions to Avoid

- Heat, sparks, flames - High temperatures - sources of ignition - contact with incompatible materials

Materials to Avoid

- Strong oxidizing agents - acids - bases - reducing agents - halogens - hydrogen

Hazardous Polymerization

Will not occur.

Hazardous Decomposition Products

- oxides of carbon - hydrocarbons – phenolic vapors – aldehydes -smoke -fumes

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Toluene: Oral LD50 rat >2,000 mg/kg. Dermal LD50 rabbit >3,000 mg/kg

Chronic Toxicity/Carcinogenicity

Aliphatic Petroleum Distillate (as VM&P naphtha 8032-32-4): ACGIH Carcinogen Category: A3
(Confirmed Animal Carcinogen with Unknown Relevance to Humans)

This product contains carbon black which is classified by IARC as a Group 2B possible human carcinogen. When encapsulated in the liquid matrix the risk of exposure is reduced.

Genotoxicity

This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity

Toluene: In laboratory studies, birth defects, increased fetal lethality and delayed fetal development have been observed in offspring of female animals exposed during pregnancy. Toluene has been demonstrated to be embryofetotoxic and teratogenic in laboratory animals.

12. ECOLOGICAL INFORMATION

Mobility

No relevant studies identified.

Persistence/Degradability

No relevant studies identified.

Bio-accumulation

No relevant studies identified.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toluene: LC50 Fathead minnow (*Pimephales promelas*) 96 h 26 ppm. EC50 *Daphnia magna* 48 h 11.5 ppm

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable local and national regulations. Labels should not be removed from containers until they have been cleaned. Do not cut, puncture or weld on or near to the container. Use non-sparking tools. Do not incinerate closed containers. Empty containers may contain hazardous residues. Dispose of containers with care.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Coating Solution (3) UN1139, II
UN Proper Shipping Name	Coating Solution
UN Class	(3)
UN Number	UN1139
UN Packaging Group	II
Classification for AIR Transportation (IATA)	Consult current IATA Regulations prior to shipping by air.

15. REGULATORY INFORMATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments (2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger

T- Toxic

F- Flammable

R phrases

R11 Highly flammable.

R36/38 Irritating to eyes and skin.

R45 May cause cancer.

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

R63 Possible risk of harm to the unborn child.

R65 Harmful: may cause lung damage if swallowed.

R67 Vapours may cause drowsiness and dizziness.

S phrases

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37 Wear suitable protective clothing and gloves.

S45 In case of accident or if you feel unwell, seek medical advice immediately.

S53 Avoid exposure – obtain special instructions before use.

S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS**TSCA Listing**

All ingredients have been verified for inclusion on the EPA Toxic Substance Control Act Chemical Substance Inventory.

15. REGULATORY INFORMATION

EINECS Listing

All ingredients in this product have not been verified for inclusion on the European Inventory of Existing Commercial Chemical Substances (EINECS).

DSL (Canadian) Listing

All ingredients in this product have not been verified for inclusion on the Domestic Substance List (DSL).

MA Right To Know Law

This product contains the following chemicals found on the Massachusetts Substance List (MSL).
Toluene (108-88-3) 5 -10 % - Methanol (67-56-1) <1% - Xylene (1330-20-7) <1%

PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List:
Carbon black (1333-86-4) < 5% - Toluene (108-88-3) 5 -10 % - Methanol (67-56-1) <1% - Xylene (1330-20-7) <1% - Ethylbenzene (100-41-4) <0.1%

NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: Toluene (108-88-3) 5 -10 % - Methanol (67-56-1) <1% - Xylene (1330-20-7) <1% - Carbon black (1333-86-4) < 5%

California Proposition 65

This product contains the following materials which the State of California has found to cause cancer, birth defects or other reproductive harm: Toluene (108-88-3) - Ethylbenzene (100-41-4) - Formaldehyde (50-00-0) trace - Benzene (71-43-2)

WHMIS Classification

B2.D2A

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

SARA Title III Sect. 311/312 Categorization

Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard, Fire Hazard

SARA Title III Sect. 313

This product contains a chemical that is listed in Section 313 at or above de minimis concentrations. The following listed chemicals are present: Toluene (108-88-3)

16. OTHER INFORMATION

NFPA Ratings

NFPA Code for Flammability - 4

NFPA Code for Health - 2

NFPA Code for Reactivity - 0

NFPA Code for Special Hazards - None

HMIS Ratings

HMIS Code for Flammability - 4

HMIS Code for Health - 2

HMIS Code for Reactivity - 0

HMIS Code for Personal Protection - See Section 8

Abbreviations

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

16. OTHER INFORMATION

NTP: National Toxicology Program
IARC: International Agency for Research on Cancer
R: Risk
S: Safety

For further information email: msdstechnical@berryplastics.com

Prepared By: EnviroNet LLC.

The information and recommendations presented in this MSDS are based on sources believed to be accurate. Berry Plastics Corporation, Tapes and Coatings Division assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the **material** for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use **or disposal** of the material is in accordance with applicable Federal, State, and local laws and regulations.

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, October 13, 2010 11:26 AM
To: Riege, Ed
Cc: VonGonten, Glenn, EMNRD; Van Horn, Kristen, NMENV
Subject: Gallup Refinery (GW-032) Meeting Minutes from 10/6
Attachments: Meeting 10-6-10.doc

Ed:

Good morning. Please find attached the meeting minutes from our October 6, 2010 meeting in Santa Fe.

Also, OCD is in receipt of your Section 12 B submittal and will respond before 10/15 COB. OCD recently received questions on the EP-0 Aeration Lagoon from Jim Lieb. OCD approves the conceptual proposal for EP-0; however, a "Minor Modification" submittal with appropriate engineering diagrams are required for OCD to issue a final approval. Some clarification e-mails were just sent to Mr. Jim Lieb regarding EP-0.

OCD expects to receive more submittals associated with the WWTS and EPA CAFO in the near future. OCD is committed to the WWTS upgrade and will expedite future related submittals to help Western to meet its EPA CAFO deadlines.

Thanks for your cooperation and the opportunity to jointly review the discharge permit and communicate on refinery issues, i.e., WWTS and EPA CAFO. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

Western Refining SW- Gallup Refinery Meeting Minutes (GW-032)
Santa Fe, OCD (Oct. 6, 2010)
1:00 p.m. – 3:00 p.m.

Gallup Refinery Agenda Items:

Attendees: Carl Chavez (OCD), Glenn von Gonten (OCD), Ed Riege (Western), Allen Hains (Western), Jim Lieb (Western), and Alan Leute

The meeting minutes for the Gallup Refinery discharge permit and waste water treatment system design has been scanned into OCD Online under the "Meetings" thumbnail.

Agenda Items

1:00 p.m. Gallup Refinery (GW-032) Communication Meeting to discuss tank and waste water pond construction and discharge permit.

OCD handed out compiled Part 17 "Permanent Pit"; Part 36 "Surface Waste Management Facilities"; and "OCD Tank Requirements" for Western's review and consideration of compliance with the OCD Permit and meeting any technical requirements.

