

# GENERAL CORRESPONDENCE



## STORMWATER POLLUTION PREVENTION PLAN

# LYBROOK GAS PROCESSING PLANT

Williams Field Services Company

August 2001

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## **Storm Water Pollution Prevention Plan Certification**

#### Name of Facility: Lybrook Gas Processing Plant

**Type of Facility:** The Lybrook Gas Processing Plant is a natural gas processing plant for the WFS Torre Alta natural gas gathering system. The plant's Standard Industrial Code number is 1321. In the National Pollutant Elimination System (NPDES) Multi Sector General Permit (MSGP), the plant is categorized as a Sub-sector 2-Natural Gas Liquids Facility in Sector I-Oil and Gas Extraction and Refining.

**Location:** Lybrook Gas Processing Plant is located in the N/2 of NW/4, Section 14, Township 23 North, Range 7 West, in Rio Arriba County, New Mexico, in Lybrook, New Mexico.

#### Site Address:

HCR 17 Box 360 HWY 44 MP 103 Cuba, NM 87013

Storm Water Pollution Prevention Plan Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: JEFFIZEY BLUMER

Signature:

Date: B(15/01

#### 1.0 INTRODUCTION

This Storm Water Pollution Prevention Plan (SWP3) is developed for implementation at the Lybrook Gas Processing Plant for storm water discharges associated with industrial activity. This SWP3 shall be implemented to fulfill the requirements of Section 405 of the Water Quality Act of 1987, which added Section 402(p) to the Clean Water Act. This section dictated that the Environmental Protection Agency (EPA) establish regulations setting forth National Pollutant Discharge Elimination System (NPDES) permit application requirements for storm water discharges associated with industrial activity and discharges from municipal separate storm sewer systems. The SWP3 outlined herein is designed to fulfill permit requirements.

#### 1.1 Site Name and Location

Lybrook Gas Processing Plant is located in the N/2 of NW/4, Section 14, Township 23 North, Range 7 West, in Rio Arriba County, New Mexico. The facility is in Lybrook, New Mexico. A site location map is attached (USGS 7.5 Min. Quadrangle: Lybrook, New Mexico) as Figure 1. A facility plot plan is attached as Figure 2.

The site address is: HCR 17 Box 360 HWY 44 MP 103 Cuba, NM 87013

1.2 Site Operator

The Lybrook Gas Processing Plant is operated by Williams Field Services (WFS).

1.3 Plan Organization

This SWP3 is consistent with the Federal Water Pollution Control Act and the New Mexico 401 Water Quality Certification. Storm water discharges are allowed under the general National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit (MSGP). On February 21, 2001, the EPA issued permit number NMR05A882 for the facility. The active date of permit coverage was January 28, 2001. The MSGP term is five years.

This plan concentrates on the identification of personnel responsible for implementation of the SWP3, identification of potential pollutants, description of structural controls to prevent pollution of storm water pollution, maintenance, inspection and evaluation, and record keeping.

1.4 Industrial Activity Description

The Lybrook Gas Processing Plant is a natural gas processing plant for the WFS Torre Alta natural gas gathering system. The plant's Standard Industrial Code number is 1321. In the MSGP, the plant is categorized as a Sub-sector 2-Natural Gas Liquids Facility of Sector I-Oil and Gas Extraction and Refining.

#### 1.5 Consistency with Other Plans

This SWP3 has been developed in conjunction with the existing environ-mental and operating plans listed below.

- The Lybrook Gas Processing Plant currently implements a Spill Prevention Control and Countermeasure (SPCC) Plan. This SPCC Plan was prepared in accordance with Section 311 of the CWA, CFR Title 40, Part 112.7, State and Local Government Requirements.
- Emergency Plan for Lybrook.
- Discharges or Spills of Oil or Hazardous Substances
- New Mexico Oil Conservation Division Discharge Plan

#### 2.0 EXISTING CONDITIONS

#### 2.1 Facility Description

The facility was originally constructed as a lean oil natural gas processing facility in 1959. It was upgraded to its current status as a cryogenic plant in 1976. WFS purchased the plant from Public Service of New Mexico (PNM) in 1995. The plant is designed to extract ethane and higher hydrocarbon gases from natural gas. The processes used to separate hydrocarbons from field gas includes compressors, turbo expanders, heat exchangers, chillers, separators, dehydrators, power generating equipment, aboveground storage tanks and other supporting equipment. The product and waste storage tank descriptions, capacities, and locations are summarized in Table 1 and Figure 2.

#### 2.2 Storm Water Drainage Patterns

The Lybrook Plant occupies approximately 30 acres of land with the elevation, of the facility, ranging from 7,160 to 7,090 feet above mean sea level. Regional surface water drainage is to the northeast toward Escrito Canyon. Lybrook Plant storm water drainage consists of three arroyo tributaries that drain to Escrito Wash as shown in Figure 1. The tributaries are located 1,200 feet north, 300 feet northeast, and 100 feet east of the facility, respectively. The confluence of the three tributaries is approximately 0.75 miles northeast of the facility.

Three surface water ponds are located within the wash, downstream of the culvert. The ponds are located approximately 0.75 miles, 1.25 and 1.75 miles northeast of the facility. Impacts to the ponds from discharge of storm water are unlikely based on their distance from the plant and the option to contain major releases at the culvert upstream of the ponds. Area arroyos and ponds including Escrito Wash are typically dry except in response to precipitation events.

Eight discrete storm water drainage basins were identified at the facility during the site inspection. Storm water drainage basins are shown in Figure 3. The plant process, loading dock, office, and water well areas (Areas 1, 2, 4 and 6, respectively) discharge to engineered storm water management structures (berms, ditches, and culverts) that direct surface runoff to the plant's storm water detention ponds located at the southeast corner of the facility.

The storm water detention ponds consist of two unlined ponds, connected in series, with an overflow to tributary drainage of Escrito Wash. The storm water detention ponds are designed to accommodate storm water without discharging during typical precipitation events. The overflow pipe is designed to discharge from below the water surface to prevent the discharge of light non-aqueous phase liquids in the event that maximum capacity is reached.

Storm water from the tank farm (Area 3) and bone yard, (Area 5) may discharge off site to surface drainage tributaries of Escrito Wash. Storm water captured in the wastewater evaporation pond (Area 8) and flare area (Area 7) is not discharged.

#	Number of Tanks	Capacity (approximate)	Description	Drainage Basin
(a)	2	50,000 gallons	Y-grade product tanks	Area 3
(b)	2	50,000 gallons	propane tanks	Area 3
(c)	4	90,000 gallons	propane tanks	Area 3
(d)	2	40,000 gallons	butane tanks	Area 3
(e)	2	42,887 gallons	natural gas liquid tanks	Area 3
(f)	1	17,000 gallons	hot oil tank	Area 1
(g)	1	21,000 gallons	ambitrol tank	Area 1
(h)	1	150 gallons	odorant tanks	Area 2
	1	300 gallons		
(i)	1	300 gallons	solvent tank	Area 1
(j)	1	4,898 gallons	used oil tank	Area 3
(k)	1	300 gallons	diesel tank	Area 1
(1)	1	300 gallons	on-road diesel tank	Area 1
(m)	1	1,000 gallons	gasoline tank	Area 1
(n)	1	180 gallons	diesel tank	Area 1
(0)	1	1,175 gallons	used oil tank	Area 5
(p)	1	2,029 gallons	lube oil tank	Area 1
(q)	1	2,820 gallons	triethylene glycol tank	Area 1
(r)	1	4,512 gallons	Methanol tank	Area 1
(s)	1	4,516 gallons	diethanolamine tank	Area 1
(t)	1	12,451 gallons	diethanolamine tank	Area 1
(u)	1	55 gallons	Expender lube oil tank	Area 1
(v)	1	1,300 gallons	Clark ambitrol tank	Area 1
(w)	1	2,000 gallons	Clark ambitrol tank	Area 1
(x)	1	3,760 gallons	lube oil tank	Area 1
(y)	1	100 barrels	used oil tank	Area 1
(z)	1	250 gallons	used oil tank	Area 1
(aa)	2	658 gallons	odorant tanks	Area 1
(ab)	1	55 gallons	York turbine oil tank	Area 1
(ac)	1	500 gallons	turbine oil tank	Area 1
(ad)	1	820 gallons	IR Ambitrol tank	Area 1
(ae)	1	1,029 gallons	IR Ambitrol tank	Area 1
(af)	1	4,898 gallons	IR lube oil tank	Area 1
(ag)	1	400 gallons	Ambitrol tank	Area 1

TABLE 1PRODUCT AND WASTE STORAGE TANKS

Figure 3 identifies each of the site drainage basins and their points of storm water discharge. Each area is discussed in the following sections:

• Plant Process Area (Area 1)

The process area is the largest of the site drainage basins and includes all the main gas processing facilities, cooling towers, maintenance building, aboveground storage tanks and vehicle fueling area. Storm water is directed east by a series of ditches, berms and culverts towards the area perimeter. The storm water is then directed to the storm water detention ponds.

• Truck Loading Area (Area 2)

The tanker truck loading and scale area is located along the southern property boundary. Storm water from this area flows east along a ditch that parallels the property fence line until it is diverted north by the main plant access road ditch. From there, storm water enters a culvert beneath the access road and discharges to the storm water detention ponds. Some storm water ponding occurs in the concrete lined area below the loading dock scale.

• Tank Farm Area (Area 3)

The tank farm consists of horizontal bullet tanks for storage of gaseous and liquid products and is located near the southwest comer of the facility. Storm water from this area flows south along a graded earthen berm that parallels the west end of the loading dock area. Discharge from the area is to a drainage ditch that parallels the north side of NM Highway 44. The ditch eventually discharges to a tributary of Escrito Wash approximately 1,000 feet to the east.

• Administrative Office Area (Area 4)

The Lybrook administrative office, a water well system building, and a plant water supply tank are located within this area. Storm water discharges from this area eventually flow through the plant process area via ditches.

• Storage (Bone Yard) Area (Area 5)

This area is utilized as a storage area/bone yard for decommissioned and inactive equipment, filter-draining operation and to land farm impacted soil. The land farm is bermed to contain storm water. Storm water discharges from this area are discharged off site via localized drainage channels that flow northeast into tributaries of Escrito Wash.

• Water Well Pump House Area (Area 6).

This area consists of several small buildings that house the water well pumping system for the plant production water. Storm water from this area is directed east to the storm water detention pond system.

#### • Flare Pad Area (Area 7)

Area 7 is located at the east end of the facility, north of the wastewater evaporation ponds. Storm water is contained with in the containment.

#### • Wastewater Evaporation Pond Area (Area 8)

The evaporation pond area is located at the east of the main facility. The area consists of three evaporation ponds. The evaporation ponds capture storm water runoff in this area. No storm water is discharged from this area.

#### 2.3 Non-Storm Water Discharges

The SWP3 team conducted a visual assessment of each of the storm water outfalls that discharge off-site on June 6, 2001. Storm water outfalls were inspected for evidence of non-authorized discharges (staining, odors, discharge pipes, etc.) from the facility. A non-authorized discharge was observed at the cooler in the north process area. The discharge consists of continuous stream of potable water from an evaporative cooler curtain. The evaporative cooler curtain provides secondary cooling for cooler. The water quality is equivalent to potable water. There were no other visual indications of non-authorized discharges observed. Certification of the assessment for the presence of non-authorized discharges is presented in Appendix A.

Non-storm water discharges that potentially flow to the storm water management system and storm water detention ponds include the following:

- Discharges from emergency fire-fighting activities, fire equipment flushings and testings,
- Air conditioning condensate,
- Routine exterior building wash downs (non-detergent),
- Potable water from fire water pumps, and
- Routine pavement wash downs (non-detergent) where spills or leaks have not occurred.

The discharges identified above are authorized under the MSGP based on their identification in this SWP3. Non-storm water discharges that are not authorized under the MSGP include the following:

- Cooling tower water,
- Process area waste water,
- Compressor wash water,
- Maintenance slab wash water, and
- Sanitary wastewater.

With the exception of sanitary wastewater that flows to the facility septic system, the above referenced, non-authorized discharges flow to the evaporation ponds via underground piping. Wastewater from the process area floor drains flow to an oil/water separator prior to discharging to the evaporation ponds.



#### 2.4 Prior Spills and Leaks

Releases at the Lybrook Plant are recorded and documented on Spill Reports maintained in the facility's environmental files. A reportable quantity (RQ spill occurred at the facility on September 27, 1990 that triggered the requirement for this SWP3. A summary of this spill and other significant spill events during the past three years are summarized below.

- On September 27, 1990, a spill occurred that the previous owner (PNM) reported as a discharge of contaminated storm water. Less than one barrel of light oil emulsion was discharged from a flare tank at the plant onto an area near Escrito Wash. Because the spill caused a "visible sheen" of oil on the surface of the channel, it was classified as an RQ spill (40 CFR Part 110).
- On February 10, 1998, a skimmer pump pumped approximately 2,600 gallons overnight causing the associated waste oil tank to overflow into the containment berm. Approximately 150 gallons of the oil/water mixture were released when the berm was breached. Over 2,000 gallons were recovered. Absorbent pads were used to soak-up the oily residue. The affected soil was treated to enhance bioremediation in place.

#### 2.5 Endangered Species

The NOI requires MSGP applicants to identify whether threatened and endangered (T&E) species are present in proximity to storm water discharges. The threatened and endangered species have been identified in Rio Arriba County are the Bald Eagle, Mexican-Spotted Owl and the Back-Footed Ferret. According to the Threatened and Endangered Species Conflict Map located at the Bureau of Land Management (BLM) Farmington, New Mexico office, no threatened or endangered species habitats were identified in the Lybrook Plant area. Based on existing storm water discharges and the established storm water management system, only minimal land disturbing activities (i.e. berm repairs, ditch cleanings) are anticipated at this time. With the exception of the incidental occurrence of Bald Eagles, no T&E species are known to be "In Proximity" to the facility. Based on visual inspection, the industrial nature of the Lybrook Plant, and minimal disturbance of natural habitat, adverse effects to these species are not likely.

#### 2.6 Historic Properties

The NOI requires MSGP applicants to identify historical properties that are present in proximity to storm water discharges. The historical property must be either listed or eligible for listing on the National Register of Historical Places. A search of the National Register Information System did not reveal any historical properties in the proximity of Lybrook Plant. A subsequent visual inspection of the facility did not identify any historic properties that would be affected by implementation of this plan.

#### 3.0 STORM WATER MANAGEMENT CONTROLS

#### 3.1 Pollution Prevention Team

The Pollution Prevention Team consists of specific individuals responsible for the development and revision, implementation, and maintenance of the SWP3. The Team will consist of management personnel responsible for overseeing the plan, conducting quarterly inspections, conducting annual evaluations, and preparing reports. The Team will also include on-site technical personnel responsible for the day-to-day activities and maintenance of the SWP3. Team members are comprised of the following:

Name	Team Position	Telephone No.
Mark Bareta	Coordinator	(505) 632-4634
Tony DeHerrera Tim Berry	Manager/Administer	(505) 632-4459 (505) 632-4425
Odie Chapman or Designee	Inspector	(505) 632-4613

#### 3.1.1 SWPP Coordinator

The SWPP Coordinator for the Lybrook Gas Processing Plant will be located at the San Juan Area office of Williams Field Services (WFS) in Bloomfield, New Mexico. The Coordinator will be responsible for the following plan activities:

- <u>Coordination with Regulatory Agencies</u>: The Coordinator will be prime contact with the regulatory agencies involved in the NPDES permit process and shall be responsible for compiling and submitting requested information.
- <u>Maintenance of Required Documentation</u>: The Coordinator will be responsible for ensuring that required documentation is maintained at the head office and on-site, including records of inspection, maintenance, spills/leaks, annual evaluation for compliance, revisions to the plan, and activities of Team members, records of training, and monitoring records.
- <u>Review of Inspection and Maintenance Schedule</u>: The Coordinator will review the inspection and maintenance schedule at least once annually to ensure that it fulfills the purpose of the plan. The schedule will be discussed with the Manager/Administrator, and any revisions agreed upon will be documented. The Coordinator shall also review inspection and maintenance reports to ensure that the schedule is being implemented.
- <u>Review of Employee Training Program</u>: The Coordinator shall review the schedule and content of the Employee training program to ensure that it fulfills the intent of the plan and is keeping with the latest regulations and practices. The Coordinator will be available to conduct training efforts and assist the Manager/Administrator in formulation of training programs.



- <u>Comprehensive Site Compliance Evaluation</u>: The Coordinator shall conduct an annual on-site compliance evaluation with the Manager/Administrator. The Coordinator shall be responsible for intermediate evaluations if observations during the annual evaluation indicate that the intent of the SWP3 is not being fulfilled. The Coordinator shall prepare a report following the evaluation in accordance with the plan.
- <u>Revisions to the SWP3</u>: The Coordinator shall review the SWP3 on an annual basis and implement revisions or additions as needed to bring the plan current with the latest regulations and procedures and with any change in site conditions. These recommendations will be coordinated with the Manager/Administrator for implementation.

#### 3.1.2 SWP3 Manager/Administrator

The SWP3 Manager/Administrator shall visit the facility on a regular basis and shall report directly to the Coordinator. The Manager/Administrator shall be responsible for the following SWP3 activities:

- <u>Inspection and maintenance schedule</u>: The Manager/Administrator will be responsible for developing and implementing the inspection and maintenance schedule and for assigning the tasks related to the schedule to the Inspector. The Manager/Administrator shall review the inspection and maintenance reports prepared by the Inspector and approve the reports prior to submitting copies to the Coordinator. The Manager/Administrator will be responsible for ensuring that the schedule is implemented and proper documentation is completed. The Manager/Administrator will maintain a file of all documentation on-site. The Manager/Administrator shall ensure that any deficiency found during inspection is rectified in a timely manner and documented in the file.
- <u>Employee Training Program</u>: The Manager/Administrator shall be responsible for developing and implementing an employee-training program for site personnel involved in activities related to the SWP3. The Manager/Administrator shall ensure that all personnel are aware of permit and regulatory requirements associated with their activities and are familiar with the contents of the SWP3.
- <u>Comprehensive Site Compliance Evaluation</u>: The Manager/Administrator shall accompany the Coordinator during site evaluations to provide information and ensure that any deficiency found during evaluation is rectified in a timely and well-documented manner. The Manager/Administrator will maintain a record of evaluation reports and resulting actions on-site.
- <u>Spills and Leaks</u>: The Manager/Administrator shall respond immediately to spills and leaks and take appropriate action to repair and mitigate such events. The Manager/Administrator shall notify the Coordinator immediately when any event threatens to pollute the storm water system. The Manager/Administrator will be responsible for documenting all events, actions taken, and the extent, if any, of storm water contamination. This documentation shall be maintained on-site and a copy forwarded to the Coordinator.
- <u>Revisions to the SWP3</u>: The Manager/Administrator shall review the SWP3 on an annual basis and recommend revisions or additions as needed to bring the plan current with the

latest regulations and procedures and with any change in site conditions. These recommendations will be coordinated with the Coordinator for implementation.

#### 3.1.3 SWP3 Inspector

The SWP3 Inspector shall be located on-site on a day-to-day basis and shall report directly to the Manager/Administrator. The Inspector shall be responsible for the following SWP3 activities:

- <u>Inspection and Maintenance</u>: The Inspector shall conduct routine scheduled inspections and prepare a report of the inspection to be submitted to the Coordinator. The Inspector shall oversee routine scheduled maintenance and request any replacement, repairs, or unscheduled maintenance needed and report to the Manager/Administrator on all work performed. The inspector shall perform storm water monitoring according to the requirements of this plan.
- <u>Employee Training Program</u>: The Inspector shall participate in the employee-training program and shall alert site personnel to any activity not in conformance with the intent of the SWP3. Any activity not in conformance with the plan shall be reported to the Manager/Administrator.
- <u>Spills and Leaks</u>: The Inspector shall immediately report any spill or leak according to the WFS SPCC Plan and Emergency Operating Procedures and take appropriate action to remedy the event, contain any spilled substance, and mitigate any damage. The Inspector shall provide a written report to the Manager/Administrator following any spills or leaks, describing the event, personnel involved, cause, and actions taken.
- <u>Revisions to the Plan</u>: The Inspector shall be thoroughly familiar with the requirements of the SWPP and may offer comments or recommendations to the Manager/Administrator concerning revisions or additions to the plan to better suit the site-specific conditions.
- 3.2 Risk Identification and Assessment

Eight drainage areas of the site, shown in Figure 3, have been assessed for their potential as storm water pollution sources. Preventative measures that have been implemented for each area are described below.

• Plant Process Area (Area 1)

The potential pollutants are natural gas products, lube oil and used oil, process chemicals, water treatment chemicals, coolants, diesel and gasoline. Process equipment, such as engines, compressors, power generating equipment, and cooling towers, are housed indoors thus reducing the potential for storm water pollution. Most of the process area is gravel covered to slow runoff and minimize soil erosion. In the event of a spill or release, surface discharges can be contained near the source by blocking ditches and culverts or eventually run off will be contained in the storm water detention ponds.

Contact and non-contact (cooling) wastewaters from the process area are not commingled with storm water discharges. Wastewater from the plant process area is directed to the facility's wastewater evaporation ponds. Floor drains in the maintenance shop, Clark and Solar buildings are directed to an oil/water separator prior to discharge of the water fraction to the evaporation ponds. The oil fraction removed by the oil/water separator is pumped to the used oil storage tank for recycling.

Product and waste storage tanks are located in this area. Potential leaks and spills associated with transfer activities from these tanks could contribute pollutants to the storm water management system. Where experience indicates a reasonable potential for failure such as a tank overflow, rupture, or leakage, appropriate containment, diversionary structures, or equipment to prevent a discharge from reaching a water course are provided.

Plant vehicles are refueled in the plant process area. Vehicle refueling activities have the potential to contribute petroleum products to storm water by overfilling, and equipment failure. Control measures include posted signs to remind employees not to "top off' tanks, and to return fuel nozzles to the bermed area around the tank.

• Truck Loading Area (Area 2)

The potential pollutants are natural gas liquids. Product loading in the truck loading area could contribute petroleum hydrocarbons to the storm water management system from leaks and spills. A concrete spill containment structure is located beneath the truck scale in the loading area. Storm water that ponds below the loading dock scale is inspected before pumping water out into the storm water drainage system. If any evidence of pollutants is observed in the standing water below the scale, the water is removed and disposed properly.

• Tank Farm Area (Area 3)

The potential pollutants are natural gas liquids and mercaptan odorant. Two horizontal tanks containing natural gas liquids are the only potential, non-gaseous pollutant sources stored within this area. Each of the natural gas liquid tanks has secondary containment berms capable of containing releases and preventing discharge of contents to the storm water system. In event of a spill, the SPCC Plan will be implemented.

• Administrative Office Area (Area 4)

No potential pollutants were identified in this area.

• Storage Area (Area 5)

The potential pollutants are used oil and process chemicals, and landfarm soil with process chemicals and/or petroleum hydrocarbons. A filter draining operation consisting of filter draining apparatus and disposal dumpster could contribute petroleum hydrocarbons and process fluids. Equipment and material storage in this area could contribute petroleum hydrocarbons to off site drainages. Good housekeeping measures and enforcement of appropriate storage practices that include draining of equipment fluids prior to storage will minimize storm water impact. The landfarm and filter draining operation shall be bermed to contain runoff.

• Water Well Pump House Area (Area 6).

No potential pollutant sources were identified in this area.

• Flare Pad Area (Area 7)

Typically, liquids are removed from the flare line by a knockout tank and gas emissions are flared to the atmosphere with little potential to contribute to storm water pollution. In the event of liquid spillage from the knockout tank, or incomplete combustion in the flare, pollutants would be contained within the flare pad berm. Periodic removal of visibly stained gravel will minimize pollutants available to mix with storm water

• Wastewater Evaporation Pond Area (Area 8)

The potential pollutant is process wastewater. Since this pond is a non-discharging impoundment, it is not a storm water pollution source. Storm water that falls or drains into the pond is evaporated along with the process wastewater. The pond level is inspected daily. Spray towers have been operating in the pond to enhance evaporation. The pond liner leak detection wells are gauged on a regular basis.

3.3 Best Management Practices

This section identifies the Best Management Practices (BMPs) currently being implemented to prevent or mitigate pollution to storm water.

3.3.1 Good Housekeeping

All areas on-site are routinely maintained and kept free from waste material and debris. All waste material and debris is properly collected in appropriate container and disposed of on an on-going basis. Any temporary storage of potential pollutant sources is located in a contained hazardous material area with appropriate controls for storm water protection. All raw materials are protected from precipitation by storage in containers or coverage. All containers are clearly labeled with an accurate description of the substance contained. Personnel are to ensure that any reused containers are clearly marked with the current contents description and date. The previous descriptions shall be removed or voided. All containers are sealed; no open storage of liquid wastes is permitted.

#### 3.3.2 Preventive Maintenance

Periodic inspection and maintenance of storm water management devices as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.

• Open Channels: Periodic inspection of the open channels shall be performed at least once quarterly and after any large precipitation event. The channels shall be cleared of debris and sediment deposits and repaired and maintained as necessary.



- Culverts: Periodic inspection of the culverts shall be performed at least once quarterly and after any large precipitation event. Sediment deposits and debris shall be removed from the culverts, any erosion damage at entrance or outfall shall be repaired and extra protection considered if this is an on-going problem. Any damaged culvert shall be repaired or replaced.
- Containment Structures: Periodic inspection of the containment structures around process equipment, product and waste storage tanks, and the truck loading equipment shall be performed at least once quarterly and after any large precipitation event.
- Process Wastewater System: Periodic inspection of the process wastewater system shall be performed at least once quarterly. The system will be evaluated and necessary maintenance performed to ensure proper flow from the process area drains through the oil/water separator to the evaporation ponds.

#### 3.3.3 Spill Prevention and Response Procedures

Detailed policy and procedures for preventing, controlling, and reporting discharges or spills can be found in WFS Operating and Maintenance procedure, entitled Discharges or Spills of Oil or Hazardous Substances: Preventing, Controlling and Reporting of, 21.10.020 and the Lybrook Plant SPCC Plan, 42.13.001.

#### 3.3.4 Inspection and Evaluation

In addition to or as part of the Annual Comprehensive Compliance Evaluation Report required by the permit, the qualified Inspector will conduct visual inspections of the Plant annually. The Inspector shall include quarterly visual inspections as part of his routine preventive maintenance site check.

The objective of the visual inspections is to survey equipment and storage areas on a regular basis and to identify problems and ensure that appropriate actions are taken. A work order will be prepared describing corrective measures shall be used to ensure that appropriate actions are taken in response to the inspection. Records of annual inspections shall be maintained for a minimum of five years.

Specifically, the Inspector will visually check for:

- Corroded or damaged drums, tanks, or pipes;
- Broken or breached earthen dikes;
- Broken or cracked concrete containment walls;
- Clogged catchment ponds;
- Collapsed or clogged culverts; and
- Stained soil.

#### 3.3.5 Sediment and Erosion Control

The following BMPs for sediment and erosion control are maintained and upgraded as needed to minimize the entrainment of fine-grained soils into storm water discharges.

• Maintain vegetative cover to the extent possible in exposed soil areas.

- Minimize soil erosion by reducing storm water runoff velocity and providing drainage pathways.
- Minimize exposure of bare soil areas to precipitation following any new construction or other ground disturbing activities. This can be accomplished by slope protection, flow diversions, and/or soil stabilization (mulching, matting, geotextiles).
- Allow sediments to settle out of storm water by utilizing the storm water detention pond.
- Ground stabilization at non-paved surfaces, such as parking, loading, unloading, and open areas. This may include re-grading the unpaved surface to remove ruts and erosion scars that have formed, followed by the application of gravel over non-paved areas.
- The majority of the plant process area has been covered with a layer of gravel to minimize erosion and potential contamination problems.
- Stabilize steep slopes.
- Minimize offsite runoff flows on to the facility by maintaining berms and diversions.

#### 3.3.6 Process and Materials Management

Process wastewater flows have been minimized to keep the evaporation pond water level low to prevent storm water from causing an overflow event. Spray towers have been installed in the evaporation pond to enhance evaporation.

Materials management practices include the identification of toxic and hazardous substances stored on-site and the organization and handling procedures for these substances. By minimizing the exposure of materials to storm water, facilities can eliminate the possibility of storm water discharges coming into contact with pollutants. Specific practices emphasized include:

- Neatly organizing drums, boxes, and other containers for storage at designed storage areas;
- Identification of all substances stored and handled on-site;
- Development of handling procedures for these materials; and
- Revision of the SPCC and this plan to include new materials stored or handled on-site.

#### 3.3.7 Employee Training

The SWP3 manager and inspector will conduct and coordinate employee training annually to inform and educate plant personnel about the SWP3. The following subjects will be covered:

- SPCC plan and associated spill response procedures;
- Good house keeping and preventative maintenance procedures;
- Proper tank filling, emptying, and material loading and unloading procedures;
- Drum handling, labeling and disposal procedures;
- Waste handling and disposal procedures; and
- Storm water monitoring and sampling procedures.

#### 4.0 IMPLEMENTATION

#### 4.1 Best Management Practices (BMP) Implementation

The Best Management Practices described in this plan have been implemented or will be initiated. These BMPs will be incorporated into the existing preventive maintenance schedule. Implementation will be monitored through inspections. The BMP, inspection interval, and responsible party are listed below.

Best Management Practice	Inspection Interval	Responsible Party
Good Housekeeping	Annual	Inspector
Preventative Maintenance	Annual	Inspector
Spill Prevention and Response Procedures	Annual	Inspector
Visual Inspection	Annual	Inspector
Sediment and Erosion Control	Annual	Inspector
Process and Materials Management	Annual	Inspector
Employee Training	Annual	Manager/Administrator

#### 4.2 Visual Monitoring

Visual monitoring of storm water from each outfall are requirements of the MSGP. Visual monitoring of storm water discharge from the outfalls described in the section below must be conducted at least once per quarter to inspect storm water quality associated with snowmelt, or storm water runoff. Monitoring will be conducted during the following periods:

- 1<sup>st</sup> Quarter January through March,
- 2<sup>nd</sup> Quarter April through June, 3<sup>rd</sup> Quarter July through September, and
- 4<sup>th</sup> Ouarter October through December.

Outfall sampling locations are shown in Figure 3 and include the following:

- Outfall 1 (Areas 1, 2, 4, and 6) Storm water detention pond outfall when pond capacity is reached.
- Outfall 2 (Area 3) Outfall location along the south side of the area when flowing,
- Outfall 3 (Area 5) Outfall location along northeast side of the area when flowing, ۲
- Area 7 No outfall, and
- Area 8 No outfall.

Visual examinations are conducted during daylight hours within the first 30 minutes, or as soon as possible thereafter, after runoff or snowmelt begins discharging. All samples will be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inches rainfall) storm event. The 72-hour storm interval is waived when the preceding measurable storm did not yield a measurable discharge, or it can be documented that less than 72-hour interval is representative for local storm events during the sampling period.



The grab sample must be collected in the first 30 minutes of the discharge. If the collection of a grab sample during the first 30 minutes is not possible, a grab sample can be collected during the first hour of the discharge, and the discharger must submit with the monitoring report a description of why a grab sample during the first 30 minutes was impracticable. A grab sample of the discharge is collected in a clear container. The visual examination is conducted in a well lit area during daylight hours and include any observations related to color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators of storm water pollution.

In some of the above-described areas, there are several outfalls within the same area that discharge offsite. A single sample for visual monitoring from one of the outfalls is deemed as a "representative discharge" based on the similar nature of industrial activities, type of materials, and management practices conducted within these areas.

Visual monitoring worksheets must be maintained onsite and filed with the SWP3. Blank worksheets are included in Appendix B. Information on the worksheets includes examination dates, times, personnel, nature of discharge (snowmelt, rainstorm, etc.), visual quality of the discharge, and probable sources of any observed pollution. If no discharges occur within a quarter then visual monitoring is not required and "no discharge" is recorded on the monitoring worksheets.

#### 4.3 Employee Training

An employee-training program shall be developed and implemented to inform personnel of storm water BMPs identified in this Plan. Training will be provided annually and records of said training shall be retained for three years. The employee training programs shall inform personnel responsible for storm water management and employees at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training addresses topics such as spill response, good housekeeping and material management practices.

The purpose of the training program is to inform and teach on-site personnel with regard to the components of the discharge regulations, permit, and storm water pollution prevention plan. The program will prepare individuals to effectively minimize and/or eliminate pollutants from entering the storm drainage system.

The goal of the program is to produce trained personnel who have the know-how to prevent spills and to respond safely and effectively, and who recognize and report potential storm water contamination situations.

#### 4.4 Record Keeping & Internal Reporting Procedures

All records of inspections and maintenance activities must be incorporated in Appendix C of this plan and maintained on-site. Documenting all inspections, training programs and incidents is an excellent preventive maintenance technique. A log will be developed and followed to record all maintenance, monitoring, and inspection activities with regard to the storm water drainage system. This log will become incorporated into the preventive maintenance log. Records of spills, leaks, or other pollutant discharges, inspections, monitoring events and maintenance activities must be retained for at least five years.



#### 4.5 Comprehensive Storm Water Compliance Evaluation

The Coordinator and Inspector shall conduct annual site compliance inspection. This annual inspection will provide a basis for evaluating the effectiveness of the plan. The inspection will evaluate measures to reduce pollutant loadings: structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the SWP3. Measures shall be evaluated to determine whether they are adequate and properly implemented in accordance with terms of the permit or whether additional control measures are needed. A visual inspection of equipment needed to implement the SWP3, such as spill response equipment, shall be made. Areas contributing to any storm water discharge shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Specifically, the site evaluation will include:

- Inspect storm water drainage areas;
- Observe structural measures, culverts, earthen berms, and concrete dikes for proper operation;
- Evaluate effectiveness of storm water pollution prevention measures and BMPs;
- Review and evaluate quarterly monitoring data;
- Revise SWP3 to reflect new construction areas and changes in the storm water drainage system;
- Implement changes as required; and
- Complete and sign the Storm Water Compliance Evaluation Report.

A Storm Water Compliance Evaluation Report summarizing the scope of the inspection, personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken shall be prepared. If the report describes deficiencies in pollution control structures or procedures, such deficiencies shall be corrected and the SWP3 shall be modified to reflect the required changes. The report shall be signed by the Coordinator and Inspector. The report shall be retained as part of the SWP3 for at least five years.





Source:U\$GS Lybrook Quadrangle, New Mexico

Scale: 1" = 2,000'



Figure 1 Site Vicinity / Topographic Map Lybrook Gas Processing Plant Section 14, Township 23N Range 7W

Rio Arriba County, New Mexico



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Figure 3 Drainage Plan Lybrook Gas Processing Plant Section 14, Township 23N Range 7W Rio Arriba County, New Mexico

← AREA 7 AREA 8 \* OUTFALL 1

# Appendix A

# **SWP3 Documentation**

NPDES Form 3510-6	United States Environmental Proto Washington, DC 2046 Notice of Intent for Storm Water Discha INDUSTRIAL ACTIVITY Under the Multi-sec	ection Agency Form Approved 50 OMB No. 2040-0086 arges Associated with tor NPDES General Permit
Submissi to discha Water Mi Section E with all ap on maint days afte complete implement	on of this completed Notice of Intent (NOI) constitutes notice that the e rge pollutants to waters of the United States, from the facility or site i ulti-sector General Permit (MSGP). Submission of the NOI also con 8 of this form has read, understands, and meets the eligibility condition oplicable terms and conditions of the MSGP; understands that continued aloning eligibility for coverage, and that implementation of the permittee er a complete NOI is mailed. In order to be granted coverage, all i d. Please read and make sure you comply with all permit requirement at a storm water pollution prevention plan.	entitive in Section B intends to be authorized identified in Section C, under EPA's Storm institutes notice that the party identified in us of Part I of the MSGP; agrees to comply d authorization under the MSGP is contigent as pollution prevention plan is required two information required on this form must be is, including the requirement to prepare and
A. Permi Permit	it Selection number assigned to your facility under the previous permit: NMRO(5	New Permit Number (EPA Use Only)           D_A520
<b>B. Facili</b> 1. Nan 3. Mai b. C	ty Operator Information ne:[Williams, File]d, SenVilces, , ling Address: a. Street or P.O. Box: 188, CR, 4900, , city:Bloomfile]d, , , , , , , , , , , , , , , , , , ,	<u>1</u> 12. Phone: 151015161312141613141 111111111111111111111111111111
<b>C. Facili</b> 1.Faci	ty/Site Information lity/Site Name: LIVIDION GAS PICOLESS	ing Blant
2.Loca b. C d. S 3.a. La	ation Address: a. Street: HCR, 1,7, BOX, 3,6,0, H ity: 10,0,a, , , , , , , , , , , , , , , , , ,	<u>WY 44 MP 103</u> Rio Arriba
4.a. P	ermit Applicant: D Federal D State D Tribal D Private D Other pu	blic entity
b. Is 5.Doe a. F b. A If 6.The prin	the facility located on Indian Country Lands? Yes INo is the facility discharge storm water into: Receiving water(s)? IN Yes INo If yes, name(s) of receiving water(s) municipal separate storm sewer system (MS4)? Yes INo yes, name of the MS4 operator: LILIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	ESCILICO Wash
Prin 7.Apr	nary: [1]][1]] Secondary (if applicable): [1]] blicable sector(s) of industrial activity, as designated in Part 1.2.1	8.Additional Facility/Site Requirements: a Based on the instructions provided in
oft	he MSGP, that include associated discharges that you seek to have	Addendum A of the MSGP, have the
Cov DSe DSe DSe DSe DSe	ered Under this permit (choose up to three): ector A Sector F Sector K Sector P Sector U Sector Z ector B Sector G Sector L Sector Q Sector V Sector AA ector C Sector H Sector M Sector R Sector W Sector AB ector D Sector I Sector N Sector S Sector X Sector AC ector E Sector J Sector O Sector T Sector Y Sector AD	eligibility criteria for "listed species" and critical habitat been met? I Yes I No b.Based on the instructions provided in Addendum B of the MSGP, have the eligibility criteria for protection of historic properties been met? I Yes I No
D. Cert Do y supe infor dire- know pen:	ification you certify under penalty of law that this document and all attachment ervision in accordance with a system designed to assure that qualified mation submitted? Based on your inquiry of the person or persons w ctly responsible for gathering the information, do you certify that the i wledge and belief, true, accurate, and complete? Do you certify that y alties for submitting false information, including the possibility of fine	is were prepared under your direction or d personnel properly gather and evaluate the who manage the system, or those persons information submitted is, to the best of your you are aware that there are significant and imprisonment for knowing violations?
Print	Name: Ugefifi Baumer	
Sign	ature:	Date: 0111215101
EPA For	m 3510-6 (Revised 08-2000, Expires 04-2003)	Page 1 o

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SERVISONMENTAL PROTECTION AGENCY (EPA) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER NOTICE OF INTENT CENTER	~~~~~~~
NMR05A882	~~~~~~
Dear Operator: 02/21/2001	******
The EPA has processed your Notice of Intent (NOI) application for the facility noted below. <b>This facility is authorized to discharge</b> storm water associated with multi-sector activity under the terms and conditions imposed by the EPA's NPDES Storm Water Multi-Sector Permit. The facility permit number is listed above and the active date of permit coverage is 1/28/2001.	~~~~~~~
EPA's multi-sector permit requires certain pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial site. You may also be required to submit monitoring data for your facility's storm water discharges. As a facility authorized to discharge under this storm water multi-sector permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.	*****
FACILITY: LYBROOK GAS PROCESSING PLANT HCR 17 BOX 360 HWY 44 MP 103 CUBA, NMOPERATOR: WILLIAMS FIELD SERVICES 188 CR 4900 BLOOMFIELD, NM 87413	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
To obtain a copy of the EPA's storm water multi-sector permit terms and conditions to which you are now held accountable, please call the EPA Office of Water Resource Center at (202) 260-7786. If you have general questions concerning the storm water program, please call the EPA Region <b>06</b> contact: <b>Brent Larsen</b> , <b>(214) 665-7523</b> .	~~~~~~~~~~~
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

NOI ASSI	N-STORM WATER DIS( ESSMENT AND CERTI	CHARGE FICATION	Worksheet #5 Completed by:Mark J. BaretaTitle:Senior EnvironTitle:7/22/2001	mental Specialist	
Date of Test or Evaluation	Outfall Directly Observed During the Test (identify as indicated on the site map)	Method Used to Test or Evaluate Discharge	Describe Results from Test for the Presence of Non-Storm Water Discharge	Identify Potential Significant Sources	Name of Person Who Conducted the Test or Evaluation
5/6/2001	Evaporative Cooler Water	Source Evaluation		No Potential Significant Sources	Mark J. Bareta
			CERTIFICATION		
I, <u>) EVECES</u> under my dire submitted. B information si	Thumers ection or supervision in accor ased on my inquiry of the per ubmitted is, to the best of my ncluding the possibility of fine	(responsible corporadance with a system or second resons who r resons who r knowledge and belie and imprisonment for a second se	ate official), certify under penalty of law designed to assure that qualified perso manage the system or those persons d sf, true, accurate, and complete. I am a sr knowing violations.	<ul> <li>that this document and all attacent numel properly gather and evalua lirectly responsible for gathering ware that there are significant p</li> </ul>	chments were prepared tte the information the information, the enalties for submitting false
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C. Signature				D. Date Signed る「ら/	

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Lybrook Gas Processing Plant

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# Appendix B

# **Inspection and Monitoring Worksheets**

Quarterly Storm Water Visual Monitoring Report Lybrook Gas Processing Plant

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Quarter: \_\_\_\_\_Year: \_\_\_\_

Inspection Date:

Name of Inspector:

\_\_\_\_\_Title:\_\_

Nature of Discharge: (Rain or Snowmelt)

Outfall Observation Location	Date and time	Color	Unusual Odor	Clarity / Opacity	Floating Solids	Suspended Solids	Settled Solids	Foam	Oil Sheen	Comments
Outfall #1 (Area 1)										
Outfall #2 (Area 3)										
Outfall #3 (Area 5)										

**Comments:** 

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# Quarterly Inspection Report Lybrook Gas Processing Plant

Inspection Date: \_\_\_\_\_

Name of Inspector: \_\_\_\_\_\_ Title: \_\_\_\_\_\_

Pollutant Reduction Measures Evaluation:

Structural and Sediment Controls	Physical Condition of Control Features	Required Actions
Berms		
Concrete Containment		
Gravel and Paving		<u>_</u>
Rip-Rap and Filter Fabric		
Ditches		
Culverts and Piping		
Detention Ponds		

#### **Best Management Practices Evaluation:**

Best Management Practice	Condition of Practice	Required Actions
Good Housekeeping		
Preventative Maintenance	,	
Spill Prevention and Response Procedures		
Sediment and Erosion Control		
Process and Materials Control		
Process and Materials Management		
Employee Training		

#### **Additional Comments:**

# Comprehensive Compliance Evaluation Report Lybrook Gas Processing Plant

Inspection Date:		
Name of Inspector:	Title:	<u></u>
Others Present:		

\_\_\_\_\_

**Pollutant Source Evaluation:** 

Pollutant Source Area	Pollutant Sources Observed	Required Actions
Plant Process Area (Area 1)		
Truck Loading Area (Area 2)		
Tank Farm Area (Area 3)		
Administrative Office Area (Area 4)		
Storage Area (Area 5)		
Water Well pump House Area (Area 6)		
Flare Pad Area (Area 7)		
Wastewater Evaporation Pond (Area 8)		

**Comments:** 

**Pollutant Reduction Measures Evaluation:** 

Physical Condition of Control Features	Required Actions
	·
	<u></u>
	<u> </u>
	Physical Condition of Control Features

## **Best Management Practices Evaluation:**

Best Management Practice	Condition of Practice	Required Actions
Good Housekeeping		
Preventative Maintenance		
Spill Prevention and Response Procedures		
Sediment and Erosion Control		
Process and Materials Control		
Process and Materials Management		
Employee Training		

## Additional Comments:

Comprehensive Compliance Evaluation Report

Notes: Supplementary documentation to the inspection report may include field notebooks, timed and dated photographs or videotapes, drawings, sketches, and maps.

Based on the comprehensive evaluation, the Multi-Sector General Permit (MSGP) requires that any potential pollutant sources or pollution prevention measures that are not adequately addressed in the Storm Water Pollution Prevention Plan (SWP3) need to be revised within 2 weeks of the evaluation. Any identified issues or measures that are revised in the SWMP must be implemented within 12 weeks after the evaluation as specified in the MSGP.

If no incidents of non-compliance are identified during the evaluation, the following certification of compliance with the SWP3 must be signed by the Plant Manager or other authorized individual within Williams Field Services organization. This authorization should be filed with the SWP3.

Certification of Compliance

I certify under penalty of law that this Comprehensive Compliance Evaluation Report was prepared under my direction or supervision and that the Lybrook Gas Processing Plant is in compliance with the MSGP as specified in the SWP3. Based on my inquiry of the persons who conducted the evaluation, and those responsible for implementing the required actions, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Name:

Signature:

Date:
# Comprehensive Compliance Evaluation Report Lybrook Gas Processing Plant

Inspection Date: J	une 6, 20001
--------------------	--------------

Name of Inspector: Mark J. Bareta

Title: Senior Environmental Specialist

Others Present: Tim Berry, Steve Herrera

# **Pollutant Source Evaluation:**

Pollutant Source Area	Pollutant Sources Observed	Required Actions		
Plant Process Area (Area 1)	Evaporative cooler water discharge	None		
Truck Loading Area (Area 2)	ОК	None		
Tank Farm Area (Area 3)	Berm between plant and highway needs improvement	Upon completion of highway construction, repair berms		
Administrative Office Area (Area 4)	ОК	None		
Storage Area (Area 5)	Filter draining operations, land farm, and drums	See comments		
Water Well pump House Area (Area 6)	ОК	None		
Flare Pad Area (Area 7)	Flare containment needs improvement Repair containment			
Wastewater Evaporation Pond (Area 8)	ОК	None		

**Comments:** Water is discharged from the evaporative cooler in the north process area. The water is potable and is not a pollutant source.

In Storage Area (Area 5), Filter and sock draining operations, land farm and drums were observed.

**Pollutant Reduction Measures Evaluation:** 

Structural and Sediment Controls	Physical Condition of Control Features	Required Actions
Berms	ОК	None
Concrete Containment	ОК	None
Gravel and Paving	Gravel erosion observed in the process area.	Continue Maintenance
Rip-Rap and Filter Fabric	ОК	None
Ditches	ОК	. None
Culverts and Piping	ОК	None
Detention Ponds	ОК	None

# **Best Management Practices Evaluation:**

Best Management Practice	Condition of Practice	Required Actions		
Good Housekeeping	See Area 5 Above	See Area 5 Above		
Preventative Maintenance	ОК	None		
Spill Prevention and Response Procedures	ОК	None		
Sediment and Erosion Control	Gravel erosion observed in the process area.	Continue Maintenance		
Process and Materials Control	ОК	None		
Process and Materials Management	ОК	. None		
Employee Training	ОК	None		

**Additional Comments:** 



Notes: Supplementary documentation to the inspection report may include field notebooks, timed and dated photographs or videotapes, drawings, sketches, and maps.

Based on the comprehensive evaluation, the Multi-Sector General Permit (MSGP) requires that any potential pollutant sources or pollution prevention measures that are not adequately addressed in the Storm Water Pollution Prevention Plan (SWP3) need to be revised within 2 weeks of the evaluation. Any identified issues or measures that are revised in the SWMP must be implemented within 12 weeks after the evaluation as specified in the MSGP.

If no incidents of non-compliance are identified during the evaluation, the following certification of compliance with the SWP3 must be signed by the Plant Manager or other authorized individual within Williams Field Services organization. This authorization should be filed with the SWP3.

# Certification of Compliance

I certify under penalty of law that this Comprehensive Compliance Evaluation Report was prepared under my direction or supervision and that the Lybrook Gas Processing Plant is in compliance with the MSGP as specified in the SWP3. Based on my inquiry of the persons who conducted the evaluation, and those responsible for implementing the required actions, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Name:

MARK J. BARETA Why Bat 7/25/2001

Signature:

Date:

# Appendix C

# **Storm Water Visual Monitoring Procedure**

# Storm Water Visual Monitoring Procedure

# **Outfalls and Drainage Points**

The Storm Water Pollution Prevention Plan (SWP3) includes a section that describes the outfall locations and the area drained by each outfall. A site drainage map provides a visual reference for the location of the outfalls and the outline of the drainage area to each outfall. Visual inspection and monitoring (if required) must usually be performed at all outfalls. If characteristics of storm water discharge are expected to be similar for different outfalls, then a facility may choose to report the test results from one outfall as representative of all outfalls.

## **Sheet Flow Run-off**

Sheet flow run-off occurs in areas that have no discernible discrete discharge point. Vacant land and open parking lots are examples of sheet flow run-off areas. These areas should be described in the SWP3 and shown on the site drainage map.

### **Regulatory Requirements for Visual Inspection and Monitoring of Storm Water Discharges**

Each facility covered under the multi-sector general storm water permit must conduct quarterly visual monitoring of storm water discharges at each outfall during qualifying storm events and must document the results.

In accordance with the general permit, visual examinations of storm water quality must be performed and documented at least once each calendar quarter. The visual inspections of storm water discharge at each outfall must be completed during a qualifying storm event during daylight hours. A qualifying storm event is defined as rainfall of at least 0.1 inches, with no previous storm events having occurred within the previous 72 hours (3-days). Realistically, however, based on conditions present at typical industrial sites, a rainfall rate of 0.3 to 0.5 inches is often required before an appreciable amount of flow occurs that can be collected for a representative observation. A rain gauge mounted in an accessible area outside, away from traffic and the possibility of disturbance, should be used to record the total amount of rainfall at the site over the duration of the storm event (e.g. 1.2 inches over 4.5 hours).

Visual inspections should be made within 30 minutes to 1 hour after the beginning of storm water flow through the outfalls. The inspections shall document observations for the following discharge characteristics:

- Color
- Unusual odor
- Clarity/opacity
- Floating, suspended, or settled solids
- Foam
- Oil sheen
- Other obvious indications of contamination or pollution (e.g. residues or foreign matter)

The examinations must be conducted in a well-lit area. No analytical testing is required for the quarterly visual monitoring requirements beyond the recording of physical observations. Documented results must be retained in the SWP3.

