NM1 -

C-138

YEAR(S): 2001 District I 1625 N. French Dr., Hobbs, NM 88240 District III 81 South First, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe. NM 87505 Roger Anderson Form C-138 Revised March 17, 1999

Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

REQUEST FOR AFFROVAL TO ACCEPT	SOLID WASTE
1. RCRA Exempt: Non-Exempt:	4. Generator Williams
Verbal Approval Received: Yes No	5. Originating Site MILAGEO PIAN+
2. Management Facility Destination KEY ENERGY DISPOSAL	6. Transporter Key
3. Address of Facility Operator #345 CR 3500 AZ+CC NM	8. State NM
7. Location of Material (Street Address or ULSTR) # 187 CR 4490 7. Bloomfield, NM 87413	- ·
9. Circle One:	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. (B. All requests for approval to accept non-exempt wastes must be accompanied by no material is not-hazardous and the Generator's certification of origin. No waste cla approved	ecessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transp	ort.
BRIEF DESCRIPTION OF MATERIAL:	Refiled on .
SEE DISCHARGE PLAN Requests testing warrier Fee month Estimated Volume 1000 bbl cy Known Volume (to be entered by the open	Renewal For MILAGEO Plant LAST Filed + Approve 11-13-2000
Estimated Volume 1000 bb cy Known Volume (to be entered by the open	erator at the end of the haul)cy
SIGNATURE Male Subject TITLE: MER Waste Management Facility Authorized Agent	DATE: <u>10-29-01</u>
TYPE OR PRINT NAME: MICHAEL TALOVICA TELE	EPHONE NO. <u>505-334-6/86</u>
(This space for State Use) APPROVED BY: Deny Toen TITLE: Environment	1 Engr DATE: 11/20/01
APPROVED BY: Martyn Jaky TITLE: Environmental	DATE: 11/20/0/ DATE: 11/27/01

OIL CONSERVATION DIVISION AZTEC DISTRICT_OFFICE 1000 RIO BRAZOS ROAD AZTEC, NEW MEXICO 87410 (506) 334-6178 Fax (505)334-6170

GARY E. JOHNSON GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY

CERTIFICATE OF WASTE STATUS

1	Generator Name and Address: NICLIAMS (MILAGRO PLANT)	2. Destination Name: KCY DISPOSAL
	#187 CR 4980	CR 3500
	BLOOMFIELD, NM 87413	FARMINGTON, NIM
3. (Originating Site (name):	Location of the Waste (Street address &/or ULSTR):
,	MILAGRO PLANT	# 192 CR 4900
	.se=	BLOOMFIELD, NM 87413
	Attach list of originating sites as appropriate	
4. 5	Source and Description of Waste	
	NATURAL GAS PROCESSING WASTE -	- INCCUDING - PRODUCED WATER, AMINE COMPOUNDS
	AND DE MINIMUS QUANTITIES OF OTHE	ER NON-HAZAROOUS LIQUID WASTES. WASTE-HAS A
	· ·	BY ANALYTICAL TESTING-RESULTS ON FILE.
, _	MARK HARVEY	representative for:
	· · · · · · · · · · · · · · · · · · ·	
icco	-	do hereby certify that, ecovery Act (RCRA) and Environmental Protection Agency's July,
1988	rding to the Resource Conservation and Resou	
1988 1988	rding to the Resource Conservation and Resou	ecovery Act (RCRA) and Environmental Protection Agency's July, ribed waste is: (Check appropriate classification) -EXEMPT oilfield waste which is non-hazardous by characteristic
1988	rding to the Resource Conservation and Resource Conservation and Resource Resource Conservation and Resource Re	ecovery Act (RCRA) and Environmental Protection Agency's July, cribed waste is: (Check appropriate classification) -EXEMPT oilfield waste which is non-hazardous by characteristic visis or by product identification or non-exempt non-hazardous waste defined above.
1988	rding to the Resource Conservation and Resou	ecovery Act (RCRA) and Environmental Protection Agency's July, cribed waste is: (Check appropriate classification) -EXEMPT oilfield waste which is non-hazardous by characteristic ysis or by product identification or non-exempt non-hazardous waste defined above. mentation is attached (check appropriate items):
acco 1988 l	rding to the Resource Conservation and Resource Conservation and Resource Resource Conservation and Resource Re	ecovery Act (RCRA) and Environmental Protection Agency's July, cribed waste is: (Check appropriate classification) -EXEMPT oilfield waste which is non-hazardous by characteristic visis or by product identification or non-exempt non-hazardous waste defined above. mentation is attached (check appropriate items): Other (description): FACILITY DISCHARGE FLE

QWAL LABORATORIES, INC.

2911 ROTARY TERRACE, P.O. BOX 562/PITTSBURG, KS 66762/(316)232-1970

LABORATORY REPORT:

REFERENCE #:

0011535

SENT WILLIAMS FIELD SERVICE

DATE REPORTED:

11/29/00

TO: 295 CHIPETA WAY

DATE COLLECTED:

P.O. #:

11/17/00

SALT LAKE CITY, UTAH 84158

MARK HARVEY

DATE RECEIVED:

11/21/00

PROJECT: MILAGRO PONDS

Sample ID: MIL-POND-C-01

Sample Matrix: WATER

Collection Date: 11/17/00 08:05:00

TEST	METHOD-CAS #	RESULT	UNITS	PQL	ANALYZED EXTRACTE
METAL PREPARATION	EPA 3010	IL001121C			11/21/00ЈН
SILVER, TOTAL	SW 846 6010B	<0.01	MG/L	0.01	11/22/00RDC
ARSENIC, TOTAL	SW 846 6010B	0.12	MG/L	0.05	11/22/00RDC
BARIUM, TOTAL	SW 846 6010B	0.12	MG/L	0.005	11/22/00RDC
CADMIUM, TOTAL	SW 846 6010B	0.019	MG/L	0.005	11/22/00RDC
CHROMIUM, TOTAL	SW 846 6010B	10.0	MG/L	0.01	11/22/00RDC ——
MERCURY, TOTAL	SW 846 7470	<0.0002	MG/L	0.0002	11/22/00XM
LEAD, TOTAL	SW 846 6010B	0.10	MG/L	0.01	11/22/00RDC
SELENIUM, TOTAL	SW 846 6010B	0.29	MG/L	0.05	11/22/00RDC
REACTIVE CYANIDE	SW846 SEC7.3	<0.001	MG/L	0.001	11/22/00MS2
REACTIVE SULFIDE	SEC.7.3.4.1	<0.05	MG/L	0.05	11/22/00MS2
HALOGENS, TOTAL ORGA	SW 846 9020	362.4	UG/L	5.0	11/22/00MB
TPH GRO	8015G/OA1	107	UG/L	50.0	11/21/00MB
BTEX	OA1/8021B			3.0	·
BENZENE	71-43-2	ND	UG/L	1.0	11/21/00MB
TOLUENE	108-88-3	2.81	UG/L	1.0	11/21/00MB
ETHYLBENZENE	100-41-4	ND	UG/L	1.0	11/21/00MB
TOTAL XYLENES	1330-20-7	3.16	UG/L	1.0	11/21/00MB
BFB (SURROGATE)	-	114	125	75	

ND=NONE DETECTED

PQL=PRACTICAL QUANTITATION LIMIT

SU=STANDARD UNITS

*BACKGROUND CONTAMINATION

SUR=SURROGATE

Q=OUTSIDE LIMITS

B=DETECTED IN METHOD BLANK

APPROVED BY: TERRY KOESTER

TERRY KOESTER

LABORATORY DIRECTOR

REPORT AMENDED TO REFERENCE APPROPRIATE METHODS FOR METALS

ANALYSIS. MS2

REFERENCE #: 0011535 PAGE: 1

AMENDED REPORT

Q.W.A.L. LABORATORIES, INC.

Established 1976

2551100

2911 Rotary Terrace • Pitrsburg, Kansas 66762

TO ORDER: FAX 1-316-232-7730 OR PHONE 1-316-232-1970

(If special detection please note below.) *FAILURE TO COMPLETE THIS FORM MAY DELAY LABORATORY RESULTS. limits are required REMARKS ☐ SameDuy (b) TURNAROUND TIME REQUESTED (Additional Charges May Apply)

L) Standard

T 2 Hours

48 Hours

24 Hours

Sun

* Note - Please conduct lab for availability of princity service. © ANALYSIS REQUEST (if different form report address) (Write Tests Here) Send Invoice to: Company. City/State; Address: Phone: Acin: Company WILLIAMS FIELD STAVICE. **ag**bal2 (1) Sample Sampling Personnel (print name) 505-632-440A 501 Send Report to: ₩װܡ City/State: Address: Phone: **30**] X S Purchase Order #: HOL Method (1) Preserved Dhone #: **EONTH** 7.7 Time 7.30 Time Fux #: l'ime Time Time # of Containers **©** Date 11-30 Date Date Date Date Time (1) (1) Grab WILLIAMS FICEN SCRUICE Comp X MILACRU PUNDS Attention: MAAK Haedey Sampling Personnel Signature(s) 8.05 2) Project Name or Number 1-17 City, State, Zip Code (1) Relinguished By: Relinquished By: Retinquished By: Company Name: Seceived By: MIL-POND-C-01 Received By: Réceived By: Address: Sample 1.D. 7 DILVE 13162327730 **TVB**

0 🕅

District I 1625 N. French Dr., Hobbs, NM 18240 District II 811, South First, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Roger Arderson

Martyne Form C-138

Knows Revised March 17, 1999

This Submit Original
Plus 1 Copy
to Appropriate
District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

Waste Management Facility Authorized Agent TYPE OR PRINT NAME: MICHAEL TIPLOUICH TELEPHONE NO. 505-334-6186 (This space for State Use) APPROVED BY: Dany Tend TITLE: Enviro Eng DATE: 9/13/0		
2. Management Facility Destination Leg Ellergy Disposal 6. Transporter Leg 3. Address of Facility Operator #345 Cl33500 A24eC NM 8. State NM 7. Location of Material (Street Address or ULSTR) 1130 MADISON Lawe 9. Circle One: A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator: G. All requests for approval to accept oilfield exempt wastes will be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved All transporters must certify the wastes delivered are only those consigned for transport. BRIEF DESCRIPTION OF MATERIAL: C 1 ty	1. RCRA Exempt: Non-Exempt: X	
3. Address of Facility Operator # 345 Cl 3500 A2+ec , NN 8. State NM 7. Location of Material (Street Address or ULSTR) FREMINATION , NM 27401 9. Circle One: A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator: one certificate per job. 8. All requests for approval to accept non-exempt wastes must be accompanied by a certification of waste from the Generator: one certificate per job. 8. All requests for approval to accept non-exempt wastes must be accompanied by a certification of waste from the Generator: one certificate per job. 8. All requests for approval to accept non-exempt wastes must be accompanied by a certification of waste from the Generator: one certificate per job. 8. All requests for approval to accept non-exempt wastes will be accompanied by a certification of waste from the Generator: one certificate per job. 8. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator: one cer	Vērbal Approval Received: Yes No	5. Originating Site
7. Location of Material (Street Address or ULSTR) 170 MAD/500 LANG 9. Circle One: A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator: one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved All transporters must certify the wastes delivered are only those consigned for transport. BRIEF DESCRIPTION OF MATERIAL: CITY WATER MIXED WITH UNDSED TREATING CHEMICAL STATES OF THE WASTER OF THE W	2. Management Facility Destination Key Evergy Disposal	6. Transporter Key
7. Location of Material (Street Address or ULSTR) FRENCHTON, NM 67401 9. Circle One: A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator: one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved All transporters must certify the wastes delivered are only those consigned for transport. BRIEF DESCRIPTION OF MATERIAL: C 1 4	#345Cl3500 AZIEC、Nル 3. Address of Facility Operator	8. State MM
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one certificate per job. B. All requests for approval to accept non-exempt wastes must-be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved All transporters must certify the wastes delivered are only those consigned for transport. BRIEF DESCRIPTION OF MATERIAL: C 1+1	9. <u>Circle One</u> :	
BRIEF DESCRIPTION OF MATERIAL: CITY WATER MIXED WITH UNUSED TREATING CHEMICALS LAST FILES 6-12-01 PLEMER Refer to MSDS IN FOR AGENTING CHEMICALS DATE: 9-10- Waste Management Fagility Authorized Agent TYPE OR PRINT NAME: MICHAEL TOLOUGH (This space for State Use)	one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste cla	cessary chemical analysis to PROVE the
CITY WATER MIXED WITH UNUSED TREATING CHEMICAL S LAST FILE OF 6-12-01 PLEASE Refer to MSDS IN TO AGENCADO APPROVAL Dated 1-16-01 Estimated Volume Zoobbli cy Known Volume (to be entered by the operator at the end of the haul) Cy SIGNATURE Waste Management Facility Authorized Agent TYPE OR PRINT NAME: MICHAEL TOLOUICH TELEPHONE NO. 505-334-6186 (This space for State Use)	All transporters must certify the wastes delivered are only those consigned for transp	ort.
Please Refer to MSOS INTO ASSESSED APPROVAL Dated 1-16-01 Estimated Volume 2006bls cy Known Volume (to be entered by the operator at the end of the haul) cy SIGNATURE Management Fagrity Authorized Agent TYPE OR PRINT NAME: MICHAEL TALOUICH TELEPHONE NO. 505-334-6/86 (This space for State Use)	BRIEF DESCRIPTION OF MATERIAL:	
Plense Refer to MSDS IN The agreement 138 Approval Estimated Volume Zoobbli cy Known Volume (to be entered by the operator at the end of the haul) cy SIGNATURE Waste Management Fagrify Authorized Agent TYPE OR PRINT NAME: MICHAEL TALOUICH TELEPHONE NO. 505-334-6/86 (This space for State Use)	City water MIXED with UNUSED T	REATING CHEMICH(S
Estimated Volume Zobb cy Known Volume (to be entered by the operator at the end of the haul) cy	die de la company de la compan	
Estimated Volume	Please Refer to MSDS INTE MERIDON	8 ApprouxL
SIGNATURE Management Facility Authorized Agent TYPE OR PRINT NAME: MICHAEL TRISUICIT TELEPHONE NO. 505-334-618-6 (This space for State Use)	Doted 1-16-01 Processing	
TYPE OR PRINT NAME: MICHARI TIPLOUICH TELEPHONE NO. 505-334-6186 (This space for State Use)	Estimated Volume 20066 cy Known Volume (to be entered by the open	erator at the end of the haul)cy
(This space for State Use)		DATE: 9-10-0,
	TYPE OR PRINT NAME: MICHAEL TALOUICH TELE	EPHONE NO. <u>505-334-6/8</u> 6
APPROVED BY: Martin Ohh TITLE: Environmental Geologist DATE: 11-27-01		, a. l. b. l
APPROVED BY: //anton Oth TITLE: Environmental Geolog St DATE: 11-27-01	APPROVED BY: Deny Fund TITLE: Enviro	#nc DATE: 9//3/0/
	APPROVED BY: Marty John TITLE: Environme	1-27-01 DATE: 11-27-01

1625 N. French Dr 630bbc, NB 68240 District II - (505) 748-1283 811 S. First Arts III - (505) 334-6178 1000 Rio Brazos Road Aziac, NM 87410 District IV - (505) 827-7131 2040 S. Pacheco Santa Fe, NM 87505

New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division 2040 South Pacheco Street

Submit to OCD Permitted Surface Waste Management Facility

Form C-143

2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131

GENERATOR CERTIFICATE OF WASTE STATUS

Waste Generator Name and Address:	2:Permit Number (if waste generated at an OCD permitted facility)
COATSAL CHEMICAL CO. LLC.	
1130 MADISON LANE	_
FARMINGTON, NM. 87401	•
3. Description of Waste and Generating Process:	4. Location of Waste (Street address &/or ULSTR):
RINSE WATER FROM PUMP, HOSES, AND	COASTAL CHEmical co. LLC.
TANKS USED TO DELIVER CHEMICAL.	1130 MADISON LANE
ALL CHEMICALS RINSED OUT ARE VIRGIN	FARMINGTON, NM. 87401
UNUSED CHEMICALS. CHEMICALS MAY INCLU	DE
ALKANOLAMINE, GLYCOL (TEG & EG	
ANTIFREEZE.	·-
-	-
E. Dantingtion (Surface Monagement Equilibrity)	G. Transporter
Destination (Surface Waste Management Facility):	6. Transporter:
VEY ENERGY DISPOSAL	Key Everby
7. Estimated Volume cy/bbis	
For NON-EXEMPT waste only, the following documentation is	attached (check appropriate items):
XX MSDS Information	RCRA Hazardous Waste Analysis (With Chain of Custody).
Other (Description)	
Generator certifies that, according to the Resource Conservate Agency's July 1988 regulatory determination, the above description	on and Recovery Act (RGRA) and the Environmental Protection ibed waste is: (check appropriate classification)
EXEMPT oilfield waste.	XX NON-EXEMPT oilfield waste that is non-hazardous
	pursuant to 40 CFR Part 261. (Attach appropriate
	documentation)
In addition, Generator certifies that nothing has been added to waste does not contain Naturally Occurring Radioactive Mater Subpart 1403.	o this exempt or non-exempt non-hazardous waste and that this rial (NORM) regulated pursuant to 20 NMAC 3.1
Generator Signature: Rolet Burns	de Date: 9-10-01
	Date: 1 / O O
Print Name: ROBERT BURNSIDE	
Title:FACILITY MANAGER	

District I. 1625 N. French Dr., Hobbs, NM 88240 <u>Vistrict II</u>

811 South First, Artesia, NM 88210 <u>District III</u>
1000 Rio Brazos Road, Aztec, NM 87410 <u>District IV</u>

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-138 Revised March 17, 1999

> Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

	
1. RCRA Exempt: Non-Exempt: X	4. Generator COMPESSOR SYSTEMS ZNC.
Verbal Approval Received: Yes No	5. Originating Site————————————————————————————————————
2. Management Facility Destination KEY ENERGY DISPOSAC	6. Transporter Key-
3. Address of Facility Operator #345 er3500 Azlec, Nm	8. State NM
7. Location of Material (Street Address or ULSTR) # 5995 US HWY 64 FACMINGTON, NM	٠
9. <u>Circle One</u> :	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste class approved	cessary chemical analysis to PROVE the sified hazardous by listing or testing will be
All transporters must certify the wastes delivered are only those consigned for transporters	ort.
BRIEF DESCRIPTION OF MATERIAL:	
produces water mixes with wash w from compressor skids may contain as	ster
L'anne consensors Per non the	Nov 2001
	61.81,45
Estimated Volume 6000 64 000 Known Volume (to be entered by the open	ator at the end of the haul)cy
Estimated Volume Co School Volume (to be entered by the oper	cy DATE: 1/-5-0/
SIGNATURE Mala Community Signature Title: MGe	DATE: //-5-01
SIGNATURE Waste Management Facility Authorized Agent TITLE:	DATE: //-5-01
SIGNATURE Waste Management Facility Authorized Agent TYPE OR PRINT NAME: MICHAEL TALOUICM TELE (This space for State Use)	DATE: //-5-0/ PHONE NO. <u>505-334-6186</u>

District I - (505) 393-6161 1625 N. French Dr Hobbs, NM 88240 <u>District II</u> - (505) 748-1283 811 S. First Artes NM 88210 District III - (505) 334-6178 1000 Rio Brazos Road Aztec, NM 87410 District IV - (505) 827-7131 2040 S. Pacheco Santa Fe, NM 87505

New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division

2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131

Form C-143 3/15/00

Submit to OCD Permitted Surface Waste Management Facility

GENERATOR CER	TIFICATE OF WASTE STATUS
1. Waste Generator Name and Address: CSI Po3oc 1886	Permit Number (if waste generated at an OCD permitted facility)
Bloomfield NM 87413	•
3. Description of Waste and Generating Process:	4. Location of Waste (Street address &/or ULSTR):
Provided HZO MIXED WITH	US HW 64 # 5995
various amounts of wash water	FARMINGTON, NM
then compressed skips,	
5. Destination (Surface Waste Management Facility):	6. Transporter:
7. Estimated Volume & loss cy/bbls	Key
For NON-EXEMPT waste only, the following documenta	tion is attached (check appropriate items):
MSDS Information	RCRA Hazardous Waste Analysis (With Chain of Custody).
Other (Description)	
Generator certifies that, according to the Resource Cons Agency's July 1988 regulatory determination, the above	servation and Recovery Act (RCRA) and the Environmental Protection described waste is: (check appropriate classification)
EXEMPT oilfield waste.	NON-EXEMPT oilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation)

In addition, Generator certifies that nothing has been added to this exempt or non-exempt non-hazardous waste and that this waste does not contain Naturally Occurring Radioactive Material (NORM) regulated pursuant to 20 NMAC 3.1

SUSPECTED HAZARDOUS WASTE ANALYSIS

Client: Sample ID:

Lab ID#: Sample Matrix: Preservative:

Compressor Systems Inc.

Produced Water Tank 19816 Water

Cool Cool and Intact Project #:

Date Reported: Date Sampled: Date Received:

Date Analyzed: Chain of Custody: 01038-001

05-07-01 05-02-01

05-03-01 05-07-01 8639

Parameter

Condition:

Result

IGNITABILITY:

Negative

CORROSIVITY:

Negative

pH = 5.68

REACTIVITY:

Negative

RCRA Házardous Waste Criteria

Parameter

Hazardous Waste Criterion

IGNITABILITY:

Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21. (i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

CORROSIVITY:

Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22. (i.e. pH less than or equal to 2.0 or pH greater than or equal to 12:5)

REACTIVITY:

Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. (i.e. Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference:

40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments:

CSI Yard.

EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS

Client:	Compressor Systems Inc.	Project #:	01038-001
Sample ID:	Produced Water Tank	Date Reported:	05-07-01
Laboratory Number:	19816	Date Sampled:	05-02-01
Chain of Custody:	8639	Date Received:	05-03-01
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	05-04-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

December	Concentration Limit		Regulatory Limits
Parameter	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND.	0.0001	0.7
2-Butanone (MEK)	0.0750	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	0.0766	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria		Parameter	Percent Recovery
	4 344	Fluorobenzene	100%
	***	1,4-difluorobenzene	100%
	Ž.	4-bromochlorobenzene	100%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

CSI Yard.

Analyst C. Oglen

Christini m Wasters
Review

EPA METHOD 8040 PHENOLS

Client:	Compressor Systems Inc.	Project #:	01038-001
Sample ID:	Produced Water Tank	Date Reported:	05-09-01
Laboratory Number:	19816	Date Sampled:	05-02-01
Chain of Custody:	8639	Date Received:	05-03-01
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	05-08-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	98%
	2,4,6-Tribromophenol	99%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

CSI Yard.

Analyst

Pristering Wasters

6/ 17



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics

Client:	Compressor Systems Inc.	Project #:	01038-001
Sample ID:	Produced Water Tank	Date Reported:	05-09-01
Laboratory Number:	19816 **	Date Sampled:	05-02-01
Chain of Custody:	8639 **	Date Received:	05-03-01
Sample Matrix:	Water 📆	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	05-08-01
Condition:	Cool and Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

r=	 		
QA/QC Acceptance Criteria		Parameter	Percent Recovery
MANAO Acceptance Citteria		raiailietei	reident Redovery
	 ,		

2-fluorobiphenyi

95%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992. Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

CSI Yard.

Analyst L. Ofen

Phristis my Warters

EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS

Client:	Compressor Systems Inc.	Project #:	01038-001
• •	- · · · · · · · · · · · · · · · · · · ·	•	05-09-01
Sample ID:	Produced Water Tank	Date Reported:	
Laboratory Number:	19816	Date Sampled:	05-02-01
Chain of Custody:	8639	Date Received:	05-03-01
Sample Matrix:	Water	Date Analyzed:	05-08-01
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

		Det.	Regulatory
,	Concentration	Limit	Level
Parameter	(mg/L)	(mg/L)	(mg/L)
		·	
Arsenic	ND .	0.001	5.0
Barium	0.007	0.001	100
Cadmium	ND .	0.001	1.0
Chromium	ND	0.001	5.0
Lead	ND	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	ND	0.001	1.0
Silver	ND	0.001	5.0

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA,

December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission

SW-846, USEPA. December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C

section 261.24, August 24, 1998.

Comments:

CSI Yard.

Analyst

Mustine on Wasters



QUALITY ASSURANCE / QUALITY CONTROL DOCUMENTATION

9/17

ENVIROTECH LABS

EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS Quality Assurance Report

Client:	QA/QC	Project#:	N/A
Sample ID:	Laboratory Blank	Date Reported:	05-07-01
Laboratory Number:	05-04-TCV	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	05-04-01
Condition:	N/A	Analysis Requested:	TCLP

		Detection	Regulatory
	Concentration	Limit	Limits
Parameter	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND.	. 0.0001	0.5
Benzene	ND	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5 .

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	100%
	1,4-difluorobenzene	100%
	4-bromochlorobenzene	100%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 19816.

Analyst P. affire

Review Musters

EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	05-07-01
Laboratory Number:	19816	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP	Date Analyzed:	05-04-01
Condition:	N/A	Date Extracted:	N/A

		Duplicate		
	Sample	Sample	Detection	
	Result	Result	Limits	Percent
Parameter	(mg/L)	(mg/L)	(mg/L)	Difference
Vinyl Chloride	ND	ND	0.0001	0.0%
1,1-Dichloroethene	ND	ND	0.0001	0.0%
2-Butanone (MEK)	0.0750	0.0754	0.0001	0.6%
Chloroform	ND	ND	0.0001	0.0%
Carbon Tetrachloride	ND	ND	0.0001	0.0%
Benzene	0.0766	0.0765	0.0001	0.2%
1,2-Dichloroethane	ND	ND	0.0001	0.0%
Trichloroethene	ND	ND	0.0003	0.0%
Tetrachloroethene	ND .	ND	0.0005	0.0%
Chlorobenzene	ND	ND	0.0003	0.0%
1,4-Dichlorobenzene	ND	ND	0.0002	0.0%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for sample 19816.

Analyst C. Cyline

Mistri m Walters
Review

EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client: QA/QC Project #: N/A Sample ID: Matrix Spike Date Reported: 05-07-01 Laboratory Number: 19816 Date Sampled: N/A Sample Matrix: Water Date Received: N/A **TCLP** Analysis Requested: Date Analyzed: 05-04-01 Condition: N/A Date Extracted: N/A

Parameter	Sample Result (mg/L)	Spike Added (mg/L)	Spiked Sample Result (mg/L)	Det. Limit (mg/L)	Percent Recovery	SW-846 % Rec. Accept. Range
Vinyl Chloride	ND	0.050	0.0495	0.0001	99%	28-163
1,1-Dichloroethene	ND	0.050	0.0494	0.0001	99%	43-143
2-Butanone (MEK)	0.0750	0.050	0.124	0.0001	99%	47-132
Chloroform	ND	0.050	0.0500	0.0001	100%	49-133
Carbon Tetrachloride	ND	0.050	0.0490	0.0001	98%	43-143
Benzene	0.0766	0.050	0.126	0.0001	100%	39-150
1,2-Dichloroethane	ND	0.050	0.0490	0.0001	98%	51-147
Trichloroethene	ND	0.050	0.0495	0.0003	99%	35-146
Tetrachloroethene	ND	0.050	0.0495	0.0005	99%	26-162
Chlorobenzene	ND	0.050	0.0495	0.0003	99%	38-150
1,4-Dichlorobenzene	ND	0.050	0.0495	0.0002	99%	42-143

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for sample 19816.

Analyst C. Oyler

Mister m Walters

EPA METHOD 8040 PHENOLS Quality Assurance Report Laboratory Blank

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	05-09-01
Laboratory Number:	05-08-TCA	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	05-08-01
Condition:	N/A	Analysis Requested:	TCLP

Analytical Results	Concentration	Detection Limit	Regulatory Limit
Parameter	(mg/L)	(mg/L)	(mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recove	ries: Parai	neter	Percent Recover	ry
	2- flu	orophenol	98	%
		-tribromophenol	99	%
		• •		
References:	Method 1311, Toxicity C	haracteristic Leaching Proced	ure Test Methods for Evaluating	Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: QA/QC for sample 19816.

Analyst L. Celera

Phrister m Wasters



EPA METHOD 8040 PHENOLS Quality Assurance Report

Official		Dunings #s	NI/A
Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	05-09-01
Laboratory Number:	19816	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Date Analyzed:	05-08-01
	•	Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Detection Limit (mg/L)	Percent Difference
o-Cresol	. ND	ND	0.020	0.0%
p,m-Cresol	ND	ND	0.040	0.0%
2,4,6-Trichlorophenol	ND	ND	0.020	0.0%
2,4,5-Trichlorophenol	ND	ND	0.020	0.0%
Pentachlorophenol	ND	ND	0.020	0.0%

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Maximum Difference
•	8040 Compounds	30.0%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 19816.

Analyst

ENVIROTECH LABS PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	05-09-01
Laboratory Number:	05-08-TBN	Date Sampled:	N/A
Sample Matrix:	Hexane	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	05-08-01
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachioroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND .	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria		Parameter	Percent Recovery
	. •	2-fluorobiphenyl	95%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 19816.

Analyst Qdeen

Phristine m Whaters



EPA Method 8090 **Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics QA/QC Matrix Duplicate Report**

Client:	QA/QC	Project #:	NA
Sample ID:	Matrix Duplicate	Date Reported:	05-09-01
Laboratory Number:	19816	Date Sampled:	, N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	05-08-01
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Percent Difference	Det. Limit (mg/L)
1 ardinotos	(1119/2)	(11/9/2/	Dillorence	(1119/12)
Pyridine	ND	ND	0.0%	0.020
Hexachloroethane	ND	ND	0.0%	0.020
Nitrobenzene	ND	ND	0.0%	0.020
Hexachlorobutadiene	ND	ND	0.0%	0.020
2,4-Dinitrotoluene	ND	. ND	0.0%	0.020
HexachloroBenzene	ND ·	ND	0.0%	0.020

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Maximum Difference
area receptance ontena	I di dilitetti	Maximum Directorice

8090 Compounds

30%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992. Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 19816.



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	05-08-TCM QA/QC	Date Reported:	05-09-01
Laboratory Number:	19816	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP Metals	Date Analyzed:	05-08-01
Condition:	N/A	Date Extracted:	N/A

Blank & Duplicate		Method	Detection	n Sample	Duplicati	% - %	Acceptance
Conc (mg/L) Arsenic	Blank ND	Blank ND	0.001	ND	ND	0.105 0.0%	0:107; is 0.107; is 1.100;
Barium	ND	ND	0.001	0.007	0.007	0.0%	0% - 30%
Cadmium	ND	NĎ	0.001	ND	ND	0.0%	0% - 30%
Chromium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Lead	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Silver	ND	ND	0.001	ND	ND	0.0%	0% - 30%

Spike Conc. (mg/L)	Spike Added	Sampl	Solked Samole	Recovery	Acceptance
Arsenic	0.500	ND	0.498	99.6%	80% - 120%
Barium	0.500	0.007	0.506	99.8%	80% - 120%
Cadmium	0.500	ND	0.499	99.8%	80% - 120%
Chromium	0.500	ND	0.499	99.8%	80% - 120%
Lead	0.500	ND	0.498	99.6%	80% - 120%
Mercury	0.050	ND	0.049	98.0%	80% - 120%
Selenium	0.500	ND	0.497	99.4%	80% - 120%
Silver	0.500	ND ·	0.498	99.6%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, Dec. 1996

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals,

SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission,

SW-846, USEPA, December 1996.

Comments:

QA/QC for sample 19816.

Analyst

Review

Cuanam

CHAIN OF CUSTODY RECORD

08639

*	Helinquished by: (Signature)	Rélinquished by: (Signature)	Relinquished by: (Signature)					Produced water Tul 87/01 14:40 19816	Sample No./ Sample Sample Lab Number		Clie	Client / Project Name Project Location
5796 U.S. Highway 64 Farmington, New Mexico 87401 (505) 632-0615	FOVIROTECH INC	Received by: (Signature)	S/3/a1 8:30 My (Signature)					Wale 5 V	Sample A	OIOWY 100	rs W	ord.
Received Intact Cool - Ice/Blue Ice	Sample Receipt		25/01 8:30	-		-					Remarks	ANALYSIS / PARAMETERS

District I
1625 N. French Dr., Hobbs, NM 88240
District II ==
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-138 Revised March 17, 1999

> Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

REQUESTION ATTROVAL TO ACCEPT	JOHN WASTE
1. RCRA Exempt: Non-Exempt: X	4. Generator. OL + G45 Equip.
Verbal Approval Received: Yes No	5. Originating Site Shop SUMP
2. Management Facility Destination LEY ENERGY Disposar	6. Transporter
3. Address of Facility Operator 4345 CR 35.00 AZEC NM	8. State NM
7. Location of Material (Street Address or ULSTR) FARMINGTON, NM 87402	
9. Circle One:	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by nematerial is not-hazardous and the Generator's certification of origin. No waste class approved	cessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transporters	ort.
BRIEF DESCRIPTION OF MATERIAL:	
Coly water mixed with cleaning Abent	
Estimated Volume _ < 80661, cy Known Volume (to be entered by the open	ator at the end of the haul)cy
SIGNATURE Maste Management Facility Authorized Agent TITLE: MGZ	DATE: /0-30-0/
TYPE OR PRINT NAME: MICHAEL TALOUICH TELE	PHONE NO. <u>505 - 334-6/8</u> L
APPROVED BY: Months 916 TITLE: Environ	Eng 15 DATE: 11/1/2001 alulGeolos L DATE: 11-5-01

District I - (505) 393-6161 1625 N, French Dr Hobbs, NM 88240 District III - (505) 7,88-1283 811 S. First Artes A. Nor 88240 District III - (505) 334-6178 1000 Rto Brazos Road Aztec, NM 87410 District IV - (505) 827-7131 2040 S. Pacheco

Santa Fe, NM 87505

New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 2040 South Pacheco Street Santa Fe. New Mexico 87505

Submit to OCD Permitted Surface Waste Management Facility

Form C-143

3/15/00

Santa Fe, New Mexico 87505 (505) 827-7131

GENERATOR CERTIFICATE OF WASTE STATUS

. Waste Generator Manne and Address.	2. Permit Number (ii waste generated at an OSQ
Oil + GAS Equip	permitted facility)
4910 E- MAIH	
Diltars Equip 4910 E- MAIH FALMING FON M. MEN 87402 B. Description of Waste and Generating Process:	4. Location of Waste (Street address &/or ULSTR):
Hot both for cleaning	SAME
Hot both for cleaning	SAME
sactore oilfield productions	
equip.	
5. Destination (Surface Waste Management Facility):	6. Transporter:
Kay	KEY
7. Estimated Volume – <u>80</u> cy/bbls	
MSDS Information Other (Description)	RCRA Hazardous Waste Analysis (With Chain of Custody).
Generator certifies that, according to the Resource Conservation Agency's July 1988 regulatory determination, the above describe	
EXEMPT oilfield waste.	NON-EXEMPT oilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation)
In addition, Generator certifies that nothing has been added to waste does not contain Naturally Occurring Radioactive Materia Subpart 1403.	al (NORM) regulated pursuant to 20 NMAC 3.1
Generator Signature July Cherry	Date: 29/oct/2001
Print Name: Philip Chimey	
Title:	
	•



ZEP MANUFACTURING COMPANY P.O. BOX 2015 ATLANTA, GEORGIA 30301

MATERIAL SAFETO FOA A SHEET ND SAFE HANDLING AND DISPOSAL INFORMATION

ISSUE DATE:

02/01/89

SUPERSEDES:

12/30/88

Date printed: 11/17/99

ZEP VAT NEUTRALIZER 1465

Product No:

Vat **Ne**utralizer

SECTION I - EMERGENCY CONTACTS

TELEPHONE: (404) 352-1680 MEDICAL EMERGENCY:

BETWEEN &:00 AM - 5:00 PM (EST)

(770) 439-4200

NON OFFICE HOURS, WEEKENDS

(770) 432-2873 (770) 455-8160 AND HOLIDAYS, PLEASE CALL YOUR LOCAL POISON CONTROL

(770) 552-8836

(770) 424-2048

(770) 424-4789

TRANSPORTATION EMERGENCY: (770) 922-0923 CHEMTREC:

(800) 424-9300 DISTRICT OF COLUMBIA: (202) 483-7616

TOLL FREE - ALL CALLS RECORDED

ALL CALLS RECORDED

DESIGNATIONS

(PPM)

EFFECTS (SEE NOTICE)

% IN PROD.