Western provided agenda handout with the following topics: overview; T-35 Equalization Tank (3000 bbl capacity) Design Details; Improvements to Tanks 27 and 28 (5000 bbl capacity with floating roof and oil recovery capability via vacuum truck0); New underground sewer lines design details and testing; Above ground line design; Future flow of process wastewater and sanitary wastewater; Logistics EP-0 preliminary design with aeration (no engineering diagram was provided at the meeting); and Time schedule. Western indicated that although NMED was involved with the EPA CAFO below, NMED indicated that OCD has jurisdiction over the treatment design and that Western would need to comply with the CAFO schedule and obtaining OCD approvals on the treatment system. Note that all tanks will have oil skimming capacity.

OCD clarified that waste water treatment system requirements related to the discharge permit were deferred to the enforcement schedule and requirements of the EPA CAFO, since it required a treatment system upgrade and negotiations were ongoing at the time Federal Enforcement Actions were issued.

1:05 p.m. Discharge Permit Items (GW-032)

- Western wants to submit a permit modification for the construction of the new aeration lagoon EP-0 that will serve as the discharge point for the new waste water treatment plant and the sanitary water from Pilot and Western's sanitary bathrooms.

- Western seeks NMOCD approval to construct an underground wastewater pipeline (sewer) as required by Condition 12.B of the GW-032 Discharge Permit Approval Conditions dated August 23, 2007. The attached drawings, and specifications depict the design and construction of the 24 inch sewer. Other NMOCD Discharge Permit conditions, such as Condition 12.A, were considered during the development of this design.
- Western is proceeding with the waste water plant construction as approved by NMED and OCD under the CAFO. The underground piping construction is a critical path issue. To maintain our schedule, we would appreciate your approval for the 24 inch sewer construction by Friday October 15, 2010.
- The attached drawings and specifications cover only the underground portion of our Stormwater / Process Sewer Collection System (referred to as the stormwater management system" in the CAFO milestones # 3 and #4). Attached are:
 - P&ID Stormwater Diversion tanks, drawing # Z84-34-017 - Piping and Instrumentation Drawing, highlighted for the 24 inch underground sewer portion
 - Underground Sewer Piping Specification - detailed description of the 24 inch sewer piping design and installation Stormwater Yard Piping Plan
 - Profile - routing of the 24 inch sewer and elevation profile.
 - Scotchkote Technical Brochure - factory applied fusion bonded coating for the exterior of the 24 inch pipe, and
 - Polyken Technical Brochures - coating system to wrap the joints of the 24 inch pipe after welding
- As Western finalizes its design, Western will provide additional information regarding the above ground portions of the 24 inch sewer, the three tanks, the pumps and the piping to send the water to the API Separator, including 'As Built" drawings upon completion of the installation.
- Western will submit similar future correspondence with recommended dates for response for OCD WWTS approval based on the CAFO Timeline.
- Once pipelines installed, need to be tested per Section 12A to ensure there are no leaks.

2:00 p.m. NMED Issues

- Western is proposing a SWMU 1 (EP-1 and Aeration Lagoons 1 & 2) closure in-place. EP-0 (see handout) will replace these units and be positioned up gradient of EP-2 and the rest of the EP network. Western thinks native clay excavated during construction of EP-0 will be used to cap SWMU 1.

2:15 p.m. Issues Identified & Miscellaneous

- No engineering design diagram was provided for EP-0 the aeration lagoon. Nor was a plan view engineering diagram with a properly sized lagoon based on flow capacity specifications. OCD indicated that an oil trap is recommended in the design. Western wanted OCD approval without an engineering diagram. Western indicated that it would be double-lined with leak detection system, appropriately sized and constructed in accordance with OCD Part 17 "Permanent Pit" technical specifications. OCD indicated that an acceptable submittal is needed for it to make any approval and/or Western must provide the language that ensures a compliant design and construction is completed. The aeration lagoon is to be constructed by February 29, 2012. The facility "Biohazard Plan" will need to be updated based on the construction and operation of EP-0. Since EP-0 is actually an aeration lagoon, the pond requirements would still apply; however, the sprayer design at a minimum should comply with RCRA or Sanitary aggressive biotreatment designed systems.
- Western indicated that pumps were undersized and that this was one design item that needs to be upgraded in the diagrams provided to the OCD. Western indicated that flow lines are adequately sized to handle the flow capacity of the system.
- Engineering diagrams were labeled "Preliminary" and were not in final form. Western indicated that the design was ongoing, but the dilemma was the CAFO Time line, OCD permit approval requirements, and Western's ability to complete final "Engineering Design Diagrams." OCD indicated that whatever it approved would have to be worded to address any OCD approvals before final "As Built" diagrams could be submitted. Also, any approvals that OCD made would include a "Disclaimer" that would ensure that the final design is compliant with permit. OCD acknowledged based on the OCD permit, that it wanted the upgraded waste water treatment system installed back in 2007; consequently, OCD wants to work with Western to get the system built within the CAFO Time line, since Western is subject to penalties and fines if it cannot comply with the negotiated and agreed schedule.
- Tanks are to be constructed on OCD recommended LLDPE liners that are thermally seamed with 1 + ½ volume per tank or all interconnected tank containment volume. Some discussion of HDPE, but OCD indicated stress cracking is a problem at < 60 mil thickness.

2:45 p.m. Miscellaneous & Path forward

OCD retained presentation materials to review after the meeting and requested that the operator follow-up via e-mail with specific discharge permit referenced items from the meeting with attached related engineering diagrams, with request and by needed date of approval due to CAFO deadlines. Western indicated that it would begin by addressing the Section 12B approval of underground pipelines from the OCD. Future requests would follow that would ensure it meets the EPA CAFO WWTP Upgrade Project Timeline.

3:00 p.m. End of meeting

GW - 032

MEETINGS

(Diagrams)

Chavez, Carl J, EMNRD

Subject: Western Refining SW, Inc.- Gallup Refinery Meeting (GW-032) Tank & Waste Water Pond Construction with Joint Review of Discharge Permit & Mods Communication Meeting
Location: OCD Santa Fe 3rd Floor Conference Room (Wendell Chino Bldg.) 1220 South St. Francis Dr., Santa Fe NM 87505
Start: Wed 10/6/2010 1:00 PM
End: Wed 10/6/2010 3:00 PM
Recurrence: (none)
Meeting Status: Meeting organizer
Organizer: Chavez, Carl J, EMNRD
Required Attendees: Riege, Ed; Hains, Allen; Leute, Alan; VonGonten, Glenn, EMNRD

From: Riege, Ed [mailto:Ed.Riege@wnr.com]
Sent: Thursday, September 23, 2010 8:08 AM
To: Chavez, Carl J, EMNRD
Cc: Hains, Allen; Leute, Alan; VonGonten, Glenn, EMNRD; Lieb, Jim; Turri, Mark
Subject: RE: Meeting to discuss implementation of the CAFO at Gallup Refinery (GW-32)

Thanks Carl. We will plan on meeting you at your Santa Fe office on Wednesday October 6th at 1 pm. As you suggest we can also talk about the discharge permit as Jim and I have already started working on the 5 yr renewal which is due next spring. In addition to Allen Hains and I, Jim Lieb and Alan Leute, our project manager on the new equalization tank, pond and lines will also be joining us.