# Resources/Coordination Needed to Conduct Visual Storm Water Monitoring

Storm water quarterly visual monitoring can be documented on a worksheet-type checklist with fields for entering comments. The worksheet can be formatted to include physical inspections of plant areas drained by each outfall, so that potential sources of contamination can be identified if such evidence is observed in the discharge. Take into consideration appropriate safety precautions and other logistics regarding outfall access during inspection planning. The following items are recommended to conduct the visual inspection at each outfall, or to gather additional data:

- Mounted rain gauge located outside in an accessible location of the plant,
- Watch or clock,

- Umbrella or rain-protective clothing,
- Skid resistant rubber or plastic safety boots,
- Clean, unused white plastic bucket with handle and plastic lid, at least 2-gallon capacity,
- Chemical resistant rope,
- 1-quart or equivalent unused clear glass sample jar or clear plastic container,
- Blank quarterly monitoring form.

The bucket(s) and jar(s) used for visual inspection of storm water discharges should be clean and reserved for this purpose only. The goal is to capture a representative volume of storm water at each outfall and record the observations made regarding physical appearance and characteristics of the discharge. The run off should be observed during the first thirty minutes to one hour after flow at the outfall begins. Once a storm event occurs, the period before a sufficient amount of flow is discharged can be as little as ten minutes or as much as an hour, depending on factors such as how far from the drainage area the actual outfall discharge point is.

Steps To Complete The Visual Inspection

1. Once the storm event begins, note the time. Check the flow at the closest outfall approximately every 15 minutes. The flow must be sufficient to collect at least half a bucket within a minute or two (approximately 1 gal/min). If sufficient flow is never achieved after the first hour, then the storm event will be insufficient for observation.

2. If sufficient flow is achieved within the first thirty minutes to one hour, record the date and beginning time that the outfall observations are made in the appropriate field on the worksheet form. Proceed to the first outfall.

3. Note the physical appearance of any run-on from adjacent property, if such is present. If the appearance of storm water coming from adjacent property appears to be different from that being discharged from the site, note such differences on the visual observation worksheet.

4. Except where noticeable unusual odors of a chemical nature are detected, it is presumed that storm water discharges may have a characteristic "earthy" or "moldy" smell, especially if there is decayed vegetation or algae growth in the discharge area. Some discharges may have no odor at all. It is helpful to record a baseline observation of the typical characteristics of an "unpolluted" discharge for reference. Unusual odors should be recorded on the worksheet, otherwise it is presumed that no unusual odor was present.

5. Collect at least half a bucket of run-off for visual inspection. Tie the rope to the bucket handle if needed to maneuver the bucket into the drainage point. Catch the flow in the most rapid portion of the stream without scraping dirt or debris from the ground.

6. As soon as a sufficient volume of run off is collected in the bucket, fill the sample jar with some of the collected run off. Keep the remaining water in the bucket, cover the container, and set aside temporarily.

7. Note the following parameters and quality of the discharge in the sample jar and record on the worksheet:

Color: Should normally be able to see through the water. Presence of dirt or excessive silt may indicate soil erosion or washout, or presence of other types of residues.

Excess floating, settled, and suspended solids: Solids may be present in the collected water, and these solids may float on the water, settle out in the bottom of the container, or remain suspended in the water. The source of these solids may be dirt, material washed out from a stockpile, construction area, etc., depending on the color. Normally these should not prevent seeing through the liquid in the jar. Note the presence of suspended and settleable solids by color, opacity of the liquid, and nature of the material if known.

8. Note the following parameters and quality of discharge from inspecting the water in the sample jar and comparing with the run-off left in the bucket, recording observations on the worksheet:

Foam: Presence of foam suggests that detergent residues, emulsifiers, or surfactants may have been deposited on pavements from illicit washing of vehicles or equipment outside. Also look at the outfall for signs of foaming.

Oil sheen: Use a flashlight if needed to observe the surface of the collected run-off in the bucket. Visible oil sheen indicates that petroleum or other oil-like residues have washed off pavement. In many cases, this can be attributed to oil staining from vehicles in parking lots, docks, or traffic areas, or from outside storage of containers that may be leaking or which have residues on the outside.

Excess settled solids and debris: Use flashlight if needed to look at collected run-off in the bucket and sample jar. Have solids settled at the bottom in a layer more than 0.25 inches? Are there any unidentified pieces of debris or trash other than grass, pebbles, or dirt?

9. Note the following parameters by observing the condition of the outfall drainage point and recording on the worksheet:

Staining: Does the outfall bear evidence of unusual staining other than that attributable to rust from metal storm grates or other identified sources?

Evidence of chemical dumping: Is there any evidence of debris associated with chemical residues or container remnants? Is there a tar-like discolored layer or film, or does the drainage area appear pitted or worn away from exposure to a corrosive material?

Dry Weather Flow: Prior to the storm event, was there any noticeable dry weather flow? If so, was the source determined? If yes, record this data on the worksheet.

10. After observations are complete at the first outfall, proceed to the next outfall or sheet flow run-off area to make similar observations, following Steps 1 - 9. If the storm event ceases prior to completing observations at all outfalls and sheet flow areas, note this on the worksheet. A separate qualifying storm event during the same quarter will be needed to complete observations for remaining outfalls or sheet flow areas.

After the visual inspection is completed, rinse the bucket and sample jar with potable water and stored dry in a secure area until next storm event.

11. After the storm event has ceased, record the total rainfall amount received at the mounted rain gauge at the facility, and the duration of the storm event (as best determined) on the worksheet. After collecting the rainfall data, empty the rain gauge for the next storm event.

Notes on collection of rainfall data: The rain gauge must be checked and emptied after each storm event, whether visual inspections are conducted or not, to ensure the accuracy of the data collected for the next storm event. An on-site rain gauge is generally more accurate than reports from nearby weather stations, as rainfall amounts may vary widely even over short distances.

The same worksheet used to record visual storm water quality inspection results may also be used to record physical plant area inspections, either before or after the qualifying storm event. After the form is completed, turn in to the SWP3 Team Coordinator for review; follow up action if needed, and archiving in the SWP3.

The following conditions should be recorded on a quarterly monitoring form if they occur:

- Lack of a qualifying storm event during a calendar quarter,
- Inability to conduct visual observations due to facility shut down,
- Occurrence of storm event when facility is unoccupied,
- Inability to conduct visual observations because storm event begins after daylight hours,
- Inability to conduct visual observation because of lack of sufficient flow, and
- Storm event occurs within three days of previous rainfall.



Cźk CONTROL ROOM FLARE SEPARATOR FIRE TRAINING S. Service of \_\_\_**₩`\_**\_\_\_\* 1.10 with the second N 12 . CLOSED DRAIN 3" 3" FLARE-EQUIPMENT Expander Compressor Discharge Demethanizer Bottoms Gas Chiller OPEN DRAIN 4" FLARE LINE 3" we have a set of the s SANITARY WASTE LINE 126166811668111608106084**606** PLANT PROCESS WATER DATE: DEC. 1988 S-1 WATER MONITORING WELL SCALE: APPROX. 1"=50" 













Dave but 26/299











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SUNTERRA GAS PROCESSING COMPANY Lybrook Gas Plant

Waste Water Discharge Plan GW-47 December 1988

Sunterra Gas processing company P.O. BOX 1869 • BLOOMFIELD, NM 87413 • (505) 632-8033

December 13, 1988

Mr. William J. LeMay, Director Oil Conservation Division (OCD) Energy, Minerals and Natural Resources Department P. O. Box 2088 Santa Fe, New Mexico 87501

Re: Lybrook Gas Plant Waste Water Discharge Plan GW-47

Dear Mr. LeMay:

Enclosed are four (4) copies of the Waste Water Discharge Plan for application for Sunterra's Lybrook Gas Plant.

I hereby certify that I am familiar with the information contained in and submitted with this application and that such information is true, accurate and complete to the best of my knowledge and belief.

I look forward to working with OCD as you review our discharge application.

Sincerely

Ken Gressanth

Ron Grossarth Vice President and General Manager

RG/jb

Enclosures

cc: Mr. David Boyer, OCD

#### INTRODUCTION

Sunterra Gas Processing Company's ("Sunterra") Lybrook Gas Plant ("Plant") is located approximately fifty (50) miles south of Bloomfield, New Mexico on Highway 44. The Plant site covers approximately 41.4 acres which includes an employee camp with 11 family dwellings that house 39 people. The location is shown on Exhibit 1. The Plant site is owned by Sunterra Gas Processing Company in fee simple.

The Plant was originally constructed in 1959. The Plant consists of an extraction system to remove ethane and higher hydrocarbons from field natural gas. The hydrocarbons that are removed are marketed in several places. The residual natural gas is also marketed by another company. An upgrade and a new cryogenic extraction system was added in 1975.

The Plant was purchased by Sunterra on December 31, 1986. Prior to that time, the Plant was owned by Southern Union Gas Company. Upon assumption of ownership, Sunterra realized that the existing waste water system was not adequate and revisions were needed to protect the environment. This plan will outline Sunterra's proposal to reduce the amount of wastewater requiring treatment and removal of hydrocarbons from the wastewater for recycle and reuse.

The following is a more detailed description of the extraction unit at the Plant:

## Lybrook Processing Unit

As upgraded in 1975, the Lybrook unit is designed as a cryogenic process and

-1-

is currently active. The unit has a capacity of approximately 72 million cubic feet of field gas per day.

The process begins with field gas directed upward from the bottom of a process tower. Diethanolamine solution (DEA) is directed downward through the tower to contact the rising gas. Acid gases are extracted from the gas by the DEA. The rich DEA is then directed to a still column for acid gas removal. The acid gases are emitted to the atmosphere. The DEA is cooled for recycling. Water losses from the DEA system are made up with deionized well water. The gas is directed from the DEA process to one of the two dehydrator towers in which water is absorbed by molecular sieves. The second tower is cooled and regenerated while absorption continues in the first tower. The water removed during regeneration flows to pond #1. The gas is chilled in heat exchangers and chillers and goes to separators for separation of hydrocarbon liquids. Gas pressure is reduced in turbo expanders which liquifies ethane, propane, butane and natural gasolines. The liquids then move to a demethanizer. Methane and some ethane are flashed off and directed to the residual gas pipeline. The liquid product moves to a deethanizer where ethane is extracted and placed in the product tank. The liquid product then goes into a depropanizer where propane is removed for local sales. The liquid product is pumped to storage and then to a pipeline for market.

Methanol is occasionally used to mitigate or prevent icing problems in the cryogenic system. Ambitrol is used as a coolant and antifreeze for plant compressors.

A system of drains directs wastewater and waste liquids from the unit to pond #1. Hydrocarbon vapor releases from the unit are directed to the flare. A

-2-

schematic of the present process wastewater flow is presented in Exhibits 2 and 3.

#### Wastewater Characterization

Exhibit 2 is the present water flow diagram for the Plant. All process and sanitary facilities water is obtained from a water well and is not treated. A 148,000 gallon storage tank provides for water storage. From this storage tank, water is routed to the Plant, sanitary facilities or the campsite.

The majority of water used at the Plant is for cooling tower makeup. At present, the cooling tower operation accounts for 87% of the water usage at the Plant. In the cooling tower, 90% of the water is lost in evaporation with 12% as blow down routed to pond #1. This blow down contains dissolved solids (TDS) in the 1,500 ppm range.

Another small stream from the deionizer regeneration cycle contains dissolved solids. This stream averages approximately 46 gallons per day.

There are several open drains which drain wash down water in the compressor buildings. These wash downs average 330 gallons per day and can be contaminated with lubrication oils and grease. These buildings have concrete floors with sumps under floor level which drain to pond #1 untreated.

We also use approximately 2,000 gallons per fire fighting training session, 4-6 times a year. The training pit is shown on Exhibit 3. Naptha is used as the fuel. When training is complete the naptha is allowed to burn off.

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No sanitary facilities wastewater is co-mingled with process wastewater. The sanitary wastewater is discharged into septic systems.

Exhibit 3 is a map showing present discharge points within the Plant and their routing into pond #1. Also shown on Exhibit 3 is the septic systems for the sanitary wastewater. All chemicals used within the Plant and their Manu-facturing Safety Data Sheets (MSDS) are included as Appendix 1 in the plan.

## Planned Process Changes

Upon review of the wastewater streams that presently are being produced, it became apparent that some changes could be done to minimize the quantity of wastewater generated and reduce the amount of well water used. Since the cooling tower is the largest single user of water and contributes the most wastewater to pond #1, Sunterra is in the process of evaluating methods to increase the cycles of concentration to reduce the volume of blowdown. Another alternative is to evaporate a portion of the cooling tower blow down and then condense the overhead water and return it to the cooling tower as makeup water. This will reduce fresh water makeup and blow down volumes.

All the wastewater from the floor drains, which could be contaminated with oil, will be routed through an oil and water separator to remove any oil. The water out of the separator will be directed to the evaporation pond and the oil will be placed in storage for recycle. The hydrocarbon/water separator is shown in Exhibit 4. The leak detection system will be routinely monitored for leaks. If a leak is detected, the Aztec office of OCD will be notified and the material will be analyzed.

-4-

The regenerator gas scrubber water is lower in total dissolved solids than the well water, therefore this regeneration water will be used as cooling tower makeup and for use in the DEA Makeup System. This will reduce the amount of well water required for makeup in the cooling tower.

We will analyze the streams that flow to the new evaporation pond for those parameters listed in <u>Guidelines of the Preparation of Groundwater Discharge</u> <u>Plans at Natural Gas Processing Plants</u> upon approval to implement the above changes. In Appendix 2 are analyses of the water in the two ponds at the Plant along with analyses of cooling tower blow down and well water.

# Transfer and Storage of Process Fluids and Effluents

Exhibit 5 is an orthophoto of the Plant showing proposed wastewater flow routing. All of the flows are underground. All tanks and separators are above ground. At present, all floor drains are directed to pond #1 with no treatment. As mentioned previously, Sunterra plans to treat these drains to remove machinery lubricating fluids that were going to pond #1.

Exhibits 5 and 6 show the proposed changes Sunterra plans to implement. The new hydrocarbon/water separator will be underground and of concrete construction. All other process changes will be above ground.

# Spill/Leak Prevention and Housekeeping Procedures

Within the processing units, small spills or leaks will be controlled with the use of curbs or berms around pieces of equipment that are the most susceptible, such as pumps, tanks and separators.

-5-

Small leaks or spills will be picked up with a portable pump and tank. Also storm water that falls within the curbed or bermed area will be picked up with this portable pump and tank. Rainfall will be put in the hydrocarbon/water separator to remove any residual oils and the water directed to Pond #1.

The 100YR-24HR precipitation event at the Plant site is approximately 2.8 inches. As previously stated, areas of potential hydrocarbon spills will be bermed to hold at least 4.0 times the 100YR storm event. The bermed areas will be pumped out routinely and the water placed in the hydrocarbon water separator.

# Effluent Disposal

At present all wastewaters, except from sanitary facilities, enter pond #1; the overflow from pond #1 enters pond #2 via an overflow pipe. Pond #3 is an emergency pond in case the levels in ponds #1 and #2 are exceeded. This pond is normally dry. Pond locations are depicted on Exhibit 5.

The solid wastes produced at the Lybrook plant are disposed of in the following manner:

Oil, air, glycol, fuel and gas filters, oily rags and wastepaper are landfilled in the camp landfill shown on Exhibit 3. Spent, activated charcoal is steamed out in the vessel and spread out on the ground away from the process area to dry and landfilled in the camp landfill shown on Exhibit 3.

Dehydrator molecular sieve material (alumina-silicate) and ceramic balls are spread out around the plant area where excessive moisture collects.

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All used (waste) oil is collected in a used oil tank and sold to Mesa Petroleum to be recycled. The waste oil collection tank will be on a concrete and bermed slab.

Generators, reciprocating compressors, turbine compressors, air compressors, expander/compressors, and automotive oils are the only sources of waste oils.

All used barrels are returned to vendors. These include muriatic acid, caustic soda, air compressor oil, expander oil, N/L cleaner, and cooling tower chemicals.

### Site Characteristics

The Plant is located east of Lybrook near the southwest end of Crow Mesa, a north-south drainage divide. The Plant sits on a gentle eastward-dipping slope in the Escrito Canyon drainage. The arroyo in Escrito Canyon drains to the north-northeast and is located approximately two miles east of the Plant. Three arroyos are near the Plant; one channel is about 1200 feet north; another is about 300 feet south; and the third originates about 100 feet east. All the drainages are normally dry. The Plant and surroundings are shown on Exhibit 7 and the cross-section location is shown on Exhibit 8.

Within the area defined by a boundary one mile outside the perimeter of the Plant, there are no perennial streams and no permanent bodies of water (apart from the artificial ponds which are part of the Plant itself). Two ponds, located northeast of the Plant, receive discharge from the Plant. Three sewage lagoons are present north of the Plant site. These ponds receive sewage from the campsite at the Plant. The USGS  $7\frac{1}{2}$ -minute Lybrook Quadrangle

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shows three ephemeral ponds within the one-mile radius of the Plant; one, about 2500 feet southwest of the Plant, is about 0.3 acre; a second, about 3500 feet northeast of the Plant, is about 0.5 acre; and a third, about 2200 feet southeast of the Plant, is about 0.2 acre. The pond northeast of the Plant lies in the same drainage as the Plant. Impact to the drainage and the ephemeral pond could result if the berms of the ponds at the facility were eroded and breached during a storm event. Berms around the ponds are over four feet higher than the drainage, south of ponds (Exhibit 9). The ponds are situated north of the drainage on a south facing slope. Additionally, a third 'dry' pond is situated between the drainage and the other ponds. Therefore, it is unlikely the ponds would be affected by flow in the drainage.

Several water wells are present in the vicinity of the Plant in addition to a number of oil wells (Exhibit 7). Water well information was obtained from State Engineer records, Stone and others (1983), Lybrook Gas Plant records, and Lybrook Water Users Association and is summarized in Table 1. Wells are completed at depth between 1600 and 1700 feet, in the Ojo Alamo aquifer, and are unlikely to be impacted by any seepage from the ponds.

Ground water discharges from Escrito Spring, located about one-mile west of the Plant, on the west side of the drainage divide. Discharge is probably from perched bodies of ground water in the San Jose Formation which are recharged by precipitation on the mesa top. Geologic and hydrogeologic conditions are described in greater detail in a following section.

The Plant rests on, or in close proximity to, the contact between the Regina Member and basal Cuba Mesa Member, both of the San Jose Formation (Eocene). The Regina Member consists of variegated shales and tan to white sandstones.

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Location	Owner '	Date drilled	Well depth, ft.	Depth to water, ft.	Date neasured	Use	Aquifer	location number shown on Figure 1.
23.7.10.4331	Lybrook Water Users Assoc	1/ 9/71	1704	900	12/ 4/81	public supply	Ojo Alamo Sa	1.
23.7.13.3221	Berry, Homer	n/a	n/a	n/a	n/a	вtk	Ojo Alamo Se	2.
23.7.14.1	Lybrook Inn	n/a	1700	180	/ /56	abandoned (?)	Ojo Alamo Ss(?)	
23.7.14.1232	Sunterra Gas Plant	n/a	1650	816	10/16/57	abandoned	Ojo Alamo Sa	3.
23.7.14.1232	Sunterra Gas Plant	n/a	1700	89 <b>9</b>	1/24/15	dom/ind	Ojo Alamo Sa	4.
23.7.15.	<b>Bl Paso Station</b>	n/a	n/a	200	8/ /56	n/a	Nacimiento Fm	

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# Table 1. Well records from facility and local area.

One of the sandstone beds forms the mesa west of the Plant. In the vicinity of the Plant, the Cuba Mesa Member appears to consist predominantly of slope-forming shales. The San Jose Formation sits disconformably on the shales and sands of the Nacimiento Formation (Paleocene) (Manley and others, 1987). Lithologies of the Nacimiento Formation and Ojo Alamo Sandstone beneath the facility were interpreted from gamma-ray and neutron logs of the Lybrook Water Well No. 2 (no other logs were run and lithologic data, if collected, was not located). Interpreted subsurface relationships are shown on cross section A-A (Exhibit 8).

Ground water, in closest proximity to the ponds into which water from the Plant is placed, is the shallow perched water in the San Jose Formation and/or underlying Nacimiento Formation beneath the site. From test borings at the Plant, perched water, if present, must be greater than 50 feet below land surface. The El Paso Station Well (see Table 1), which is thought to be located west of the Plant, is reportedly completed in the Nacimiento Formation and the depth to water was 200 feet in August of 1956 (Stone and others, 1983). This may represent the top of the potentiometric surface in the Nacimiento Formation.

The aquifer utilized as a water supply for the Plant, Lybrook Water Users Association and nearby ranchers, is in the Ojo Alamo Sandstone. Depth to water, measured in the well at the Plant, was 899 feet July 24, 1975.

Available data indicates sandstone transmissivities in the Regina and Cuba Mesa Members of the San Jose Formation and in the Nacimiento Formation might range from 40 to 120  $ft^2/day$  (Stone and others, 1983). Vertical hydraulic

-9-

conductivities in and between sandstone beds are expected to be orders of magnitude less than in the horizontal direction.

Ground water quality data in the area of the Plant are limited. Stone and others (1983) report specific conductance values ranging from 950 to 1500 micromhos/cm for ground waters in the Nacimiento Formation. An analysis of ground water from a Lybrook well completed in the Ojo Alamo aquifer is as follows;

well location	23.7.14.1
date sampled	10/24/74
spec. cond.	1130 micromhos/cm
рН	9.1 stnd. units
Ca	1.7 mg/1
Mg	0.0 "
Na	250. "
К	0.9 "
нсоз	318. "
CO3	31. "
SO4	230. "
C1	7.5 "
F	1.3 "
S102	13. "
NO3	
P04	2.1 "
Fe	.02 "
Mn	.01 "
TDS	695.

Soils at the Plant are poorly developed and appear to be relatively thin. Several small holes were dug with a shovel immediately east of the eastern property line and the ponds to examine the nature, thickness and moisture content of the soils. The soil profile is generally less than a few feet

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thick and consists of light brownish-gray or light brown fine-grained sandy loam. Dark reddish-brown clay with white calcareous streaks was encountered in one hole. Soils were relatively dry. A small amount of seepage was noted at the base of the embankment between two of the ponds, approximately two feet above the natural ground level. Small draws and channels between and east of the ponds were dry.

Five five-inch diameter holes, S-1, S-2, S-3, S-4 and S-5, were drilled to depths of 50 feet to obtain information concerning; lithologies of subsurface sediments; stratigraphic relations; ground water conditions; and evidence of subsurface contamination (locations shown in Exhibit 9). An attempt to collect core samples from bore hole S-1 proved unsuccessful due to the unconsolidated nature of the samples. Therefore, the other holes were drilled using air-rotary methods. Water was injected in some instances to aid in lifting cuttings from the bore holes.

Subsurface sediments consisted principally of fine-grained sands, with some interbedded medium- to coarse-grained sands and gravels. Also present in the borings were intervals of clay (or shale), silty clay, and clayey silt.

In general, three thin, clay-rich intervals were encountered in the bore holes. These intervals are believed to extend beneath the pond areas (Exhibit 10). Clay-rich intervals ranged in thickness from a few inches to nearly five feet. Logs of the borings are included in Appendix 3.

Unsaturated conditions were encountered in the five borings. Moisture content of the sediments, upon visual inspection, seemed higher near the surface and in zones immediately above at the top of clayey intervals.

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Black, hydrocarbon-stained sediments were encountered in an interval from three to eight feet below ground surface in bore hole S-5. Bore hole S-5 is located in the drainage area east of the Plant. Exact source and extent of this contamination is not known. A clay interval at eight-foot depth appears to have inhibited downward migration of the contamination. Some hydrocarbon contamination was also noted in bore hole S-4; from 2 to 3.5 feet, and from 15 to 16 feet. Contamination was not observed in any of the other bore holes.

Monitor wells were constructed in the holes and consisted of: a ten-foot section of two-inch diameter, machine-slotted (0.010-inch), PVC screen, placed near the bottom of the hole (except for S-2, screened from 20 to 30 feet); two-inch diameter PVC casing to the top of the hole; Colorado Silica Sand, no. 20, placed as gravel pack in the annulus, around the screen section; powdered bentonite placed in the annulus, above the gravel pack; backfilled the annulus with cuttings to within about eight feet of the surface; cemented the annulus to the top of the hole above the cuttings; and placed a six-inch diameter steel pipe over the well head.

It appears pond water has not and probably will not migrate significant distances in the subsurface from the ponds. Nearness and apparent fine-grained, clay-bearing sedimentary intervals beneath the area should inhibit vertical migration of fluids. It is proposed the monitor wells installed at the site be maintained and monitored on a quarterly basis. Monitoring would involve determining whether or not a fluid is present in the wells. If a fluid is present, fluid levels would be determined and samples would be collected and analyzed for major-ions and volatile-aromatic hydrocarbons and results submitted to OCD.

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## CONCLUSION

Sunterra believes that this discharge plan, along with the proposed Plant changes, will result in reduced wastewater being generated, minimization of the potential to impact groundwater and with the removal of potential hydrocarbons in the wastewater be an environmentally sound plan.

Sunterra will begin work on the proposed changes once the discharge plan is approved. All the changes will be accomplished within 18 months of plan approval.









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FLARE STACK LEACH FIEL \* .. CLOSED DRAIN 3" 3" FLARE-EQUIPMENT Expander Compressor Discharge Demethanizer Bottoms Gas Chiller OPEN DRAIN 4" FLARE LINE 3" a service and the service of the ser P SANITARY WASTE LINE DATE: DEČ. 1988 SCALE:





















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Exhibit 8. Cross section A-A', illustrating stratigraphy and sandstone beds beneath the facilty.







Exhibit 9. Topographic map of pond area, Lybrook Plant site; showing drill-hole locations and section lines (see Exhibit 10)

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EXHIBIT 10





#### APPENDIX 1

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#### MATERIAL SAFETY DATA SHEETS

#### CHEMICALS CURRENTLY USED IN THE LYBROOK PLANT

Engi	ne Oil	Use	Vendor
1.	DTE 797	Turbines	Mobil
2.	Pegasus 490	Clarks	Mobil
3.	DTE 25	Refrig. Compressors	Mobil
4.	Rarus 427	Inst. Air Compsrs.	Mobil
5.	Rarus 827	Start Air Compsrs.	Mobil
<u>Clea</u>	ning Solvents		
6.	N L Concentrate	Soap, Grease Clnr.	Lenn & Fink
7.	Solvent – Mineral Spirits	Parts Cleaner	Dial Oil
8.	Sepelec	Elec. Contact Clnr.	Zep
9.	Zep Lemonex	Sanitary Cleaner	Zep
10.	Zep-D-Ice	De-icer	Zep
Trea	ting Chemicals		
11.	IWE 7044	Clg. Twr. Treating	Ind. Water Eng. Inc.
12.	Bromicide Tables	Clg. Twr. Treating	Great Lakes Chem.
13.	IWE 6030C	Clg. Twr. Treating	Ind. Water Eng. Inc.
14.	IWE 4015L	Clg. Twr. Treating	Ind. Water Eng. Inc.
15.	Methanol	Thaw Hydrates	Weskem
16.	Hydrochloric Acid	Deionizer System	Weskem
17.	Diethanolamine (DEA)	Process Chem.	Van Waters & Rogers
18.	Ambitrol FL	Engine coolant	Weskem
19.	Ureabor	Weed killer	Weskem
20.	Ethylene Glycol	Process chem	Weskem
21.	Corexit 7669 (anti-foam)	Process chem	Weskem
22.	Technihib 7020	Corrision Inhibtr	Unichem
23.	Scentinel A (Ethyl-mercptan)	Propane Odorizer	Weskem
24.	Diethylene Glycol	Process chem	Dow Chemical
25.	Caustic Soda	Deionizer	Weskem
26.	IWE 100	Clg. Twr. Treating	Ind. Water Eng. Inc.
27.	IWE 7200	Clg. Twr. Treating	Ind. Water Eng. Inc.
28.	IWE 6135	Clg. Twr. Treating	Ind. Water Eng. Inc.

Mobil 600114 PAGE 1 DF 4 -MOBIL OIL CORPORATION MATERIAL SAFETY DATA BULLETIN REVISED: 04/17/84 MOBIL DTE 797 DIL HEALTH EMERGENCY TELEPHONE: SUPPLIER: (212) 883-4411 MOBIL CIL CORP. CHEMICAL NAMES AND SYNONYMS: TRANSPORT EMERGENCY TELEPHONE: PET. HYDROCARBONS AND ADDITIVES (800) 424-9300 (CHEMTREC) USE OR DESCRIPTION: STEAM TURBINE GIL \*\*\*\*\*\*\*\*\* II. TYPICAL CHEMICAL AND PHYSICAL PROPERTIES \*\*\*\*\*\*\*\*\*\*\* APPEARANCE: ASTM 0.5 LIQUID ODOR: MILD PH: NA VISCOSITY AT 100 F, SUS: 160.0 AT 40 C, CS: 30.0 VISCOSITY AT 210 F, SUS: 44.0 AT 100 C, CS: 5.3 FLASH POINT F(C): 41C(21C) (ASTM D-92) MELTING POINT F(C): NA POUR POINT F(C): 20(-7) BDILING POINT F(C): > 600(316) RELATIVE DENSITY, 15/4 C: 0.858 SOLUBILITY IN WATER: NEGLIGIBLE VAPER PRESSURE-MM HG 200: < .1 NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES FOR FURTHER INFORMATION, CONTACT YOUR LOCAL MARKETING OFFICE. WT PCT EXPOSURE LIMITS SOURCES (APPROX) MG/M3 PPM (AND NOTES) HAZARDOUS INGREDIENTS: NONE OTHER INGREDIENTS: REFINED MINERAL DILS >95 ADCITIVES AND/OR OTHER INGREDS. < 5 KEY TO SOURCES: A=ACGIH-TLV, A\*=SUGGESTED-TLV, M=MOBIL, D=CSHA NOTE: LIMITS SHOWN FOR GUIDANCE ONLY. FOLLOW APPLICABLE REGULATIONS. --- INCLUDES AGGRAVATED MEDICAL CONDITIONS, IF ESTABLISHED ---EFFECTS OF OVEREXPOSURE: SLIGHT SKIN IRRITATION. \*\*\*\*\*\*\*\*\*\*\*\*\*\* V. EMERGENCY AND FIRST AID PROCEDURES --- FOR PRIMARY ROUTES OF ENTRY ---EYE CONTACT: FLUSH WITH WATER. SKIN CONTACT: WASH CONTACT AREAS WITH SOAP AND WATER. INHALATION: NOT EXPECTED TO BE A PROBLEM. INGESTION: NOT EXPECTED TO BE A PROBLEM WHEN INGESTED. IF UNCOMFORTABLE SEEK MEDICAL ASSISTANCE. \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* VI. FIRE AND EXPLOSION HAZARD DATA FLASH POINT F(C): 410(210) (ASTM D-92) FLAMMABLE LIMITS. LEL: UEL: 7.0 • 6 EXTINGUISHING MEDIA: CARBON DIDXIDE, FDAM, DRY CHEMICAL AND WATER FDG. SPECIAL FIRE FIGHTING PROCEDURES: FOR FIRES IN ENCLOSED AREAS, FIREFIGHTERS MUST USE SELF-CONTAINED BREATHING APPARATUS. UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

NFPA HAZARD ID: HEALTH: G, FLAMMABILITY: 1, REACTIVITY: 0

MOBIL DTE 797 DIL

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600114 PAGE 2 OF 4

- PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: ADSORB ON FIRE RETARDANT TREATED SAWDUST, DIATOMACEDUS EARTH, ETC. SHOVEL UP AND DISPOSE OF AT AN APPROPRIATE WASTE DISPOSAL FACILITY IN ACCORDANCE WITH CURRENT APPLICABLE LAWS AND REGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.
- WASTE MANAGEMENT: PRODUCT IS SUITABLE FOR BURNING IN AN ENCLOSED, CONTROLLED BURNER FOR FUEL VALUE OR DISPOSAL BY SUPERVISED INCINERATION. SUCH BURNING MAY BE LIMITED PURSUANT TO THE RESOURCE CONSERVATION AND RECOVERY ACT. IN ADDITION, THE PRODUCT IS SUITABLE FOR PROCESSING BY AN APPROVED RECYCLING FACILITY OR CAN BE DISPOSED OF AT ANY GOVERNMENT APPROVED WASTE DISPOSAL FACILITY. USE OF THESE METHODS IS SUBJECT TO USER COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS AND CONSIDERATION OF PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* IX. SPECIAL PROTECTION INFORMATION \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* EYE PROTECTION: NO SPECIAL EQUIPMENT REQUIRED. SKIN PROTECTION: NO SPECIAL EQUIPMENT REQUIRED. HOWEVER, GOOD PERSONAL HYGIENE PRACTICES SHOULD ALWAYS BE FOLLOWED. RESPIRATORY PROTECTION: NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION. VENTILATION: NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

MOBIL DTE 797 DIL

500114 PAGE 3 DF 4

ORAL TOXICITY (RATS): NONTOXIC(ESTIMATED) ---BASED ON TESTING OF SIMILAR PRODUCTS ANO/OR THE COMPONENTS.

DERMAL TOXICITY (RABBITS): NONTOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

INHALATION TOXICITY (RATS): NOT APPLICABLE ---HARMFUL CONCENTRATIONS OF MISTS AND/OR VAPORS ARE UNLIKELY TO BE ENCOUNTERED THROUGH ANY CUSTOMARY OR REASONABLY FORESEEABLE HANGLING, USE, OR MISUSE OF THIS PRODUCT.

EYE IRRITATION (RABBITS): EXPECTED TO BE NON-IRRITATING. ---BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

SKIN IRRITATION (RABEITS): MAY CAUSE SLIGHT IRRITATION ON PROLONGED OR REPEATED CONTACT. ---BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

---CHRONIC OR SPECIALIZED (SUMMARY)---

THE BASE DILS IN THIS PRODUCT ARE SEVERELY SOLVENT REFINED AND/OR SEVERELY HYDROTREATED. TWO YEAR MOUSE SKIN PAINTING STUDIES OF SIMILAR DILS SHOWED NO EVIDENCE OF CARCINGGENIC EFFECTS. SEVERELY SOLVENT REFINED AND SEVERELY HYDROTREATED MINERAL BASE DILS HAVE BEEN TESTED AT MOBIL ENVIRONMENTAL AND HEALTH SCIENCES LABORATORY BY DERMAL APPLICATION TO RATS 5 DAYS/WEEK FOR 90 DAYS AT DOSES. SIGNIFICANTLY HIGHER THAN THOSE EXPECTED DURING NORMAL INDUSTRIAL EXPOSURE. EXTENSIVE EVALUATIONS INCLUDING MICROSCOPIC EXAMINATION OF INTERNAL ORGANS AND CLINICAL CHEMISTRY OF BODY FLUIDS, SHOWED NO ADVERSE EFFECTS.

D.D.T. SHIPPING NAME: NOT APPLICABLE

D.D.T. HAZARD CLASS: NOT APPLICABLE

US OSHA HAZARD COMMUNICATION STANDARD: PRODUCT ASSESSED IN ACCORDANCE WITH OSHA CFR 1910.1200 AND DETERMINED NOT TO BE HAZARDOUS. RCRA INFORMATION: THE UNUSED PRODUCT, IN OUR OPINION, IS NOT

SPECIFICALLY LISTED BY THE EPA AS A HAZARDOUS WASTE (40 CFR, PART 261D); GOES NOT EXHIBIT THE HAZARDOUS CHARACTERISTICS OF IGNITABILITY, CORROSIVITY, OR REACTIVITY, AND IS NOT FORMULATED WITH THE METALS CITED IN THE EP TOXICITY TEST. HOWEVER, USED PRODUCT MAY BE REGULATED.

THE FOLLOWING PRODUCT INGREDIENTS ARE CITED ON THE LISTS BELOW:

CHEMICAL NAME

CAS NUMBER LIST CITATIONS \*\*\* NO INGREDIENT CITATIONS \*\*\*

#### --- KEY TO LIST CITATIONS ---

1 = OSHA I, 2 = ACGIH, 3 = IARC, 4 = NTP, 5 = NCI, 6 = EPA CARC, 7 = NFPA 49, 8 = NFPA 325M, 9 = DOT HMT, 10 = CA RTK, 11 = IL RTK, 12 = MA RTK, 13 = MN RTK, 14 = NJ RTK, 15 = MI 293, 16 = FL RTK, 17 = PA RTK.--- NTP, IARC, AND OSHA INCLUDE CARCINOGENIC LISTINGS ----

#### Mobil

MOBIL DTE 797 DIL

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INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WABEANIES OF EYEBY SIND AND NAIWE, INCLUDING WABEANIES DE MEBCHANIABILITY AND FIINESS FOR A PABILOULAB PUBPOSE IN BESPECT ID IME USE DE SUITABILITY DE THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.

ENVIRONMENTAL AFFAIRS AND TOXICOLOGY DEPARTMENT, PRINCETON, NJ FOR FURTHER INFORMATION, CONTACT:

MOBIL OIL CORPORATION, PRODUCT FORMULATION AND QUALITY CONTROL 3225 GALLCHS ROAD, FAIRFAX, VA 22037 (703) 849-3265

Mobil ·605881 PAGE 1 OF POBIL DIL CORPORATION MATERIAL SAFETY DATA BULLETIN **REVISED: 10/26/82** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* I. PRODUCT IDENTIFICATION \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* MOBIL PEGASUS 490 HEALTH EMERGENCY TELEPHONE: SUPPLIER: MOBIL CIL CORP. (212) 883-4411 CHEMICAL NAMES AND SYNONYMS: TRANSPORT EMERGENCY TELEPHONE: (800) 424-9300 (CHENTREC) PET. HYDROCARBONS AND ADDITIVES USE OR DESCRIPTION: GAS ENGINE DIL \*\*\*\*\*\*\*\*\*\* II. TYPICAL CHEMICAL AND PHYSICAL PROPERTIES \*\*\*\*\*\*\*\*\*\*\* APPEARANCE: ASTM 4.0 LIQUID DDDR: MILD PH: NA VISCOSITY AT 100 F, SUS: 670.0 AT 40 C, CS: 128.0 VISCOSITY AT 210 F, SUS: 72.0 AT 100 C, CS: 13.5 FLASH POINT F(C): >480(249) (ASTM D-92) MELTING POINT F(C): NA POUR POINT F(C): 10(-12) BOILING POINT F(C): > 60C(316) SOLUBILITY IN WATER: NEGLIGIBLE RELATIVE DENSITY, 15/4 C: C.879 VAPER PRESSURE-MM HG 20C: < .1 NA=NOT APPLICABLE NE=NCT ESTABLISHED D=DECOMPOSES FOR FURTHER INFORMATION, CONTACT YOUR LOCAL MARKETING OFFICE. WT PCT EXPOSURE LIMITS SOURCES (APPROX) MG/M3 PPM (AND NOTES) HAZARDOUS INGREDIENTS: NONE **OTHER INGREDIENTS:** REFINED MINERAL DILS >95 ADDITIVES AND/OR OTHER INGREDS. < 5 KEY TO SOURCES: A=ACGIH-TLV, A\*=SUGGESTED-TLV, M=MOBIL, O=CSHA NOTE: LIMITS SHOWN FOR GUIDANCE ONLY. FOLLOW APPLICABLE REGULATIONS. --- INCLUDES AGGRAVATED MEDICAL CONDITIONS, IF ESTABLISHED ---EFFECTS OF OVEREXPOSURE: NOT EXPECTED TO BE A PROBLEM. --- FOR PRIMARY ROUTES OF ENTRY ---EYE CONTACT: FLUSH WITH WATER. SKIN CONTACT: WASH CONTACT AREAS WITH SDAP AND WATER. INHALATION: NOT EXPECTED TO BE A PROBLEM. INGESTION: NOT EXPECTED TO BE A PROBLEM. HOWEVER, IF GREATER THAN 1/2 LITER (FINT) INGESTED, IMMEDIATELY GIVE 1 TO 2 GLASSES OF WATER AND CALL A PHYSICIAN, HOSPITAL EMERGENCY ROOM OR POISON CONTROL CENTER FOR ASSISTANCE. DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

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MOBIL PEGASUS 490

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\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* VI. FIRE AND EXPLOSION HAZARD DATA \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* FLASH POINT F(C): > 480(249) (ASTM D-92) FLAMMABLE LIMITS. LEL: .6 UEL: 7.0 EXTINGUISHING MEDIA: CARBON DIDXIDE, FOAM, DRY CHEMICAL AND WATER FOG. SPECIAL FIRE FIGHTING PROCEDURES: FOR FIRES IN ENCLOSED AREAS, FIREFIGHTERS MUST USE SELF-CONTAINED BREATHING APPARATUS. UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE NFPA HAZARD ID: HEALTH: C/ FLAMMABILITY: 1/ REACTIVITY: 0 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* VII. REACTIVITY DATA \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* STABILITY (THERMAL, LIGHT, ETC.): STABLE CONDITIONS TO AVOIC: EXTREME HEAT INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZERS HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXICE. HAZARDOUS POLYMERIZATION: WILL NOT OCCUR \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* VIII. SPILL OR LEAK PROCEDURE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ENVIRONMENTAL IMPACT: REPORT SPILLS AS REQUIRED TO APPROPRIATE AUTHORITIES. U. S. COAST GUARD REGULATIONS REQUIRE IMMEDIATE REPORTING OF SPILLS THAT COULD REACH ANY WATERWAY INCLUDING INTERMITTENT DRY CREEKS. REPORT SPILL TO COAST GUARD TOLL FREE NUMBER 800-424-8802. PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: ADSORB ON FIRE RETARDANT TFEATED SAWDUST, DIATOMACEDUS EARTH, ETC. SHOVEL UP AND DISPOSE OF AT AN APPROPRIATE WASTE DISPOSAL FACILITY IN ACCORDANCE WITH CURRENT APPLICABLE LAWS AND REGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL. WASTE MANAGEMENT: PRODUCT IS SUITABLE FOR BURNING IN AN ENCLOSED. CONTROLLED BURNER FOR FUEL VALUE OR DISPOSAL BY SUPERVISED INCINERATION. SUCH BURNING MAY BE LIMITED PURSUANT TO THE RESOURCE CONSERVATION AND RECOVERY ACT. IN ADDITION, THE PRODUCT IS SUITABLE FOR PRECESSING BY AN APPROVED RECYCLING FACILITY OR CAN BE DISPOSED OF AT ANY GOVERNMENT APPROVED WASTE DISPOSAL FACILITY. USE OF THESE METHODS IS SUBJECT TO USER COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS AND CONSIDERATION OF PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL. EVE PROTECTION: NO SPECIAL EQUIPMENT REQUIRED. SKIN PROTECTION: NO SPECIAL EQUIPMENT REQUIRED. HOWEVER, GOOD PERSONAL HYGIENE PRACTICES SHOULD ALWAYS BE FOLLOWED. RESPIRATORY PROTECTION: NO SPECIAL REQUIREMENTS UNDER ORDINARY

CONDITIONS OF USE AND WITH ADEQUATE VENTILATION. VENTILATION: NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

MOBIL PEGASUS 490

Mobil

--- ACUTE---

ORAL TOXICITY (RATS): LD50: > 5 G/KG 0/10 RATS DIED AT THIS DDSAGE LEVEL. SLIGHTLY TOXIC(ESTIMATED) ---BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

DERNAL TOXICITY (RABBITS): LD50: > 2 G/KG 0/10 RABBITS DIED AT THIS DOSAGE LEVEL. SLIGHTLY TOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS ANC/OR THE COMPONENTS.

INHALATION TOXICITY (RATS): NOT APPLICABLE ---HARMFUL CONCENTRATIONS OF MISTS AND/OR VAPORS ARE UNLIKELY TO BE ENCOUNTERED THROUGH ANY CUSTOMARY OR REASONABLY FORESEEABLE HANCLING, USE, OR MISUSE OF THIS PRODUCT.

EYE IRRITATION (RABBITS): EXPECTED TO BE NON-IRRITATING. EYE IRRITATION SCORES: C AT 24 HOURS, O AT 48 HOURS, O AT 72 HOURS---BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

SKIN IRRITATION (RABEITS): EXPECTED TO BE NON-IRRITATING. PRIMARY IRRITATION SCORE: 0/8---BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPENENTS.

---CHRONIC OR SPECIALIZED (SUMMARY)---

THE BASE DILS IN THIS PRODUCT ARE SEVERELY SOLVENT REFINED AND/OR SEVERELY HYDROTREATED. TWO YEAR MOUSE SKIN PAINTING STUDIES OF SIMILAR DILS SHOWED NO EVIDENCE OF CARCINDGENIC EFFECTS. SEVERELY SOLVENT REFINED AND SEVERELY HYDROTREATED MINERAL BASE OILS HAVE BEEN TESTED AT MOBIL ENVIRONMENTAL AND HEALTH SCIENCES LABORATORY BY DERMAL APPLICATION TO RATS 5 DAYS/WEEK FOR 90 DAYS AT DOSES SIGNIFICANTLY HIGHER THAN THOSE EXPECTED DURING NORMAL INDUSTRIAL EXPOSURE. EXTENSIVE EVALUATIONS INCLUDING MICROSCOPIC EXAMINATION OF INTERNAL ORGANS AND CLINICAL CHEMISTRY OF BODY FLUIDS, SHOWED NO ADVERSE EFFECTS.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* XII. REGULATORY INFORMATION \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* TSCA INVENTORY STATUS: ALL COMPONENTS REGISTERED. D. D. T. SHIPPING NAME: NOT APPLICABLE D.O.T. HAZARC CLASS: NOT APPLICABLE US CSHA HAZARD COMMUNICATION STANDARD: PRODUCT ASSESSED IN ACCORDANCE

- WITH OSHA CFR 1910.1200 AND DETERMINED NOT TO BE HAZARDOUS. RCRA INFORMATION: THE UNUSED PRODUCT, IN OUR OPINION, IS NOT SPECIFICALLY LISTED BY THE EPA AS A HAZARDOUS WASTE (40 CFR)
  - PART 261D); DOES NOT EXHIBIT THE HAZARDOUS CHARACTERISTICS OF IGNITABILITY, CCRRCSIVITY, CR REACTIVITY, AND IS NOT FORMULATED WITH THE METALS CITED IN THE EP TOXICITY TEST. HOWEVER, USED PRODUCT MAY BE REGULATED.

THE FOLLOWING PRODUCT INGREDIENTS ARE CITED ON THE LISTS BELOW:

LIST CITATIONS CHEMICAL NAME CAS NUMBER ZINC (ELEMENTAL ANALYSIS) (0.018 7440-66-6 15 PCT)

--- KEY TO LIST CITATIONS ---11 = IL RTK, 12 = MA RTK, 13 = MN RTK, 14 = NJ RTK, 15 = MI 293, 16 = FL RTK, 17 = PA RTK. --- NTP, IARC, AND OSHA INCLUDE CARCINOGENIC LISTINGS ---

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MOBIL PEGASUS 490

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INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, EUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WASBANILES OF EYEBY KIND AND NAIUBE, INCLUDING WABBANILES OF MERCHANIABILITY AND FILNESS FOB A PABILCULAB PUBPOSE IN BESPECI ID IME USE OB SUITABILITY OF THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.

PREFARED BY: MOBIL CIL CORPORATION ENVIRONMENTAL AFFAIRS AND TOXICOLOGY DEPARTMENT, PRINCETON, NJ FOR FURTHER INFORMATION, CONTACT:

MOBIL OIL CORPORATION, PRODUCT FORMULATION AND QUALITY CONTROL 3225 GALLOWS ROAD, FAIRFAX, VA 22037 (703) 849-3265

 Mobil 602631 PAGE 1 MOBIL OIL CORPORATION MATERIAL SAFETY DATA BULLETIN REVISED: 08/25/83 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* I. PRODUCT IDENTIFICATION \*\*\*\*\*\* MOBIL DTE 25 HEALTH EMERGENCY TELEPHONE: SUPPLIER: MOBIL CIL CORP. (212) 883-4411 TRANSPORT EMERGENCY TELEPHONE: CHEMICAL NAMES AND SYNONYMS: (800) 424-9300 (CHEMTREC) PET. HYDROCARBONS AND ADDITIVES USE OR DESCRIPTION: HYDRAULIC DIL \*\*\*\*\*\*\*\*\*\* II. TYPICAL CHEMICAL AND PHYSICAL PROPERTIES \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* PH: NA APPEARANCE: ASTH 4.0 LIQUID ODOR: MILD VISCOSITY AT 100 F, SUS: 220.0 AT 40 C. CS: 42.0 VISCOSITY AT 210 F, SUS: 47.0 AT 100 C, CS: 6.2 FLASH POINT F(C): 395(202) (ASTM D-92) MELTING POINT F(C): NA POUR POINT F(C): -5(-21)BOILING POINT F(C): > 60C(316) RELATIVE DENSITY, 15/4 C: 3.868 VAPCR PRESSURE-MM HG 20C: < .1 SOLUBILITY IN WATER: NEGLIGIBLE NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES FOR FURTHER INFORMATION, CONTACT YOUR LOCAL MARKETING OFFICE. \*\*\*\*\*\* SOURCES WT PCT EXPOSURE LIMITS MG/M3 PPM (AND NOTES) (APPROX) HAZARDOUS INGREDIENTS: NONE OTHER INGREDIENTS: REFINED MINERAL DILS >95 ADDITIVES AND/OR OTHER INGREDS. < 5 KEY TO SOURCES: A=ACGIH-TLV/ A\*=SUGGESTED-TLV/ M=MOBIL/ O=CSHA NDTE: LIMITS SHOWN FOR GUIDANCE ONLY. FOLLOW APPLICABLE REGULATIONS. --- INCLUCES AGGRAVATED MEDICAL CONDITIONS, IF ESTABLISHED ---EFFECTS OF OVEREXPOSURE: NOT EXPECTED TO BE A PROBLEM. \*\*\*\*\*\*\*\*\*\*\* V. EMERGENCY AND FIRST AID PROCEDURES \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* --- FOR PRIMARY ROUTES OF ENTRY ---EYE CONTACT: FLUSH WITH WATER. SKIN CONTACT: WASH CONTACT AREAS WITH SDAP AND WATER. INHALATION: NOT EXPECTED TO BE A PROBLEM. INGESTION: NOT EXPECTED TO BE A PROBLEM. HOWEVER, IF GREATER THAN 1/2 LITER (PINT) INGESTED, IMMEDIATELY GIVE 1 TO 2 GLASSES OF WATER AND CALL A PHYSICIAN, HOSPITAL EMERGENCY ROOM OR POISON CONTROL CENTER FOR ASSISTANCE. DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

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\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* VI. FIRE AND EXPLOSION HAZARD DATA \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 395(202) (ASTM 0-92) FLASH PDINT F(C): FLAPMABLE LIMITS. LEL: .6 UEL: 7.0 EXTINGUISHING MEDIA: CARBON DIDXIDE, FOAM, DRY CHEMICAL AND WATER FOG. SPECIAL FIRE FIGHTING PROCEDURES: FIREFIGHTERS MUST USE RECOMMENDED PROTECTIVE EQUIPMENT. UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE NFPA HAZARD ID: HEALTH: C, FLAMMABILITY: 1, REACTIVITY: 0 STABILITY (THERMAL, LIGHT, ETC.): STABLE - CONDITIONS TO AVOID: STRONG OXIDATION INCCHPATIBILITY (MATERIALS TO AVOID): STRONG DXIDIZERS HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE. HAZARDOUS POLYMERIZATION: WILL NOT OCCUR \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* VIII. SPILL OR LEAK PROCEDURE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ENVIRONMENTAL IMPACT: REPORT SPILLS AS REQUIRED TO APPROPRIATE AUTHORITIES. U. S. COAST GUARD REGULATIONS REQUIRE IMMEDIATE REPORTING OF SPILLS THAT COULD REACH ANY WATERWAY INCLUDING INTERMITTENT DRY CREEKS. REPORT SPILL TO COAST GUARD TOLL FREE NUMBER 800-424-8502. PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: ADSORB ON FIRE RETARDANT TREATED SANDUST, DIATOMACEDUS EARTH, ETC. SHOVEL UP AND DISPOSE OF AT AN APPROPRIATE WASTE DISPOSAL FACILITY IN ACCORDANCE WITH CURRENT APPLICABLE LAWS AND REGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL. WASTE MANAGEMENT: PRODUCT IS SUITABLE FOR BURNING IN AN ENCLOSED, CONTROLLED BURNER FOR FUEL VALUE OR DISPOSAL BY SUPERVISED INCINERATION. SUCH BURNING MAY BE LIMITED PURSUANT TO THE RESOURCE CONSERVATION AND RECOVERY ACT. IN ADDITION, THE PRODUCT IS SUITABLE FOR PRECESSING BY AN APPROVED RECYCLING FACILITY OR CAN BE DISPOSED OF AT ANY GOVERNMENT APPROVED WASTE DISPOSAL FACILITY. USE OF THESE METHODS IS SUBJECT TO USER COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS AND CONSIDERATION OF PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL. EYE PROTECTION: NO SPECIAL EQUIPMENT REQUIRED. SKIN PROTECTION: NO SPECIAL EQUIPMENT REQUIRED. HOWEVER, GODD PERSONAL HYGIENE PRACTICES SHOULD ALWAYS BE FOLLOWED. RESPIRATORY PROTECTION: NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION. VENTILATION: NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* X. SPECIAL PRECAUTIONS \*\*\*\*\* NO SPECIAL PRECAUTIONS REQUIRED.