@ ** SULFURIC ACID ** oil of vitriol; CAS# 7664-93-9; RTECS# WS5600000; OSHA PEL-1 mg/m3 (for mists only).

@ IDENTIFIES CHEMICALS LISTED UNDER SARA-SECTION 313 FOR RELEASE REPORTING..

0.25 TOX COR 60-70

SECTION III - HEALTH HAZARD DATA

SECTION II - HAZARDOUS INGREDIENTS

SPECIAL NOTE: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions

ACUTE EFFECTS OF OVEREXPOSURE:

Corrosive to skin and eyes on contact. Eye contact can produce corneal damage or blindness. Skin contact can produce inflammation, reddening, and blistering. Inhalation of spray mist or vapors may produce irritation. burning, or destruction of tissues in the respiratory tract, characterized by coughing choking, pain, or shortness of breath. Severe overexposure may lead to fatal lung damage. Ingestion can cause abdominal pain, nausea, vomiting, and collapse, along with tissue destruction in the gastrointestinal tract. CHRONIC EFFECTS OF OVEREXPOSURE:

Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

None of the ingredients are listed as carcinogens by IARC, NTP, or OSHA.

EST'D PEL/TLV: Not established PRIMARY ROUTES OF ENTRY: N/A

HMIS CODES: HEALTH 3; FLAM. 0; REACT. 2; PERS. PROTECT. G ; CHRONIC HAZ. YES

FIRST AID PROCEDURES:

SKIN: Immediately flush contaminated skin with plenty of water for at least 15 minutes. Get medical attention

EYES: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. Get medical attention at once.

INHALE: Move exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Get medical attention immediately.

INGEST: If this product is swallowed, do not induce vomiting. If victim is conscious give plently of water to drink. Get medical attention at once.

SECTION IV - SPECIAL PROTECTION INFORMATION

PROTECTIVE CLOTHING: Wear rubber or neoprene gloves and a face shield when using. A rubber apron and boots are strongly recommended.

EYE PROTECTION: Wear splash-proof safety goggles especially if contact lenses are worn.

RESPIRATORY PROTECTION: If ventilation is inadequate, wear a properly fitting MSHA or OSHA-approved

VENTILATION: If vapors are detected, ventilate work area by opening windows and using exhaust fans.

SECTION V - PHYSICAL DATA

BOILING POINT (F):

~ 220

SPECIFIC GRAVITY:

1.55

VAPOR PRESSURE(mmHg): VAPOR DENSITY(AIR = 1):

N/A

EVAPORATION RATE (=1):

N/A < 1.0

SOLUBILITY IN WATER:

N/A COMPLETE 0.0%

pH(CONCENTRATE): pH(USE DILUTION OF 1% SOLUTION):

1.0

VOC CONTENT (CONCENTRATE):

APPEARANCE AND ODOR: A COLORLESS LIQUID WITH NO ODOR:

SECTION 1

KRYLON INDUSTRIAL 31500 SOLON ROAD SOLON, OH 44189

EMERGENCY TELEPHONE NO. (218) 292-7400
INFORMATION TELEPHONE NO. (800) 247-3286

MATERIAL SAFETY DATA SHEET

@1994, The Sherwin-Williams Co. DATE OF PREPARATION 20 - Jul - 94



						All Purpose		Rustin	Rust Inhibitive	
	-SECTION II-	- {	Yapat	1340	1368	1357	1369	1345	1346	פלבו
	HAZARDOUS HOREDIENT	ארא אפר	Units Presente	Zimo		Auddy				Sandatte Filler
	Contract by margin;		(mm Hg)	Fleh	Winte	Brown	Qray	Yellow	Cheen	Surface Prime
74-08-0	Propers (peopeliani)	1000	PPM 780.0	15	17	17	17	16	91	18
742-80-8	V. M. & P. Nephine		PPM 12.0	1						•
100-00-3	Teluano	100 <150>	PPM (Skin) 22.0		23	27	27	6	6	
338-20-7	Xylene		PPM 5.0	10				12	12	íe
78-63-1	2-Methyl-1-Propenol	50	PPM 8,7							2
7800 3	Methyl Ethyl Ketone	200 200 <300> <300>	PPM 70.0	34						
87-84-1 * Assigne	Austone	750 200 200 200 200 200 200 200 200 200 2	PPM 780.0		94	34	2	48	48	=
240-05-0 ^{\$} 2hd	2he	Not Established	,	38						
947-88- 0	Tuto	2 2 1	Mg/M3 as Resp. Dest					5	5	80
1463-67-7	Therefore Dioxide	10 10151	MgAM3 as Dusi (Resp. Fraction)		đ		ບ			-
471-04-1	Zinc Molyboule	Not Established						22	2	
	YOC as a percent by weight per BAAOMD Rule 49	W BAAQMD Rule 49		59	8 2	80	62	83	8J	82
The second second	NFPA Cade 208 Level			ಚ	u	ಟ	ú	IJ	ម	IJ
	High Parison (Hages - Flagmatify - Rescrivity)	nability . Rescaviv)		2-4-0	2-4-0	2.1-0	2-4-0	2.4.0	2-4-0	2-4-0

gradians subject to the reporting requirements of the Superfund Amendments and Resultiorization Act (SARA) Socilon 313, 40 CFR 372.85 C

→→→ MSDS Text Page Follows · · · →→



THE REPRODUCTION OF

THE

FOLLOWING

DOCUMENT (S)

CANNOT BE IMPROVED

DUE TO

THE CONDITION OF

THE ORIGINAL

Section 또 — PHYSICAL DATA

NATA NE LELITARIO DE LA CONTRA 7.A. 209 of

EVANORATION RATE
VANOR DEBUSTYF
RECTURE POINT 111 Packer than Ribor Heavier than Air N.A.

Section IV -- FIRE AND EXPLOSION HAZARD DATA

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MEPTOTION PLANT POINT 40 *P PMCC

Ory Chenkoal, Form

, electrical equipment, sparks, and spen flamm. Closed entraliant may (0 address has: Application to list exfects tegy has appelled practitions; setting appears to decomposition products any cause a health heard. Leading appearant. Obtain smolical attention.

peart including self-contained breathing apparatus should be used. Sective. If water is used, for motales are preferable. Mater may tainers to prevent pressure build-up and possible autoignition or g

Section V — HEALTH HAZARD DATA

Concessor way be by INIALETICA (0) Jou FICH and/or SKIII recommendations or IYA contact, for preper use, depending on ventilation. and personal conditions of

Exaction of eyes, etta and respiratory system. BECKONTREMO AC CROSLE ž May cause nervous eyetem depression and possibly death.

and Iteliany of busing sensation may betrous Accumulates by Exposure s, naveen, ami loss of coordination are indications of excessive exposure Ladicate ş or excessive

DET AND FIRST ALD PROCEDURES

If affected, remove from exposure. Restoro breathing. Restoro area theroughly with scap and water water e-was rivene contemporal tender before re-was. Then eyes with large amerats of water for if minures. Š

if in STEE: Theh eyes with large amounts SMALCOMED: Get medical attention.

DEMEES TOOL 8 SUPPLY It in these products is an IARC, erro or OSEA listed descinages.

I Rebens may increase the mervous system effects of other colvents.

I Rebens may increase the mervous system effects of other colvents of fects to produce the section II may cause adverse effects to mary, bland-forming, cardiovascular, and reproductive systems.

lde dust at 150 mg./mJ developed lung cannor, however, puch el bannodkeleno permanent brain

REACTIVITY DATA

By firm: Carbon Dieside, Carb

Carbon Momowide, Oxides of Ketale in Saction II

Section VII - SPILL OF LEAK PROCEDURES

STREET TO BE TARRY IN CASE SATISFACIAL PORTROLL.

Remove all sources of ignition. Ventilate and remove with account to compervation and Marte Brown this product may be harardong as defined under the Remource Compervation and Recovery Act (Richa) 40 cfm 181. Seate must be tested for ignitability to determine the applicable FPA harardons waste numbers. Muste from graduets containing Methyl Erlyl Econs and/or Sino may also require testiny (or extractability.

In accordance with Federal, Musternament in the indirecte.

Dispose of in accordance with Federal, State

Section VIII -- PROTECTION INFORMATION

PRECAUTIONS TO SE TAKEN IN INE
US- BALY with Adaquate Vantilation: Avai
with akin and eyes. Wash hande after using Avoid beauthing vapor and apray mist. Avoid contact

These coatings may contain materials classified as missace particulates (listed as Bust' in Section EI) which may be present at herardous levels only during sacding or shrading of the dried film. If no specific dusts are listed in Section II, the applicable limits for missaces dusts are NGIH TLY 10 mg./ml (total dust), OSNA PEL 15 mg./ml (total dust), 5 mg./ml respirable fraction).

Baction II is maintained below 1914.197, 1918.198. Local exhaust preferable. General éxhaust accoptable if the exposurs to materials in Frapplicable exposurs limits. Refer to OSDA Standards 1910-94,

If personal exposure cannor be controlled below applicable limits by wentlistion, wear a properly filted organic vapor/particulate respirator approved by NIOSH/MSHA for protect ngainet materials in section IT. approved by #IOSM/HSIN for protection

When sanding or abrading the dried film, wear a dust/mist respirator for protoction against mon-volatile materials in Section if. Home required for normal application of serosol products where minimal skin contact

Por long or repeated contact, west chemical resistant gloves

Hear safety apactacles with unperforated sideshields

Section IX -- PRECAUTIONS

PRECAUTIONS TO BE TAKEN

Keep warm and quiet.

artention

IN HANDCING AND STORFING

ã

Contents are EXTREMELY PLANABLE. Keep away from heat, sparke, and open flame. Vapors will accumulate readily and may ignite explosively.

Outing use and until all vepors are gone: Keep area ventilated - Do not shoke - Extendish all flomes, pliot lights, and heaters - Turn of stoves, electric tools appliances, and any other sources of ignition.

Consult NYA, Code. Wee approved Rending and Grounding procedures.

Contents under pressure. wee approved Rending and Grounding procedures. sure. Do not panoture, incinerate, or expose t light, radiators, stewes, hot water, and ether and other heat sources could cause ende entretement of esome

Intentional misses by deliberately concentrating and inhaling the contents con be harmful

Section X — OTHER REGULATORY INFORMATION

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CALIFORNIA PROPOSITION
Several products (eq rel products (see table) contain a chembrel known to birth defects or other reproductive harm. the state of California to

The above information partains to this product as currently formalated, and is based on the information available at this time. Addition of reducers or other additives to this 3

Material Safety Data Sheet

Section 1. Ch	emical Product and Company Identification		
Common Name	Triethylene Glycol Reprocessed	Code	93101
Supplier	COASTAL CHEMICAL CO.L.L.C.	MSDS#	Not available.
	3520 Yeterans Memorial Drive	Validation Da	te 2/3/9 6
	ABBEVILLE, LA 70510 318-893-3862	Print Date	5/12/99
Synonym	Not available.	In case of	Turner de la França de Mail
Trade name	Not available.	Emergean.	Transportation Emergency Call CHEMITREC 800-424-9300
Muterial Uses	Not available.		Other information Call Jos Hudman 713-477-6675
Manufacturer	Various	·	

Section 2. Composition and	Information	on ingredien	<u> </u>	and the same of th
Name	CAS#	% by Weight	TI.Y/PEL	LCo/LDn
Diethylene alvol	111-46-6	0-5	Not available.	ORAL (LD50) mg/kg; Acute: 12565 (Hamster.). 14800 (Rat). DERMAL (LD50) mg/kg; Acute: 11890 (Hemster.). 11900 (Rabbith
Triethylane Glycol	11227-6	95-100		

Section 3. Hazards le	entification	harman and a super-	
Emergency Overview	CAUTIONI		
-	MAY CAUSE EYE IRRITATION. MAY CAUS	E SKIN IRRITATION,	
Routes of Entry	Eye contact Ingestion. Skin contact Inhalation	v.	
Potential Acute Health Effects	Slightly dangerous to dangerous in case of skir of inhalation. This product may irritate eyes and		f eye contact (intent), of ingestion.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Not available. M Not available. The substance is toxic to b system: Not available. Repeated or prolonged	lood, kidneys, liver. Toxicity	of the product to the reproductive

Eye Contact	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye comment. Seek medical attention.
Skin Contact	If the chemical got onto the clothed partier of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean tolds, crevices, creases and grain. COLD water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
Hazardous Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Hazardous Inhalation	No additional information.
Ingestion	DO NOT induce vomiling. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.

Section 5. Fire and Ex	plosion Data
Flammability of the Product	Combustible.
Auto-Ignition Temperature	The lowest known value is 227.78°C (442°F) (Diethylene glycol).
Flash Points	The lowest known value is CLOSED CUP: 138°C (280.4°F) OPEN CUP: 143°C (280.4°F) (Cleveland) (Diethylene glycol)
Flammable Limits	The greatest known range is LOWER: 2% UPPER: 12.3% (Diethylene glycol)
Products of Combustion	These products are carbon oxides (CO, CO2),
Fire Hazards in Presence of Various Substances	Very slightly to slightly flammable in presence of open flames and sparks, of heat.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No specific information is available in our database regarding the products risks of explosion in the presence of various materials.
Fire Fighting Media 3 200 3	SMALL FIRE: Use DRY chemicals, CO2, water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Special Remarks on, Fire Hazards	When heated to decomposition, it emits acrid smoke and imitating fumes. (Diethylene special)
Special Remarks on Explosion Hazards	No additional remark.

Small Spill	Dilute with water and mop up, or absorb with an inert DRY m container. Finish cleaning by spreading water on the contamination of the c	naterial and place in an inated surface and dispo	appropriate waste disp see of according to local
Large Spill	Combustible material. Keep away from heat. Keep away from sources of ignition. Si water on the contaminated surface and allow to evacuate through	top leak if without risk. I ugh the sanitary system.	Finish dearing by sprea

Section	n 7. Handling	and Storage	
Handling		Not available.	
Storage		Keep container dry. Keep in a coo dosed. Keep in a cool, wall-ventilal	of place. Ground all equipment containing material. Keep container tightly sted place. Combustible materials should be stored away from extreme heal
		and away from strong exidizing agen	

Section 8. Exposure C	ontrols/Persona	Protection	
	Provide exhaust vent their respective threst station location.	ilation or other eng old limit value. En	eneering controls to keep the airborne concentrations of vapors below sure that eyewash stations and safety showers are processal to the work-
Personal Protection	Safety glasses. Lab o	oal. Gloves (imper	vious).
•			
Personal Protection in Case of a Large Spill	Spiesh goggles. Ful specialist BEFORE ha	l suit. Boots. Glo andling this product	ves. Suggested protective clothing might not be sufficient; consult a
Chemical Name or Product Name		CAS#	Exposure Limits
2,2'-Oxydiethanol Tricthylene Glycol		11-46-8 12-27-8	No: avalable.

·Triethylene Glycol R	eprocessed		.:		Page N	lumber: 3
Section 9. Physical a	nd Chemical Properties			<i>f</i> .		
Physical siste and appearance	Liquid.	Odor	Not evallable).		
Motecplar Weight	Not applicable.	Taste	Not available	3.		
pH (1% solo/water)	Neutral.	Color	Not available).		
Beiling Palm	The lowest known value is 245.8°C (474.4°F)	Diethylene glyd	col). Weighted a	vérage: 284.	02°C (543.	.2°F)
Stelling Point/Pour Point	May start to solidify at -5°C (23°F) based on de	ua for: Triethyl	ene Glycol. Wel	hted averag	e: -5.09°C	(22.8°F)
Critical Temperature	Not available.					
Specific Gravity	Weighted average: 1.12 (Water = 1)					
Vapor Pressure	The highest known value is 0.01 mm of Hg (@	20°C) (Diethy	ene glycol),			
Vapor Density	The highest known value is 6.7 (Air = 1) (Tetr	aethylene glyc	ol). Weighted a	verage: 6.7	(Air = 1)	
Volatility	Not available.					
Odor Threshold	Not available.					
Evaporation rate	Not available.		· ·			
Viscosity	Not available.			7±	<u> </u>	
Water/Oil Dist. Coeff.	Not available.					
lunicity (in Water)	-Not available.	and the state of			·	
Dispersion Properties	See solubility in water, methanol, diethyl elber		r			
Solubility	Easily soluble in cold water, not water, methal	not, dicthyl ethe	er.			
Physical Chemical Comments	Not available.				-	

Section 10. Stability	and Reactivity Data			
Chemical Stability	The product is stable.	, =e		
Conditions of Instability -	No additional remark.	en de la companya de	-	
incompatibility with various substances	Very slightly to slightly reac	tive with oxidizing agents.		
Hazardous Decomposition Products	Not available.			
Hazardous Polymerization	Not available.		·	

Texicity to Animals	Acute oral toxicity (LD50): > 5 Acute dermal toxicity (LD50):	000 mg/kg (Hamster.) (Calculated valu > 5000 mg/kg (Hamster.) (Calculated v	e for the mixture). alue for the mixture).
Chronic Effects on Humans	The substance is toxic to bloc	d, kidneys, liver. Toxicity of the product	to the reproductive system. Not available.
Other Taxic Effects on Humans	Slightly dangerous to danger of inhalation.	ous in case of skin contact (irritant, per	mealor), of eye contact (irritant), of ingestion
Special Remarks on Toxicity to Animals	No additional remark.		
Special Remarks on Chronic Effects on Humans	No additional remark.		

Triethylene Glycol i	Reprocessed Page Number: 4
Section 12. Ecologic	cal Information
Ecotozicky	Not available.
BQD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products ma arise.
Texicity of the Products	The product itself and its products of degradation are not toxic.
of Blodegradation	The product itself and its products of degradation are not loads.

Waste Disposal

ort information							
NONE	سننج بالدراد المديند		and the second second				•
Not a DOT controlle	ed material (United	.9lales).		į			-
Not applicable (PIN	and PG).			1987 Troubleton and			
NONE			· ' ' .	·			
Not available				- : -			
Not applicable.						•••	
	Not a DOT controlls Not applicable (PIN NONE Not available. Not applicable.	NONE Not a DOT controlled material (United SE Not applicable (PIN and PG). NONE Not available. Not applicable.	NONE Not a DOT controlled material (United States). Not applicable (PIN and PG). Not available. Not applicable.	NONE Not a DOT controlled material (United States). Not applicable (PIN and PG). Not available. Not applicable.	NONE Not a policable (PIN and PG). Not available. Not applicable.	NONE Not applicable. Not applicable. Not applicable.	Not a policable. Not applicable. Not applicable.

Federal and		The following produ	oct(s) is (are) listed by the State of Minnesot	a: Diethylene glycol		
Regulations		im mal II. d			4	
	الأرياط السيامي	· · · · · · · · · · · · · · · · · · ·				
		en e				·
Other Classi	Nextlons	WHMIS (Canada)	Not controlled under WHMIS (Canada).			
		DSC1. (EEC)	Not controlled under DSCL (Europe).			

Section 16. Other Information

Section of the second HMIS (U.S.A.) 2 Fire Hazard 1 Reactivity 0 Personal Protection

National Fire Protection Association (U.S.A.)

Printed 5/12/99.

Health

Fire Hazard Leactivity

References Not available. Other Special No additional remark. Considerations Validated by Joe Hudman on 8/8/96. Verified by Joe Hudman.

Transportation Emergency Call CHEMTREC 800-424-9300 Other Information Call Jos Hudman 713-477-6675

Continued on Next Page

Triethylene Glycol Reprocessed

Sptice to Reader

Page Number: 5

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District I 1625 N. French Dr., Hobbs, NM 88240 District III
811*South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410 District IV 2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Narthe Is waste stream approvator life

Roser Andreson
Form C-138
Revised March 17, 1999

Submit Original Plus 1 Copy to Appropriate District Office

can require what they went.

REQUEST FOR APPROVAL TO ACCEPT	SOLID WASTE
I. RCRA Exempt: Non-Exempt: 🔀	4. Generator will iam s
Verbal Approval Received: Yes No	5. Originating Site MILAGEO PIAN+
2. Management Facility Destination KEY ENERGY DISPOSAL	6. Transporter Key
3. Address of Facility Operator #345 CR 3500 AZEC NM	8. State NM
7. Location of Material (Street Address or ULSTR) 13. Toomfield, NM 87413	5
9. <u>Circle One</u> :	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. (B.) All requests for approval to accept non-exempt wastes must be accompanied by no material is not-hazardous and the Generator's certification of origin. No waste class approved	ecessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transp	oort.
WASTE WATER FROM NATURAL GAS pro-	CETTING
SEE DISCHARGE PLAN Requests testing waiver by oing per month	Renewal For OmicaGeo Plant Chast Ciled + Approved 11-13-200
SEE DISCHARGE PLAN Requests testing warred per month Estimated Volume 1000 bb) cy Known Volume (to be entered by the open	Renewal For MILAGEO Plant Shart Ciled + Approved 11-13-2000 erator at the end of the haul)
SEE DISCHARGE PLAN Requests testing warrer Estimated Volume 1000 bbl cy Known Volume (to be entered by the open	PRENEWAL FOR MILAGRO PIANT DATE: 10-29-01
SEE DISCHARGE PLAN Requests testing wariner Estimated Volume 1000 bbl cy Known Volume (to be entered by the open signature waste Management Facility Authorized Agent TYPE OR PRINT NAME: MICHAEL TALOVICH TELI	PRENEWAL FOR MILAGEO PINH MI
SEE DISCHARGE PLAN Requests testing wariner Estimated Volume 1000 bbl cy Known Volume (to be entered by the open SIGNATURE Waste Management Facility Authorized Agent TYPE OR PRINT NAME: MICHAEL TALONICH TELI	PRENEWAL FOR MILAGEO PINH MI
SEE DISCHARGE Plan Requests testing wariner See month Estimated Volume 1000 bol cy Known Volume (to be entered by the open signature Management Facility Authorized Agent TYPE OR PRINT NAME: MICHAEL TALOVICH TELI (This space for State Use) Need Copy of Most Relight Annual Statement that Process these	PRENEWAL FOR MILAGEO PINH MI

OIL CONSERVATION DIVISION AZTEC DISTRICT OFFICE 1000 RIO BRAZOS ROAD AZTEC, NEW MEXICO 87410 (506) 334-6178 Fax (505)334-6170

GARY E. JOHNSON GOVERNOR

JENNIFER A. SALISBURY CABINET SECRETARY

CERTIFICATE OF WASTE STATUS

1. Generator Name and Address:	2. Destination Name:
WILLIAMS (MILAGROPLANT)	KEY DISPOSAL
#187 C2 4980	CR 3500
BLOOMFIELD, NM 87413	= FARMINGTON, N.M
3. Originating Site (name):	Location of the Waste (Street address &/or ULSTR):
MILAGRO PLANT	# 192 CR 4900
*	BLOOMFIELD, NM 87413
Attach list of originating sites as appropriate	
4. Source and Description of Waste	
NATURAL GAS PROCESSING WASTE -1	INCCUBING PRODUCED WATER, AMINE COMPOUNDS
	R NON-HAZAROOUS LIQUID WASTES. WASTE HAS .
	BY ANALYTICAL TESTING-RESULTS ON FILE.
<u> </u>	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	· · · · · · · · · · · · · · · · · · ·
I, MARK HARVEY (Print Name)	representative for:
(Print Name)	Tepresentative for.
	do hereby certify that,
	covery Act (RCRA) and Environmental Protection Agency's July,
	covery Act (RCRA) and Environmental Protection Agency's July,
1988, regulatory determination, the above descri	covery Act (RCRA) and Environmental Protection Agency's July,
1988, regulatory determination, the above descri EXEMPT oilfield waste Analys -	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic
1988, regulatory determination, the above descri EXEMPT oilfield waste Analys and that nothing has been added to the exempt of	covery Act (RCRA) and Environmental Protection Agency's July, bed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above.
1988, regulatory determination, the above descri EXEMPT oilfield waste NON-E analys	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic is or by product identification or non-exempt non-hazardous waste defined above.
EXEMPT oilfield waste Analyse and that nothing has been added to the exempt of MSDS Information RCRA Hazardous Waste Analysis	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above. mentation is attached (check appropriate items): Check Check appropriate items):
1988, regulatory determination, the above descri EXEMPT oilfield waste analyse and that nothing has been added to the exempt of For NON-EXEMPT waste the following document of the matter of the m	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above. mentation is attached (check appropriate items): Check (Check appropriate items):
EXEMPT oilfield waste Analyse and that nothing has been added to the exempt of MSDS Information RCRA Hazardous Waste Analysis	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above. mentation is attached (check appropriate items): Check Check appropriate items):
EXEMPT oilfield waste NON-E analystand that nothing has been added to the exempt of MSDS Information — MSDS Information — RCRA Hazardous Waste Analysis — Chain of Custody	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above. mentation is attached (check appropriate items): Check (description): FACILITY DISCHARGE PLACE)
1988, regulatory determination, the above descri EXEMPT oilfield waste	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above. mentation is attached (check appropriate items): Cother (description): FACILITY DISCHARGE PLA AND CCD APPROVAL
EXEMPT oilfield waste NON-E analystand that nothing has been added to the exempt of MSDS Information — MSDS Information — RCRA Hazardous Waste Analysis — Chain of Custody	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above. mentation is attached (check appropriate items): Cother (description): FACILITY DISCHARGE PLA AND CCD APPROVAL
EXEMPT oilfield waste EXEMPT oilfield waste and that nothing has been added to the exempt of the second of the exempt of the e	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above. The non-exempt non-hazardous waste defined above. Other (description): FACILITY DISCHARGE PLA AND CCD APPROVAL s of Naturally Occurring Radioactive Material (NORM) pursuant
EXEMPT oilfield waste EXEMPT oilfield waste and that nothing has been added to the exempt of the second of the exempt of the e	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above. mentation is attached (check appropriate items): Cother (description): FACILITY DISCHARGE PLA AND CCD APPROVAL
EXEMPT oilfield waste EXEMPT oilfield waste analys and that nothing has been added to the exempt of For NON-EXEMPT waste the following docum MSDS Information RCRA Hazardous Waste Analysis Chain of Custody This waste is in compliance with Regulated Levels to 20 NMAC 3.1 subpart 1403.C and D.	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above. The non-exempt non-hazardous waste defined above. Other (description): FACILITY DISCHARGE PLA AND CCD APPROVAL s of Naturally Occurring Radioactive Material (NORM) pursuant
EXEMPT oilfield waste EXEMPT oilfield waste and that nothing has been added to the exempt of the second of the exempt of the e	covery Act (RCRA) and Environmental Protection Agency's July, ibed waste is: (Check appropriate classification) EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification or non-exempt non-hazardous waste defined above. The non-exempt non-hazardous waste defined above. Other (description): FACILITY DISCHARGE PLA AND CCD APPROVAL s of Naturally Occurring Radioactive Material (NORM) pursuant



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

--July 3, 2001-

CERTIFIED MAIL RETURN RECEIPT NO. 5051 0630

Ms. Clara L Garcia Williams Field Services 188 CR 4900 Bloomfield, New Mexico 87413

RE: Discharge Plan Renewal Approval GW-060

Williams Field Services Milagro Gas Plant

San Juan County, New Mexico

Dear Ms. Garcia:

The ground water discharge plan renewal GW-060 for the Williams Field Services Milagro Gas Plant located in the SW/4 SE/4 of Section 12, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico, is hereby approved under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 days of receipt of this letter.

The original discharge plan application was submitted on December 3, 1990 pursuant to Section 5101.B.3. of the New Mexico Water Quality Control Commission (WQCC) Regulations. The discharge plan renewal application was submitted April 26, 2001 pursuant to Section 3106 of the New Mexico Water Quality Control Commission (WQCC) Regulations. It is approved pursuant to Section 3109.A. Please note Section 3109.G., which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve Williams Field Services of liability should operations result in pollution of surface water, ground water, or the environment.

Please be advised that all exposed pits, including lined pits and open tanks (tanks exceeding 16 feet in diameter), shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that Section 3104 of the regulations provides: "When a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3107.C., Williams Field Services is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3109.H.4., this discharge plan is for a period of five years. This plan will expire on March 31, 2006, and Williams Field Services should submit an application in ample time before this date. Note that under Section 3106.F. of the regulations, if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved. It should be noted that all discharge plan facilities will be required to submit the results of an underground drainage testing program as a requirement for discharge plan.

Williams Field Services will submit a storm water run-off plan for approval by the OCD within six (6) months of the date of this approval letter for the Milagro Gas Plant.

Ms. Clara L.Garcia GW-060 Milagro Gas Plant July 3, 2001 Page 2

The discharge plan application for the Williams Field Services Milagro Gas Plant is subject to WQCC Regulation 3114. Every billable facility submitting a discharge plan application will be assessed a non-refundable fee equal to the filing fee of \$100. There is a flat fee assessed for natural gas processing plants equal to \$4,000.00. The OCD has received the filing fee.

Please make all checks payable to: Water Management Quality Management Fund

C/o: Oil Conservation Division

1220 South St. Francis Drive

Santa Fe, New Mexico 87505.

If you have any questions please contact Mr. W. Jack Ford at (505) 476-3489. On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

Roger C. Anderson

Chief, Environmental Bureau Oil Conservation Division

RCA/wjf Attachment

xc: OCD Aztec Office



ATTACHMENT TO THE DISCHARGE PLAN GW-060 WILLIAMS FIELD SERVICES MILAGRO GAS PLANT DISCHARGE PLAN APPROVAL CONDITIONS

(July 3, 2001)

- 1. Payment of Discharge Plan Fees: The \$100.00 filing fee has been received by the OCD. There is a flat fee assessed for natural gas processing plants equal to \$4,000.00. The required flat fee may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the plan, with the first payment due upon receipt of this approval.
- 2. <u>Williams Field Services Commitments:</u> Williams Field Services will abide by all commitments submitted in the discharge plan renewal application dated April 26, 2001 and these conditions for approval.
- 3. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge plan will be approved by OCD on a case-by-case basis.
- 4. <u>Drum Storage:</u> All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums will be stored on their sides with the bungs in and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets will also be stored on an impermeable pad and curb type containment.
- 5. <u>Process Areas:</u> All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.
- 6. <u>Above Ground Tanks:</u> All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new tanks or existing tanks that undergo a major modification, as determined by the Division, must be placed within an impermeable bermed enclosure.
- 7. <u>Above Ground Saddle Tanks:</u> Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

- 8. <u>Labeling:</u> All tanks, drums and containers will be clearly labeled to identify their contents and other emergency notification information.
- 9. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must demonstrate integrity on an annual basis. Integrity tests include pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing.
- 10. <u>Underground Process/Wastewater Lines:</u> All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity every 5 years. The permittee may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing.
- 11. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be closed unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.
- 12. <u>Housekeeping:</u> All systems designed for spill collection/prevention will be inspected weekly and after each storm event to ensure proper operation and to prevent overtopping or system failure. A record of inspections will be retained on site for a period of five years.
- 13. <u>Spill Reporting:</u> All spills/releases will be reported pursuant to OCD Rule 116 and WQCC 1203 to the OCD Aztec District Office.
- 14. <u>Transfer of Discharge Plan:</u> The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.
- 15. Storm Water Plan: The facility will have an approved storm water run-off plan.

- 16. Closure: The OCD will be notified when operations of the Milagro Gas Plant are discontinued for a period in excess of six months. Prior to closure of the Milagro Gas Plant a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.
- 17. Certification: Williams Field Services, by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. Williams Field Services further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Accepted: July 26,2001

WILLIAMS FIELD SERVICES

by Claram. Back Environmental Compliance

DISCHARGE PLAN RENEWAL

MILAGRO PLANT (GW- 60)

Williams Field Services Company

April 2001

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Figure 2 - Facility Plot Plan

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Appendix A – WES Spill Control Procedures
Appendix B – NMOCD Notification of Fire, Breaks, Spills, Leaks, and Blowouts

I. TYPE OF OPERATION

The Milagro Plant is a natural gas conditioning and cogeneration plant for Williams Field Services (WFS).

II. LEGALLY RESPONSIBLE PARTY

Williams Field Services 188 CR 4900 Bloomfield, NM 87413 (505) 632-4634

Contact Person:

Mark J. Bareta, Senior Environmental Specialist Phone and Address, Same as Above

III. LOCATION OF FACILITY

The Milagro Plant is located in Section 12, Township 29 North, Range 11 West, in San Juan County, New Mexico, approximately 2.5 miles east of Bloomfield, New Mexico. A site location map is attached (USGS 7.5 Min. Quadrangles: Bloomfield, New Mexico) as Figure 1. The facility layout is illustrated in Figure 2. All figures are attached following Section XI of the text.