See you soon.

Ed

Ed Riege
Environmental Manager

Western Refining
Gallup Refinery
Route 3 Box 7
Gallup, NM 87301
(505) 722-0217
ed.riege@wnr.com

Safety starts with "S", but always begins with "You"

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, September 22, 2010 1:34 PM
To: Riege, Ed
Cc: Hains, Allen; Leute, Alan; VonGonten, Glenn, EMNRD
Subject: RE: Meeting to discuss implementation of the CAFO at Gallup Refinery (GW-32)

Hey guys.

The afternoon of the 6th should work.... Why don't we have a communication meeting on the discharge permit and review it together and see if there are any other issues to discuss while we're at it. OCD is on travel restriction, so a meeting would help us get caught up on any issues at this point in time with the discharge permit. Why don't we meet for a minimum of 2 hours to go over your questions and to get caught up on the discharge permit, modifications, etc. and any issues we need to communicate on and work together.

Some OCD guidance on tanks and waste water ponds may be found at the following links:

Pits (19.15.17 NMAC); Ponds (19.15.36 NMAC) and Tanks (search for "Tank"):

<http://www.emnrd.state.nm.us/oed/documents/20098-5currentrules-new17and39.pdf>

For tanks, you may view your discharge permit and any modifications (GW-032).

Let me know. Thanks.

WESTERN REFINING SOUTHWEST, INC. GALLUP REFINERY

MEETING AGENDA

October 6, 2010

- Overview
- T-35 Design details *Equal. TK*
- Improvements made to T-27 and T-28
- New underground sewer lines design details and testing
- Above ground line design
- Future flow of process wastewater and sanitary wastewater
- Logistics EP-0 preliminary design with aeration
- Time schedule

Gallup Refinery WWTP Upgrade Project Timeline

Western Refining

Stormwater / Process Sewer Collection System Phase I and Phase II

- 1 Refurbish Existing Tanks 27 and 28
- 2 Release Equalization Tank design and order steel
- 3 Tank Site Preparation and construct ringwall foundation
- 4 Build New Equalization Tank
- 5 Detail Design
- 6 Order Transfer Pumps
- 7 Install Interconnecting Piping
- 8 Install pump foundations and containment
- 9 Hydrotect Equalization Tank
- 10 Final Tie-in of Stormwater and Process Wastewater sewer lines
- 11 Commissioning and Start Up of Sewer and Tankage
- 12 CAFO Deadline to Complete Equalization Tank and Piping
- 13 CAFO Deadline to Commence Operation of the Stormwater Management System
- 14 CAFO Deadline to prevent Old API Separator from receiving any flows

Wastewater Treatment Plant Upgrade Phase I

- 1 Confirm DGF and MPPE design basis and complete equipment specifications
- 2 Order DGF and MPPE Units
- 3 CAFO Deadline to submit Proof of Procurement of DGF and MPPE Units
- 4 Engineering Design
- 5 Manufacture DGF
- 6 Manufacture MPPE

Wastewater Treatment Plant Upgrade Phase II

- 1 Detailed Engineering
- 2 Finalize Sanitary Wastewater Aeration Design
- 3 Site Preparation and Install DGF and MPPE foundations
- 4 CAFO Deadline to complete Site Prep and Foundations for DGF and MPPE units
- 5 Construct Aerated Line Pond EP-0
- 6 Install equipment and interconnecting piping
- 7 CAFO Deadline to Complete Installation of Interconnecting Piping and Transfer Pumps for DGF and MPPE units.
- 8 Commissioning and Start Up of DGF and MPPE
- 9 CAFO Deadline Commission and Start Up DGF and MPPE Units
- 10 CAFO Deadline End of System Start Up Grace Period and Achievement of All Discharge Limits

Closure Plans

- 1 Demonstrate WWTP Operation
- 2 Decommission Benzene Strippers
- 3 Demolish Benzene Strippers
- 4 Begin Old API Separator Closure Plan
- 5 Begin Aeration Lagoon(AL-1/AL-2) and Evaporation Pond (EP-1) Closure Plan

2010											
J	F	M	A	M	J	J	A	S	O	N	D

2011

CURRENT PROGRESS

2012

J	F	M	A	M	J	J	A	S	O	N	D
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LEGEND