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\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* XI. TOXICOLOGICAL DATA \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* --- ACUTE---ORAL TOXICITY (RATS): LD5C: > 5 G/KG C/10 RATS DIED AT THIS DDSAGE LEVEL. SLIGHTLY TOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

DERMAL TOXICITY (RABBITS): LD50: > 2 G/KG 0/10 RABBITS DIED AT THIS DOSAGE LEVEL. SLIGHTLY TOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

INHALATION TOXICITY (RATS): NOT APPLICABLE ---HARMFUL CONCENTRATIONS OF MISTS AND/DR VAPORS ARE UNLIKELY TO BE ENCOUNTERED THROUGH ANY CUSTOMARY OR REASONABLY FORESEEABLE HANDLING, USE, OR MISUSE OF THIS PRODUCT.

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EYE IRRITATION (RABBITS): EXPECTED TO BE NON-IRRITATING.
                                                      ---BASED ON
TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.
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SKIN IRRITATION (RABEITS): EXPECTED TO BE NON-IRRITATING. --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

---CHRONIC OR SPECIALIZED (SUMMARY)---

THE BASE OILS IN THIS PRODUCT ARE SEVERELY SOLVENT REFINED AND/OR SEVERELY HYDROTREATED. TWO YEAR MOUSE SKIN PAINTING STUDIES OF SIMILAR DILS SHOWED ND EVIDENCE OF CARCINOGENIC EFFECTS. SEVERELY SOLVENT REFINED AND SEVERELY HYDROTREATED MINERAL BASE DILS HAVE BEEN TESTED AT MOBIL ENVIRONMENTAL AND HEALTH SCIENCES LABORATORY BY DERMAL APPLICATION TO RATS 5 DAYS/WEEK FOR 90 DAYS AT DOSES SIGNIFICANTLY HIGHER THAN THOSE EXPECTED DURING NORMAL INDUSTRIAL EXPOSURE. EXTENSIVE EVALUATIONS INCLUDING MICROSCOPIC EXAMINATION OF INTERNAL ORGANS AND CLINICAL CHEMISTRY OF BODY FLUIDS, SHOWED NO ADVERSE EFFECTS.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* XII. REGULATORY INFORMATION \*\*\*\*\* TSCA INVENTORY STATUS: ALL COMPONENTS REGISTERED.

D.D.T. SHIPPING NAME: NOT APPLICABLE

1

D.D.T. HAZARG CLASS: NOT APPLICABLE US ESHA HAZARD COMMUNICATION STANDARD: PRODUCT ASSESSED IN ACCORDANCE WITH USHA CFR 1910.1200 AND DETERMINED NOT TO BE HAZARDOUS.

RCRA INFORMATION: THE UNUSED PRODUCT, IN OUR OPINION, IS NOT SPECIFICALLY LISTED BY THE EPA AS A HAZARDOUS WASTE (40 CFR/ PART 261D); DOES NOT EXHIBIT THE HAZARDOUS CHARACTERISTICS OF IGNITABILITY, CORROSIVITY, OR REACTIVITY, AND IS NOT FORMULATED WITH THE METALS CITED IN THE EP TOXICITY TEST. HOWEVER, USED PRODUCT MAY BE REGULATED.

THE FOLLOWING PRODUCT INGREDIENTS ARE CITED ON THE LISTS BELOW:

LIST CITATIONS CAS NUMBER CHENICAL NAME 7440-66-6 15 ZINC (ELEMENTAL ANALYSIS) (0.058 PCT)

--- KEY TO LIST CITATIONS ---3 = IARC = 4 = NTP5 = NCI2 = ACGIH,  $1 = OSHA Z_{P}$ 6 = EPA CARC, 7 = NFPA 49,8 = NFPA 325M, 9 = DOT HMT, 10 = CA RTK, 15 = MI 293, 12 = MA RTK/ 13 = MN RTK/ 14 = NJ RTK/ 11 = IL RTK, 17 = PA RTK.  $16 = FL RTK_{\bullet}$ --- NTP, IARC, AND OSHA INCLUDE CARCINDGENIC LISTINGS ---

MOBIL DTE 25

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602631 PAGE 4 OF 4

INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND HE EXPRESSLY DISCLAIM ALL MARRANIES OF EYERY KIND AND NAIURE, INCLUDING WARBANIES DE MERCHANIABILITY AND FIINESS EDB A PABILCULAR PURPOSE IN RESPECT ID THE USE OR SUITABILITY OF THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID FATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.



# THE REPRODUCTION OF

THE

FOLLOWING

**DOCUMENT (S)** 

**CANNOT BE IMPROVED** 

**DUE TO** 

THE CONDITION OF

**THE ORIGINAL** 

Mcbil CTIL TIL CUTANNISION PLANTE DIFFER CHALL SELETIS 787370: 11/06/05 \*\*\*\*\* 1091E 4105 417 JDPREIS: HEALTH IN BRUENDY ITALIAHOME: · · · · TIL 0012. (217) // 3-4411 UHENIQAE MANGRONAD DA 12/19/19: TRANSPORT REPERSIONOR THE PHONE: DET. HYDRODAR KANA ANA ACDITIVES JOI 19 DISOPIPTION: (FLC) +3+-7730 (CHEMTREC) PRODUCT TECHNICAL THEORMATION: COMPRETION LIE (411) 002-4525 \*\*\*\*\*\*\*\*\*\*\* III. TYPICAL CHEMICAL AND PHYSICAL PROPERTIES \*\*\*\*\*\*\*\*\*\*\* APPRARANCE: ASTM 4.0 LEQUED 24 J DOCK: MILL VISCOSITY AT 100 7, 505: 701.5 AT 40 0, 05: 101.0 VISCOSITY AT 210 9, 505: 70.5 AT 100 0, 05: 11.7 FLASH FOINT F(0): >432(000) (1878 0-92) MOLTING PRINT F(C): UA PBUR PTINT =(C): L1(-7) TILING AMINT F(C): > 500(315) ATLATIVE CENSITY, 15/4 1: 0.02 DULUBILITY IN WATER: REGLICIPLE VAPER PRESSURE-MM HG DOC: K .1 NAHNOT APPLICABLE (REFULT FSTABLIGHED) DECRORMPOOLS PTR FURTHER IMFORMATION, CONTACT YOUR LOCAL WARKETING UFFICE. WT POT EXPESSIBLE LIMITS SOURCES (APPROX) MG/MO PPM (AND NOTES) HALAKOOUS INGREDIFATS: やこんご GTHER INGREDIENTS: PEFINED MINEPAL TILS >95 ADDITIVES AND/OR STHER INGREDS. < 5 UM TO CODRESS: NEACRONANTER/ (KERUSGESTED-TEV/ MENTURE/ DECOMA) NOTE: LINETS SHOWS FOR SUIDANCE INLY. FOLLOW APPLICANLE RESULATIONS. --- INCLUDES AGGRAVATED HEDICAL CONDITIONS/ IF ISTABLISHED ---BEFECTS OF OVEREXPOSURE: ANT LXPOOTED TO BE A PROBLEM. \*\*\*\*\*\*\*\*\*\*\*\*\*\* V. LMERGRNCY AND FIRST AID PROCEDURES \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* --- FOR PRIMARY DOUTES OF FUTRY ----EYE CONTACT: FLUSH WITH WATER. SKIN CONTACT: MASH CONTACT AREAS WITH SCAP AND WATER. INHAUATION: NOT EXPECTED TO DE A PROBLEM. INGESTION: NOT EXPECTED TO UP 4 PROBLEM. HOWEVER, IF OREATER THAN 1/2 LITIP (PINT) INGESTED, IMMEDIATELY SIVE 1 TO 2 GLASSES OF WATER AND CALL A PHYSICIAN/ HOSPITAL EMERGENCY ROOM OR POISON CONTROL CENTER FOR ASSISTANCE. OD MOT INDUCE VOMITING OR SIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSIN.

Mcbil

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--VIGLO: 11/29/30 \*\*\*\*\*\*\*\*\*\*\*\*\*\* . باب ا<sup>ر</sup> سال د 11.9FEI.44 ヨビネビアル シックアンデルアイ アプビデアはついます。 THE THE TOP. (717) (3--41 TRINGPORT DIFREEMON TELEPHONE: DREMICAL MAMBER NUCLAYNDAYNDY FYN. FYDROCAFBONN AND IDDITINIS 10) -24-4707 (CHEMTREC) <^. WEE IN FEREFIRIE: TREDUCT TECHNICAL THEODIATION: COMPRESSON CIL ( 10) :42-4720 \*\*\*\*\*\*\*\*\*\* II. FMPICAL SHEMICAL AND PHYSICAL PRIPERTIES \*\*\*\*\*\*\*\*\*\*\*\*\* APPEARANCE: ASTM 1.5 LICUID VISCUSITY AT 100 F/ 303: 1000 AT 100 0/ 03: 01. VISCUSITY AT 010 F/ 303: 50.0 AT 100 0/ 03: 01. VISCUSITY AT 010 F/ 303: 50.0 AT 100 0/ 03: 0.1 200R: MILC 24 14 #E48H 2014T F(C): 400(201) (437% C-92) HELTING POINT F(C): 11 PBUR PRINT F(0): -75(-77) UTILING POINT F(C): > 500(015) USEATIVE DENSITY, 1774 D: 1.45 CLEURILITY IN ATTR: UNGLIGICLE VAPER REESURG-MM HR DOOL K .1 MAENOT APPLICATLE REENOT TOTABLISHED DEDCOMPOSES FOR FURTHER INFORMATION, CONTACT YOUR LOCAL MARKETING DEETOR. WT FOT EXPOSURE LIMITS SOURCES (APPPEX) AG/M3 PPM (AND MOTES) HAZARDOUS INGREDIENTS: NONE UTHER INGREDITHTS: SYNTHETIC DILL 295 ACCITIVES AND/OB STHER INGREDS. < 5 KEY FO SOURCES: AFACAINFIEV, AKFRURGRENFELV, KFARGEL, NENSHA NETE: LIMITS SHOWN FOR RUTUANED BYLY. FOLLOW APPLICATES RECOVERTING. --- INCLUDES AGGRAVATED MEDICAL CONCITIONS, IF ESTABLISHED ---EFFECTS OF OVEREXPOSURE: NOT EXPECTED TO BE A PROBLEM. \*\*\*\*\*\*\*\*\*\*\*\* V. CMERGENCY AND FIRST AID PROCEDURES \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* --- FER PRIMARY FOUTES OF FUTRY ---EYE CONTACT: FLUSH WITH WATER. SKIN CONTACT: WASH CONTACT AREAS WITH SOAP AND WATER. INHALATION: NOT EXPECTED TO BE A PROBLEM. INGESTIGN: NOT EXPECTED TO BE A PROBLEM. HOWEVER, IF DREATER THAN 1/2 LITER(FINT) INGESTED, INMEDIATELY GIVE 1 TO 2 GLASSES OF WATER AND CALL A PHYSICIAN, MOSPITAL EMERGENCY ROOM OR POISON CONTROL CENTER FOR ASSISTANCE. DO NOT ENDUCE VOMITING OR GIVE ANYTHING SY MOUTH TO AN UNCONSCIDUD PERSON.

Required under USD	L Safe	ty and He	alth Regulations for Ship Repairing,		
Shipbuilding,	and Sh	ipbreaking	(29 CFR 1915, 1916, 1917)		
		SECT	ON I		
AANUFACTURER'S NAME National Labo ehn & Fink Industrial Products	rator Div.	ries, of Ster	EMERGENCY TELEPHON	E NO.	
ADDRESS (Number, Street, City, State, and ZIP C	odej				
THEMICAL NAME AND SYNONYMS	<u>.040</u>	•	TRADE NAME AND SYNONYMS		
HEMICAL FAMILY	Lure L mivi		FORMULA	<u> </u>	
			11.a.		
SECTION	111 -	HAZAR	DOUS INGREDIENTS		
PAINTS, PRESERVATIVES, & SOLVENTS	*	TLV (Units)	ALLOYS AND METALLIC COATINGS	×	TLV (Unit
PIGMENTS .	0		BASE METAL	0	
CATALYST	0		ALLOYS	lo	
VEHICLE	0		METALLIC COATINGS	lo <sup>.</sup>	
SOLVENTS	0		FILLER METAL PLUS COATING OR CORE FLUX	<u> </u>	
ADOITIVES	0		OTHERS	10	
OTHERS phosphates & KOH (see be	elbw)	e		1.	
) HAZARDOUS MIXTUR	ES OF	OTHER LIC	DUIDS, SOLIDS, OR GASES	×	
Phosohates (calculated as P f	rom s	odium ti	ripolyphosphate - CAS #7758-29-4)	6.0	-
Potassium Hydroxide, CAS #131	0-58-	3		· b.5	d
	•	•.			
22	CTIC				
9011 ING POINT (°E )			SPECIFIC GRAVITY (He Gal)	<u> </u>	
		200°F	PERCENT, VOLATILE		.043
	<u> </u>	<u>n.a.</u>	I BY VOLUME (%) EVAPORATION RATE	1_2	0 5%
SOLUBILITY IN WATER	<u> </u>	<u>n.a.</u>	( <u>Hu Ac</u> =1)	<u> </u>	<u>'.0</u>
APPEARANCE AND OODR Close with		MOLECE	jun, concentrate		0.0
Clear, Visc	uus į	JINK IIG			
SECTION IV	- FI	RE AND	EXPLOSION HAZARD DATA		
FLASH POINT (Method used) > 200°F Tag	Close	ed Cup	FLAMMABLE LIMITS	<u> </u>	Uei
EXTINGUISHING MEDIA Non-flamma	ble				
PECIAL FIRE FIGHTING PROCEDURES	Ione				

PAGE (1)

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(Continued on reverse side)

Form OSHA-20

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		SECTION	V + HEAL	TH HAZAR	DATA		
HRESHOLD LIMIT	VALUE Unk	nown					
FFECTS OF OVERE	effects unkn	own. Oral	1 Ld is	greater th	an <u>5 gra</u> m	s per kil	ogram of
Ly weight.				•			
MERGENCY AND F	IRST AID.PROCE	DURES IF	eye conta	act occurs,	flush wi	th plenty	of water.
	· ·			· ·			•
					- <u>.</u>		· ····
·····		SECTIO					
TABILITY			CONDITION	IS TO AVOID			<u> </u>
	UNSTABLE						
NCOMPATABILITY	Materiais to avoid	X	<u> </u>		<u> </u>	·	
AZARDOUS DECC	MPOSITION PRO	Non DUCTS	e	•			· · ·
		Non	e . ·	CONDITIONS	TO AVOID		
AZARDOUS	MATOC			· .	·	•	· · ·
	WILL NO	T OCCUR	X				
							•
					_		
	SE	CTION VI	1 - 52111	OBIEAK	ROCEDUR	FS	
				OLICEACI	NUCEDUR		
STEPS TO BE TAK	EN IN CASE MATI	ERIAL IS RE	LEASED OR	SPILLED			
	EN IN CASE MATI	ERIAL IS RE	LEASED OR	SPILLED Abso	<u>rb onto r</u>	ags or to	owels or flood
steps to be taki	or wet vacut	ERIAL IS RE	rinse to	drain.	rb onto r	vags or to	owels or flood
STEPS TO BE TAKE	Or wet vacut	ERIAL IS RE	rinse to	drain.	rb onto r	<u>ags or to</u>	owels or flood
STEPS TO BE TAKE	or wet vacuu METHOD Abso	IM UD OR	rinse to paterial m	drain.	rb onto r	ags or to	owels or flood
STEPS TO BE TAKE	or wet vacuu METHOO Abso nse water or	ERIAL IS RE um up or Orbtive m wet vacu	rinse to o naterial m	drain. ay be dispo	rb onto r sed of in	ags or to	owels or flood iate sanitary
STEPS TO BE TAKE	or wet vacuu METHOD Abso nse water or	ERIAL IS RE	rinse to material m	drain. ay be dispo	rb onto r sed of in	ags or to	iate sanitary
waste Disposal	en in case mati or wet vacuu METHOD Abso nse water or SECTIO	Drbtive m wet vacu	rinse to naterial m numed prod	drain. ay be dispo uct may be PROTECTION	rb onto r sed of in sewered w	ags or to  appropri-	iate sanitary
STEPS TO BE TAKE	EN IN CASE MATH Or wet Vacuu METHOD Abso SECTIC OTECTION (Speci	Drbtive m wet vacu	rinse to naterial m numed prod	drain. ay be dispo uct may be PROTECTION	rb onto r sed of in sewered w	ags or to  appropri- tith plent MATION	iate sanitary
STEPS TO BE TAKE	EN IN CASE MATH Or wet Vacuu METHOD Abso SECTIC OTECTION (Speci LOCAL EXHAD	ERIAL IS RE um up or orbtive m wet vacu ON VIII - DV VIII - DV DVPCI NC	rinse to naterial m numed prod SPECIAL I one requir	Abso drain. ay be dispo uct may be PROTECTION ed	rb onto r sed of in sewered w N INFORM	ags or to appropri-	iate sanitary
STEPS TO BE TAKE	EN IN CASE MATH Or wet Vacuu METHOD Abso SECTIC OTECTION (Spec: LOCAL EXHAD	ERIAL IS RE um up or orbtive m wet vacu ON VIII - fy fype, No UST No (General)	rinse to naterial m numed prod SPECIAL	Abso drain. ay be dispo uct may be PROTECTION ed ed	rb onto r sed of in sewered w N INFORM	ags or to appropri- with plant IATION	iate sanitary
STEPS TO BE TAKE	Abso METHOD Abso Abso Abso SECTIO OTECTION (Spec: LOCAL EXHAD MECHANICAL Normal veniones	ERIAL IS RE JM UD OR Orbtive m wet vacu ON VIII - DV General) tilation	rinse to naterial m numed prod SPECIAL I one requir is suffic	Abso drain. ay be dispo uct may be PROTECTION ed ed ient	rb onto r sed of in sewered w NINFORM	ags or to 	iate sanitary
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STEPS TO BE TAKE 	IN CASE MATH Or Wet Vacuum METHOD Absonnet Absonnet Absonnet SECTION SECTION OTECTION (Special MECHANICAL Normal ven OVES None r IVE EQUIPMENT	ERIAL IS RE Im up or Orbtive m wet vacu ON VIII - DV GAL DV GAL (General) tilation equired none SECTIO	rinse to naterial m numed prod SPECIAL I one requir is suffic N IX - SPI	Abso drain. ay be dispo uct may be PROTECTION ed ed ient EYE PROTEC	rb onto r sed of in sewered w NINFORM SPEC:// OTHER TION None	ags or to appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri- appropri-	iate sanitary
STEPS TO BE TAKE	Abso METHOD Abso METHOD Abso Abso Nethod Abso SECTION SECTION OTECTION (Speci- MECHANICAL NORMAL VEN NORE PRIMENT OBE TAKEN IN H	ERIAL IS RE Im up or Orbtive m wet vacu ON VIII - DV VIII - DV VIII - DV VIII - NO UST NO (General) tilation equired none SECTIO	rinse to o naterial m numed prod SPECIAL I one requir one requir is suffic N IX - SPI	Abso drain. ay be dispo uct may be PROTECTION ed ed ient EYE PROTEC ECIAL PREC	rb onto r sed of in sewered w NINFORM SPECIA OTHER TION None	appropri	iate sanitary
STEPS TO BE TAKE 	Absontation or wet vacuum METHOD Absontation Absontation Absontation Absontation Absontation (Special Content) (S	ERIAL IS RE Im up or Orbtive m wet vacu ON VIII - DV VIII - DV VIII - DV CUST No (General) tilation equired none SECTIO ANDLING A	rinse to naterial m numed prod SPECIAL I one requir one requir is suffic N IX - SPI ND STORING	Abso drain. ay be dispo uct may be PROTECTION ed ed ient EYE PROTEC ECIAL PREC No speci	rb onto r sed of in sewered w NINFORM SPECIA OTHER TION None AUTIONS	AL None Tecuired	e necessary
STEPS TO BE TAKE SE and mop WASTE DISPOSAL andfill. Rin AESPIRATORY PR VENTILATION PROTECTIVE GLO CTHER PROTECT PRECAUTIONS TO "en handling THER PRECAUT	Abso METHOD Abso METHOD Abso Nethod Abso SECTIO OTECTION (Special LOCAL EXHAL MECHANICAL Normal ven OVES None re IVE EQUIPMENT	ERIAL IS RE IM UD OR DOUBTIVE M Wet Vacu ON VIII - DV VIII - DV VVIII - NO UST NO (General) tilation equired none SECTIO DANDLING A	rinse to naterial m numed prod SPECIAL I one requir is suffic N IX - SPI	Abso drain. ay be dispo uct may be PROTECTION ed ed ient EVE PROTEC No speci	rb onto r sed of in sewered w NINFORM SPECIA OTHEA TION None AUTIONS al precau	AL None required	e necessary

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# Occupational Safety and Health Administration

U.S. DEPARTMENT OF LABOR

Required under USOL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I					
MANUFACTURER'S NAME	EMERGENCY TELEPHONE NU.				
KERR-MCGEE REFINING CORPORATION	(405) 270-2431				
ADDRESS (Number Street City Store and ZIP Code) NERR-MCGEE CENTER, OKLAHOMA CITY, OKLAHOMA 73102					
CHEMICAL NAME AND SYNONYMS Stoddard Solvent Type Petroleum Hydrocarbon Distillate	Stoddard Solvent KERMAC 1001				
CHEMICAL FAMILY FORMUL Hydrocarbon Mixture	A MULTI-COMPONENT HYDROCARBON MIXTURE (1)				

SECTION	111 -	HAZAF	RDOUS INGREDIENTS		
FAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	1 %	1LV (Unite)
PIGMENTS			BASE METAL		
CATALYST			ALLOY3		
VEHICLE			METALLIC COATINGS		
SOLVENTS	100	(2)	FILLER METAL PLUS COATING OR CORF FLUX		
ADD:TIVES			отнекз		
OTHERS					
HAZARDOUS MIXTURE	SOFO	THER LI	OUIDE, SOLIDS, OR GASES	%	TLV (Gais)

SE	CTION III - F	PHYSICAL DATA	
LOILING FOINT (°F.)	300 to 410	SPECIFIC GRAVITY (1120-1)	0.7835
VAPOR PRESSURE (mm Hy.) C100°F	5.3	PERCENT, VOLATILE CY VOLUME (%)	100%
VAPOR DENSITY (AIR+1)	4.8	EVAPORATION RATE (=1)	(٤)
SOLUBILITY IN WATER	Insoluble		
APPEARANCE AND ODOR APPEARANCE	- WATER WHIT	TE, ODOR - HYDROCARBON NAPHTHA	

SECTION IV - FIRE AND EXPLOSION HAZARD DATA						
FLASH POINT (Meinod uses) ASTA D 56	114°F	I LAMMAULE LIMITS				
EXTINCUISHING MEDIA Whatever your f hydrocarbon fires compatible with	your appi	tion department co ication. Consult F	nsiders suitable for ire Protection Cuide			
SPECIAL FIRE FIGHTING PROCEDURES	See linc	above.	NFPA # 325 (16).			
URUSUAL ETHE AND EXPLOSICITE VENEDS	See Note	(5)				

Form Antivesed Other No. 34 (1387
	SECTION V - REALTH HAZARD DATA
THRESHOLS LINHT VALUE	See Note (2).
FFFECTS OF OVEREXPOSURE	Sce Note (6).
EMENCENCY AND FIRST AND PRO Call a doctor. If swa	occurres illowed, do not induce vomiting. Consult Red Cross First Aid
Text Book (11). For e	ye irritation, flush with water. For breathing distress,
collapse or drowsiness	remove patient to fresh air.
	SECTION VI + REACTIVITY DATA

STABILITY UNSTABLE			Keep away from heat and open flames.
	STABLE	x	
INCOMPATABIL	NTY (Meterials to av	uid) Keep	away from strong oxidizer chemicals.
HAZARDOUS D	ECOMPOSITION PR	ODUCTS Cart	oon monoxide resulting from incomplete combustion.
HAZARDOUS	MAY O	CCUR	CUNDITIONS TO AVOID
POLYMERIZATI	ON WILL I	ADT OCCUR	X

	SECTION VIL - SPILL OR LEAK PROCEDURES
(a) Clean it up; (b)	) dispose of solvent containing wiping clothes or absorbent
paper in a suitable	manner (use safety type trash recepticle.)
WASTE DISPOSAL METHOD	Whatever you consider appropriate (a) avoid polluting plant
water effluent; (b)	avoid polluting atmosphere by incomplete combustion.

	SECTION VIII - SPECIAL F	PROTECTION INFORMATION
RESPIRATORY P	COTECTION (Specify type) Whatever is	appropriate for your industrial application
VENTILATION	See Notes (6) and (7)	SPECIAL
	MECHANICAL (General) See Notes (6) and (7)	OTHER
PROTECTIVE GEO See Notes (	7) and (8)	EVE PROTECTION See Note (9)
UTHER PHOTECT	IVE EQUIPMENT	

SECTION IX - SPEC	TAL PRECAUTIONS
FRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	Keep away from heat and open flames.
Consult Fire Protection Guide on Hazardous	s Chemicals NFPA #49 (10)

PAGE (2)

. 1 (1) This is a complex mixture of paraffin, isoparaffin, naphthene and aromatic hydrocarbons in the  $C_9$  to  $C_{11}$  carbon number range. A typical hydrocarbon type analysis for this product is:

Saturates Vol. %	87.8
Aromatics Vol. %	12.2
Olefins Vol. %	nil
	100.0

(2) The closest material for which a TLV is listed in part 1910.93, subpart G of the Occupational Safety and Health Standards, Department of Labor, Title 29 of the Federal Regulations is Stoddard Solvent - 500 PPM.

(3) Dependent upon the temperature and other conditions. The evaporation rate will be less than the evaporation rate of Butyl Acctate.

(4) Dependent upon the temperature.

(5) This material will not explode spontaneously. It must be heated in excess of 114° before there is sufficient concentration of vapors to support combustion. It has a NFPA flammability rating of 1. See NFPA #704M (10); or OSHA Class II, See Fed Reg. Title 29 Part 1910.106. The DOT Class is combustible, See Fed. Reg. Title 49, Part 173.115.

(6) Excessive inhalation may cause local irritation, drowsiness, collapse, muscle twitching, coma, and later pneumonia.

(7) Dependent upon the type of industrial application.

(8) Because of its de-fatting action on the skin, prolonged or frequent periodic contact of KERMAC 100W may be irritating and cause dermatitis.

(9) The liquid product will cause severe eye irritation and contact should be avoided. If there is sufficient probability of eye contact by droplets of hydrocarbon as a result of splashing or other dispersive action, then goggle eye protection is warranted.

(10) Can be obtained from:

National Fire Protection Association, International 60 Battermarch Street Boston, Massachusetts 02110

(11) Can be obtained from:

Doubleday & Company Garden City, New York

72-62-7820-01	DIVISION OF ASH	<b>cal Company</b> LAND OIL, INC.	
IATERIAL SAFETY	P. O. BOX 2219, CCLUMBUS, DH	0 43216 • (514) 889-3333	Asniand,
DATA SHEET	24-HOUR EMERGENCY TE	LEPHONE (606) 324-1133	
000840	MINERAL SPIRI	S NONEXEMPT	PAGE, 1
THIS MEDS COMPLIES W	NITH 29 CFR 1910.1200	CTHE HAZARD COMMUNI	(CATION STANDARD)
************	******	**************	**************
PRODUCT NAME: MINERAL S CAS NUMBER:	SPIRITS NONEXEMPT 8052 41 J		
DIAL OIL COMPANY 206 RIO GRANDE Aztec, new mexico	5 87410	US 50 009 258 Data Sheet No; Latest Revision Product; 25160 Invoice; 35910 Invoice Date; 1 To;	30520- 0000589-003 N DATE: 03/86-86063 100 13 :1/05/86
ATTN, PLANT MGR.,	SAFETY DIR.		
	SECTION I-PRODUCT	IDENTIFICATION	•••••
GENERAL OR GENERIC ID: /	ALIPHATIC HYDROCARBO	N	
DOT HAZARD CLASSIFICATI	ONI COMBUSTIBLE (173.	.115)	
	BECTION II-CO	DMPONENTS	
IF PRESENT, IARC, M	NTP AND OSHA CARCINO See definition page (	GENS ARE IDENTIFIED D For clarification	IN THIS SECTION
INGREDIENT		N (BY WT)	NOTE
ALIPHATIC PETROLEUM DIST	TILLATES Pel. 500 Bom	£00 <u>-</u> 14	( 1)
( 1), NIOSH RECOMMENDS / Mg/Cum as determini	A LIMIT OF 350 MG/CUI ED by a 15 minute sai	M - 8 HOUR TIME WEIGH Mple.	HTED AVERAGE, 1800
	SECTION III-PH	YSICAL DATA	
PROPERTY			MEASIOFMENT
- N U - L X I T	REFIN		MEMOUREMENI Colorado
BOILING POINT	FOR PRODUCT		300.00 325 F ( 148.88 DEG C)
VAPOR PRESSURE	FOR PRODUCT		2.00 MMHG
			( 20.00 DEG C)
SPECIFIC VAPOR DENSITY	AIR : 1		+.9
BPECIFIC URAVILY			a 60.00 DEG F ( 15.55 DEG C)
PERCENT VOLATILES			100.00%
EVAPORATION RATE	(ETHER :	1)	70.00
92 ( 	CTION IV-FIRE AND EX	PLOSION INFORMATION	
FLASH POINT	100.0 ( 37.8	DEG F Deg C)	
EXPLOSIVE LIMIT (PRO	DUCT)	LOWER - 1.0%	
EXTINGUISHING MEDIA, RE	GULAR FOAM OR CARBON	DIOXIDE OR DRY CHEM	ICAL
HAZARDOUS DECOMPOSITION	PRODUCTS: MAY FORM	TOXIC MATERIALB, CA	RBON DIOXIDE AND
FIREFIGHTING PROCEDURES FACEPIECE OPERATED FIGHTING FIRES.	, WEAR SELF-CONTAINE IN PRESSURE-DEMAND	D BREATHING APPARATU Or other positive pr	S WITH A FULL Essure mode when
BPECIAL FIRE & EXPLOSION JHE GROUND OR BE MU Flames and Ignitio	N HAZARDS, VAPORS AR Oved by Ventilation N Bources at Locatio	E HEAVIER THAN AIR A And ignited by heat, NS distant from mate	ND MAY TRAVEL ALONG Pilot Lights, other Rial Mandling Point.
NEVER USE WELDING Product (Even Just NFPA Codes, Health	OR CUTTING TORCH ON Residue) can ignite - 0 flammability	OR NEAR DRUM (EVEN E Explosively, - 2 reactivity-	MPTY) BECAUSE Q
	SECTION V-HEALT	H HAZARD DATA	• • • • • • • • • • • • • • • • • • • •
PERMINSIBLE EXPOSURE LE	VEL 600 P	P M	
THRESHOLD LIMIT VALUE	£00 P	PM	
EFFECTE OF ACUTE OVEREX	POSURE, FOR PRODUCT		

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AND SAFE HANDLING AND DISPOSAL INFORMATION PAGE 1 OF DATE : 09/28/86 ZEPELEC -SUPERSEDES: 05/30/86 PRODUCT NUMBER: 0327

ZEP MANUFACTURING COMPANY PST IN MAINTENANCE PRODUCTS

HECTION I - EMERGENCY CONTACTS

ZEP MANUFACTURING COMPANY NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 4 P. C. BOX 2015 435-2973, 996-0899, 252-1587, 351-2952, 971-3367 ATLANTA, GEORGIA 30301 LOCAL POISON CONTROL CENTER ...... 7ELEPHONE (404)352-1680 TRANSPORTATION EMERGENCY EETWEEN 8:00A. M. -5:00P. M. CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDE (EASTERN TIME ZONE) DISTRICT OF COLUMBIA (202)483-7616 ALL CALLS RECORDE \_\_\_\_\_ SECTION II – HAZARDOUS – INGREDIENTS TLV -EFFECTS 74 - 1 DESIGNATIONS (PPM) (SEE REVERSE) PR( \*\* 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE \*\* fluere-1000 EIR CNS >90 carbon 113; freon 113; freon tf; CAS# 76-13-1; RTECS# KJ4000000; OSHA PEL 1000 PFM

SPECIAL NOTE: ADVERSE HEALTH EFFECTS WOULD NOT BE EXPECTED UNDER RECOMMENDED CONDITIONS OF USE SO LONG AS PRESCRIBED SAFETY PRECAUTIONS ARE PRACTICED.

SECTION III - HEALTH HAZARD DATA

ACUTE EFFECTS OF OVEREXPOSURE:

SEVERE OVEREXPOSURE (greater than 2500 ppm) BY INHALATION CAN CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION RESULTING IN HEADACHE, NAUSEA, AND DIZZINESS. IN EX-TREME CASES STUPOR, UNCONSCIOUSNESS, AHD DEATH MAY RESULT. ONE INGREDIENT IN THIS PRODUCT HAS CAUSED CARDIAC SENSITIZATION IN ANIMALS DURING TESTS AT LEVEL 3BOVE 20,000 ppm, WHILE THIS EFFECT HAS BEEN IMPLICATED FOR HUMANS IT HAS NOT BEEN PROVEN; ADRENALIN INTENSIFIES THE EFFECT. SKIN OR EYE CONTACT MAY CAUSE FATTING, WITH POSSIBLE IRRITATION.

INHALATION OF AEROSOL MIST MAY PRODUCE CHEMICAL PNEUMONIA.



AND SAFE HANDLING AND DISPOSAL INFORMATION PAGE 2 C DATE : 09/28/86 ZEPELEC SUPERSEDES: 05/30/86 PRODUCT NUMBER: 0327

ZEP MANUFACTURING COMPANY ST IN MAIN TENANCE PRODUCTS

SECTION III - HEALTH HAZARD DATA (CONTINUED)

CHRONIC EFFECTS OF OVEREXPOSURE: SKIN WHICH IS REPEATEDLY DEFATTED BY CONTACT WITH THIS PRODUCT MAY BE MORE SUSCEPTIBLE TO IRRITATION, INFECTION, OR DERMITITIS. NONE OF THE HAZARDOUS INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTF, & D

EST'D PEL/TLV: 1000 PPM PRIMARY ROUTES OF ENTRY: INH.	
HMIS CODES: HEALTH 1; FLAM. 1; REACT. 1; PERS. PROTECT. X ; CHRONIC HAZ.	NO
FIRST AID PROCEDURES: SKIN : IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER FOR A MINUTES. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS. EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MIN CASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION INHALE: MOVE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STO FORM ARTIFICIAL RESPIRATION. GET MEDICAL ATTENTION IMMEDIATELY INGEST: THIS ROUTE OF EXPOSURE IS NOT LIKELY DUE TO PRODUCT NATURE.	T LEAST NUTES: AT DNC PPED; P
SECTION IV - SPECIAL PROTECTION INFORMATIO	N
PROTECTIVE CLOTHING : THE USE OF NEGPRENE, NITRILE OR NATURAL RUBBER	GLOVES
EYE PROTECTION : USE TIGHT-FITTING SAFETY GLASSES. CONTACT LENS	ES SHOU
RESPIRATORY PROTECTION: IF VENTILATION IS INADEQUATE, WEAR A PROPERLY	FITTING
VENTILATION : VENTILATION SHOULD RESPIRATOR. FANS AND/OR EXHAUST HOOD IN ENCLOSED SPACES.	XHAUST
SECTION V - P H Y S I C A L D A T A (FOR FILL MATERIAL ONLY)	
BOILING POINT (F): 117.6FSPECIFIC GRAVITYVAPOR PRESSURE(MMHG):334PERCENT VOLATILE BY VOLUME (%)VAPOR DENSITY(AIR=1):2.9EVAPORATION RATE(CCL4SOLUBILITY IN WATER :0.02PH(CONCENTRATE)APPEARANCE AND ODOR : A CLEAR, THIN LIQUID WITH A MILD SOLVENT ODOR.	: 1.5 : 100 1): 0.3 N/A N/A
SECTION VI - FIRE AND EXPLOSION DATA	
FLASH POINT(F) (METHOD USED): NOT FLAMMABLE (CSMA) FLAMMABLE LIMITS LEL N/A UEL N/A EXTINGUISHING MEDIA : N/A SPECIAL FIRE FIGHTING: DIRECT STREAM OF WATER ONTO INTACT CONTAINERS. UNUSUAL FIRE HAZARDS : CONTAINER MAY BURST IF HEATED ABOVE 120F.	

	MAILINAL UMILII UMIMUTILI
	AND SAFE HANDLING AND DISPOSAL INFORMATION PAGE 3 DATE : 09/28/86 ZEPELEC
ZEP MANUFACTURING COMPANY ST IN MAINTENANCE PRODUCTS	SUPERSEDES: 05/30/86 PRODUCT NUMBER: 0327
SECTION VII - R E A C	TIVITY DATA
STABILITY INCOMPATIBILITY(AVOID POLYMERIZATION HAZARDOUS DECOMPOSITI	: STABLE ) : HEAT, SUNLIGHT, STRONG OXIDIZERS, AND ACIDS : WILL NOT OCCUR ON: CARBON DIOXIDE, CARBON MONOXIDE, HYDROGEN CHLORIDE, SMALL AMOUNTS OF FHOSGENE & CHLORINE GAS.
SECTION VIII - S P I	LL AND DISPOSAL PROCEDURES
STEPS TO BE TAKEN IN OBSERVE SAFETY PRECAU SPILLS ARE UNLIKELY D ENT (eg ZEP-O-ZORB), THOROUGHLY WITH A DET	CASE MATERIAL IS RELEASED OR SPILLED: TIONS IN SECTIONS 4 & 9 DURING SPILL CLEAN-UP. LARGE WE TO PACKAGING. SPILL MAY BE ABSORBED ON AN INERT AB PLACED IN A SUITABLE CONTAINER FOR DISPOSAL. WASH ARE ERGENT SOLUTION AND RINSE WELL WITH WATER.
WASTE DISPOSAL METHOD PRODUCT IS CONSUMED I ERS. LARGE NUMBERS O	: N USE. DO NOT CRUSH, PUNCTURE OR INCINERATE SPENT CON F AEROSOL CONTAINERS MAY REQUIRE HANDLING AS A HAZARDO
WASTE, BUT IN MOST ST MONTH MAY ALLOW DISPO LOCAL, STATE AND FEDE	ATES TOTAL HAZARDOUS WASTE QUANTITIES LESS THAN 220 LB SAL IN A CHEMICAL OR INDUSTRIAL WASTE LANDFILL. CONSU RAL AGENCIES FOR THE PROPER DISPOSAL METHOD IN YOUR AR
WASTE, BUT IN MOST ST MONTH MAY ALLOW DISPO LOCAL, STATE AND FEDE RCRA HAZ. WASTE NOS. :	ATES TOTAL HAZARDOUS WASTE QUANTITIES LESS THAN 220 LE ISAL IN A CHEMICAL OR INDUSTRIAL WASTE LANDFILL. CONSU RAL AGENCIES FOR THE PROPER DISPOSAL METHOD IN YOUR AR
WASTE, BUT IN MOST ST MONTH MAY ALLOW DISPO LOCAL, STATE AND FEDE RCRA HAZ. WASTE NOS.: SECTION IX - S P E C	ATES TOTAL HAZARDOUS WASTE QUANTITIES LESS THAN 220 LE ISAL IN A CHEMICAL OR INDUSTRIAL WASTE LANDFILL. CONSU RAL AGENCIES FOR THE PROPER DISPOSAL METHOD IN YOUR AR F002 I A L P R E C A U T I O N S
WASTE, BUT IN MOST ST MONTH MAY ALLOW DISPO LOCAL, STATE AND FEDE RCRA HAZ. WASTE NOS.: SECTION IX - S P E C FRECAUTIONS TO BE TAK DO NOT STORE AT TEMPE PUNCTURE OR INCINERAT DO NOT BREATHE SPRAY KEEP OUT OF THE REACH	ATES TOTAL HAZARDOUS WASTE QUANTITIES LESS THAN 220 LE SAL IN A CHEMICAL OR INDUSTRIAL WASTE LANDFILL. CONSU RAL AGENCIES FOR THE PROPER DISPOSAL METHOD IN YOUR AR I A L P R E C A U T I O N S EN WHEN HANDLING AND STORING: RATURES ABOVE 120F. OR IN DIRECT SUNLIGHT. DO NOT E CONTAINER. MISTS OR VAPORS. OF CHILDREN.

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( <u>7</u> 9) N	IATERIAL S	AFETY [	DATA	SHEET	
ZEP MANUFACTURING COMPANY PST IN MAINTENANCE PRODUCTS	AND SAFE HANDI DATE : SUPERSEDES :	LING AND DISPOSA 11/27/86 <b>/E</b> 04/16/86 PR	L INFORMATI	ON PAG 1 1BER: 0675	GE 1 OF
LECTION I - E M E R G E	NCY CONT	ACT5	and a shore with a straight for an one says	an a	A THE CONTRACT OF CONTRACT OF CONTRACT
ZEF MANUFACTURING COMPAN F.O. BOX 2015 ATLANTA, GEORGIA 30301 TELEPHONE (404)352-1680 SETWEEN 8:00A.M5:00P.M (EASTERN TIME ZONE)	Y NON-OFFICE HOU 435-2973, 995- LOCAL POISON C TRANSPO CHEMTREC: TOLL DISTRICT OF CO	RS, WEEKENDS 0899, 252-15 ONTROL CENTE RTATION EMER FREE 1-800- LUMBIA (202)	6, AND HOL 197, 351-2 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	IDAYS:AREA 2952, 971-3 ALL CALLS ALL CALLS	CODE 4 367 RECORDE RECORDE
SETTION II - H A Z A R D	OUS INGR	EDIENT	5		
DESIGNATIONS ** SODIUM METASILICATE * sodium salt; water glass	* silicic acid ( ; CAS# ;5834-92-	H2-Si-O3) di O; RTECS#	ILV (PPM) I- N/D	COR	% 1 SE) PRC 1-1
×* NONYLPHENOXYPOLY(ETHY poly(oxy=1,2-ethanediy1) nycroxy; CAS# 9016-45-9; √/D	HG7M3 (FOR POWD LENEOXY)ETHANOL / alpha-(nonylph RTECS# MD905000	EKS UNLY) ** enyl)−omega- ; OSHA PEL-	N/D -	EIR	5-1
→ D Construction of the second seco	HLORIDES ** blen chlorides and al orides: CAS# 557 EV_N/D	d of alkyl kyl dimethyl 63-06-7;	N/D	COR TOX CB	L < 5
** TETRASODIUM ETHYLENED ethylenedinitrilo tetra-	IAMINE TETRAACET acetic acid; EDT	ATE ** A; CAS#	N/D	IRR	< 5
54-02-8; RTECS# AH402500 ** TETRAPOTASSIUM PYROPH acid, tetrapotassium sal NONE	0 OSPHATE ** TKPP; t; CAS# 7320-34-	diphosphor: 5/ RTECS#	ic N/D	IRR	<
SPECIAL NOTE: ADVERSE HE CONDITIONS OF USE SO LON	ALTH EFFECTS WOU	LD NOT BE EX SAFETY PREC	XPECTED U	NDER RECOMM RE PRACTICE	IENDED
SECTION III - H E A L T	H HAZARD	DATA			, ann 200 ann ann ann ann ann a
ACUTE EFFECTS OF OVEREXF FRODUCT IN CONCENTRATED EYE TISSUE DAMAGE WHICH	OSURE: FORM IS A SEVERE CAN BE PERMANENT	E EYE IRRITA SKIN CONT	NT. OVER- ACT MAY P	EXPOSURE MA RODUCE IRRI	Y LEAD TATION

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AND SAFE HANDLING AND DISPOSAL INFORMATION PAGE 2 OF DATE : 11/27/86 ZEP LEMONEX : SUPERSEDES: 04/16/86 PRODUCT NUMBER: 0675

ZEP MANUFACTURING COMPANY

SECTION 111 - HEALTH HAZARD DATA (CONTINUED)

CHRONIC EFFECTS OF OVEREXPOSURE:

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REPEATED OR FROLONGED SKIN CONTACT MAY PRODUCE CHRONIC INFLAMMATION OR DERMAT: IS, CHARACTERIZED BY REDNESS, SCALING, OR ITCHING. REPEATED EYE EXPOSURE MAY PRODUCE CHRONIC INFLAMMATION OF THE EYE OR CORNEAL DAMAGE. NONE OF THE HAZARDOUS INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTP, & OU

EST D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: N/A
HMIE CODES: HEALTH B; FLAM. 0; REACT. 0; PERS. PROTECT. B ; CHRONIC HAZ. NO
<ul> <li>FIRST AID PROCEDURES:</li> <li>SKIN : IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER FOR AT LEAST MINUTES. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS.</li> <li>EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, ( CASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE INHALE: MOVE EXPOSED PERSON TO FRESH AIR. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION PROMPTLY.</li> <li>INGEST: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE</li> </ul>
SECTION IV - SPECIAL PROTECTION INFORMATION
PROTECTIVE CLOTHINGWEAR IMPERVIOUS GLOVES THAT HAVE DEMONSTRATED RESIST- ANCE TO THE INGREDIENTS IN THIS PRODUCT.EYE PROTECTIONWEAR SPLASH-PROOF SAFETY GOGGLES ESPECIALLY IF CONTACT LENSES ARE WORN.RESPIRATORY PROTECTION:RESPIRATORY PROTECTION MAY BE UNNECESSARY SINCE PRODUC DOES NOT GIVE OFF SIGNIFICANT QUANTITIES OF VAPOR.VENTILATIONIF VAPORS ARE DETECTED, VENTILATE WORK AREA BY OPENING WINDOWS AND USING EXHAUST FANS.
SECTION V - P H Y S I C A L       D A T A         BOILING POINT (F)       : APPROX. 215F       SPECIFIC GRAVITY       : 1.0c         VAPOR PRESSURE(MMHG):       N/A       PERCENT VOLATILE BY VOLUME (%)       : APP.         VAPOR DENSITY(AIR=1):       N/A       EVAPORATION RATE(WATER       =1): 1.0         SOLUBILITY IN WATER :       COMPLETE       PH(CONCENTRATE)       : 12.9         PH(USE DILUTION OF 1% SOLUTION ):       10.8         APPEARANCE AND ODOR :       BLUE-GREEN, CLEAR LIQUID WITH LEMON-CITRUS FRAGRANCE.
SECTION VI - FIRE AND EXPLOSION DATA
LASH POINT(F) (METHOD USED): NONE (TCC) FLAMMABLE LIMITS LEL N/A UEL N/A EXTINGUISHING MEDIA : NON-COMBUSTIBLE LIQUID. SPECIAL FIRE FIGHTING: NONE UNUSUAL FIRE HAZARDS : NONE



AND SAFE HANDLING AND DISPOSAL INFORMATION PAGE 3 BF DATE : 11/27/86 ZEP LEMONEX -SUPERSEDES: 04/16/86 PRODUCT NUMBER: 0675

ZEP MANUFACTURING COMPANY RST IN MAINTENANCE PRODUCTS

SELTION VII - REACTIVITY DATA

STABILITY : INCOMPATIBILITY(AVOID) : POLYMERIZATION : HAZARDOUS DECOMPOSITION:	STABLE STRONG DXIDIZING AGENTS WILL NOT OCCUR CARBON DIOXIDE, CARBON MONOXIDE, AND OTHER UNIDENTIF ORGANIC COMPOUNDS.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: OBSERVE SAFETY PRECAUTIONS IN SECTIONS 4 & 9 DURING CLEAN-UP. ABSORD SPILL OF AN INERT ABSORDENT MATERIAL (eg ZEP-O-ZORD); PICK UP AND PLACE IN A CLEAN D.O. SPECIFICATION CONTAINER FOR DISPOSAL. WASH AREA THOROUGHLY WITH A DETERGENT SOLUTION AND THEN RINSE WELL WITH WATER.