IV. LANDOWNER

Williams Field Services (WFS) owns the subject property.

V. FACILITY DESCRIPTION

This facility, built in 1991, is a natural gas conditioning and cogeneration plant. The conditioning plant is designed to remove carbon dioxide and water from raw natural gas. Plant processes include gas dehydration using triethylene glycol, CO₂ removal by contacting natural gas with sufinol and glycol and sufinol regeneration.

The cogeneration plant generates electricity using natural gas fuel. The exhaust gas heat is used to generate steam for use in the gas conditioning plant. In addition, there are various storage tanks, support structures and ancillary equipment. Records related to facility operations are maintained at central office locations.

VI. SOURCE, QUANTITY, AND QUALITY OF EFFLUENTS AND WASTE SOLIDS

The source, quantity, and quality of effluent and waste solids generated at the plant are summarized in Table 1.

TABLE 1 SOURCE, QUANTITY, AND QUALITY OF EFFLUENT AND WASTE SOLIDS MILAGRO PLANT

PROCESS FLUID/WASTE	SOURCE	QUANTITY (Ranges)	QUALITY
Waste Water	Produced water, boiler blowdown, sulfinol pump building, sulfinol reclaimer, and selected process containment drains.	1,000-4,000 gal/day	Water, Amine, Amine Salts, Glycol and Storm water
Used Oil	Turbines and Oil Skimmer	10-50 bbl/month	Used motor oil w/no additives
Used Oil Filters	Turbines	50-100 filters/year	No additives
Laboratory Waste	Laboratory	50-100 gal/month	No additives
Used Oil, Glycol, Amine, Ambitrol, and Water Mixture	Filter drain pad	1-10 bbl/month	Used motor oil, glycol, amine, and ambitrol w/no additives
Used Process Filters	Air, Oil, Inlet, Glycol, Ambitrol and Fuel Gas	1,400-3,000 filters/year	No additives
Empty Drums / Containers	Liquid Containers	200-400/year	No additives
Spill Residue (i.e., gravel, soil)	Incidental spills	Incident dependent	Incident dependent
Used Absorbents	Incidental spill/leak equipment wipe-down	Incident dependent	No additives

VII. TRANSFER, STORAGE, AND DISPOSAL OF PROCESS FLUIDS, EFFLUENTS AND WASTE SOLIDS

Wastes generated at this facility fall into two categories: exempt and non-exempt. Exempt wastes include, but may not be limited to, used process filters, certain absorbents, spill residues, and produced water with or without de minimus quantities of non-hazardous liquids. Non-exempt wastes include, but may not be limited to, used oil, used oil filters, laboratory waste, and empty drums. Tables 2a & 2b describe the transfer, storage and disposal of process fluids, effluents, and waste solids expected to be generated at the site.

Non-exempt waste management will be conducted in accordance with NMOCD requirements including the preparation of a Certificate of Waste Status for each non-exempt waste stream. Non-exempt wastes will be analyzed at a minimum for BTEX, TPH, RCRA D-List metals, ignitability, corrosivity, and reactivity to initially determine if such wastes are hazardous as defined in 40 CFR Part 261. All wastes at the facility will be periodically surveyed for naturally occurring radioactive material (NORM) to determine if the concentrations of radium 226 exceed 30 picocuries per gram or if radiation exposure exceeds 50 microroentgens per hour. If affirmed, such materials will be handled and disposed in accordance with NMOCD NORM Regulations.

Barring facility modification and/or process changes, the classification of non-exempt wastes and testing of exempt wastes (when required) by laboratory analyses will be made once during the approval period of this plan. Subsequent laboratory analyses will be performed at the generator's

discretion (minimum of once every five years), or more frequently to comply with waste acceptance procedures of the disposal facility.

TABLE 2a
TRANSFER, STORAGE, AND DISPOSAL OF PROCESS FLUIDS, EFFLUENTS, AND WASTE SOLIDS
Milagro Plant

PROCESS FLUID/WASTE	STORAGE	CONTAINER CAPACITY (approximate)	CONTAINMENT/ SPILL PREVENTION	RCRA STATUS	DESCRIPTION OF FINAL DISPOSITION
Waste Water	Above Ground Storage Tanks	(3) 5,024, bbl	Berms	Non-exempt	Evaporation is performed at this WFS facility or transported for disposal at an approved disposal facility. A Waste Acceptance Profile will be filed with the disposal facility.
Used Oil	Above Ground Storage Tanks	1,000 gallon 100 bbl	Berms	Non-exempt	May be hauled to a WFS or contactor consolidation point before transport to EPA-registered used oil marketer for recycling.
Used Oil Filters	Drum or other container	Varies	Transported to a WFS or contractor facility in drum or other container	Non-exempt	Consolidated on site, drained, and ultimately transported for disposal at an approved disposal facility. A Waste Acceptance Profile will be filed with the disposal facility. Recycling options may be considered when available.
Laboratory Waste	Drum or other container	Varies	Berms	Non-exempt	Transported for disposal at an approved disposal facility. A Waste Acceptance Profile will be filed with the disposal facility.
Used Process Filters	Drum or other container	Varies	Transported to a WFS or contractor facility in drum or other container	Exempt	Consolidated on site, drained, and ultimately transported for disposal at an approved disposal facility. A Waste Acceptance Profile will be filed with the disposal facility. Recycling options may be considered when available.
Used Oil, Glycol, Ambitrol, and Water Mixture	Above Ground Storage Tanks	(2) 250 bbl	Веттѕ	Non-exempt	Transported for disposal at an approved disposal facility. A Waste Acceptance Profile will be filed with the disposal facility. Recycling options may be considered when available.
Empty Drums / Containers	N/A	Varies	Вегт	Non -exempt	Barrels are returned to supplier or transported to a WFS or contractor consolidation point and ultimately recycled/disposed consistent with applicable regulations.
Spill Residue (i.e., soil, gravel)	N/A	N/A	In situ treatment, land-farm, or alternate method	Incident dependent	Per Section VI, Remediation, in 8/13/93 NMOCD Guidelines for Remediation of Leaks, Spills, and Releases.
Used Absorbents	Drum or other container	Varies	Transported to a WFS or contractor facility in drum or other container	Incidènt dependent	Consolidated on site, drained, and ultimately transported for disposal at an approved disposal facility. A Waste Acceptance Profile will be filed for non-exempt waste with the disposal facility. Recycling options may be considered when available.

TRANSFER, STORAGE, AND DISPOSAL OF PROCESS FLUIDS, EFFLUENTS, AND WASTE SOLIDS

Milagro Plant

PROCESS FLUID/WASTE	STORAGE	CONTAINER CAPACITY	CONTAINMENT/ SPILL PREVENTION	RCRA STATUS	DESCRIPTION OF FINAL DISPOSITION
Compressor Oil	Above ground	(2) 2,300 gallon	Berms	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Diesel	Above ground storage tanks	1,175 gallon 1,250 gallon	Berms	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Gasoline/Diesel Mix	Above ground storage tanks	1,000 gallon	Вет	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Dielectric Oil	Transformer Casings	(2) 4,233 gallon (2) 456 gallon (4) 233 gallon	Вегтѕ	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Ambitrol/Water Mix	Above ground storage tanks	100 bbl	Вегт	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Amine/Water Mix	Above ground storage tanks	100 bbl 500 bbl	Вет	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Triethylene Glycol	Above ground storage tanks	100 bbl	Ветт	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Triethylene Glycol/Water Mix	Above ground storage tanks	(2) 100 bbl	Вегт	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Amine	Above ground storage tanks	(2) 250 bbl	Berms	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Gasoline/Diesel Mix	Above ground storage tanks	500 gallon	Berm	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Polymer	Above ground storage tanks	(2) 400 gallons	Вегтѕ	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Solvent	Above ground storage tank	300 gallons	Ветп	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
Cortrol	Above ground storage tank	400 gallons	Вегт	N/A	Off-spec material recycled or disposed consistent with applicable regulations.

Stearnate	Above ground storage tank	400 gallons	Вет	N/A	Off-spec material recycled or disposed consistent with applicable regulations.
					ā

4. 1

VIII. STORM WATER PLAN

A Storm Water Pollution Prevention Plan has been prepared for this facility in accordance with federal requirements. A copy will be provided to the NMOCD under separate cover.

IX. INSPECTION, MAINTENANCE AND REPORTING-

WFS's personnel will operate and maintain the facility 24 hours per day, 7 days per week, 52 weeks per year. An operator will monitor the facility for equipment malfunctions. Regular inspections will be conducted throughout the facility. The above ground and below-grade tanks will be gauged regularly, and monitored for leak detection.

In the event of a release of a reportable quantity, the operator reports the release to a WFS spill notification service. The service immediately notifies the WFS Environmental Department and all appropriate agencies.

X. SPILL/LEAK PREVENTION AND REPORTING (CONTINGENCY PLANS)

Spill containment berms around above ground storage tanks will be designed to contain 1-1/3 times the volume of the tank. The below-grade tanks will be constructed with a means of leak detection, and will either be double-bottomed tanks or a tank set on an impermeable pad.

WFS corporate policy and procedure for the controlling and reporting of Discharges or Spills of Oil or Hazardous Substances is provided in Appendix A. Significant spills and leaks are reported to the NMOCD pursuant to NMOCD Rule 116 and WQCC 1-203 using the NMOCD form (see Appendix B).

XI. SITE CHARACTERISTICS

The Milagro Plant is located approximately 2.5 miles east of Bloomfield, New Mexico. The site elevation is approximately 5,700 feet above mean sea level. The natural ground surface topography slopes downward toward the west and southwest. The maximum relief over the site is approximately 40 feet. Intermittent flow from the site will follow natural drainage to the south towards Hare Canyon Wash. The nearest down-gradient perennial source of surface water is the San Juan River located approximately 1.9 miles south of the site, at an elevation of approximately 5,530 feet.

A review of the available hydrologic data 1,2,3 for this area revealed that there are no water wells within a 1/4-mile radius of Milagro Plant. The Nacimiento Formation is the water-bearing unit underlying the site. This formation consists of a sequence of interbedded sandstone and mudstone. The estimated ground water depth at the site is 40 feet. The total dissolved solids concentration of area ground water is expected to range from 2,800 to 3,200 parts per million.

The 100-year 24-hour precipitation event at a regional weather station is 2.8 inches. This small amount of rainfall for the area should pose no flood hazards. Vegetation in the area consists predominantly of sagebrush and native grasses.

Flood Protection: Surface water runoff from the area surrounding the site will be diverted around the facility into the natural drainage path.

References

IStone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., Padgett, E.T., 1983, Hydrology and Water Resources of San Juan Basin, New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 6.

²Records of Water Wells in San Juan County, 1978-1983.

³Online Well Reports and Downloads, New Mexico Office of the State Engineer, 2001.

XII. FACILITY CLOSURE PLAN

All reasonable and necessary measures will be taken to prevent the exceedence of WCQQ Section 3103 water quality standards should WFS choose to permanently close the facility. WFS will submit a detailed closure plan to the NMOCD prior to closure.

Generally, closure measures will include removal or closure in place of underground piping and other equipment. All wastes will be removed from the site and properly disposed in accordance with the rules and regulations in place at the time of closure. When all fluids, contaminants, and equipment have been removed from the site, the site will be graded as close to the original contour as possible.

Should contaminated soil be discovered, any necessary reporting under NMOCD Rule 116 and WQCC Section 1203 will be made and clean-up activities will commence. Post-closure maintenance and monitoring plans would not be necessary unless contamination is encountered.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-138 Revised March 17, 1999

> Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. RCRA Exempt: Non-Exempt: 🔀	4. Generator EL PASO FIELD SERVICE
Verbal Approval Received: Yes No	5. Originating Site CHALO PLANT
2. Management Facility Destination UEY DISPOSAL	6. Transporter LEY EWERBY
3. Address of Facility Operator #345 CR 3500 AZEC N.M.	8. State NM
7. Location of Material (Street Address or ULSTR) TZON, RIZW, SANJUAN CO.,	
9. Circle One:	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by a one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by necessarial is not-hazardous and the Generator's certification of origin. No waste class approved All transporters must certify the wastes delivered are only those consigned for transporters.	sessary chemical analysis to PROVE the sified hazardous by listing or testing will be
BRIEF DESCRIPTION OF MATERIAL:	11.
Oil Conservation Division	2001 EIVEN DIV DIST. 3 181 LI 91 SIJI
SIGNATURE Maste Management Facility Authorized Agent TITLE: Management Facility Authorized Agent	PHONE NO. 505-334-6186
(This space for State Use) APPROVED BY: TITLE: GEO / OF TITLE: T	09 (3) DATE: 10/1/01 - Chief DATE: 10/1/01



September 26, 2001

Key Energy Services, Inc. P. O. Box 900 Farmington, NM 87499

Dear Sirs:

Please find enclosed a Certificate of Waste Status and a current analysis for the El Paso Field Services Co. Chaco Plant contact waste water stream. If you need any additional information of documentation for this waste, please call me at (505) 599-2256.

Sincerely yours,

David Bays, REM

Principal Environmental Scientist

anil Bay

cc: Chaco Env. File

CERTIFICATE OF WASTE STATUS

Generator Name and Address:	2. Destination Name:				
El Paso Field Services Co.	Key Energy Services, Inc.				
614 Reilly Avenue	Disposal Well – 345 CR 3500				
Farmington, NM 87401	Farmington, NM				
3. Originating Site (name):	Location of Waste(Street address &/or ULSTR):				
Chaco Plant	SW/4 of Section 16, T26N, R12W, San Juan Co., NM				
Attach list of originating sites as appropriate					
4. Source and Description of Waste					
Contact waste water from Cryogenic Plant and Co	mpressor Station operations				
ı,					
representative for: (Print Name)					
,					
El Paso Field Services					
according to the Resource Conservation and Recovery Act (RCRA) and Environmental Protection Agency's July, 1988 regulatory determination, the above described waste is: (Check appropriate classification)					
NON-EXEMPT oilfield waste which is non-hazardous by					
EXEMPT Oilfield waste X characteristic analysis or by product identification					
and that nothing has been added to the exempt or non-hazardous waste defined above.					
For NON-EXEMPT waste only, the following documentation is attached (check appropriate items):					
MSDS Information Other (description)					
X RCRA Hazardous Waste Analy Chain of Custody	SIS				
Name (Original Signature):	Bar				
Title: Principal I	Environmental Scientist				
Date: September	er 26, 2001				





Pinnacle Lab ID number September 10, 2001

108105

AMEC EARTH & ENVIRONMENTAL 2060 AFTON PLACE FARMINGTON, NM 87401

EL PASO FIELD SERVICES 614 RIELLY STREET FARMINGTON, NM 87401

Project Name

EPFS CHACO SAMPLING

Project Number

1517-0000-54

Attention:

ROBERT THOMPSON/DAVID BAYS

On 08/24/01 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 analyses were performed by Pinnacle Laboratories, Inc. Albuquerque, NM.

All other analyses were performed by Severn Trent Laboratories, Inc. Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.

General Manager

MR: it

Enclosure



CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 108105
PROJECT#	: 1517-0000-54	DATE RECEIVED	: 08/24/01
PROJECT NAME	: EPFS CHACO SAMPLING	REPORT DATE	: 09/10/01
PINNACLE			DATE
ID#	CLIENT DESCRIPTION	MATRIX	COLLECTED
108105 - 01	CHACO CONTACT WASTE WATER	AQUEOUS	08/23/01



GAS CHROMATOGRAPHY RESULTS

TEST

: EPA 8021 MODIFIED

CLIENT

: AMEC EARTH & ENVIRONMENTAL

PINNACLE I.D.: 108105

PROJECT#

: 1517-0000-54

PROJECT NAME

: EPFS CHACO SAMPLING

11100001	47 (IVIL	. 2. 10 011/100 0/1	IVII EII VO				
SAMPLE				DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	CHACO CONT	ACT WASTE WATE	QUEOUS	08/23/01	NA	08/30/01	5
PARAMETE	ER	DET. LIMIT		UNITS	CHACO CONTACT V	WASTE WATER	
BENZENE		0.5		UG/L	180		
TOLUENE		0.5		UG/L	280		
ETHYLBEN	IZENE	0.5		UG/L	24		
TOTAL XY	LENES	0.5		UG/L	160		
SURROGAT	TE: UOROBENZENE	: (%)			107		
SURROGA:		(80 - 120)			, 10 <i>1</i>		

CHEMIST NOTES: N/A



GAS CHROMATOGRAPHY RESULTS REAGENT BLANK

TEST

: EPA 8021 MODIFIED

PINNACLE I.D.

108105

BLANK I. D.

DATE EXTRACTED

NA

CLIENT

: 083001

DATE ANALYZED

08/30/01

PROJECT#

: AMEC EARTH & ENVIRONMENTAL : 1517-0000-54

SAMPLE MATRIX

PROJECT NAME

: EPFS CHACO SAMPLING

AQUEOUS

PARAMETER BENZENE

UNITS

< 0.5

TOLUENE

UG/L

UG/L

< 0.5

ETHYLBENZENE TOTAL XYLENES

UG/L UG/L < 0.5 < 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

89

SURROGATE LIMITS:

(80 - 120)

CHEMIST NOTES:

N/A



GAS CHROMATOGRAPHY QUALITY CONTROL MSMSD

TEST

: EPA 8021 MODIFIED

MSMSD#

: 108120-01

CLIENT

: AMEC EARTH & ENVIRONMENTAL

. 4

4547.0000.54

PROJECT #
PROJECT NAME

: 1517-0000-54

: EPFS CHACO SAMPLING

PINNACLE I.D.

108105

DATE EXTRACTED

NA

DATE ANALYZED SAMPLE MATRIX 08/30/01 AQUEOUS

UNITS

UG/L

					0.1.0		•	~ ~ ~	
	SAMPLE	CONC	SPIKED	%	DUP	DUP		REC	RPD
PARAMETER	RESULT	SPIKE	SAMPLE	REC	SPIKE	% REC	RPD	LIMITS	LIMITS
BENZENE	<0.5	20.0	17.1	86	17.3	87	1	(80 - 120)	20
TOLUENE	<0.5	20.0	20.2	101	20.1	101	0	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.9	105	20.8	104	0	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	62.7	105	62.5	104	0	(80 - 120)	20

CHEMIST NOTES: N/A

(Spike

(Spike Sample Result - Sample Result)

-----X 100

% Recovery =

Spike Concentration

(Sample Result - Duplicate Result)

RPD (Relative Percent Difference) =

·----- X 10

Average Result



STL Pensacola

LOG NO: C1-08684 Received: 25 AUG 01 Reported: 05 SEP 01

Ms. Jacinta Tenorio Pinnacle Laboratories 2709-D Pan American Freeway Northeast Albuquerque, NM 87107

Project: 108105, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 07551095

REPORT OF RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPI	ED.
08684-1	CHACO CONTACT WW/108105-01	08-23-01/1	4:50
PARAMETER		08684-1	
RCRA Metal			·
Arsenic,	mg/l	0.028	
Barium, n	ng/1	0.023	
Cadmium,	mg/l	<0.0050	
Chromium,		0.73	
Lead, mg/		0.013	
Selenium,		<0.010	
Silver, n	${ m ng/l}$	<0.0050	
Dilution	Factor	1	
Prep Date		08.29.01	
Analysis	Date	08.30.01	
Batch ID		PW272	
Prep Meth	nod	3010A	
Analyst		GSP	
	7470A), mg/l	0.0033	
Dilution	Factor	1	
Prep Date		09.03.01	
Analysis	Date	09.03.01	
Batch ID		HGW068	
Prep Meth	nod	7470A	
`Analyst		JDE	



STL Pensacola

LOG NO: C1-08684
Received: 25 AUG 01
Reported: 05 SEP 01

Ms. Jacinta Tenorio Pinnacle Laboratories 2709-D Pan American Freeway Northeast Albuquerque, NM 87107

Project: 108105, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 07551095

REPORT OF RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION , QC		SAMPLES 1		
08684-3 08684-4	Method Blank Lab Control Standard % Matrix Spike % Recovery Matrix Spike Duplicate	Recovery			
PARAMETER			08684-3	08684-4	08684-5
RCRA Metal:	s (6010B)		07 9	99 %	90 9
Barium, mg		<0.010		99 %	
Cadmium, n	- ·	<0.010		96 %	
Chromium,		<0.0050			99 %
Lead, mg/		<0.0050			98 %
Selenium,			93 %	94 %	95 %
Silver, mg			99 %		
Dilution !		1			
Prep Date		08.29.01			
Analysis I	Date	08.30.01			
Batch ID		PW272	PW272	PW272	PW272
Prep Metho	od	3010A			
Analyst		GSP			
Mercury (74	470A), mg/l	<0.00020	100 %	81 %	82 %
Dilution I	Factor	1			
Prep Date		09.03.01			
Analysis I	Date	09.03.01			
Batch ID		HGW068	HGW068	HGW068	HGW068
Prep Metho	od	7470A			
Analyst		JDE			

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Larce Larson, Project Manager



Data Qualifiers for Final Report

54	The goal to use detected in the goal stand method blook (completely in flagged area though goods in ND)
B1	The analyte was detected in the associated method blank (sample itself is flagged even though sample is ND).
B2	The analyte was detected in the sample(s) and in the associated method blank analyzed on the day samples were
	extruded; however, this analyte was not detected in the blank analyzed with the samples.
B3	The analyte was found in the associated blank as well as in the associated sample(s) (qualifier is applied to the sample, not
	to the blank).
B4	Sample results were corrected due to contaminants in Fractionation Blank
D	Diluted out (surrogate or spike due to sample dilution)
Ē	Compound concentration exceeds the upper calibration range of the instrument.
F	The reported value is < STL Pensacola RL and ≥ the STL Pensacola MDL; therefore, the quantitation is estimation.
G	Sample and/or duplicate result is at or below 5 X (times) the STL Reporting Limit and the absolute difference between the
0	sample and duplicate result is at or below the STL reporting limit; therefore, the results are "in control".
LI4	Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results
H1	exceeds the STL Reporting Limit; therefore, the results are "out of control"
H2	Sample and duplicate (or MS and MSD) RPD is above control limit.
J (description)	The analyte was positively identified, the quantitation may be an estimation
J4	(For positive results)Temperature limits exceeded (≤2°C or ≥ 6°C), non-reportable for NDPES compliance monitoring.
J6 .	(For positive results) LCS or Surrogate %R is > upper control limit (UCL), results may be biased high
J8	Matrix spike and post spike recoveries are outside control limits. See out of Control Events/Corrective Action Form.
J9	(For positive results) LCS or Surrogate %R is < lower control limit (LCL), results may be biased low
M1	A matrix effect was present (¹sample, MS or MSD was analyzed twice to confirm surrogate/spike failure, ²sample and/or
	MS/MSD chromatogram(s) had interfering peaks, ³ sample result was > 4 X spike added, ⁴ metals serial dilution was
	performed, or ⁵ metals post spike is < 40% R)
M2	The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect.
N/C	Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers)
NH	Sample and duplicate results are "out of control". The sample is nonhomogeneous.
NoMS	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)
Q	The analytical (post digestion) spike is reported due to the percent recovery being outside limits on the matrix (pre-
α	digestion) spike.
D (description)	The quantitation may be an estimation.
R (description)	
R1	(For nondetects) Temperature limits exceeded (≤2°C or ≥ 6°C); non-reportable for NDPES compliance monitoring
R2 ·	Improper preservation, no preservative present or insufficient amounts of preservative in sample upon receipt, non-reportable
	for NDPES compliance monitoring
R3	Improper preservation, incorrect preservative present in sample upon receipt, non-reportable for NPDES compliance
R4	Holding time exceeded, non-reportable for NDPES compliance monitoring.
R5	Sample collection requirements not met, see case narrative.
R6	LCS or surrogate %R is < LCL and analyte is not detected or surrogate %R is < 10% for detects/nondetects.
R7	Internal standard area outside –50% to +100% of calibration verification standard.
R8	Initial calibration or any calibration verification exceeds acceptance criteria.
R9	Not filtered and preserved at time of collection.
R10	Headspace >1/4" in diameter in volatile vials, non-reportable for NPDES compliance monitoring
R11	Samples were filtered and preserved within 4 hours of collection.
R12	Analysis performed outside the 12-hour tune or not within tune criteria.
S1	The Method of Standard Additions (MSA) has been performed on this sample.
S2	Incorrect sample amount was submitted to the laboratory for analysis
S3 (Flashpoint)	This method is not designed for solids and the results may not be accepted by any regulator for such purposes.
• • •	Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
T	The compound is not within the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified
TIC	· · · · · · · · · · · · · · · · · · ·
	Compound.
U	The analyte was analyzed for but not detected (at or above the RL or the MDL, whichever is entered next to the "U" value.
	Value for result will never be below the MDL)
W	Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike
	absorbance.
@ #	Adjusted reporting limit due to sample composition, not due to overcal (dilution prior to digestion and/or analysis).
#	Elevated reporting limit due to insufficient sample size
1 pt	The compound has been quantitated against a one point calibration.
* (Metals & Wet Chem)	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)

Revised: 06/19/0

STL PENSACOLA State Certifications

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL), expires 06/30/02

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater), expires 01/12/02

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental), expires 02/07/02

State of California, Department of Health Services, Laboratory ID No. 01128CA (Hazardous Waste and Wastewater), expires 03/31/02

State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (D W, H W and Wastewater), expires 09/30/01

Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL) Extension granted

Florida DOH Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater), expires 06/30/02

Florida DEP/DOH CompQAP # 980156

Florida, Radioactive Materials License No. G0733-1, no expiration date assigned

Foreign Soil Permit, Permit No. S-37599

Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste), expires 10/31/01 Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water), expires 12/31/01 State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. LA000017 (Drinking Water), expires 12/31/01 Louisiana Department of Environmental Quality, LELAP, Laboratory ID No. 02075, Agency Interest ID 30748 (Environmental, expires 6/30/02) State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida), expires 09/30/02 Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Wastewater), expires 06/30/02 State of Michigan, Bureau of E&OccH, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida), expires 06/30/02 New Hampshire DES ELAP, Laboratory ID No. 250501 (Wastewater), expires 08/16/02 State of New Jersey, Department of Env. Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waster), expires 06/30/01 New York State, Department of Health, Laboratory ID No. 11503 (WW and Solids/Hazardous Waste), expires 03/31/02 North Carolina Department of Environment & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater), expires [2/3]/01 North Dakota DH&Consol Labs, Laboratory ID No. R-108 Wastewater and Hazardous Waste by Reciprocity with Florida), expires 06/30/02 State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater), expires 08/31/02 Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water), expires 12/01/01 South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater & Solids/Hazardous Waste by Reciprocity with FL), expires 06/30/01 Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water), expires 08/03/04 Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL), expires 06/30/02 State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater), expires 09/14/01

West Virginia Division of Env., Office of Water Resources, Laboratory ID No. 136 (Haz Waste and Wastewater Reciprocity FL), expires 12/31/01

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704, expires 04/01/04 | word\certlist\condcert.lst revised 08/22/01

STL Pensacola PROJECT SAMPLE INSPECTION FORM

108684 Date Received: 8:250 SERVICES Yes" No* Was there a Chain of Custody? (Yes) No* Were samples checked for N/A preservative? (Check pH of all H2O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)+ No* Was Chain of Custody properly Is there sufficient volume for N/A Yes No (Can) analysis requested? filled out and relinquished? Yes No* No* Were samples received within 3. Were samples received cold? Yes N/A 10. (Criteria: 2° - 6°C: STL-SOP Holding Time? (REFER TO STL-SOP 1040) Is Headspace visible > ¼" in Yes* No 11. Were all samples properly Yes No* diameter in VOA vials?* If labeled and identified? any headspace is evident, Did samples require splitting or No 5. Yes' comment in out-of-control compositing*? Rea By: PM Client Other* section. (Yes No* 12. If sent, were matrix spike Yes Were samples received in bottles returned? proper containers for analysis requested? Was Project Ivialiago.
of problems? (initials: DSN bm H 6-850) 13. Were all sample containers No' received intact? Shipped By: Airbill Number(s): Cooler Number(s): Shipping Charges: Cooler Temp(s) (°C): Cooler Weight(s): Out of Control Events and Inspection Comments: 25 on Ph doe ECPA miles. DMH 8-8501 8. 82 ox P Verled

(USE BACK OF PSIFFOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: DMH Date: 8-2501 Logged By: LL Date: 25-Aug-0

- Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analytic department will flag immediate hold time samples(pH, Dissolved O₂, Residual CL) as out of hold time, therefore, these samples will not be documented on this PSIF.
- If Other, note who requested the splitting or compositing of samples on the Comment Section of this form. All volatile samples requested to be split or composited must be done in the Volatile Lab. Document: "Volatile sample values may be compromised due to sample splitting (compositing)"
- + All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938, section 2.2.9).
- According to EPA, ¼ of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938, section 2.2.12).

Interlab Chain of Custody

Pinnacle Laboratories, Inc.

NUMBER OF CONTAINERS Gross Alpha/Beta 82S+32S MUIDAR (EM-93I) MUINARU Base/Neutral Acid Compounds GC/MS 8240 (TCLP 1311) ZHE SMIS 0758/(0158) ANG Herbicides (615/8151) ANALYSIS REQUES PESTICIDES/PCB (608/8082) COD BOD Volatile Organics GC/MS (8260) Oil and Grease Gen Chemistry: TOC XOT Metals-TAL (23 METALS) Metals-13 PP List RCRA TCLP METALS AROR (8) alateM TIME MATRIX LABID Jacinta A. Tenorio 2709-D Pan American Freeway, NE Albuquerque, New Mexico 87107 Network Project Manager: Pinnacle Laboratories, Inc. (505) 344-3777 Fax (505) 344-4413 SAMPLE ID

PROJECT #: 10 \$105 Total Number of Containers PROJ. NAME: HMFC Chain of Custody Seals QC LEVEL STD. IV Received Intact? QC REQUIRED: MS MSD BLANK Received Good Cond./Cold TAT: STANDARD RUSH!! LAB NUMBER:	SAMPLE RECEIPT SAMPLES SENT TO:		HELINGUISED BY:
AMEC STD.) IV D. MS MSD BLANK DARD RUSHII	ainers PENSACOLA - STL-FL	Y Signature: - Time: 17xx Signature:	Signature: Time:
TD.) IV MS MSD BLANK RD RUSHII	ls ESL - OR	Sylandone Journ 1700	
MS MSD BLANK RD RUSHII	STL.CT	Painted Name: Date:_/	Printed Name: Date:
RUSHII	/Cold ATEL - AZ	Nameure 1 11/10 8/24/01	
	ATEL - MARION	Pinnacle Laboratories, Inc.	Company
	ATEL - MELMORE	RECEIVED BY:	1. RECEIVED BY:
DUE DATE: 9/7 COMMENTS:	BARRINGER	Signature: Time:	Signature: Time:
RUSH SURCHARGE:	ENVIRO TEST LABS	Transfellarard 1010	
CLIENT DISCOUNT:	WCAS	Printed Name: Date:	Printed Name: Date:
SPECIAL CERTIFICATION	WOHL	DOVELLE HOVARD 8-050	
REQUIRED: YES MO		Company ST(-DNS	Company

Dinnacle Laboratories Inc.

CHAIN OF CUSTODY DATE: 8/23/01. PAGE: 1. OF

201801

PLI Accession #:

0 NUMBER OF CONTAINERS Metals: RCRA Metals by TCLP (Method 1317) 45 20 mg (8) slateM ARDA Target Analyte List Metals (23) Priority Pollutant Metals (13) General Chemistry: Polynuclear Aromatics (610/8310/8270-SIMS) Base/Neutral/Acid Compounds GC/MS (625/8270) Herbicides (615/8151) **ANALYSIS REQUEST** Pesticides /PCB (608/8081/8082) 8260 (Landfill) Volatile Organics 8260 (CUST) Volatile Organics 8260 (Full) Volatile Organics 8260 (TCL) Volatile Organics 204.1 EDB□\DBCP□ 8021 (CUST) (OJAH) fS08 8051 (EDX) 8021 (TCL) 8021 (BTEX) | MTBE | TMB | PCE 8021 (BTEX)/8015 (Gasoline) 1208 (M8015) Gas/Purge & Trap MA 1508X3T8 4157 (MOD.8015) Diesel/Direct Inject Petroleum Hydrocarbons (418.1) TRPH DATE TIME WATRIX LAB'LD AMEC EARTH & ENVIRONMENTAL 97 I 8740 FARMINGTON, N/M BY40 PASO FIELD SERVICES PROJECT MANAGER: ROBERT THOMPSON 0Sh/ 2060 AFTON PLACE FARMINGTON NM 327-728 326-572 8/23/01 614 REILLY AVE DAVID BAYS HACO CONTACT WASTE WATER PROJECT INFORMATION (505) (505) SAMPLE ID COMPANY: COMPANY: ADDRESS: ADDRESS: BILL TO: PHONE: FAX

SHADED AREAS ARE FOR LAB USE ONLY.

			Y: 1. RELINQUISHED BY:	Time: 1620 Signature: Time:	Date Original Name Date:	No No No	Company:	1. RECEIVED BY: (LAB)	Time: Biophyme: 17 June: 17 Ju	Date: Amiled Name: 1 Date: 17 8 2	Pinnacle Laboratories Inc.	WORLDNET.ATT.NET DISTRIBUTION: White - PLI, Canary -
			RELINQUISHED BY:	Signature: Time:	Printed Name	BEET HOMBON	Company: AMEC. See reverse side (Force Majeure)	RECEIVED BY:		Printed Name:	Сотралу	-4413 • E-mail: PIN_LAB@
			PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS	(RUSH) ☐24hr ☐48hr ☐72hr ☐1WEEK (NORMAL) 🕱	ONM OSOWA OTHER	METHANOL PRESERVATION □	E O	DO NOT FILTER, DISREGARD	WHICHEVER BOTTLES ARE NOT NEEDED. Signature.	Ruthfuls per Robert T 02:25/		11/10/98 PLI Inc.: Pinnacle Laboratories, Inc. • 2709-D Pan American Freeway, NE • Albuquerque, New Mexico 87107 • (505) 344-3777 • Fax (505) 344-4413 • E-mail: PIN_LAB@WORLDNET.ATT.NET
			PROJECT INFORMATION	PROJ. NO.: 1517-0000-3	PROJ. NAME: EPFS CHACO CAMPLING CERTIFICATION REQUIRED.	P.O. NO.: N/A	SHIPPED VIA: GREY HOUND	SAMPLE RECEIPT	NO CONTAINERS		RUE ICENSE) STATES	_
PLEASE FILL THIS FORM IN COMPLETELY.												