Refinery Activities



Detail Design



Construction

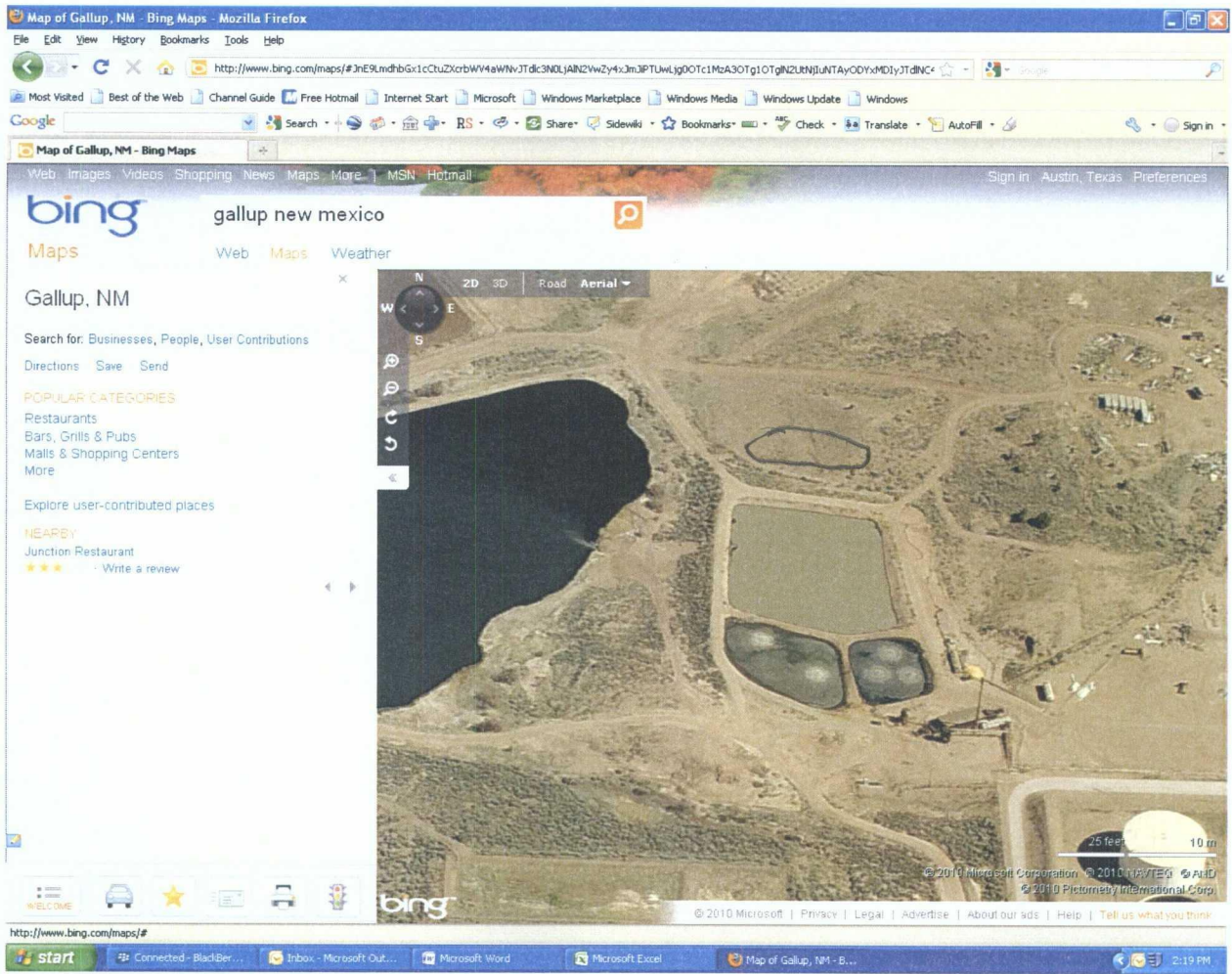


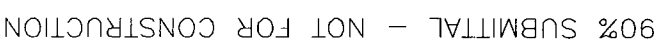
Deadlines

Milestone	Implementation Date
1. Submit proof of procurement including vendor Acknowledgement of Order, vendor's factory order number, and estimated delivery date for DGF and MPPE units to demonstrate Respondent will comply with milestone 7 of this chart.	September 30, 2010
2. Commence construction of Equalization Tank	September 30, 2010
3. Complete installation of Tanks 27 and 28, and Equalization Tank and ancillary equipment and connect the storm water management system to the current Waste Water Treatment System.	December 31, 2010
4. Commence operation of the storm water management system	January 15, 2011
5. Complete measures to prevent the Old API Separator from receiving any flows, including removal of segments from, and insertion of cement plugs in, all inlet piping to the Old API Separator. ²	March 1, 2011
6. Complete site preparation and foundations for DGF and MPPE equipment	July 31, 2011
7. Complete installation of interconnecting piping and transfer pumps for DGF and MPPE units	January 31, 2012
8. Complete connection of the storm water management system to the new Waste Water Treatment System and commission and Start-Up of DGF and MPPE units	February 29, 2012
9. End of system startup grace period for achievement of all discharge limits as required by the CAFO.	May 31, 2012

"Completion" of a milestone means that Western has implemented the milestone in all material respects in accordance with the approved Process Design Report for Wastewater Treatment Plant Workplan. Respondent shall provide written certification to NMED and EPA within five business days of completion of each milestone.

² Such measures shall not be construed to limit the authority of the NMED with respect to corrective action at any solid waste management unit or area of concern at Respondent's facility.





PRELIMINARY

- NOTES:
1. VACUUM TRUCK CONNECTION FOR OIL REMOVAL FROM FLOATING ROOF SKIMMER.
2. 24" GATE VALVE WITH GEAR--ASSIST OPERATOR.
3. DOUBLE BOTTOM FOR LEAK DETECTION. LEAK INDICATORS NOT SHOWN.
4. RADAR GAUGE READOUT IN CENTRAL CONTROL ROOM (DCS)
5. MAXIMUM FILL HEIGHT 28'-0" ABOVE PRIMARY (UPPER) FLOOR
6. OVERFLOW SIZED FOR 275GPM NORMAL FLOW. OVERFLOW VALVE NORMALLY CLOSED. OPEN OVERFLOW VALVE ONLY WHEN APPROACHING HIGH TANK LEVEL TO PREVENT INTERNAL FLOATING ROOF FROM HITTING CONE ROOF RAFTERS.
7. OVERFLOW SLOTS ON T-35 SIZED FOR _GPM RAINSTORM EVEN TO PREVENT INTERNAL FLOATING ROOF FROM HITTING CONE ROOF RAFTERS.
8. TANKS HAVE PASSIVE ANODE CATHODIC PROTECTION ON BOTH PRIMARY AND SECONDARY BOTTOMS. ELECTRICAL INSULATING FLANGE CONNECTION REQUIRED ON INLET AND OUTLET PIPING.
9. TIE-INS TO MATCH EXISTING 16" CAST IRON PROCESS SEWER AND 24" HDPE STORM WATER SEWER.

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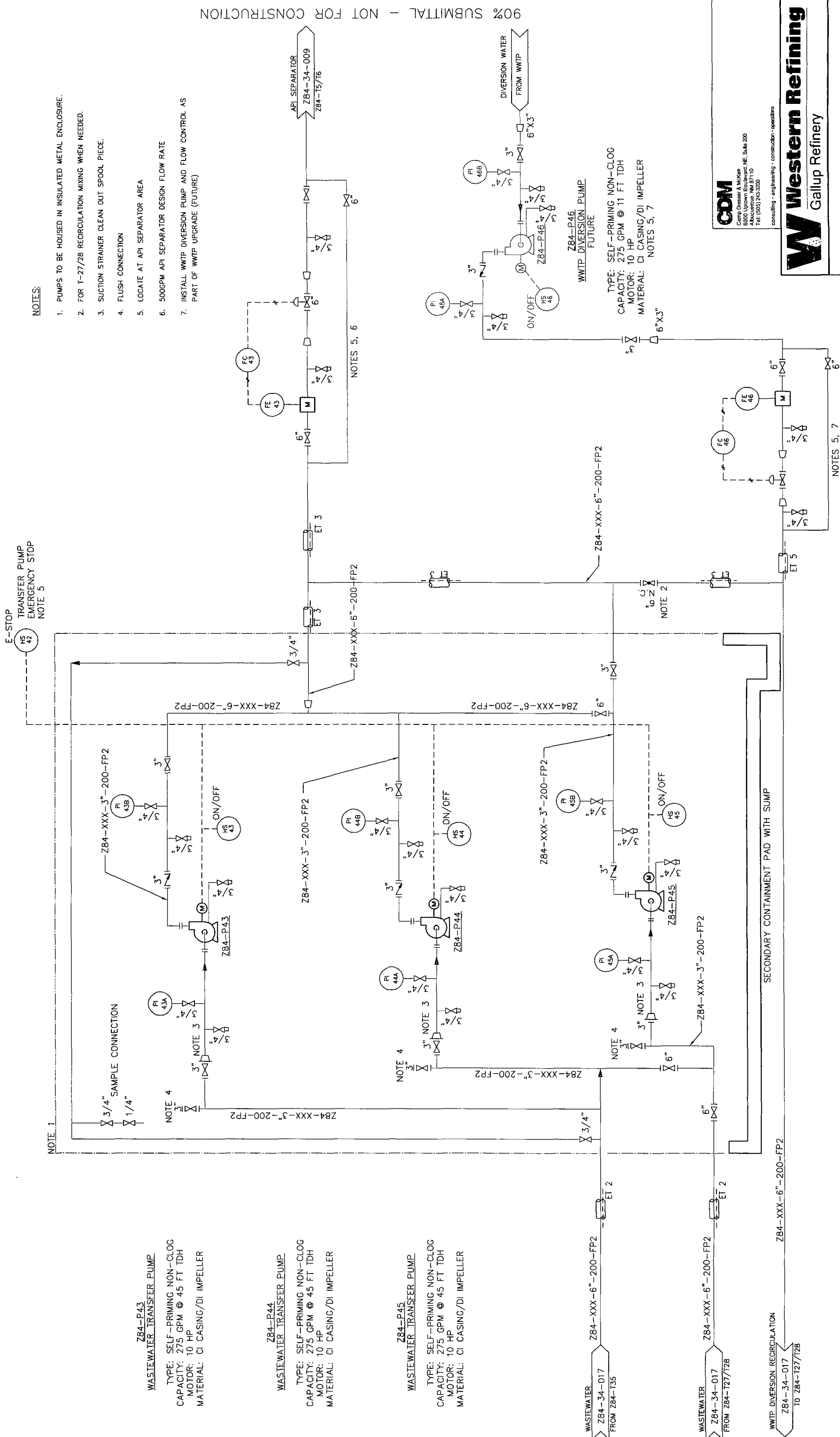
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STORM WATER DIVERSION TANKS