WASTE DISPOSAL METHOD:

LIGUIDS CANNOT BE SENT TO LANDFILLS UNLESS SOLIDIFIED. UNUSABLE PRODUCT AND SOME COLLECTED, SPENT USE-DILUTIONS MAY REQUIRE DISPOSAL AS A HAZARDOUS WASTE A PERMITTED TREATMENT/STORAGE/DISPOSAL FACILITY. IN MOST STATES HAZARDOUS WAS IN TOTAL AMOUNTS OF 220 LBS. OR LESS PER MONTH MAY BE DISPOSED OF IN A CHEMIC, OR INDUSTRIAL WASTE LANDFILL. IF COMPANY EFFLUENT IS ULTIMATELY TREATED BY A PUBLICLY OWNED TREATMENT WORKS, NEUTRALIZATION OF SPENT TANK-SOLUTIONS WITH SU SEGUENT DISCHARGE TO THE SEWER MAY BE FOSSIBLE. CONSULT LOCAL, STATE AND FED-ERAL AGENCIES FOR PROPER DISPOSAL METHOD IN YOUR AREA.

RCRA HAZ. WASTE NOS. : DOO2 (SEE ABOVE)

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING: STORE TIGHTLY CLOSED CONTAINER IN DRY AREA AT TEMPERATURES BETWEEN 40 AND 120 DEGREES F. STORE AWAY FROM STRONG ACIDS AND DXIDIZING COMPOUNDS. KEEP PRODUCT AWAY FROM SKIN AND EYES. KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - TRANSPORTATION DATA

DOT PROPER SHIPPING NAME NONE DOT HAZARD CLASS: N/A DOT I.D. NUMBER : N/A DOT LABEL/PLACARD: NONE IPA TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED EPA CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER): N/A

ZEP MANUFACTUEING COMPANY	ATERIAL SAFETY DA AND SAFE HANDLING AND DISPOSAL IN DATE : 12/19/87 GUPE	ATA : NECEMATI R ZEP-U	SHEET	
<b>CIRST IN MAINTENANCE PRODUCTS</b>				
ECTION I - EMERGEN	CY CONTACTS	12.0 <b>0</b> -0-0-127507 -00-20	a anno 1997 ann ann an Ann	م يوني يوني يوني يوني يوني يوني يوني يون
ZEF MANUFACTURING COMPANY P D. BOX 2015 ATLANTA, GEORGIA 30301 TELEPHONE (404)352-1680 PETWEEN 8:00A.M5:00P.M. (EASTERN TIME ZONE)	NON-OFFICE HOURS, WEEKENDS, 435-2973, 976-0899, 252-1587 LOCAL POISON CONTROL CENTER TRANSPORTATION EMERGE CHEMTREC: TOLL FREE 1-800-42 DISTRICT OF COLUMBIA (202)48	AND HOL , 351-2  NCY 4-9300 3-7616	LIDAYS:AREA CO 2952, 971-3367 ALL CALLS REC ALL CALLS REC	DE 4 ORDE ORDE
SECTION II - H A Z A R D DESIGNATIONS ** CALCIUM CHLORIDE ANHYD chloride; CAS# 10043-52-4 OSHA PEL N/D: MER 10mg/M3	D U S I N G R E D I E N T S ROUS BEADS ** calcium ; RTECS# EV9800000 (NUISANCE DUST)	TLV (PPM) N/D	EFFECTS (SEE REVERSE) IRR	% I PRC 90-
** SODIUM CHLORIDE ** hal RTECS# VZ4725000; OSHA PE	ite; salt; CAS# 7647-14-5; L-N/D.	N/D	EIR	5-

SPECIAL NOTE: ADVERSE HEALTH EFFECTS WOULD NOT BE EXPECTED UNDER RECOMMENDED CONDITIONS OF USE SO LONG AS PRESCRIBED SAFETY PRECAUTIONS ARE PRACTICED.

SECTION III - HEALTH HAZARD DATA

ACUTE EFFECTS OF OVEREXPOSURE: THIS PRODUCT CAN BE AN EYE IRRITANT. INFLAMMATION OF EYE TISSUE IS CHARACTERIZ BY REDNESS, WATERING, AND/OR ITCHING.



AND SAFE HANDLING AND DISPOSAL INFORMATION PAGE 2 0 DATE : 12/18/87 SUPER ZEP-D-ICE SUPERBEDEB: 04/09/86 FRODUCT NUMBER: 1454

ZEP MANUFACTURING COMPANY

SECTION III - HEALTH HAZARD DATA (CONTINUED)

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CHRONIC EFFECTS OF OVEREXPOSURE: THEFE ARE NO KNOWN EFFECTS FROM CHRONIC EXPOSURE TO THIS PRODUCT. NONE OF THE INGREDIENTS ARE LISTED AS CARCINDGENS BY IARC, NTP, OR OSHA.

EST D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: N/A
HMIS CODES: HEALTH 1; FLAM. 0; REACT. 0; PERS. PROTECT. B ; CHRONIC HAZ. NO
<pre>FIRST AID PROCEDURES: SKIN : FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER. CONSULT A PHYSICIAN IF IRRITATION DEVELOPS. EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, CASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONC INHALE: MOVE EXPOSED PERSON TO FRESH AIR. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION PROMPTLY. INGEST: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONC</pre>
SECTION IV - SPECIAL PROTECTION INFORMATION
PROTECTIVE CLOTHING:WEAR IMPERVIOUS GLOVES THAT HAVE DEMONSTRATED RESIST- ANCE TO THE INGREDIENTS IN THIS PRODUCT.EYE PROTECTION:USE OF TIGHT-FITTING SAFETY GLASSES OR GOGGLES IS STR GLY RECOMMENDED, ESPECIALLY WHEN WEARING CONTACT LENSRESPIRATORY PROTECTION:NO SPECIAL MEASURES ARE REQUIRED.VENTILATION:NO SPECIAL MEASURES ARE REQUIRED.
SECTION Y - PHYSICAL DATA
BOILING POINT (F)N/ASPECIFIC GRAVITY: N/AVAPOR PRESSURE(MMHG):N/APERCENT VOLATILE BY VOLUME (%): < C
SECTION VI - FIRE AND EXPLOSION DATA
FLASH POINT(F) (METHOD USED): NONE (TCC) FLAMMABLE LIMITS LEL N/A UEL N/A EXTINGUISHING MEDIA : NON-COMBUSTIBLE SOLID SPECIAL FIRE FIGHTING: NONE UNUSUAL FIRE HAZARDS : NONE



AND SAFE HANDLING AND DISPOSAL INFORMATION PAGE 3 D. DATE : 12/18/S7 SUPER ZEP-D-ICE : SUPERSEDES: 04/09/36 PRODUCT NUMBER: 1494

ZEP MANUFACTURING COMPANY SST IN MAINTENANCE PRODUCTS

EETIEN VII - REACTIVITY DATA

STABILITY INCOMPATIBILITY(AVOID)	•	STABLE CONCENTRATED SOLUTIONS MAY BE CORROSIVE TO METALS
FOLYMERIZATION HAZARDOUS DECOMPOSITION	:	WILL NOT OCCUR NONE

BECTION VIII - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: OBSERVE SAFETY PRECAUTIONS IN SECTIONS 4 & 9 DURING CLEAN-UP. PICK UP SPILLE: MATERIAL AND PLACE IN A SUITABLE WASTE CONTAINER. WASH AREA THOROUGHLY WITH DETERGENT SOLUTION AND RINSE AREA WELL WITH WATER.

WASTE DISPOSAL METHOD:

FRODUCT IS NOT CONSIDERED A HAZARDOUS WASTE UNDER RCRA. UNUSABLE MATERIAL SHOULD BE DRUMMED AND TAKEN TO A CHEMICAL OR INDUSTRIAL LANDFILL, OR IF PERMI TED PUT INTO SOLUTION WITH WATER AND FLUSHED INTO A SANITARY SEWER. NEUTRAL-IZATION OF PH MAY BE A PREREGUISITE FOR SEWER DISPOSAL. CONSULT LOCAL, STATE AND FEDERAL AGENCIES FOR PROPER METHOD OF DISPOSAL IN YOUR AREA.

PCRA HAZ. WASTE NOS.: N/A

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING: KEEP PRODUCT AWAY FROM SKIN AND EYES. DO NOT BREATHE DUST. KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - TRANSPORTATION DATA

DOT PROPER SHIPPING NAME NONE DOT HAZARD CLASS: N/A DOT I.D. NUMBER : N/A DOT LABEL/PLACARD: NONE EPA TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED EPA CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER): NONE

Material	Safety	Data	Sheet
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and is the or . Floor, contracted a prome on ourselver, on sharting tading provide the				U	
SECTION 1 -					
Namulaciurer's Name Industrial Water Engineering,	Inc		· · ·		
2300 Buena Vista SE Suite 135		Emergency Telephone No	505 842-1216	5	
ity, State, and ZIP		Other Information			
Albuquerque, New Mexico87106			same	<u> </u>	
lignsture of Person Responsible for Preparation (Optional)		Date Prepared	5/21/86		
SECTION 2 - INGREDIENTS/IDE	NTITY				
-Componential (chemical & common nameta))	OSHA PEL	ACGIH TLV	Other Exposure Limita	3 (optional)	C A NO
Sulfonated styrene maleic anhydride	copoly	mer,			
Aminotri(methylene-phosphonic_acid)					
Caustic soda			·····		
Sodium tolyltriazole	_				
wotan				•	
waldar		·····			
· · · · · · · · · · · · · · · · · · ·					
			<u> </u>	· · · · · · · · · · · · · · · · · · ·	
SECTION 3 - PHYSICAL & CHEMICAL CHARACT	FRISTICS	المرينة بين المعين الشير			
Section 5 - 111 Steal & Chemical Charact	E11191109				
	Specific		Vapor		
Point N/A	Specific Gravity IH <sub>1</sub> O=1	' 1.18	Vapor Pressure imm Hj	₽ N/A	
Point N/A Vapor Density (Air = 1) N/A	Specific Gravity IH <sub>1</sub> O= 1	' 1.18	Vapor Pressure (mm Hg	₽N∕A_	
Point N/A Vapor Density (Air = 1) N/A	Specific Gravity IH,O=1 Reactivity in Water	' 1.18	Vapor Pressure (mm Hg	₽_N∕A_	
Point N/A Vapor Density (Air = 1) N/A Solubility in Water Completely Appearance	Specific Gravity IH,O= 1 Reactivity IN Water Melting	' 1.18 N/A	Vapor Pressure (mm H	<sup>d</sup> N/A	
Point N/A Vapor Density (Air = 1) N/A Solubulity in Water Completely Appearance and Odor Clear yellow liquid	Specific Gravity IH,O= 1 Reactivity IN Water Melting Point N/	' 1.18 N/A 'A	Vapor Pressure (mm Hy	<sup>b</sup> N/A	
Point N/A Vapor Density (Air = 1) N/A Solubility in Water Completely Appearance and Odor Clear yellow liquid SECTION 4 - FIRE & EXPLOSION DATA	Specific Gravity IH,O= 1 Reactivity IN Water Melting Point N/	' 1.18 N/A 'A	Vapor Pressure (mm Hg	<sup>d</sup> N/A	
Point N/A Vapor Density (Air = 1) N/A Solubility in Water Completely Appearance and Odor Clear yellow liquid SECTION 4 - FIRE & EXPLOSION DATA Flash R. C. Used in Air S b	Specific Gravity IH,O=1 Reactivity IN Water Melting Point N/	' 1.18 N/A 'A	Vapor Pressure (mm Hy UEL Upper	<sup>0</sup> N/A	
Point N/A Vapor Density (Air = 1) N/A Solubulity in Water Completely Appearance and Odor Clear yellow liquid SECTION 4 - FIRE & EXPLOSION DATA Flash P. C. Used in Air % by Auto-Ignition Extinguisher Method Flasmmable Method Flasmmable	Specific Gravity IH,O= 1 Reactivity IN Water Melting Point N/	' 1.18 N/A 'A	Vapor Pressure (mm Hy UEL Upper	<sup>0</sup> N/A	
Point     N/A       Vapor Density (Air = 1)       N/A       Solubulity in Wetter       Completely       Appearance and Odor     Clear yellow liquid       SECTION 4 - FIRE & EXPLOSION DATA       Flash Point     F. C. Used     Flammable is Air % by       Auto-Ignition Temperature     Extinguisher Midit       Special Fire     O	Specific Gravity IH,O=1 Reactivity IN Water Melting Point N/ e Lamits LEL y Valume Low	' 1.18 N/A 'A	Vapor Pressure (mm Hy UEL Upper	<sup>p</sup> N/A	
Point     N/A       Vapor Density (Air = 1)     N/A       Solubility in Water     Completely       Appearance and Odor     Clear yellow liquid       SECTION 4 - FIRE & EXPLOSION DATA       Flash     Method       Point     F. C. Used       Auto-Ignition     Extinguisher Mish i       Special Fire     Product       Fighting Procedures     Product	Specific Gravity IH,O=1 Reactivity IN Water Melting Point N/ b Limits LEL y Volume Lowo	' 1.18 N/A 'A	Vapor Pressure (mm Hg UEL Upper	<sup>p</sup> N/A	
Point     N/A       Vapor Density (Air = 1)       N/A       Solubulity in Water       Completely       Appearance and Odor     Clear yellow liquid       SECTION 4 - FIRE & EXPLOSION DATA       Flammable is Air % by       Auto-Ignition       Extinguisher       Method       Flammable is Air % by       Auto-Ignition       Extinguisher       Method       Flammable is Air % by       Special Fire       Fyeduct       > ot flammate	Specific Gravity IH,O=1 Reactivity IN Water Melting Point N/ b Limits LEL y Valume Low	' 1.18 N/A 'A	Vapor Pressure (mm Hy UEL Upper	<sup>0</sup> N/A	
Point     N/A       Vapor Density (Air = 1)       N/A       Solubulity in Water       Completely       Appearance and Odor     Clear yellow liquid       SECTION 4 - FIRE & EXPLOSION DATA       Flash Point     F. C. Used     Entinguisher Mishit       Special Fire       Special Fire     Product     ot flammate       Unusual Fire and Explosion Hazarde	Specific Gravity IH,O=1 Reactivity IN Water Melting Point N/ Limits LEL y Volume Low	' 1.18 N/A 'A	Vapor Pressure (mm Hg UEL Upper	<sup>D</sup> N/A	
Point     N/A       Vapor Density (Atr = 1)       N/A       Solubility in Water Completely       Appearance and Odor     Clear yellow liquid       SECTION 4 - FIRE & EXPLOSION DATA       Flash     Method     Flammable is Air % by       Auto-Ignition     Extinguisher Mishi       Special Fire     Product     ot flammable       Unusual Fire and Explosion Hazarde     Product	Specific Gravity IH,O=1 Reactivity IN Water Melting Point N/ e Limits LEL y Velume Lowe	' 1.18 N/A 'A	Vapor Pressure (mm Hg UEL Upper	₽ <u>N/A</u>	
Point     N/A       Vapor Density (Atr = 1)       N/A       Solubility in Water       Completely       Appearance and Odor     Clear yellow liquid       SECTION 4 - FIRE & EXPLOSION DATA       Flash     Method     Flammable is Air % by       Auto-Ignition     Extinguisher       Temperature     Mishit       Special Fire     Product       Special Fire     Product       Unusual Fire and     Explosion Hazards	Specific Gravity IH,O=1 Water Melting Point N/ Limits LEL y Volume Low	' 1.18 N/A 'A	Vapor Pressure (mm Hg UEL Upper	<sup>D</sup> N/A	
Print       N/A         Vapor       Density (Atr = 1)         Solubility       in Water         Completely         Appearance         and Odor         Clear yellow liquid         SECTION 4 - FIRE & EXPLOSION DATA         Flash         Point         F. C. Used         Auto-Ignition         Extinguisher         Method         Product         Special Fire         Fighting Procedures         Product         Ot flammate         Unusual Fire and         Explosion Hazards	Specific Gravity IH,O=1 Reactivity IN Water Melting Point N/ e Limite LEL y Volume Lowe	' 1.18 N/A 'A	Vapor Pressure (mm Hg UEL Upper	₽ <u>N/A</u>	
Point       N/A         Vapor       Density (Atr = 1)         Solubulity       in Wester         Completely       A         Appearance       and Odor         Clear yellow liquid       SECTION 4 - FIRE & EXPLOSION DATA         Flash       P. C. Used         Point       F. C. Used         Auto-Ignition       Extinguisher         Temperature       Middlit         Special Fire       Product         Unusual Fire and       Explosion Hazards	Specific Gravity IH,O=1 Water Melting Point N/ Limits LEL y Volume Low	' 1.18 N/A 'A	Vapor Pressure (mm Hg UEL Upper		

- IWE 7044

QUICK IDENTIFIER Common Name (used on label and list) 12

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sebility Unstable	L'unditions to Avoid Avoit	d contact with	oxidizers/acida	
A n'ompatability feterisis Lo Avoidi	<u>5 10</u> + 1		¥ () ÷ 34-9-8 <del>X 8_1 X 4_1</del> X + 34 X	······································
				<u></u>
azardous Acomposition Product				
lazardous Mi	y Uccur Conditions			······
olymerization will N				
	·····			
SECTION 6 - H	EALTH HAZAR	:DS -		
. Acute		2. Chronic		
igns and symptoms of Exposure				
	<u> </u>			
Medical Conditions Ge	eraliy			
Agenevated by P. spont	Harmfull	if swallowed,	Avoid breathing	vapors, avoid
contact	with eyes, s	kin, clothing		OSHA Yes 11
or Potential Carcinoger	P	rogram No 🗶	Monographa No 🗶	No 🗙
Emergency and First Aid Procedures	After any e	xposure wash pr	omptly and thore	oughly with water.
, If produ	ct gets into	eyes-flood eye	s with cool. cle	an water immediate
1. in	alation		me	dical attention.
ROUTES V	62			
$\overline{OF}$ $\left(\frac{1}{3}\right)$	<u>الم</u>			
ENTRY / Stat				
/ <del>.</del>	restion			
SECTION 7 - S	PECIAL PRECAL	TIONS AND SPILL	FAK PROCEDURES	·
Precautions to be Take				
in Handling and Stora	•			
Other Precautions K	eep containe	r closed when r	<u>ot in use.</u>	· · · ·
Steps to be Taken in C Material is Heleased o	Spilled Product	te ecluble in	water and should	t he fluched with a
		<u>, 13 SOLUDIE IN</u>	water and should	I DE IIUSNEU WIUN C
Quantitit	es of water,	• ••••••••••••••••••••••••••••••••••••	<u></u>	······································
Methods (Consult fede	ai, state, and local regula	Product ca	in be removed fro	om drum with standa
methods	used by drun	a reconditioners	3	
SECTION 8 -	SPECIAL PROT	ECTION INFORMAT	ION/CONTROL MEAS	URES
Respiratory Protection				
(Specify Type)	none		Sac	
ventilation .	Exhaust	Mechanical (Cieneral)	Special	
Protective Gloves minh	er	E) Pr	rotection everogeles	s/face shield
	<u></u> .	<u> </u>		
Other Protective Clothing or Equipment				
Other Protective Clothing or Equipment Wurk/Hygienic Practi				

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#### P.D. BOX 2200 • HIGHWAY 52 N.W. • WEST LAFAYETTE, INDIANA 47906 • PHONE: 317-463 2511 • TELEX: 27-9428 • CABLE: GLAKCHEM LAFAYETTE

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act of 1970 and shall not be used for any other purpose. Use or dissemination of all or any part of this information for any other purpose may result in a violation of faw or constitute grounds for legal action.

	SECT	ON I	]	
MANUFACTURER'S NAME		EMERGENCY TELEPHONE NO.		
GREAT LAKES CHEMICAL CORPOR	ATION	(404) 952-2581		
TRADE NAME AND SYNONYMS Bromi Cide	Tablets			
CHEMICAL NAME AND SYNONYMS 1-Bromo-3-chloro-5,5-dimethylhydant	oin			
CHEMICAL FAMILY Halogenated hydantoin		FORMULA C5H6BrCIN202 CAS#126-06-	7	
SECTION	N II - HAZAR	DOUS INGREDIENTS		
COMPONENT	*	HAZARD DATA		
	1- 92.5	TLV not established		
hydantoin	1- 52.5	Bromicide <sup>®</sup> Tablet is an active		
Inert ingredients	7.5	Corrosive, causes eye damage skin irritation.	and	
SE	CTION III - P	HYSICAL DATA		
BOILING POINT (*F.)	Not Available	SPECIFIC GRAVITY (H20=1) AV	Not ailable	
VAPOR PRESSURE (mm Hg.)	52	Melting Point (°F) (145-150°C) 29	3-302	
VAPOR DENSITY (AIR-1)	II			
SOLUBILITY IN WATER, g/100 g at 77°F	0.15			
APPEARANCE AND ODOR White table	ts with	faint halogen odor.		
SECTION IV	- FIRE AND	EXPLOSION HAZARD DATA		
FLASH POINT (Method used) Not Applic	able	FLAMMABLE LIMITS Not Applicable	<del></del>	
EXTINGUISHING MEDIA Water			•	
SPECIAL FIRE FIGHTING PROCEDURES , In fir or bro phosph	es fueled h mine. Wear ate fire es	by other materials may release hydrogen br self-contained breathing apparatus. Amm stinguishers should not be used.	omide Onium	
UNUSUAL FIRE AND EXPLOSION HAZARDS	-box mate	Tablets may SI	older	

for prolonged periods emitting a dense black smoke.

SECTION V · HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

None\_established.

Toxicity The combined oral  $ID_{50}$  in rats is 1.39 g/kg. The acute dermal toxicity is greater than 2.0 g/kg for both male and female rabbits. No signs of systemic toxicity were observed. The primary skin irritation index is calculated to be 6.1. The material is considered to be corrosive to the skin. Contact with dilute solution (0.1% or less) is non-irritating to the eyes or skin.

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- CONTINUED -

#### SECTION V - HEALTH HAZARD DATA (cont.)

EFFECTS OF OVEREXPOSURE The material can cause irreversible eye damage, skin irritation and irritation to nose and throat. The effects of long-term, low-level exposures have not been determined. Safe handling on a long-term basis should minimize repeated acute over exposures.

#### EMERGENCY\_AND FIRST AID PROCEDURES

If swallowed, food bread soaked in mulk, followed by olive oil or cooking oil. Do not induce vomiting or give anything by mouth to an unconscious person. Call a physician immediately. In case of skin contact, wash thorowonly with soap and water. In case of eye contact, flush eyes with water for 15 minutes; obtain medical assistance. Wash contaminated clothing before reuse.

		S	ECTIO	N VI - RI	EACTIVITY DAT	A		
STABILITY	UNSTABLE		co Dx	NDITIONS	s mix with anything but water.			
	STABLE	x						
INCOMPATIBILITY	Organics	and any other	readi	ly oxidi	Table materials	(strong reducing ag	ents).	
HAZARDOUS DECO Hydrogen bi	MPOSITION COMIDE,	bromine,	hyð	lrogen	chloride,	chlorine may	, be released.	
HAZARDOUS		MAY OCCUR			CONDITIONS TO	None		
POLYMERIZATION		WILL NOT OCC	UR	x			_	

#### SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Sweep up spilled material and place in a clean, suitable container. Avoid contact with skin, eyes, or clothing. Avoid inhalation of dusts. Wash area of spill with large amounts of water.

WASTE DISPOSAL METHOD

Wastes resulting from the use of this product may be disposed of on site or at an approved disposal facility. Do not reuse empty container. Triple rinse the container (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerat:. Burn only if allowed by state and local authorities. If burned stay out of smoke.

	SECTION VIII - SPECIAL P	ROTECTION INF	ORMATION	· <u> </u>
RESPIRATORY PR	mask essential where dusti	.ng may occ	ur.	
VENTILATION	LOCAL EXHAUST Pecommencad where cust	SPECIAL	None	
	MECHANICAL Use for general area co	ntrol.	OTHER	None
PROTECTIVE GLC	Essential	EXE PROJECTION	chemical	safety goggles.
OTHER PROTECT	IVE EQUIPMENT Clothing designed	l to minimi	ze skin	contact.

#### SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Keep product dry in tightly closed container when not in use. Store in a cool, dry, well ventilated area away from heat, open flames, organic chemicals and sunlight. Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. OTHER PRECAUTIONS Transfer contents only to clean and dry containers. Always replace the

Transfer contents only to clean and dry containers. Always replace the cover.

The information supplied above is presented in good faith and has been derived from sources believed to be reliable. However, no warranty, express or implied is extended regarding its accuracy or the results to be obtained from its use. Since conditions of use are beyond our control all risks are assumed by the user.

GLK 138 1M 10/75

12/83 Rev. 9/84

Material Salety Data Shee						
May be used to comply with OSHA's Hazard Communication Standard - 290 FR 1910–1200 Standard must be consulted for specific requirements	-					
SECTION 1 -						
Name Industrial Water Engineerir	പ്, Inc	• 1				
Addream 2300 Buena Vista SE #135		Emergency Telephane No.	(505)	842-12	216	
City, State, and ZIP Albuquerque, NM 87106		Other Information Calls				
Signature of Person Responsible for Preparation (Optional)		Date Prepared				
SECTION 2 - HAZARDOUS INGREDIENTS/IDE	NTITY					
Hazardous Component(a) (chemical & common nameta))	USHA PEL	ACGIH TLV	Other Ex Limits	posure	्र (optional)	
Polyoxyethylene(dimethyliminio)						
ethylene(dimethyliminio) ethylene						
dichloride			_		30%	
inert ingredients	_		-		70%	
		· · · · · · · · · · · · · · · · · · ·				
SECTION 3 - PHYSICAL & CHEMICAL CHARACT	TERISTICS					
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Rolling Point above 212	TERISTICS Specific Gravity IH,0=	5 1.08		por essure imm Hg	same .	8.5
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Boling Point above 212 Vapor Density (Air = 1)	TERISTICS Specific Gravity IH,0=	5 1.08	Va Pr	por essure imm Hg	same .	83
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Bailing Pointabove_212 Vapor Density (Air = 1) Solubility in Watermiscible	TERISTICS Specific Gravity IH,O= Reactivity in Water	5 1.08 miscible	Va Pr	por essure imm Hg	3 same	83
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Boling Point above 212 Vapor Density (Air = 1) Solubility in Watter miscible Appresence and (Mor clear brown liquid	TERISTICS Specific Gravity IH,O= Reactivity in Water Melting Point	5 miscible none	Va Pr	por essure imm Hg	Bame	<u>83</u>
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Boling Point above 212 Vapor Density (Air = 1) Solubility in Watter miscible Appearance and (blow clear brown liquid SECTION 4 - FIRE & EXPLOSION DATA	TERISTICS Specific Gravity IH,O= Reactivity in Water Melting Point	5 miscible none	Va Pr	por essure imm Hg	Bame	83
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Boiling Point above 212 Vapor Density (Air = 1) Solubility in Water miscible Apprearance and (blor clear brown liquid SECTION 4 - FIRE & EXPLOSION DATA Flash Point 275 :: C. Used tag lip bue on flammable in Air 7 b	TERISTICS Specific Gravity IH,O= Reactivity in Water Melung Point le Limita L.E by Volume Lou	miscible none	UEL.	por essure (mm Hg	same	8 S
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Boiling Point above 212 Vapor Density (Air = 1) Solubility in Water miscible Appearance and (Mor clear brown liquid SECTION 4 - FIRE & EXPLOSION DATA Flash Method Flammable in Air 2 to Auto-Ignition Extinguisher Temperature Media Water for	TERISTICS Specific (iravity (H,O= Reactivity in Water Melting Point le Limita LE by Volume Low	<pre>     1.08     miscible     none    </pre>	UEL. UEL. Umma DI chemi	por essure imm Hg	<sup>1</sup> Same	8 S
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Rolling Point above 212 Vapor Density (Air = 1) Solubility in Water miscible Apprearance and Other clear brown liquid SECTION 4 - FIRE & EXPLOSION DATA Flash Method Flammabl Point 275 C. Used tagliabue oc Auto-Ignition Extinguisher Temperature Media Water fo Special Fire Fighting Procedures none	TERISTICS Specific (iravity (H,O= Reactivity in Water Melting Point le Limita LE by Volume Lo DIE , CO2 ,	miscible none ""not fla or dry	UEL. UEL. Umma DI chemi	por essure imm Hg	<sup>1</sup> Same	8 S
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Bouling Point	TERISTICS Specific (iravity (H <sub>1</sub> O)= Reactivity in Water Melting Point le Limita LE by Volume Loo	miscible none	UEL. UEL. Umma DI chemi	por essure imm Hg	<sup>1</sup> Same	8 S
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Bouing Point above 212 Vapor Density (Air = 1) Solubility in Water miscible Appearance and (Mor clear brown liquid SECTION 4 - FIRE & EXPLOSION DATA Flash Method Flammable in Air 3 to Auto-Ignition Extinguisher Temperature Media Water for Special Fire Fighting Procedures none Unusual Fire and Explosion Hazarda none	TERISTICS Specific (iravity (H <sub>1</sub> O)= Reactivity in Water Melting Point le Limita LE by Volume Loo DIE , CO2 ,	miscible none ""not fla or dry	UEL UEL Umma Di chemi	por essure imm Hg		a s
SECTION 3 - PHYSICAL & CHEMICAL CHARACT Rouling Point	TERISTICS Specific Gravity IH,O= Reactivity in Water Melting Point le Limita LE by Volume Lou DIE , CO2 ,	miscible none ""not fla or dry	UEI. UEI. UEI. Imma DI chemi	por essure imm Hg .e .cal	Same	83

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ncomputability Materials to Avoid	none		· · · · · · · · · · · · · · · · · · ·			
Jazardaus homosottum Producta		· · · · · · · · · · · · · · · · · · ·				
lazardous May () 'olymerization Will Not ()	Conditions Cour Conditions Cour X to Avoid					· · · · · · · · · · · · · · · · · · ·
SECTION 6 - HE	ALTH HAZA	KDS	2 Chronic			
Symptons of Exposure ha	rmful_if_	swallowed	. Not nor	nally i	ritatir	ng to skin.
11 Methical Conditions General Aggravated by Exposure	ritating	to <u>eyes</u> .				······································
Chemical Easted as Carcino or Potential Carcinogen	çen l	National Toxicology Program	Yes No	I A.R.C. Monographs	Yes	OSHA Yes i No i
Emergency and First Aid Provisiures — W8	ash from s	kin or ey	yes with p	lenty of	clean	cool water
ENTRY J Skin	ion					
SECTION 7 - SPE	CIAL PRECA No specia	UTIONS AN	DSPILL/LEA	K PROCEE	URES	•
OF ENTRY J Skin i Ingest SECTION 7 - SPE Precautions to be Taken in Handling and Storage	NO SPECIA	UTIONS AN	D SPILL/LEA tion neede wear goggl	K PROCED d. es.	URES	<u> </u>
OF ENTRY J Skin i Ingest SECTION 7 - SPE Precautions to be Taken in Handling and Storage Other Precautions Wear Steps to be Taken in Case Material is Released or Spi	No specia rubber glo	UTIONS AN 11 protec oves and with wate	DSPILL/LEA tion neede wear goggl r	K PROCEE d. es.	URES	<b>b</b>
UF ENTRY J Skin i tigest SECTION 7 - SPE Prevautions to be Taken in Handling and Storage Other Prevautions Wear Steps to be Taken in Case Material is Released or Spi Wante Disponal Methoda (Consult federal,	CIAL PRECA No specia rubber glo	UTIONS AN	D SPILL/LEA tion neede wear goggl r ult Local	K PROCEE d. es. Federa	URES	ر e regulatio
UF ENTRY J Skin i Ingent SECTION 7 - SPE Precautions to be Taken in Handling and Storage Other Precautions Wear Steps to be Taken in Case Material is Released or Spi Waste Dispussi Methods (Consult federal, SECTION 8 - SP	CIAL PRECA No specia rubber glo lud flush u state, and heal regu ECIAL PRO	UTIONS AN 1 protec oves and with wate Intimma Cons FECTION IN	D SPILL/LEA tion neede wear goggl r ult Local,	K PROCEI d. es. Federa	URES	e regulation RES
UF ENTRY J Skin i Ingeni SECTION 7 - SPE Precautions to be Taken in Handling and Storage Other Precautions Wear Precautions Wear Precautions Wear Steps to be Taken in Case Material is Released or Spi Wante Dispunal Methoda (Consult federal, SECTION 8 - SP Respirators Protection Specia Type)	CIAL PRECA No specia rubber glo lied flush u state, and heral regu ECIAL PRO	UTIONS AN 1 protec oves and with wate with wate Mitimum Cons FECTION IN not requi	D SPILL/LEA tion neede wear goggl r ult Local FORMATION red	K PROCEI d. es. Federa	URES	e regulatio
UF ENTRY J Skin i Ingeni SECTION 7 - SPE Precautions to be Taken in Handling and Storage Other Precautions Wear Steps to be Taken in Case Material is Released or Spi Waste Disposal Methods (Consult federal, SECTION 8 - SP Respirators Protection Specia Type) Ventilation	CIAL PRECA No specia rubber glo libed flush w state, and local regu ECIAL PRO	UTIONS AN 1 protec oves and with wate with wate Intimma Cons FECTION IN not requi normal	D SPILL/LEA tion neede wear goggl r ult Local, IFORMATION red Mechanical (tioneral)	K PROCEI d. es. Federa I/CONTRO	URES	e regulatio
UF ENTRY J Skin i Ingent SECTION 7 - SPE Precautions to be Taken in Handling and Storage Other Precautions Wear Precautions Wear Precautions Wear Steps to be Taken in Case Alaterial is Released or Spi Maste Dispussi Methods (Consult federal, SECTION 8 - SP Respirators Protection Protective Glaves Other Protective Clothing or Fluoriment	CIAL PRECA No specia rubber glo lied flush to state, and heral regu ECIAL PRO Local Fahaust rubber	UTIONS AN al_protection oves_and with_wate intimmatic Cons FECTION IN not_requination normal	D SPILL/LEA tion neede wear gogj r ult Local FORMATION red Mechanical (formal)	K PROCEI d. es. Federa V/CONTRO	URES	e regulation

U.S. DEPARTMENT OF LABOR Occupational Safety and Health Administration

Forni Aubroved OMB No. 44-R1367

## MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME

FORMUL

EMERGENCY TELEPHONE NO. 505/344-7071

Industrial Mater Engineering, Inc. ADDRESS (Number, Street, City, State, and ZIP Code) 1050 University NE, Albuquerque, NM

1650 Dhiversity NE, Albuquerque, NM 87102 Chemical Name and synonyms

nitrite/borate

proprietary

TRADE NAME AND SYNONYMS

SECTION	N 11 -	HAZA	RDOUS INGREDIENTS		
PAINTS, PRESERVATIVES, & SOLVENTS	×	TLV (Units)	ALLOYS AND METALLIC COATINGS	×	TLV (Unit:
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS		1			
HAZARDOUS MIXTURE	ES OF	OTHER LI	DUIDE SOLIDE, OR CASES	×	TL . (Unit:
none					
			· · · · · · · · · · · · · · · · · · ·		
				1	

•	SECTION III -	PHYSICAL DATA	
BOILING POINT ("F.)		SPECIFIC GRAVITY (H20=1)	1 12
VAPOR PRESSURE (mm Hg.)	NA	PERCENT, VOLATILE	NA
VAPOR DENSITY (AIR=1)	NA	EVAPORATION RATE (=1)	NA
SOLUBILITY IN WATER	apprec	iable	
APPEARANCE AND ODOR clea	ar yellow li	quid	

SECTION IV - FIRE AND E	EXPLOSION HAZARD DAT	ГА	:
FLASH POINT (Method und)	FLAMMABLE LIMITS	امـا	Uei
EXTINGUISHING MEDIA			
SPECIAL FIRE FIGHTING PROCEDURES			
UNUSUAL FIRE AND EXPLOSION HAZARDS	· · · · · · · · · · · · · · · · · ·		

PAGE (1)

(Continued on reverse side)

Form OSHA Rev. May 72

		SE	ECTION	V .	HEAL	TH	HAZ/		 DATA		<u></u>	· · · · · · · · · · · · · · · · · · ·	· · · ·
THHESHOLD LINI	VALU		See Not	e ()	· · · · ·							· ·	
FFECTS OF OVER	EXPOS	Jric	Con Not	e (6	/ <u>·</u>								·
				<u>e (</u> 0	<u>/•</u>								
Call a docto Text Eoo: (1 collapse or	FINST A	f swallow For eye s	ved, do Lrritat	not ion, itien	indu flus t to	ice v ih w: fres	vomit ith w sh ai	ing. ater. r.	Const For	ilt Red breath	Cros	s First lstress	Aid ,
			SECTIO		L • 8		 T ! . ' [ 7	YDS	 				
STABILITY			7	1 con	5.1108	S TO							
		1A51E		<u>Ke</u>	ED E	ay :	from	heat	and of	en fla	ames.		
INCUMPATABILIT	Y INSIN	ists to an und)	<u>X</u>	<u> </u>							<u>`</u>		
HAZARDOUS DEC	01:2051	TION PEODU	Leep	away		n st: 	rong	0X10	izer ci		15.		
	~		Cart	ם תסכ 	ionox:	LCe : Cor	VOITIO	Eing NSIG	ITOM : AVUID	Incompi		Cmbust1	on.
HAZAROOUS POLYMERIZATION	N	MAY OCCUI	R	1		ł							
WILL NOT OCCUR X						<u>,</u>	- <u></u>						
		WILL NOT O	occur		X								· · · · · · · · · · · · · · · · · · ·
		WILL NOT O	DCCUR		X								
		SECT	TON VI	 	X PILL	081		PROC	CEDUR	ES			
575P7 TO 26 TAP		SECT		I - S	X PILL	OR L	EAK	PRO	CEDUR	ES	or a'		
STEPS TO BE TAM (a) Clean i Davet in a	EN IN C L UP; Suice	SECT	TON VI	I - S LEASE SOLV	X PILL Vent	OR L Spitte	EAK	PRO(	CEDUR ping c	ES lothes c.)	or all	scrbent	
STEPS TO BE TAM (à) Clean i paper in a	EN IN C E UP; SUICE	SECT SECT (b) disp	TON VI	I - S LEASE SOLV	X PILL Yent	OR L SPILLE	-EAK eo ainin trasl	PROC ng wi n rec	CEDUR ping_c cpticl	ES lothes c.)	or all	oscrbent	
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TRECAUTIONS TO HE TAKEN IN HANDLING AND STORING Keep away from heat and open flames.

Consult Fire Protection Guide on Hazardous Chemicals NFPA #49 (10)

OTHER PALCAUTIONS

PAGE (2) •

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DURODI

### MATERIAL SAFETY DATA SHEET ...... Page 1 of 3

### IDENTIFICATION

Synonyms Methyl alcohol, wood alcohol, •carbinol CAS Name Methanol

I.D. Nos./Codes NIOSH Registry No. PC-14000 Wiswesser Line Notation Ql Manufacturer/Distributor E. I. du Pont de Nemours & Co., Inc. Address Wilmington, DE 19898 HAZARDOUS COMPONENTS

Material(s)

Methanol

#### PHYSICAL DATA

Boiling Point, 760 mm Hg 64.7°C (148.5°F) Specific Gravity @ 20°C 0.792

Vapor Density

(Air = 1)  $\sim 1.1$ 

% Volatiles by Vol.

100%AppearanceFormAppearanceLiquidClearpH Information

#### FIRE AND EXPLOSION DATA

Flash Point	Method
11°C (52°F)	TCC

Flammable Limits in Air, % by Vol.

Fire and Explosion Hazards Flammable. Flame is invisible in daylight. Methanol-water mixtures with 25% or more methanol are flammable.

Extinguishing Media Dry chemical, CO<sub>2</sub>, water spray, "alcohol" foam.

Special Fire Fighting Instructions Use water spray to cool tanks or containers.

The data in this Meterial Setety Data Sheet relates only to the specific meterial designated herein and does not relate to use in combination with any other meterial at in any process. Information set forth herein is furnished free of charge and is based on technical data that Du Pont believes to be reliable. It is intended for use by persons hering technical skill and at own discretion and nak. Since conditions of use are outside our control, we make no warrantee, express or implied, and assume no kability in connection with any use of this interme

Chemical Family Alcohol

CAS Registry No. 67-56-1

Product Information and Emergency Phone (302) 774-2421

Transportation Emergency Phone (800) 424-9300

#### Approximate %

100%

Melting Point  $-97.8^{\circ}C$  (-144°F) Vapor Pressure mm Hg @ 25°C = 138, @ 37.7°C = 220

Solubility in H<sub>2</sub>O

100%

Evaporation Rate (Butyl Acetate = 1)

@ 25°C ∿ 12.5

Color Odor Color less Faint Alcoholic Octanol/Water Partition Coefficient Log P = -0.82

Autoignition Temperature 385°C (725°F)

#### Lower 6.7%

Upper 36%

#### HAZARDOUS REACTIVITY

ilistability

#### Stable

Incompatibility Reacts vigorously with strong oxidizers, chromic anhydride, lead perchlorate, perchloric acids.

Decomposition Occurs from heat and reaction with materials above.

Polymerization Will not occur.

#### HEALTH HAZARD INFORMATION

Exposure Limits

OSHA TWA 200 ppm, 260 mg/m<sup>3</sup>. ACGIH TLV<sup>®</sup> (skin) 200 ppm, 260 mg/m<sup>3</sup>.

Routes of Exposure and Effects May be fatal or cause blindness if swallowed. Cannot be made nonpoisonous. Harmful if inhaled. May irritate eyes. Repeated contact may irritate skin. LD<sub>50</sub> (rats) = 12,900 mg/kg. LC<sub>50</sub> (rats) > 145,000 ppm.

First Aid

SEE ATTACHMENT.

#### **PROTECTION INFORMATION**

Ventilation Use or store only with adequate ventilation.

Personal Protective Equipment Chemical splash goggles, rubber gloves. In case of spills, emergencies, or other conditions with potential for vapor concentrations near exposure limits, use self-contained breathing apparatus, face shield, rubber clothing, as appropriate.

#### DISPOSAL PROCEDURES

Aquatic Toxicity

TLm 96: > 1000 ppm Spill Leak or Release Dike large spills. Flush spill area with plenty of water. Do not flush to sewer. Waste Disposal Dispose of in accordance with Federal, State & Local regulations. If approved, use incineration, on-site bio-oxidation or subsurface injection, or disposal contactor.

#### SHIPPING PRECAUTIONS

Transportation DOT Shipping Name - Methyl Alcohol DOT Hazard Class: Flammable liquid. STCC Code 49-092-30. UN No. 1230. IMCO Class 3. Shipping Containers Barge, railroad tank cars, tank trucks.

Storage Conditions Keep away from heat sparks & flame. Keep container tightly closed. Do not store or mix with strong oxidizers, chromic anhydride, lead perchlorate, or perchloric acid. Store in adequately ventilated area.

**REFERENCES AND ADDITIONAL INFORMATION** 

Avoid prolonged or repeated breathing of vapor. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.

For more information, refer to: Du Pont Methanol Data Sheet DATE: 10, Du Pont Methanol Properties, Uses, Storage & Handling Bulletin.



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#### page 3 of 3

2:

#### METHANOL MATERIAL SAFETY DATA SHEET ATTACHMENT

#### First Aid

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat.\_\_ Have patient lie down and keep warm. Cover eyes to exclude light. Call a physician. Never give anything by mouth to an unconscious person.

If inhaled, remove to fresh air. If not breathing, give artificial respiration; preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

In case of eye contact, flush with plenty of water for at least 15 minutes. Call a physician. For skin contact, flush with water.

	PAG
	METHANOL //
DESCRIPTION:	(Methyl Alcohol)
	Clear, Colorless Liquid; Slight Odor
	HAZARDS
	···
FIRE:	Flammable. May be ignited by heat, sparks or open flame.
	· · ·
EXPOSURE:	Vapor Harmful
THIS HAPPENS	DO THIS
SPIEL or LEAK	Shut off ignition. No smoking or flares. Keep people away. Shut off leak if without risk. Flush area with water spray.
FIRE	On small fire use dry chemical or carbon dioxide. On large fire use water spray or "alcohol" foam. Cool tank with water if exposed to fire.
EXPOSURE	Remove to fresh air.
· 4	

## U.S. EMPARTMENT OF EMOR Occupational Safety & Health Administration MATERIAL SAFETY DATA SHEET

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	وموقعه ومعافده	
SEC	CTION I	·
E. I. du Pont de Nemours & Co. (In	c.)	EMERGENCY TELEPHONE NO. (302) 774-7500
Wilmington, Delaware 19898 -		
eHydrochloric acid, muriatic acid		TRADE NAME AND SYNONYMS Hydrochloric Acid 22°
Mineral Acid	FORMULA	HCl

SECTION	П	HAZAR	DOUS INGREDIENTS		
PAINTS, PRESERVATIVES, & SOLVENTS	2	TLV (Units)	ALLOYS AND METALLIC COATINGS	*	TLV (Unitz)
PIGMENTS			BASE METAL		
CATALYST	1		ALLOTS		
VEHICLE	1		METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX	1	
ADDITIVES	1		OTHERS -		
OTHERS					
HAZARDOUS MIXTURES	S OF C	THER LIQ	UIDS, SOLIDS, OR CASES	5	TLV (Units)
<u>N.A.*</u>					
1					

SECTION III PHYSICAL DATA							
BOILING POINT CF.3	144	SPECIFIC GRAVITT IN20= 1)		1.179			
VAPOR PRESSURE (mm Ha.)	87	PERCENT VOLATILE BY VOLUME (%)		100			
VAPOR DENSITY (AIR=1)	1.27	(buty) acetate = 1)	greater	than 1			
SOLUBILITY IN WATER	complete						

Clear. colorless to light vellow furning liquid with a pungent odor

SECTION IV FIRE	AND EXPLOSION HAZARD D	ATA	<u> </u>
FLASH POINT (Method used)	FLAUMABLE LIMITS	Lei	Uel
	<u> </u>	1	<u>!</u>
Water, dry chemical, carbon di	ioxide, foam		
SPECIAL FIRE FIGHTING PROCEDURES Neutralize with chemically basi	c substances such as soda	ash or slake	ed lime.
Wear full protective clothing.	Cool tank with water if exp	osed to fire	•
Contact with common metals pr	oduces hydrogen gas which	n may form	
explosive mixtures with air.		. <u> </u>	
* not applicable			

#### NOTICE FROM DU PONT

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not

	53		V HEALT	H HAZARD DATA
<u> </u>	maximum elio	wable	<u>concentra</u>	tion according to ACGIH)
<u>Causes</u>	burns. Inhala	ation of	fumes re	sults in couching and choking
sensati	o <b>n.</b>			
Flush s	kin or eyes with	th plen	ty of wate	er for at least 15 minutes while removin
contam	inated clothing	and sh	ioes. Fo	r inhalation, leave contaminated area.
If not b	reathing apply	artific	ial respi	ration, oxvgen. Call a physician.
	•	SECTI	<u>DN VI R</u>	EACTIVITY DATA
STABILITY	UNSTABLE		CONDITION	
	STABLE	X		· · · · · · · · · · · · · · · · · · ·
COTTOS	(Noterials to avoid) ive to most me	etals wi	ith evolut	ion of hydrogen gas.
HAZARDOUS DEC	en chloride va	pors, 1	nydrogen	•
HAZARDOUS	MAY OCCU			CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT	DCCUR	X	
		•		
	SECT	ION VI	SPILL (	DR LEAK PROCEDURES
STEPS TO BE TAK	N IN CASE NATERIAL I	S RELEASED	Stav 110	wind of spill If pecessary to enter spil
0700		fined h		
area. v	VEAL SELL COULS		roathing r	protective and full protective clothing
includi	a hosta	Incu Di	reathing a	pparatus and full protective clothing
includi WASTE DISPOSAL	ng boots.			pparatus and full protective clothing
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includi waste Disposat Flush t neutral AESPIRATORY PRO NONE IC VENTILATION PROTECTIVE GLO UNTER PROTECTI RUDDET GAL PRECAUTIONS TO PROTECTIVE GLO DIMER PROTECTI DIACES OTHER PRICAUTI Wash C heat. A-7985	SECTION SECTION SECTION SECTION SECTION SECTION SECTION Maintain ac Maintain ac Maintain ac Michanical (G Unknown Ves r or plastic co Ves r or plastic co Ves r or plastic co Set Taken in mandum against physi Separated from Never use pre S For more Du Pon	vill s vill s vill s dequate arrall pated gi apron ECTION cal dan om all re-use ssure t e inform t Hydro	applied t applied t lime bef PECIAL P ventilation ventilation loves rubber IX SPEC nage. Stop oxidizing c. Keep of o empty. nation re ochloric A	opparatus and full protective clothing         o entire spill.       Washings should be         ore discharging to a sewer.         ROTECTION INFORMATION         on       setteration acid vapor i         air at 10 ppm or less.         ore in cool, open or well-ventilated         materials.       Keep container closed.         containers out of sun and away from         fer to:       5/         Acid Bulletin A-76719

 M A T E R I A L S A F E T Y D A T A S H E E T PAGE: 1

 DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

 EFFECTIVE DATE: 20 OCT 78
 PRODUCT CCDE: 21100

 PRODUCT NAME: DIETHANOLAHINE
 MSD: 0069

INGREDIENTS (TYPICAL VALUES-NOT SPECIFICATIONS)

DIETHANDLAHINE HIN.

SECTION 1

PHYSICAL DATA

: X

: 99.0 :

BOILING POINT:514F: SOL. IN WATER: COMPLETELY MISCIBLE.VAP PRESS:LOW: SP. GRAVITY:1.08 & 30/4CVAP DENSITY (AIR=1):----: X VOLATILE BY VOL: NOT AFPLICABLEAPPEARANCE AND ODOR:COLGRLESS.SL. AMMONIACAL LIQUID.