District I 1625 N. French Dr., Hobbs, NM 88240 District III
811-South First, Artesia, NM 88210
District III
1000 Rio Brasis Road, Aztec, NM 87410

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Form C-138 Revised March 17, 1999

Submit Original Plus 1 Copy to Appropriate

2040 South Pacheco, Santa Fe, NM 87505	District Office
REQUEST FOR APPROVAL TO ACCEPT S	SOLID WASTE
RCRA Exempt: Non-Exempt:	4. Generator GIAN+ RELINING 5. Originating Site COOLING TOWERS
Verbal Approval Received: Yes No	5. Originating Site COOLING TOWERS
2. Management Facility Destination KEY ENERGY DISPOSAL	6. Transporter Ley
3. Address of Facility Operator #345 CR 3500 AZ+e'C NM	8. State MM
7. Location of Material (Street Address or ULSTR) #50 CR4990 Bloom Feld NM 87413	
9. <u>Circle One</u> :	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste class approved	cessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transporters	ort.
BRIEF DESCRIPTION OF MATERIAL:	tu.
River water mixer with various Bio	DIS DERSANTS CLEMICAS
AND COOLING TOWER WASTE.	
Grant San Juan Refinery	
Estimated Volume 400-500 bbl scy Known Volume (to be entered by the open	rator at the end of the haul)cy
SIGNATURE Mulae Jalovil TITLE: MGE Waste Management Facility Authorized Agent	DATE: 9-25-01
Waste Management Facility Authorized Agent TYPE OR PRINT NAME: MICHAEL THLOUICH TELE	PHONE NO. <u>505-334-6/86</u>
(This space for State Use)	

APPROVED BY:

TITLE: ____

DATE:

CERTIFICATE OF WASTE STATUS

1. Generator Name and Address:	2. Destination Name:
Giant Refining Company	Key Energy Systems
#50 CR 4990	Disposel Systems
Bloomfield, NM 87413	Crouch Mesa
	New Mexico
3. Originating Site (name):	Location of the Waste (Street address &/or ULSTR):
Giant Refining Company	#50 CR 4990
#50 CR 4990	Bloomfield, NM 87413
Bloomfield, NM 87413	
Attach list of originating sites as appropriate	
4. Source and Description of Waste	
Cooling Tower Water from cleaning tower	during Shutdown for repairs.
I, Barry Holman (Print Name)	representative for:
Giant Refining	do hereby certify that,
according to the Resource Conservation and Recovered 1988, regulatory determination, the above described EXEMPT oilfield waste	very Act (RCRA) and Environmental Protection Agency's July, d waste is: (Check appropriate classification) EMPT oilfield waste which is non-hazardous by characteristic or by product identification
and that nothing has been added to the exempt or r	non-exempt non-hazardous waste defined above.
For NON-EXEMPT waste only the following doct XX MSDS Information RCRA Hazardous Waste Analysis Chain of Custody	umentation is attached (check appropriate items): Other (description):
13 A	
Name (Original Signature): Ory Title: Environmental Manager	



THE REPRODUCTION OF

THE

FOLLOWING

DOCUMENT (S)

CANNOT BE IMPROVED

DUE TO

THE CONDITION OF

THE ORIGINAL

Common Name : 71-D5 ANTIFOAM Manufacturer : NALCO

Internal ID: 000096 Revision Date: 01-23-1996 File Name : 000096

NALCO

MATERIAL SAFETY DATA SHEET

PRODUCT: NALCO 71-D5 ANTIFOAM

EMERGENCY TELEPHONE NUMBER:

MEDICAL (800) 462-5378 (24 HOURS)

(800) I-M-ALERT

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME:

NALCO 71-D5 ANTIFOAM

DESCRIPTION:

A BLEND OF FATTY ACIDS, POLYGLYCOLS, POLYGLYCOL ESTERS, IN HYDROCARBON OIL

NFPA 704M/HMIS RATING:

1/1 HEALTH

1/1 FLAMMABILITY

0/0 REACTIVITY

0 OTHER

0=INSIGNIFICANT

1=SLIGHT

2=MODERATE

3=HIGH

4=EXTREME

SECTION 2 HAZARDOUS INGREDIENTS

OUR HAZARD EVALUATION HAS IDENTIFIED THE FOLLOWING CHEMICAL INGREDIENT(S) AS HAZARDOUS UNDER OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200. CONSULT SECTION 14 FOR THE NATURE OF THE HAZARD(S).

INGREDIENT(S)	CAS #	APPROX.%
KEROSENE	8008-20-6	10-20
PARAFFIN WAX	8002-74-2	1-5
STRAIGHT RUN MIDDLE DISTILLATES	64741-44-2	40-70

SECTION 3 PRECAUTIONARY LABEL INFORMATION

CAUTION:

MAY CAUSE IRRITATION TO SKIN AND EYES. AVOID CONTACT WITH SKIN, EYES, AND CLOTHING. AVOID PROLONGED OR REPEATED BREATHING OF VAPOR. USE WITH ADEQUATE VENTILATION. DO NOT TAKE INTERNALLY.

EMPTY CONTAINERS MAY CONTAIN RESIDUAL PRODUCT. DO NOT REUSE CONTAINER

Common Name: 71-D5 ANTIFOAM Manufacturer : NALCO

Internal ID : 000096 File Name : 000096 Revision Date: 01-23-1996

UNLESS PROPERLY RECONDITIONED.

SECTION 4 FIRST AID INFORMATION

FLUSH WITH WATER FOR 15 MINUTES. CALL A PHYSICIAN. EYES:

SKIN:

WASH THOROUGHLY WITH SOAP AND RINSE WITH WATER. CALL A PHYSICIAN.

DO NOT INDUCE VOMITING. GIVE WATER. CALL A PHYSICIAN. INGESTION:

REMOVE TO FRESH AIR. TREAT SYMPTOMS. CALL A PHYSICIAN. INHALATION:

NOTE TO PHYSICIAN:

BASED ON THE INDIVIDUAL REACTIONS OF THE PATIENT, THE PHYSICIAN'S JUDGMENT SHOULD BE USED TO CONTROL SYMPTOMS AND CLINICAL CONDITION.

CAUTION:

IF UNCONSCIOUS, HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: EYE, SKIN, INHALATION

CAN CAUSE MILD, SHORT-LASTING IRRITATION.

SKIN CONTACT: CAN CAUSE MILD, SHORT-LASTING IRRITATION.

INHALATION: PROLONGED INHALATION OF VAPOR MAY BE HARMFUL.

SYMPTOMS OF EXPOSURE:

ACUTE:

INHALATION OF HIGH CONCENTRATIONS OF PRODUCT CAN CAUSE NAUSEA, DIZZINESS, VOMITING, STUPOR OR UNCONSCIOUSNESS.

CHRONIC:

PROLONGED SKIN CONTACT WITH PRODUCT CAN CAUSE DRY SKIN AND DEFATTING RESULTING IN IRRITATION AND DERMATITIS.

AGGRAVATION OF EXISTING CONDITIONS:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY WORSENING OF EXISTING CONDITIONS.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES:

ACUTE TOXICITY STUDIES HAVE BEEN CONDUCTED ON THIS PRODUCT. THE RESULTS ARE SHOWN BELOW.

Common Name : 71-D5 ANTIFOAM Manufacturer : NALCO

 Manufacturer: NALCO
 Internal ID: 000096

 Revision Date: 01-23-1996
 File Name: 000096

ACUTE ORAL TOXICITY (ALBINO RATS): LD50 = GREATER THAN 15,380 MG/KG

ACUTE DERMAL TOXICITY (ALBINO RABBITS): LD50 = GREATER THAN 3,038 MG/KG

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):

SKIN IRRITATION INDEX DRAIZE RATING: 3.1/8.0 MODERATELY IRRITATING

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING: 6.0/110.0 MINIMAL IRRITATION

HUMAN HAZARD CHARACTERIZATION: BASED ON OUR HAZARD CHARACTERIZATION,

THE POTENTIAL HUMAN HAZARD IS: LOW

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: PALE STRAW

FORM: LIQUID

ODOR: FAINTLY HYDROCARBON

DENSITY: 6.9-7.5 LBS/GAL.

SOLUBILITY IN WATER: INSOLUBLE

SPECIFIC GRAVITY: 0.83-0.90 @ 77 DEGREES F ASTM D-1298

VISCOSITY: 13.8 CPS @ 80 DEGREES F ASTM D-2983

FREEZE POINT: 45 DEGREES F ASTM D-1177

POUR POINT: 45 DEGREES F ASTM D-97

FLASH POINT: 260 DEGREES F (PMCC) ASTM D-93

VAPOR PRESSURE:

0.6 MM HG @ 68 DEGREES F

1.3 MM HG @ 100 DEGREES F

4.4 MM HG @ 150 DEGREES F ASTM D-323

NOTE: THESE PHYSICAL PROPERTIES ARE TYPICAL VALUES FOR THIS PRODUCT.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: 260 DEGREES F (PMCC) ASTM D-93

EXTINGUISHING MEDIA:

BASED ON THE NFPA GUIDE, USE DRY CHEMICAL, FOAM, CARBON DIOXIDE OR OTHER EXTINGUISHING AGENT SUITABLE FOR CLASS B FIRES. USE WATER TO COOL CONTAINERS EXPOSED TO FIRE. FOR LARGE FIRES, USE WATER SPRAY OR FOG, THOROUGHLY DRENCHING THE BURNING MATERIAL.

Common Name : 71-D5 ANTIFOAM Manufacturer : NALCO

Internal ID: 000096 File Name : 000096 Revision Date : 01-23-1996

UNUSUAL FIRE AND EXPLOSION HAZARD:

CONTAINERS EXPOSED IN A FIRE SHOULD BE COOLED WITH WATER TO PREVENT VAPOR PRESSURE BUILDUP LEADING TO A RUPTURE.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY:

AVOID CONTACT WITH STRONG OXIDIZERS (EG. CHLORINE, PEROXIDES, CHROMATES, NITRIC ACID, PERCHLORATES, CONCENTRATED OXYGEN, PERMANGANATES) WHICH CAN GENERATE HEAT, FIRES, EXPLOSIONS AND THE RELEASE OF TOXIC FUMES.

STORAGE:

PRODUCT SHOULD BE STORED AT TEMPERATURES ABOVE 65 DEGREES F. IF SOLIDIFIED, WARM SLOWLY (DO NOT USE LIVE STEAM) TO 70-100 DEGREES F. FREEZING DOES NOT REDUCE THE EFFICIENCY OF THE PRODUCT WHEN PROPERLY RELIQUIFIED.

THERMAL DECOMPOSITION PRODUCTS:

IN THE EVENT OF COMBUSTION CO, CO2 MAY BE FORMED. DO NOT BREATHE SMOKE OR FUMES. WEAR SUITABLE PROTECTIVE EQUIPMENT.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION:

RESPIRATORY PROTECTION IS NOT NORMALLY NEEDED SINCE THE VOLATILITY AND TOXICITY ARE LOW. IF SIGNIFICANT VAPORS, MISTS OR AEROSOLS ARE GENERATED, WEAR A NIOSH APPROVED OR EQUIVALENT RESPIRATOR.

FOR LARGE SPILLS, ENTRY INTO LARGE TANKS, VESSELS OR ENCLOSED SMALL SPACES WITH INADEQUATE VENTILATION, A POSITIVE PRESSURE, SELF-CONTAINED BREATHING APPARATUS IS RECOMMENDED.

VENTILATION: GENERAL VENTILATION IS RECOMMENDED.

PROTECTIVE EQUIPMENT:

USE IMPERMEABLE GLOVES AND CHEMICAL SPLASH GOGGLES WHEN ATTACHING FEEDING EQUIPMENT OR DOING MAINTENANCE.

THE AVAILABILITY OF AN EYE WASH FOUNTAIN AND SAFETY SHOWER IS RECOMMENDED.

IF CLOTHING IS CONTAMINATED, REMOVE CLOTHING AND THOROUGHLY WASH THE AFFECTED AREA. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.

HUMAN EXPOSURE CHARACTERIZATION:

BASED ON NALCO'S RECOMMENDED PRODUCT APPLICATION AND OUR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT, THE POTENTIAL HUMAN EXPOSURE IS: MODERATE.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT OR (800) 462-5378.

Common Name : 71-D5 ANTIFOAM Manufacturer : NALCO

 Manufacturer : NALCO
 Internal ID : 000096

 Revisión Date : 01-23-1996
 File Name : 000096

SPILL CONTROL AND RECOVERY:

SMALL LIQUID SPILLS:

CONTAIN WITH ABSORBENT MATERIAL, SUCH AS CLAY, SOIL OR ANY COMMERCIALLY AVAILABLE ABSORBENT. SHOVEL RECLAIMED LIQUID AND ABSORBENT INTO RECOVERY OR SALVAGE DRUMS FOR DISPOSAL. REFER TO CERCLA IN SECTION 14.

LARGE LIOUID SPILLS:

DIKE TO PREVENT FURTHER MOVEMENT AND RECLAIM INTO RECOVERY OR SALVAGE DRUMS OR TANK TRUCK FOR DISPOSAL. REFER TO CERCLA IN SECTION 14.

DISPOSAL:

IF THIS PRODUCT BECOMES A WASTE, IT DOES NOT MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) 40 CFR 261, SINCE IT DOES NOT HAVE THE CHARACTERISTICS OF SUBPART C, NOR IS IT LISTED UNDER SUBPART D.

AS A NON-HAZARDOUS LIQUID WASTE, IT SHOULD BE SOLIDIFIED WITH STABILIZING AGENTS (SUCH AS SAND, FLY ASH, OR CEMENT) SO THAT NO FREE LIQUID REMAINS BEFORE DISPOSAL TO AN INDUSTRIAL WASTE LANDFILL. A NON-HAZARDOUS LIQUID WASTE CAN ALSO BE INCINERATED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION 12 ENVIRONMENTAL INFORMATION

BIOLOGICAL OXYGEN DEMAND (5-DAY BOD): 102,440 MG/L

CHEMICAL OXYGEN DEMAND (COD): 308,460 MG/L

TOTAL ORGANIC CARBON (TOC): 195,870 MG/L

AQUATIC DATA:

RESULTS BELOW ARE BASED ON THE PRODUCT.

96 HOUR STATIC ACUTE LC50 TO BLUEGILL SUNFISH = 121 PPM

TOXICITY RATING: SLIGHTLY TOXIC

96 HOUR STATIC ACUTE LC50 TO RAINBOW TROUT = 310 Mg/L 96 HOUR NO OBSERVED EFFECT CONCENTRATION IS LESS THAN 78 Mg/L BASED ON NO MORTALITY OR ABNORMAL EFFECTS.

TOXICITY RATING: SLIGHTLY TOXIC

- 48 HOUR STATIC ACUTE LC50 TO DAPHNIA MAGNA = 220 MG/L
- 48 HOUR STATIC ACUTE EC50 TO DAPHNIA MAGNA = 130 MG/L
- 48 HOUR NO OBSERVED EFFECT CONCENTRATION IS 16 MG/L BASED ON NO MORTALITY OR ABNORMAL EFFECTS.

TOXICITY RATING: TOXIC

Common Name : 71-D5 ANTIFOAM Manufacturer : NALCO Revision Date : 01-23-1996

Internal ID : 000096 File Name : 000096

96 HOUR STATIC ACUTE LC50 TO FATHEAD MINNOW = 190 MG/L

96 HOUR NO OBSERVED EFFECT CONCENTRATION IS LESS THAN 100 MG/L BASED ON NO MORTALITY OR ABNORMAL EFFECTS.

TOXICITY RATING: SLIGHTLY TOXIC

IF RELEASED INTO THE ENVIRONMENT, SEE CERCLA IN SECTION 14.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION: BASED ON OUR HAZARD CHARACTERIZATION, THE POTENTIAL ENVIRONMENTAL HAZARD IS: LOW. BASED ON NALCO'S RECOMMENDED PRODUCT APPLICATION AND THE PRODUCT'S CHARACTERISTICS, THE POTENTIAL ENVIRONMENTAL EXPOSURE IS: HIGH.

SECTION 13 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES: PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

THE FOLLOWING REGULATIONS APPLY TO THIS PRODUCT.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200: BASED ON OUR HAZARD EVALUATION, THE FOLLOWING INGREDIENTS IN THIS PRODUCT ARE HAZARDOUS AND THE REASONS ARE SHOWN BELOW.

KEROSENE - SKIN IRRITANT STRAIGHT RUN MIDDLE DISTILLATES - SKIN IRRITANT

KEROSENE (OIL MIST) = TWA 5 MG/M3, STEL 10 MG/M3 ACGIH/TLV

PARAFFIN WAX (FUME) = TWA 2 MG/M3 ACGIH/TLV

STRAIGHT RUN MIDDLE DISTILLATES (OIL MIST) = TWA 5 MG/M3,

STEL 10 MG/M3 ACGIH/TLV

KEROSENE (OIL MIST) = TWA 5 MG/M3 OSHA/PEL STRAIGHT RUN MIDDLE DISTILLATES (OIL MIST) = TWA 5 MG/M3 OSHA/PEL

KEROSENE = TWA 100 PPM TLV MANUFACTURER'S RECOMMENDATION

CERCLA, 40 CFR 117, 302: NOTIFICATION OF SPILLS OF THIS PRODUCT IS NOT REQUIRED.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312 AND 313:

Common Name: 71-D5 ANTIFOAM

Manufacturer : NALCO Revision Date : 01-23-1996 Internal ID : 000096 File Name : 000096

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355): THIS PRODUCT DOES NOT CONTAIN INGREDIENTS LISTED IN APPENDIX A AND B AS AN EXTREMELY HAZARDOUS SUBSTANCE.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

OUR HAZARD EVALUATION HAS FOUND THIS PRODUCT TO BE HAZARDOUS. SHOULD BE REPORTED UNDER THE FOLLOWING EPA HAZARD CATEGORIES:

XX IMMEDIATE (ACUTE) HEALTH HAZARD

- -- DELAYED (CHRONIC) HEALTH HAZARD
- -- FIRE HAZARD
- -- SUDDEN RELEASE OF PRESSURE HAZARD
- -- REACTIVE HAZARD

UNDER SARA 311 AND 312, THE EPA HAS ESTABLISHED THRESHOLD QUANTITIES FOR THE REPORTING OF HAZARDOUS CHEMICALS. THE CURRENT THRESHOLDS ARE: 500 POUNDS OR THE THRESHOLD PLANNING QUANTITY (TPQ), WHICHEVER IS LOWER, FOR EXTREMELY HAZARDOUS SUBSTANCES AND 10,000 POUNDS FOR ALL OTHER HAZARDOUS CHEMICALS.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372): THIS PRODUCT DOES NOT CONTAIN INGREDIENTS ON THE LIST OF TOXIC CHEMICALS.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

THE CHEMICAL INGREDIENTS IN THIS PRODUCT ARE ON THE 8(B) INVENTORY LIST (40 CFR 710).

FOOD AND DRUG ADMINISTRATIONS (FDA) FEDERAL FOOD, DRUG AND COSMETIC ACT: WHEN USE SITUATIONS NECESSITATE COMPLIANCE WITH FDA REGULATIONS, THIS PRODUCT IS ACCEPTABLE UNDER 21 CFR 176.210 DEFOAMING AGENTS USED IN THE MANUFACTURE OF PAPER AND PAPERBOARD.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D: CONSULT SECTION 11 FOR RCRA CLASSIFICATION.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (FORMERLY SEC. 307), 40 CFR 116 (FORMERLY SEC. 311): NONE OF THE INGREDIENTS ARE SPECIFICALLY LISTED.

CLEAN AIR ACT,

SEC. 111 (40 CFR 60), SEC. 112 (40 CFR 61, 1990 AMENDMENTS), SEC. 611 (40 CFR 82, CLASS I AND II OZONE DEPLETING

SUBSTANCES):

THIS PRODUCT CONTAINS THE FOLLOWING INGREDIENTS COVERED BY THE CLEAN AIR ACT:

POLYPROPYLENE GLYCOL - SECTION 111

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

Common Name: 71-D5 ANTIFOAM Manufacturer : NALCO

internal ID : 000096 Revision Date: 01-23-1996 File Name: 000096

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS WHICH REQUIRE WARNING UNDER CALIFORNIA PROPOSITION 65.

MICHIGAN CRITICAL MATERIALS:

THIS PRODUCT DOES NOT CONTAIN INGREDIENTS LISTED ON THE MICHIGAN CRITICAL MATERIALS REGISTER.

STATE RIGHT TO KNOW LAWS:

THE FOLLOWING INGREDIENT(S) ARE DISCLOSED FOR COMPLIANCE WITH STATE RIGHT TO KNOW LAWS:

KEROSENE

8008-20-6

OXYALKYLATE

TRADE SECRET

PARAFFIN WAX

8002-74-2

POLYGLYCOL

TRADE SECRET

POLYGLYCOL ACID ESTER

TRADE SECRET

STRAIGHT RUN MIDDLE DISTILLATE

64741-44-2

INTERNATIONAL REGULATIONS:

THIS IS A WHMIS CONTROLLED PRODUCT UNDER THE HOUSE OF COMMONS OF CANADA BILL C-70 (CLASS D2B). THE PRODUCT CONTAINS THE FOLLOWING SUBSTANCE(S), FROM THE INGREDIENT DISCLOSURE LIST OR HAS BEEN EVALUATED BASED ON ITS TOXICOLOGICAL PROPERTIES, TO CONTAIN THE FOLLOWING HAZARDOUS INGREDIENT (S):

CHEMICAL NAME

CAS #

% CONCENTRATION RANGE

KEROSENE

8008-20-6

10-20

PARAFFIN WAX

8002-74-2

STRAIGHT RUN MIDDLE DISTILLATES

64741-44-2

40-70

SECTION 15 ADDITIONAL INFORMATION

NONE

SECTION 16 RISK CHARACTERIZATION

DUE TO OUR COMMITMENT TO PRODUCT STEWARDSHIP, WE HAVE EVALUATED THE HUMAN AND ENVIRONMENTAL HAZARDS AND EXPOSURES OF THIS PRODUCT. BASED ON OUR RECOMMENDED USE OF THIS PRODUCT, WE HAVE CHARACTERIZED THE PRODUCT'S GENERAL THIS INFORMATION SHOULD PROVIDE ASSISTANCE FOR YOUR OWN RISK MANAGEMENT WE HAVE EVALUATED OUR PRODUCT'S RISK AS FOLLOWS: PRACTICES.

THE HUMAN RISK IS: LOW.

Common Name : 71-D5 ANTIFOAM Manufacturer : NALCO Revision <u>Date</u> : 01-23-1996

Internal ID : 000096 File Name : 000096

* THE ENVIRONMENTAL RISK IS: LOW.

ANY USE INCONSISTENT WITH NALCO'S RECOMMENDATIONS MAY AFFECT OUR RISK CHARACTERIZATION. OUR SALES REPRESENTATIVE WILL ASSIST YOU TO DETERMINE IF YOUR PRODUCT APPLICATION IS CONSISTENT WITH OUR RECOMMENDATIONS. TOGETHER WE CAN IMPLEMENT AN APPROPRIATE RISK MANAGEMENT PROCESS.

THIS PRODUCT MATERIAL SAFETY DATA SHEET PROVIDES HEALTH AND SAFETY INFORMATION. THE PRODUCT IS TO BE USED IN APPLICATIONS CONSISTENT WITH OUR PRODUCT LITERATURE. INDIVIDUALS HANDLING THIS PRODUCT SHOULD BE INFORMED OF THE RECOMMENDED SAFETY PRECAUTIONS AND SHOULD HAVE ACCESS TO THIS INFORMATION. FOR ANY OTHER USES, EXPOSURES SHOULD BE EVALUATED SO THAT APPROPRIATE HANDLING PRACTICES AND TRAINING PROGRAMS CAN BE ESTABLISHED TO INSURE SAFE WORKPLACE OPERATIONS. PLEASE CONSULT YOUR LOCAL SALES REPRESENTATIVE FOR ANY FURTHER INFORMATION.

SECTION 17 BIBLIOGRAPHY

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CHEMICAL HAZARDS OF THE WORKPLACE, PROCTOR, N. H., AND HUGHES, J. P., EDS., J. P. LIPINCOTT COMPANY, N.Y., 3RD EDITION, 1991.

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IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, GENEVA: WORLD HEALTH ORGANIZATION, INTERNATIONAL AGENCY FOR RESEARCH ON CANCER.

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REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, PUBLIC HEALTH SERVICE, CENTER FOR DISEASE CONTROL, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, 1983 SUPPLEMENT OF 1981-1982 EDITION, VOL. 1-3, OH, 1984.

TITLE 29 CODE OF FEDERAL REGULATIONS PART 1910, SUBPART Z, TOXIC AND HAZARDOUS SUBSTANCES, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS, OH.

INFORMATION ON THIS MSDS HAS CHANGED. THE CHANGES ARE INDICATED BY ASTERISKS ON THE RIGHT SIDE OF ONLY THE CHANGED SECTIONS. THIS IS AN UPDATED MSDS AS

Common Name : 71-D5 ANTIFOAM Manufacturer : NALCO Revision Date : 01-23-1996

Internal ID : 000096 File Name : 000096

REQUIRED BY OSHA'S HAZARD COMMUNICATION RULE 29 CFR 1910.1200.

\$ 1 × 14 PREPARED BY: WILLIAM S. UTLEY, PHD., DABT, MANAGER, PRODUCT SAFETY

DATE CHANGED: 01/23/96 DATE PRINTED: 07/04/96

NALCO CHEMICAL COMPANY ONE NALCO CENTER NAPERVILLE, ILLINOIS 60563-1198 AREA 708-305-1000

Internal ID: 900005 File Name: 900005

NALCO

MATERIAL SAFETY DATA SHEET

TRASAR 23268 COOLING WTR TRMT PRODUCT:

EMERGENCY TELEPHONE NUMBER:

MEDICAL (800) 462-5378 (24 HOURS)

(800) I-M-ALERT

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: TRASAR 23268 COOLING WTR TRMT

DESCRIPTION:

AN AQUEOUS SOLUTION OF A SUBSTITUTED TRIAZOLE AND AN ACRYLIC POLYMER with

a tracer

NFPA 704M/HMIS RATING:

1/2 HEALTH

1/1 FLAMMABILITY

0/0 REACTIVITY

0 OTHER

0=INSIGNIFICANT 1=SLIGHT 2=MODERATE 3=HIGH 4=EXTREME

SECTION 2 HAZARDOUS INGREDIENTS

OUR HAZARD EVALUATION HAS IDENTIFIED THE FOLLOWING CHEMICAL INGREDIENT(S) AS HAZARDOUS UNDER OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200. CONSULT SECTION 14 FOR THE NATURE OF THE HAZARD(S).

INGREDIENT (S)

CAS #

APPROX.8

SODIUM TOLYLTRIAZOLE

64665-57-2

1 - 5

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING:

CAUSES IRRITATION TO SKIN AND EYES. DO NOT GET IN EYES, ON SKIN OR ON CLOTHING. WEAR GOGGLES AND FACE SHIELD WHEN HANDLING. DO NOT TAKE INTERNALLY.

EMPTY CONTAINERS MAY CONTAIN RESIDUAL PRODUCT. DO NOT REUSE CONTAINER UNLESS PROPERLY RECONDITIONED.

SECTION 4 FIRST AID INFORMATION

EYES:

Internal ID : 900005 File Name : 900005

IMMĖDIATĖLY FLUSH WITH WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN. CALL A PHYSICIAN AT ONCE.

SKIN: FLUSH WITH WATER FOR 15 MINUTES.

INGESTION: DO NOT INDUCE VOMITING. GIVE WATER. CALL A PHYSICIAN.

INHALATION: REMOVE TO FRESH AIR. TREAT SYMPTOMS. CALL A PHYSICIAN.

NOTE TO PHYSICIAN:

BASED ON THE INDIVIDUAL REACTIONS OF THE PATIENT, THE PHYSICIAN'S JUDGMENT SHOULD BE USED TO CONTROL SYMPTOMS AND CLINICAL CONDITION.

CAUTION:

IF UNCONSCIOUS, HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: EYE, SKIN

EYE CONTACT: CAN CAUSE MODERATE IRRITATION.

SKIN CONTACT: CAN CAUSE MILD, SHORT-LASTING IRRITATION.

SYMPTOMS OF EXPOSURE:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY SYMPTOMS FROM EXPOSURE NOT PREVIOUSLY MENTIONED.

AGGRAVATION OF EXISTING CONDITIONS:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY WORSENING OF EXISTING CONDITIONS.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES:

ACUTE TOXICITY STUDIES HAVE NOT BEEN CONDUCTED ON THIS PRODUCT, BUT ACUTE STUDIES HAVE BEEN CONDUCTED ON A SIMILAR PRODUCT. THE RESULTS ARE SHOWN BELOW.

ACUTE ORAL TOXICITY (ALBINO RATS): LD50 = GREATER THAN 5,000 MG/KG

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):

SKIN IRRITATION INDEX DRAIZE RATING: 1.28/8.0 SLIGHTLY IRRITATING

COMMENTS:

SWELLING DISAPPEARED AFTER 24 HOURS AND THE REDNESS DISAPPEARED TWO WEEKS AFTER EXPOSURE.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING: 23.0/110.0 MODERATELY IRRITATING

COMMENTS:

Internal ID: 900005 File Name : 900005

AFTER ONE HOUR CONTACT REDNESS, SWELLING AND DISCHARGE OCCURRED. AFTER 24 HOURS THERE WAS SLIGHT CORNEAL OPACITY WHICH DISAPPEARED AFTER FOUR DAYS AT WHICH TIME ALL EYES WERE NORMAL.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR:

CLEAR YELLOW

FORM:

LIQUID

DENSITY:

9.3 LBS/GAL.

SOLUBILITY IN WATER:

COMPLETELY

SPECIFIC GRAVITY:

1.11 @ 77 DEGREES F

ASTM D-1298

PH (NEAT) =

PH (AT 1%) = 11.4

ASTM E-70

VISCOSITY:

7 CPS @ 74 DEGREES F

ASTM D-2983

FREEZE POINT:

25 DEGREES F

ASTM D-1177

BOILING POINT:

not given

ASTM D-86

FLASH POINT:

NONE (PMCC)

ASTM D-93

THESE PHYSICAL PROPERTIES ARE TYPICAL VALUES FOR THIS PRODUCT.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: NONE (PMCC) ASTM D-93

EXTINGUISHING MEDIA:

THIS PRODUCT WOULD NOT BE EXPECTED TO BURN UNLESS ALL THE WATER IS BOILED AWAY. THE REMAINING ORGANICS MAY BE IGNITABLE. USE WATER TO COOL CONTAINERS EXPOSED TO FIRE.

UNUSUAL FIRE AND EXPLOSION HAZARD: MAY EVOLVE NOX OR SOX UNDER FIRE CONDITIONS.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: NONE KNOWN

THERMAL DECOMPOSITION PRODUCTS:

IN THE EVENT OF COMBUSTION NOX, SOX MAY BE FORMED. DO NOT BREATHE SMOKE OR FUMES. WEAR SUITABLE PROTECTIVE EQUIPMENT.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

Internal ID : 900005 File Name : 900005

RESPIRATORY PROTECTION:

RESPIRATORY PROTECTION IS NOT NORMALLY NEEDED SINCE THE VOLATILITY AND TOXICITY ARE LOW. IF SIGNIFICANT MISTS OR AEROSOLS ARE GENERATED, WEAR A NIOSH APPROVED OR EQUIVALENT RESPIRATOR.

FOR LARGE SPILLS, ENTRY INTO LARGE TANKS, VESSELS OR ENCLOSED SMALL SPACES WITH INADEQUATE VENTILATION, A POSITIVE PRESSURE, SELF-CONTAINED BREATHING APPARATUS IS RECOMMENDED.

VENTILATION: GENERAL VENTILATION IS RECOMMENDED.

PROTECTIVE EQUIPMENT:

USE IMPERMEABLE GLOVES AND CHEMICAL SPLASH GOGGLES WHEN ATTACHING FEEDING EQUIPMENT, DOING MAINTENANCE OR HANDLING PRODUCT. EXAMPLES OF IMPERMEABLE GLOVES AVAILABLE ON THE MARKET ARE NEOPRENE, NITRILE, PVC, NATURAL RUBBER, VITON AND BUTYL (COMPATIBILITY STUDIES HAVE NOT BEEN PERFORMED).

THE AVAILABILITY OF AN EYE WASH FOUNTAIN AND SAFETY SHOWER IS RECOMMENDED.

IF CLOTHING IS CONTAMINATED, REMOVE CLOTHING AND THOROUGHLY WASH THE AFFECTED AREA. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT OR (800) 462-5378.

SPILL CONTROL AND RECOVERY:

SMALL LIQUID SPILLS:

CONTAIN WITH ABSORBENT MATERIAL, SUCH AS CLAY, SOIL OR ANY COMMERCIALLY AVAILABLE ABSORBENT. SHOVEL RECLAIMED LIQUID AND ABSORBENT INTO RECOVERY OR SALVAGE DRUMS FOR DISPOSAL. REFER TO CERCLA IN SECTION 14.

LARGE LIQUID SPILLS:

DIKE TO PREVENT FURTHER MOVEMENT AND RECLAIM INTO RECOVERY OR SALVAGE DRUMS OR TANK TRUCK FOR DISPOSAL. REFER TO CERCLA IN SECTION 14.

DISPOSAL:

IF THIS PRODUCT BECOMES A WASTE, IT MEETS THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED UNDER THE RESOURCES CONSERVATION AND RECOVERY ACT (RCRA) 40 CFR 261. HAZARDOUS WASTE D002.

AS A HAZARDOUS LIQUID WASTE, IT MUST BE SOLIDIFIED WITH STABILIZING AGENTS (SUCH AS SAND, FLY ASH, OR CEMENT) SO THAT NO FREE LIQUID REMAINS BEFORE DISPOSAL TO A LICENSED INDUSTRIAL WASTE LANDFILL (HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITY). A HAZARDOUS LIQUID WASTE CAN ALSO BE DEEP-WELL INJECTED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

SECTION 12 ENVIRONMENTAL INFORMATION

BIOLOGICAL OXYGEN DEMAND (5-DAY BOD): 6,600 PPM

Internal ID : 900005 | File Name : 900005

CHEMICAL OXYGEN DEMAND (COD): 260,000 PPM

TOTAL ORGANIC CARBON (TOC): 85,000

AQUATIC DATA:

RESULTS BELOW ARE BASED ON THE PRODUCT.