REV.	REVISION DESCRIPTION	RFC No.	DATE	DRAWING NO.	REV
				784-34-017	C

PRELIMINARY

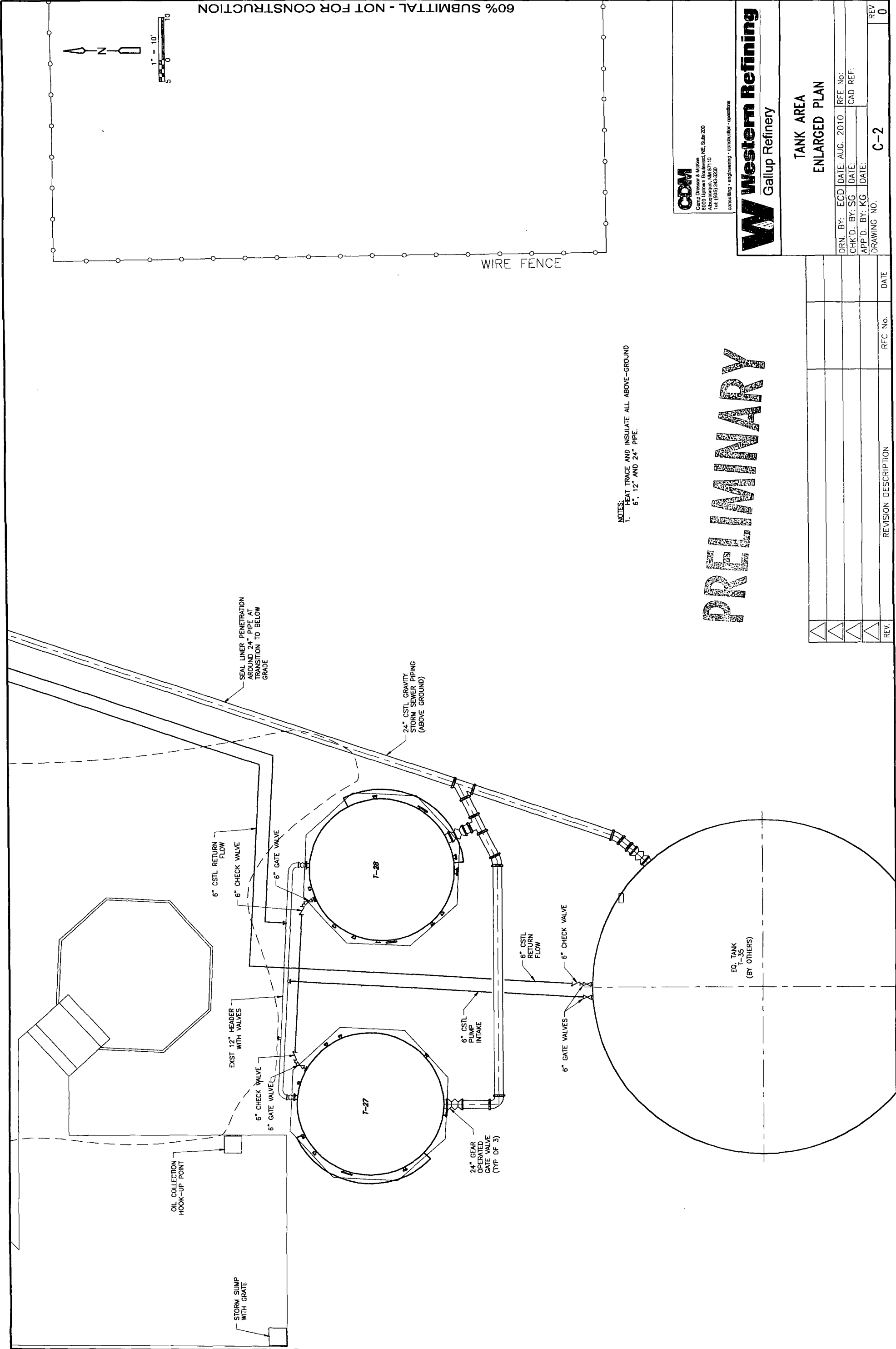


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P&ID			
STORM WATER & WWTP DIVERSION PUMPS			
DRN. BY:	GAF	DATE:	AUG. 2010
CHK'D. BY:	---	CAD REF:	---
APP'D. BY:	---	DATE:	---
DRAWING NO.	Z84-34-018		
REV	C		

REV.	REVISION DESCRIPTION	RFC No.	DATE
-	-	-	-
-	-	-	-
-	ISSUED FOR DESIGN	-	-
-	REVIEW	-	09/21/2010



NOTES:
1. HEAT TRACE AND INSULATE ALL ABOVE-GROUND 6", 12" AND 24" PIPE.