SECTION 2 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 342F: FLAMMABLE LIMITS (STP IN AIR)METHOD USED: PMCC: LFL: NOT DETER. UFL: NOT DETER.EXTINGUISHING MEDIA: WATER FOG, ALCCHOL FOAM, CO2. DRY CHEMICAL.SPECIAL FIRE FIGHTING EQUIPMENT AND HAZARDS: NONE.

SECTION 3

REACTIVITY DATA

STABILITY: WILL IGNITE IN AIR AT 1224F. INCOMPATIBILITY: OXIDIZING MATERIAL. HAZARDGUS DECOMPOSITION FRODUCTS: ----HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION 4 SPILL, LEAK, AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS (USE APPROPRIATE SAFETY EQUIPMENT): SOAK UP WI Absorbent material. Scoop into druhs. Disposal method: Eurn according to Federal, state and local regulations.

SECTION 5

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HEALTH HAZARD DATA

INGESTION: LOW SINGLE DOSE ORAL TOXICITY; LD50 (GUINEA PIGS) IN THE RANGE OF 2000 MG/KG, RAT 1820 MG/KG.

EYE CONTACT: MAY CAUSE SEVERE PAIN. IRRITATION AND INJURY. SKIN CONTACT: SINGLE SHORT CONTACT - NO IRRITATION. REPEATED PROLONGED EXPOSURE - UP TO MODERATE IRRITATION. EVEN A MINOR BURN.

SKIN ABSORPTION: NOT LIKELY TO BE ABSORBED IN ACUTELY TOXIC AMOUNTS.

(CONTINUED ON PAGE 2 ) (R) INDICATES A REGISTERED OR TRADEMARK NAME OF THE DOW CHEMICAL COMPANY MATERIAL SAFETY DATA SHEET PAGE: 2 DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

EFFECTIVE DATE: 20 OCT 78 PRODUCT (CONT D): DIETHANOLAMINE

PRODUCT CODE: 21100 MSD: 0069

SECTION 5 HEALTH HAZARD DATA (CONTINUED)

INHALATION: DOW INDUSTRIAL HYGIENE GUIDE IS 3 PPM. EFFECTS GF OVEREXPOSURE: BAD ODOR AND IRRITATION OF NOSE AND EYES.

SECTION 6 FIRST AID--NOTE TO PHYSICIAN

FIRST AID PROCEDURES:

EYES: IRRIGATE WITH FLOWING WATER IMMEDIATELY AND CONTINUOUSLY FOR 15 MINUTES. REFER TO MEDICAL PERSONNEL.

SKIN: IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN. WASH CLOTHING BEFORE REUSE. DISCARD CONTAMINATED SHOES.

INHALATION: REHOVE TO FRESH AIR IF EFFECTS OCCUR. CALL PHYSICIAN AND/OF TRANSPORT TO MEDICAL FACILITY.

INGESTION: IF SWALLOWED. INDUCE VOMITING IMMEDIATELY BY GIVING TWO GLASSES OF WATER AND STICKING FINGER DOWN THROAT. CALL A PHYSICIAN. (NEVER GIVE ANYTHING EY MOUTH TO AN UNCONSCIOUS PERSON). NOTE TO PHYSICIAN:

EYES: MAY CAUSE CORNEAL INJURY OR PURN. STAIN FOR EVIDENCE OF CORNE. INJURY. IF CORNEA IS PURNED. INSTILL ANTIBIOTIC STEROID PREPARATION FREGUENTLY. CONSULT OPHTHALMOLOGIST.

SKIN: MAY CAUSE MODERATE IRRITATION. MAY CAUSE BURN. TREAT AS ANY CONTACT CERMATITIS. IF BURN IS PRESENT, TREAT AS ANY THERMAL BURN.

RESPIRATORY: MAY CAUSE MODERATE IRRITATION. ADMINISTER OXYGEN IF AVAILABLE. BRONCHODILATORS. EXFECTORANTS. AND ANTITUSSIVES MAY BE OF HELP.

ORAL: LOW TO MODERATELY TOXIC.

GENERAL: HUMAN EFFECTS NOT ESTABLISHED. CONSULT STANDARD LITER-ATURE. NO SPECIFIC ANTIDOTE. TREATMENT BASED ON THE SOUND JUDGMENT OF THE PHYSICIAN AND THE INDIVIDUAL REACTIONS OF \_THE PATIENT.

SECTION 7 SPECIAL HANDLING INFORMATION

VENTILATION: RECOMMEND CONTROL OF VAPORS TO SUGGESTED GUIDE. RESPIRATORY PROTECTION: NONE NORMALLY NEEDED. NIOSH APPROVED RESPIRATORY PROTECTION REGUIRED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL.

PROTECTIVE CLOTHING: CLEAN, BODY-COVERING CLOTHING. IN ADDITION, IMPERVIOUS GLOVES, BOOTS, APRON DEPENDING UPON THE EXTENT AND SEVERITY OF EXPOSURE LIKELY.

EYE PROTECTION: CHEMICAL WORKERS GOGGLES. EYE FOUNTAIN AND WASHING FACILITIES AT OR NEAR WORK AREA.

(CONTINUED ON PAGE 3 ) (R) INDICATES A REGISTERED OR TRADEMARK NAME OF THE DOW CHEMICAL COMPANY MATERIAL SAFETY DATA SHEET PAGE: 3 DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

EFFECTIVE CATE: 20 OCT 78 PRODUCT (CONT®D): DIETHANOLAMINE PRODUCT CODE: 21100 MSD: 0069

SECTION 8 SPECIAL PRECAUTIONS AND ADDITIONAL INFORMATION

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: AVOID EYE AND PROLONGED SKIN CONTACT. AVOID BREATHING VAPORS IF GENERATED. ADDITIONAL INFORMATION: -----

LAST PAGE

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MATERIAL SAFETY DATA SHEET PAGE: 1DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400EFFECTIVE DATE: 11 JUN 79PRODUCT CODE: 07666PRODUCT NAME: AMBITROL (R) FL COOLANTMSD: 0584

INGREDIENTS (TYPICAL VALUES-NOT SPECIFICATIONS) : \*

ETHYLENE GLYCOL MIX INHIBITORS D. I. WATER DYE

SECTION 1

PHYSICAL DATA

BOILING POINT: 229F, 109C : SOL. IN WATER: COMPLETELY MISCIBLE VAP PRESS: APPROX. 2.5 MMHG @ 20C : SP. GRAVITY: 1.084 @ 60/60F, 16C VAP DENSITY (AIR=1): NOT APPLIC. : % VOLATILE BY VOL: APPROX. 99% APPEARANCE AND ODOR: RED LIQUID

SECTION 2 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NONE : FLAMMABLE LIMITS (STP IN AIR) METHOD USED: ---- : LFL: NOT APPLIC. UFL: NOT APPLIC. EXTINGUISHING MEDIA: NON-COMBUSTIBLE. SPECIAL FIRE FIGHTING EQUIPMENT AND HAZARDS: NONE

SECTION 3

REACTIVITY DATA

STABILITY: ----INCOMPATIBILITY: OXIDIZING MATERIAL HAZARDOUS DECOMPOSITION PRODUCTS: ----HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION 4 SPILL, LEAK, AND DISPOSAL PROCEDURES

- ACTION TO TAKE FOR SPILLS (USE APPROPRIATE SAFETY EQUIPMENT): SMALL SPILLS: COVER WITH ABSORBENT MATERIAL, SOAK UP AND SWEEP INTO A DRUM. LARGE SPILLS: DIKE AROUND SPILL AND PUMP INTO SUITABLE CONTAINERS. DISPOSAL METHOD: REPROCESS OR BURN IN PROPER INCINERATOR IN ACCORDANCE WITH LOCAL REGULATIONS.

SECTION 5 HEALTH HAZARD DATA

(CONTINUED ON PAGE 2 ) (R) INDICATES A REGISTERED OR TRADEMARK NAME OF THE DOW CHEMICAL COMPANY

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MATERIAL SAFETY DATA SHEET PAGE: 2 DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

EFFECTIVE DATE: 11 JUN 79PRODUCT CODE: 07666PRODUCT (CONT'D): AMBITROL (R) FL COOLANTMSD: 0584

SECTION 5

HEALTH HAZARD DATA (CONTINUED)

INGESTION: LOW SINGLE DOSE ORAL TOXICITY FOR ANIMALS. ETHYLENE GLYCOL IS MODERATELY TOXIC FOR HUMANS.

EYE CONTACT: UP TO MILD TRANSIENT IRRITATION, BUT NO CORNEAL INJURY EXPECTED.

SKIN CONTACT: PROLONGED CONTACT: SLIGHT IRRITATION; REPEATED EXPOSURE MAY CAUSE UP TO MODERATE IRRITATION, EVEN A BURN.

SKIN AESORPTION: NOT LIKELY TO BE ABSORBED IN TOXIC AMOUNTS. LOW IN TOXICITY BY THIS ROUTE.

INHALATION: ACGIH TLV FOR ETHYLENE GLYCOL IS 100 PPM (1978) AS VAPOR, 10 MG/M3 AS MIST.

EFFECTS OF OVEREXPOSURE: NOT KNOWN.

---- SECTION 6

FIRST AID--NOTE TO PHYSICIAN

FIRST AID PROCEDURES:

EYES: IRRIGATION OF THE EYE IMMEDIATELY WITH WATER FOR FIVE MINUTES IS GOOD SAFETY PRACTICE.

SKIN: IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN. WASH CLOTHING BEFORE REUSE. DESTROY CONTAMINATED SHOES.

INHALATION: REMOVE TO FRESH AIR IF EFFECTS OCCUR. CONSULT MEDICAL PERSONNEL.

INGESTION: IF SWALLOWED, INDUCE VOMITING IMMEDIATELY BY GIVING TWO GLASSES OF WATER AND STICKING FINGER DOWN THROAT. CALL A PHYSICIAN.

NOTE TO PHYSICIAN:

EYES: MAY CAUSE MILD IRRITATION. STAIN FOR EVIDENCE OF CORNEAL INJURY.

SKIN: MAY CAUSE MODERATE IRRITATION. WITH REPEATED CONTACT MAY CAUSE BURN. IF RASH IS PRESENT, TREAT AS ANY CONTACT DERMATITIS. IF BURN IS PRESENT, TREAT AS ANY THERMAL BURN.

RESPIRATORY: INJURY IS UNLIKELY.

ORAL: MODERATELY TOXIC.

SYSTEMIC: WITH ACUTE ETHYLENE GLYCOL OVEREXPOSURE (ORAL) ETHANOL ADMINISTRATION MAY BE INDICATED (SEE TOX OF DRUGS AND CHEMICALS -DEICHMANN AND GERARD, P. 258). KIDNEY MAY BE TARGET ORGAN WITH OVEREXPOSURE. TREATMENT BASED ON THE SOUND JUDGMENT OF THE PHYSICIAN AND THE INDIVIDUAL REACTIONS OF THE PATIENT.

SECTION 7 SPECIAL HANDLING INFORMATION

(CONTINUED ON PAGE 3 ) (R) INDICATES A REGISTERED OR TRADEMARK NAME OF THE DOW CHEMICAL COMPANY 2 -

LATERIAL SAFETY DATA SHEET PAGE: 3 DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

EFFECTIVE DATE: 11 JUN 79 PR PRODUCT (CONT'D): AMBITROL (R) FL COOLANT

PRODUCT CODE: 07666 MSD: 0584

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SECTION 7 SPECIAL HANDLING INFORMATION (CONTINUED)

VENTILATION: RECOMMEND CONTROL OF VAPORS OR MISTS OF ETHYLENE GLYCOL TO SUGGESTED GUIDE.

RESPIRATORY PROTECTION: NONE NORMALLY NEEDED. NIOSH APPROVED RESPIRATORY PROTECTION REQUIRED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. PROTECTIVE CLOTHING: CLEAN, BODY-COVERING CLOTHING. EYE PROTECTION: SAFETY GLASSES WITHOUT SIDE SHIELDS.

SECTION 8 SPECIAL PRECAUTIONS AND ADDITIONAL INFORMATION

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: AVOID SKIN AND EYE CONTACT. AVOID BREATHING VAPORS OR MISTS.

ADDITIONAL INFORMATION: REVISIONS 6/11/79 --- EXTINGUISHING MEDIA, INGESTION, EYE CONTACT, SKIN CONTACT, INHALATION, FIRST AID PROCEDURES, NOTE TO PHYSICIAN, VENTILATION, RESPIRATORY PROTECTION, PROTECTIVE CLOTHING, CENTIGRADE TEMPS ADDED.

LAST PAGE

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U.S. DEPARTMENT OF LABOR Occupational Safety and Health Administration Form Approved OME No. 44-R1387

## MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECT	
MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO. 840-
Occidental Chemical Company	(713) 629-3533 2769
ADDRESS (Number, Street, City, State, and ZIP Code) 2000 South Post Oak Foad, Houston, TX	77027
CHEMICAL NAME AND SYNONYMS See Section II Below	TRADE NAME AND SYNONYMS Oxy Ureabor
	FORMULA Mixture

SECTION II + HAZARDOUS INGREDIENTS							
PAINTS, PRESERVATIVES, & SOLVENTS	×	TLV (Units)	ALLOYS AND METALLIC COATINGS	1	TLV (Units)		
PIGMENTS			BASE METAL		•		
CATALYST This Section			ALLOYS This Section				
VEHICLE Not Applicable			METALLIC COATINGS Not Applicable				
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX				
ADDITIVES			OTHERS				
OTHERS							
HAZARDOUS MIXTURE	SOF	OTHER LI	DUIDS, SOLIDS, OR GASES	*	TLV (Units)		
Sodium Chlorate	_			30.	0		
Sodium Metaborate Tetrahydrat	te			66.	5		
5-Bramo-3-secbuty1-6-methylu	raci	1		1.	5		
Inert (water)				2.	0		

SECTION III - PHYSICAL DATA				
BOILING POINT ("F.) NOT	Apolicable		SPECIFIC GRAVITY (H20=1)	0.85
VAPOR PRESSURE (mm Hg.)	Not Applicat	le	PERCENT, VOLATILE	0
VAPOR DENSITY (AIR=1)	Not Applicat	le	EVAPORATION RATE	0
SOLUBILITY IN WATER	Moderate			
APPEARANCE AND OOOR	White granular flakes - no appreciable odor			

	Section to + FIRE AND E	APLUSIUN HAZARD DATA		
FLASH POINT (Method used) Not Applicable		FLAMMABLE LIMITS	Lel	Uei
EXTINGUISHING MEDIA	Water			
SPECIAL FIRE FIGHTING PP	Breathing apparatus s	uccested		
UNUSUAL FIRE AND EXPLO	IS OXIDIZING AGENT. A	woid contact with acids.	Auto	•

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SECTION V	<ul> <li>HEALTH</li> </ul>	HAZARD	DATA
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N/A LD50 Acute oral male albino rats 2.71 g/kg AVOID inhalation, ingestion, skin and eve contact. See Attached.

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EMERGENCY AND FIRST AID PROCEDURES See Attached: CALL PHYSICIAN

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			SECTIO	ON VI + REACTIV	ITY DATA	·
STABILITY UNST		STABLE		CONDITIONS TO AVOID CONTACTS with Acids		
		8LE	XX		Excessive Heat	•
INCOMPATABIL	JTY (Mare	riais to evoid)	·•	Acids	·	
HAZARDOUS D	ECOMPOS	ITION PRODU	ICTS	Chlorate portic	n will release oxygen	
HAZARDOUS POLYMERIZATION		MAY OCCU	R	CONDITIONS TO AVOID		
		WILL NOT OCCUR		XX		

#### SECTION VIL - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

May be collected by sweeping

WASTE DISPOSAL METHOD Material a non-selective weed killer. Do not discharge in waters reclaimed or to be used for irrigation.

	SECTION VIII - SPECIAL PI	OTECTION INFORMATION
RESPIRATORY PR	OTECTION (Specify Type) Standard du	st mask as needed.
VENTILATION	LOCAL EXHAUST NORMAL	SPECIAL
	MECHANICAL (General)	OTHER
PROTECTIVE GLOVES Recommended on damp skin		EYE PROTECTION Goggles recommended
OTHER PROTECT	VE EQUIPMENT	

SECTION IX - SPECIAL PRECAUTIONS

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PRECAUTIONS TO BE TAKEN IN MANOLING AND STORING Store in a dry cool area on pallets or skids. Avoid direct floor contact.

moisture, acids, oxidizable materials, contacts.

OTHER PRECAUTIONS Keep out of reach of children and animals. Avoid feed and foodstuff

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contamination.

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PAGE (2) GPO 930-340

#### PRODUCT: OXY UREABOR

<u>TOXICITY</u>: Acute oral  $LD_{50}$  for male albino rats is 2.71 gm/kg of body weight. Acute dermal  $LD_{50}$  for albino rabbits is greater than 10.0 gm/kg of body weight.

SYMPTOMS (if ingested): Symptoms due to borax are vomiting, gastrointestinal pain, central nervous system stimulation and an erythematous or macular rash. Symptoms due to chlorate are vomiting, gastrointestinal pain and diarrhea and pallor or cyanosis due to methogoglobin formation. Liver and kidney damage may occur associated with intravascular hemolysis. Jaundice may also occur.

RECOMMENDED TREATMENT (in event of accidental ingestion): Gastric lavage with warm water. Follow with cathartic dose of Epsom Salts or sodium sulphate. If symptoms of central nervous system stimulation occur or a skin rash is evident give 10% dextrose in water (or saline as fluid balance dictates). The dextrose should be continued at high intake both to include diuresis and because it has been reported to exert a "binding" effect on circulating borate ions. Peritoneal dialysis has been recommended if boron poisoning occurs. It seems likely that plasmaphoresis would be even more effective in ridding the blood stream of borate ions if it is available. Oxygen therapy should be used to combat the cyanosis and partial exchange blood transfusions may be required if methegoglobinemia exceeds 40%. The use of methylene blue is contraindicated since it catalyzes the reduction of chlorate to chlorite and increases the methemoglobinemic action of chlorate.

SYMPTOMS - SKIN EXPOSURE: The dry material is a mild irritant but can be dusted off readily. If applied as a wet paste (as in dermal toxicity studies) for several hours it causes erythema and edema with focal gray discolored areas which may proceed to superficial blisters or shallow ulcers.

TREATMENT - SKIN EXPOSURE: Dust off the loose material - wash with copious amounts of water and follow with an emollient lotion or cream if erythema occurs. Should eye exposure occur, thorough lavage with warm water is the treatment of choice followed by symptomatic treatment of the irritation. It is recommended that the patient be seen by his physician if there is severe ocular reaction or pain after the lavage is completed.

LITERATURE REFERENCE: Acute Intravenous and Intraperitoneal Toxicity Studies on Sodium Pentaborate Decahydrate and Sodium Borate Decahydrate, Easterday, O. D. and Hamel, H. Arch. Int. Pharmacodyn 143: 144-164 (1963).



MSD: 0597

KATERIAL SAFETY DATA SHEET PAGE: 1 DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

EFFECTIVE DATE: 11 JAN 82

PRODUCT CODE: 30478

. PRODUCT NAME: ETHYLENE GLYCOL (REGULAR)

INGREDIENTS (TYPICAL VALUES-NOT SPECIFICATIONS) : \* :

LETHYLENE GLYCOL (ESSENTIALLY)

: 100 :

SECTION 1 PHYSICAL DATA

BOILING POINT: 387.1F : SOL. IN WATER: COMPLETELY MISCIBLE VAP PRESS: 0.12 MMHG @ 25C : SP. GRAVITY: 1.1155 @ 20/20C VAP DENSITY (AIR=1): VERY LOW : \* VOLATILE BY VOL: ESSENTIALLY ZERO APPEARANCE AND ORDER: COLORLESS LIQUID - PRACTICALLY ODORLESS

SECTION 2 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 232F : FLAMMABLE LIMITS (STP IN AIR) METHOD USED: PENSKY MARTENS C.C. : LFL: 3.2% UFL: NOT DETER. EXTINGUISHING MEDIA: WATER FOG, ALCOHOL FOAM, CO2, AND DRY CHEMICAL. SPECIAL FIRE FIGHTING EQUIPMENT AND HAZARDS: NONE

SECTION 3

REACTIVITY DATA

STABILITY: ----INCOMBATIBILITY: OXIDIZING MATERIAL. HAZARDOUS DECOMPOSITION PRODUCTS: ----HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION 4 SPILL, LEAK, AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS (USE APPROPRIATE SAFETY EQUIPMENT): FLUSH WITH WATER. SOAK UP WITH ABSORBENT MATERIAL. DIKE TO CONTAIN TO PREVENT WATER POLLUTION.

DISPOSAL METHOD: SALVAGE, OR BURN AFTER CONSULTING WITH LOCAL AUTHORITIES. RECOVER WITH VACUUM TRUCK AND RETURN TO PLANT FOR REPROCESSING.

#### SECTION 5

#### HEALTH HAZARD DATA

INGESTION: LOW SINGLE DOSE ORAL TOXICITY FOR ANIMALS; MODERATE FOR HUMANS. EYE CONTACT: SLIGHT TRANSIENT IRRITATION. SKIN CONTACT: PROLONGED CONTACT: SLIGHT IRRITATION. SKIN ABSORPTION: ABSORBED THROUGH SKIN, BUT LOW IN TOXICITY BY THIS

(CONTINUED ON PAGE 2 ) (R) INDICATES A REGISTERED OR TRADEMARK NAME OF THE DOW CHEMICAL COMPANY
MATERIAL SAFETY DATA SHEET PAGE: 2 DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

EFFECTIVE DATE: 11 JAN 82PRODUCT CODE: 30478PRODUCT (CONT'D): ETHYLENE GLYCOL (REGULAR)MSD: 0597

SECTION 5 HEALTH HAZARD DATA (CONTINUED)

SKIN ABSORPTION: (CONTINUED)

ROUTE. LD50 RABBIT 1 G/KG. MAY BE A PROBLEM UPON GROSS PROLONGED CONTACT.

INHALATION: ACGIH TLV: 50 PPM CEILING AS A VAPOR; 10 MG/CU METER AS A PARTICULATE.

EFFECTS OF OVEREXPOSURE: DRUNKENNESS, CENTRAL NERVOUS SYSTEM DEPRESSION, NARCOSIS.

SECTION 6 FIRST AID--NOTE TO PHYSICIAN

#### FIRST AID PROCEDURES:

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EYES: IRRIGATION IMMEDIATELY WITH WATER FOR FIVE MINUTES IS GOOD -- SAFETY PRACTICE.---

SKIN: CONTACT WILL PROBABLY CAUSE NO MORE THAN IRRITATION. WASH OFF IN FLOWING WATER OR SHOWER. WASH CLOTHING BEFORE REUSE. DESTROY CONTAMINATED SHOES.

INHALATION: FAIREMOVE TO FRESH AIR IF EFFECTS OCCUR. CONSULT MEDICAL. HEATED MATERIAL, OR MISTS MAY BE HAZARDOUS.

INGESTION: IF SWALLOWED, INDUCE VOMITING IMMEDIATELY BY GIVING TWO GLASSES OF WATER AND STICKING FINGER DOWN THROAT. CALL A PHYSICIAN. NOTE TO PHYSICIAN:

EYES: MAY CAUSE MILD IRRITATION. STAIN FOR EVIDENCE OF CORNEAL INJURY.

SKIN: ACUTE EXPOSURE MAY CAUSE MILD IRRITATION. CHRONIC EXPOSURE MAY CAUSE MODERATE IRRITATION. MAY CAUSE BURN. TREAT AS ANY CONTACT DERMATITIS. IF BURN IS PRESENT, TREAT AS ANY THERMAL BURN. RESPIRATORY: DUSTS, VAPORS, OR MISTS MAY BE TOXIC IF PRODUCED. ORAL: LOW TO MODERATELY TOXIC.

SISTEMIC: OVER EXPOSURE MAY CAUSE LIVER DAMAGE, MAY CAUSE KIDNEY DAMAGE AND METABOLIC ACIDOSIS. ANESTHETIC OR NARCOTIC EFFECT MAY OCCUR. EARLY ADMINISTRATION OF ETHANOL MAY COUNTER THE TOXIC EFFECTS OF ETHYLENE GLYCOL. CONSULT STANDARD LITERATURE. TREATMENT BASED ON SOUND JUDGMENT OF PHYSICIAN AND THE INDIVIDUAL REACTIONS OF THE PATIENT.

#### SECTION 7 SPECIAL HANDLING INFORMATION

VENTILATION: RECOMMEND CONTROL OF VAPORS TO SUGGESTED GUIDE. RESPIRATORY PROTECTION: APPROVED ORGANIC VAPOR-TYPE RESPIRATOR REQUIRED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. PROTECTIVE CLOTHING: CLEAN, BODY-COVERING CLOTHING.

(CONTINUED ON PAGE 3 ) (R) INDICATES A REGISTERED OR TRADEMARK NAME OF THE DOW CHEMICAL COMPANY MATERIAL SAFETY DATA SHEET PAGE: 3 DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

. EFFECTIVE DATE: 11 JAN 82 PRODUCT (CONT'D): ETHYLENE GLYCOL (REGULAR) (CONTINUED) PRODUCT CODE: 30478 MSD: 0597

EYE PROTECTION: NOT NORMALLY NECESSARY.

SECTION 8 SPECIAL PRECAUTIONS AND ADDITIONAL INFORMATION

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: AVOID INGESTION. PRACTICE REASONABLE CAUTION AND PERSONAL CLEANLINESS. AVOID SKIN AND EYE CONTACT.

ADDITIONAL INFORMATION: 11 JAN 82 REVISED FROM 25 JUL 78 --SECTIONS 1, 5, 6 AND 7.

LAST PAGE (R) INDICATES A REGISTERED OR TRADEMARK NAME OF THE DOW CHEMICAL COMPANY

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESS OR IMPLIED, IS MADE.

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#### MATERIAL SAFET Y

(Approved by U.S. Separtment of Labor as Tessentially similar" to Form LS8-005-4)

EXXON CHEMICAL AMERICAS + P.O. BOX 3272, HOUSTON, TEXAS 77001 A division of EXXON CHEMICAL COMPANY, A Station of EXXON CORPORATION CONEXIT 7669

1-7669-10

PRODUCT

SECTION I - 1	IDENTIFICATION OF PHODUCT		
NUFACTURER'S NAME		EMERGEN	Y TELEPHONE NO.
EXXON CHEMICAL AMERICAS			
ORESS INumber, Street, City, State and ZIP Codas		1	713 - 870-6000
P. O. BOX 3272, HOUSTON, TEXAS 77001			
ADE NAME	CHEMICAL NAME		
CORFNET 1669 Andfoam	Not Applicable	e: blend of	materials
	Not int int	• Stend of	materials
Jiycol Suriaclant			
SECTION II-HAZARDO	OUS COMPONENTS OF MIXTUR	RES	
The precise composition of this product is proprietary information personnel to qualified Medical or Industrial Hygiene personnel as pri	A more detailed disclosure will be pro ivileyed information upon request in ca into mation upon request in ca	vided by Exxon M use of need for spec	idical of Industrial Hygiene life triatment.
Oxyalkylated glycol.			
	· · · ·		
			•
SECTION UL			
	TYPICAL PHYSICAL DATA		
PEARANCE AND ODOR	SPECIFIC GRAVITY		
Clear vellow ro dark brown liquid: b	ISPECIFIC GRAVITY	'/60°F(15.5'	°/15.5°C)
Clear yellow to dark brown liquid; b	SPECIFIC GRAVITY	/60°F(15.5°	°/15.5°C)
Clear yellow to dark brown liquid; b Diling Point (°F) Decomposes	ISPECIFIC GRAVITY	'/60°F(15.5'	°/15.5°C)
Clear yellow to dark brown liquid; b Diling POINT (°F) Decomposes	TYPICAL PHYSICAL DATA SPECIFIC GRAVITY 11aid 1.005 € 60° (BY VOLUME)	'/60°F(15.5' *-Negligibl	°/15.5°C)
Clear yellow to dark brown liquid; b Diling POINT (°F) Decomposes APOR PRESSURE <5 mm Hg 3 100°F/38°C	TYPICAL PHYSICAL DATA SPECIFIC GRAVITY 1.005 G 60° PERCENT VOLATILE (BY VOLUME) EVAPORATION RATE (n- BUTYL ACETATE = 1)	<pre>/60°F(15.5° *-Negligibl &gt; 0.5</pre>	°/15.5°C)
Clear yellow to dark brown liquid; b DILING POINT (°F) Decomposes APOR PRESSURE <5 mm Hg 3 100°F/33°C APOR DENSITY (A(R 1))	TYPICAL PHYSICAL DATA SPECIFIC GRAVITY 1.005 G 60° PERCENT VOLATILE (BY VOLUME) EVALORATION RATE (n-dutyL ACETATE = 1)	<pre>/60°F(15.5° *-Negligibl &gt; 0.5</pre>	°/15.5°C)
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Clear yellow to dark brown liquid; b Diling Point ( <sup>9</sup> F) Decomposes APOR PRESSURE <5 mm Hg 3 100°F/33°C APOR DENSITY (AIR 1) 1 DLUBILITY IN WATER Insoluble SECTION IV-FIRE	TYPICAL PHYSICAL DATA SPECIFIC GRAVITY 1.005 @ 60° PERCENT VOLATILE (BY VOLUME) EVALORATION RATE (n-aUTYL ACETATE = 1) 	<pre>2/60°F(15.5° *-Negligibl &gt;0.5</pre> E.P. Equal C. TA	e/15.5°C)
Clear yellow to dark brown liquid; b Diling Point (°F) Decomposes APOR PRESSURE <5 mm Hg 3 100°F/38°C APOR DENSITY (AIR 1) 1 DLUBILITY IN WATER Insoluble SECTION IV-FIRE LASH POINT (Method)	TYPICAL PHYSICAL DATA SPECIFIC GRAVITY 1.005 @ 60° PERCENT VOLATILE (BY VOLUME) EVALORATION RATE (n-dUTYL ACETATE = 1) -Components with than 212° F./100° AND EXPLOSION MAZARD DA FLAMMABLE LIMITS	<pre>/60°F(15.5° *-Negligibl &gt;0.5 E.P. Equal C. TA</pre>	2/15.5°C)
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Clear yellow to dark brown liquid; b Dicing Point (°F) Decomposes APOR PRESSURE <5 mm Hg 3 100°F/38°C APOR DENSITY (AIR 1) 1 DLUBILITY IN WATER Insoluble SECTION IV-FIRE LASH POINT (Meinod) >210°F/99°C (SETACC - ASTM D3278) TRE EXTINGUISHING MEDIA Extinguish preferentially with dry cher PECIAL FIRE FIGHTING PROCEDURES	TYPICAL PHYSICAL DATA SPECIFIC GRAVITY 1.006 @ 60° PERCENT VOLATILE (BY VOLUME) EVALORATION RATE (n-BUTYL ACETATE = 1) -Components with than 212°F./100° AND EXPLOSION MAZARD DA FLAMMARLE LIMITS (PERCENT BY VOLUME) mical, foam, waterspray	<pre>P/60°F(15.5° *-Negligibl &gt; 0.5 E.P. Equal C. TA or water f</pre>	2/15.5°C)
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any loss or damage that may occur from the use of this infor-

nor do we offer any warranty against µatent infringement.

our knowledge and belief, accurate and reliable as of the date com-

piled. However, no representation, warranty or guarantee is inside as

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	SECTION V - HEALTH HAZARD DATA
COREXIT 7669 ANTIES	m Vapor Concentration is negligible at workroom temperature.
	May cause skin the eye irritation. Aupors irritant to Acute (respiratory cases,
CFFELTS OF OVEREAPOSURE	CHRONIC Prolonged or receated skin contact may cause irritation.
EMERGENCY AND FIRST AND Flush eyes with the	PROCEDURES ney of water until irritation subsides. Wash skin with soap and wate
Remove to fresh air	. If not breathing, apply artificial respiration and CALL A PHYSICIA.
· · · · · · · · · · · · · · · · · · ·	

		551	CHON VI-REACTIVITY DATA
TABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	Y	NOT ADDIICIDIE
NCOMPATIBILI	TY (MATERIALS TO A	OID FOR PURPO	SEE OF TRANSPORT, HANDLING & STORAGE ONLY)
	Strong Oxi	dizing Agen	ts. May dissolve some plastics of rubber.
	Strong Oxi	dizing Agen	ta. May dissolve some plastics of Mubber.

SECTION VIL-SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Keep public away. Shut off source, if possible to do so safely. Advise authorities if substance has entered a watercourse, or sewer, or has contaminated soil or vegetation.

WASTE DISPOSAL (INSUBE CONFORMITY WITH LOCAL DISPOSAL REGULATIONS) Contain spilled liquid with sand or earth. Recover by pumping or with suitable absorben... Consult an expert on disposal of recovered material.

	SECTION VIII - PERSONAL PROTEC	TION INFOR	MATION				
RESPIRATORY PRO	TECTION Use approved respiratory protection mask if used in enclosed spaces	tion such	as alr-	anbt	lieu		
	LOCAL EXHAUST Usually not needed in open unconfined areas.	SPECIAL					
VENILATION	MECHANICAL (General) Explosion-proof ventilation equipment.	GTHER				······	
PROTECTIVE GLOV	emically-resistant gloves.	ECTION Chemin	al solas	ih go	ggles	i.	·
UTHER PROTECTION							
L							
·	SECTION IX - HANDLING AND STO	RAGE PREC.	AUTIONS				
PRECAUTIONS TO	SECTION IX - HANDLING AND STOP	RAGE PREC	AUTIONS				
PRECAUTIONS TO	SECTION IX - HANDLING AND STOP BE TAKEN IN HANGLING AND STORING BE Closed when not in use. Knep away fi	RAGE PREC	AUTIONS	and	<u></u>	flames.	  ;
PRECAUTIONS TO Acep contains not store no	SECTION IX - HANDLING AND STOP BE TAKEN IN HANGLING AND STORING er closed when not in use. Keep away fr ear flame, heat, or strong oxidants.	RAGE PREC.	AUTIONS	and	<u></u>	flames.	 D;
PRECAUTIONS TO Acep contains not store no other precauti	SECTION IX - HANDLING AND STOP BE TAKEN IN HANGLING AND STORING er closed when not in use. Keep away for ear flame, heat, or strong oxidants. DNS None	RAGE PREC.	AUTIONS sparks,	and	<u></u>	flames.	 ;
PRECAUTIONS TO Keep containe not store ne other precauti	SECTION IX - HANDLING AND STOP BE TAKEN IN HANGLING AND STORING er closed when not in use. Knep away fr ear flame, heat, or strong oxidants. ONS None	RAGE PREC.	AUTIONS sparks,	and	<u></u>	flames.	;

DATE OF ISSUE SEP 2 3 1973	APPHOLES BY: Lisnes as ther non
REVISED: SUPERSEDES	TITLE Director of Industrial Hygiene

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DESCRIPTION: ..... TECHNIHIB 7020 IS A SPECIALLY DESIGNED CORROSION - 1 INHIBITOR CONTAINING BOTH VOLATILE AND NON-VOLITILE FILM FORMING AMINES. THIS COMBINATION PROVIDES CORROSION PROTECTION AND ANTI-FOULANT PROPERTIES TO BOTH THE VAPOR AND LIQUID PHASES OF AQUEOUS SYSTEMS CONTAINING ETHANOLAMINES AND/OR GLYCOLS.

> TECHNIHIB 7020 IS INTENDED FOR USE IN AMINE AND GLYCOL SYSTEMS DOWNSTREAM OF THE STRIPPER STILLS TO PROVIDE CORROSION PROTECTION AND TO PREVENT DEPOSITION OF UNDESIRABLE COMPOUNDS IN THESE SYSTEMS.

> THE RECOMMENDED TREATMENT RATE OF TECHNIHIB 7020 IS 25 TO 50 PPM ON A CONTINUOUS BASIS. INTERMITTENT SLUG TREATING SCHEDULES SHOULD PROVIDE ENOUGH RESIDUAL OF THIS COMPOUND TO EQUAL THE CONTINUOUS AMOUNT DURING THE SAME TREATMENT TO PROVIDE EASY CONTROL OF PUMPING RATES, PERIOD. TECHNIHIB 7020 MAY BE DILUTED WITH WATER.

FORM: LIQUID COLOR: BROWN DENSITY: 8.1 LBS/GAL POUR POINT: 18<sup>0</sup>F 185<sup>0</sup>F FLASH POINT OPEN CUP: 92<sup>0</sup>F FLASH POINT CLOSED CUP: VISCOSITY 3 100°F: 54.0 S.U. 6.6 :Hq

TECHNIHIB 7020

STORE ANY ST

**INTERNATIONAL** 

na ana na Nana na ang Nang na na ang Nang na na na na Nang na na

APPLICATION:

**PROPERTIES:** 

HANDLING

1.4 PACKAGING:

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DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. IN CASE OF CONTACT, WASH WITH COPIOUS AMOUNTS DO NOT EXPOSE THIS COMPOUND TO OPEN FLAME OR OF WATER. HEAT.

TECHNIHIB 7020 IS NORMALLY SOLD IN 55 GALLON DRUMS OR IN BULK QUANTITIES.

PRODUCT

BULLETIN

UNICHEM		Date	Prepared 05/22/86
INTERNATIONAL	Superse	des Previous Sh	eet Dated 11/12/85
	I. PRODUCT II	DENTIFICATION	
Unichem International	707 N. Leech/P. EMERGENCY	0. Box 1499/Hol TELEPHONE NUMBE	bbs, New Mexico R (505) 393-775
Trade Name TECHNIHIE	3 7020		
Chemical Description			
	II. HAZARDOUS	INGREDIENTS	
Material			TLV (Units)
Noos			
Neither this product no 1910.1200 sources as ca	or its ingredients or its ingredients of the second s	ICAL DATA	or USHA Standard, Se
Neither this product no 1910.1200 sources as ca	or its ingredients or its ingredients of the second s	ICAL DATA	or USHA Standard, Se
Neither this product no 1910.1200 sources as ca Boiling Point, 760 mm Hg	III. PHYS	ICAL DATA	18°F
Neither this product no 1910.1200 sources as ca Boiling Point, 760 mm Hg Specific Gravity (H <sub>2</sub> O=1)	III. PHYS 212°F 0.972	ICAL DATA Freezing Point Solubility in Wa	18°F Soluble
Neither this product no 1910.1200 sources as ca Boiling Point, 760 mm Hg Specific Gravity (H <sub>2</sub> O=1) Appearance and Odor Amb	III. PHYS 212°F 0.972 21971 212°F	ICAL DATA Freezing Point Solubility in Wa	18°F ISoluble
Neither this product no 1910.1200 sources as ca Boiling Point, 760 mm Hg Specific Gravity (H <sub>2</sub> O=1) Appearance and Odor Amb IV.	III. PHYS 212°F 0.972 FIRE AND EXPLO	ICAL DATA Freezing Point Solubility in Wa No Odor DSION HAZARD DA	18°F 18°F ATA
Neither this product no 1910.1200 sources as ca Boiling Point, 760 mm Hg Specific Gravity (H <sub>2</sub> O=1) Appearance and Odor Amb IV. Flash Point (Test Method	III. PHYS 212°F   0.972   FIRE AND EXPLO	ICAL DATA Freezing Point Solubility in Wa No Odor DSION HAZARD DA	18°F 18°F Ater soluble
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Neither this product no 1910.1200 sources as ca Boiling Point, 760 mm Hg Specific Gravity (H <sub>2</sub> O=1) Appearance and Odor Amb IV. Flash Point (Test Method Extinguishing Media. Car water spray to cool fire-exp Special Fire Fighting Pr apparatus and full protectiv	III. PHYS 212°F    0.972  S Per to Brown Liquid FIRE AND EXPLO 92°F TCC bon Dioxide, Dry Ch osed containers. OCEDURES Firefi e clothing.	ICAL DATA Freezing Point Solubility in Wa No Odor DSION HAZARD DA memical, Water Spring Signers should wear	18°F ATA ay or Fog, Foam. Us self-contained brea

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Product

TECHNIHIB 7020

V. HEALTH HAZARD DATA

Threshold Limit Value Not Determined

Effects of Overexposure Prolonged skin contact will cause dryness and irritation. Ingestion may cause catharsis. Inhalation of mist may cause respiratory irritation. Eye contact will cause irritation.

Emergency and First Aid Procedures Eyes: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skin: Flush area with water. Wash with soap and remove contaminated clothing. Inhalation: Remove to fresh air. Apply artifical respiration if necessary. Ingestion: Call a physician. Do not induce vomiting. Dilute with water or milk.

VI. REACTIVITY DATA

Stability	Stable	x	Conditions	to Avoid	
-	Unstable				None

Incompatibility (Materials to Avoid)

Oxidizers

Hazardous Decomposition of Products

Oxides of Carbon and Nitrogen

Hazardous Polymerization May Occur Conditions to Avoid

VII. SPILL OR LEAK PROCEDURES

) Steps to be Taken if Material is Released or Spilled Provide adequate ventilati Remove sources of ignition. Contain and absorb spill.

Waste Disposal Method Dispose via a licensed waste disposal company. Follow loca state, and federal regulations.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type) Use air-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingredients.

Ventilation	Local Exhaust As ner	eded to prevent ulation of	Spec	ial None	
	Mechanical (General)	vapors above TLV	Other	r None	
Protective Glo	OVES Rubber	Eye Protect	ion	Safety Glasses, Face Shield	Goggles, and/or

Other Protective Equipment Overalls, Rubber Boots, Eyewash Stations, Safety Showers

IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing Store in cool, well-ventilated, low fire-risk area away from ignition sources and incompatible materials. Keep containers closed when not in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin Do not ingest.



Date \_\_\_\_\_ April. 1985

### MATERIAL SAFETY DATA SHEET

Page 1 of 6

Product Name:

# SCENTINEL® A

and the second second

PHILLIPS 66 COMPANY A SUBSIDIARY OF PHILLIPS PETROLEUM COMPANY Bartlesville, Oklahoma 74004

Emergency Phone Nos.

918-661-3865 (during business) 918-661-8118 (after hours)



WORLDWIDE

USA AND CANADA

OTHER COUNTRIES

# **PRODUCT IDENTIFICATION**

- Synonyms: Ethanethiol
- Chemical Name: Ethanethiol
- Chemical Family: Mercaptan
- Chemical Formula: C<sub>2</sub> H<sub>6</sub> S
- CAS Reg. No: 75-08-1
- Product No: MO2400

Product and/or Components Entered on EPA's TSCA Inventory: Yes X No

# HAZARDOUS COMPONENTS

	CAS	%	OSHA	ACGIH
Ingredients	Number	By Wt.	PEL	TLV
Ethyl Mercaptan	75-08-1	99 +	10 ppm	0.5 ppm
Related Mercaptans and Sulfides	NA	1	NE	NE

Page 2 of 6

# PERSONAL PROTECTION INFORMATION

Ventilation: Use adequate ventilation to control exposure below recommended levels.

Respiratory Protection: For concentrations exceeding the recommended exposure level, use NIOSH/MSHA approved air purifying respirator.

Eye Protection: Use safety glasses with side shields.

Skin Protection: Rubber, neoprene or vinyl gloves if liquid splashes could occur. Use protective garments to prevent excessive skin contact.

Note: Personal protection information shown above is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

# HANDLING AND STORAGE PRECAUTIONS

Avoid inhalation and skin and eye contact. Wear protective equipment and/or garments described above if exposure conditions warrant. Launder contaminated clothing before reuse. Store in cool, dry, well-ventilated area. Protect from sources of ignition. Provide means of controlling leaks and spills. Bond and ground during liquid transfer. Use product in a closed system.

# REACTIVITY DATA Stability: Stable I Unstable I Conditions to Avoid: Incompatibility (Materials to Avoid): Oxygen and strong oxidizing materials.

Hazardous Polymerization: Will not Occur 🛛 May Occur 🗌 Conditions to Avoid:

Hazardous Decomposition Products:Sulfur oxides released when exposed to high temperatures or when burned.

Page 3 of 6

# HEALTH HAZARD DATA

RECOMMENDED EXPOSURE LIMITS: OSHA PEL 10 ppm; ACGIH TLV 0.5 ppm.

ACUTE EFFECTS OF OVEREXPOSURE:

EYE: Vapor may cause mild irritation to the eyes.

SKIN: Liquid may cause mild irritation.

INHALATION: Vapor may cause headache, nausea, weakness, fatigue and slight irritation to mucous membranes. May be aspirated into lungs if ingested.

INGESTION: Not applicable.

SUBCHRONIC AND CHRONIC EFFECTS OF OVEREXPOSURE: No known applicable information.

OTHER HEALTH EFFECTS: No known applicable information.

#### HEALTH HAZARD CATEGORIES:

	Animal	Human		Animal Human
Known Carcinogen			Toxic	
Suspect Carcinogen			Corrosive	
Mutagen			Irritant	
Teratogen			Target Org	jan Toxin 🔲 🛛 🗍
Allergic Sensitizer			Specify	No known applicable
Highly Toxic			opeeny	information.

#### FIRST AID AND EMERGENCY PROCEDURES:

EYE: Immediately wash liquid from eyes. Seek medical attention if irritation develops.

SKIN: Immediately wash liquid from skin. Seek medical attention if irritation develops.

INHALATION: Remove from contaminated atmosphere. If illness develops consult a physician.

INGESTION: Do not induce vomiting. Seek immediate medical assistance. A physician may, at his discretion, perform gastric layage using a cuffed endotracheal tube

Page 4 of 6

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# PHYSICAL DATA

Appearance: Colorless liquid Odor: Repulsive Boiling Point:  $93^{\circ}F$ Vapor Pressure:  $16.2 \text{ psia} (838 \text{ mm Hg}) \text{ at } 100^{\circ}F$ Vapor Density (Air = 1): 2.1 Solubility in Water: Slight Specific Gravity (H<sub>2</sub> O = 1): 0.845 at 60/60^{\circ}F Percent Volatile by Volume: 100 Evaporation Rate (<u>Ethyl Ether</u> = 1): < 1 Viscosity: 0.290 Centipoises at  $68^{\circ}F$ 

# **FIRE and EXPLOSION DATA**

Flash Point (Method Used): -55°F (-48°C) (Estimated)

Flammable Limits (% By Volume in Air): LEL <u>NE</u> UEL <u>NE</u>

Fire Extinguishing Media: Dry chemical, foam, carbon dioxide (CO<sub>2</sub>).

Special Fire Fighting Procedures: Shut off source. Self-contained breathing apparatus should be worn. Use water fog or spray to cool exposed equipment and containers.

Fire and Explosion Hazards: Sulfur oxides released when burned.

# SPILL, LEAK and DISPOSAL PROCEDURES

Precautions Required if Material is Released or Spilled:Protect from ignition. Contain spill. Keep out of water sources and sewers. Promptly neutralize the spill by adding dilute (5%) a queous (water) solution of calcium hypochlorite (HTH) with stirring. Alternatively, household bleach (Clorox, Purex) in a dilute solution may be used. Concentrated or dry bleach must not be used. Absorb in dry, inert material (sand, clay, sawdust, etc.). Refer to Personal Protection Information (Page 2) and contact appropriate safety personnel for respirator requirements.

Waste Disposal (Insure Conformity with all Applicable Disposal Regulations): Burn under controlled conditions or place in other permitted waste disposal facility.

Page 5 of 6

### DOT TRANSPORTATION

Shipping Name: Ethyl Mercaptan Hazard Class: Flammable Liquid ID Number: UN 2363 Marking: Ethyl Mercaptan, UN 2363 Label: Flammable Liquid Placard: Flammable / 2363 Hazardous Substance/RQ: NA Shipping Description: Ethyl Mercaptan, Flammable Liquid, UN 2363 Packaging References: 49 CFR 173.141

**RCRA CLASSIFICATION** (FOR UNADULTERATED PRODUCT AS A WASTE) Ignitable

### PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT

Wear protective equipment and/or garments described on Page 2 if exposure conditions warrant. Contact immediate supervisor for specific instructions before work is initiated.

### HAZARD CLASSIFICATION

THIS PRODUCT MEETS THE FOLLOWING HAZARD DEFINITION(S) AS DEFINED BY OCCUPATIONAL SAFETY AND HEALTH REGULATIONS (29 CFR PART 1910, 1200):

- □ Not Hazardous
- Combustible Liquid
- Compressed Gas
- Flammable Gas
- XI Flammable Liquid
- Flammable Solid
- Flammable Aerosol
- Explosive
- Health Hazard (See Page 3)
- Pyrophoric
- Unstable

Oxidizer

- Water Reactive
- C Organic Peroxide

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Page 6 of 6

# **ADDITIONAL COMMENTS**

Phillips believes that the information contained herein (including data and statements) is accurate as of the date hereof. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE AS CONCERNS THE IN-FORMATION HEREIN PROVIDED. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and the information referred to herein are beyond the control of Phillips (references to Phillips including its divisions, affiliates, and subsidiaries), Phillips expressly disclaims any and all liability as to any results obtained or arising from any use of the product or such information. No statement made herein shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents.

MSD: 0070

MATERIAL SAFETY DATA SHEET PAGE: 1 DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48540 EMERGENCY PHONE: 517-635-9400

EFFECTIVE DATE: 18 SEP 78

PRODUCT CODE: 21148

: :

: 99

PRODUCT NAME: DIETHYLENE GLYCOL (REGULAR GRADE)

INGREDIENTS (TYPICAL VALUES-NGT SPECIFICATIONS)

DIETHYLENE GLYCOL

SECTION 1

PHYSICAL DATA

BOILING POINT: 472.6F : SOL. IN MATER: COMPLETELY MISCIBLE VAP PRESS: < 0.01 MMHG @ 20C : SP. CRAVITY: 1.118 @ 20/20C VAP DENSITY (AIR=1): 2.14 : X VOLATILE BY VOL: NOT APPLICABLE APPEARANCE AND ODOR: COLORLESS, MILD: LIBUID.

SECTION 2 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 255F: FLAMNABLE LIMITS (STP IN AIR)METHOD USED: PMCC: LFL: NOT CETER. UFL: NOT DETER.EXTINGUISHING MEDIA: WATER FOG, ALCOHOL FOAM, CO2, DRY CHEMICAL.SPECIAL FIRE FIGHTING EQUIPMENT AND HAZARDS: NONE.