96 HOUR STATIC ACUTE LC50 TO FATHEAD MINNOW = 418 MG/L

TOXICITY RATING: SLIGHTLY TOXIC

48 HOUR STATIC ACUTE LC50 TO CERIODEPHNIA DUBIA = 1,581 MG/L

TOXICITY RATING: ESSENTIALLY NON-TOXIC

RESULTS BELOW BASED ON A SIMILAR PRODUCT.

96 HOUR STATIC ACUTE LC50 TO BLUEGILL SUNFISH = GREATER THAN 1,000 MG/L

96 HOUR NO OBSERVED EFFECT CONCENTRATION IS 1,000 MG/L BASED ON NO MORTALITY OR ABNORMAL EFFECTS.

TOXICITY RATING: ESSENTIALLY NON-TOXIC

96 HOUR STATIC ACUTE LC50 TO RAINBOW TROUT = 710 MG/L

96 HOUR NO OBSERVED EFFECT CONCENTRATION IS 125 MG/L BASED ON NO MORTALITY OR ABNORMAL EFFECTS.

TOXICITY RATING: SLIGHTLY TOXIC

48 HOUR STATIC ACUTE LC50 TO DAPHNIA MAGNA = GREATER THAN 1,000 MG/L

48 HOUR NO OBSERVED EFFECT CONCENTRATION IS 1,000 MG/L BASED ON NO MORTALITY OR ABNORMAL EFFECTS.

TOXICITY RATING: ESSENTIALLY NON-TOXIC

IF RELEASED INTO THE ENVIRONMENT, SEE CERCLA IN SECTION 14.

SECTION 13 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES: CORROSIVE LIQUID, N.O.S.

UN/ID NO: UN 3267

HAZARD CLASS - PRIMARY: 8 - CORROSIVE

Common Name : TRASAR 23268 Manufacturer : NALCO

Internal ID: 900005 Revision Date: 01-22-1996 File Name : 900005

PACKING GROUP:

III

IMDG PAGE NO:

8147 - 1

IATA PACKING INSTRUCTION:

CARGO: 820

IATA CARGO AIRCRAFT LIMIT:

60 L (MAX NET QUANTITY PER PACKAGE)

FLASH POINT:

NONE

HAZARDOUS COMPONENT(S):

SODIUM TOLYLTRIAZOLE

RQ LBS (PER PACKAGE):

NONE

RQ COMPONENT(S)

NONE

SECTION 14 REGULATORY INFORMATION

THE FOLLOWING REGULATIONS APPLY TO THIS PRODUCT.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200: BASED ON OUR HAZARD EVALUATION, THE FOLLOWING INGREDIENT IN THIS PRODUCT IS HAZARDOUS AND THE REASON IS SHOWN BELOW.

SODIUM TOLYLTRIAZOLE - EYE IRRITANT

CERCLA/SUPERFUND, 40 CFR 117, 302:

NOTIFICATION OF SPILLS OF THIS PRODUCT IS NOT REQUIRED.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

THIS PRODUCT DOES NOT CONTAIN INGREDIENTS LISTED IN APPENDIX A AND B AS AN EXTREMELY HAZARDOUS SUBSTANCE.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

OUR HAZARD EVALUATION HAS FOUND THIS PRODUCT TO BE HAZARDOUS. THE PRODUCT SHOULD BE REPORTED UNDER THE FOLLOWING EPA HAZARD CATEGORIES:

XX IMMEDIATE (ACUTE) HEALTH HAZARD

- -- DELAYED (CHRONIC) HEALTH HAZARD
- -- FIRE HAZARD
- -- SUDDEN RELEASE OF PRESSURE HAZARD
- -- REACTIVE HAZARD

UNDER SARA 311 AND 312, THE EPA HAS ESTABLISHED THRESHOLD QUANTITIES FOR THE REPORTING OF HAZARDOUS CHEMICALS. THE CURRENT THRESHOLDS ARE: 500 POUNDS OR THE THRESHOLD PLANNING QUANTITY (TPQ), WHICHEVER IS LOWER, FOR EXTREMELY HAZARDOUS

Internal ID : 900005 File Name : 900005

SUBSTANCÉS AND 10,000 POUNDS FOR ALL OTHER HAZARDOUS CHEMICALS.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
THIS PRODUCT DOES NOT CONTAIN INGREDIENTS ON THE LIST OF TOXIC CHEMICALS.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

THE CHEMICAL INGREDIENTS IN THIS PRODUCT ARE ON THE 8(B) INVENTORY LIST (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D: CONSULT SECTION 11 FOR RCRA CLASSIFICATION.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/ FORMERLY SEC. 307, 40 CFR 116/FORMERLY SEC. 311: THIS PRODUCT CONTAINS THE FOLLOWING INGREDIENTS COVERED BY THE CLEAN WATER ACT:

NONE OF THE INGREDIENTS ARE SPECIFICALLY LISTED.

CLEAN AIR ACT, SEC. 111 (40 CFR 60), SEC. 112 (40 CFR 61, 1990 AMENDMENTS), SEC. 611 (40 CFR 82, CLASS I AND II OZONE DEPLETING SUBSTANCES): THIS PRODUCT DOES NOT CONTAIN INGREDIENTS COVERED BY THE CLEAN AIR ACT.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS WHICH REQUIRE WARNING UNDER CALIFORNIA PROPOSITION 65.

MICHIGAN CRITICAL MATERIALS:

THIS PRODUCT DOES NOT CONTAIN INGREDIENTS LISTED ON THE MICHIGAN CRITICAL MATERIALS REGISTER:

STATE RIGHT TO KNOW LAWS:

THE FOLLOWING INGREDIENT(S) ARE DISCLOSED FOR COMPLIANCE WITH STATE RIGHT TO KNOW LAWS:

ACRYLIC POLYMER

TRADE SECRET

SODIUM TOLYLTRIAZOLE

64665-57-2

WATER

7732-18-5

INTERNATIONAL REGULATIONS:

THIS IS A WHMIS CONTROLLED PRODUCT UNDER THE HOUSE OF COMMONS OF CANADA BILL C-70 (CLASS D2B). THE PRODUCT CONTAINS THE FOLLOWING SUBSTANCE(S), FROM THE INGREDIENT DISCLOSURE LIST OR HAS BEEN EVALUATED BASED ON ITS TOXICOLOGICAL PROPERTIES, TO CONTAIN THE FOLLOWING HAZARDOUS INGREDIENT(S):

CHEMICAL NAME

CAS #

% CONCENTRATION RANGE

SODIUM TOLYLTRIAZOLE

64665-5**7-**2

1-5

Internal ID: 900005 File Name: 900005

SECTION 15 ADDITIONAL INFORMATION

NONE

SECTION 16 USER'S RESPONSIBILITY

THIS PRODUCT MATERIAL SAFETY DATA SHEET PROVIDES HEALTH AND SAFETY INFORMATION. THE PRODUCT IS TO BE USED IN APPLICATIONS CONSISTENT WITH OUR PRODUCT LITERATURE. INDIVIDUALS HANDLING THIS PRODUCT SHOULD BE INFORMED OF THE RECOMMENDED SAFETY PRECAUTIONS AND SHOULD HAVE ACCESS TO THIS INFORMATION. FOR ANY OTHER USES, EXPOSURES SHOULD BE EVALUATED SO THAT APPROPRIATE HANDLING PRACTICES AND TRAINING PROGRAMS CAN BE ESTABLISHED TO ENSURE SAFE WORKPLACE OPERATIONS. PLEASE CONSULT YOUR LOCAL SALES REPRESENTATIVE FOR ANY FURTHER INFORMATION.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, PUBLIC HEALTH SERVICE, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, DOULL, J., KLAASSEN, C. D., AND ADMUR, M. O., EDS., MACMILLIAN PUBLISHING COMPANY, INC., N. Y., 2ND EDITION, 1980.

CHEMICAL HAZARDS OF THE WORKPLACE, PROCTOR, N. H., AND HUGHES, J. P., EDS., J. P. LIPINCOTT COMPANY, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, SAX, N. IRVING, ED., VAN NOSTRAND REINHOLD COMPANY, N.Y., 6TH EDITION, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, GENEVA: WORLD HEALTH ORGANIZATION, INTERNATIONAL AGENCY FOR RESEARCH ON CANCER, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, CLAYTON, G. D., CLAYTON, F. E., EDS., JOHN WILEY AND SONS, N. Y., 3RD EDITION, VOL. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, PUBLIC HEALTH SERVICE, CENTER FOR DISEASE CONTROL, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, 1983 SUPPLEMENT OF 1981-1982 EDITION, VOL. 1-3, OH, 1984.

TITLE 29 CODE OF FEDERAL REGULATIONS PART 1910, SUBPART Z, TOXIC AND HAZARDOUS SUBSTANCES, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS, OH.

Internal ID : 900005 File Name : 900005

PREPARED'BY: . William S. Utley, PHD., DABT, Manager, Product Safety

DATE CHANGED: 01/22/96

DATE PRINTED: 04/04/98

NALCO CHEMICAL COMPANY ONE NALCO CENTER

NAPERVILLE, ILLINOIS 60563-1198

AREA 630-305-1000

Common Name : A+Z+LITE 7356

Manufacturer : NALCO Internal ID : 000159
Revision Date : 08-17-1993 File Name : 000159

NALCO

MATERIAL SAFETY DATA SHEET

PRODUCT: NALCO A+Z+LITE 7356

EMERGENCY TELEPHONE NUMBER:

MEDICAL (800) 462-5378 (24 HOURS)

(800) I-M-ALERT

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO A+Z+LITE 7356

DESCRIPTION:

AN AQUEOUS SOLUTION OF A ZINC SALT, A SUBSTITUTED CARBOXYLIC ACID AND

PHOSPHORIC ACID

NFPA 704M/HMIS RATING:

1/1 HEALTH

0/0 FLAMMABILITY

0/0 REACTIVITY

0 OTHER

0=INSIGNIFICANT 1=SLIGHT 2=MODERATE 3=HIGH 4=EXTREME

SECTION 2 HAZARDOUS INGREDIENTS

OUR HAZARD EVALUATION HAS IDENTIFIED THE FOLLOWING CHEMICAL INGREDIENT(S) AS HAZARDOUS UNDER OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200. CONSULT SECTION 14 FOR THE NATURE OF THE HAZARD(S).

INGREDIENT (S)

CAS #

APPROX.%

PHOSPHORIC ACID

7664-38-2

5-10

ZINC CHLORIDE

7646-85-7

1-5

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING:

CAUSES IRRITATION TO SKIN AND EYES. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. WEAR GOGGLES AND FACE SHIELD WHEN HANDLING. AVOID PROLONGED OR REPEATED BREATHING OF VAPOR. USE WITH ADEQUATE VENTILATION. DO NOT TAKE INTERNALLY. KEEP CONTAINER CLOSED WHEN NOT IN USE.

EMPTY CONTAINERS MAY CONTAIN RESIDUAL PRODUCT. DO NOT REUSE CONTAINER UNLESS PROPERLY RECONDITIONED.

, F

Internal ID : 000159 File Name : 000159

SECTION 4 FIRST AID INFORMATION

EYES: FLUSH WITH WATER FOR 15 MINUTES. CALL A PHYSICIAN.

SKIN: FLUSH WITH WATER FOR 15 MINUTES.

INGESTION: -DO NOT INDUCE VOMITING. GIVE WATER. CALL A PHYSICIAN.

INHALATION: REMOVE TO FRESH AIR. TREAT SYMPTOMS. CALL A PHYSICIAN.

NOTE TO PHYSICIAN:

BASED ON THE INDIVIDUAL REACTIONS OF THE PATIENT, THE PHYSICIAN'S JUDGMENT

SHOULD BE USED TO CONTROL SYMPTOMS AND CLINICAL CONDITION.

CAUTION:

IF UNCONSCIOUS, HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: EYE, SKIN

EYE CONTACT: CAN CAUSE MILD, SHORT-LASTING IRRITATION.

SKIN CONTACT: CAN CAUSE MILD, SHORT-LASTING IRRITATION.

SYMPTOMS OF EXPOSURE:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY SYMPTOMS FROM EXPOSURE NOT PREVIOUSLY MENTIONED.

AGGRAVATION OF EXISTING CONDITIONS:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY WORSENING OF EXISTING CONDITIONS.

SECTION 6 TOXICOLOGY INFORMATION

TOXICITY STUDIES:

TOXICITY STUDIES HAVE BEEN CONDUCTED ON THIS PRODUCT. THE RESULTS ARE SHOWN BELOW.

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):

SKIN IRRITATION INDEX DRAIZE RATING: 1.6/8.0 MINIMALLY IRRITATING

COMMENTS:

REDNESS AND SWELLING WERE NOTED IMMEDIATELY UPON REMOVAL OF THE OCCLUSIVE DRESSING. AT 24 HOURS, THREE OF THE SIX RABBITS STILL EXHIBITED REDNESS. THIS REDNESS SLOWLY SUBSIDED SO THAT BY DAY SEVEN ALL RABBITS HAD RETURNED TO NORMAL.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING: 13/110.0 MINIMALLY IRRITATING

Internal ID : 000159 File Name : 000159

COMMENTS:

NO CORNEAL OPACITY WAS NOTED AT ANY SCORING INTERVAL. SLIGHT IRITIS WAS OBSERVED ON DAYS 1, 2 AND 3 IN TWO OF SIX ANIMALS. THIS CLEARED BY DAY SEVEN. MODERATE TO SEVERE CONJUNCTIVAL IRRITATION WAS NOTED AMONG ALL SIX RABBITS. BY DAY SEVEN ALL BUT ONE RABBIT HAD RETURNED TO NORMAL.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR:

CLEAR COLORLESS TO LIGHT YELLOW

FORM:

LIQUID

ODOR:

NONE

DENSITY:

9.2-9.4 LBS/GAL.

SOLUBILITY IN WATER:

COMPLETELY

SPECIFIC GRAVITY:

1.10-1.13 @ 60 DEGREES F

ASTM D-1298

PH (NEAT) =

0.2 - 0.8

ASTM E-70

VISCOSITY:

4 CPS @ 60 DEGREES F

ASTM D-2983

FREEZE POINT:

20 DEGREES F

ASTM D-1177

BOILING POINT:

210 DEGREES F @ 760 MM HG

ASTM D-86

FLASH POINT:

NONE (PMCC)

ASTM D-93

NOTE: THESE PHYSICAL PROPERTIES ARE TYPICAL VALUES FOR THIS PRODUCT.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: NONE (PMCC) ASTM D-93

EXTINGUISHING MEDIA: NOT APPLICABLE

UNUSUAL FIRE AND EXPLOSION HAZARD:

CONTACT WITH REACTIVE METALS (EG. ALUMINUM) MAY RESULT IN THE GENERATION OF

FLAMMABLE HYDROGEN GAS.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY:

AVOID ALKALINE MATERIALS (EG. AMMONIA AND ITS SOLUTIONS, CARBONATES, SODIUM HYDROXIDE (CAUSTIC), POTASSIUM HYDROXIDE, CALCIUM HYDROXIDE (LIME), CYANIDES, SULFIDES, HYPOCHLORITES, CHLORITES) WHICH CAN GENERATE HEAT WITH SPLATTERING OR BOILING AND THE RELEASE OF TOXIC FUMES.

Revision Date: 08-17-1993

AVOID CONTACT WITH ALUMINUM. CORROSIVE TO ALUMINUM.

THERMAL DECOMPOSITION PRODUCTS:

IN THE EVENT OF COMBUSTION CO, CO2 MAY BE FORMED. DO NOT BREATHE SMOKE OR FUMES. WEAR SUITABLE PROTECTIVE EQUIPMENT.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

Internal ID : 000159 File Name : 000159

RESPIRATORY PROTECTION:

IF IT IS POSSIBLE TO GENERATE SIGNIFICANT LEVELS OF VAPORS OR MISTS, A NIOSH APPROVED OR EQUIVALENT ACID GAS CARTRIDGE RESPIRATOR IS RECOMMENDED.

FOR LARGE SPILLS, ENTRY INTO LARGE TANKS, VESSELS OR ENCLOSED SMALL SPACES WITH INADEQUATE VENTILATION, A POSITIVE PRESSURE, SELF-CONTAINED BREATHING APPARATUS IS RECOMMENDED.

VENTILATION: GENERAL VENTILATION IS RECOMMENDED.

PROTECTIVE EQUIPMENT:

USE IMPERMEABLE GLOVES AND CHEMICAL SPLASH GOGGLES WHEN ATTACHING FEEDING EQUIPMENT, DOING MAINTENANCE OR HANDLING PRODUCT. EXAMPLES OF IMPERMEABLE GLOVES AVAILABLE ON THE MARKET ARE NEOPRENE, NITRILE, PVC, NATURAL RUBBER, VITON AND BUTYL (COMPATIBILITY STUDIES HAVE NOT BEEN PERFORMED).

THE AVAILABILITY OF AN EYE WASH FOUNTAIN AND SAFETY SHOWER IS RECOMMENDED.

IF CLOTHING IS CONTAMINATED, REMOVE CLOTHING AND THOROUGHLY WASH THE AFFECTED AREA. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT OR (800) 462-5378.

SPILL CONTROL AND RECOVERY:

SMALL LIQUID SPILLS:

CONTAIN WITH ABSORBENT MATERIAL, SUCH AS CLAY, SOIL OR ANY COMMERCIALLY AVAILABLE ABSORBENT. SHOVEL RECLAIMED LIQUID AND ABSORBENT INTO RECOVERY OR SALVAGE DRUMS FOR DISPOSAL. REFER TO CERCLA IN SECTION 14.

LARGE LIQUID SPILLS:

DIKE TO PREVENT FURTHER MOVEMENT AND RECLAIM INTO RECOVERY OR SALVAGE DRUMS OR TANK TRUCK FOR DISPOSAL. REFER TO CERCLA IN SECTION 14.

FOR LARGE INDOOR SPILLS, EVACUATE EMPLOYEES AND VENTILATE AREA. THOSE RESPONSIBLE FOR CONTROL AND RECOVERY SHOULD WEAR THE PROTECTIVE EQUIPMENT SPECIFIED IN SECTION 10.

DISPOSAL:

IF THIS PRODUCT BECOMES A WASTE, IT MEETS THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED UNDER THE RESOURCES CONSERVATION AND RECOVERY ACT (RCRA) 40 CFR 261.

Revision Date: 08-17-1993

HAZARDOUS WASTE D002.

AS A'HAZARDOUS LIQUID WASTE, IT SHOULD BE SOLIDIFIED WITH STABILIZING AGENTS (SUCH AS SAND, FLY ASH, OR CEMENT) SO THAT NO FREE LIQUID REMAINS BEFORE DISPOSAL TO AN INDUSTRIAL WASTE LANDFILL. A HAZARDOUS LIQUID WASTE CAN ALSO BE DEEP-WELL INJECTED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

Internal ID : 000159 File Name : 000159

SECTION 12 ENVIRONMENTAL INFORMATION ====

AQUATIC DATA:

96 HOUR STAFTIC ACUTE LC50 TO BLUEGILL SUNFISH = 700 MG/L

96 HOUR NO OBSERVED EFFECT CONCENTRATION IS 180 MG/L BASED ON NO MORTALITY OR ABNORMAL EFFECTS.

TOXICITY RATING: SLIGHTLY TOXIC

96 HOUR STATIC ACUTE LC50 TO RAINBOW TROUT = 8.7 MG/L

96 HOUR NO OBSERVED EFFECT CONCENTRATION IS 2.5 MG/L BASED ON NO MORTALITY OR ABNORMAL EFFECTS.

TOXICITY RATING: TOXIC

96 HOUR STATIC ACUTE LC50 TO MYSID SHRIMP = 26.9 MG/L

96 HOUR NOEC = 15 MG/L

TOXICITY RATING: MODERATELY TOXIC

IF RELEASED INTO THE ENVIRONMENT, SEE CERCLA IN SECTION 14.

SECTION 13 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES: CORROSIVE LIQUID, N.O.S.

UN/ID NO: UN 1760

HAZARD CLASS - PRIMARY: 8 - CORROSIVE

PACKING GROUP: III

IMDG PAGE NO: 8147

IATA NOTE: P:818 C:820

IATA LIMIT: C: 60 L

Internal ID: 000159 File Name: 000159

FLASH POINT: NONE

HAZARDOUS COMPONENT(S): PHOSPHORIC ACID, ZINC CHLORIDE

RO LBS (PER PACKAGE): 24,000

RQ COMPONENT(S) ZINC CHLORIDE

SECTION 14 REGULATORY INFORMATION

THE FOLLOWING REGULATIONS APPLY TO THIS PRODUCT.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200: BASED ON OUR HAZARD EVALUATION, THE FOLLOWING INGREDIENTS IN THIS PRODUCT ARE HAZARDOUS AND THE REASONS ARE SHOWN BELOW.

PHOSPHORIC ACID = TWA 1 MG/M3, STEL 3 MG/M3 ACGIH/TLV ZINC CHLORIDE (FUME) = TWA 1 MG/M3, STEL 2 MG/M3 ACGIH/TLV

PHOSPHORIC ACID = TWA 1 MG/M3, STEL 3 MG/M3 OSHA/PEL ZINC CHLORIDE (FUME) = TWA 1 MG/M3, STEL 2 MG/M3 OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:

THIS PRODUCT CONTAINS ZINC CHLORIDE A REPORTABLE QUANTITY (RQ) SUBSTANCE AND IF 24,000 POUNDS OF PRODUCT ARE RELEASED, IT REQUIRES NOTIFICATION TO THE NATIONAL RESPONSE CENTER, WASHINGTON, D.C. (1-800-424-8802).

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355): THIS PRODUCT DOES NOT CONTAIN INGREDIENTS LISTED IN APPENDIX A AND B AS AN EXTREMELY HAZARDOUS SUBSTANCE.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

OUR HAZARD EVALUATION HAS FOUND THIS PRODUCT TO BE HAZARDOUS. THE PRODUCT SHOULD BE REPORTED UNDER THE FOLLOWING EPA HAZARD CATEGORIES:

XX IMMEDIATE (ACUTE) HEALTH HAZARD

- -- DELAYED (CHRONIC) HEALTH HAZARD
- -- FIRE HAZARD
- -- SUDDEN RELEASE OF PRESSURE HAZARD
- -- REACTIVE HAZARD

UNDER SARA 311 AND 312, THE EPA HAS ESTABLISHED THRESHOLD QUANTITIES FOR THE REPORTING OF HAZARDOUS CHEMICALS. THE CURRENT THRESHOLDS ARE: 500 POUNDS OR THE THRESHOLD PLANNING QUANTITY (TPQ), WHICHEVER IS LOWER, FOR EXTREMELY HAZARDOUS SUBSTANCES AND 10,000 POUNDS FOR ALL OTHER HAZARDOUS CHEMICALS.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

Internal ID : 000159 File Name : 000159

THIS PRODUCT CONTAINS THE FOLLOWING INGREDIENT(S), (WITH CAS # AND % RANGE) WHICH APPEAR(S) ON THE LIST OF TOXIC CHEMICALS.

PHOSPHORIC ACID

7664-38-2

5-10

ZINC CHLORIDE

7646-85-7

1-5

TOXIC SUBSTANCES CONTROL ACT (TSCA):

THE CHEMICAL INGREDIENTS IN THIS PRODUCT ARE ON THE 8(B) INVENTORY LIST (40 CFR 710).

U.S. DEPARTMENT OF AGRICULTURE (USDA):

USDA INSPECTION AND GRADING PROGRAMS - FOOD SAFETY AND INSPECTION SERVICE: THIS PRODUCT IS AUTHORIZED BY USDA FOR USE IN FEDERALLY INSPECTED MEAT AND POULTRY PLANTS. AUTHORIZED USE IS UNDER CATEGORY G5, FOR TREATMENT OF COOLING AND RETORT WATER; AND G7, TREATING BOILERS, STEAM LINES, AND/OR COOLING SYSTEMS. THE FOLLOWING LIMITATIONS APPLY FOR G7: NO CONTACT WITH EDIBLE PRODUCTS.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D: CONSULT SECTION 11 FOR RCRA CLASSIFICATION.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (FORMERLY SEC. 307), 40 CFR 116/FORMERLY SEC. 311: THIS PRODUCT CONTAINS THE FOLLOWING INGREDIENTS COVERED BY THE CLEAN WATER ACT:

ZINC CHLORIDE - SECTION 307, 311 PHOSPHORIC ACID - SECTION 311

CLEAN AIR ACT, SEC. 111 40 CFR 60), SEC. 112 (40 CFR 61, 1990 AMENDMENTS), SEC. 611 (40 CFR 82, CLASS I AND II OZONE DEPLETING SUBSTANCES):
THIS PRODUCT DOES NOT CONTAIN INGREDIENTS COVERED BY THE CLEAN AIR ACT.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS WHICH REQUIRE WARNING UNDER CALIFORNIA PROPOSITION 65.

MICHIGAN CRITICAL MATERIALS:

THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCE(S) IDENTIFIED ON THE MICHIGAN CRITICAL MATERIALS REGISTER:
ZINC CHLORIDE

STATE RIGHT TO KNOW LAWS:

REGULATED IN THOSE STATE USING THE TLV FOR ZINC CHLORIDE, PHOSPHORIC ACID AS A CRITERIA FOR LISTING.

Common Name: A+Z+LITE 7356 Manufacturer: NALCO

Internal ID: 000159 Revision Date : 08-17-1993 File Name: 000159

INTERNATIONAL REGULATIONS:

THIS IS A WHMIS CONTROLLED PRODUCT UNDER THE HOUSE OF COMMONS OF CANADA BILL C-70. THE PRODUCT CONTAINS THE FOLLOWING SUBSTANCE(S), FROM THE INGREDIENT DISCLOSURE LIST OR HAS BEEN EVALUATED BASED ON ITS TOXICOLOGICAL PROPERTIES, TO CONTAIN THE FOLLOWING HAZARDOUS INGREDIENT (S):

CHEMICAL NAME

CAS #

% CONCENTRATION RANGE

PHOSPHORIC ACID -

7664-38-2

5-10

ZINC CHLORIDE

7646-85-7

1 - 5

SECTION 15 ADDITIONAL INFORMATION

NONE

SECTION 16 USER'S RESPONSIBILITY

THIS PRODUCT MATERIAL SAFETY DATA SHEET PROVIDES HEALTH AND SAFETY INFORMATION. THE PRODUCT IS TO BE USED IN APPLICATIONS CONSISTENT WITH OUR PRODUCT LITERATURE. INDIVIDUALS HANDLING THIS PRODUCT SHOULD BE INFORMED OF THE RECOMMENDED SAFETY PRECAUTIONS AND SHOULD HAVE ACCESS TO THIS INFORMATION. FOR ANY OTHER USES, EXPOSURES SHOULD BE EVALUATED SO THAT APPROPRIATE HANDLING PRACTICES AND TRAINING PROGRAMS CAN BE ESTABLISHED TO ENSURE SAFE WORKPLACE OPERATIONS. PLEASE CONSULT YOUR LOCAL SALES REPRESENTATIVE FOR ANY FURTHER INFORMATION.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, PUBLIC HEALTH SERVICE, PB 33-135855, 1983.

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REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, PUBLIC HEALTH SERVICE, CENTER FOR DISEASE CONTROL, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, 1983

Internal ID : 000159 File Name : 000159

SURPLEMENT OF 1981-1982 EDITION, VOL. 1-3, OH, 1984.

TITLE 29 CODE OF FEDERAL REGULATIONS PART 1910, SUBPART Z, TOXIC AND HAZARDOUS SUBSTANCES, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS, OH.

PREPARED BY: RICKY A. STACKHOUSE PHD., TOXICOLOGIST

DATE CHANGED: 08/17/93 DATE PRINTED: 11/18/95

NALCO CHEMICAL COMPANY
ONE NALCO CENTER
NAPERVILLE, ILLINCIS 60563-1198
AREA 708-305-1000

Manufacturer : NALCO Revision Date : 09-06-1996 Internal ID: 000097 File Name: 000097

NALCO

MATERIAL SAFETY DATA SHEET

PRODUCT

NALSPERSE 7348 BIODISPERSANT

EMERGENCY TELEPHONE NUMBER

MEDICAL (708) 920-1510 (24 HOURS)

SECTION 1 PRODUCT IDENTIFICATION

NALSPERSE 7348 BIODISPERSANT TRADE NAME:

DESCRIPTION: A POLYGLYCOL

NFPA 704M/HMIS RATING:

0/1 HEALTH

1/1 FLAMMABILITY

0/0 REACTIVITY

OTHER

0=INSIGNIFICANT

1=SLIGHT

2=MODERATE

3=HIGH

4=EXTREME

SECTION 2 HAZARDOUS INGREDIENTS

OUR HAZARD EVALUATION OF THE INGREDIENT(S) UNDER OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 HAS FOUND NONE OF THE INGREDIENT(S) HAZARDOUS.

SECTION 3 PRECAUTIONARY LABEL INFORMATION

CAUTION:

MAY CAUSE IRRITATION TO SKIN AND EYES. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. DO NOT TAKE INTERNALLY.

EMPTY CONTAINERS MAY CONTAIN RESIDUAL PRODUCT. DO NOT REUSE CONTAINER UNLESS PROPERLY RECONDITIONED.

SECTION 4 FIRST AID INFORMATION

EYES: FLUSH WITH WATER FOR 15 MINUTES. CALL A PHYSICIAN.

SKIN: FLUSH WITH WATER FOR 15 MINUTES.

INGESTION: DO NOT INDUCE VOMITING. GIVE WATER. CALL A PHYSICIAN.

Manufacturer: NALCO Internal ID: 000097 Revision Date: 09-06-1996 File Name: 000097

INHALATION: REMOVE TO FRESH AIR. TREAT SYMPTOMS. CALL A PHYSICIAN.

NOTE TO PHYSICIAN:

BASED ON THE INDIVIDUAL REACTIONS OF THE PATIENT, THE PHYSICIAN'S JUDGMENT SHOULD BE USED TO CONTROL SYMPTOMS AND CLINICAL CONDITION.

CAUTION:

IF UNCONSCIOUS, HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: EYE, SKIN

EYE CONTACT: MAY CAUSE IRRITATION WITH PROLONGED CONTACT.

SKIN CONTACT: MAY CAUSE IRRITATION WITH PROLONGED CONTACT.

SYMPTOMS OF EXPOSURE:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY SYMPTOMS FROM EXPOSURE NOT PREVIOUSLY MENTIONED.

AGGRAVATION OF EXISTING CONDITIONS:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY WORSENING OF EXISTING CONDITIONS.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES:

ACUTE TOXICITY STUDIES HAVE BEEN CONDUCTED ON THIS PRODUCT. THE RESULTS ARE SHOWN BELOW.

ACUTE ORAL TOXICITY (ALBINO RATS): LD50 = 2,229 MG/KG

95% CONFIDENCE LIMIT = 1,400 - 3,085 MG/KG

TOXICITY RATING: MODERATELY TOXIC

COMMENTS:

PHARMOCOTOXIC SIGNS NOTED FOLLOWING PRODUCT ADMINISTRATION INCLUDED ANOREXIA, DIARRHEA, DECREASED ACTIVITY, SALIVATION, AND ATAXIA. ALL SURVIVING ANIMALS APPEARED NORMAL 72-HOURS POST DOSING. DEATHS OCCURRED 24-48 HOURS AFTER ADMINISTRATION OF THE TEST ARTICLE.

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS): SKIN IRRITATION INDEX DRAIZE RATING: 0.57/8.0 SLIGHTLY IRRITATING

COMMENTS:

APPLICATION OF 0.5 ML TO A 6 CM2 SITE ON THE SHAVEN BACK OF EACH OF A GROUP OF SIX ALBINO RABBITS (4-HOUR OCCLUDED CONTACT) RESULTED IN VERY MILD REDNESS AND NO SWELLING. AT THE END OF 72-HOURS, ALL SITES HAD RETURNED TO NORMAL.

Manufacturer: NALCO

Internal ID: 000097 Revision Date: 09-06-1996 File Name: 000097

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING: 2.7/110.0 MINIMALLY IRRITATING

COMMENTS:

. .

INSTILLATION OF 0.1 ML INTO THE CONJUNCTIVAL SAC OF ONE EYE OF EACH OF A GROUP OF SIX ALBINO RABBITS PRODUCED VERY SLIGHT REDNESS ONE HOUR AFTER INSTILLATION. BY THE END OF 24-HOURS, ALL EYES HAD ESSENTIALLY RETURNED TO NORMAL.

HUMAN HAZARD CHARACTERIZATION:

BASED ON OUR HAZARD CHARACTERIZATION, THE POTENTIAL HUMAN HAZARD IS: LOW

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: CLEAR

LIQUID FORM:

ODOR: NONE .

DENSITY: 8.5 LBS/GAL.

SOLUBILITY IN WATER: INSOLUBLE

SPECIFIC GRAVITY: 1.00-1.04 @ 68 DEGREES F ASTM D-1298

PH (AT 2.5%) = 5.0 - 7.5ASTM E-70

VISCOSITY: 273 CPS @ 78 DEGREES F ASTM D-2983

FREEZE POINT: NONE ASTM D-1177

FLASH POINT: GREATER THAN 200 DEGREES F (PMCC) ASTM D-93

VAPOR PRESSURE: LESS THAN 0.01MM HG @ 68 DEGREES F ASTM D-323

VOLATILE ORGANIC

COMPOUND (VOC): 0.06 LBS/GAL. EPA METHOD 24

THESE PHYSICAL PROPERTIES ARE TYPICAL VALUES FOR THIS PRODUCT.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: GREATER THAN 200 DEGREES F (PMCC) ASTM D-93

EXTINGUISHING MEDIA:

BASED ON THE NFPA GUIDE, USE DRY CHEMICAL, FOAM, CARBON DIOXIDE OR OTHER EXTINGUISHING AGENT SUITABLE FOR CLASS B FIRES. USE WATER TO COOL CONTAINERS EXPOSED TO FIRE. FOR LARGE FIRES, USE WATER SPRAY OR FOG, THOROUGHLY DRENCHING THE BURNING MATERIAL.