PRELIMINARY

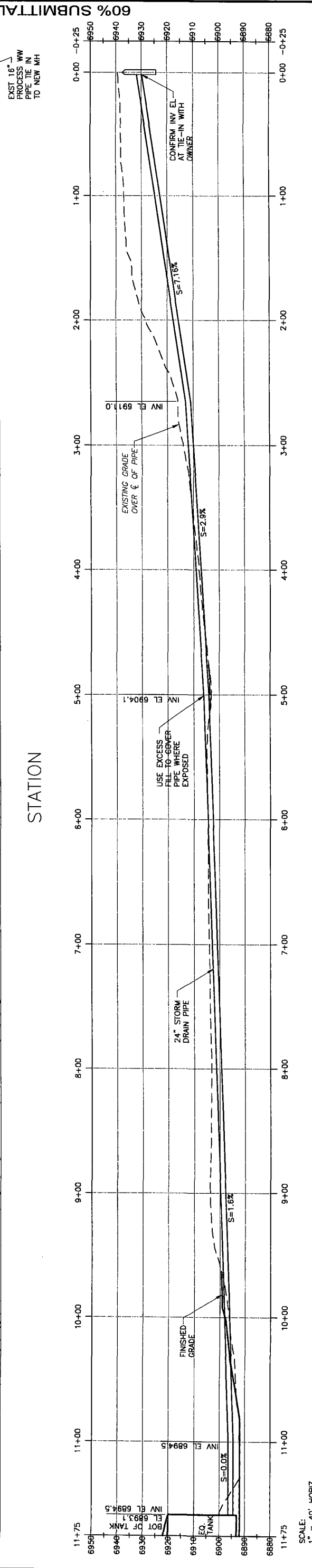
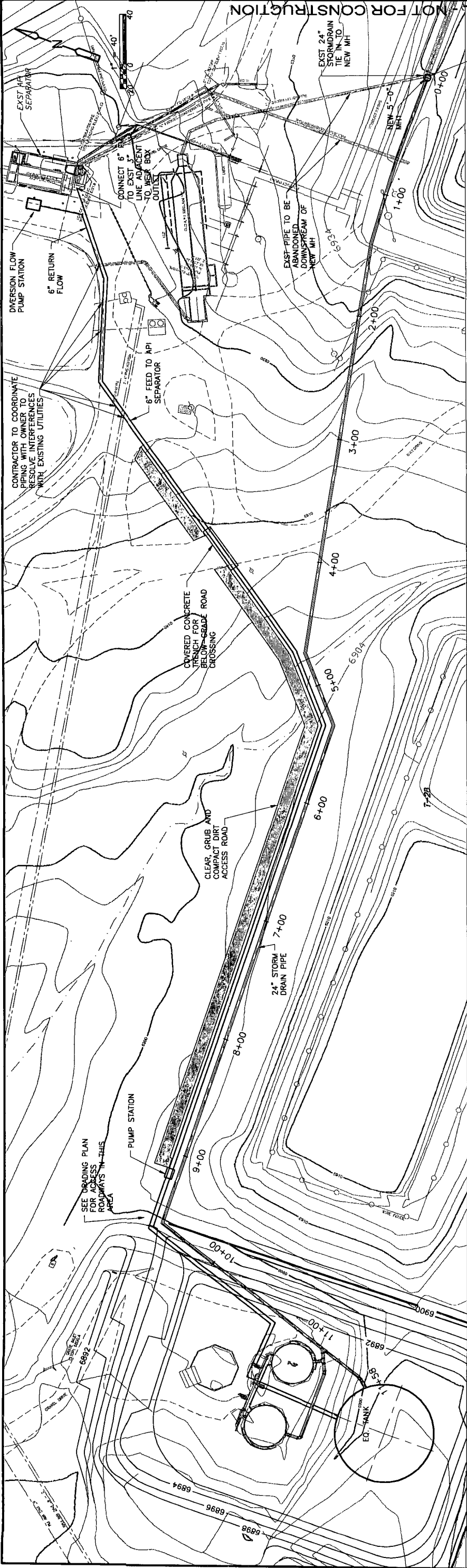
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TANK AREA
ENLARGED PLAN

DRN. BY:	ECD	DATE:	AUG. 2010	RFE No:	
CHK'D. BY:	SG	DATE:		CAD REF:	
APP'D. BY:	KG	DATE:		DRAWING NO.	C-2
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STORMWATER YARD PIPING

PLAN AND PROFILE

DRN. BY: ECD | DATE: AUG. 2010 | RFE No:

CHK'D. BY: SG | DATE: | CAD REF:

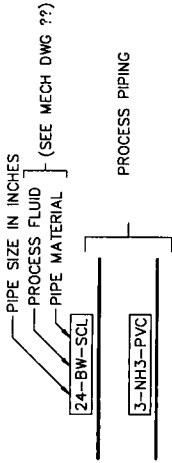
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DRAWING NO. C-3 | REV 0

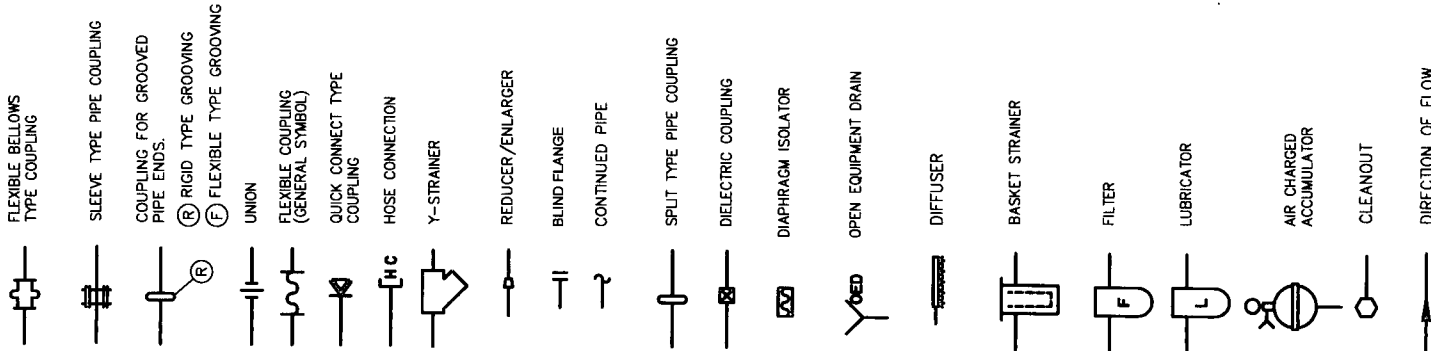
PRELIMINARY

REV.	REVISION DESCRIPTION	RFC No.	DATE

PIPE LINE SYMBOLS

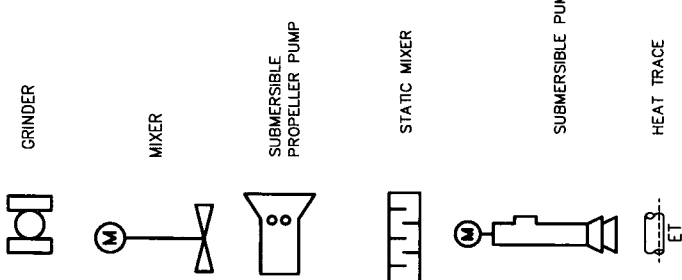
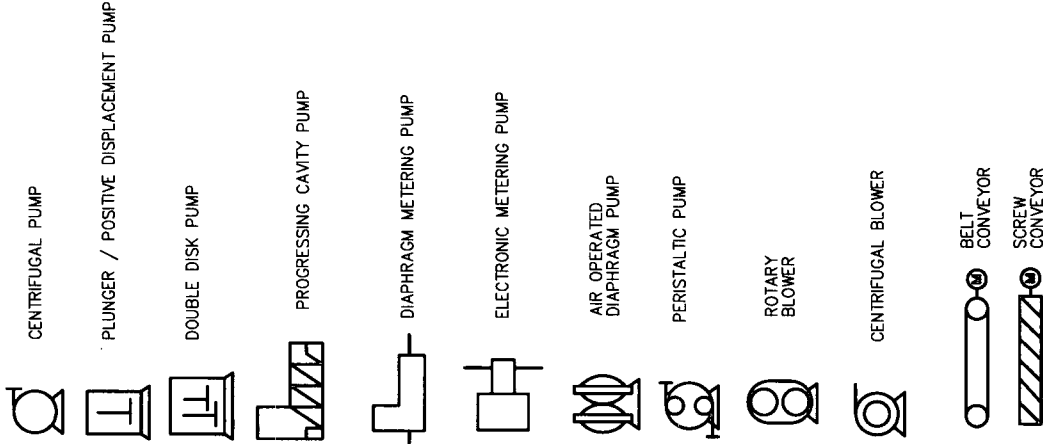