SECTION 3

REACTIVITY DATA

SECTION 4 SPILL, LEAK, AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS (USE APPROPRIATE SAFETY EQUIPMENT): CAM TO PREVENT WATER POLLUTION. SOAK UP WITH ABSORBENT MATERIAL. USE VACUUM TRUCK TO RECOVER. RETURN TO PLANT FOR REPROCESSING. DISPOSAL METHOD: BURN ACCORDING TO LOCAL, STATE, AND FEDERAL LAWS.

SECTION 5

HEALTH HAZARD DATA

INGESTION: LOW SINGLE DOSE ORAL TOXICITY FOR LAB ANIHALS; MODERATE FOR HUMANS. EYE CONTACT: UP TO MILD IRRITATION. SKIN CONTACT: ESSENTIALLY NCN-IRRITATING. SKIN ABSORPTION: ABSORBED THROUGH SKIN BUT LOW IN TOXICITY BY THIS ROUTE

(CONTINUED ON PAGE 2 ) (R) INDICATES A REGISTERED OR TRADEMARK NAME OF THE DOW CHEMICAL COMPANY MATERIAL SAFETY DATA SHEET PAGE: 2 DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

EFFECTIVE DATE: 18 SEP 78. PRODUCT CODE: 21148 PRODUCT (CONT'D): DIETHYLENE GLYCOL (REGULAR GRADE) MSD: 0070

SECTION 5 HEALTH HAZARD DATA (CONTINUED)

INHALATION: NO GUIDE FOR CONTROL KNOWN. NOT LIKELY A PROBLEM BECAUSE OF LOW VOLATILITY. A LEVEL OF 100 PPM HAS BEEN SUGGETED AS A GUIDE IF MATERIAL IS HANDLED HOT.

EFFECTS OF OVEREXPOSURE: DEGENERATION OF THE KIDNEY AND TO A LESSER EXTENT THE LIVER.

SECTION 6 FIRST AID--NOTE TO PHYSICIAN

FIRST AID PROCEDURES:

۲. ۲. ر

> EYES: IRRIGATION OF THE EYE IMMEDIATELY WITH WATER FOR 5 HINUTES IS GOOD SAFETY PRACTICE. CONSULT MEDICAL. SXIN: WASH OFF IN FLOYING WATER. DECONTAMINATE CLOTHING AND ACCESSORIES BEFORE REUSE. GOOD PERSONAL HYGIENE. INHALATION: REMOVE TO FRESH AIR IF EFFECTS OCCUR. INGESTION: TOXIC BY INGESTION. INDUCE VOMITING IMMEDIATELY. CALL A PHYSICIAN AND/OR TRANSPORT TO EMERGENCY FACILITY. NOTE TO PHYSICIAN: STAIN FOR EVIDENCE OF CORNEAL ABRASION OR INJURY. MAY CAUSE NEUROLOGIC SIGNS AND SYMPTOMS. MAY CAUSE KIDNEY DAMAGE. MAY CAUSE ELECTROLYTE IMBALANCE. SUGGEST BASELINE CBC, UA, AND 12 TEST. SUGGEST BASELINE ELECTROLYTES. CONSULT STANDARD LITERATURE. USE OF ALCOHOL MAY BE HELPFUL.

SECTION 7 SPECIAL HANDLING INFORMATION

VENTILATION: GOOD VENTILATION USUALLY ADEQUATE FOR MOST OPERATIONS. RESPIRATORY PROTECTION: IF HANDLING HOT MATERIAL, CONTROL VAPORS TO 100 PPM OR LESS. NONE NORMALLY NEEDED. PROTECTIVE CLOTHING: CLEAN CLOTHING. EYE PROTECTION: NOT NORMALLY NECESSARY.

SECTION 8 SPECIAL PRECAUTIONS AND ADDITIONAL INFORMATION

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: PRACTICE REASONABLE CAUTION TO AVOID SKIN AND EYE CONTACT. AVOID BREATHING VAPORS FROM HOT MATERIAL.

ADDITIONAL INFORMATION: ----

LAST PAGE

(R) INDICATES A REGISTERED OR TRADEMARK NAME OF THE DOW CHEMICAL COMPANY

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE.

U.S. DEPARTMENT OF LABOR Occupational Safety and Health Administration

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SHEET MATERIAL SAFET DATA V I

Required under USDL Safety and Health Regulations for Ship Repairing, Children and 100 OFD 1015 1015 1017) ....

		SECT	ION I N	<u>``</u> `		
MANUFACTURER'S NAME			<u> </u>	EMERGENCY TELEPHON	E NO.	
Vulcan Materials Company, Ch	nemica	ls Div:	ision	316-524-57	51	
P. O. Box 7689 Birmingham	Codej	ma 35'	203			
CHEMICAL NAME AND SYNONYMS 50% and 73% Liquid Sodium Hy	droxi	de	TRADE N	AME AND SYNONYMS Caustic Soda		
Alkali Metal Hydroxides			FORMULA NaOH in v	ater solution		
SECTIC	DN 11 -	HAZAR	RDOUS INGREDI	ENTS		
PAINTS, PRESERVATIVES, & SOLVENTS	*	TLV (Units)	ALLOYS AND	METALLIC COATINGS	×	TLV (Unit
PIGMENTS		-	BASE METAL		.	
CATALYST		ļ	ALLOYS	·	·	
VEHICLE			METALLIC COATIN	GS		
SOLVENTS			FILLER METAL PLUS COATING OR	CORE FLUX		<u> </u>
ADDITIVES ·			OTHERS	* <u></u>		ļ
OTHERS						1
HAZARDOUS MIXTU	RES OF	OTHER LI	OUIDS SOLIDS OR G	ASES	×	
	~ ~ ~					<u> </u>
		·				1
S	ECTIO	ON 111 -	PHYSICAL DATA			1
S		N 111 - 293C 3790	PHYSICAL DATA	· (H20=1) 50% こ 500 73% @ 1420		1.53 1.72
S BOILING POINT (°F.) 505 735 VAPOR PRESSURE (mm Hg.)	ECTIO	N III - 293° 379° N/A	PHYSICAL DATA SPECIFIC GRAVITY PERCENT, VOLATI BY VOLUME (%)	۲ (H <sub>2</sub> O=1) 50% کو 600 ۲ (H <sub>2</sub> O=1) 73% کو 142 <sup>C</sup> LE		1 1.5. 1.7 0
S BOILING POINT (°F.) 50% 73% VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR=1)	ECTIO	N III - 2930 3790 N/A N/A	PHYSICAL DATA SPECIFIC GRAVITY PERCENT, VOLATI BY VOLUME (%) EVAPORATION RA	- (H <sub>2</sub> O=1) 50% 2 600 (H <sub>2</sub> O=1) 73% <u>0 142</u> LE TE 1)		1 1.53 1.72 0 N/A
S BOILING POINT (°F.) 505 735 VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR*1) SOLUBILITY IN WATER	ECTIO	N III - 293C 379C N/A N/A N/A Domplete	PHYSICAL DATA SPECIFIC GRAVITY PERCENT, VOLATI BY VOLUME (%) EVAPORATION RA (	۲ (H <sub>2</sub> O=1) 50% 2 600 (H <sub>2</sub> O=1) 73% 0 142 <sup>C</sup> LE TE 1)		1.53 1.72 0 N/A
S BOILING POINT (°F.) 505 735 VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR=1) SOLUBILITY IN WATER APPEARANCE AND ODOR Water whi	ECTIO	N III - 293C 379 <sup>0</sup> N/A N/A Domplete gray 1	PHYSICAL DATA SPECIFIC GRAVITY PERCENT. VOLATI BY VOLUME (%) EVAPORATION RA (	(H <sub>2</sub> O=1) 50% 2 600 (H <sub>2</sub> O=1) 73% 2 142 <sup>C</sup> LE TE 1)		1 1.5. 1.7. 0 N/A
S BOILING POINT (°F.) 505 VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR=1) SOLUBILITY IN WATER APPEARANCE AND ODOR Water whi SECTION IV	ECTIO	N III - 293C 379 <sup>0</sup> N/A N/A omplete grav 1 RE AND	PHYSICAL DATA SPECIFIC GRAVITY PERCENT. VOLATI BY VOLUME (%) EVAPORATION RA (	۲(H <sub>2</sub> O=1) 50% 2 600 1420 LE TE 1)		1 1 1.5. 1.7' 0 N/A
S BOILING POINT (°F.) 503 VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR=1) SOLUBILITY IN WATER APPEARANCE AND ODOR Water whi SECTION IV FLASH POINT (Melhod used) None	ECTIO	N III - 293C 379 <sup>0</sup> N/A N/A omplete grav 1 RE AND	PHYSICAL DATA SPECIFIC GRAVITY PERCENT, VOLATI BY VOLUME (%) EVAPORATION RA (	۲(H2O=1) 50% کو 600 LE TE 1) ZARD DATA		1 1 1 1 1 1 1 7 0 N/A Ue
S BOILING POINT (°F.) 50% VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR=1) SOLUBILITY IN WATER APPEARANCE AND ODOR Water whi SECTION IV FLASH POINT (Melhod used) NONE EXTINGUISHING MEDIA N/A	ECTIO	N III - 293C 3790 N/A N/A N/A omplete gray 1 RE AND	PHYSICAL DATA SPECIFIC GRAVITY PERCENT, VOLATI BY VOLUME (%) EVAPORATION RA (	(H <sub>2</sub> O=1) 50% 2 600 (H <sub>2</sub> O=1) 73% 1 142 LE TE 1) ZARD DATA		1 1 1 1 2 1 7 0 N/A
S BOILING POINT (°F.) 50% VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR=1) SOLUBILITY IN WATER APPEARANCE AND ODOR Water whi SECTION IV FLASH POINT (Method used) EXTINGUISHING MEDIA NONE EXTINGUISHING MEDIA N/A SPECIAL FIRE FIGHTING PROCEDURES	ECTIO -   	N III - 293C 379C N/A N/A Dmplete grav 1 RE AND	PHYSICAL DATA SPECIFIC GRAVITY PERCENT, VOLATI BY VOLUME (%) EVAPORATION RA (	(M <sub>2</sub> O=1) 50% و 600 (M <sub>2</sub> O=1) 73% 1 142 LE TE 1) ZARD DATA		1 1.5. 1.7 0 N/A
S BOILING POINT (°F.) 503 735 VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR=1) SOLUBILITY IN WATER APPEARANCE AND ODOR Water whi SECTION IV FLASH POINT (Method used) EXTINGUISHING MEDIA NONE EXTINGUISHING MEDIA N/A SPECIAL FIRE FIGHTING PROCEDURES	ECTIO	N III - 293C 3790 N/A N/A N/A omplete grav 1 RE AND	PHYSICAL DATA SPECIFIC GRAVITY PERCENT, VOLATI BY VOLUME (%) EVAPORATION RA (	(M <sub>2</sub> O=1) 50% 2 60° (M <sub>2</sub> O=1) 73% 0 142° LE TE 1) ZARD DATA		1 1.5 1.7 0 N/A
S BOILING POINT (°F.) 50% VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR=1) SOLUBILITY IN WATER APPEARANCE AND ODOR Water whi SECTION IV FLASH POINT (Method used) EXTINGUISHING MEDIA NONE EXTINGUISHING MEDIA N/A SPECIAL FIRE FIGHTING PROCEDURES	ECTIO	N III - 293C 3790 N/A N/A omplete grav 1 RE AND	PHYSICAL DATA SPECIFIC GRAVITY PERCENT, VOLATI BY VOLUME (%) EVAPORATION RA (	(M <sub>2</sub> O=1) 50% 2 60° (M <sub>2</sub> O=1) 73% 0 142° LE TE 1) ZARD DATA		1 1.5 1.7 0 N/A

Form Aspreved CMB No. 44-R1387

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	SECTION V + HEALTH HAZARD DATA				
	they come in contact producing severe burns to skin on eves. Swallowing w	τh : 111			
	in severe injury and inhalation of dust or mist can cause respiratory dama	ge.			
	EMERGENCY AND FIRST AID PROCEDURES Wash affected areas with codious amounts of water. Call a physician.				
İ	•				
, F	SECTION VI - REACTIVITY DATA				
	STABILITY UNSTABLE CONDITIONS TO AVOID Neutralization with acids produce heat,	•			
	STABLE XX sometimes violently.				
	Bress bronze aluminum tin lead zinc and steel above 140° F				
	HAZARDOUS DECOMPOSITION PRODUCTS				
	MAY OCCUR CONDITIONS TO AVOID				
	POLYMERIZATION WILL NOT OCCUP				
•					
	SECTION VII - SPILL OR LEAK PROCEDURES				
	STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED				
	Confine spill, dilute with water. Avoid contact with skin.				
	WASTE DISPOSAL METHOD	<u> </u>			
-	After dilution, neutralize with muniatic acid or sulfuric acid, dilute further				
	for disposal. Contact local authorities. For additional information contact				
•	supplier or manufacturer.				
	SECTION VIII - SPECIAL PROTECTION INFORMATION	SECTION VIII - SPECIAL PROTECTION INFORMATION			
	RESPIRATORY PROTECTION (Specify type) Caniston dust filten	•			
	VENTILATION LOCAL EXHAUST				
	MECHANICAL (General)				
	PROTECTIVE GLOVES. EYE PROTECTION	<u> </u>			
	OTHER PROTECTIVE EQUIPMENT Rubber suit and shoes	<u></u>			
	SECTION IX - SPECIAL PRECAUTIONS				
	PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING To hold as licuid storage temperature must be above 60°F for 50% and 145°F for				
	To hold as liquid storage temperature must be above 60°F for 50% and 145°	<u>F fc</u>			
	PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING To hold as liquid storage temperature must be above 60°F for 50% and 145° OTHER PRECAUTIONS Carbon steel vessel may be used below 140°Fneed nickel or epoxy lining	F fc abov			
	PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING To hold as liquid storage temperature must be above 60°F for 50% and 145° OTHER PRECAUTIONS Carbon steel vessel may be used below 140°Fneed nickel or epoxy lining 140°F	F fc abov			
	PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING To hold as liquid storage temperature must be above 60°F for 50% and 145° OTHER PRECAUTIONS Carbon steel vessel may be used below 140°Fneed nickel or epoxy lining 140°F PAGE (2)	F fc abov			

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#### I. IDENTIFICATION

PRODUCT NAME: IWE 100 CHEMICAL NAME: NA-MIXTURE CHEMICAL NAME: NA-MIXTURE CHEMICAL FAMILY: NA MIXTURE CHEMICAL FAMILY: NA HIT

ATTRANSAL TO ATA SHELL

II. HALARDOUS INORBUIGNIS	•	144
Alkyl dimethylbenzylammonium chloride	13.5	NA
Alkyl dimethylethylammonium bromide	1.5	NA
Tributyltin neodecanoate	5.0	NA

#### III. EMERGENCY AND FIRST AID ACUTE HEALTH HAZARDS

Severe skin and eye irritant. For contact flush eyes and skin with water for at least 15 minutes. For eyes, contact physician. Harmful or fatal if swallowed. For ingestion, drink large quantities of milk, raw egg whites, gelatin solution, or water. Avoid alcohol. Contact physician immediately. TO PHYSICIAN: Probable mucosal damage may contraindicate gastric lavage. Measures against circulatory shock, respiratory depression, and convulsions may be needed.

IV. DESCRIPTION AND PHYSICAL DATA

Physical form: liquid Solubility in water: complete Appearance: clear to light straw color. Sweet odor.

V. FIRE AND EXPLOSION HAZARD DATA

Flash point: none Extinguishing media: not applicable Special Fire Fighting Procedures: not applicable Unusual Fire and Explosion Hazards: not applicable Hazardous Thermal Decomposition Products: not applicable

DISCLAIMER OF LIABILITY: The Information in the bulletin is believed to be accurate and all recommendations are made with all managements place the of

#### VI. REACTIVITY DATA

Hazardous Polymerization: will not occur Conditions to Avoid: none Incompatibility: strong oxidants

VII. SPILL OR LEAK PROCEDURES

Steps.to be taken in case material is released or spilled: Absorb spills onto inert absorbent material such as sawdust or clay and place in trash receptacle.

Waste Disposal Method: RCRA Hazardous Waste-NO Follow local, state, and federal regulations and codes regarding dist sal.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection: no Ventilation: no Eye Protection: face shield and goggles Skin Protection: Rubber or neoprene gloves and rubber or neoprene apron.

IX. Special Precautions

Precautions to be taken in handling and storing: Read and follow all label directions. Keep out of reach of children. Avoid contamination of food or feed-stuffs. Toxic to fish. Keep out of lakes, streams, or ponds.

X. EFFECTS OF LONG TERM EXPOSURE

Not established, however, no ingredients are known or suspected as carcinogens.

XI. DOT Proper shipping name/hazard class

Not a DOT hazard



Industrial Water Engineering, Inc. 2300 Buena Vista SE #135 Albuquerque, NM 87106

# MATERIAL SAFETY DATA SHEET PROCESS CHEMICALS DIVISION

MATERIAL DATA SAFETY SHEET

SECTION I:

PRODUCT NAME:	IWE 7200
MANUFACTURED BY:	INDUSTRIAL WATER ENGINEERING, INC. 2300 BUENA VISTA SE #135 ALBUQUERQUE, NM 87106
EMERGENCY TELEPHONE:	(505) 842-1216
CHEMICAL NAME:	Water treatment compound

IWE 7200

TRADE NAME:

CHEMICAL FAMILY:

PHOSPHATES AND ORGANIC POLYMERS

DOT SHIPPING CLASSIFICATION:

PROCESS WATER TREATMENT #50227-1 LTL-60 TL-35

SECTION II: INGREDIENTS

MATERIAL: CAS NUMBER 1. Demineralized water 7732-18-5 2. Potassium Hydroxide to alkaline pH 1310-58-3 3. 1-Hydroxyethylidene-1,1-diphosphonic acid 2809-21-4 5. Phosphoric acid 7664-38-2 6. Tolyltriazole 64665-57-2 7. Tetrapotassium pyrophosphate NONHAZ 8. Tritor -20 NONHAZ 9. Acrysol QR-1086 NONHAZ 10.

DISCLAIMER OF LIABILITY: The information in this bulletin is believed to be accurate but all recommendations are made without warranty since the conditions of use are beyond IWE'S control. The listed properties are illustrative only and not product specifications. IWE disclaims any liability in connection with the use of the information and does not warrant against infringement by reason of the use of any of its products in combination with other material or in any process.

#### SECTION FIL: PHYSICAL DATA

#### SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash point-----NA Autoignition temperature-----NA Flammable limits in air----NA Extinguishing media----carbon dioxide, dry chemical, toam

#### SPECIAL FIRE FIGHTING PROCEDURES:

Full protective equipment including self contained breathing apparatus should be used. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool and protect closed containers exposed to extreme heat.

#### UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode (due to the buildup of pressure) when exposed to extreme heat. While not normally combustible, if water content is lost material may release combustible vapors if exposed to ignition source. Vapor can burn in open or explode if confined. Vapors may be heavier than air and may travel long distances on ground before flash back to the source.

SECTION V:HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: NONE ESTABLISHED.

#### EFFECTS OF EXPOSURE:

-BY INGESTION: Extremelly corrosive to mouth and throat. Swallowing will cause rapid burning, severe pain, vomiting, and collapse. Some effects may be delayed.

-EYE CONTACT: Product is extremely corrosive to the eyes. Brief contact causes severe eye damage and prolonged contact may cause permanent eye injury which may be followed by blindness.

-SKIN: Product is extremely corrosive to the skin and rapidly causes severe burns. Moisture on the skin, such as prespiration, will accelerate tissue destruction. -Chronic exposure-May result in areas of destruction of skin cissues on primary invitant dermatitis. Inhalation of Vapors or mists may cause varying degrees of damage to the affected tissues and also increasing susceptibility to respiratory illness.

NEPA HAZARD SIGNAL: HEALTH-2 STABILITY-D SPECIAL-ALK

FLAMMABILITY-0

-----

EPA HAZARD WASTE CLASS: NONE DOT HAZARD WASTE CLASS: NONE

#### SECTION VI EMERGENCY AND FIRST AID PROCEDURES

INHALATION: If overcome by exposure, immediately remove victim to fresh air. Keep victim quiet. Administer oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

EYE CONTACT: In case of eye contact, immediately flush eyes with clean low pressure lukewarm water for at least 15 minutes. Occasionally lifting eyelids. Obtain medical attention.

SKIN CONTACT: Immediately remove contaminated clothing. Wash skin with mild soap/water. Flush 5 minutes with lukewarm water. If sticky use waterless cleaner first.

INGESTION: If large quantity swallowed, administer lukewarm water if victim completely conscious/alert. Do not induce vomiting/aspiration exceeds systemic poisoning risk. Obtain emergency medical treatment.

#### TOXICITY DATA:

known hazands under CFR	1910.1200		
	yes no	yes	no
combustible liquids	x	skin hazard x	
flammable material	×	eye hazard x	
pyrophoric material	×	toxic agent x	
explosive material	×	highly toxic	×
unstable material	×	sensitizer	х
water reactive material	×	carcinogen	х
oxidizer	×	reproductive toxin	×
organic peroxide	х	blood toxin	×
corrosive material	х	nervous system toxin	x
compressed gas	x	lung toxin	×
irritant	x	liver toxin	х
		kidney toxin	x

#### SECTION VII:REACTIVITY DATA

#### SECTION VIII: SPILL OR LEAK PROCEDURES

PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED: May contaminate public waters. Prevent flow to sewers/public waters. Restrict cleanup water use. Small spills, 10 gallons, may be flushed to a sanitary sewer. Impound and recover large land spills. Soak up with absorbent material and dispose in accordance with state, local, and tederal regulations.

Waste disposal method: Landfill or incinerate in an approved facility. Do not incinerate in closed container. Dispose of in accordance with federal, state, and local regulations regarding pollution.

#### SECTION IX: SPECIAL PROTECTIVE INFORMATION

Respiratory Protection:NIOSH/MSHA mechanical filter respirator for dust or mist should be used if airborne particulate is generated when handling this material.

Ventilation: General room ventilation is expected to be adequate.

Eye: Eye protection such as chemical splash goggles and or face mask must be worn when any possibility exists for eye contact due to splashing or spraying liquid. Contact lenses should not be worn.

Skin: Protective gloves, apron, head and face protection should be worn. This equipment should be cleaned thoroughly after each use.

Other: Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or use of toilet facilities. Take shower after work using plenty of soap and water.

# SECTION X: SPECIAL PRECAUTIONS

-----

Precautions to be caken in handling and storage: Store in a cool cory place. Keep container rightly closed. Use only with adequate ventilation. Avoid breathing vapor and mist. Avoid contact with skin and eyes. Do not take internally.

Date: Prepared 05/01/87 Les Norman, P.E.

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Industrial Water Engineering, Inc. 2300 Buena Vista SE #135 Albuquerque, NM 87106

# MATERIAL SAFETY DATA SHEET **PROCESS CHEMICALS DIVISION**

MATERIAL DATA SAFETY SHEET

SECTION I:

PRODUCT NAME: IWE 6135 MANUFACTURED BY:

INDUSTRIAL WATER ENGINEERING, INC. 2300 BUENA VISTA SE SUITE 135 ALBUQUERQUE, NM 87106

EMERGENCY TELEPHONE:

CHEMICAL NAME:

TRADE NAME:

CHEMICAL FAMILY:

(505) 842-1216

IWE 6135

Non oxidizing biocide

Non-oxidizing biocide

DOT SHIPPING CLASSIFICATION:

water treatment compound 50227-1 TL-35 LTL-60Non-Hazardous

SECTION II: INGREDIENTS

MAT	TERIAL:	CAS NUMBER
1.	WATER	007732-18-5
2.	Potassium N-methyldithiocarbamate	137-41-7
3.	Disodium cyanodithioimidocarbonate	138-93-2

DISCLAIMER OF LIABILITY: The information in this bulletin is believed to be accurate but all recommendations are made without warranty since the conditions of use are beyond IWE'S control. The listed properties are illustrative only and not product specifications. IWE disclaims any liability in connection with the use of the information and does not warrant against infringement by reason of the use of any of its products in combination with other material or in any process.



# THE REPRODUCTION OF

THE

FOLLOWING

### **DOCUMENT (S)**

# **CANNOT BE IMPROVED**

# **DUE TO**

### **THE CONDITION OF**

### **THE ORIGINAL**

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Solubility on wetercomplete.
Appearance and Adorclear red-orange liquid, sulfide odor
old (3 deat
$\mu_{\rm H}$ (100 $n_{\rm DM}$ is whether)

SECTION (V: FIRE AND EXPLOSION HAZARD DATA

SPECIAL FIRE FIGHTING FROCEDURES: None

#### SECTION V: HEALTH HAZARD DATA

#### THRESHOLD LIMIT VALUE:

Oral LD**so**=570 mg/kg; Dermal LD**so**=884 mg/kg; Inhalation at high levels of mist can cause irritation to lung tissue due to corrosive characteristics.

#### EFFECTS OF EXPOSURE:

-BY INGESTION: Extremelly corrosive to month and chroat. Swallowing will cause rabid burning, severe baid, comiting, and collapse. Some affects may be deleved.

-EVE CONTACT: Product is extremely corrosive to the eves. Brief contact causes severe eve damage and prolonged contact may cause permanent eve injury which may be followed by blindness.

-SKIN: Product is extremely corrosive to the skin and rapidly causes severe burns. Moisture on the skin, such as prespiration, will accelerate tissue destruction.

-Chronic exposure-May result in areas of destruction of skin tissues or primary irritant dermatitis. Inhalation of vapors or mists may cause varying degrees of damage to the affected fissues and also increasing susceptibility to respiratory illness. ander 1997 - Constantino (Constantino) - Constantino (Constantino) Constantino (Constantino) SECTOR SHE

EPA HAZARD MASIE (1.685; MONE ODI HAZARD MASIE (1.685; MONE TECA INVENTORY: CONE EPA RESISTRATION: EPA registration No. (448-0) FDA Regulations: 21 OFR (76.300, 173.320

#### SECTION VI PMERGENCY AND FIRST AID PROCEDURES

INHALATION: (Fovercome of exposure, immediately remove victim to fresh air. Keep victim quiet. Administer oxynem or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

EYE CONTACT: In case of eve contact, immediately flush eves with clean low pressure objectme water for at least 15 minutes. Occasionally tidling oveligs. Obtain medical attention.

SKIN CONTACT: Unmediately remove contaminated clothing. Wash skin will mild scap/water. Flush 5 minutes with lukewarm water. If sticky use waterless cleaner first.

#### TOXICITY DATA:

lanown bazards under CFR 1910.1200

	Ves	E C		V 🖻 🚍	O O
combustible liquids		×	skin hazard	М	
flammable material		×	eve hazard	×	
pvrophoric materia:		24	toxic agent	×	
explosive maternal		N	highly toxac		N(
unstable paterial		×	sensitizen		::f
water centive activity.		25	CLEAR CLEAR FOR COMPANY		N
cover et i green		:::	reproductive (ow)	11	М
organic perovide		st	blend testin		2
corrosive material	×		nervous system (o	M IL PA	$\geq$
compressed cas		X	lung toxin		Н
i mmi kani	×		liver toxin		×
			kidnev joxin		М

#### SECTION STREEECTIVITY DATA

#### SECTION VIII: SPULL OR LEAK PROCEDURES

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PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED: Small spills may be flushed to sewer with copious amount of water. For large spills area should be dammed to prevent spill from entering tish bearing maters. Pump into appropriate containers. Dispose of as below.

Waste disposal method: Froduct is a bazardous waste due to pH. EPA Hazard Code C and R. EPA Hazardous Waste Numbers 0002 and 0003 due to pH. Comply with disposal regulations for bazardous waste.

Container disposal: Offer for recycling or triple rinse and dispose of in an approved landfill.

#### SECTION (X: SPECIAL PROTECTIVE INFORMATION

Respiratory Protection:NIOSH/MSHA mechanical filter respirator for dust or mist should be used if airborne particulate is generated when bandling this material.

Ventilation: General room ventilation is expected to be adequate.

Eve: Eve protection such as chemical splash goggles and or face mask must be worn when any possibility exists for eve contact due to splashing or spraving liquid. Contact lenses should not be worn.

Skin: Protective gloves, apron, head and face protection should be worn. This equipment should be cleaned thoroughly after each use.

Other: Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or use of toilet facilities. Take shower after work using plenty of soap and water.

#### SECTION X: SPECIAL PRECAUTIONS

Precaucions in the cakes in handling and econode: Store in a cool dry nlace. Reeu container munity closed. Use only with adequate , yearclation. Avoid breathing woor and mist. Avoid contact with skin and oves. Do not take internally.

Oate: Preparen (05/01/87 Les Mormau

#### APPENDIX 2

i.

#### LYBROOK PLANT SAMPLING LOCATIONS Duplicate Sampling with OCD 6/09/88

Sample I.D.

i.

- 1. Water Sample of Cooling Tower Sump
- 2. Water Sample of Water Supply System
- 3. Water Sample of Pond #1 (Flare Pond)
- 4. Water Sample of Pond #2 (Secondary Pond)



10: Sunterna Gas Processing ATTN: Gary Jordan PO Box 2106 Albuquerque, NM 87103

DATE: 30 June, 1988 WORK ORDER NO: 2773

SAMPLE ID: Lybrook Gas Plant, 6/9/88, #1 Cooling Tower.

ANAL YTE

- -

ANALYTICAL RESULTS NOMINAL DETECTION LIMIT

⊳

pH	9.5		0.01	
TDS	7836	m@/1	1	$m_{\rm G}/1$
As	0.162	ma/l	0.020	mg/1
Ba	<1.0	wal)	0.50	$m_{\rm CI}/1$
Cit	0. <b>0</b> 55	mci/1	ເວ, ເວດຮ	mg∕∣
Ch	0.079	insi/)	0.025	ms1/)
CN	(0.005	ma/1	0.003	mg/L
F	22.8	m@/1	0.01	mg/l
i <sup>a</sup> b	0.056	mg/1	0.005	mg/1
Total Hø	<0.002	ma/1	0.001	mst/3
NO 3	<0.01	mg/1	0.01	mg/1
Se	0.059	ms/)	0.005	ma/)
Ag	<0.05	mg/l	0.01	mg/1
Benzene	< 1.	us/)	1.	ua/)
Toluene	< 1	ug/l	1	ug/l
CCL &	38609	us/1	1	ug/)
1,2-Dichloroethane	< 1.	ug/1	1,	ug/l
1,1-Dichloroethylene	< 1	ua/1	1	ua/1
1,1,2,2-Tetrachloroethylene	< 1.	110/1	1	ug/1
1,1,2-Trichloroethylene	<1	ua/J	ļ	$u_{\rm SI}/1$
Ethyl Benzene	< 1	49/1	l	ug/1
Xy)enes	< <u>1</u>	us/1	)	ua/)
Methylene Chloride	<1	ug/1	l	ug/1
CHCL 3	< 1	ug/)	1	ua/1
1,1-Dichloroethane	< <u>1</u>	ug/1	1	ug/1
EDB	<0.1	ug/l	0.1	ug/)
l,1,1-Trichloroethane	< 1	ug/l	1	ug/1
1,1,2-Trichlonoethane	< 1	ua/1	1	ug/1
1,1,2,2~[etnachlonoethane	< 1	ug/l	<u>1</u>	ug/l
Vinyl Chlonide	< 1	ug/)	1.	ug/1
Cu	Ü.534	mg/1	0.05	mg/l
C)	138.9	mg/1	1.0	ma/1
Fe.	0.275	mg/l	0.10	mg/1
Mn	<n.n5< td=""><td>mg/)</td><td>0.05</td><td>ma/l</td></n.n5<>	mg/)	0.05	ma/l
50 4	2602	mg/1	1.0	mg/1
Zn	0.117	mg/)	n.u20	mg/l
A1	<0.50	mg/1	0.50	mǥ∕l
ß	2.09	mg/).	0.04	ma/).
Co	(0.05	mg/1	0.05	mg/1
Mo	<0.50	ms1/1	0.05	mg/l
MA	0.072	mg/l	n.05	ma∕1

7300 Jefferson, N.E. • Albuquerque, New Mexico 87109 • (505) 345-8964

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Sincercery,

Balwant Chauhan, Ph.D. anhan

Laboratory Director

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#### SCIENTIFIC LABORATORY DIVISION ORGANIC ANALYSIS REQUEST FORM Organic Section - Phone: 841-2570

88-0860-C DAVID BOYER REPORT TO: S.L.D. No. OR-N.M. OIL CONSERVATION DIVISION DATE REC P.O. Box 2088 PRIORITY Santa Fe, NM 87504-2088 PHONE(5): 827-5812 ; COUNTY: KLD ANNIHA COLLECTION CITY: \_\_\_\_\_ hu brock COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minute) 8361016101911115101 LOCATION CODE: (Township-Range-Section-Tracts) + + + (10N06E24342) SAMPLE TYPE: WATER [X], SOIL [\_], FOOD [\_], OTHER:\_\_\_\_\_\_ This form accompanies \_\_\_\_\_ Septum Vials, \_\_\_\_\_ Glass Jugs, and/or \_\_\_\_\_ Samples were preserved as follows: NP: No Preservation; Sample stored at room temperature. P-Ice Sample stored in an ice bath (Not Frosen). D P-AA Sample Preserved with Ascorbic Acid to remove chlorine residual. 🗹 Р-НСІ Sample Preserved with Hydrochloric Acid (2 drops/40 ml) ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required. PURGEABLE SCREENS EXTRACTABLE SCREENS (753) Aliphatic Headspace (1-5 Carbons) (751) Aliphatic Hydrocarbons X (754) Aromatic & Halogenated Purgeables (755) Base/Neutral Extractables (765) Mass Spectrometer Purgeables (758) Herbicides, Chlorophenoxy acid (766) Trihalomethanes (759) Herbicides, Triasines (774) SDWA VOC's I (8 Regulated +) (760) Organochlorine Pesticides (775) SDWA VOC's II (EDB & DBCP) (761) Organophosphate Pesticides Other Specific Compounds or Classes [ (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides Remarks: FIELD DATA: pH=<u>10</u>; Conductivity=<u>6000</u> umho/cm at <u>17</u>°C; Chlorine Residual= mg/l Dissolved Oxygen=\_\_\_\_mg/l; Alkalinity=\_\_\_\_mg/l; Flow Rate\_\_\_\_\_/\_\_\_\_ Depth to water \_\_\_\_\_ft.; Depth of well \_\_\_\_ft.; Perforation Interval \_\_\_\_\_ft.; Casing:\_\_\_ Sampling Location, Methods and Remarks (i.e. odors, etc.) Surgerra Lubrock Cooling Tower Semple Yeltowish, cloudy I certify that the results in this block accurately reflect the results of my field analyses, observations and Real Method of Shipment to the Lab: Tale Call activities.(signature collector): VA CHAIN OF CUSTODY I certify that this sample was transferred from \_\_\_\_\_ \_\_\_\_\_ to \_\_\_\_\_ \_\_\_\_\_ on \_\_\_\_/\_\_\_\_ - \_\_\_:\_\_\_\_ and that at (location) the statements in this block are correct. Evidentiary Seals: Not Sealed 🗌 OR Seals Intact: Yes 🛄 No 🛄 Signatures For OCD use: Date owner notified: 8/19/78 Phone or Letter? Initials

### ANALYSES PERFORMED

ANALYSES PERFORMED	LAB. No.: OR- 860
THIS PAGE FOR LABORAT	ORY RESULTS ONLY
This sample was tested using the analytical screening $method(s)$ chec	iked below:
PUBCEABLE SCREENS         (753) Aliphatic Headspace (1-5 Carbons)         (X) (754) Aromatic & Halogenated Purgeables         (765) Mass Spectrometer Purgeables         (766) Trihalomethanes         (774) SDWA VOC's I (8 Regulated +)         (775) SDWA VOC's II (EDB & DBCP)         Other Specific Compounds or Classes	EXTEACTABLE SCREENS (751) Aliphatic Hydrocarbons (755) Base/Neutral Extractables (758) Herbicides, Chlorophenoxy acid (759) Herbicides, Triasines (760) Organochlorine Pesticides (761) Organophosphate Pesticides (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides
COMPOUND(S) DETECTED CONC.	COMPOUND(S) DETECTED CONC
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COMPOUND(S) DETECTED	CONC.	COMPOUND(S) DETECTED	CONC [PPB]
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1 11			
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• DETECTION LIMIT • ¥	2.5476	+ DETECTION LIMIT + +	-

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[ RESULTS IN BRACKETS ] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: One	compound detected we	the the shotowningtion
and Hall detections	and identified by me	ms sectionether as
Justhiocymatometh	enc at approx 50-	100 and
/		//

#### CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Not Sealed Intact: Yes No M. Seal(s) broken by: Mat Acalin date:
I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and
that the statements on this page accurately reflect the analytical results, for this sample.
Date(s) of analysis: 6/15/85 Analyst's signature:
I certify that I have reviewed and concer with the analytical results for this sample and with the statements in this block.
Reviewers signature: K Meyer her

ATE AL OLOISS	LAB	59300 59600 XX	отнев. 82235
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Santa Fe,	NM 87504-2088		
Attn: <u>David B</u>	oyer	······································	
Phone: 827-F	3912		C BERNOR SANTA FE
MPLING CONDITIONS			Owner
Bailed C Pump	Water level	Discharge	Sample type
(Dipped 🗆 Tap	Conductivity (I Incorrected)	Water Terms (00010)	Conductivity of 25.5C (2000.4)
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No. of samples f XN submitted XN XNA: No acid added	IF: Whole sample (Non-filtered) Other-specify: A	red in field with $\Box$ A: $\mu$ membrane filter $\Box$ A: A: 5ml conc. HNO <sub>3</sub> a	2 mi H <sub>2</sub> SO <sub>4</sub> /L added added  A: 4ml fuming HNO <sub>3</sub> ad
No. of samples f submitted X NA: No acid added NA: No acid added NA NA Conductivity (Corrected)	IF: Whole sample (Non-filtered) Other-specify: A M SAMPLES Units Date and	$\frac{1}{\mu} \text{ membrane filter} \square A:$ $\frac{1}{2} \text{ Sml conc. HNO}_3 a$ $\frac{1}{2} \text{ From } \sqrt{F},$	2 ml H <sub>2</sub> SO <sub>4</sub> /L added idded IA: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date Analyzed
No. of samples / XN submitted / XN ANA: No acid added IALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095)	IF: Whole sample (Non-filtered) □ F: Filter 0.45 Other-specify: □ A m SAMPLES Units Date and 10510 µmho _ 7/	red in field with $\Box A$ : $\mu$ membrane filter $\Box A$ : $\therefore 5ml conc. HNO_3 a$ $Hyzed = From \mu f,\downarrow \downarrow$	2 mi H <sub>2</sub> SO <sub>4</sub> /L added idded $\square$ A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> 24. mg/l - $\frac{7}{19}$
No. of samples f submitted X NA: No acid added IALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended)	IF: Whole sample IF: Whole sample (Non-filtered) □ F: Filter Other-specify: □ A m SAMPLES Units Date and 10510 µmho _ 7/	$\begin{array}{c c} \text{red in field with} & \square A: \\ \mu \text{membrane filter} & \square A: \\ \text{: 5ml conc. HNO_3 a} \\ \text{styzed} & From \underline{N + }, \\ \text{: 5ml conc. HNO_3 a} \\$	2 mi H <sub>2</sub> SO <sub>4</sub> /L added idded $\square$ A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> <u>24</u> mg/1 <u>7/2</u> $\overrightarrow{7/2}$
No. of samples f submitted X NA: No acid added ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530),	$\begin{array}{c} \text{IF:} & \text{Whole sample} \\ \text{IF:} & \text{(Non-filtered)} \\ \hline \text{Other-specify:} \\ \hline \text{IA} \\ \hline \text{m SAMPLES} \\ \hline \\ \hline \\ \hline \\ 10510 \\ \mu \text{mho} \\ \hline \hline \\ \hline $	ed in field with µmembrane filter 1: 5ml conc. HNO <sub>3</sub> a hyzed From <u>N</u> F, 11 ∑ Calcium 21 [A: Potassium 21 [A: [A: ]	2 ml H <sub>2</sub> SO <sub>4</sub> /L added idded $\square$ A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> <u>24</u> mg/1 <u>7/25</u> <u>8e5</u> mg/1 7/19
No. of samples f submitted X X NA: No acid added ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: pH Other:	$IF: Whole sample (Non-filtered)  Other-specify:  SAMPLES Units Date and  10510 µmho \frac{7}{7}/2$	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a Hyzed From <u>N</u> , II Calcium Z Potassium Z Magnesium X Sodium	2 mi H <sub>2</sub> SO <sub>4</sub> /L added idded $\square$ A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> <u>24</u> mg/1 <u>7/25</u> <u>8.5</u> mg/1 <u>7/25</u> <u>8.5</u> mg/1 <u>7/25</u>
No. of samples f submitted / X (NA: No acid added ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other:	$\begin{array}{c} \text{IF: } \begin{array}{c} \text{Whole sample} \\ \text{IF: } \begin{array}{c} \text{Whole sample} \\ (\text{Non-filtered}) \end{array} \end{array} \square F: \begin{array}{c} F: \\ \text{Silter} \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.45 \\ 0.4$	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a Aryzed From NF, IL Calcium Potassium ZI Magnesium Sodium Magnesium Magnesium	2 ml H <sub>2</sub> SO <sub>4</sub> /L added idded A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> 24 mg/1 <u>7/25</u> <u>8.5 mg/1 7/25</u> e 2706 mg/1 7/26
No. of samples f submitted X X NA: No acid added ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: pH Other: Other:	$   \begin{array}{c}     \text{IF: } & \text{Whole sample} \\     \text{IF: } & \text{(Non-filtered)} \\     \text{Other-specify: } \\     \text{II A} \\     \text{m SAMPLES} \\     \text{Units Date and} \\     \text{IQSIO } \mu \text{mho} \\     \text{IQSIO } \mu \text{mho} \\     \text{IQSIO } \\     \text{Immode } \\     \text{IQSIO } \\     \text{Immode } \\     \text{IQSIO } \\     \text{Immode } \\     \text{Immode } \\     \text{IQSIO } \\     \text{Immode } \\      \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text{Immode } \\     \text$	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a Hyzed From <u>N</u> F, Calcium Calcium Magnesium Sodium Bicarbonat Chloride	2 ml H <sub>2</sub> SO <sub>4</sub> /L added idded $\square$ A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> 24 mg/1 <u>7/25</u> <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25</u> e <u>2706 mg/1 7/26</u> tot mg/1 7/21
No. of samples f No. of samples f NA: No acid added ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: pH Other: Other: A-H_SO_ Nitrate-N +, Nitrate-N total (00630)		ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a Byzed From NF, II Calcium Potassium A: Sodium Bicarbonat Chloride Sulfate	2 mi H <sub>2</sub> SO <sub>4</sub> /L added added A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> <u>24</u> mg/1 <u>7/25</u> <u>8.5</u> mg/1 <u>7/25</u>
No. of samples       /         Na. No acid added       /         ALYTICAL RESULTS fron       NA         Conductivity (Corrected)       25°C (00095)         Total non-filterable       /         residue (suspended)       (00530)         Other:       _         Other:       _         AH1SO4       _         Nitrate-N + Nitrate-N       total (00630)         Armonia-N total (00610)       _	IF:       Whole sample (Non-filtered)       □       F:       Filter 0.45         Other-specify:       □       A         m SAMPLES       Units Dete and         10510       μmho       7/1         ?7.46       mg/l       7/2         mg/l	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a Hyzed From NF, Calcium Potassium Calcium Magnesium Sodium Sodium Sodium Sulfate X Total Soli	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
No. of samples       ////////////////////////////////////	IF:       Whole sample (Non-filtered)       □       F:       Filter         Other-specify:       □       A         m SAMPLES	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a Sml conc. HNO <sub>3</sub> a From NF, Calcium Potassium A: Sodium A: 5ml conc. HNO <sub>3</sub> a Magnesium A: 5ml conc. HNO <sub>3</sub> a A: 5ml	$2 \text{ ml H}_{2}SO_{4}/L \text{ added}$ added $\square A: 4 \text{ ml fuming HNO}_{3} \text{ ad}$ $NA \text{ Sample: Date Analyzed}$ $24 \text{ mg/1} \frac{7}{1/9}$ $28 \text{ mg/1} \frac{7}{7/25}$ $8 \text{ mg/1} \frac{7}{7/25}$
No. of samples       /         No. of samples       /         NA: No acid added       /         ALYTICAL RESULTS fro       /         NA       /         Conductivity (Corrected)       25°C (00095)         Total non-filterable       /         residue (suspended)       (00530)         Other:       /         Other:       /         Other:       /         A-H_2SO_4       /         Nitrate-N + Nitrate-N       total (00630)         Armmonia-N total (00610)       _         Total Kjeldahl-N       /         (       )         Chemical oxygen       /	IF:       Whole sample (Non-filtered)       □       F:       Filter 0.45         Other-specify:       □       A         m SAMPLES       Units Date and        10510       µmho	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a Myzed From NF, Calcium Potassium Calcium Magnesium Sodium Bicarbonat Chloride Sulfate Total Soli	$2 \text{ ml H}_{2}SO_{4}/L \text{ added}$ added $\Box A: 4 \text{ ml fuming HNO}_{3} \text{ ad}$ NA Sample: Date Analyzed 24 mg/1 <u>7/25</u> <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25</u>
No. of samples       f         NA       f         ALYTICAL RESULTS fro       for         25°C (00095)	IF:       Whole sample (Non-filtered)       □       F:       Filter 0.45         Other-specify:       □       A         m SAMPLES       Units Date and         10510       µmho       7/4         ?7.16       mg/l       7/2         mg/l      mg/l      mg/l        mg/l      mg/l      mg/l	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a Hyzed From MF, II Calcium Potassium Calcium Magnesium Sodium Sodium Sodium Sulfate Total Soli	$2 \text{ mi H}_{2}SO_{4}/L \text{ added}$ added [A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date Analyzed 24 mg/1 7/19 28 mg/1 7/25 8.5 mg/1 7/25 8.5 mg/1 7/25 e 2706 mg/1 7/26 ioi mg/1 7/26 ioi mg/1 7/26 ds 8492 mg/1 7/7
No. of samples       f         No. of samples       f         NA: No acid added       Image: Conductivity (Corrected)         Image: Conductivity (Corrected)       25°C (00095)         Total non-filterable       residue (suspended)         (00530)       Image: Conductivity (Corrected)         Other:       Image: Conductivity (Corrected)         Image: Conductivity (Corrected)       Image: Conductivity (Corrected)         Other:       Image: Conductivity (Corrected)         Image: Conductivity (Corrected)       Image: Conductivity (Corrected)         Other:       Image: Conductivity (Corrected)         Image: Conductivity (Conductivity (Conductivity (Conductivity (Conductivity (Conductity (Conductity (Conductivity (Conductity (Conductity (Co	IF:       Whole sample (Non-filtered)       □       F:       Filter 0.45         Other-specify:       □       A         m SAMPLES	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a A: 5ml conc. HNO <sub>3</sub> a	2 ml H <sub>2</sub> SO <sub>4</sub> /L added idded A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> 24 mg/1 <u>7/25</u> <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25</u> added <u>10 mg/1 7/25</u> <u>101 mg/1 7/26</u> ds <u>8492 mg/1 7/75</u> Anion Balance
No. of samples       f         No. of samples       f         No. of samples       f         NA: No acid added       Image: Solution of the second structure of the second st	IF:       Whole sample (Non-filtered)       □       F:       Filter         Other-specify:       □       A         m SAMPLES       □       IA	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a syzed From NF, Calcium Potassium Calcium Aignesium Sodium Sodium Sodium Sulfate Chloride Chloride Chloride Chloride Chloride Chloride	2 mi H <sub>2</sub> SO <sub>4</sub> /L added added [A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> <u>24</u> mg/1 <u>7/25</u> <u>8.5</u> mg/1 <u>7/25</u> <u>8.5 mg/1 <u>7/25</u> <u>8.5 mg/1 <u>7/25</u> <u>8.5 mg/1 <u>7/25</u> <u>8.5 mg/1 <u>7/25</u> <u>8.5 mg/1</u></u></u></u></u>
No. of samples       /         No. of samples       /         Submitted       /         X       NA: No acid added         X       IALYTICAL RESULTS from NA         Conductivity (Corrected)       25°C (00095)         25°C (00095)	IF:       Whole sample (Non-filtered)       □       F:       Filter 0.45         Other-specify:       □       A         m SAMPLES       Units Date and        10510       µmho       7/2        7.46       mg/1         mg/1	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a A: 5ml conc. HNO <sub>3</sub> a	2 ml H <sub>2</sub> SO <sub>4</sub> /L added idded A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> 24 mg/1 <u>7/25</u> <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25 <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25 <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25 <u>8.5 mg/1 7/25 <u>8.5 mg/</u></u></u></u></u>
No. of samples f submitted / X (NA: No acid added ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095)	IF = Crieck proper boxes         IF: Whole sample (Non-filtered)       □ F: Filter 0.45         Other-specify:       □ A         m SAMPLES	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a Sml conc. HNO <sub>3</sub> a From MF, Calcium Potassium A Potassium A Sodium Sodium Sodium Sulfate Chloride Sulfate Cation/A Analyst	2 mi H <sub>2</sub> SO <sub>4</sub> /L added added A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> 24 mg/1 <u>7/25</u> <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25</u> <u>7.5 mg/1 7/25 <u>7.5 mg/1 7/25</u> <u>7.5 mg/</u></u>
No. of samples / XN submitted / XN X NA: No acid added ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: A p H Other: Other: A-M_SO_ Nitrate-N + Nitrate-N total (00630) Ammonia-N total (00610) Total KjeldahI-N ( ) Chemical oxygen demand (00340) Total organic carbon ( ) Other: Other: Other: Chemical oxygen demand (00340) Total organic carbon ( ) Other: Other: Other: Chemical oxygen	IF:       Whole sample (Non-filtered)       □       F:       Filter 0.45         Other-specify:       □       IA         m SAMPLES	ed in field with µmembrane filter A: 5ml conc. HNO <sub>3</sub> a A: 5ml co	2 ml H <sub>2</sub> SO <sub>4</sub> /L added idded A: 4ml fuming HNO <sub>3</sub> ad NA Sample: Date <u>Analyzed</u> 24 mg/1 <u>7/25</u> <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25 <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25 <u>8.5 mg/1 7/25 <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25</u> <u>8.5 mg/1 7/25 <u>8.5 mg/1 7/25 <u>8.5 mg/</u></u></u></u></u></u>