UNUSUAL FIRE AND EXPLOSION HAZARD:

Revision Date: 09-06-1996

* į

SECTION 9 REACTIVITY INFORMATION

Internal ID: 000097

File Name: 000097

INCOMPATIBILITY:

AVOID CONTACT WITH STRONG OXIDIZERS (EG. CHLORINE, PEROXIDES, CHROMATES, NITRIC ACID, PERCHLORATES, CONCENTRATED OXYGEN, PERMANGANATES) WHICH CAN GENERATE HEAT, FIRES, EXPLOSIONS AND THE RELEASE OF TOXIC FUMES.

THERMAL DECOMPOSITION PRODUCTS:

IN THE EVENT OF COMBUSTION CO, CO2 MAY BE FORMED. DO NOT BREATHE SMOKE OR FUMES. WEAR SUITABLE PROTECTIVE EQUIPMENT.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION:

RESPIRATORY PROTECTION IS NOT NORMALLY NEEDED SINCE THE VOLATILITY AND TOXICITY ARE LOW. IF SIGNIFICANT VAPORS, MISTS OR AEROSOLS ARE GENERATED, WEAR A NIOSH APPROVED OR EQUIVALENT RESPIRATOR.

FOR LARGE SPILLS, ENTRY INTO LARGE TANKS, VESSELS OR ENCLOSED SMALL SPACES WITH INADEQUATE VENTILATION, A POSITIVE PRESSURE, SELF-CONTAINED BREATHING APPARATUS IS RECOMMENDED.

VENTILATION:

GENERAL VENTILATION IS RECOMMENDED. ADDITIONALLY, LOCAL EXHAUST VENTILATION IS RECOMMENDED WHERE VAPORS, MISTS OR AEROSOLS MAY BE RELEASED.

PROTECTIVE EQUIPMENT:

USE IMPERMEABLE GLOVES AND CHEMICAL SPLASH GOGGLES WHEN ATTACHING FEEDING EQUIPMENT, DOING MAINTENANCE OR HANDLING PRODUCT. EXAMPLES OF IMPERMEABLE GLOVES AVAILABLE ON THE MARKET ARE NEOPRENE, NITRILE, PVC, NATURAL RUBBER, VITON, AND BUTYL (COMPATIBILITY STUDIES HAVE NOT BEEN PERFORMED).

THE AVAILABILITY OF AN EYE WASH FOUNTAIN AND SAFETY SHOWER IS RECOMMENDED.

IF CLOTHING IS CONTAMINATED, REMOVE CLOTHING AND THOROUGHLY WASH THE AFFECTED AREA. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.

HUMAN EXPOSURE CHARACTERIZATION:

BASED ON NALCO'S RECOMMENDED PRODUCT APPLICATION AND OUR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT, THE POTENTIAL HUMAN EXPOSURE IS: MODERATE.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT OR (800) 462-5378.

SPILL CONTROL AND RECOVERY:

SMALL LIQUID SPILLS:

CONTAIN WITH ABSORBENT MATERIAL, SUCH AS CLAY, SOIL OR ANY COMMERCIALLY

Manufacturer : NALCO Revision Date : 09-06-1996 Internal ID: 000097 File Name : 000097

AVAILABLE ABSORBENT. SHOVEL RECLAIMED LIQUID AND ABSORBENT INTO RECOVERY OR SALVAGE DRUMS FOR DISPOSAL. REFER TO CERCLA IN SECTION 14.

LARGE LIQUID SPILLS:

DIKE TO PREVENT FURTHER MOVEMENT AND RECLAIM INTO RECOVERY OR SALVAGE DRUMS OR TANK TRUCK FOR DISPOSAL. REFER TO CERCLA IN SECTION 14.

DISPOSAL:

IF THIS PRODUCT BECOMES A WASTE, IT DOES NOT MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) 40 CFR 261, SINCE IT DOES NOT HAVE THE CHARACTERISTICS OF SUBPART C, NOR IS IT LISTED UNDER SUBPART D.

AS A NON-HAZARDOUS LIQUID WASTE, IT SHOULD BE SOLIDIFIED WITH STABILIZING AGENTS (SUCH AS SAND, FLY ASH, OR CEMENT) SO THAT NO FREE LIQUID REMAINS BEFORE DISPOSAL TO AN INDUSTRIAL WASTE LANDFILL. A NON-HAZARDOUS LIQUID WASTE CAN ALSO BE INCINERATED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

SECTION 12 ENVIRONMENTAL INFORMATION

CHEMICAL OXYGEN DEMAND (COD): 2,000,000 MG/L

TOTAL ORGANIC CARBON (TOC): 540,000 MG/L

AQUATIC DATA:

- 96 HOUR STATIC ACUTE LC50 TO BLUEGILL SUNFISH = GREATER THAN 1,000 PPM
- 96 HOUR STATIC ACUTE LC50 TO RAINBOW TROUT = GREATER THAN 1,000 MG/L
- 96 HOUR NO OBSERVED EFFECT CONCENTRATION IS 320 MG/L BASED ON NO MORTALITY
- OR ABNORMAL EFFECTS.

TOXICITY RATING: . ESSENTIALLY NON-TOXIC

- 48 HOUR STATIC ACUTE LC50 TO DAPHNIA MAGNA = GREATER THAN 1,000 MG/L
- 48 HOUR NO OBSERVED EFFECT CONCENTRATION IS 180 MG/L BASED ON NO MORTALITY
- OR ABNORMAL EFFECTS.

TOXICITY RATING: ESSENTIALLY NON-TOXIC

- 96 HOUR STATIC ACUTE LC50 TO CHANNEL CATFISH, LARGEMOUTH BASS, GRASS SHRIMP, SHORE CRABS = GREATER THAN 1,000 PPM
- 96 HOUR STATIC ACUTE LC50 TO EASTERN OYSTERS = 307 PPM
- 96 HOUR STATIC ACUTE LC50 TO QUAHOG CLAMS = 567 PPM
- 48 HOUR EC50 TO CERIODAPHNIA DUBIA = 240 MG/L
- 48 HOUR NO OBSERVED EFFECT CONCENTRATION IS 130 MG/L BASED ON NO MORTALITY
- OR ABNORMAL EFFECTS.
- 7-DAY CHRONIC REPRODUCTIVE IC25 AND IC25 TO

Manufacturer: NALCO

Internal ID: 000097 Revision Date: 09-06-1996 File Name : 000097

CERPODOPHNIA DUBIA IS 17 MG/L AND 13 MG/L, RESPECTIVELY

THE .7-DAY NOEL BASED ON REPRODUCTION IS 12.5 MG/L THE 7-DAY LOEL BASED ON REPRODUCTION IS 25 Mg/L

IF RELEASED INTO THE ENVIRONMENT, SEE CERCLA IN SECTION 14.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION: BASED ON OUR HAZARD CHARACTERIZATION, THE POTENTIAL ENVIRONMENTAL HAZARD IS: BASED ON NALCO'S RECOMMENDED PRODUCT APPLICATION AND THE PRODUCT'S CHARACTERISTICS, THE POTENTIAL ENVIRONMENTAL EXPOSURE IS:

SECTION 13 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES: PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

THE FOLLOWING REGULATIONS APPLY TO THIS PRODUCT.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200: BASED ON OUR HAZARD EVALUATION, THIS PRODUCT IS NOT HAZARDOUS.

CERCLA, 40 CFR 117, 302:

NOTIFICATION OF SPILLS OF THIS PRODUCT IS NOT REQUIRED.

- SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355): THIS PRODUCT DOES NOT CONTAIN INGREDIENTS LISTED IN APPENDIX A AND B AS AN EXTREMELY HAZARDOUS SUBSTANCE.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

OUR HAZARD EVALUATION HAS FOUND THAT THIS PRODUCT IS NOT HAZARDOUS UNDER 29 CFR 1910.1200.

*UNDER SARA 311 AND 312, THE EPA HAS ESTABLISHED THRESHOLD QUANTITIES FOR THE REPORTING OF HAZARDOUS CHEMICALS. THE CURRENT THRESHOLDS ARE: 500 POUNDS OR THE THRESHOLD PLANNING QUANTITY (TPQ), WHICHEVER IS LOWER, FOR EXTREMELY HAZARDOUS SUBSTANCES AND 10,000 POUNDS FOR ALL OTHER HAZARDOUS CHEMICALS.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372): THIS PRODUCT DOES NOT CONTAIN INGREDIENTS ON THE LIST OF TOXIC CHEMICALS.

Manufacturer : NALCO Internal ID : 000097
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TOXIC SUBSTANCES CONTROL ACT (TSCA):

THE *CHEMICAL INGREDIENTS IN THIS PRODUCT ARE ON THE 8(B) INVENTORY LIST (40 CFR 710).

FOOD AND DRUG ADMINISTRATION (FDA) FEDERAL FOOD, DRUG AND COSMETIC ACT: WHEN USE SITUATIONS NECESSITATE COMPLIANCE WITH FDA REGULATIONS, THIS PRODUCT IS ACCEPTABLE UNDER 21 CFR 176.180 - COMPONENTS OF PAPER AND PAPERBOARD IN CONTACT WITH DRY FOOD.

U. S. DEPARTMENT OF AGRICULTURE (USDA):

USDA INSPECTION AND GRADING PROGRAMS - FOOD SAFETY AND INSPECTION SERVICE: THIS PRODUCT IS AUTHORIZED BY USDA FOR USE IN FEDERALLY INSPECTED MEAT AND POULTRY PLANTS. AUTHORIZED USES ARE UNDER CATEGORY G5, G7.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D: CONSULT SECTION 11 FOR RCRA CLASSIFICATION.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (FORMERLY SEC. 307), 40 CFR 116 (FORMERLY SEC. 311):
NONE OF THE INGREDIENTS ARE SPECIFICALLY LISTED.

CLEAN AIR ACT, SEC. 111 (40 CFR 60), SEC. 112 (40 CFR 61, 1990 AMENDMENTS), SEC. 611 (40 CFR 82, CLASS I AND II OZONE DEPLETING SUBSTANCES): THIS PRODUCT DOES NOT CONTAIN INGREDIENTS COVERED BY THE CLEAN AIR ACT.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

THIS PRODUCT CONTAINS ETHYLENE OXIDE, KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE EFFECTS, AS AN IMPURITY OR RESIDUE.

MICHIGAN CRITICAL MATERIALS:

THIS PRODUCT DOES NOT CONTAIN INGREDIENTS LISTED ON THE MICHIGAN CRITICAL MATERIALS REGISTER.

STATE RIGHT TO KNOW LAWS:

THE FOLLOWING INGREDIENT(S) ARE DISCLOSED FOR COMPLIANCE WITH STATE RIGHT TO KNOW LAWS:

POLYGLYCOL

TRADE SECRET

INTERNATIONAL REGULATIONS:

THIS IS NOT A WHMIS CONTROLLED PRODUCT UNDER THE HOUSE OF COMMONS OF CANADA - BILL C-70.

SECTION 15 ADDITIONAL INFORMATION

NALCO INTERNAL NUMBER 308644

Common Name: NALSPERSE 7348 BIODISPERSANT
Manufacturer: NALCO Internal ID : 000097 Revision Date : 09-06-1996 File Name : 000097

SECTION 16 RISK CHARACTERIZATION

DUE TO OUR COMMITMENT TO PRODUCT STEWARDSHIP, WE HAVE EVALUATED THE HUMAN AND ENVIRONMENTAL HAZARDS AND EXPOSURES OF THIS PRODUCT. BASED ON OUR RECOMMENDED USE OF THIS PRODUCT, WE HAVE CHARACTERIZED THE PRODUCT'S GENERAL RISK. THIS INFORMATION SHOULD PROVIDE ASSISTANCE FOR YOUR OWN RISK MANAGEMENT PRACTICES. WE HAVE EVALUATED OUR PRODUCT'S RISK AS FOLLOWS:

- THE HUMAN RISK IS: LOW.
- THE ENVIRONMENTAL RISK IS: LOW.

ANY USE INCONSISTENT WITH NALCO'S RECOMMENDATIONS MAY AFFECT OUR RISK CHARACTERIZATION. OUR SALES REPRESENTATIVE WILL ASSIST YOU TO DETERMINE IF YOUR PRODUCT APPLICATION IS CONSISTENT WITH OUR RECOMMENDATIONS. TOGETHER WE CAN IMPLEMENT AN APPROPRIATE RISK MANAGEMENT PROCESS.

THIS PRODUCT MATERIAL SAFETY DATA SHEET PROVIDES HEALTH AND SAFETY INFORMATION. THE PRODUCT IS TO BE USED IN APPLICATIONS CONSISTENT WITH OUR PRODUCT LITERATURE. INDIVIDUALS HANDLING THIS PRODUCT SHOULD BE INFORMED OF THE RECOMMENDED SAFETY PRECAUTIONS AND SHOULD HAVE ACCESS TO THIS INFORMATION. ANY OTHER USES, EXPOSURES SHOULD BE EVALUATED SO THAT APPROPRIATE HANDLING PRACTICES AND TRAINING PROGRAMS CAN BE ESTABLISHED TO ENSURE SAFE WORKPLACE OPERATIONS. PLEASE CONSULT YOUR LOCAL SALES REPRESENTATIVE FOR ANY FURTHER INFORMATION.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, PUBLIC HEALTH SERVICE, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, DOULL, J., KLAASSEN, C. D., AND ADMUR, M. O., EDS., MACMILLIAN PUBLISHING COMPANY, INC., N. Y., 4TH EDITION, 1996.

CHEMICAL HAZARDS OF THE WORKPLACE, PROCTOR, N. H., AND HUGHES, J. P., EDS., J. P. LIPINCOTT COMPANY, N.Y., 3RD EDITION, 1991.

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IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, GENEVA: WORLD HEALTH ORGANIZATION, INTERNATIONAL AGENCY FOR RESEARCH ON CANCER.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, CLAYTON, G. D., CLAYTON, F. E., EDS., JOHN WILEY AND

, N. Y., 4TH EDITION, VOL. 2 A-F, 1994.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, PUBLIC HEALTH SERVICE, CENTER FOR DISEASE CONTROL, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, 1983

Common Name : NALSPERSE 7348 BIODISPERSANT Manufacturer : NALCO Internal ID: 000097 Revision Date: 09-06-1996 File Name: 000097

SUPPLEMENT OF 1981-1982 EDITION, VOL. 1-3, OH, 1984.

diameter and a second

TITLE 29 CODE OF FEDERAL REGULATIONS PART 1910, SUBPART Z, TOXIC AND HAZARDOUS SUBSTANCES, CCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS, OH.

PREPARED BY: WILLIAM S. UTLEY, PhD., DABT, MANAGER, PRODUCT SAFETY

DATE CHANGED: 09/06/98

DATE PRINTED: 10/14/98

NALCO CHEMICAL COMPANY ONE NALCO CENTER NAPERVILLE, ILLINOIS 61863-1198 AREA 708-305-1000

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-138 Revised March 17, 1999

> Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. RCRA Exempt: Non-Exempt:	4. Generator Hall buston
Verbal Approval Received: Yes No	5. Originating Site YARD TANK
2. Management Facility Destination Key Excess Disposal	6. Transporter UEY EXCREY
3. Address of Facility Operator CROUCH MESA	8. State NM.
7. Location of Material (Street Address or ULSTR) 4/09 E. MAIN JT. FRANKETON, NM 87402	٤
9. Circle One:	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator; one certificate per job. (B) All requests for approval to accept non-exempt wastes must be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved	
All transporters must certify the wastes delivered are only those consigned for transport.	
BRIEF DESCRIPTION OF MATERIAL:	
Returned unused bel water that was stored	
IN YARD "JUNK TANK" AND WAS SAMPLED 7-9-2001	
Estimated Volume 143 66/s cy Known Volume (to be entered by the operator at the end of the haul)cy	
SIGNATURE Waste Management Facility Authorized Agent TITLE: Mon	DATE: 8-1-01
TYPE OR PRINT NAME: MICHAEL TALOUICH TELEPHONE NO. 505-BOURNOUS	
(This space for State Use) APPROVED BY: TITLE: GEO/OG/37 DATE: 8/03/0/ APPROVED BY: TITLE: DATE: 8/701	

1625 N. French Dr Hobbs, JM 882-30 District II - (505) 748-1283 831 S. Epst Artesia, Nor-882-40 District III - (509) 334-6178 1000 Rio Brazos Road Aziec, JM 87410 District IV - (505) 827-7131 2040 S. Pacheco Sanza Fe, JM 87505

New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division

2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131 Submit to OCD Permitted Surface Waste Management Facility

Form C-143

3/15/00

GENERATOR CERTIFICATE OF WASTE STATUS

. Waste Generator Name and Address:	2.Permit Number (if waste generated at an OCD permitted facility)
Hollibuton Energy Services 4109 E. Main Studt Farmington, NM 87402 Description of Waste and Generating Process:	4. Location of Waste (Street address &/or ULSTR):
Determ frac fluids that	Hallburton Freigy Services
referred to as a junk water storage lank that was sampled in 7/9/2001.	Farmington, NM 87402
Destination (Surface Waste Management Facility): Key Eursy Surices	6. Transporter: Keyeke vsy Savoices
Estimated Volume 143 cy/bbls	
or NON-EXEMPT waste only, the following documentation is	attached (check appropriate items):
or NON-EXEMPT waste only, the following documentation is MSDS Information	attached (check appropriate items): RCRA Hazardous Waste Analysis (With Chain of Custody).
·	,
MSDS Information Other (Description) TCLP	RCRA Hazardous Waste Analysis (With Chain of Custody). on and Recovery Act (RCRA) and the Environmental Protection
MSDS Information Other (Description) enerator certifies that, according to the Resource Conservation	RCRA Hazardous Waste Analysis (With Chain of Custody). on and Recovery Act (RCRA) and the Environmental Protection
MSDS Information Other (Description) enerator certifies that, according to the Resource Conservation, and the second se	RCRA Hazardous Waste Analysis (With Chain of Custody). on and Recovery Act (RCRA) and the Environmental Protection bed waste is: (check appropriate classification) NON-EXEMPT oilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation) this exempt or non-exempt non-hazardous waste and that this
MSDS Information Other (Description) enerator certifies that, according to the Resource Conservation, and the second	RCRA Hazardous Waste Analysis (With Chain of Custody). on and Recovery Act (RCRA) and the Environmental Protection bed waste is: (check appropriate classification) NON-EXEMPT oilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation) this exempt or non-exempt non-hazardous waste and that this
enerator certifies that, according to the Resource Conservation gency's July 1988 regulatory determination, the above descripency's July 1988 regulatory determination, the above descripency addition, Generator certifies that nothing has been added to ste does not contain Naturally Occurring Radioactive Material by 1403.	on and Recovery Act (RCRA) and the Environmental Protection bed waste is: (check appropriate classification) NON-EXEMPT cilifield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation) this exempt or non-exempt non-hazardous waste and that this at (NORM) regulated pursuant to 20 NMAC 3.1



SUSPECTED HAZARDOUS **WASTE ANALYSIS**

Client: Sample ID: Halliburton Energy Services

Project #:

92132-001

Junk Water Tank

Date Reported:

07-10-01

Lab ID#:

20231

Date Sampled:

07-09-01

Sample Matrix:

Water

Date Received:

07-09-01

Preservative:

Cool

Date Analyzed:

07-09-01

Condition:

Cool and Intact

Chain of Custody:

9306

Parameter

Result

IGNITABILITY:

Negative

CORROSIVITY:

Negative

pH = 7.30

REACTIVITY:

Negative

C. Oeper an

RCRA Hazardous Waste Criteria

Parameter

Hazardous Waste Criterion

IGNITABILITY:

Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21.

(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

CORROSIVITY:

Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22.

(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)

REACTIVITY:

Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. (i.e. Violent reaction with water, strong base, strong acid, or the generation

of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference:

40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments:

4109 E. Main St., Farmington.



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Junk Water Tank	Date Reported:	07-10-01
Laboratory Number:	20231	Date Sampled:	07-09-01
Chain of Custody:	9306	Date Received:	07-09-01
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	07-10-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

	Concentration	Detection Limit	Regulatory Limits
Parameter	(mg/L)	(mg/L)	(mg/L)
Vinyi Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	0.0761	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	0.0381	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	0.125	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	100%
	1,4-difluorobenzene	100%
	4-bromochlorobenzene	100%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

4109 E. Main St., Farmington.

Analyst C. Ogjunn

Mistri m Wasters Review



EPA METHOD 8040 PHENOLS

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Junk Water Tank	Date Reported:	07-10-01
Laboratory Number:	20231	Date Sampled:	07-09-01
Chain of Custody:	9306	Date Received:	07-09-01
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	07-10-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	0.166	0.040	200
2,4,6-Trichlorophenol	0.058	0.020	2.0
2,4,5-Trichlorophenol	0.147	0.020	400
Pentachiorophenol	0.093	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	98%
	2,4,6-Tribromophenol	99%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

4109 E. Main St., Farmington.

Analyst

No the m Walter



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Junk Water Tank	Date Reported:	07-10-01
Laboratory Number:	20231	Date Sampled:	07-09-01
Chain of Custody:	9306	Date Received:	07-09-01
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	07-10-01
Condition:	Cool and Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	0.670	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	0.039	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
		, , , , , , , , , , , , , , , , , , , ,

2-fluorobiphenyi

97%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

4109 E. Main St., Farmington.

Analyst

Review Wasters



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Junk Water Tank	Date Reported:	07-09-01
Laboratory Number:	20231	Date Sampled:	07-09-01
Chain of Custody:	9306	Date Received:	07-09-01
Sample Matrix:	Water	Date Analyzed:	07-09-01
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	ND	0.001	5.0
Barium	0.089	0.001	100
Cadmium	ND	0.001	1.0
Chromium	0.297	0.001	5.0
Lead	0.371	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	ND	0.001	1.0
Silver	ND	0.001	5.0

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA,

December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission

SW-846, USEPA. December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C

section 261.24, August 24, 1998.

Comments:

4109 E. Main St., Farmington.

Analyst

Mister m Walters Review



QUALITY ASSURANCE / QUALITY CONTROL DOCUMENTATION



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	07-10-01
Laboratory Number:	07-10-TCV	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-10-01
Condition:	N/A	Analysis Requested:	TCLP

		Detection	Regulatory
	Concentration	Limit	Limits
Parameter	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	ND	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	100%
	1,4-difluorobenzene	100%
	4-bromochlorobenzene	100%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 20231.

Analyst C. Cylerca

Misting Warten



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client: Sample ID:	QA/QC Matrix Duplicate 20231	Project #: Date Reported:	N/A 07-10-01
Laboratory Number: Sample Matrix:	Water	Date Sampled: Date Received:	N/A N/A
Analysis Requested: Condition:	TCLP N/A	Date Analyzed: Date Extracted:	07-10-01 N/A

		Duplicate		
•	Sample	Sample	Detection	
	Result	Result	Limits	Percent
Parameter	(mg/L)	(mg/L)	(mg/L)	Difference
Vinyl Chloride	ND	ND	0.0001	0.0%
1,1-Dichloroethene	ND	ND	0.0001	0.0%
2-Butanone (MEK)	0.0761	0.0761	0.0001	0.0%
Chloroform	ND	ND	0.0001	0.0%
Carbon Tetrachloride	ND	ND	0.0001	0.0%
Benzene	0.0381	0.0381	0.0001	0.0%
1,2-Dichloroethane	ND	ND	0.0001	0.0%
Trichloroethene	0.125	0.125	0.0003	0.0%
Tetrachloroethene	ND	ND	0.0005	0.0%
Chlorobenzene	ND	ND	0.0003	0.0%
1,4-Dichlorobenzene	ND	ND	0.0002	0.0%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for sample 20231.

Den L. Oylun

Phristis n Walter



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client: QA/QC Project #: N/A Sample ID: Matrix Spike Date Reported: 07-10-01 20231 Laboratory Number: Date Sampled: N/A Water Date Received: Sample Matrix: N/A **TCLP** 07-10-01 Analysis Requested: Date Analyzed: N/A Date Extracted: Condition: N/A

			Spiked			SW-846
	Sample	Spike Sampl	Sample	Det.		% Rec. Accept. Range
	Result	Added	Result	Limit	Percent	
Parameter	(mg/L)	(mg/L)	(mg/L)	(mg/L)	Recovery	
Vinyl Chloride	ND	0.050	0.0495	0.0001	99%	28-163
1,1-Dichloroethene	ND	0.050	0.0494	0.0001	99%	43-143
2-Butanone (MEK)	0.0761	0.050	0.1251	0.0001	99%	47-132
Chloroform	ND	0.050	0.0500	0.0001	100%	49-133
Carbon Tetrachloride	ND	0.050	0.0490	0.0001	98%	43-143
Benzene	0.0381	0.050	0.0876	0.0001	99%	39-150
1,2-Dichloroethane	ND	0.050	0.0490	0.0001	98%	51-147
Trichloroethene	0.125	0.050	0.175	0.0003	100%	35-146
Tetrachloroethene	ND	0.050	0.0495	0.0005	99%	26-162
Chlorobenzene	ND	0.050	0.0495	0.0003	99%	38-150
1,4-Dichlorobenzene	ND	0.050	0.0495	0.0002	99%	42-143

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for sample 20231.

Analyst C. Oliver

Review Martin



EPA METHOD 8040 PHENOLS Quality Assurance Report

Laboratory Blank

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	07-10-01
Laboratory Number:	07-10-TCA	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-10-01
Condition:	N/A	Analysis Requested:	TCLP

Analytical Results	Concentration	Detection Limit	Regulatory Limit
Parameter	(mg/L)	(mg/L)	(mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-fluorophenol	98 %
	2,4,6-tribromophenol	99 %

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 20231.

Analyst

Phristing Wasters
Review



EPA METHOD 8040 PHENOLS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Method Blank	Date Reported:	07-10-01
Laboratory Number:	07-09-TCA	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Date Analyzed:	07-10-01
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	98%
	2,4,6-Tribromophenol	99%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenois, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 20231.

Analyst

Misting Walters
Review



EPA METHOD 8040 PHENOLS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	07-10-01
Laboratory Number:	20231	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Date Analyzed:	07-10-01
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Detection Limit (mg/L)	Percent Difference
o-Cresol	ND	ND	0.020	0.0%
p,m-Cresol	0.166	0.163	0.040	2.0%
2,4,6-Trichiorophenoi	0.058	0.057	0.020	1.0%
2,4,5-Trichlorophenol	0.147	0.145	0.020	1.1%
Pentachlorophenol	0.093	0.092	0.020	0.8%

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Maximum Difference

8040 Compounds

30.0%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenois, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 20231.

Analyst L. Ogler

Phriotine of Walter



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	07-10-01
Laboratory Number:	07-10-TBN	Date Sampled:	N/A
Sample Matrix:	Hexane	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	07-10-01
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery

2-fluorobiphenyl

101%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 20231.

Analyst L. Odlice

Misture of Walter



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Method Blank	Date Reported:	07-10-01
Laboratory Number:	07-09-TBN	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool and Intact	Date Analyzed:	07-10-01
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0 3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
WAVE ACCEPTANCE CITIENIA	ra: allictri	Let retif vacavel à

2-fluorobiphenyl

96%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 20231.

Analyst

Review



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics QA/QC Matrix Duplicate Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	07-10-01
Laboratory Number:	20231	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	07-10-01
		Analysis Reguested	TOLD

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Percent Difference	Det. Limit (mg/L)
Pyridine	ND	ND	0.0%	0.020
Hexachloroethane	ND	ND	0.0%	0.020
Nitrobenzene	0.670	0.664	0.9%	0.020
Hexachlorobutadiene	ND	ND	0.0%	0.020
2,4-Dinitrotoluene	0.039	0.039	0.0%	0.020
HexachloroBenzene	ND	ND	0.0%	0.020

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Maximum Difference

8090 Compounds

30%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 20231.

Analyst C. Ogleron

Review M Wareters



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-09-TCM QA/QC	Date Reported:	07-09-01
Laboratory Number:	20231	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP Metals	Date Analyzed:	07-09-01
Condition:	N/A	Date Extracted:	N/A

Blank & Duplicate Conc. (mg/L)	Instrument Blank	Method Blank	Delection Infinit	on Sample	Duplicate	% Difference	Acceptance
Arsenic	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Barium	ND	ND	0.001	0.089	0.087	2.2%	0% - 30%
Cadmium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Chromium	ND	ND	0.001	0.297	0.295	0.7%	0% - 30%
Lead	ND	ND	0.001	0.371	0.368	0.8%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Silver	ND	ND	0.001	ND	ND	0.0%	0% - 30%

Selection of the select	CENTRE OF THE SECOND CONTRACTOR OF THE SECOND		DIKKEN STATE OF THE STATE OF TH	Péicent de l' FERECAVEN	A PACCEDIANCE TO RANGE
Arsenic	0.500	ND	0.499	99.8%	80% - 120%
Barlum	0.500	0.089	0.586	99.5%	80% - 120%
Cadmium	0.500	ND	0.499	99.8%	80% - 120%
Chromlum	0.500	0.297	0.796	99.9%	80% - 120%
Lead	0.500	0.371	0.867	99.5%	80% - 120%
Mercury	0.050	ND	0.049	98.0%	80% - 120%
Selenium	0.500	ND	0.501	100.2%	80% - 120%
Silver	0.500	ND	0.498	99.6%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, Dec. 1996

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals,

SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission,

SW-846, USEPA, December 1996.

Comments:

QA/QC for sample 20231.

Analyst

Minton Maller

09306

1	Cool - Ice/Blue Ice		15	(505) 632-0615	<u>.</u>			
1	Received Intact		ay 64	5796 U.S. Highway 64	Π 2			
Y NA								
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			Received by: (Signature)	Received			nature)	Relinquished by: (Signature)
			l by: (Signature)	Heceived	·		mature)	92
Date Time 7-9-01 1041	7-	Q) ex	Received by: (Signature)	Time LO: KS	7. <i>9.01</i>	E.	hed by: (Signature)	Relinquished by: (Signature)
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			Con	Sample Z Matrix	Lab Number	te Sample Time	Sample Date	Sample No./ Identification
Remarks	22		tainers LP /o H&A) 00 C	Client No. 92132)	Drow-	Sampler:
	AMETERS	ANALYSIS / PARAMETERS	<i>9</i>	oject Location 4109 E. Hoin. St. Farmings	Project Location 4109 E. Hoin	~ Sorykes	Drawa (C	Client / Project Name
	!							