MISCELLANEOUS FITTINGS AND PIPING COMPONENTS

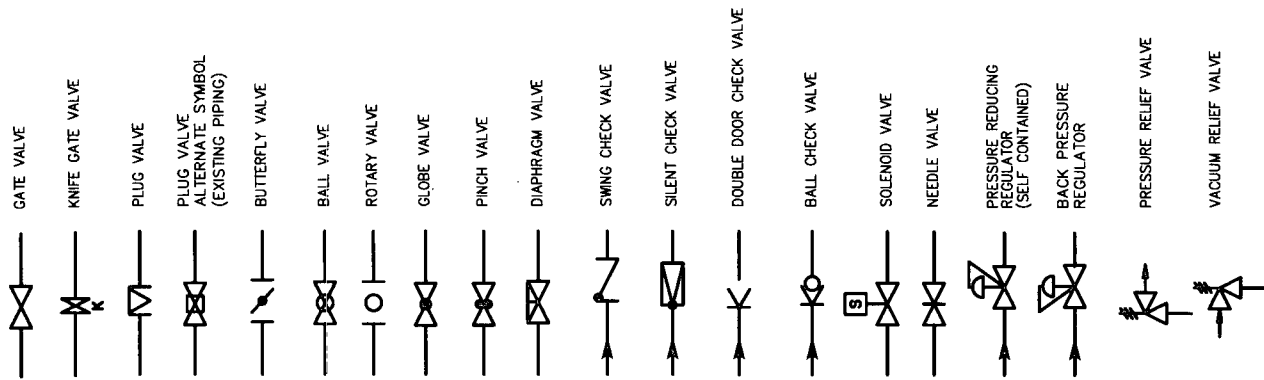


MISCELLANEOUS SYMBOLS

PARTIAL LIST
ADDITIONAL SYMBOLS MAY BE
SHOWN ON THE FLOW DIAGRAMS



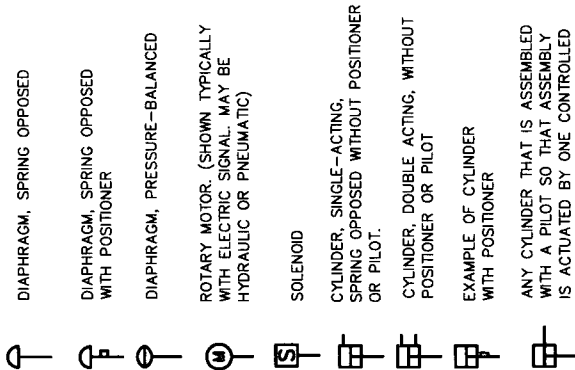
VALVE SYMBOLS



NOTES

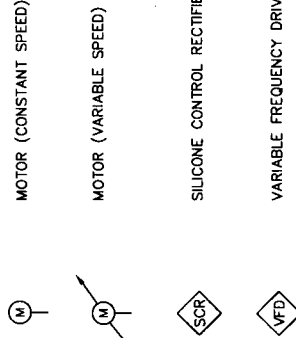
1. REFER TO SHEET Z84-34-016 FOR ADDITIONAL INSTRUMENTATION EQUIPMENT IDENTIFICATION, LINE SYMBOLS, ADDITIONAL ABBREVIATIONS AND INSTRUMENT TAGGING CONVENTIONS.
2. THIS IS A GENERAL P&ID LEGEND SHEET. SOME SYMBOLS OR NOTATIONS MAY NOT BE USED ON THIS PROJECT.
3. STANDARD DETAILS SHALL BE USED FOR ALL PERMANENT WORK EVEN THOUGH THEY ARE NOT CALLED OUT AT ALL LOCATIONS WHERE THEY APPLY.

VALVE ACTUATORS

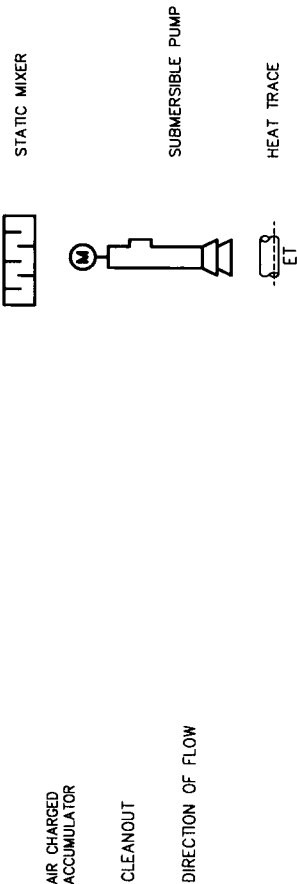


FLOAT ACTUATOR

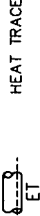
MISCELLANEOUS SYMBOLS



DIRECTION OF FLOW



SUBMERSIBLE PUMP



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Z84-34-015		

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GENERAL INSTRUMENT OR FUNCTION SYMBOLS

	LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	LOCATION NORMALLY NOT ACCESSIBLE TO OPERATOR
PRIMARY LOCATION OR CONTROL PANEL			
SECONDARY LOCATION OR CONTROL PANEL			

INDICATES A SINGLE INSTRUMENT OR OTHER COMPONENT HAVING MULTIPLE FUNCTIONS

REPRESENTS EQUIPMENT SPECIFIED AND PROVIDED IN OTHER DIVISIONS AND SECTIONS, OTHER THAN THE INSTRUMENTATION SECTIONS.

INDICATES INTERLOCK OR LOGIC IN A MOTOR STARTER

INDICATES GENERAL OR MISCELLANEOUS HARDWIRED INTERLOCK

SILICONE CONTROLLED RECTIFIER

VARIABLE SPEED DRIVE

LOGIC BLOCK

LOGIC BLOCK

MODEM

INSTRUMENT LINE SYMBOLS

ELECTRICAL SIGNAL

TELEPHONE SIGNAL

ELECTROMAGNETIC OR SONIC SIGNAL

PNEUMATIC SIGNAL

CAPILLARY TUBE

HYDRAULIC SUPPLY

INSTRUMENT SUPPLY OR CONNECTION TO PROCESS

SCREENED INSTRUMENT LINES INDICATE EXISTING LINES TO REMAIN AS IS (ELECTRIC SIGNAL SHOWN-TYPICAL FOR OTHER SIGNALS)