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ANALYTE	CATIONS MEQ.	PPM	DET. LIMIT	ANALYTE	ANIONS MEQ.	PPM	DET. LIMIT
Ca Mg Na K	1.20 0.70 122.14 0.97	24.00 8.50 2808.00 38.00	<3.0 <0.3 <10.0 <0.3	HC03 SO4 CL	44.35 50.21 2.85	2706.00 2410.00 101.00	<1.0 <10.0 <5.0
Mn Fe	0.00 0.00	0.00 0.00		NO3 C03 NH3 PO4	0.00 16.72 0.00 0.00	0.00 1003.00 0.00 0.00	< 0. < 1. < 0. < 0.
SUMS	125.01	2878.50	;   1	•	114.12	6220.00	
Total I Ion Bal	)issolved .ance =	Solids= 109.54%	8492	WC Date c	No. No.	= 8802097	/

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	1 Environment Department	
New Mexico Health and SCIENTIFIC LABORAT	ORY DIVISION	
Albuquerque NM 8710	IE S	HEAVY METAL ANALYSIS FORM
	5	Telephone: (505)841-2553
Date	Lab User	
Received 6 10 85	No. ICP-270 Code	🕅 82235 🔲 Other:
COLLECTION DATE & TI	ME: yy mm dd hh m	COLLECTION SITE DESCRIPTION
	88 06 09 11 5	Cooling Tours
COLLECTED BY:	1. Pin mt	
Reperter,	fmd 25 Alt Cra	
، ، ، ۲ <b>۰</b> :		OWNER: Standard Light hack
1		
ENVIRONMENTAL BU	TON DIVISION	SITE IOCATION:
State Land Offic	re Bldg. PO Box 208	8
SANTA FE, NM	37504-2088	Township, Range, Section, Tract: (10N06E24342)
× Palu	20	
ATTN: <u>D. DZYP</u>		N/WEII CODE-
ILLEPHONE: 027-1	JOIZ JIAITO	
	LATITUDE, LONGI	
Bailed [] Pi	Imp Water Level:	Discharge:   Sample Type:
		GRAR
OH(00400)  Conductiv	vity(Uncorr.)   Water	Temp.(00010)   Conductivity at 25°C
1D	0	(00094)
	boot umho	
FIELD COMMENTS:	•	· · · · · · · · · · · · · · · · · · ·
SAMPLE FIELD TREATME	2NUL	TID INITUATA DECOMPOSE
		LAB ANALYSIS REQUESTED:
Check proper boxes:	WDF Water	LAB ANALYSIS REQUESTED:
Check proper boxes: WPN: Water Preserved w/HNO	WPF: Water	AB ANALYSIS REQUESTED:
Check proper boxes: WWPN: Water Preserved w/HNO Non-Filtered	U WPF: Water Preserved w/HNO3 Filtered	AB ANALYSIS REQUESTED: X ICAP Scan Mark box next to metal if AA is required.
Check proper boxes: WPN: Water Preserved w/HNO Non-Filtered	WPF: Water Preserved w/HNO <sub>3</sub> Filtered	ICAP Scan         Mark box next to metal if AA         is required.
Check proper boxes: WPN: Water Preserved w/HNO Non-Filtered	Image: Water         Image: Water         Preserved w/HNO3         Filtered         ANALYTICAL RES	IAB ANALYSIS REQUESTED:         ICAP Scan         Mark box next to metal if AA         is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered CLEMENT Aluminum	Image: Water         Preserved w/HNO3         Filtered         ANALYTICAL RES         JE       AA VALUE	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA         is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       .44.
Check proper boxes: WPN: Water Preserved w/HNO Non-Filtered LEMENT Aluminum Barium 40.1	Image: Water         Image: Water         Preserved w/HNO3         Filtered         ANALYTICAL RES         Image: DE AA VALUE         AA VALUE	IAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT ICAP VALUE Silicon 34.         Silver 40.1
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered Served w/HNO <sub>3</sub> ICAP VALU CALLEMENT Aluminum Sarium Served w/HNO <sub>3</sub> Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Contended Co	Image: Weight of the second symplect	IAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       34.         Silver       40.         Strontium       0.2.
Check proper boxes: WPN: Water Preserved w/HNO Non-Filtered CLEMENT Aluminum Barium Barium Beryllium Boron 2.2	Definition of the second secon	LAB ANALYSIS REQUESTED:         ICAP Scan         Mark box next to metal if AA         is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       34.         Silver       40.         Tin       40.
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered Aluminum Barium Barium Beryllium Boron Cadmium	Image: Water         Preserved w/HNO3         Filtered         ANALYTICAL RES         Image: DE AA VALUE         Image: AA VALUE         Image: DE AA VALUE	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       34.         Silver       40.         Tin       40.         Vanadium       40.
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered Seryllium Barium Barium Cadmium Calcium Check proper boxes: WPN: Water ICAP VALL CAP VALL	Image: Water         Preserved w/HNO3         Filtered         ANALYTICAL RES         Image: DE AA VALUE         Image: DE AA VALUE         Image: DE AA VALUE         Image: DE AA VALUE	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       34.         Silver       40.1         Strontium       0.2.         Tin       40.1         Vanadium       40.1
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered Aluminum Barium Barium Beryllium Cadmium Cadmium Calcium Check proper boxes: ICAP VALU 40.1 5.4 40.1 40.1	Image: Weight of the second	IAB ANALYSIS REQUESTED:         ICAP Scan       Mark box next to metal if AA         Mark box next to metal if AA       is required.         ULTS (MG/L)       AA VALUE         ELEMENT       ICAP VALUE       AA VALUE         Silicon       34.       Image: Colored structure       Image: Colored structure         Silver       40.1       Image: Colored structure       Image: Colored structure         Vanadium       40.1       Image: Colored structure       Image: Colored structure         Vanadium       40.1       Image: Colored structure       Image: Colored structure         Arsenic       Image: Colored structure       Image: Colored structure       Image: Colored structure       Image: Colored structure
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered LEMENT Aluminum Barium Barium Boron Cadmium Calcium Chromium Cobalt Lence Check proper boxes: ICAP VALU CAP VALU CAP VALU Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construction Construct	Description of the second seco	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       34.         Silver       40.1         Strontium       0.2         Tin       40.1         Vanadium       40.1         Zinc       40.1         Selenium       0.1
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered Aluminum Barium Barium Boron Cadmium Calcium Chromium Cobalt Copper 0.7	Image: Weight of the second	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       34.         Silver       40.1         Strontium       0.2         Tin       40.1         Vanadium       40.1         Zinc       40.1         Marsenic       Image: Comparison of the second se
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered ELEMENT Aluminum Barium Barium Boron Cadmium Cadmium Cobalt Copper Iron Codd Aluminum Cobalt Copper Codd Con Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd Codd	Image: Weight of the second	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       34.         Silver       40.1         Strontium       0.2.         Tin       40.1         Vanadium       40.1         Zinc       <0.1
Check proper boxes:         WPN: Water         Preserved w/HNO3         Non-Filtered         ELEMENT       ICAP VALU         Aluminum       40.1         Barium       40.1         Baron       2.2         Cadmium       40.1         Cobalt       40.1         Copper       0.7         Iron       0.3         Lead       40.1	WPF: Water         Preserved w/HNO3         Filtered         ANALYTICAL RES         DE         AA VALUE	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE       AA VALUE         Silicon       34.
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered ELEMENT Aluminum Barium Barium Calcium Calcium Calcium Cobalt Copper Iron Lead Magnesium Manganese (2000 Calcium Cobalt Copper Copper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Comper Com	□ WPF: Water Preserved w/HNO <sub>3</sub> Filtered ANALYTICAL RES DE AA VALUE □	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       34.         Silver       40.1         Strontium       0.2.         Tin       40.1         Vanadium       40.1         Zinc       40.1         Mercury       0         Mercury       0
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered ELEMENT Aluminum Barium Barium Beryllium Calcium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum	□ WPF: Water Preserved w/HNO <sub>3</sub> Filtered ANALYTICAL RES <u>AA VALUE</u> 	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       34.         Silver       40.1         Strontium       0.2         Tin       40.1         Vanadium       40.1         Zinc       40.1         Arsenic       Image: Compare the second se
Check proper boxes:WPN: WaterPreserved w/HNO3Non-FilteredNon-FilteredICAP VALUAluminumBariumBariumCalciumCalciumCobaltCobaltCopperO.7O.3LeadMagnesiumMagneseMolybdenumVickel	□ WPF: Water Preserved w/HNO <sub>3</sub> Filtered ANALYTICAL RES <u>DE AA VALUE</u> 	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE         Silicon       36.         Silver       40.1         Strontium       0.2         Tin       40.1         Vanadium       40.1         Zinc       40.1         Arsenic       Image: Compare the second se
Check proper boxes:WPN: WaterPreserved w/HNO3Non-FilteredSono-FilteredICAP VALUAluminumBariumColliantBariumCadmiumCadmiumCadmiumCadmiumCobaltCobaltCopperD.7IronLeadAugnesiumAugnesiumAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugneseAugnesAugnese <td>□ WPF: Water Preserved w/HNO<sub>3</sub> Filtered ANALYTICAL RES DE AA VALUE </td> <td>LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE       AA VALUE         Silicon       34.       Image: Stream of the /td>	□ WPF: Water Preserved w/HNO <sub>3</sub> Filtered ANALYTICAL RES DE AA VALUE 	LAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE       AA VALUE         Silicon       34.       Image: Stream of the
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered ELEMENT Aluminum Barium Barium Calcium Cadmium Cobalt Copper Copper Copper Copper Copper Con Lead Copper Copper Con Lead Copper Copper Con Lead Copper Con Copper Con Copper Con Copper Con Copper Con Con Con Con Con Con Con Con	□ WPF: Water Preserved w/HNO <sub>3</sub> Filtered ANALYTICAL RES DE AA VALUE 	IAB ANALYSIS REQUESTED:         ICAP Scan         Mark box next to metal if AA         is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE       AA VALUE         Silicon       34.          Silver       40.1          Strontium $0.2$ Tin       40.1          Vanadium       40.1          Zinc       <0.1          Arsenic           Selenium           Mercury                     Mark box next to metal if AA </td
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered ELEMENT Aluminum Barium Barium Barium Calcium Calcium Calcium Cobalt Copper Con Lead Copper Con Lead Copper Con Con Con Con Con Con Con Con	□ WPF: Water Preserved w/HNO <sub>3</sub> Filtered ANALYTICAL RES <u>ANALYTICAL RES</u> <u>ANALYTICAL RES</u>	IAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE       AA VALUE         Silicon       36.       Image: Constraint of the second sec
Check proper boxes: WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered 2LEMENT Aluminum Barium Barium Baryllium Cadmium Cadmium Cadmium Cadmium Cadmium Cadmium Cadmium Cadmium Cadmium Cadmium Cadmium Cadmium Cobalt Copper Copper Copper Con Cadmium Cobalt Copper Con Cadmium Cobalt Copper Con Cadmium Cobalt Copper Con Cadmium Cobalt Copper Con Copper Con Con Con Cobalt Copper Con Con Con Con Con Con Con Con	WPF: Water         Preserved w/HNO3         Filtered         ANALYTICAL RES         DE         AA VALUE	IAB ANALYSIS REQUESTED:         Mark box next to metal if AA is required.         ULTS (MG/L)         ELEMENT       ICAP VALUE       AA VALUE         Silicon       34.       Image: Comparison of the strength of the strengt of the strength of the strength of the strengt of th

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10: Sunterna Gas Processing ATTN: Gany Jondon PD Box 2106 Albuquenque, NM 87103

DATE: 30 June, 1988 WORK ORDER NO: 2273

SAMPLE ID: Lybrook Gas Plant, 6/9/88, #2 Well Water.

ANAL YTE.

ANALYTICAL RESULTS NOMINAL DEPECTION LIMIT

рН	9.3		0.01	
TDS	680	mg/l	1	mg/l
As	<0.05	ma/1	0.020	mg/1
8a	<1.O	ma/)	0.50	$\ln \alpha / \beta$
Cd	<0.010	ing/l	0.005	mg/1
Cr	(0.05	mg/).	0.025	ma/)
CN	<0.005	mg/1	0.003	mg/1
F	1,80	ma/)	0.01	mg/)
Pb	(1).1)5	m@/ 1.	0.005	mg/l
Total Hg	<0.002	ma/1	0.001	ing/1
NO 3	0.174	mg/1	0.01	mg/l
Se	<0.010	ms1/1	0.005	mg/l
Ag	(0.05	mg/l	0.01	mg/1
Benzene	< 1	ua/)	Į.	ua/l
Toluene	< 1	ug/1	1	ug/t
CCL 4	< 1	ug/)	1	ug/)
1,2-Dichlonoethane	<u>(1</u>	ug/1	1	ug/).
1,1-Dichlonoethy)ene	< 1	ua/1	1	ug/)
1,1,2.2-Tetnachlonoethylene	< 1,	149/1	L.	119/1
1,1.2-Inichlonoethylene	〈 1	ug/)	1	ua/)
Ethyl Benzene	く1	ug/t	1_	ua/1
Xylenes	< 1	ug/l	1.	ug/)
Methylene Chloride	< 1	ug/1	1.	ug/t
CHCL 3 ·	<1	ua/1	1.	ug/)
1,1-Dichloroethane	く1	ug/1	1,	ug/l
EDB	(0.1	ug/l	0.1	usi/1
1,1,1-Trichloroethane	く1	ug/1	1	ug/l
1,1,2-Trichlonoethane	<1	ug/l	<u>,</u>	ug/)
1,1,2,2-Tetrachloroethane	<1	49/1	1.	ug/l
Vinyl Chloride	< 1	ug/)	1	ug/)
Cu	(O.O5	mg/l	0.05	mg/1
Cl	10.9	ma/1	1.0	ma∕l
Fe	(0.10	mg/1	0.10	mg/l
Mn	(0.05	mg/)	0.05	mg/l
50 4	217.9	mg/1	1.0	mg/1
Zn	<0.02	mg/l	0.020	ma/).
A1	KD.50	mg/l	0.50	mg/1
8	0.200	mg/l	0.04	wa∖1
Co	<0.05	mǥ∕l	0.05	mg/l
Mo	KO.50	m31/1	<u>0.05</u>	mg/)
Ni	<0.05	mg/l	0.05	m9/1

7300 Jefferson, N.E. • Albuquerque, New Mexico 87109 • (505) 345-8964

An invoice (on services is included. Thank you for contacting Assaidal Analytical Laboratories.

.

Sincerely,

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Balwant Chauhan, Ph.D. Laboratory Director

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# SCIENTIFIC LABORATORY DIVISION ORGANIC ANALYSIS REQUEST FORM Organic Section - Phone: \$41-2570

				·
REPORT TO:	DAVID BOYER	-	S.L.D. No. OR-	88-0863
WP. Y rY	N.M. OIL CONSERVATION DIVIS	ION	DATE REC.	
175	P.O. Box 2088	· · · · · ·	PRIORITY	3
	Santa Fe, NM 87504-2088		PHONE(S): _8	27-5812
COLLECTION C	TTY: ILETTOR	; co	DUNTY: <u><u><u><u><u>R</u></u></u></u></u>	HIP-TURE
COLLECTION I	ATE/TIME CODE: (Year-Month-Day-Hour-Minute	0630	61021	121/101
LOCATION COL	DE: (Township-Range-Section-Tracts)	+     +	· · · · · · · · · · · · · · · · · · ·	(10N06E24342)
USER CODE: [	8 2 2 3 5  SUBMITTER:	id Boyer		CODE: 2 6 0
SAMPLE TYPE	: WATER 💢, SOIL [_], FOOD [_], OTHER:			
This form accon Samples were pro- NP: P-Ice P-AA P-HC1 ANALYSES RP required. Whene (753) Aliph (754) Arom (765) Mass (766) Triha (776) Triha (775) SDW. Othe Remarks:	Apanies Septum Vials, Glass Jugs, a reserved as follows: No Preservation; Sample stored at room temper Sample stored in an ice bath (Not Frosen). Sample Preserved with Ascorbic Acid to remove Sample Preserved with Hydrochloric Acid (2 dr QUESTED: Please check the appropriate box(es) b ver possible list specific compounds suspected or r <u>PURGEABLE SCREENS</u> atic Headspace (1-5 Carbons) atic & Halogenated Purgeables Spectrometer Purgeables lomethanes A VOC's I (8 Regulated +) A VOC's I (8 Regulated +) A VOC's II (EDB & DBCP) r Specific Compounds or Classes	and/or sture. e chlorine residua rope/40 mi) below to indicate required. (751) A (755) B (758) H (758) H (759) H (760) O (761) O (764) P (762) Si	al. the type of analy <u>RACTABLE SCRE</u> Lliphatic Hydrocarb Sase/Neutral Extrac erbicides, Chloroph erbicides, Triasines Organochlorine Pesti rganophosphate Per olychlorinated Biph olynuclear Aromati DWA Pesticides &	rtical screens ENS ons tables enoxy acid cides sticides lenyls (PCB's) c Hydrocarbons Herbicides
FIELD DATA:				
pH=; C	onductivity= <u>1997</u> _umho/cm_at_ <u>_</u> C; Chlo	orine Residual=	mg/l	
Dissolved Oxyge	n=mg/l; Alkalinity=mg/l; Flow Ra	.te		
Depth to water	ft.; Depth of wellft.; Perforation	Interval	ft.; Casing:	
Sampling Locatio	on, Methods and Remarks (i.e. odors, etc.)	$\mathcal{F}$	$\wedge$	
Sum/er	in hybrora Domethic Wa	ale sup	ne y	
Sampk.	- Tirm Value of tank be	Mom'j'	Kenny MO	0000
I certify that the certify that the sectivities.	he results in this block accurately reflect the results collector):	its of my field a Method of	analyses, observatio f Shipment to the	ns and Lab: <u>State Co</u>
CHAIN OF CU	STODY			
I certify that th	his sample was transferred from		to	
at (location)		_ on/		; and that
the statements	in this block are correct. Evidentiary Seals: Not S	Sealed 🛄 OR S	Seals Intact: Yes [	No 🗌
Signatures			<u></u>	
For OCD	use: Date owner notified: 8/	14/88 PI	none or Let	ter) Initials

CEIVED 6 10 88	NO WC-2098 CODE	59300	<u> </u>	OTHER: 82	235	
ACTION DATE	SITE Sample loc INFORM- >	cation junte	2.22 1-1/22	PC- G-C	mostic	luster Supp.
ected by - Person/Agency		site description				<u> </u>
ENVIRONMEN NO NM OIL COM AL State Land PORT Santa Fe,	TAL BUREAU SERVATION DIVISION Office Bldg, PO B NM 87504-2088	1 30x 2088			<u> </u>	
Attn: <u>David Br</u>	yer			011	CONSERVE	TAFE
Phone: 827-5	812			Station/ well code		
MPLING CONDITIONS				Owner		
Bailed C Pump	Water level 🧹		Discharge		Sample typ	GRAR
H (00400)	Conductivity (Uncorrected)	µmho	Water Temp. (00010)	27 °C	Conductivit	ry at 25 °C (00094) μπ
No. of samples	IT Check proper boxes IF: Whole sample (Non-filtered)	Filtered in fil 0.45 µmemi	eld with A:	2 ml H <sub>2</sub> SO4	/L added	
MPLE FIELD TREATMENT No. of samples Pubmitted / X M X NA: No acid added ALYTICAL RESULTS fro NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended)	IT Check proper boxes IF: Whole sample (Non-filtered) □ F: Other-specify: m SAMPLES Units Da ↓↓0}µmho	Filtered in file 0.45 µmemi □ A: 51 Ite analyzed 7411	From $\mathcal{A}$ : Calcium	2 mi H <sub>2</sub> SO4 dded NA Samp1 8-	/L added A: 4ml e: mg/1 mg/1	Euming HNO <sub>3</sub> ad Date <u>Analyzed</u> $7/2 \le$
MPLE FIELD THEATMENT         No. of samples         submitted         Submitted         X         NA: No acid added         IALYTICAL RESULTS from         NA         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:         AH-SQ.	IT Check proper boxes IF: Whole sample (Non-filtered) □ F: Other-specify: m SAMPLES Units Da Units Da 	3 Filtered in file 0.45 µmemi □ A: 51 Ite analyzed 7/11 7/21	From A: Calcium, Calcium, Calcium, Magnesium Sodium, Bicarbonat	2 mi H <sub>2</sub> SO <sub>4</sub> dded NA Samp1 8. 13. 25 / 14. 25 /	/L added A: 4m1 e: mg/1 mg/1 g/1 g/1	Euming HNO <sub>3</sub> add Date <u>Analyzed</u> $7/2 \le$ $7/2 \le 2$ $7/2 \le 2$
MPLE FIELD THEATMEN         No. of samples         submitted         Submitted         NA: No acid added         IALYTICAL RESULTS fro         NA         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:         NH-3SO4	IF Check proper boxes IF: Whole sample (Non-filtered) □ F: Other-specify: m SAMPLES Units Da Units Da Units Da 0 0 0 0 0 0 0 0 0 0 0 0 0	3 Fittered in fit 0.45 µmemi □ A: 51 It analyzed 7/11 7/21	From A: Calcium , Calcium , Ca	2 mi H <sub>2</sub> SO <sub>4</sub> dded NA Samp1 NA Samp1 13. 25 / 12. 25 / 12. 27. 27. 27. 27. 27. 27. 27. 2	/L added A: 4m1 e: mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	Euming HNO <sub>3</sub> add Date <u>Analyzed</u> $7/2 \leq$ $7/2 \leq$ 7/2 <
Imple Field Theatmer         No. of samples         submitted         Submitted         X         NA: No acid added         IALYTICAL RESULTS fro         NA         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:         A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N         total (00630)         Ammonia-N total (00610)         Total Kjekdahl-N         (         Chemical axygen	IF: Whole sample (Non-filtered) □ F: Other-specify: m SAMPLES Units Da Units Da Units Da Units Da Units Da Units Da Units Da Units Da Units Da Units Da	3 Fittered in fit 0.45 µmemi □ A: 51 Ite analyzed 7/11 7/2.1	eid with <ul> <li>A:</li> <li>brane filter</li> <li>A:</li> </ul> ml conc. HNO3 a           From              From              Calcium              Potassium              Magnesium              Sodium           Chloride           Sulfate	2 mi H <sub>2</sub> SO <sub>4</sub> dded NA Samp1 NA Samp1 13. 25 / 12. 25 / 13. 25 / 13. 25 / 13. 25 / 13. 25 / 13. 25 / 14. 25 / 14. 25 / 15. 25 / 15. 25 / 15. 25. 25. 25. 25. 25. 25. 25. 2	/L added A: 4m1 e: mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	Euming HNO <sub>3</sub> add Date <u>Analyzed</u> $7/2 \leq$ $7/2 \leq$ 7/2 = 7/2 =
MPLE FIELD THEATMER         No. of samples         submitted         //         X         NA: No acid added         X         ALYTICAL RESULTS from         NA         Conductivity (Corrected)         25°C (00095)         Total non-filterable         residue (suspended)         (00530)         Other:         Other:         Other:         Other:         Other:         Other:         Other:         AH2SO4         Nitrate-N +, Nitrate-N         total (00630)         Ammonia-N total (00610)         Total Kjeldahl-N         (         Chemical oxygen         demand (00340)         Total organic carbon	IF Check proper boxes IF: Whole sample (Non-filtered) □ F: Other-specify: m SAMPLES Units Da Units Da Units Da Units Da Units Da Units Da Units Da Units Da Units Da Units Da	3 Fittered in fit 0.45 µmemi □ A: 51 Ite analyzed 7/11 7/2.1	eld with <ul> <li>A:</li> <li>brane filter</li> <li>A:</li> </ul> ml conc. HNO3 a           From //,           Calcium           Calcium           Potassium           Magnesium           Sodium           Sodium           Sodium           Sodium           Sulfate           Total Soli	2 mi H <sub>2</sub> SO <sub>4</sub> dded NA Samp1	/L added A: 4m1 e: mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	Euming HNO <sub>3</sub> add Date <u>Analyzed</u> $7/2 \leq$ $7/2 \leq$ 7/2 = 7/2 =
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HNO3 a   From   Calcium   Calcium   Potassium   Potassium   Magnesium   Sodium   Sodium   Chloride   Sulfate   Sulfate   Cation/A	2 mi H <sub>2</sub> SO <sub>4</sub> dded $\Box$ NA Samp1 NA Samp1 $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$ $I_{3}$	/L added A: 4m1 e: mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 	Euming HNO <sub>3</sub> add Date <u>Analyzed</u> $7/2 \leq$ $7/2 \leq$ 7/2 < 7/2 <

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ANALYTI	CATIONS E MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. LIMIT
Ca Mg Na K	0.40 1.10 10.92 0.03	8.00 13.40 251.00 1.00	<3.0 <0.3 <10.0 <0.3	HC03 SO4 CL	5.75 4.38 0.14	351.00 210.00 5.00	<1.0 <10.0 <5.0
Mn Fe	0.00 0.00	0.00 0.00		NO3 C03 NH3 PO4	0.00 0.42 0.00 0.00	0.00 25.40 0.00 0.00	< 0. < 1. < 0. < 0.
SUMS	12.44	273.40			10.69	591.40	
Total I Ion Bai	Dissolved lance =	Solids= 116.38%	683	WC Date o	No. No.	= 8802098	

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New Mexico Health and Environment Department SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE Albuquerque, NM 87106

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#### HEAVY METAL ANALYSIS FORM

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Telephone: (505)841-2553

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Date Lab Us	jer
Received 6/10/84 No. ICP-265 Co	ode 🕅 82235 🗌 Other:
COLLECTION DATE & TIME: yy mm dd h	h mm COLLECTION SITE DESCRIPTION
68 06 09 1	210 Water Supply Tank
COLLECTED BY:	
▝▖▖	
TO:	OWNER: SUNTERTA LIGTON
	Benning Press
ENVIRONMENTAL BUREAU	SITE LOCATION: 10
NM OIL CONSERVATION DIVISION	County: Rip HMUR
State Land Office Bldg. PO Box	2088
SANTA FE, NM 87504-2088	Township, Range, Section, Tract: (10N06E24342)
N h	+   +   +
ATTN: D, KDUCK	
TELEPHONE: 827-5812 ST	TION/ WELL CODE:
LATITUDE, LA	
SAMPLING CONDITIONS:	
□ Bailed □ Pump   Water Leve	al: Discharge: Sample Type:
Dipped M Tap	Geal
pH(00400) Conductivity(Uncorr.) Wa	ter Temp (00010)   Conductivity at 25°C
ETELD CONDENTS:	the state of the ter
riello completion i	The a bours of strafts land
CANDLE FIELD MORAMARNM	TAD ANALYCTC DEODECHED.
Check Proper bever	LAB ANALISIS REQUESTED:
W WDN: Wator WDP: Wator	
Processed w/WNO Processed w/WNO	Wark how next to motal if N
Non-Filtorod 3 Filtorod	ia remuired
ΑΝΙΔΙ ΥΤΙζΔΙ Ι	RESULTS (MG/L)
FLEWENT TOAD VALUE AA VALUE	
Aluminum (A)	Silicon C/
Barium (A)	
Barrullium 40.1	Stroptive
Beryllium	
Calcium <u>1.1</u>	<u>21nc</u> <u><u>20.1</u></u>
	Arsenic
Copart <u>20.05</u>	
	Mercury
	│ ∐
Lead $20.1$ $2(0.01)$	│ ∐
Magnesium <u>20.</u>	│ <u></u> <u></u> ⊢
Malubdanum 40.05	<u></u> <u></u> <u></u>
	<u></u>
NICKEL	
	An inites
LAB COMMENTS:	9 ATT 614160 7/5/08 N (ESTED
the seal Witt : C	
FOR UCD USE:	(1 - 0 n)
Date owner Notilied: 5//5/99 ICAP	Analyst p keviewer ( Mul
	1/5/42 - 1/2-KTR
Initials: <u>A</u> / Jy Date	Anaryzed 1//2/00 Date Reverved 4-1/00



TO: Sunterna Gas Processing ATTN: Gary Jordan PO Box 2106 Albuquerque, NM 87103

ANALYTE

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DATE: 30 June, 1988 WORK ORDER NO: 2773

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SAMPLE ID: Lybrook Gas Plant, 6/9/88, #3 Waste Water.

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ANALYTICAL RESULTS NOMINAL DETECTION LIMIT

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На	8.8		17 17 1	
TDS	6216	m(1/)	1	ma/1
As	0.172	ma/1	0.020	ma/1
Ва	(1.0	mg/1	0.50	mg/l
Cd	0.024	ms1/1	0.005	ma/1
Cr	0.068	mg/1	0.025	$m\alpha/1$
CN	0.005	mg/1	0.003	mg/1
F	20.6	mg/l	0.01	$(n \alpha / )$
Pb	0.051	mg/l	0.005	mg/l
Total Hg	(0.002	insi/1	0.001	mg/1
NO 3	(0.01	mg/l	0.01	mg/1
Duplicate	<u>(0.01</u>	mg/1	0.01	msi/1
Se	0.057	mg/1	0.005	mg/1
Ag	<d.05< td=""><td>mg/l</td><td>0.01</td><td>mg/l</td></d.05<>	mg/l	0.01	mg/l
Benzene	1207	ug/t	1	ug/1
Toluene	319	ug/1	1	ug/1
CCL 4	<1	ug/1	1	ug/1
1,2-Dich)oroethane	<1	ug/1	1	ug/)
1,1-Dichloroethylene	< 1	ug/1	1	ug/1
1,1.2,2-Tetrachloroethylene	• <1	ua/)	١	ug/)
l,1,2-Trichloroethylene	<1	1.19/1	l,	ug/1
Ethyl Benzene	< 1	ug/1	1	ug/1
Xylenes	<1	ug/1	1	ug/1
Methylene Chloride	<u>{</u> 1	ug/1	1	ug/1
CHCL 3	<1	ug/1	1	ug/l
1,1-Dichloroethane	< 1	ug/l	1	ug/l
EDB	(0.1	ug/1	0.1	ug/1
1,1,1-Trichloroethane	<b>&lt;</b> 1	ua/).	1.	ug/)
1,1.2-Trichloroethane	< 1	ug/1	1	ug/1
1,1,2,2-Tetrachloroethane	< 1	ug/)	1	us/1
Vinyl Chloride	< 1	ug/1	l,	ug/1
Cu	0.162	mal)	0.05	ma/)
C1	208.4	ma/1	1.0	mg/l
Fe	6.80	mer/1	0.18	mg/1
Mn	0.230	mg/l .	0.05	mg/l
SO 4	1667	mឡ/]	1.O	mg/1
Zn	0.560	ma∕l	ກ.ຄຂກ	mg/l
Al	14.57	ma/l	0.50	mg/l
8	1.84	mg/l	0.04	mg/1
Co	<0.05	wally	0.05	wa\]
Mo	(0.50	ing/1	0.05	ma∕1
N 1	0.084	mal 1	0.05	wa\)
7300 Jefferson, N.E. • ,	Albuquer	que, New Mexico 87109	• (505) 3	45-8964

An involce for services is included. Thank you for contacting Assaigai Analytical Laboratories.

Sincerely,

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Balwant Chauhan, Ph.D. Laboratory Director

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REPORT TO: DAVID BOYER N.M. OIL CONSERVATION DIVIS P.O. Box 2088 Santa Fe, NM 87504-2088 COLLECTION CITY: <u>hubber</u> COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minut	S.L.D. 1 TON DATE PRIORI	No. OR $6/10/85$
N.M. OIL CONSERVATION DIVIS         P.O. BOX 2088         Santa Fe, NM 87501-2088         Collection City:         Lub 200K         Collection DATE/TIME CODE:	PRIORI	$\operatorname{Rec.} \underbrace{-6/10/85}_{7}$
P.O. Box 2088         JGU         P.O. Box 2088         Santa Fe, NM 87574-2085         Collection City:         Lub Dork         Collection DATE/TIME CODE:         (Year-Month-Day-Hour-Minute)	PRIORI	• • •
Santa Fe, NM 8755-2088 COLLECTION CITY: <u>hubbork</u> COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minut	PHONE	TY
COLLECTION CITY: <u>hybrack</u> COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minut		(s): <u>827-5812</u>
COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minut	; COUNTY:	Rin Gamlere
	· 1918101610	171/1212151
LOCATION CODE: (Township-Range-Section-Tracts)	<u>+     +  </u>	+     (10N06E24342
USER CODE: 18121213151 SUBMITTER: Day	id Bover	CODE: 2 6 0
SAMPLE TYPE: WATER XI, SOIL   , POOD   , OTHER:		
	•	
This form accompanies <u>O</u> Septum Viala, Glass Jugs, Samples were preserved as follows:	and/or	
NP: No Preservation; Sample stored at room tempe	rature.	
P-Ice Sample stored in an ice bath (Not Frosen).	e chloring residual	
P-KA Sample Preserved with Alcorbic Acid to remov P-HCl Sample Preserved with Hydrochloric Acid (2 of	irops/40 mi)	
ANALYSES REQUESTED: Please check the appropriate box(es)	below to indicate the typ	e of analytical screens
required. Whenever possible list specific compounds suspected or	required.	
(753) Aliphatic Headspace (1-5 Carbons)	EXTRACTAB	Hydrocarbons
(754) Aromatic & Halogenated Purgeables	(751) Anphasic	ral Extractables
(765) Mass Spectrometer Purgeables	(758) Herbicides,	Chlorophenoxy acid
(766) Trihalomethanes	(759) Herbicides,	Triasines
(774) SDWA VOC's I (8 Regulated +)	(760) Organochio	orine Pesticides
(775) SDWA VOC's II (EDB & DBCP)	(761) Organopho	sphate Pesticides
Other Specific Compounds or Classes	(767) Polychlorin	nated Biphenyls (PCB's)
	(764) Polynuciea	r Aromatic Hydrocarbons
	[_] (762) SDWA Pe	sticides & Herbicides
Remarks:		
FIELD DATA:		
$pH=\underline{9}$ ; Conductivity= <u><math>5800</math></u> umbo/em at <u><math>31</math></u> °C; Chi	orine Residual=m	g/l
Dissolved Oxygen=mg/l; Alkalinity=mg/l; Flow R	ate/	
Depth to waterft.; Depth of wellft.; Perforation	Intervalft.;	Casing:
Sampling Location, Methods and Remarks (i.e. odors, etc.)		
Sunferra Lubreck Stare Pit	at Gasplan	1. Lipson Fromck
Pik on Muthore, tremples	irom contre	lo Jpons
I certify that the results is this block accurately reflect the res	uits of my field analyses	observations and
activities.(signature collector).	Method of Shipme	int to the Lab: Stole Co
CHAIN OF CUSTODY		
I certify that this sample was transferred from	to	
at (location)	on//	and that
the statements in this block are correct. Evidentiary Seals: Not	Sealed OR Seals Inte	act: Yes 🛄 No 🛄
Signatures		

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### ANALYSES PERFORMED

	LA	<b>B</b> . N	o.:	OR-	85	
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This sample was tested using the analytical scree	ening method(a):	checked below:	
PURCEABLE SCREENS         (753)       Aliphatic Headspace (1-5 Carbons)         X       (754)         Aromatic & Halogenated Purgeables         (765)       Mass Spectrometer Purgeables         (766)       Trihalomethanes         (774)       SDWA VOC's I (8 Regulated +)         (775)       SDWA VOC's II (EDB & DBCP)         Other Specific Compounds or Classes		EXTRACTABLE SCREENS (751) Aliphatic Hydrocarbons (755) Base/Neutral Extractables (758) Herbicides, Chlorophenoxy acid (759) Herbicides, Triasines (760) Organochlorine Pesticides (761) Organophosphate Pesticides (761) Organophosphate Pesticides (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides	
COMPOUND(S) DETECTED	CONC.	COMPOUND(S) DETECTED	CONC
damente amerikke	PPB	f	IPPB -
1017 auce subsected	<u>Xmanka</u>		
te hand 1	/55		
J. think ac	326		
ettillerganc	TiRi		
pr.m- Rylenc			
- C- Kuff AC	16		<b>-</b>
hale geneted purseablist	$N', D_i$		
/		······	
• DETECTION LIMIT • 🗡	597/2	+ DETECTION LIMIT + +	<b>I</b>
N D = NONE DETECTED AT OR ABOVE T R = DETECTED AT A LEVEL BELOW [ RESULTS IN BRACKETS ] ARE UNCON LABORATORY REMARKS:	THE STATED THE STATED FIRMED AND/O <i>elutina</i> <i>in at</i>	D DETECTION LIMIT DETECTION LIMIT (NOT CONFIRMED) OR WITH APPROXIMATE QUANTITATION <u>unsaturated compounds</u> <u>eluting compounds in the</u> <u>10-30 pph diffected leg</u> , <u>in</u> <u>in instific</u> .	at 23 4
CERTIFICA Seal(s) Not Sealed Intact: Yes I No . I certify that I followed standard laboratory procedu that the statements on this page accurately reflect to Date(s) of analysis: <u>6/14/88</u> . Analyst's sig	TE OF ANALY Seal(s) broken h ures on handling the analytical re gnature:///	TICAL PERSONNEL by: <u>flue</u> date: date: and analysis of this sample unless otherwise noted sults for this sample.	14/88 and
I certify that I have reviewed and concur with the Reviewers signature: <u>KMeyenhei</u>	analytical result	for this sample and with the statements in this	biock.
0			

H ENVIRONMENT
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#### SCIENTIFIC LABORATORY DIVISION ORGANIC ANALYSIS REQUEST FORM Organic Section - Phone: 841-2570

REPORT TO: DAVID BOYER	88-0864-B
N.M. OIL CONSERVATION DIVIS	ION DATE REC. 6/10/88
10 ET P.O. Box 2088	PRIORITY
767 Santa Fe. NM 87504-2088	PHONE(S): 827-5812
COLLECTION CITY. LUDDEN	· commerce Rip Door it's
	Ship of the Grant Ship is the
COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minuto	
LOCATION CODE: (Township-Range-Section-Tracts)	
SAMPLE TYPE: WATER [X], SOIL [_], FOOD [_], OTHER:_	<u> </u>
This form accompanies       Septum Vials,       Glass Jugs,         Samples were preserved as follows:       NP:       No Preservation; Sample stored at room temper         P-Ice       Sample stored in an ice bath (Not Frosen).         P-Ice       Sample Preserved with Ascorbic Acid to remov         P-AA       Sample Preserved with Ascorbic Acid to remov         P-HCl       Sample Preserved with Hydrochloric Acid (2 d         ANALYSES BEQUESTED:       Please check the appropriate box(es) If         required.       Whenever possible list specific compounds suspected or         PURCEABLE SCREENS       (753) Aliphatic Headspace (1-5 Carbons)         (754) Aromatic & Halogenated Purgeables       (765) Mass Spectrometer Purgeables         (765) Trihalomethanes       (774) SDWA VOC's I (8 Regulated +)         (775).SDWA VOC's II (EDB & DBCP)       Other Specific Compounds or Classes	and/or <u>SAIRA</u> rature. re chlorine residual. Irops/40 ml) below to indicate the type of analytical screens required. <u>EXTRACTABLE SCREENS</u> (751) Aliphatic Hydrocarbons (755) Base/Neutral Extractables (758) Herbicides, Chlorophenoxy acid (759) Herbicides, Triasines (760) Organochlorine Pesticides (761) Organophosphate Pesticides (767) Polychlorinated Biphenyls (PCB's)
Remarks:	(762) SDWA Pesticides & Herbicides
FIELD DATA:	
pH= <u>C</u> ; Conductivity= <u><math>OOC</math>umho/cm at</u> <u>C</u> ; Chl	orine Residual=mg/l
Dissolved Oxygen=mg/l; Alkalinity=mg/l; Flow R	ate/
Depth to waterft.; Depth of wellft.; Perforation	Intervalft.; Casing:
Sampling Location, Methods and Remarks (i.e. odors, etc.) <u>Sumplements</u> Lippers Korre He <u>And Andrace of pondy</u> I certify that the results in this block accurately reflect the result activities.(signature collector):	Employpes observations and Method of Shipment to the Lab: State (M)
CHAIN OF CUSTODY	
I certify that this sample was transferred from	to
at (location)	on/ and that
the statements in this block are correct. Evidentiary Seals: Not	Sealed OR Seals Intact: Yes No
Signatures	
For OCD use: Date owner notified: $\underline{2}$	3/19/98 Phone or Letter? Initials

#### ANALYSES PERFORMED

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LAB. No .: OR- 88 - 364

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THIS PAG	E FOR LABO	RATORY RESULTS ONLY	
This sample was tested using the analytical screen	ning method(s)	checked below:	
PURGEABLE SCREENS         (753) Aliphatic Headspace (1-5 Carbons)         (754) Aromatic & Halogenated Purgeables         (765) Mass Spectrometer Purgeables         (766) Trihalomethanes         (774) SDWA VOC's I (8 Regulated +)         (775) SDWA VOC's II (EDB & DBCP)         Other Specific Compounds or Classes		EXTRACTABLE SCREENS (751) Aliphatic Hydrocarbons (755) Base/Neutral Extractables (758) Herbicides, Chlorophenoxy acid (759) Herbicides, Triasines (760) Organochlorine Pesticides (761) Organophosphate Pesticides (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides	
AN		L RESULTS	-
COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC.
PCBS (Polychlorinated Biphenyle)	ND		
			B
• DETECTION LIMIT • * ABBREVIATIONS USED: N D = NONE DETECTED AT OR ABOVE T R = DETECTED AT A LEVEL BELOW [ RESULTS IN BRACKETS ] ARE UNCONF	THE STATES THE STATES IRMED AND/	+ DETECTION LIMIT + T D DETECTION LIMIT D DETECTION LIMIT (NOT CONFIRMED) OR WITH APPROXIMATE QUANTITATION	
LABORATORY REMARKS:			
CERTIFICAT Seal(s) Not Sealed [] Intact: Yes [] No []. S	'E OF ANALY	TICAL PERSONNEL	
I certify that I followed standard laboratory procedur that the statements on this page accurately reflect th Date(s) of analysis: $\frac{7/2.5}{88}$ . Analyst's sign	es on handling ne analytical re nature:	r and analysis of this sample unless otherwise noted esults for this sample.	and
I certify that I have reviewed and concur with the s Reviewers signature: Meule here	analytical resul	ts for this sample and with the statements in this	block.
J			

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-	JF
" Enviro	inter 1
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# SCIENTIFIC LABORATORY DIVISION ORGANIC ANALYSIS REQUEST FORM Organic Section - Phone: 841-2570

	88.0865
REPORT TO: DAVID BOYER	S.L.D. No. OR
WU N.M. OIL CONSERVATION DIVIS	SION DATE REC. $6/10/81$
761 <u>P.O. Box 2088</u>	PRIORITY
<u>Santa Fe, NM 87504-2088</u>	PHONE(S): 827-5812
COLLECTION CITY: 1415-2012	; COUNTY: KUDATALLA
COLLECTION DATE/TIME/CODE: (Year-Month-Day-Hour-Minut	· 1818101610191/1213151
LOCATION CODE: (Township-Range-Section-Tracts)	+   +   +   (10N06E24342)
USER CODE: 812 2 3 5 SUBMITTER: Day	vid BoyerCODE: 2   6   0
SAMPLE TYPE: WATER $\lambda$ , soil [], food [], other:	
This form accompanies Septum Vials, Glass Jugs,         Samples were preserved as follows:         NP:       No Preservation; Sample stored at room tempe         P-Ice       Sample stored in an ice bath (Not Frosen).         P-AA       Sample Preserved with Ascorbic Acid to remoin         P-HCl       Sample Preserved with Ascorbic Acid (2 of ANALYSES BEQUESTED: Please check the appropriate box(cs)         required. Whenever possible list specific compounds suspected or PURGEABLE SCREENS         (753) Aliphatic Headspace (1-5 Carbons)         (754) Aromatic & Halogenated Purgeables         (765) Mass Spectrometer Purgeables         (766) Trihalomethanes         (774) SDWA VOC's I (8 Regulated +)         (775) SDWA VOC's II (EDB & DBCP)         Other Specific Compounds or Classes         Remarks:	and/or
FIELD DATA:	
pH=; Conductivity= $2CCC$ umbo/cm atC; Ch	lorine Residual=mg/l
Dissolved Oxygen=mg/l; Alkalinity=mg/l; Flow R	Late
Depth to waterft.; Depth of wellft.; Perforation	intervalft.; Casing:
Sum Taning Lutin Alton and remarks (1.0. odors, etc.)	it at Cost Plant
Con Uprint Suisking Ch.	who P Cram a Coor area
I certify that the results in this block, accurately reflect the res activities.(signature collector):	ults of my field analyses, observations and Method of Shipment to the Lab: <u>State</u>
CHAIN OF CUSTODY	/
I certify that this sample was transferred from	to
at (location)	on/ and that
the statements in this block are correct. Evidentiary Seals: Not	Sealed OR Seals Intact: Yes No
Signatures	
For OCD use: Date owner notified:	3/19/03 Phone or Letter? Initials 21/2

#### ANALYSES PERFORMED

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### LAB. No.: OR- 865

hod(s) checked below: EXTRACTABLE SCREENS (751) Aliphatic Hydrocarbons (755) Base/Neutral Extractables (758) Herbicides, Chlorophenoxy acid (759) Herbicides, Chlorophenoxy acid (759) Herbicides, Triasines (760) Organochlorine Pesticides (761) Organophosphate Pesticides (767) Polychlorinated Biphenyls (PCB's) (764) Polynuciear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides (762) SDWA Pesticides & Herbicides (760) OrganoUND(S) DETECTED CONC [PPB]
EXTRACTABLE SCREENS         (751) Aliphatic Hydrocarbons         (755) Base/Neutral Extractables         (758) Herbicides, Chlorophenoxy acid         (759) Herbicides, Chlorophenoxy acid         (759) Herbicides, Triasines         (760) Organochlorine Pesticides         (761) Organophosphate Pesticides         (767) Polychlorinated Biphenyls (PCB's)         (764) Polynuclear Aromatic Hydrocarbons         (762) SDWA Pesticides & Herbicides         ICAL RESULTS         COMPOUND(S) DETECTED       CONC         [PPB]
ICAL RESULTS         .       compound(s) detected         .       conc         .       [PPB]
COMPOUND(S) DETECTED CONC
+ DETECTION LIMIT + +
TATED DETECTION LIMIT CATED DETECTION LIMIT (NOT CONFIRMED) AND/OR WITH APPROXIMATE QUANTITATION $(\omega \neq \varepsilon \lambda)$ COOLING (DATEX INCLT) $P_{(\omega \neq \varepsilon \lambda)} = \frac{(\omega \neq \omega \tau)}{(\omega \in \omega \tau)}$
NALYTICAL PERSONNEL oken by: date: undling and analysis of this sample unless otherwise noted and ical results for this sample.