District I
1625 N. French Dr., Hobbs, NM 88240
District II
6811 South First, Artesia. NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe. NM 87505

State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Form C-138 Revised March 17, 1999

> Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. RCRA Exempt: Non-Exempt: 🔀	4. Generator COASTAL CHEMICAL
Verbal Approval Reseived: Yes No	5. Originating Site YAR
2. Management Facility Destination KEY DISPOSAL	6. Transporter Key
3. Address of Facility Operator #345 CR 3500 AZ+EC NM	8. State NM
7. Location of Material (Street Address or ULSTR) #10 RD 5911 FIRMINGTON, NM 8740	
9. <u>Circle One</u> :	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste class approved	cessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transport	on
CITY WATER MIXED with UNUGED TREATING	•
MAST Filed 12-15-2000 PLEASE REFOR to MSDS INFORMATIONS MILLIANDS -DATED 1-16-01	
Estimated Volume 160661s cy Knowr, Volume (to be entered by the ope	rator at the end of the haulcy
SIGNATURE Waste Management Facility Authorized Agent TITLE: MOR	DATE: 6-12-01
TYPE OR PRINT NAME: MICHAEL TALOUICAL TELE	PHONE NO. <u>505-334-6/86</u>
(This space for State Use)	
APPROVED BY: Deny Keny TITLE: Geola	DATE: 6/12/01
APPROVED BY: Mantyn 9 26. TITLE: Environment	h 6 6 6 - 15 -01

CERTIFICATE OF WASTE STATUS

1. Generator Name and Address:	2. Destination Name:
COASTAL CHEMICAL CO., INC.	KEY ENERGY SERVICES
#10 RD 5911	345 RD 3500
FARMINGTON, NM 87401	AZTEC, NM 87401
3. Originating Site (name):	Location of the Waste (Street address &/or ULSTR):
	COASTAL CHEMICAL CO., INC.
	#10 RD 5911
	FARMINGTON, NM 87401
Attach list of originating sites as appropriate 4. Source and Description of Waste	
	AND TANKS USED TO DELIVER VIRGIN NSED OUT ARE VIRGIN?UNUSED CHEMICALS. NOLAMINE, GLYCOL (TEG & EG)
•	
1 WIKE EDEDIIADD	febresentative tor: " 🤏
(Print Name)	representative for: do hereby certify that
(Print Name) COASTAL CHEMICAL CO. INC. according to the Resource Conservation and Recove 1988, regulatory determination, the above describe EXEMPT oilfield waste	do hereby certify that very Act (RCRA) and Environmental Protection Agency's July d waste is: (Check appropriate classification)
(Print Name) COASTAL CHEMICAL CO, INC. according to the Resource Conservation and Recove 1988, regulatory determination, the above describe EXEMPT oilfield waste YX NON-EXI	do hereby certify that very Act (RCRA) and Environmental Protection Agency's July d waste is: (Check appropriate classification) EMPT oilfield waste which is non-hazardous by characteristic or by product identification
(Print Name) COASTAL CHEMICAL CO, INC. according to the Resource Conservation and Recove 1988, regulatory determination, the above described EXEMPT oilfield waste EXEMPT oilfield waste AND STATE OF THE NAME	do hereby certify that very Act (RCRA) and Environmental Protection Agency's July d waste is: (Check appropriate electification) EMPT oilfield waste which is non-hazardous by characteristic or by product identification non-exempt non-hazardous waste defined above. umentation is attached (check appropriate items): Other (description):
(Print Name) COASTAL CHEMICAL CO. INC. according to the Resource Conservation and Recove 1988, regulatory determination, the above describe EXEMPT oilfield waste EXEMPT oilfield waste analysis and that nothing has been added to the exempt or the following document of the exempt or the exemp	do hereby certify that very Act (RCRA) and Environmental Protection Agency's July d waste is: (Check appropriate electification) EMPT oilfield waste which is non-hazardous by characteristic or by product identification non-exempt non-hazardous waste defined above. umentation is attached (check appropriate items): Other (description):
(Print Name) COASTAL CHEMICAL CO INC. according to the Resource Conservation and Recove 1988, regulatory determination, the above describe EXEMPT oilfield waste EXEMPT oilfield waste Analysis and that nothing has been added to the exempt or the For NON-EXEMPT waste only the following document of the EXEMPT waste only the EXEMPT waste only the EXEMPT waste only the EXEMPT waste only the following document of the EXEMPT waste only the EXEMPT wa	do hereby certify that very Act (RCRA) and Environmental Protection Agency's July d waste is: (Check appropriate electification) EMPT oilfield waste which is non-hazardous by characteristic or by product identification non-exempt non-hazardous waste defined above. umentation is attached (check appropriate items): Other (description):

District I 1625 N. French Dr., Hobbs, NM 88240 District II. 811 South First, Artesia, NM 88210 District III District IV 2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Form C-138 Revised March 17, 1999

Submit Original Plus 1 Copy to Appropriate District Office

DECLIEST FOR APPROVAL TO ACCEPT SOLID WASTE

REQUEST FOR AFFROVAL TO ACCEPT.	SOLID WASTE
1. RCRA Exempt: Non-Exempt: 💢	4. Generator Bullington
Verbal Approval Received: Yes No	5. Originating Site SeeList
2. Management Facility Destination (EY DISPOSAC	6. Transporter Key
3. Address of Facility Operator #345 CR3500 Aztec NM	8. State NM
7. Location of Material (Street Address or ULSTR)	
9. Circle One: A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste cla approved	cessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transp	ort.
BRIEF DESCRIPTION OF MATERIAL:	
OIL HANK WHER FROM COMPROSSOR STRATIONS At Mc Crath s wo Refer [Is testing still valid.	DATED ANAlytical GOOD Till 12-7-2001
Estimated Volume 1000 bols cy Monthly 1000 bols cy Received by the ope	sioned M. Vieling this is that whate stream mix rator at the end of the hau!
SIGNATURE Management Facility Authorized Agent TITLE: Management Facility Authorized Agent	ger DATE: 6-6-07
TYPE OR PRINT NAME: MICHAEL TALOUICH TELE	PHONE NO. <u>505-334-6186</u>
(This space for State Use)	~
APPROVED BY: Derry ton TITLE: Geolog 1	
APPROVED BY: Mantyn & TITLE: En vivonne	tul Geology DATE: 6-15-01

NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

GIL GONSERVATION DIVISION AZTEC DISTRICT GFFICE 1999 RID BRAZOS RDAD AZTEC, NEW MEXICO 87410 (305) 334-4178 FBX (305)334-5

GARY E. JOHNSON COVERNOR JENNIFER A. SALISBURY CABINET SECRETARY

CERTIFICATE OF WASTE STATUS

I. Generator Name and Address:	2. Destination Name:
Purlimeton Resources,	Key Energy Sorvices 3651 U.S. High way 64
3401 East 30th Street	3651 U.S. High way of
Farming but, NM 87401	Location of the Waste (Street address &/or ULSTR):
. Originating Site (name);	Location of the Waste (Street address &/or ULSTR):
Unit: SE	Section: 11 Township: 291 Range: 1110
Compressor sites SEELIST	
Attach list of originating sites as appropriate 4. Source and Description of Waste	
Oil tank water from us	edoiltanks at McGrath SWD
Water from oil tanks at co	empressor stations
•	
· ·	
•	
Green West	representative for:
(Print Name)	A house and the share
	do hereby certify that,
secretion to the Recourses Conservation and Rec	covery Act (RCRA) and Environmental Protection Agency's July,
1988, regulatory determination, the above descri	ibed waste is: [Cueck appropriate crassing (1911)
EXEMPT cilfield waste NON-I	EXEMPT oilfield waste which is non-hazardous by characteristic sis or by product identification
the state of the state and state of the sweeters	or non-exempt non-hazardous waste defined above.
and that nothing has been added to the exempt	DI HUIT-GATING
For NON-EXEMPT waste the following document of MSDS Information RCRA Hazardous Waste Analyst Chain of Custody	nentation is attached (check appropriate items): Other (description): sis
This waste is in compliance with Regulated Leve to 20 NMAC 3.1 subpart 1403.C and D.	als of Naturally Occurring Radioactive Material (NORM) pursuant
Name (Original Signature):	Musty
Title: Sr. Environ metal R	ep.
Date: 6/6/	
ZU UHSTIAT BABZ IS 'FEW	DM : FEX NO. :

BURLINGTON RESOURCES

SAN JUAN DIVISION

December 27, 2000

Oil Conservation Division Attn: Martyne Keiling 2040 South Pacheco Street Santa Fe. New Mexico 87505

Re: Characterization of Drained Water from Used Oil Tank

Dear Ms. Keeling:

Attached is a Certificate of Waste Status form and a wastewater analysis for water generated from draining the used oil tank at the compressor stations. The main purpose for analyzing these waste streams was to comply with 40 CFR 262.11 waste determination requirements contained in the Resource Conservation and Recovery Act (RCRA). Upon evaluating the analysis for this waste stream it appears the water does <u>not</u> exhibit the characteristics of a hazardous waste.

Due to the fact that this waste stream has been analyzed in two consecutive years and each time showing the waste is non-hazardous, Burlington Resources requests that the non-hazardous determination be accepted for a period of two years from the date of sample collection and analysis. If processes or products change that may impact this waste stream, a new analysis will be completed.

Should you have any questions concerning the content or need additional information, please feel free to contact me at 326-9537. Thank you for your time and consideration.

Sincerely,

Gregg Wurtz

Environmental Representative

Drogg Wenty

Enc.

Certificate of Waste Status

Sample Project CC-59463

CC:

Bruce Gantner Greg Kardos Ken Johnson Correspondence

Compressor Files

Mike Talovichl

Burlington Resources Oil & Gas Company Compressor Stations

- · ·		QTR	SEC	TWI	RNG
1. 2.	Frances Mesa	SW	27	30N	7W
3.	Cedar Hill	SW	29	32N	
4.	Gobernador · Manzanares	NW		30N	7W
5.	Pump Canyon	SE	4	29N	8W
6.	Hart Canyon	NE SE	24	30N	9W
7.	Buena Vista	SE NE	20	31N	10W
8.	Sandstone	SE	13 32	30N	9W
9.	Quinn	SW	16	31N 31N	8W 8W
10.	Arch Rock	SW	14	31N	10W
11. 12.	Pump Mesa	SW	14	31N	8W
13.	Middle Mesa	SW	10	31N	7W
14.	Simms Mesa Rudy	NE	22	30N	7W
15.	Zachry	SE	35	29N	11W
16.	Albright	SM.	34	29N	10W
17.	Rattlesnake	NW SW	22	29N	10W
18.	Cox	SW	10 20	31N	7W
19.	Lateral 311	NE	17	32N 29N	10W 10W
20.	Lateral 355	SE	25	30N	10W
21. 22.	Ute	SW	14		11W
- ∴ .	State	NW	16		9W

hone;(505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 8746

*Ed Hasely
Burlington Resources
P.O. Box 4289
Farmington, NM 87499-4289

Dec. 13, 1999

Mr. Hasely:

Please find enclosed the reports for the samples submitted to our laboratory for analysis on November 23, 1999. I apologize for the delay in receiving your results.

If you should have any questions regarding the results of these analyses, please do not hestitate to call me at your convenience.

Sincerety,

Sharbo Williams

Organics Lab Supervisor

Enclosures

xc: file

one (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 87401

BURLINGTON RESOURCES

Case Narrative

On November 23, 1999, samples were submitted to Inter-Mountain Laboratories for analysis. The samples were analyzed for the parameters listed on the accompanying chain of custody document.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analyses of the samples reported herein are found in Test Methods For Evaluation of Solid Waste, SW-846, USEPA, and Methods For Chemical Analysis of Water and Wastes, EPA-600/4-79-020, USEPA, 1994.

Quality control reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call me at your conveneince.

Sharon Williams

Organic Analyst/Farmington



ne (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 87401

Client:

Burlington Resources

Project:

Compressor Stations

Sample ID:

Water From Used Oil Tank

Lab ID:

0399W05762

Matrix:

Liquid

Condition:

Cool/Intact

Date Reported: 12/13/99

Date Sampled: 11/23/99

Date Received: 11/23/99

Date Analyzed: 12/03/99

	Analytical			
Parameter	Result	PQL	MCL	Units
TCLP Metals - EPA Method 1311				
Arsenic	<0.1	0.1	5.0	mg/L
Barium	. <0.5	0.5	100	mg/L
Cadmium	<0.01	0.01	1.0	mg/L
Chromium	0.05	0.02	5.0	mg/L
Lead	<0.1	0.1	5.0	mg/L
Mercury	<0.001	0.001	0.2	mg/L
Selenium	0.23	0.1	1.0	mg/L
Silver	<0.05	0.05	5.0	mg/L

Reference: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", United States Environmental Protection Agency, Final Update 1, July 1992.

Reviewed By:

William Lipps



2506 West Main Street, Farmington, NM 87461

Flash Point

Client:

one (505) 326-4737 Fax (505) 325-4182

Burlington Resources

Project:

Compressor Stations

Sample ID:

Water From Used Oil Tank

Laboratory ID:

0399W05762

Sample Matrix: Condition:

Liquid Intact

Date Reported:

Date Sampled:

12/13/99 11/23/99

Date Received:

11/23/99

Date Analyzed:

12/07/99

Analyte	Result	Units
Flash Point	>140	°F

References:

Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical / Chemical Methods" United States Environmental Protection Agency 3rd Edition, Final Update II, September, 1994.

Annual Book of ASTM Standards, Method D56.



Phone (505) 326-4737 Fax (505) 325-4182 CHARACTERISTIC LEACHING PROCEDURE TOXICITY CHARACTERISTIC LEACHING PROCEDURE EPA METHOD 8260B

VOLATILE ORGANIC COMPOUNDS BY GC/MS

Client: Burlington Resources
Project ID: Compressor Stations
Sample ID: Water from used oil tanks

Laboratory ID: 0399W05762

Sample Matrix: Water

Date Reported: 12/08/99
Date Sampled: 11/23/99
Date Réceived: 11/24/99
Date Extracted: NA

Date Analyzed: 12/01/99

Parameter	Analytical Result	Detection Limit	Regulatory Level	Units
Benzene	ND	0.05	0.5	mg/L
Carbon Tetrachloride	ND	0.05	0.5	mg/L
Chlorobenzene	ND	0.05	100	mg/L
Chloroform	ND	0.05	6.0	mg/L
1,2-Dichloroethane	ND	0.05	0.5	mg/L
1,1-Dichloroethylene	ND	0.05	0.7	mg/L
Methyl Ethyl Ketone (2-Butanone)	ND	1.25	200	mg/L
Tetrachloroethylene	ND	0.05	0.7	mg/L
Trichloroethylene	ND	0.05	0.5	mg/L
Vinyl Chloride	ND	0.05	0.2	mg/L

ND - Compound not detected at stated Detection Limit.

Surrogate Recovery	%	Limits
Dibromofluoromethane	97	86 - 118
Dichloroethane-d4	91	80 - 120
Toluene-d8	90	88 - 110
4-Bromofiuorobenzene	92	86 - 116

Reference: Test Methods for Evaluating Water, Wastewater and Solid Waste, SW-846,U.S.E.P.A., Volume 18. Revision 2. December 1996.

Analyst Lug Sw

Reviewed

Phone (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 8740

QUALITY CONTROL / QUALITY ASSURANCE



one (505) 326-4737 Fax (505) 325-4182

Inter-Mountain Laboratories, Inc.

2506 West Main Street, Farmington, NM 87401

Quality Control / Quality Assurance

Spike Analysis / Blank Analysis
TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client:

Burlington Resources

Project:

Compressor Stations

Sample Matrix:

Liquid

Date Reported:

12/13/99

Date Analyzed:

12/03/99

Date Received:

11/23/99

Spike Analysis

	Spîke	Sample	Spike	
	Result	Result	Added	Percent
Parameter	(mg/L)	(mg/L)	(mg/L)	Recovery
Arsenic	0.97	<0.1	1.00	97%
Barium	0.98	<0.5	1.00	98%
Cadmium	0.79	< 0.01	1.00	79%*
Chromium	0.88	<0.01	1.00	88%
Lead	0.68	<0.1	1.00	68%*
Mercury	0.005	<0.001	0.005	102%
Selenium	1.20	<0.1	1.00	120%*
Silver	0.74	< 0.05	1.00	74%*

Method Blank Analysis

		Detection		
Parameter	Result	Limit	Units	
Arsenic	ND	0.1	mg/L	
Barium	ND	0.5	mg/L	
Cadmium	ND	0.01	mg/L	
Chromium	ND	0.02	mġ/L	
Lead	ND	0.1	mg/L	
Mercury	ND	0.001	mg/L	
Selenium	ND	0.1	mg/L	
Silver	ND	0.05	mg/L	
Silver	ND	0.05	mg/	

References:

Method 1311: Toxicity Characteristic Leaching Procedure,

SW-846, Rev. 0, July 1992.

Method 3010A: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, Rev. 1, July 1992.

Comments:

*Spike recovery failed to meet established QC limits due to matrix interferences.

Reported by

Reviewed by Why



2506 West Main Street, Farmington, NM 87401

Quality Control / Quality Assurance

Known Analysis TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client:

Burlington Resources

Project:

Compressor Stations

Sample Matrix:

Liquid

Date Reported:

12/13/99

Date Analyzed:

12/03/99

Date Received:

11/23/99

Known Analysis

Parameter	Found Result	Known	Percent	••
T AI AITIGLEI	Nesun	Result	Recovery	Units
Arsenic	1.01	1.00	101%	mg/L
Barium	0.51	0.50	102%	mg/L
Cadmium	1.03	1.00	92%	mg/L
Chromium	1.06	1.00	106%	mg/L
Lead	1.04	1.00	104%	mg/L
Mercury	0.004	0.004	100%	mg/L
Selenium	0.53	0.50	106%	mg/L
Silver	1.05	1.00	105%	mg/L
				···· 3 /—

References:

Method 1311: Toxicity Characteristic Leaching Procedure,

SW-846, Rev. 0, July 1992.

Method 3010A: Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, Rev. 1, July 1992.

Comments:

Reviewed by



ione (505) 326-4737 Fax (505) 325-4182

EPA METHOD 8260B VOLATILE ORGANIC COMPOUNDS BY GC/MS

Method Blank Analysis

Sample ID:

Method Blank

Laboratory ID: V3MB99-335

Sample Matrix: Water

Date Reported:

12/08/99

- - Date Extracted:

NA

2506 West Main Street, Farmington, NM 87401

Date Analyzed:

12/01/99

Parameter	Analytical Result	Detection Limit	Regulatory Level	Units
Benzene	ND	0.01	0.5	mg/L
Carbon Tetrachloride	ND	0.01	0.5	mg/L
Chlorobenzene	ND	0.01	100	mg/L
Chloroform	ND	0.01	6.0	mg/L
1.2-Dichloroethane	ND	0.01	0.5	mg/L
1,1-Dichloroethylene	ND	0.01	0.7	mg/L
Methyl Ethyl Ketone (2-Butanone)	ND	0.25	200	mg/L
Tetrachloroethylene	ND	0.01	0.7	mg/L
Trichloroethylene	ND	0.01	0.5	mg/L
Vinyl Chloride	ND	0.01	0.2	mg/L

ND - Compound not detected at stated Detection Limit.

Surrogate Recovery	%	Limits
Dibromofluoromethane	94	86 - 118
richloroethane-d4	93	80 - 120
Toluene-d8	89	88 - 110
4-Bromofluorobenzene	92	86 - 116

Reference: Test Methods for Evaluating Water, Wastewater and Solid Waste, SW-846,U.S.E.P.A., Volume IB. Revision 2. December 1996.

(505) 526-4737 Fax (505) 325-4182 TOXICITY CHARACTERISTIC LEACHING PROCEDURE 2506 West Main Street, Farmington, NM 17 (1) EPA METHOD 8260B VOLATILE ORGANIC COMPOUNDS BY GC/MS

Blank Spike/Duplicate Analysis

Sample ID:

Blank Spike Duplicate

Laboratory ID:

BSD99-336

Sample Matrix:

Water

Date Reported:

12/08/99

Date Extracted:

NA

Date Analyzed:

12/02/99

Parameter	Analytical Result mg/L	Spike Added mg/L	Spike Results mg/L	Spike Recovery %	Duplicate Results mg/L	Duplicate Recovery %	Relative Difference %RSD
Benzene	ND	0.050	0.050	99	0.053	106	7
Carbon Tetrachloride	ND	0.050	0.054	109	0.057	113	4
Chlorobenzene	ND	0.050	0.050	99	0.053	106	7
Chloroform	ND	0.050	0.056	112	0.060	121	7
1,2-Dichloroethane	ND	0.050	0.049	98	0.057	113	15
1,1-Dichloroethylene	ND	0.050	0.046	91	0.047	94	3
Methyl Ethyl Ketone (2-Butanone)	ND	0.100	0.102	102	0.115	115	12
Tetrachloroethylene	ND	0.050	0.055	110	0.058	115	4
Trichloroethylene	ND	0.050	0.052	103	0.055	111	7
Vinyl Chloride	ND	0.050	0.052	105	0.052	104	0

ND - Compound not detected at stated Detection Limit.

	Spike	Duplicate	
Surrogate Recoveries	%	%	Limits
Dibromofluoromethane	96	102	86 - 118
Dichloroethane-d4	90	101	80 - 120
Toluene-d8	92	92	88 - 110
4-Bromofluorobenzene	95	94	86 - 116

Reference: Test Methods for Evaluating Water, Wastewater and Solid Waste, SW-846,U.S.E.P.A., Volume IB, Revision 2, December 1996.



none (505) 326-4737 Fax (505) 325-4182 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TOXICITY CHARACTERISTIC LEACHING PROCEDURE EPA METHOD 8260B

VOLATILE ORGANIC COMPOUNDS BY GC/MS

Matrix Spike Analysis

Sample ID:

Matrix Spike

Date Reported:

12/08/99

Laboratory ID: 0199W19088MS

Sample Matrix: Water

Date Extracted:
Date Analyzed:

12/02/99

	Analytical Result	Spike Added	Spike Results	Spike Recovery	
Parameter	mg/L	mg/L	mg/L	%%	
Benzene	ND	0.050	0.054	108	
Carbon Tetrachloride	ND	0.050	0.059	119	
Chiorobenzene	ND	0.050	0.054	109	
Chloroform	ND	0.050	0.061	121	
1,2-Dichloroethane	ND	0.050	0.054	108	
1,1-Dichloroethylene	ND	0.050	0.050	100	
Methyl Ethyl Ketone (2-Butanone)	ND	0.100	0.084	84	
Tetrachloroethylene	ND	0.050	0.059	118	
Trichloroethylene	ND	0.050	0.057	113	
Vinyl Chloride	ND	0.050	0.054	108	

ND - Compound not detected at stated Detection Limit.

Surrogate Recovery	%	Limits
Dibromofluoromethane	98	86 - 118
Dichloroethane-d4	96	80 - 120
Toluene-d8	92	88 - 110
4-Bromofluorobenzene	95	86 - 116

Reference: Test Methods for Evaluating Water, Wastewater and Solid Waste, SW-846.U.S.E.P.A., Volume IB, Revision 2, December 1996.



505) 326-4737 Fax (505) 325-4132

Inter-Mountain Laboratories, Inc.

2506 West Main Street, Farmington, NM 87401

Quality Control / Quality Assurance

Known Analysis FLASH POINT

Client:

Burlington Resources

Date Reported:

12/13/99

Project:

Compressor Stations

Date Analyzed:

12/07/99

Sample Matrix:

Liquid

Date Received:

11/23/99

Parameter	Found Result	, Known Result	
p-Xylene	76°F	77°F	

Reference:

Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical / Chemical Methods" United States Environmental Protection Agency 3rd Edition, Final Update II, September, 1994.

Annual Book of ASTM Standards, Method D93-80.

Comments:

Reported by

Reviewed by



CHAIN OF CUSTODY RECORD

_				1	T	 T	 		т-	T	T	$\overline{}$		1	1	т			
	1633 Terra Avenue Sheridan, Wyoming 82801	Relinquished by/(Signature)	Relinquished by: (Signature)	Relinquished by: (Signature)			170,7	borg borg	(Cryst)				1-		Water fram Used OI Tank 11	Sample No./	⇒	Client/Project Name	Inter- Mountain Laboratories, Inc.
	Inter-N		landre		*							-	3	-	11/23 11/05/	Date Time Lab N		5/0.1 Tank water	
The same of the sa	Inter-Mountain Laboratories, Inc.: Trole 2506 West Main Street 1160 Rese 10 82718 Farmington, NM 87401 Bozeman, 1682-8945 Telephone (505) 326-4737 Telephone	Date	Date Date	11/23/99											762	Lab Number	Chain of Custody Tape No.	Project Location	
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	11183 State Hwy. 30 College Station, TX 77845 Telephone (409) 776-8945	(a)		later						/			7			Flash		ANALYSES / PARAMETERS	
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District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Form C-138 Revised March 17, 1999

Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT	SOLID WASTE
1. RCRA Exempt: Non-Exempt:	4. Generator BURING FON
Verbal Approval Received: Yes No	5. Originating Site VALVERPL AMY
2. Management Facility Destination LEY Encety Disposer	6. Transporter Ley
3. Address of Facility Operator #345 CR 3500 AZIEC NM	8. State NM
7. Location of Material (Street Address or ULSTR) Range 11 w	
9. Circle One: A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste cla approved	ecessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transp	ort.
BRIEF DESCRIPTION OF MATERIAL:	
,	and frame clowing
Estimated Volume 350 bols cy Known Volume (to be entered by the open	
SIGNATURE Waste Management Facility Authorized Agent TITLE: Mb1	DATE: 6-6-01
TYPE OR PRINT NAME: MICHAEL TALOVICY TELE	PHONE NO. 505-334-6186
(This space for State Hea)	
(This space for State Use) APPROVED BY: Servy Lend TITLE: Geo Co	09 (S) DATE: 6/07/01
APPROVED BY: Matyn gilly TITLE: Environment	mtel Geolyst DATE: G. 65-01



NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

OIL GONSERVATION DIVISIO AZTEC DISTRICT GFFICE 1909 RIG BRAZOS ROAD AZTEC, NEW MEZICO 17516 (308) 234-8178 FBE (303)234-6

GARY E. JOHNSON

JENNIFER A. SALISBURY CABINET SECRETARY

CERTIFICATE OF WASTE STATUS

1. Generator Name and Address:	2. Destination Name:
Burlington Resources	Key Emergy Services
3401 East 30th St.	Key Energy Services 5651 US Highway 64
Farmington , NM 87401	•
3. Originating Site (name):	Location of the Waste (Street address &/or ULSTR):
Val Verde Plant Un	it: SE Section: 11 Township: 29H Range: 11W
Attach list of originating sites as appropriate	
4. Source and Description of Waste	er. Plate and frame cleanin solution
Amine to Amine heat exchange	er. Plate and frame cleaning solution
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e .	
• • • • • • • • • • • • • • • • • • •	
Burlington Resources	representative for:
(Print Name)	
Burlington Resources	do hereby cartify that,
according to the Resource Conservation and Rec	do hereby certify that, covery Act (RCRA) and Environmental Protection Agency's July,
1988, requiatory determination, the above descri	bed waste is: (Check appropriate classification)
	•
EXEMPT cilfield waste X NON-E	EXEMPT oilfield waste which is non-hazardous by characteristic
analys	is or by product identification
	and and horandaria resident defined above
and that nothing has been added to the exempt of	or non-exempt non-hazardous waste defined above.
As much about the state of the	
For NON-EXEMPT waste the following documents	nantation is attached (check appropriate items):
★ MSDS Information	Other (description):
RCRA Hazardous Waste Analys	us ,
Chain of Custody	
This waste is in enemalisted with Remileteri I avail	s of Naturally Occurring Radioactive Material (NORM) pursuan
to 20 NMAC 3.1 subpart 1403.C and D.	4 01 11010, 011
CO SO SHAWC 3.1 SODDWILL 140010 in the C.	
A	
Name (Original Signature):	Man 5
Wattle (Griginal Dignaturo).	
Title: Sr. Environmental A	an.
THE PROPERTY OF THE PARTY OF TH	
Date: 6/6/01	
- 24 - WHOTIAT DAM2 IS INPUL	· ·au vui

BURLINGTON RESOURCES

SAN JUAN DIVISION

June 6, 2001

Key Energy Services Inc. Attn: Mike Talovich P.O. Box 900 5651 US Highway 64 Farmington, NM 87499

RE: Request for approval to dispose of Burlington Resources Oil & Gas Company's Val Verde Plant non exempt nonhazardous spent plate and frame cleaning solution.

Mr. Talovich:

Burlington Resources is requesting approval to dispose approximately 350 bbl. of the spent plate and frame cleaning solution at Key Energy Services, Farmington, NM disposal facility.

Attached are copies of the chemical profile analysis of the spent cleaning solution proposed for disposal. Included are: 1) metals analysis, 7/30/99; 2) sampling procedures and analysis for metals, characteristics, semi volatile, and volatile parameters, 3/4/97; and 3) Flash Point analysis, 3/14/00. The process generating this waste and the products used in the process have not changed. In addition attached are MSDS's for the products used in the process.

The cleaning solution is considered to be non-exempt nonhazardous waste based on the data provided, generator knowledge of the process, and products used.

If you have additional questions concerning this request please contact me at (505) 326-9537.

Sincerely,

Gregg Wurtz

Environmental Representative

Gregg Wenty

cc: Correspondence

Val Verde Plant waste file

Attachment: Waste profile

2506 West Main Street, Farmington, NM 87401

BURLINGTON RESOURCES

Case Narrative

On June 26, 1999, two samples were submitted to Inter-Mountain Laboratories - Farmington for rush analysis. Analysis for TCLP Metals were performed on the samples as per the accompanying Chain of Custody document.

Extractions were performed on the samples by "<u>Toxicity Characteristic Leaching Procedure</u>", Method 1311, SW-846, Rev. 0, July 1992.

Digestion of the extracted samples were performed by "Acid Digestion of Aqueous Samples and Extracts for Total Metals", Method 3010, SW-846, Rev. 1, July 1992.

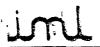
Trace metal analysis were performed on the samples by"<u>Test Methods for Evaluating Solid Waste: Physical/Chemical Methods"</u>, SW-846, United States Environmental Protection Agency, November, 1986.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies.

Quality control reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Shaken Williams
Organic Analyst

William



Inter-M. Atain Laboratories, Inc.

2506 West Main Street, Farmington, NM 87401

Client:

Phone (505) 326-4737 Fax (505) 325-4182

Burlington Resources

Project:

TCLP's

Sample ID:

V V P Plate Cleaning Waste #1

Lab ID:

0399W03764

Matrix:

Liquid

Condition:

Cool/Intact

Date Reported: 08/02/99

Date Sampled: 07/26/99

Date Received: 07/26/99

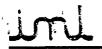
Date Analyzed: 07/30/99

Parameter	Analytical Result	PQL	MCL	Units
TCLP METALS - EPA METHOD 1311				
Arsenic	<0.25	0.25	5.0	mg/L
Barium	<0.5	0.5	100.0	mg/L
Cadmium	<0.2	0.2	1.0	mg/L
Chromium	<0.5	0.5	5.0	mg/L
Lead	<0.5	0.5	5.0	mg/L
Mercury	<0.001	0.001	0.2	mg/L
Selenium	<0.25	0.25	1.0	mg/L
Silver	<0.5	0.5	5.0	mg/L

Reference: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", United States Environmental Protection Agency, November, 1986.

Reviewed By

Sharon Willams, Organic Lab Supervisor



Inter-Mc Itain Laboratories, Inc.

2506 West Main Street, Farmington, NM 87401

Phone (505, 326-4737 Fax (505) 325-4182

Client:

Burlington Resources

Project:

TCLP's

Sample ID: VVP Plate Cleaning Waste #2

Lab ID:

0399W03765

Cool/Intact

Matrix:

Liquid

Condition:

Date Reported: 08/02/99

Date Sampled: 07/26/99

Date Received: 07/26/99

Date Analyzed: 07/30/99

	Analytical			
Parameter	Result	PQL	MCL	Units
TCLP METALS - EPA METHOD 1311				
Arsenic	<0.25	0.25	5.0	mg/L
Barium	1	0.5	100.0	mg/L
Cadmium	<0.2	0.2	1.0	mg/L
Chromium	<0.5	0.5	5.0	mg/L
Lead	<0.5	0.5	5.0	mg/L
Mercury	<0.001	0.001	0.2	mg/L
Selenium	<0.25	0.25	1.0	mg/L
Silver	<0.5	0.5	5.0	mg/L

Reference: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", United States Environmental Protection Agency, November, 1986.

Reviewed By:

Sharon Willams, Organic Lab Supervisor



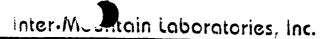
Inter-N. Jantain Laboratories, Inc.

Phone (505) 326-4737 Fax (505) 325-4182

2506 West Mair. Street, Farmington, NM 87401

QUALITY CONTROL / QUALITY ASSURANCE





2506 West Main Street, Farmington, NM 67401

Quality Control / Quality Assurance

Spike Analysis / Blank Analysis
TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client: Project: **Burlington Resources**

TCLP's

Sample Matrix:

Durnington Resource

Extract

Date Reported:

07/30/99

Date Analyzed:

07/30/99

Date Received:

07/26/99

Spike Analysis

		pinto / maryoto		
	Spike Result	Sample Result	Spike Added	Percent
Parameter	(mg/L)	(mg/L)	(mg/L)	Recovery
Arsenic	0.46	<0.005	0.50	92%
Barium	0.82	0.24	0.50	116%
Cadmium	0.39	< 0.004	0.50	78%*
Chromium	0.39	<0.01	0.50	78%*
Lead	0.85	<0.05	1.00	85%
Mercury	0.005	< 0.001	0.005	104%
Selenium	0.88	< 0.005	1.00	88%
Silver	0.39	<0.01	0.50	78%*

Method Blank Analysis

		Detection	
Parameter	Result	Limit	Units
Arsenic	ND	0.25	mg/L
Barium	ND	0.5	mg/L
Cadmium	ND	0.2	mg/L
Chromium	ND	0.5	mg/L
Lead	ND	0.5	mg/L
Mercury	ND	0.001	mg/L
Selenium	ND	0.25	mg/L
Silver	ND	0.5	mg/L

References:

Method 1311: Toxicity Characteristic Leaching Procedure,

SW-846, Rev. 0, July 1992.

Method 3010A: Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, Rev. 1, July 1992.

Comments:

* Spike recovery failed to meet established QC limits due to matrix interferences.

Reported by

Reviewed by //

2506 West Main Street, Farmington, NM 87407

Quality Control / Quality Assurance

Known Analysis TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client:

Project:

Sample Matrix:

Burlington Resources

TCLP's

Extract

Date Reported:

08/02/99

Date Analyzed:

07/30/99

Date Received:

07/26/99

Known Analysis

	Found	Known	Percent	
Parameter	Result	Result	Recovery	Units
Arsenic	2.02	2.00	101%	mg/L
Barium	1.88	2.00	94%	mg/L
Cadmium	1.93	2.00	98%	mg/L
Chromium	1.96	2.00	98%	mg/L
Lead	1.94	2.00	97%	mg/L
Mercury	0.004	0.004	108%	mg/L
Selenium	2.05	2.00	103%	mg/L
Silver	0.51	0.50	102%	mg/L

References:

Method 1311: Toxicity Characteristic Leaching Procedure,

SW-846, Rev. 0, July 1992.

Method 3010A: Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, Rev. 1, July 1992.

Comments:

Reported by

Reviewed by__



CHAIN OF CUSTODY RECORD

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Relinquished by: (Signature)				Date	Time	Received by laboratory: (Signature)	oratory: (Sign	ature)		Date	Time
	, c		Inter-Mountain Laboratories, Inc.	ain Labo	oratorie	s, Inc.		c			
1633 Terra Avenue Sheridan, Wyoming 82801 Telephone (307) 672-8945		1701 Phillips Circle Gillette, Wybening 82718 Telephone (307) 682-8945		2506 West Main Street Farmington, NM 87401 (\$\frac{1}{2}\) Telephone (805) 326-4737	· · · · · · · · · · · · · · · · · ·	1160 Research Drive Bozeman, Montana 59718 Telephone (406) 586-8450	Drive ana 59718 586-8450	11183 State Hwy. 30 College Station, TX 7 Telephone (409) 776	11183 State Hwy. 30 College Station, TX 77845 Telephone (409) 776-8945	5191	\$



CHAIN OF CUSTODY RECORD

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	1	*											

ontract Environmental Services, Inc.

Post Office Box 3376 Farmington, New Mexico 87499 Phone (505) 325-1198

March 4, 1997

Burlington Resources
Mr. Craig Bock
3535 E. 30th Street
Farmington, New Mexico 87401

RE:

Written Procedure For Sampling Steel Tank, Spent Scale Cleaning Solution, Val Verde Plant,

Bloomfield, New Mexico

Dear Mr. Bock,

Contract Environmental Services, Inc. (CES) is pleased to present this sampling procedure for the above described site to Burlington Resources (BR). Sampling will be broken down into two (2) parts. Part one (1) will be sampling the liquid and part two (2) will be sampling the bottom sludge (if any).

Part 1 - Top to bottom liquid samples will be obtained using a 3/4" PVC sample tube. The PVC will be lowered into the fluid until the bottom is encountered. A rubber stopper will be inserted into the exposed end just above the liquid level. The PVC sampler will be extracted and the contents placed in a stainless steel canister for mixing. A total of three (3) liquid samples will be taken for compositing.

Part 2 - The bottom sludge (if any) will be sampled using a PVC sample tube with an eight (8) ounce glass sample jar secured with zip ties at one end. If sludge is encountered, a sample will be gathered from the center and each side. The three (3) sludge samples will be added to the same stainless steel canister to be composited with the liquid previously obtained.

The liquid and solids will be thoroughly mixed and samples for laboratory analysis will be gathered from the stainless steel container.

Samples will be adequately preserved as directed by the lab and carefully packaged for shipping to Assaigai Laboratory of Albuquerque for analyses. Chain-of-custody records will accompany the sample from the time they are gathered until the analyses are completed at the laboratory. The lab has been informed of our request for "Rush" analyses and have scheduled the work prior to receiving the samples. They have committed to a five (5) working day turn-around-time. Assaigai will receive the samples on Thursday morning by 10:00 am to begin the analyses. We should expect results on or before Thursday, March 13th, 1997.