SOFTWARE OR DATA LINK SIGNAL

RADIO SIGNAL

ES ---> ELECTRICAL SOURCE

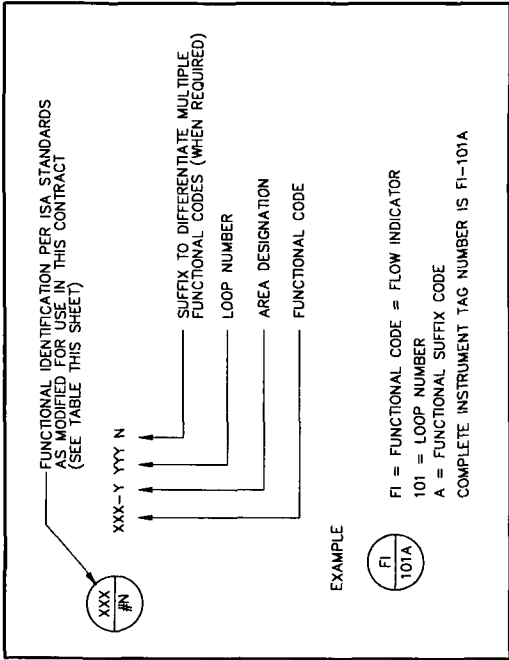
IA ---> INSTRUMENT AIR SOURCE

INSTRUMENTATION FUNCTIONAL CODE

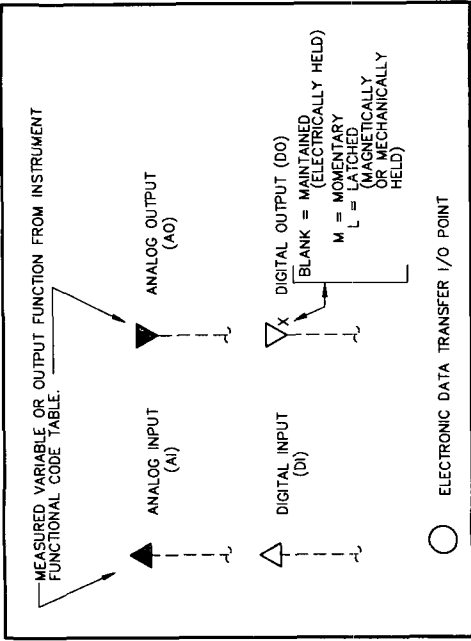
	FIRST LETTER		SUCCEEDING LETTERS	
	MEASURED OR INITIATING VARIABLE	(MODIFIER)	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION (MODIFIER)
A	ANALYSIS		ALARM (1)	(1) CONTROL
B				
C	(1)	DIFFERENTIAL		
D	DENSITY (1)			
E	VOLTAGE			
F	FLOW RATE	RATIO		
G	(1)		GLASS OR VIEWING DEVICE	
H	HAND (MANUAL)		INDICATE	
I	CURRENT	SCAN		
J	POWER			
K	TIME	TIME RATE OF CHANGE		
L	LEVEL		PILOT LIGHT	
M	(1)	MOMENTARY		
N	(1)		(1)	
O	(1)		ORIFICE	
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)	
Q	QUANTITY	INTEGRATE OR TOTALIZE	RECORD	
R				
S	SPEED, FREQUENCY OR SOLENOID	SAFETY		
T	TEMPERATURE			
U	MULTIVARIABLE (2)		MULTIFUNCTION (2)	MULTIFUNCTION (2)
V	VIBRATION, MECH ANAL			
W	WEIGHT OR FORCE			
X	STATUS OR UNCLASSIFIED			
Y	EVENT, STATE OR PRESENCE			
Z	POSITION			

TABLE NOTES:
(1) USER'S CHOICE.
(2) WHEN USED SYMBOL OR SIGNAL LINE IS ANNOTATED.

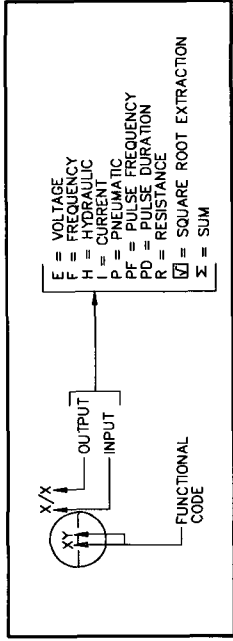
INSTRUMENTATION TAGGING



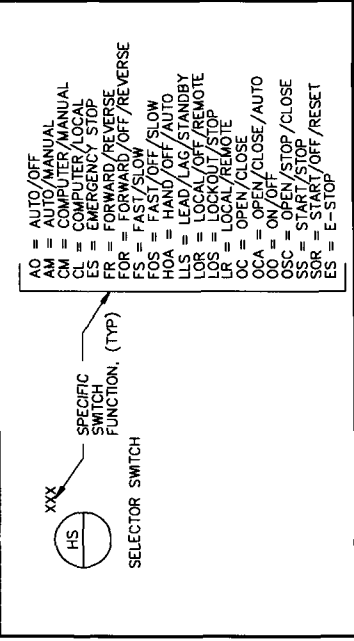
I/O SIGNALS



SIGNAL CONVERTERS



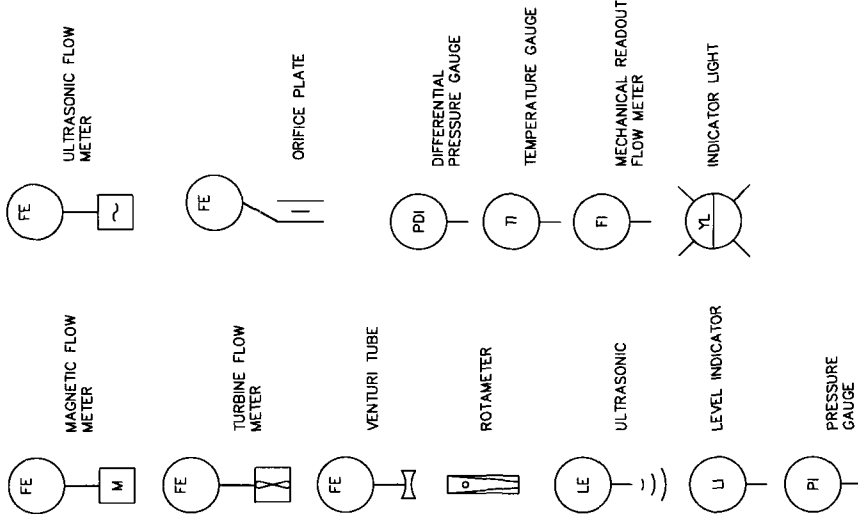
HAND SWITCHES



GENERAL NOTES

1. REFER TO SHEET Z84-34-016 FOR ADDITIONAL NOTES.
2. ALL NECESSARY VALVES ARE NOT SHOWN ON THE P&ID'S FOR CLARITY. PROVIDE ISOLATION VALVES ON ALL SAMPLE LINES TO SENSORS, 2 VALVE MANIFOLDS FOR ALL ABSOLUTE AND GAUGE PRESSURE DEVICES, AND FIVE VALVE MANIFOLDS FOR ALL DIFFERENTIAL PRESSURE DEVICES.
3. EQUIPMENT AND PIPING SHOWN IN LIGHTER LINE WEIGHT INDICATE EXISTING EQUIPMENT.
4. EFFLUENT FLUSHING WATER AND SEALED WATER LINES ARE SHOWN DIAGRAMMATICALLY, FOR THE ACTUAL PIPING REFER TO THE MECHANICAL PIPING DIAGRAMS.
5. LIGHTER WEIGHT LINES, SHOWN AS INSTRUMENTS OR PIPING THAT ARE EXISTING. HEAVIER LINES, SHOWN AS INSTRUMENTS OR PIPING THAT ARE NEW.

PRIMARY ELEMENTS



90% SUBMITTAL - NOT FOR CONSTRUCTION

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P&ID

INSTRUMENTATION SYMBOL & LEGENDS II

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