		M 87106 - (505) 841	-2555	0 59em IXX	OTHER 82	235	
	G G	SITE INFORM-► ATION	Sample location	Tenza Lyb	rook s	lare,	Fit/Pork
ollected by - Person	And And E	ton /OCD			]	•	
END NAL EPORT D	ENVIRONMEN NM OIL CON State Land Santa Fe,	ITAL BUREAU ISERVATION DI 1 Office Bldg NM 87504-208	VISION J. PO Box 208 38	8			3 1923
Attı	n: <u>David Br</u>	over			CI Station/	CONSER	ΑΤΙ <u>Ο.Ι</u>
Pho AMPLING C	ONDITIONS	812			Owner		
Bailed Dipped	C Pump C Tap	Water level	· · ·	Discharge		Sample type	GRab
iH (00400)	<u>C1</u>	Conductivity (Unc	orrected)	Water Temp. (00010)	3/ •c	Conductivity	at 25°C (00094) µmh
MPLE FIEL No. of samples submitted		IT — Check prop F: Whole sample (Non-filtered)	er boxes □ F: Filtered in 0.45 μme	field with	2 ml H <sub>2</sub> SO <sub>4</sub> /	L added	
AMPLE FIEL No. of samples submitted NA: No a NALYTICAL NA	LD TREATMEN	IT — Check prop F: Whole sample (Non-filtered) Other-specify: m SAMPLES	er boxes F: Filtered in 0.45 μme Δ A: Units Date analyze	field with mbrane filter A: 2 5ml conc. HNO <sub>3</sub> ac	2 ml H <sub>2</sub> SO <sub>4</sub> / dded NA Sample	Ladded A: 4ml fu	ming HNO <sub>3</sub> adde Date
AMPLE FIEL No. of samples submitted NA: No a VALYTICAL NA Conductivity 25°C (00095	D TREATMEN	T - Check prop F: Whole sample (Non-filtered) Other-specify: m SAMPLES	er boxes F: Filtered in 0.45 μmer ΔΑ: Units Date analyzer μmho _7/11	field with $\Box A$ : a morane filter $\Box A$ : a filter $\Box A$ : a filter $\Box A$ : a filter $\Box A$ : $\Box $	2 ml H <sub>2</sub> SO <sub>4</sub> / dded NA Sample	Ladded A: 4ml fu	Date Analyzed 7119
MPLE FIEL No. of samples submitted NA: No a NALYTICAL NA Conductivity 25°C (00095 Total non-filte residue (sus (00530) Other: 1 a	D TREATMEN	T - Check prop F: Whole sample (Non-filtered) Other-specify: m SAMPLES 29 44 8,72	er boxes F: Filtered in 0.45 μme CIA: Units Date analyze μmho 7/11 mg/1 7/216	field with mbrane filter A: 2 5ml conc. HNO <sub>3</sub> ac From <u>M</u> , Calcium Potassium Magnesium	$2 \text{ ml H}_2 \text{SO}_4 / \\ \text{dded} \qquad \square 4 \\ \text{NA Sample} \\ \underbrace{\mathcal{S}}_{\mathcal{S}_4} / \underbrace{\mathcal{S}}_{S$	Ladded A: 4ml fu :: mg/1 3mg/1	Date Date <u>Analyzed</u> 7/19 7/25 (7/19
MPLE FIEL No. of samples submitted NA: No a NALYTICAL NA Conductivity 25°C (00095 Total non-filte residue (sus (00530) Other: La( Other:	D TREATMEN	IT - Check prop         F: Whole sample (Non-filtered)         Other-specify:         m SAMPLES         29 44         8.72	er boxes □ F: Filtered in 0.45 μme □ A: □ A: <u>Units Date analyze</u> μmho <u>7/11</u> mg/1 <u>7/26</u>	field with mbrane filter A: 2 Stal conc. HNO <sub>3</sub> ac From <u>M</u> , Calcium Potassium Magnesium Sodium N Bicarbonati	$2 \text{ ml H}_2 \text{SO}_4 / \text{dded} \square 1$ $MA \text{ Sample} \\ \underbrace{8}_{(2,3)} \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3) \\ (8, 3$	L added A: 4m1 fu :: mg/1 3mg/1 0mg/1 43mg/1	ming HNO <sub>3</sub> adde Date <u>Analyzed</u> 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25
MPLE FIEL No. of samples submitted NA: No a NALYTICAL NA Conductivity 25°C (00095 Total non-filte residue (sus (00530) Other: Lat Other: Other: Other:	D TREATMEN	T - Check prop F: Whole sample (Non-filtered) Other-specify: m SAMPLES <u>7</u> 9 44 <u>8.72</u>	er boxes □ F: Filtered in 0.45 μme □ A: Units Date analyze μmho11 7/11 7/26	field with mbrane filter A: 2 5ml conc. HNO <sub>3</sub> and From /, Calcium, Calcium, Calcium, Magnesium Sodium Sodium Chloride	$2 \text{ ml H}_2 \text{SO}_4 / \\ \text{dded} \qquad \square 4 \\ \text{NA Sample} \\ \qquad $	L added A: 4ml fu :: mg/1 3mg/1 0mg/1 17mg/1	Date <u>Analyzed</u> 7/19 7/25 (7/19 7/25 7/25 7/25 7/25 7/25 7/26 6/29
AMPLE FIEL No. of samples submitted NA: No a NALYTICAL NA Conductivity 25°C (00095 Conductivity 25°C (00095 Total non-filte residue (sus (00530) Other: Lat Other: Other: AH <sub>2</sub> SO <sub>4</sub> Nitrate-N +, total (00630) Ammonie-N	D TREATMEN	T - Check prop F: Whole sample (Non-filtered) Other-specify: m SAMPLES <u>7</u> 9 44 <u>8.72</u>	er boxes □ F: Filtered in 0.45 μmer □ A: Units Date analyze μmho1]  mg/l	field with mbrane filter A: 2 5ml conc. HNO <sub>3</sub> ac From /, Calcium, Calcium, Calcium, Magnesium, Sodium, Sodium, Sodium, Sulfate, Total Solid	$2 \text{ ml H}_2 \text{SO}_4 / 2 \text{ dded} \qquad \square 4 \text{ dded} \qquad \square 4 \text{ ded} \qquad \square 4 \text{ sample} \text{ ded} \qquad \square 4 \text{ sample} \text{ ded}  for a standard stand$	L added A: 4ml fu :: mg/1_ 3_mg/1_ 3_mg/1_ 43_mg/1_ 43_mg/1_ 43_mg/1_ 43_mg/1_ 43_mg/1_	ming $HNO_3$ adde Date <u>Analyzed</u> 7/19 7/25 7/19 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/27 7/27
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AMPLE FIEL No. of samples submitted  NA: No a  NALYTICAL NA Conductivity 25°C (00095 Total non-filte residue (suss (00530) Cother: La( Other: Other: Other: A-H_SO_ Nitrate-N +, total (00630) Ammonia-N Total Kjeldah () Chemical ox demand (000 Total organic () Cotal organic () Co	LD TREATMEN	T - Check prop F: Whole sample (Non-filtered) Other-specify: m SAMPLES 79 44 8.72-	er boxes F: Filtered in 0.45 μmer 0.45 μmer 0.45 μmer 0.45 μmer 0.45 μmer 1 A: 1	field with mbrane filter A: 2 Sml conc. HNO3 and From //, Calcium, Calcium, Calcium, Magnesium Sodium Sodium Sodium Sodium Sodium Sodium Soliate Chloride Sulfate Cation/A	2 mi H <sub>2</sub> SO <sub>4</sub> / dded NA Sample 	L added A: 4m1 fu mg/1 amg/1 amg/1 amg/1 bmg/1 comg/1 famg/1 famg/1 famg/1 amg/1 amg/1 comg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1 famg/1	ming $HNO_3$ adde Date <u>Analyzed</u> 7/19 7/25 7/19 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/25 7/27 7/27 7/27 7/27 7/27 7/27 7/27 7/27 7/27 7/27 7/27 7/27 7/27 7/27 7/27 7/27 7/77
AMPLE FIEL No. of samples submitted NA: No a NALYTICAL NA Conductivity 25°C (00095 Total non-filte residue (sus (00530) Other: La Other: Other: AH <sub>2</sub> SO <sub>4</sub> Nitrate-N +, total (00630) Ammonia-N Total Kjeldah () Chemical oxa demand (000) Total organico () Other: Cother:	LD TREATMEN	IT - Check prop         F: Whole sample (Non-filtered)         Other-specify:         m SAMPLES         29 44         8.72	er boxes F: Filtered in 0.45 μmer 0.45 μmer 0.45 μmer [] A: I A: Units Date analyze μmho1] mg/l mg/l mg/l mg/l mg/l	field with mbrane filter A: 2 Sml conc. HNO <sub>3</sub> ac From //, Calcium, Calcium, Calcium, Potassium, Magnesium, Sodium, Sodium, Sodium, Sodium, Sodium, Sulfate, Chloride, Chloride, Calcium, Chloride, Calcium, Chloride, Calcium, Sulfate, Cation/A Analyst	2 ml H <sub>2</sub> SO <sub>4</sub> / dded $\square$ NA Sample $\mathcal{B}_{2}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ 	L added A: 4m1 fu       	Date Analyzed 77/19 7/25 77/19 7/25 77/25 77/25 77/25 77/26 6/29 6/29 6/29 77/7 777 777 777 777 777 777 7
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HNO3 ac From //, Calcium, Calcium, Calcium, Potassium, Magnesium, Sodium, Sodium, Sodium, Sodium, Sodium, Sodium, Sodium, Sulfate, Chloride, Calcium, Chloride, Cation/A Analyst	2 ml H <sub>2</sub> SO <sub>4</sub> / dded $\square$ NA Sample $\mathcal{B}_{2}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ $\mathcal{A}_{3}$ 	L added A: 4m1 fu       	ming $HNO_3$ adds Date Analyzed 7/1.9 7/25 7/1.9 7/25 7/25 7/25 7/25 7/25 7/26 6/29 6/29 6/29 7/7 Reviewed by

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	CATIONS				ANIONS		
ANALYT	E MEQ.	PPM	DET. LIMIT	ANALYT	E MEQ.	PPM	DET. LIMIT
Ca Mg Na K	0.40 1.50 100.48 0.72	8.00 18.30 2310.00 28.00	<3.0 <0.3 <10.0 <0.3	HC03 SO4 CL	78.22 14.02 0.98	4773.00 673.00 34.70	<1.0 <10.0 <5.0
Mn Fe	0.00 0.00	0.00 0.00		NO3 CO3 NH3 PO4	0.00 7.87 0.00 0.00	0.00 472.00 0.00 0.00	< 0. < 1. < 0. < 0.
SUMS	103.10	2364.30			101.09	5952.70	
Total : Ion Ba	Dissolved lance =	Solids= 101.99%	6668	WC Date c	No. Dut/By	= 8802099	~

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New Mexico Health and Environment Department SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE Albuquerque, NM 87106

HEAVY METAL ANALYSIS FORM Telephone: (505)841-2553

Date User Lab 61101881NO. ICP-271 ☑ 82235 Received Code □ Other: COLLECTION DATE & TIME: XY. mmdd hh mm COLLECTION SITE DESCRIPTION. 125 Luhrork Flare Pit TEPR 2 COLLECTED BY: TO: OWNER: Sunteria SITE LOCATION: ENVIRONMENTAL BUREAU 1110 NM OIL CONSERVATION DIVISION County: State Land Office Bldg., PO Box 2088 87504-2088 SANTA FE, NM Township, Range, Section, Tract: (10N06E24342) D. BOUFF ATTN: TELEPHONE: 827-5812 STATION/ WELL CODE: | | | 1 LATITUDE, LONGITUDE: SAMPLING CONDITIONS: Pump Water Level: Discharge: Sample Type: 🗌 Bailed Dipped Tap П Conductivity at 25°C pH(00400) Conductivity (Uncorr.) Water Temp. (00010) (00094)Cj °c Zumho umho FIELD COMMENTS: 0 mill an any ric SAMPLE FIELD TREATMENT LAB ANALYSIS REQUESTED: Check proper boxes: WPN: Water WPF: Water ICAP Scan X П Preserved w/HNO3 Preserved w/HNO, Mark box next to metal if AA Non-Filtered Filtered is required. ANALYTICAL RESULTS (MG/L) ELEMENT ICAP VALUE ELEMENT ICAP VALUE AA VALUE AA VALUE Aluminum 5.8 Silicon 44 Barium Silver 20.1 0.1 Beryllium 40. Strontium 0.2 Boron 1.9 Tin 40. Cadmium Vanadium 20.1 40.1 Calcium Zinc 0.2 40.1 20,005 Chromium Arsenic Cobalt 20.05 Selenium 0.2 Copper Mercury Iron Lead 40. 0.01 Magnesium 2.0 Manganese 0.16 Molybdenum 10. Nickel 40. LAB COMMENTS: 5.0ml HNO3 all a SLD. AT For OCD Use: Date Owner Notified; ICAP Analyst Reviewer Phone or Letter? 7/15/88 Initials: Date Analyzed Date Reveived



TO: Sunterna Gas Processing ATTN: Gary Jordan PO Box 2106 Albuquerque, NM 87103

DATE: 30 June, 1988 WORK ORDER NO: 2773

SAMPLE ID: Lybrook Gas Plant, 6/9/88, #4 Waste Water.

ANALYTE

ANALYTICAL RESULTS NOMINAL DETECTION LIMIT

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РН	9.3		1). ()1.	
TDS	8076	$m\alpha/1$	Э.	ma/)
As	0.134	ma∕t	0.020	mg/l
Ba	<1.O	$m\alpha/3$	A.50	ma/3
Cd	0.036	ma/1	0.005	ma/1
Cm	(0.05	ma/ )	0.025	mg/)
CN	(0.005	mg/1	0.003	mg/l
F	26.)	ma/1	0.01	$(n \alpha / )$
d°1	0.051	mg/l	0.005	mg/l
Total Hg	<0.002	mg/)	0.001	mg/l
NO 3	<0.01	mg∕l	0.01	mg/1
Se	0.023	mg/1	n.005	mg/l
Ag	<0.05	mg/l	0.01	mg/1
Benzene	< 1	ug/1	1	ug/)
Toluene	< 1	ug/1	1	ug/1
CCL 6	< 1	ug/J	1	ug/1
1,2-Dichloroethane	< 1	ug/1	1.	ug/l
1,1-Dichloroethylene	< 1	ug/1	1	ug/)
1.1.2.2-Tetrachloroethylene	< 1	ug/1.	11	ug/t
1.1.2-Trichlonoethylene	< 1	ug/)	1	ug/)
Kthyl Benzene	< 1	113/1	1	Hg/1
Xylenes	< 1	ug/)	1	ua/1
Methylene Chloride	< 1.	ug/l	1	ug/t
CHCL 3	<1	ug/1	1	ug/l
1,1-Dichloroethane	< 1.	ug/l	1	ug/l
EDB	<0.1	ug/)	ດ.1	ug/1
1,1,1-Trichloroethane	< 1	ug/l	1.	ug/t
1,1,2-Trichloroethane	< 1	ug/)	1	ug/)
1,1,2,2-Tetrachloroethane	<1	ug/l	1_	ug/l
Vinyl Chloride	< 1	ug/)	)	ug/).
Cu	(0.05	m⊴/l	D.D5	mg/l
CJ	119.1	ma∕]	1.0	ms:/).
Fe	0.582	mg/l	0.1O	m3/1
Mn	<0.O5	ma/l	0.05	mg/)
SO 4	1718	mg/1	1.0	mg/1
Zh	0.070	mg/l	0.020	mg/l
Al	1.30	mg/l	0.50	mg/1
B	2.9	mg/l	0.04	mg/l
Co	<0.05	mg/l	0.05	mg/1
Мо	<0.50	mg/1	0.05	ma∕1
Ni	0,070	mg∕l	0.05	mǥ/l

7300 Jefferson, N.E. • Albuquerque, New Mexico 87109 • (505) 345-8964

An invoice for services is included. Thank you for contacting Assaigai Analytical Laboratories.

Sincerely,

han an Balwant Chauhan, Ph.D.

Balwant Chauhan, Ph.D. Laboratory Director

REPORT TO:	DAVID BOYER		S.L.D. No. OR-	: 88-0849-
NRU.1	N.M. OIL CONSERVATION DIV	VISION	DATE REC.	6/10/0
751	P.O. Box 2088		PRIORITY _	<u>\</u>
1 5	<u>Santa Fe, NM 87504-2088</u>		PHONE(S):	827-5812
COLLECTION C	nry:1/22.012	;	COUNTY: KLD	Mariled
COLLECTION I	ATE/TIME CODE: (Year-Month-Day-Hour-M	linute) 1 <u>21210</u>	01/01/1/	1245
LOCATION CON	DE: (Township-Range-Section-Tracts)	+	+ 1_+ 1	
USER CODE:	8121213151 SUBMITTER:	David Bover		CODE: 1 2 1 6
SAMPLE TYPE	WATER IX SOUL & ROOD & COTT	DOYEL		
This form accon Samples were pr NP: P-Ice P-AA P-HC1 ANALYSES RE required. Whene	reserved as follows: No Preservation; Sample stored at room to Sample stored in an ice bath (Not Frosen Sample Preserved with Ascorbic Acid to r Sample Preserved with Hydrochloric Acid QUESTED: Please check the appropriate box( ver possible list specific compounds suspected <u>PURGEABLE SCREENS</u>	inge, and/or omperature. ). emove chlorine resi (2 drops/40 ml) es) below to indic: or required. <u>E:</u>	dual. ste the type of anal <b>CTRACTABLE SCRE</b>	lytical screens EENS
This form accon         Samples were pi         NP:         X P-Ice         P-AA         X P-HCI         ANALYSES RE         required. Whene         (753) Aliph         (755) Mass         (766) Triha         (774) SDW.         Othe	reserved as follows: No Preservation; Sample stored at room te Sample stored in an ice bath (Not Frosen Sample Preserved with Ascorbic Acid to r Sample Preserved with Hydrochloric Acid QUESTED: Please check the appropriate box( ver possible list specific compounds suspected <u>PURGEABLE SCREENS</u> atic Headspace (1-5 Carbons) atic & Halogenated Purgeables Spectrometer Purgeables Iomethanes A VOC's I (8 Regulated +) A VOC's II (EDB & DBCP) r Specific Compounds or Classes	ings, and/or         imperature.         ).         emove chlorine resident         (2 drope/40 ml)         es) below to indiction         or required.         [] (751]         [] (755]         [] (758)         [] (759)         [] (760)         [] (761)         [] (762)	dual. ate the type of anal <b>CTRACTABLE SCRI</b> ) Aliphatic Hydrocarl Base/Neutral Extra Herbicides, Chloroph Herbicides, Triasine Organochlorine Pest Organophosphate Pe Polychlorinated Bip Polynuclear Aromat SDWA Pesticides &	lytical screens <u>EENS</u> bons ctables henoxy acid s ticides esticides seticides henyls (PCB's) ic Hydrocarbons k Herbicides
This form accon         Samples were pi         NP:         X         P-Ice         P-AA         X         P-HCl         ANALYSES RE         required. Whene         (753) Aliph         (754) Arom         (765) Mass         (766) Triha         (774) SDW.         Othe         Remarks:	reserved as follows: No Preservation; Sample stored at room te Sample stored in an ice bath (Not Frosen Sample Preserved with Ascorbic Acid to r Sample Preserved with Hydrochloric Acid QUESTED: Please check the appropriate box( ver possible list specific compounds suspected <u>PURGEABLE SCREENS</u> atic Headspace (1-5 Carbons) atic & Halogenated Purgeables Spectrometer Purgeables lomethanes A VOC's I (8 Regulated +) A VOC's II (EDB & DBCP) r Specific Compounds or Classes	ings, and/or emperature. ). enove chlorine resi (2 drope/40 ml) es) below to indic or required. [(751) [(753) [(753) [(753) [(753) [(753) [(753) [(753) [(753) [(753) [(753) [(753) [(753) [(753) [(753) [(764) [(762)] [(762)]	dual. ate the type of anal <b>CTRACTABLE SCRI</b> ) Aliphatic Hydrocarl Base/Neutral Extra Herbicides, Chloroph Herbicides, Triasine Organochlorine Pest Organophosphate Pe Polychlorinated Bip Polynuclear Aromat SDWA Pesticides &	lytical screens EENS bons ctables henoxy acid s ticides esticides bhenyls (PCB's) tic Hydrocarbons k Herbicides
This form accon         Samples were pi         NP:         AP-Ice         P-AA         P-HCI         ANALYSES RE         required. Whene         (753) Aliph         (754) Arom         (765) Mass         (766) Triha         (774) SDW.         (775) SDW.         Othe         Remarks:	reserved as follows: No Preservation; Sample stored at room te Sample stored in an ice bath (Not Frosen Sample Preserved with Ascorbic Acid to r Sample Preserved with Hydrochloric Acid QUESTED: Please check the appropriate box( ver possible list specific compounds suspected <u>PURGEABLE SCREENS</u> atic Headspace (1-5 Carbons) atic & Halogenated Purgeables Spectrometar Purgeables lomethanes A VOC's I (8 Regulated +) A VOC's II (EDB & DBCP) r Specific Compounds or Classes	ings, and/or         emperature.         ).         emove chlorine resident (2 drops/40 ml)         (a) below to indice         or required.         (751)         (753)         (753)         (753)         (759)         (760)         (761)         (762)	dual. ate the type of anal <b>KTRACTABLE SCRI</b> Aliphatic Hydrocari Base/Neutral Extra Herbicides, Chloroph Herbicides, Triasine Organochlorine Pest Organophosphate Pe Polychlorinated Bip Polynuclear Aromat SDWA Pesticides &	lytical screens EENS bons cctables henoxy acid s ticides esticides seticides henyls (PCB's) tic Hydrocarbons k Herbicides
This form accon         Samples were pi         NP:         X P-Ice         P-AA         X P-HCI         ANALYSES RE         required. Whene         (753) Aliph         X (754) Arom         (765) Mass         (766) Triha         (774) SDW.         Othe         Remarks:         PHELD DATA:         pH=_//; C	reserved as follows: No Preservation; Sample stored at room te Sample stored in an ice bath (Not Frosen Sample Preserved with Ascorbic Acid to r Sample Preserved with Hydrochloric Acid QUESTED: Please check the appropriate box( ver possible list specific compounds suspected <u>PURGEABLE SCREENS</u> atic Headspace (1-5 Carbons) atic & Halogenated Purgeables Spectrometer Purgeables lomethanes A VOC's I (8 Regulated +) A VOC's II (EDB & DBCP) r Specific Compounds or Classes onductivity= <u>7</u> <u>POO</u> umho/cm at <u>20</u> °C;	unperature,         ).         emove chlorine residual:         (2 drops/40 ml)         (a) below to indic:         or required.         (751)         (753)         (753)         (753)         (753)         (753)         (753)         (753)         (753)         (760)         (761)         (762)         (762)         Chlorine Residual:	dual. ate the type of anal <b>CTRACTABLE SCRI</b> Aliphatic Hydrocar Base/Neutral Extra Herbicides, Chloroph Herbicides, Triasine Organochlorine Pest Organophosphate Pe Polychlorinated Bip Polynuclear Aromat SDWA Pesticides & mg/1	lytical screens EENS bons ctables henoxy acid s ticides esticides henyls (PCB's) tic Hydrocarbons k Herbicides
This form accon         Samples were pi         NP:         X P-Ice         P-AA         X P-HCI         ANALYSES RD         required. Whene         (753) Aliph         (754) Arom         (765) Mass         (766) Triha         (774) SDW.         (775) SDW.         Othe         Remarks:         FIELD DATA:         pH=_//; C         Dissolved Oxyget	reserved as follows: No Preservation; Sample stored at room te Sample stored in an ice bath (Not Frosen Sample Preserved with Ascorbic Acid to r Sample Preserved with Hydrochloric Acid QUESTED: Please check the appropriate box( ver possible list specific compounds suspected <u>PURGEARLE SCREENS</u> atic Headspace (1-5 Carbons) atic & Halogenated Purgeables Spectrometer Purgeables Iomethanes A VOC's I (8 Regulated +) A VOC's I (8 Regulated +) A VOC's II (EDB & DBCP) r Specific Compounds or Classes onductivity= <u>7</u> <u>POO</u> umho/cm at <u>DO</u> °C; h=mg/l; Alkalinity=mg/l; Florent	ungs, and/or         emperature.         ).         emove chlorine resi         (2 drope/40 ml)         es) below to indic         or required.                 (751)	dual. ate the type of anal <b>XTRACTABLE SCRI</b> ) Aliphatic Hydrocarl Base/Neutral Extra Herbicides, Chloroph Herbicides, Triasine Organochlorine Pest Organophosphate Per Polychlorinated Bip Polynuclear Aromat SDWA Pesticides & mg/l	ytical screens EENS bons ctables henoxy acid s ticides esticides seticides thenyls (PCB's) tic Hydrocarbons & Herbicides
This form accon         Samples were pi         NP:         X P-Ice         P-AA         X P-HCI         ANALYSES RE         required. Whene         (753) Aliph         X (754) Arom         (765) Mass         (766) Triha         (774) SDW.         (775) SDW.         Othe         Remarks:         PHELD DATA:         pH=_//; C         Dissolved Oxyget         Depth to water	reserved as follows: No Preservation; Sample stored at room te Sample stored in an ice bath (Not Frosen Sample Preserved with Ascorbic Acid to r Sample Preserved with Hydrochloric Acid QUESTED: Please check the appropriate box( ver possible list specific compounds suspected <u>PURGEABLE SCREENS</u> atic Headspace (1-5 Carbons) atic & Halogenated Purgeables Spectrometer Purgeables Iomethanes A VOC's I (8 Regulated +) A VOC's II (EDB & DBCP) r Specific Compounds or Classes 	ungs, and/or         emperature.         ).         enove chlorine residuation         (2 drope/40 ml)         es) below to indic         or required.         (751)         (753)         (753)         (753)         (753)         (753)         (753)         (753)         (753)         (760)         (761)         (762)         (762)         Chlorine Residual:         w Rate         ation Interval	dual. ate the type of anal <b>CTRACTABLE SCRI</b> ) Aliphatic Hydrocarl ) Base/Neutral Extra Herbicides, Chloroph Herbicides, Triasine Organochlorine Pest Organophosphate Pe Polychlorinated Bip Polynuclear Aromat SDWA Pesticides & mg/l ft.; Casing:	lytical screens EENS bons ctables henoxy acid s ticides esticides henyls (PCB's) ic Hydrocarbons k Herbicides

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CHAIN OF CUSTODY	
I certify that this sample was transferred from	to
at (location)	on/: and that
the statements in this block are correct. Evidentiary Seals: Not	Sealed 🛄 <u>OR</u> Seals Intact: Yes 🛄 No 🛄
Rimeture	

For OCD use: Date owner notified: 9/19/68 Phone or Letter? Initials

#### ANALYSES PERFORMED

## LAB. No .: OR- 844

	E FUE LABO	EXIORY RESULTS ONLY	
This sample was tested using the analytical scree	ening method(s)	checked below:	
PURG EABLE SCREENS         (753) Aliphatic Headspace (1-5 Carbons)         (754) Aromatic & Halogenated Purgeables         (765) Mass Spectrometer Purgeables         (766) Trihalomethanes         (774) SDWA VOC's I (8 Regulated +)         (775) SDWA VOC's II (EDB & DBCP)         Other Specific Compounds or Classes		EXTRACTABLE SCREENS (751) Aliphatic Hydrocarbons (755) Base/Neutral Extractables (758) Herbicides, Chlorophenoxy acid (759) Herbicides, Triasines (760) Organochlorine Pesticides (761) Organophosphate Pesticides (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides	
AN	ALYTICA	L RESULTS	-
COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC [PPB]
asimatic Ausaiaticz			
lensing 1	T.R.		
Atolucno	155		
Atm - Karking	T.R.		
othe Vengene	N'D.		
A-X, Mari	11 17		<u> </u>
balcas ater sura diles	11.17		
man encare pungeaver			
	╂────┤		
	543/1		
DETECTION LIMIT		+ DETECTION LIMIT + 1	
N D = NONE DETECTED AT OR ABOVE T R = DETECTED AT A LEVEL BELOW [ RESULTS IN BRACKETS ] ARE UNCON 	E THE STATE THE STATE FIRMED AND/	D DETECTION LIMIT D DETECTION LIMIT (NOT CONFIRMED) OR WITH APPROXIMATE QUANTITATION	
CERTIFICA Seal(s) Not Sealed Intact: Yes No . I certify that I followed standard laboratory procedu that the statements on this page accurately reflect ( Date(s) of analysis: <u>h/14/85</u> . Analyst's si I certify that I have revisived and concur with the Reviewers signature: <u>Meyer here</u>	TE OF ANALY Seal(s) broken ares on handling the analytical re gnature:	TICAL PERSONNEL by: date: g and analysis of this sample unless otherwise noted esuits for this sample.	and block.

ECEIVED 6 10 8	Nauc-2100		0 59600 XX	OTHER: 822	35	- ` - O
Selfor DATE	SITE INFORM ATION		interio ly	preele S	contin-	Your
ollected by - Person / Agency	Korson/OCD		n	┓		
ENVIRONM	ENTAL BUREAU					
END NM OIL C NALState La	ONSERVATION DIV nd Office Bldg,	ISION PO Box 208	8		<u> </u>	
Santa Fe	, NM 87504-2088	}		$\left  - \frac{100}{100} \right $	ALLG	SUVISION
Attn: <u>David</u>	Boyer		<u></u>	OIL CC	NSERVATION	0,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Phone: 827	-5812			station/ -	58	
AMPLING CONDITIONS	<b>j</b>					
_ Bailed ⊂ Pump ✓ Dipped □ Tap	Water level	-	Discharge	S	sample type GR,	KIZ
H (00400)	Conductivity (Uncom	rected) (9792) µmho	Water Temp. (00010)	20.0	Conductivity at 25 °C	с (00094) µmi
ield comments PLN	12 color(1	Alare?)	Septie CA	lon. r	verflor	9
Sa A	melonan	04.		j ~		
	1 - star is for					
No. of samples       /       >         submitted       /       >         XNA: No acid added       >	ENT — Check proper (NF: Whole sample (Non-filtered)	Doxes □ F: Filtered in 0.45 μmen □ A:	field with mbrane filter A: 2 5ml conc. HNO <sub>3</sub> ac	2 mi H₂SO₄/L ided □A:	added 4ml fuming	; HNO3 add
AMPLE FIELD TREATM No. of samples submitted / 2 XNA: No acid added NALYTICAL RESULTS f	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES	Doxes F: Filtered in 0.45 μmer Δ A: Inits Date analyzed	field with $\Box$ A: 2 mbrane filter $\Box$ Sm1 conc. HNO <sub>3</sub> ac	2 mi H <sub>2</sub> SO <sub>4</sub> /L ided A:	added 4ml fuming	; HNO <sub>3</sub> add
AMPLE FIELD TREATM No. of samples submitted XNA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095)	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr	Doxes □ F: Filtered in 0.45 µmer □ A: Inits Dete analyzed mho _7/11	field with mbrane filter $\Box$ A: 2 5ml conc. HNO <sub>3</sub> ac	2 mi H <sub>2</sub> SO <sub>4</sub> /L ided A: NA Sample:	added 4ml fuming Da <u>Ana</u> l	; HNO <sub>3</sub> add ate iyzed
AMPLE FIELD TREATM No. of samples submitted NA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable retidue (surposeded)	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr	Doxes □ F: Filtered in 0.45 µmer □ A: Inits Date analyzed mho11	field with mbrane filter $\Box$ A: 2 5ml conc. HNO <sub>3</sub> ac From <u>MF</u> ,	2 mi H <sub>2</sub> SO <sub>4</sub> /L ided A: NA Sample: 8	added 4ml fuming Da <u>Anal</u> 	te 1yzed 77-119
AMPLE FIELD TREATM No. of samples submitted XNA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530)	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr	Doxes Doxes F: Filtered in 0.45 μmet 0.45 μmet 0.	field with mbrane filter $\Box$ A: 2 5ml conc. HNO <sub>3</sub> ac $\Box$ From $M$ , $\Box$ Calcium $\Box$ Potassium	$2 \text{ mi H}_2 \text{SO}_4/L$ ided $\square \text{A}:$ NA Sample: $\frac{B}{\sqrt{2}}$	added 4ml fuming Da <u>Anal</u> mg/1 mg/1 	s HNO <sub>3</sub> add ate lyzed 77-119 25 7419
AMPLE FIELD TREATM No. of samples submitted XNA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother:	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr	DOX93 DOX93 F: Filtered in 0.45 μmer 0.45 μmer 1 A: Inits Date analyzed mho <u>-7/11</u> mg/l <u>-7/2.6</u>	field with mbrane filter $\Box$ A: 2 Sml conc. HNO <sub>3</sub> ac $\Box$ From $M$ , $\Box$ Calcium $\Box$ Potassium $\Box$ Magnesium	2 mi H₂SO₄/L ided □A: NA Sample: 8 JE 11 207	added 4ml fuming Da <u>Anal</u> mg/1 mg/1 mg/1 	$\frac{1}{77-119}$
AMPLE FIELD TREATM No. of samples submitted XNA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other:	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr 7.19	DOX93 DOX93 F: Filtered in 0.45 μmer 0.45 μmer 0.45 μmer 1 A: 1 A: 1 mits Date ensityzet mho 7/11 mg/l 7/26	field with mbrane filter A: 2 Sml conc. HNO <sub>3</sub> ac From <u>M</u> , Calcium Potassium Magnesium Sodium Bicarbonate	2 mi H₂SO₄/L ided □A: NA Sample: 8 	added 4ml fuming Da Anal mg/1/ mg/1/ mg/1/ mg/1/2 mg/1/2	s HNO <sub>3</sub> add ate <u>1yzed</u> 77-119 72-5 74/19 25
AMPLE FIELD TREATM No. of samples submitted XNA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: A-H <sub>2</sub> SO <sub>4</sub>	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr	Doxes □ F: Filtered in 0.45 µmer □ A: Inits Dete enalyzed mho <u>7/11</u> mg/l <u>7/2.6</u>	field with mbrane filter A: 2 5ml conc. HNO <sub>3</sub> ac From <u>M</u> F, Calcium Potassium Magnesium Sodium Magnesium Chioride	2 ml H <sub>2</sub> SO <sub>4</sub> /L ided A: NA Sample: 8 	added 4ml fuming Da <u>Anal</u> mg/1 mg/1 <u>7/2</u> mg/1 <u>7/2</u> mg/1 <u>7/2</u> mg/1 <u>7/2</u>	s HNO <sub>3</sub> add ate lyzed 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-19 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-119 77-11
AMPLE FIELD TREATM No. of samples submitted XNA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N total (00630)	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr 7.19	Doxes □ F: Filtered in 0.45 µmet □ A: Inits Dete analyzed mho11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 	field with mbrane filter A: 2 5ml conc. HNO <sub>3</sub> ac From <u>M</u> F, Calcium Potassium Magnesium Sodium Sodium Chloride Sulfate	2 mi H <sub>2</sub> SO <sub>4</sub> /L ided A: NA Sample: 8 75 11 307 470 92 1370	added 4ml fuming Da <u>Anal</u> mg/1 mg/1 7/ mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2	$\frac{1}{2}$
AMPLE FIELD TREATM No. of samples submitted XNA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: AH <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total KiektenLM	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr 9.19	Doxes         □ F: Filtered in 0.45 µmer         □ A:         Inits Date analyzed         mho       -7/11         mg/l       -7/210         mg/l	field with mbrane filter A: 2 Sml conc. HNO3 ac From MP, Calcium Potassium Magnesium Sodium Chloride Chloride Calcium	2 mi H <sub>2</sub> SO <sub>4</sub> /L ided A: NA Sample: 8 75 11 307 12 137 137 15 8452	added 4ml fuming Da Anal mg/1 mg/1 mg/1 mg/1 mg/1 7/ mg/1 7/ mg/1 7/ mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 mg/1 7/ 2 2 2 2 2 2 2 2 2 2 2 2 2	$\frac{1}{7}$
AMPLE FIELD TREATM No. of samples submitted XNA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: AH <sub>2</sub> SO <sub>4</sub> Nitrate-N + , Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldani-N ()	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr 	Doxes         F:       Filtered in 0.45 μmer         Inits       Date enalyzed         Inits       Date enalyzed         mho       7/11         mg/l       7/26         mg/l	field with mbrane filter A: 2 Sm1 conc. HNO <sub>3</sub> ac From M, Calcium Potassium Magnesium Sodium Sodium Chloride Sulfate Total Solice	$2 \text{ mi H}_2 \text{SO}_4/L$ ided $\square \text{A}:$ NA Sample: $B$ $\square B$	added 4ml fuming 	3 HNO3 add ate 1 yzed 77/19 77/19 21 21 21 21 21 21 21 21 21 21
AMPLE FIELD TREATM No. of samples submitted VA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: AH <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahl-N () Chemical oxygen demand (00340)	ENT — Check proper (NIF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr 9.19	<i>DOXess</i> □ F: Filtered in 0.45 μmer □ A: Inits Date enalyzed mho11	field with mbrane filter A: 2 5ml conc. HNO <sub>3</sub> ac From MF, Calcium Potassium Magnesium Sodium Sodium Chloride Sulfate Chloride	2 mi H <sub>2</sub> SO <sub>4</sub> /L ided A: NA Sample: 8 78 11 307 4 4 92 137 is 845	added 4ml fuming 0a Anal mg/1 mg/1 2 mg/1 7/2 mg/1 7/2 2 mg/1 7/2 2 mg/1 7/2 2 mg/1 7/2 2 mg/1 7/2 2 mg/1 7/2 2 mg/1 7/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2	$\frac{1}{77}$
AMPLE FIELD TREATM No. of samples submitted NA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: Other: A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00830) Ammonia-N total (00810) Total Kjeldahl-N () Chemical oxygen demand (00340) Total organic carbon ()	ENT — Check proper (NF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr 9.19	DOX93         □ F: Filtered in 0.45 µmer         Inits Date enalyzed         Inits Date enalyzed         mho       -7/11         mg/l       -7/210         mg/l	field with mbrane filter A: 2 Sml conc. HNO3 ac From MP, Calcium Potassium Magnesium Sodium Sodium Chloride Sulfate Chloride	2 mi H <sub>2</sub> SO <sub>4</sub> /L ided A: NA Sample: 8 75 11 307 12 137 137 15 8457 nion Bala	added 4ml fuming Da <u>Anal</u> mg/1 mg/1 mg/1 <u>7</u> /2 mg/1 <u>7</u> /2 mg/1	$\frac{1}{3} \text{ HNO}_{3} \text{ add}$
AMPLE FIELD TREATM No. of samples submitted VNA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: AH <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldahi-N ( ) Chemical oxygen demand (00340) Total organic carbon ( ) Cother: Other: Other:	ENT — Check proper (NIF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr 7.19	DOX93         □ F: Filtered in 0.45 µmer         Inits Date analyzed         Inits Date analyzed         mho       -7/11         ng/l	field with mbrane filter A: 2 Sml conc. HNO3 ac From // , Calcium, Calcium, Potassium, Magnesium, Sodium, Sodium, Chloride, Chloride, Chloride, Calcium, Calcium, Calcium, Cation/A Analyst	2 mi H <sub>2</sub> SO <sub>4</sub> /L ided A: NA Sample: 8 75 11 3 75 12 13 13 13 13 13 13 13 13 13 13	added 4ml fuming Da Anal mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 2 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 2 mg/1 4 mg/1 4 mg/1 2 mg/1 4 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1	$\frac{1}{7}$
AMPLE FIELD TREATM No. of samples submitted VA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Cother: Other: Other: Other: A-H <sub>2</sub> SO <sub>4</sub> Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total KjeldahI-N () Chemical oxygen demand (00340) Total organic carbon () Other: Other: Aboratory comparie	ENT — Check proper (NIF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr 	Doxes         F:       Filtered in 0.45 μmer         Inits Date enalyzed         Inits Date enalyzed         mho       7/11         mg/l       7/2.10         mg/l	field with mbrane filter A: 2 Sml conc. HNO3 ac From MF, Calcium Potassium Magnesium Sodium Sodium Chloride Sulfate Chloride Chloride Chloride Chloride	2 ml H <sub>2</sub> SO <sub>4</sub> /L ided $\square$ A: NA Sample: B JE II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II $3o^{2}$ II II $3o^{2}$ II II $3o^{2}$ II II II $3o^{2}$ II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II II III	added 4ml fuming 0a Anal mg/1 mg/1 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 mg/1 7/2 7/2 mg/1 7/2 mg/1 7/2 7/2 mg/1 7/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2	s HNO <sub>3</sub> add ate yzed 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)19 77-)1
AMPLE FIELD TREATM No. of samples submitted VNA: No acid added NALYTICAL RESULTS f NA Conductivity (Corrected) 25°C (00095) Total non-filterable residue (suspended) (00530) Total (suspended) (00530) Other: Other: Other: Other: Other: Chemical cospon Conter: Conduction of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the of the	ENT — Check proper (NIF: Whole sample (Non-filtered) Other-specify: rom SAMPLES U 10478 µr 9.19	DOX93         □ F: Filtered in 0.45 µmer         Inits Date analyzed         Inits Date analyzed         mho       -7/11         ng/l       -7/210         mg/l	field with mbrane filter A: 2 Sml conc. HNO3 ac From M, Calcium Calcium Potassium Magnesium Sodium Sodium Chloride Chloride Chloride Cation/A Analyst	2 mi H <sub>2</sub> SO <sub>4</sub> /L ided A: NA Sample: 8 75 11 307 12 137 137 137 137 137 137 137 137	added 4ml fuming Da Anal mg/1 mg/1 mg/1 mg/1 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1 2 mg/1	3 HNO3 add ate lyzed 77-119 25 74/19 21 21 21 21 21 21 21 21 21 21

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ANALYTI	CATIONS E MEQ.	PPM	DET. LIMIT	ANALYTE	MEQ.	PPM	DET. Limit
Ca Mg Na K	0.40 0.90 133.54 0.72	8.00 11.00 3070.00 28.00	<3.0 <0.3 <10.0 <0.3	HC03 SO4 CL	77.09 28.54 2.60	4704.00 1370.00 92.00	<1.0 <10.0 <5.0
Mn Fe	0.00 0.00	0.00 0.00		NO3 C03 NH3 PO4	0.00 16.47 0.00 0.00	0.00 988.00 0.00 0.00	< 0. < 1. < 0. < 0.
SUMS	135.56	3117.00	l.		124.69	7154.00	
Total I Ion Bai	Dissolved lance =	Solids= 108.71%	8452	WC Date o	No. ut/By	= 8802100,	55

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APPENDIX 3

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LOG OF BORINGS S-1 THROUGH S-5

JOHN W. SHOMAKER

CONBULTING GEOLOGIST 3236 CANDELARIA RD., NE Albuquerque, N.M. 87107

Sunterra Plant; NE corner of property; NE of ponds

WELL NO. 5-1 ELEV.(GL) \_\_\_\_\_(KB) \_\_\_\_\_

PAGE \_\_\_\_\_ OF\_\_\_\_

DATE 9-20-88

	17	8-	in dia	, bit	and	3-in dia core	· · · · · · · · · · · · · · · · · · ·	
	e No	ple	DEPTH		тніск		DEWVDKC	
	ð	San	FROM	то	NESS		n E WIANKS	
			0	3	3	Sand, fn-gr., brn, moisture at ±1'	air rotary	
			_3	8	5	sand, fn-gr, tan, dry	no recovery in 5' core	
				<u></u>			barrel	
			8	13	5	sand, fn- to med - gr, lt. brn, dry	no recovery	
			13	14,5	1.5	sand, m-gr., silt, dry to sittly. mst.,	~60% recovery in	
			_14.5_	16	1.5	sand, fn-gr., buff, clay, gry-brn, interbedded,	core barrel	
				,	<u> </u>	clay increases from 4.5-16, dry		
		<u> </u>	16		<u> -'</u>	Clay, gry, some silt	injected water to hold	
				<u></u>	·		hole; = 1' of till in hole	
	·						blew to clean hole;	
							went in with 15 core	
			17	7,			barre/	
—- İ			<u> </u>		14	sand, trigg, It bra, silt, purple sand trammis	40% recovery	
						at 29-31		
			31	46		Silly Sana, In-gr., Lt brn, dry	0.5 To recovery	
			40		4	Sandstone, fm-med-gr., It. brn, dry	arilled with air	
	<u> </u>				-	· · · · · · · · · · · · · · · · · · ·		
						hell consolations		
			· · · · · · · · · · · · · · · · · · ·		-	49'-39' : 7" dia PVC screen : 0000		
_			·		-	39 - top : " " " casing alued	P21	
						2 sks : #20 Colorado Silica sand in annu	125	
						1 sk ; powdered bentonite		
						back filled to ±8'		
						cement to top		
				<u> </u>		placed le"-dia steel pipe over casing:	padlock on 2" cap.	
				<u> </u>				
	<u> </u>		· · · ·			9-21-88; 08:25; casing dry	·	
		.				9-23-88		
							· · · · · · · · · · · · · · · · · · ·	
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Sunterra Plant; NW of ponds

PAGE \_/\_\_\_ OF\_\_/ WELL NO. 5-2 \_\_\_\_\_ SEC. \_\_\_\_\_ TWP. \_\_\_\_ RGE. \_\_ ELEV.(GL)\_\_\_\_\_(KB)\_\_\_\_\_

478" DATE <u>9-20-88</u> 5<sup>5/8"</sup> dia bit

	e No	ple	ple	ple	DEPTH		DEPTH		DEPTH	ТН	тніск		
	Sar Co		FROM	TO	NESS		REMARKS						
			0	1	1	sand Sn-gr. hrn: dry	drilled with air						
			1	2	1	clay, brn, silty							
			2	7	5	sand, fn-gr. brn_dry							
			7	10	3	sand, fn-nr, tan-buff; interbedded sand, fn-gr,							
						brng dry							
	<u> </u>		10	16	6	sand, Fn-to crse-gr. U.brn, moisture at 13'							
			16	17	_/	clay, gry-brn, silty moist							
		<u> </u>	17	22	5	sand, fn-gr, tan; interbedded day, gry-brn,							
			·			dry							
	L		22	24	2	sand, fn-gr, gry-brn, dry							
			24	25	_/	sand, In-gr, Lt. brn dry							
	<u> </u>		25 -	26	<u>                                      </u>	sand, toto med- ar. gry dry							
·			26	29	3	sand, fn-crs-gr, buff to white, dry							
·			29	30	1	sand fn-gr, buff to while interbedded							
						shale, dk gry dry							
I			30	45	15	sandstone for to crs- ar. buff-wht. dry	drill chatter						
			45	48	3	same interbedded shale. dk ary-brn.							
						fissle dry							
		1	48	50	Z	sandstone, fa-ar, while-buff day							
,						<u> </u>	· · · · · · · · · · · · · · · · · · ·						
						well completion	······································						
						30'-20': 2" dia PVC screen: 0.010 slt							
		1			1	20'-top: " " " casing alved							
						backfilled hole to # 30'							
						2 sks: #20 Colorado Sillica Sand							
						1 sk; powdered bentonite							
						backfilled to ±8' depth							
						cement to top .							
						set 6"-dia steel casing over well: page	lock on cap.						
						for the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second							
				1	-	9-21-88:08:30; Casing dry							
						9-23-58 ""							
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Sunterra Plant; S-side of ponds, SE corner. Well NO. 5-3 \_\_\_\_\_ SEC. \_\_\_\_\_ TWP. \_\_\_\_\_ RGE. \_\_\_ DATE 9-21-88 ELEV.(QL) \_\_\_\_\_(KB) \_\_\_\_\_ 111/8"-dia bit O S FROM DEPTH тніск. LITHOLOGY REMARKS NESS то 5.5 5.5 silly sand, fn-gr, buff, dry with moisture 0 air rotary increasing at 1' to 5.5" moist slow dring clayey silt, gry-brn, moist 5.5 7 1.5 claystone, gry brn, dry to sitly moist 7 10 3 15 sand frigr. tan, moist interbedded clay, 5 10 gry-brn Ζ 15 claystone, gry-brn, dry 17 25 8 17 sand, fn-gr., tan, dry sand, fn- to crs-gr., tan, dry sand, = gravel (1/4"- 1/2" dia), crs- to med-gr., 25 12 37 4 37 41 injected water after loss of circulation: Ubrn. material very dry 44 41 3 shale, gry-brn sandstone, med- to cree-gr, tan 44 46 2 47 46 1 shale, gry-brn Sandstone; crs- to m-gr., poorly sorted 47 49 Ş sandstone, fn-gr, bulf, dry 49 50 1 well completion: 48'to 38'; set 2"-dia PVC surren; 0,010 stt 38' to top; "" " " casing, glued 2 sks, #20 Colorado Silica sand 1 sk; powdered bentomite backfilled to ±8' cement to top set 6"-dia steel pipe over well; padlock on cap. 9-21-88:12:15 dry casing 9-23-88 \*

JOHN W. SHOMAKER

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Sunterra Plant; 5-side of punds

PAGE \_\_\_\_\_ OF\_\_\_

#### WELL NO. <u>5-4</u> \_\_\_\_\_\_SEC. \_\_\_\_\_TWP. \_\_\_\_\_RGE. \_\_\_\_\_ ELEV.(GL) \_\_\_\_\_\_(KB) \_\_\_\_\_

DATE 9-21-88

	4	7/8	"-dia (	<u>bit</u>			
	SoreNo	ample	DEP	TH	THICK- NESS	LITHOLOGY	REMARKS
	-		0	1.5	1.5	sithe class han maist	failled with pir
		-	1.5	2	0.5	clay acy wet	an ince with an
			2 Z	3.5	1.5	sitty clay ary skined with hydrocachons ador	······································
					1-1-0	very moist	
			3,5	15	11.5	sand, fn- to med- gr., brn, moist	
			15	16		Sand; In-to crs-gr., gry-brn, minor hydrocard	n
	<u> </u>	<b> </b>			·	dor, moist	`
		<u> </u> -	16	17	/_/	clay, gry-brn moist	
		<b> </b>	17_	21	<u>4</u>	sand, In-gr., brn, moist	
			21	22	-/	sand, fn-gr., tan to bult, dry	
			62	27	5	sames the to med-gr., dry	
			27	31	4	sand, med- to crs-gr, (gravel; 1/4 - 1/2 dia), tan,	
						dry	······································
			31	32		sand, fn- to med-gr., tan dry	
	-		32		2	sandstone, = gravel (1/4-1/2" dia), med- to crs-gr,	drill chatter
						butt, slt moist.	<u></u>
			34	37_		shale, gry-brn, fissle, dry	
	.	-	37	38		silly daystone; gry-grn, dry	
	<u>   - </u>		38	42	4	sandstone, fagr., buff, interbedged clayor	<u>, C</u>
			1-1-			dk. gry-brn, dry	
			46	40	<u> </u>	Sanastone, tn-gr., buit - tan, dry	
	-}		1/7	41		sanastone, in- to mea-gr., butt, dry	) 
			-41	~0		Sanastone, med- to crs-gr, gry-brn, slt.	
			LIX	50	2.	moisture	
		-	70	- 00		crayey sinstone orn, ary	
	1	-				well completion:	
	-	-	-			50- 40' 2"-dia P.VC screen: 0.010 sh	
				1		40'- top: 1' '' casing alved	
		_				2. sks · #20 Colorado Silica Sand	
				-	1	1 sh nowdourd benyonite	
						back filled to t 8'	·
	-	-	-			remaint to ton	
		-				set la"-dia start more nour woll. not	lode cap
<u> </u>	1	1-	-			with a concerta proceeding prad	· · · · · · · · · · · · · · · · · · ·
		T				9-21-88: 13:00 CASING dry	
_						9-23-58 "' "	
<b>.</b>	1			_ <b>_</b>	_		
	1	1	1				1

JOHN W. SHOMAKER

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CONSULTING GEOLOGIST 3236 CANDELARIA RD., NE Albuquerque, N.M. 87107

	Sur	oterra	a Plai	nt; Sside of ponds; SW corner WELL NO. 5-5	F	AGE _/ OF _/				
DATE $9-21-88$ ELEV.(GL) (KB) (KB)										
Sample	DEPTH THI		THICK- NESS	LITHOLOGY	<u> </u>	REMARKS				
	0	0.5	0.5	sands fn-gr, buff, dry	drilled	l with air				
	0,5	_/	0.5	silty clay, gry-bm, moist		· · · · · · · · · · · · · · · · · · ·				
			2	clay, gry-brn, dry						
	3	4	/	Silty clay; black; moist; hydrocarbon stained;						
	4	5	1	sand for an Wack, byd. stain- adar provist						
	5	8	3	clay, black, moist, hyd. stain, odor silty						
	8	10	2	clay, gry-brn, moist						

		4	5	1	sand finger, black, hyd. stain oder moist
		5	8	3	clay, black, moist, hyd. stain, odor, silty
	 	8	10	2	clay, gry-brn, moist
·		10	12	2	silty sand frigr. ary moist
		12	13	1	silty clay, gry, noist
	 	13	13,5	0.5	silty clay, brn dry
		13.5	15.5	2	Sand M-gr, tan, dry
		15.5	27	11.5	sand, fn-gr, bry dry
	 	27	32	5	sand, for to med- gr., buff, dry
·		32	41	9	sandstone, med - to crs- gr, buff tolan, dry
		41	42	1	silly claystone, any-ann. dry
	 	42	44	2	sandstone fin-gr., buff. dry
		44	45	1	same, med- to crse- ar, gravel (1/4"), buff dry
		45	50	5	same, fn-gr, dry
					, , , , ,
'					
					well completion:
					48'-38':2" dia PVC surcen: 0.010 st.
					38' to top: " " " casing: glued
					2 sks_ # 20 Silica sand
					1 " purt of bentopite
					backfilled to = 8'
					cement to top
			•		set 6"dia steel casing over well: radock on con.
			·		9-21-88 casing dry
					9-23-88 11 11
•					
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