All sampling equipment will be wiped down on site and either decontaminated or properly disposed of.

Contract Environmental Services, Inc. appreciates this opportunity to submit this sampling procedure to Burlington Resources and looks forward to serving your firm on this and other projects in the near future.

Sincerely

Shawn A. Adams

Contract Environmental Services, Inc.

Val Verde Plant Plate Exchange. Wash Wh



ASSAIG LABORATORIES, INC.



7300 Jefferson, N.E. • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

3332 Wedgewood, E-5 • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820

Report Generated:

March 12, 1997 14:42

CERTIFICATE OF ANALYSIS RESULTS BY SAMPLE

SENT CONTRACT ENVIRONMENTAL SERV WORKORDER #

: 9703041

TO: PO BOX 3376

WORK ID

: MOI-VAL VERDE

FARMINGTON, NM

CLIENT CODE

: CONTO1

87499 DATE RECEIVED : 03/06/97

ATTN: SHAWN ADAMS

Page: 1

Lab ID: 9703041-01A

Collected: 03/05/97 12:00:00

Sample ID: VALV-100

Matrix: LIQUID

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
FLASH POINT/SW846 1010 Flash Point	> 60	Deg Centigrade	20	1.0	03/10/97	WFLASH204
REACTIVITY/SW846 7-3 Sulfide Cyanide	NON-REACT NON-REACT	mg/Kg of Waste mg/Kg of Waste	500 250	1.0 1.0	03/11/97 03/11/97	W97114 W97114

Lab ID: 9703041-01B Sample ID: VALV-101

Collected: 03/05/97 12:00:00

Matrix: LIQUID

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID	
CORROS(NACE)/SW846 1110 Corrosivity (NACE)	ND	m m /yr	6.0	1.0	03/07/97	WNACE035	

Lab ID: 9703041-01C

Sample ID: VALV-102/103

Collected: 03/05/97 12:00:00

Matrix: LIQUID

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
TCLP SV/METHOD 1311/8270B 1,4-Dichlorobenzene 2-Methylphenol / O-Cresol 3/4-Methylphenol / M/P-Cresol Hexachloroethane Nitrobenzene Hexachlorobutadiene 2,4,6-Trichlorophenol 2,4-5-Trichlorophenol 2,4-Dinitrotoluene Hexachlorobenzene Pentachlorophenol	ND ND ND ND ND ND ND ND ND	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0010 0.0010 0.0010 0.0010 0.0010 0.0010 0.010 0.010 0.0010 0.0010 0.0010	290 290 290 290 290 290 290 290 290 290	03/08/97 03/08/97 03/08/97 03/08/97 03/08/97 03/08/97 03/08/97 03/08/97 03/08/97 03/08/97	TSVOA186 TSVOA186 TSVOA186 TSVOA186 TSVOA186 TSVOA186 TSVOA186 TSVOA186 TSVOA186
Pyridine TCLP SVOA XT/1311/3520	03/07/97	ing/L N/A	0.010	270	03/06/37	13 VOA100



Lab ID: 9703041-01D

Sample ID: VALV-104

Collected: 03/05/97 12:00:00

Matrix: LIQUID

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
pH/EPA 150.1 pH	8.7	pH Units	0.10	1.0	03/07/97	WPH479

Lab ID: 9703041-01E

Sample ID: VALV-105

Collected: 03/05/97 12:00:00

Matrix: LIQUID

TEST / METHOD	RESULT	UNITS	LIMIT	D_ F	DATE ANAL	BATCH_ID
% SOLIDS(TCLP XT)EPA 160.3	1.00	% (Percent)				
TCLP (ICP) DIG/1311/3005	03/09/97	N/A				
TCLP EXTRACTION/TCLP 1311 TCLP METALS/1311/SW8466010	03/06/97	. N/A				
Arsenic, As	ND	mg/L	0.40	1.0	03/10/97	M97180.97178
Barium, Ba	ND	mg/L	0.50	1.0	03/10/97	M97180.97178
Cadmum, Cd	ND	mg/L	0.0050	1.0	03/10/97	M97180,97178
Chromium, Cr	ND	mg/L	0.020	1.0	03/10/97	M97180,97178
Lead. Ph	ND	mg/L	0.050	1.0	03/10/97	M97180,97178
Mercury, Hg	ND	mg/L	0.0020	1.0	03/11/97	M97180,97178
Selenium, Se	ND	mg/L	0.050	1.0	03/10/97	M97180,97178
Silver, Ag	ND	mg/L	0.040	1.0	03/10/97	M97180,97178
TCLP(CVAA)Hg XT/SW846 7471	03/10/97	Ñ/A				

Lab ID: 9703041-01F

Sample ID: VALV-106/107 A/B

Collected: 03/05/97 12:00:00

Matrix: LIQUID

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
TCLP ZHE / TCLP 1311 ZHE/VOA/METHOD 1311/8240B	03/06/97	N/A				
Vinyl Chloride	ND	mg/L	0.0050	5.0	03/07/97	TVOA278
1.1-Dichloroethene	ND	mg/L	0.0010	5.0	03/07/97	TVOA278
Chloroform	ND	mg/L	0.0010	5.0	03/07/97	TVOA278
1.2-Dichloroethane	ND	mg/L	0.0010	5.0	03/07/97	TVOA278
2-Butanone (MEK)	ND	mg/L	0.0050	5.0	03/07/97	TVOA278
Carbon Tetrachloride	ND	mg/L	0.0010	5.0	03/07/97	TVOA278
Trichloroethene	ND	mg/L	0.0010	5.0	03/07/97	TVOA278
Benzene	ND	mg/L	0.0010	5.0	03/07/97	TVOA278
Tetrachloroethene	ND	mg/L	0.0010	5.0	03/07/97	TVOA278
Chlorobenzene	ND	mg/L	0.0010	5.0	03/07/97	TVOA278

Fred L. Shore, Ph.D.

VP of Laboratory Operations

WORKORDER COMMENTS

DATE

: 03/12/97

WORKORDER:

DEFINITIONS/DATA QUALIFIERS

The following are definitions, abbreviations, and data qualifiers which may have been utilized in your report:

- ND = Analyte "not detected" in analysis at the sample specific
 detection limit.
- D F = Sample "dilution factor"
- NT = Analyte "not tested" per client request.
 - B = Analyte was also detected in laboratory method QC blank.
 - E = Analyte concentration (result) is an estimated value or exceeds analysis calibration range.
- LIMIT = The minimum amount of the analyte that AAL can detect utilizing the specified analysis.

Please Note: Multiply the "Limit" value (AAL's Detection Limit) by Dilution Factor (D_F) to obtain the sample specific Detection Limit.

- *** Analytical results reported pertain only to the samples provided
- *** for analysis and may not represent actual field conditions.
- * * *
- *** This report is not to be reproduced except in full, without the
- *** written approval of Assaigai Analytical Inc.

REPORT COMMENTS

Chain of Custody Record

Project Manager / Contact

Client Confider LANGEN IN FATAL

3332 WEDGEWOOD EL PASO, TEXAS 79925 (915) 593-6000

7300 JEFFERSON, N.E. ALBUQUERQUE, NEW MEXICO 87109 (505) 345-8964

1910 N. BIG SPRING MIDLAND, TEXAS 79705 (915) \$70-1116 MELOUIADES ALANIS 6411 LOCAL UNO CIUDAD JUAREZ, CHIHUAHUA MEXICO 32320

Address	Address 1/ Pry 3376			<u>1</u>	Telephone No. (75) 375-1198	3 325-11	20	1	_		Ana	Analysis Required		
City / State / 2	City/State/Zip (1960) 1 State (1709)	x),17 E	6506	1	IX NO. CANE (CALE)	(40)		1		15.	1. 18.	12/1		
Project Name	Project Name / Number Trans	or U-10	ابا	Sa	Samplers: (Signature)	1 / (file.)	1 Jans	_	<u> </u>		17. J.K.2	/sc /s /	<u></u>	Remarks
Contract / Put	Contract / Purchase Order / Quote (CAME CONT. CONT. CONT.	Cat. 6.11	/100						No. of Co		1/2/			
AAL FRACTION NUMBER	Field Sample Number / Location	lon Date	te Time	Sample Type	ple Type / Size of Container		Preservation Temp. Chemical		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	//	, , ,	/ / /		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
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Signature	Jan Mann	1818167	Signature			Signature	2			1	-			
Primed St. Augh	11 KOM 5	Time	Printed	14	77.16	Printed	1 1 1	7			Time	Printed	1	

Stored (30 days max)

Stored over 30 days (additional fee)

| | Returned to customer

Disposed of (additional fee)

After analysis, samples are to be:

5- DAY

Digle And Ginalyse

75.7

Special instructions:

Method of Shipment: Shipment No.

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Company Reason

Company -

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Company (ENTALT ENU SUES

Reason Professor

Company Printed

2506 West Main Street, Farmington, NM 87401

March 15, 2000

Gregg Wurtz **Burlington Resources** 3535 E. 30th St. Farmington, NM 87402

Dear Gregg:

Enclosed please find the report for the sample received by our laboratory for analysis on March 14, 2000.

If you have any questions about the result of the analysis, please don't hesitate to call me at your convenience.

Thank you for choosing IML for your analytical needs!

Organics Lab Supervisor

Enclosure

xc: File

2506 West Main Street, Farmington, NM 87401

BURLINGTON RESOURCES

Case Narrative

On March 14, 2000, one sample was submitted to Inter-Mountain Laboratories -Farmington for analysis. The sample was received intact. Analysis for Ignitability (Flash Point), was performed on the sample as per the accompanying Chain of Custody # 63353.

Flash Point was performed on the sample by "Standard Test Methods for Flash Point By Pensky-Martens Closed Tester". Annual Book of ASTM Standards, D93-80.

It is the policy of this laboratory to employ, whenever possible, preparatory and anlytical methods which have been approved by regulatory agencies.

Quality control reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package. please feel free to call at your convenience.

Organics Lab Supervisor

2506 West Main Street, Farmington, NM 87401

Flash Point

Client:

Burlington Resources

Project:

Val Verde Plant

Sample ID:

VVP Plate/Frame Wash

Laboratory ID:

0300W01112

Sample Matrix:

Condition:

Liquid

Date Reported:

03/15/00

Date Sampled: Date Received:

03/14/00 03/14/00

Date Analyzed:

03/14/00

Intact

Analyte	Result	Units
Flash Point	>140	°F

References:

Annual Book of ASTM Standards, Method D93-80.

Reported by:

Reviewed by:

2506 West Main Street, Farmington, NM 87401

QUALITY CONTROL / QUALITY ASSURANCE

2506 West Main Street, Farmington, NM 87401

Quality Control / Quality Assurance

Known Analysis **FLASH POINT**

Client:

Burlington Resources

Project:

Val Verde Plant

Sample Matrix:

Liquid

Date Reported:

03/15/00

Date Analyzed:

03/14/00

Date Received:

03/14/00

Parameter	Found Result	Known Result
p-Xylene	76°F	77°F

Reference:

Annual Book of ASTM Standards, Method D93-80.

Comments:

Reviewed by_



CHAIN OF CUSTODY RECORD

Inter-Mountain Laboratories, Inc./ Columbia Columb	Relinquished by: (Signature)	Refinquished by: (Signature)	Monty	regulated by: (Clanatura)					3/13/00	VVP Plate/Frame Wash Strap 10:00 0300001112	R _E	for Val Verde Plant	ر پ	Burling to Resources	
untain Laborator	Date Time	Date Time	8	Date Time						Liquid	Matrix		tody Tape No.	Val Verde Plant	Project Location
ICS, INC/ SP 2506 West Main Street 11183 State Hwy. 30 Farmington, NM 87401 College Station, TX 77845 Telephone (505) 326-4737 Telephone (409) 776-8945	Received by laboratory: (Signature)			Received by: (Signature)					10	1 X	No. of Contair		\ \tag{\tau}		
633 53	3/14/00 9:51		<u> </u>	Date Time				326-4351	6-50	Report results		Tellains	Bonnatio	ETERS	

RESINEX

			**********	9323223			
MANUFACTURER'S NAME MANUFACTURER'S ADDRESS EMERGENCY PHONE NUMBER SUPPLIER IDENTIFIER SUPPLIER'S ADDRESS SUPPLIER EMERGENCY PHONE PRODUCT IDENTIFIER	Sierra Sierra BOX 149 2000 Hi NUMBER. 520 425	2 ghway 88, Globe, - 0224	Arizona 855	01			
PRODUCT USE			•	·			
Hazardous Ingredients of Materials							
			28222568 2 286	E855233322			
Chemical Identity	Concentration	CAS#/NA#/UN#	LD(50)	LC (50)			
Sodium hydroxide	10-30	1310-73~2	500=g/Kg (rat oral)				
Monoisopropanolamine	(rat oral) availab						
Sodium laureth sulfate 1-5 9004-82-4 12 00 mg/Kg Not (rat oral) availab							
	Physical Data	For Product					
ODOUR THRESHOLD	Light a odour Not ava		ess liquid wi	ith a mild			
SPECIFIC GRAVITY VAPOUR PRESSURE VAPOUR DENSITY (air=1) EVAPORATION RATE BOILING POINT FREEZING POINT pH	Not ava	ailable ailable ailable ailable		į.			
DENSITY (g/ml)	1.21 Not ave						

RESINEX

EFFECTS TERATOGENICITY, MUTAGENICITY TOXICOLOGICALLY SYNERGISTIC PRODUCTS	None of the ingredients are listed as such None of the ingredients are listed as such. Not available
Prev	entive Measures
PERSONAL PROTECTIVE EQUIPMENT	Use chemical goggles and wear rubber gloves when handling this product to prevent eye and skin contact.
	• · · · · · · · · · · · · · · · · · · ·
WASTE DISPOSAL	Dispose of waste material in accordance with all local environmental regulations
HANDLING PROCEDURES AND	Use recommended protective equipment when handling this material. Contaminated clothing must be laundered before wearing
SPECIAL SHIPPING INFORMATION	Keep container closed and keep from freezing NA1760 Class 8 Packing Group II Compounds, cleaning liquid (Sodium hydroxide)
Fir	est Aid Measures
SPECIFIC FIRST AID PROCEDURES	In case of skin contact, flush promptly with abundant water. In case of ingestion, do not induce vowiting. Call a physician. Flush eyes with abundant water and consult a physician
Preparation Date	of Material Safety Data Sheet
PREPARED BY	

REACT 102

PRODUCT IDENTIFICATION

SUPPLIER'S ADDRESS: Box 1492, 2000 Highway 88, Globe, AR 85501 SUPPLIER'S EMERGENCY PHONE NUMBER: (520) 425-0224

PRODUCT USE:ACIDIC CLEANER

HAZARDOUS INGREDIENTS

600 mg/Kg (Rat Oral)	Not available
430 mg/Kg (Rat Oral) 000 mg/Kg (Rat Oral)	Not available Not available

PHYSICAL DATA

PHYSICAL STATE:	Liquid
ODOUR AND APPEARANCE:	Colourless to pale yellow liquid with a mild odour.
ОВОГР ТИРЕЗНОТВ:	
BOILING FOINT:	
VAPOUR PRESSURE:	
VAPOUR DENSITY (AIR=1):	
SPECIFIC GRAVITY:	ì. 5
EVAPORATION RATE:	Not available
FREEZING POINT:	Not available
pH:	1-2 depending on dilution
COEFFICIENT OF OIL/WATER DISTRIBUTION:	Not available

FIRE AND EXPLOSION HAZARD

CONDITIONS OF FLAMMABILITY:	Not applicable
PLASHPOINT:	Not applicable
MEANS OF EXTENCTION:	
HAZARDOUS COMBUSTION PRODUCTS:	
EXPLOSION HAZARDS:	
UPPER FLAMMABLE LIMIT:	
LOWER FLAMMABLE LIMIT:	
AUTO-IGNITION TEMPERATURE:	
SENSITIVITY TO STATIC DISCHARGE:	Not applicable

REACT 102

REACTIVITY DATA							
STABILITY:	Stable under normal conditions of storage and use.						
CONDITIONS OF REACTIVITY:							
INCOMPATIBLE MATERIALS:							
SILCOINT WIND THE PROPERTY OF BUILDING STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET,	Tebus.						
HAZARDOUS DECOMPOSITION PRODUCTS:							
BALARDOOS DECORIE OSTITUR FRODUCTS: mainiminiminimi	decomposition.						
TOXICOLOGICA	L PROPERTIES						
ROUTES OF ENTRY	· •						
SKIN CONTACT:	Skin transition and chemical burns on prolonged skin contact						
SKIN ABSORPTION:	Certain components may be absorbed dirrought the skin. contributing to overall exposure.						
EVE:	Severe irritation and chemical burns can occur.						
INHALATION:	Mists generated from the product may be irritating to the nose, throat, and respiratory tract.						
INGESTION:	May cause corrosion of the mouth, throat, and G.I. tract.						
ACUTE OVER EXPOSURE:							
	may cause irritation of the respiratory track						
CHRONIC OVER EXPOSURE:	Dermatitis may occur with repeated exposura.						
EXPOSURE LIMITS:	Phosphoric acid: ACGIH TWA = 1 mg/m3						
	Dipropylene glycol methyl other: ACGIH TWA = 100 ppm (skin)						
IRRITANCY:							
SENSITIZATION:	Not available						
CARCINOGENICITY AND REPRODUCTIVE EFFECTS:							
TERATOGENICITY AND MUTAGENICITY:							
TOXICOI OGICALLY SYNERGISTIC PRODUCTS:	Not available						
PREVENTATION	VE MEASURES						
PERSONAL PROTECTIVE EQUIPMENT:	this penduct to present ever and skip contact.						
ENGINEERING CONTROLS	Should not be required.						
LEAK AND SPILL PROCEDURES:	Pick up small spills with absorbent material and neutralize						
#	residue with baking sods, and flush with water. Dispose of						
•	contaminated absorbent in accordance with all local environmental regulations.						
WASTE DISPOSALI-							
•	cavironnental regulations.						
HANDLING PROCEDURES AND EQUIPMENT	Use recommended protective equipment when handling this						
<u>-</u>	material. Contaminated clothing must be laundered before						
	wearing.						
STORAGE REQUIREMENTS:	Keep container closed and keep from freezing						
SPECIAL SHIPPING INFORMATION:	PIN UN 1805						

PAGE 2 of 3

REACT 102

Phosphoric acid solution Class 8(9,2) Packing Group III

FIRST AID MEASURES

SPECIFIC FIRST AID MEASURES:

In case of skin contact. flush promptly with abundant water. In case of ingestion, do not induce vomiting. Call a physician. On eye contact flush with abundant water and consult a physician.

PREPARATION INFORMATION

PREPARED BY: Mark Chaisson Chemist

PHONE NUMBER:(403) 998-3771
DATE PREPARED:May 12, 1998

DISCLAIMER

The information contained herein has been obtained from sources believed to be reliable. Sierra Chemicals L.C. provides no warranties express or templied and assumes no responsibility for the accuracy or completeness of the data provided.

03/08/00 08:44 [210234] (425) 889-4100

004 02/16/00 SULFURIC ACID 7 TO 100%

SULFURIC ACID, 77 TO 100% PRODUCT NAME:

MSDS #: DQ4950CR

EFFECTIVE DATE: 8/11/99

SUPERSEEDES: 7/10/98

ISSUED BY: 004690

01 CHEMICAL PRODUCT/COMPANY IDENTIFICATION MATERIAL IDENTIFICATION

CAS NUMBER : 7664-93-9 FORMULA : H2SO4 MOLECULAR WEIGHT : 98.08

CAS NAME : SULFURIC ACID GRADE : 77 TO 100%

TRADENAMES AND SYNONYMS DIHYDROGEN SULFATE OIL OF VITRIOL SULPHURIC ACID VITRIOL BROWN OIL

02 COMPOSITION/INFORMATION ON INGREDIENTS COMPONENTS

MATERIAL SULFURIC ACID	CAS NUMBER 7664-93-9	%
60 DEG TECHNICAL	, 66.2 55 5	77.7
66 DEG TECHNICAL		93.2
1.835 ELECTROLYTE 98% TECHNICAL		93.2 98
99% TECHNICAL		99
100% TECHNICAL		100
WATER	7732-18-5	0-22

03 HAZARDS IDENTIFICATION POTENTIAL HEALTH EFFECTS

INHALATION

EXPOSURE TO MISTS MAY CAUSE: IRRITATION OF THE NOSE AND THROAT WITH SNEEZING, SORE THROAT OR RUNNY NOSE. NON-SPECIFIC EFFECTS SUCH AS HEADACHE, NAUSEA AND WEAKNESS. GROSS OVEREXPOSURE MAY CAUSE: IRRITATION OF NOSE, THROAT, AND LUNGS WITH COUGH, DIFFICULTY BREATHING OR SHORTNESS OF BREATH. PULMONARY EDEMA (BODY FLUID IN THE LUNGS) WITH COUGH, WHEEZING, ABNORMAL LUNG SOUNDS, POSSIBLY PROGRESSING TO SEVERE SHORTNESS OF BREATH AND BLUISH DISCOLORATION OF THE SKIN; SYMPTOMS MAY BE DELAYED. REPEATED AND/OR PROLONGED EXPOSURE TO MISTS MAY CAUSE: CORROSION OF TEETH.

SKIN CONTACT

CONTACT WITH LIQUID MAY CAUSE: SKIN CORROSION, BURNS OR ULCERS. CONTACT WITH A 1 % SOLUTION MAY CAUSE -- SLIGHT IRRITATION WITH ITCHING, REDNESS OR SWELLING. REPEATED AND/OR PROLONGED EXPOSURE TO MISTS MAY CAUSE: IRRITATION WITH ITCHING, BURNING, REDNESS, SWELLING OR RASH.

EYE CONTACT

CONTACT WITH LIQUID MAY CAUSE: EYE CORROSION OR ULCERATION -BLINDNESS MAY RESULT. REPEATED AND/OR PROLONGED EXPOSURE TO MISTS MAY CAUSE: EYE IRRITATION WITH TEARING, PAIN OR BLURRED VISION.

INGESTION

IMMEDIATE EFFECTS OF OVEREXPOSURE MAY INCLUDE: BURNS OF THE MOUTH, THROAT, ESOPHAGUS AND STOMACH, WITH SEVERE PAIN, BLEEDING, VOMITING, DIARRHEA AND COLLAPSE OF BLOOD PRESSURE - DAMAGE MAY APPEAR DAYS AFTER EXPOSURE.

ADDITIONAL HEALTH EFFECTS

THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) CLASSIFIED "STRONG INORGANIC ACID MISTS CONTAINING SULFURIC ACID" AS A CATEGORY 1 CARCINOGEN, A SUBSTANCE THAT IS "CARCINOGENIC TO HUMANS". THIS CLASSIFICATION IS FOR STRONG INORGANIC ACID MISTS ONLY AND DOES NOT APPLY TO SULFURIC ACID OR SULFURIC ACID SOLUTIONS. THE BASIS FOR THE IARC CLASSIFICATION RESTS ON SEVERAL EPIDEMIOLOGY STUDIES WHICH HAVE SEVERAL DEFICIENCIES. THESE STUDIES DID NOT ACCOUNT FOR EXPOSURE TO OTHER SUBSTANCES, SOME KNOWN TO BE ANIMAL OR POTENTIAL HUMAN CARCINOGENS, SOCIAL INFLUENCES (SMOKING, ETC.) AND INCLUDED SMALL NUMBERS OF SUBJECTS. BASED ON THE OVERALL WEIGHT OF EVIDENCE FROM ALL HUMAN AND CHRONIC ANIMAL STUDIES, NO DEFINITIVE CAUSAL RELATIONSHIP BETWEEN SULFURIC ACID MIST EXPOSURE AND RESPIRATORY TRACT TUMORS HAS BEEN SHOWN.

INCREASED SUSCEPTIBILITY TO THE EFFECTS OF THIS MATERIAL MAY BE OBSERVED IN PERSONS WITH PRE-EXISTING DISEASE OF THE: LUNGS.

CARCINOGENICITY INFORMATION

NONE OF THE COMPONENTS PRESENT IN THIS MATERIAL AT CONCENTRATIONS EQUAL TO OR GREATER THAN 0.1% ARE LISTED BY IARC, NTP, OSHA OR ACGIH AS A CARCINOGEN.

04 FIRST AID MEASURES FIRST AID

INHALATION

IF INHALED, IMMEDIATELY REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. PLEASE NOTE: SYMPTOMS MAY BE DELAYED; PROMPT MEDICAL ATTENTION MAY BE REQUIRED. CALL A PHYSICIAN.

SKIN CONTACT

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 CONTAMINATED CLOTHING BEFORE REUSE.

WHILE THE PATIENT IS BEING TRANSPORTED TO A MEDICAL FACILITY, CONTINUE THE APPLICATION OF COLD, WET COMPRESSES. IF MEDICAL TREATMENT MUST BE DELAYED, REPEAT THE FLUSHING WITH COLD WATER OR SOAK THE AFFECTED AREA WITH COLD WATER TO HELP REMOVE THE LAST TRACES OF SULFURIC ACID. CREAMS OR OINTMENTS SHOULD NOT BE APPLIED BEFORE OR DURING THE WASHING PHASE OF TREATMENT.

EYE CONTACT

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN.

. InchariON

IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE LARGE QUANTITY OF WATER. CALL A PHYSICIAN IMMEDIATELY. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

NOTES TO PHYSICIANS

CONTINUED WASHING OF THE AFFECTED AREA WITH COLD OR ICED WATER WILL BE HELPFUL IN REMOVING THE LAST TRACES OF SULFURIC ACID. CREAMS OR OINTMENTS SHOULD NOT BE APPLIED BEFORE OR DURING THE WASHING PHASE OF THE TREATMENT.

05 FIRE FIGHTING MEASURES FLAMMABLE PROPERTIES

WILL NOT BURN.

FIRE AND EXPLOSION HAZARDS:

REACTS WITH MOST METALS, ESPECIALLY WHEN DILUTE, TO GIVE FLAMMABLE, POTENTIALLY EXPLOSIVE HYDROGEN GAS. FOLLOW APPROPRIATE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODES.

EXTINGUISHING MEDIA

USE MEDIA APPROPRIATE FOR SURROUNDING MATERIAL.

USE WATER SPRAY TO COOL CONTAINERS EXPOSED TO FIRE; DO NOT GET WATER INSIDE CONTAINERS.

FIRE FIGHTING INSTRUCTIONS

EVACUATE PERSONNEL TO A SAFE AREA. KEEP PERSONNEL REMOVED AND UPWIND OF FIRE. GENERATES HEAT UPON ADDITION OF WATER, WITH POSSIBLE SPATTERING. WEAR FULL PROTECTIVE CLOTHING. RUNOFF FROM FIRE CONTROL MAY CAUSE POLLUTION. NEUTRALIZE RUN-OFF WITH LIME, SODA ASH, ETC., TO PREVENT CORROSION OF METALS AND FORMATION OF HYDROGEN GAS. WEAR SELF-CONTAINED BREATHING APPARATUS IF FUMES OR MISTS ARE PRESENT.

06 ACCIDENTAL RELEASE MEASURES SAFEGUARDS (PERSONNEL)

NOTE: REVIEW FIRE FIGHTING MEASURES AND HANDLING (PERSONNEL) SECTIONS BEFORE PROCEEDING WITH CLEAN-UP. USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT DURING CLEAN-UP.

ACCIDENTAL RELEASE MEASURES

STOP FLOW IF POSSIBLE. REVIEW "FIRE AND EXPLOSION HAZARDS" AND "SAFETY PRECAUTIONS" BEFORE PROCEEDING WITH CLEAN UP. USE APPROPRIATE PROTECTIVE EQUIPMENT DURING CLEAN UP. SOAK UP SMALL SPILLS WITH DRY SAND, CLAY OR DIATOMACEOUS EARTH. DIKE LARGE SPILLS, AND CAUTIOUSLY DILUTE AND NEUTRALIZE WITH LIME OR SODA ASH, AND TRANSFER TO WASTE WATER TREATMENT SYSTEM. PREVENT LIQUID FROM ENTERING SEWERS, WATERWAYS, OR LOW AREAS.

IF THIS PRODUCT IS SPILLED AND NOT RECOVERED, OR IS RECOVERED AS A WASTE FOR TREATMENT OR DISPOSAL, THE REPORTABLE QUANTITY IS 1,000 LBS. (BASED ON THE SULFURIC ACID CONTENT OF THE SOLUTION SPILLED). COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS ON REPORTING RELEASES.

VENDORS EMERGENCY EXI JRE LIMITS (EEL) ARE ESTABLI. 2D TO FACILITATE SITE OR PLANT EMERGENCY EVACUATION AND SPECIFY AIRBORNE CONCENTRATIONS OF BRIEF DURATIONS WHICH SHOULD NOT RESULT IN PERMANENT ADVERSE HEALTH EFFECTS OR INTERFERE WITH ESCAPE EEL'S ARE EXPRESSED AS AIRBORNE CONCENTRATION MULTIPLIED BY TIME (CXT) FOR UP TO A MAXIMUM OF 60 MINUTES AND AS A CEILING AIRBORNE CONCENTRATION. THESE LIMITS ARE USED IN CONJUNCTION WITH ENGINEERING CONTROLS/MONITORING AND AS AN AID IN PLANNING FOR EPISODIC RELEASES AND SPILLS.

THE VENDORS EMERGENCY EXPOSURE LIMIT (EEL) FOR SULFURIC ACID IS 10 MG/M3 FOR 15 TO 60 MINUTES AND 20 MG/M3 FOR UP TO 15 MINUTES WITH A NOT-TO-EXCEED CEILING OF 20 MG/M3.

07 HANDLING AND STORAGE HANDLING (PERSONNEL)

DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. AVOID BREATHING VAPORS OR MIST. WASH THOROUGHLY AFTER HANDLING.

KEEP CONTAINERS CLOSED. DO NOT ADD WATER TO CONTENTS WHILE IN CONTAINER BECAUSE OF VIOLENT REACTION.

STORAGE

KEEP OUT OF SUN AND AWAY FROM HEAT, SPARKS, AND FLAME. KEEP CONTAINER TIGHTLY CLOSED AND (DRUM) CLOSURE UP TO PREVENT LEAKAGE. LOOSEN CLOSURE CAREFULLY. RELIEVE INTERNAL PRISTURE WHEN RECEIVED AND AT LEAST WEEKLY THEREAFTER. DO NOT USE PRESSURE TO EMPTY. BE SURE CLOSURE IS SECURELY FASTENED BEFORE MOVING CONTAINER. DO NOT WASH OUT CONTAINER OR USE IT FOR OTHER PURPOSES; REPLACE CLOSURE AFTER EACH WITHDRAWAL AND RETURN IT WITH EMPTY CONTAINER.

08 EXPOSURE CONTROLS/PERSONAL PROTECTION ENGINEERING CONTROLS

GOOD GENERAL VENTILATION SHOULD BE PROVIDED TO KEEP VAPOR AND MIST CONCENTRATIONS BELOW THE EXPOSURE LIMITS.

PERSONAL PROTECTIVE EQUIPMENT

HAVE AVAILABLE AND WEAR AS APPROPRIATE FOR EXPOSURE CONDITIONS WHEN HANDLING CONTAINERS OR OPERATING EQUIPMENT CONTAINING SULFURIC ACID: CHEMICAL SPLASH GOGGLES; FULL-LENGTH FACE SHIELD/CHEMICAL SPLASH GOGGLES COMBINATION; ACID-PROOF GAUNTLET GLOVES, APRON, AND BOOTS; LONG SLEEVE WOOL, ACRYLIC, OR POLYESTER CLOTHING; ACID PROOF SUIT AND HOOD; AND APPROPRIATE NIOSH RESPIRATORY PROTECTION. IN CASE OF EMERGENCY OR WHERE THERE IS A STRONG POSSIBILITY OF CONSIDERABLE EXPOSURE, WEAR A COMPLETE ACID SUIT WITH HOOD, BOOTS, AND GLOVES. IF ACID VAPOR OR MIST ARE PRESENT AND EXPOSURE LIMITS MAY BE EXCEEDED, WEAR APPROPRIATE NIOSH RESPIRATORY PROTECTION.

EXPOSURE GUIDELINES

EXPOSURE LIMITS

SULFURIC ACID, 77 TO 100%

PEL (OSHA)

: 1 MG/M3, 8 HR. TWA

TLV (ACGIH)

: 1 MG/M3, 8 HR. TWA, A2

STEL 3 MG/M3, A2

A2 (SULFURIC ACID CONTAINED IN STRONG

INORGANIC ACID MISTS)

AEL (VENDORS)

: 1 MG/M3, 8 & 12 HR. TWA 3 MG/M3, 15 MINUTE TWA

08:44 6 of 9

AEL IS VENDORS ACCEPTABLE EXPOSURE LIMIT. WHERE GOVERNMENTALLY IMPOSED OCCUPATIONAL EXPOSURE LIMITS WHICH ARE LOWER THAN THE AEL ARE IN EFFECT, SUCH LIMITS SHALL TAKE PRECEDENCE.

09 PHYSICAL AND CHEMICAL PROPERTIES PHYSICAL DATA

BOILING POINT : 193-327 C (379-621 F) @ 760 MM HG

VAFOR PRESSURE : <0.3 MM HG @ 25 C (77 F)

<0.6 MM HG @ 38 C (100 F)

VAPOR DENSITY : 3.4

MELTING POINT : -35 TO 11 C (-31 TO 52 F)

EVAPORATION RATE
SOLUBILITY IN WATER : <1 (BUTYL ACETATE=1.0)

: 100 WT%

: <1

ODOR : ODORLESS.

FORM : OILY; CLEAR TO TURBID LIQUID

COLOR : COLORLESS TO LIGHT GRAY

GRADE	BOILING DEG C	PT. DEG F	MELTI DEG C	NG PT. DEG F	SPECIFIC GRAVITY
60 DEG TECHNICAL	193	380	-12	10	1.706
66 DEG TECHNICAL	279	535	-35	-31	1.835
1.835 ELECTROLYTE	279	535	-35	-31	1.835
98% TECHNICAL	327	621	-2	29	1.844
99% TECHNICAL	310	590	4	40	1.842
100% TECHNICAL	274	526	11	51	1.839

10 STABILITY AND REACTIVITY CHEMICAL STABILITY

STABLE, BUT REACTS VIOLENTLY WITH WATER AND ORGANIC MATERIALS WITH EVOLUTION OF HEAT.

INCOMPATIBILITY WITH OTHER MATERIALS

VIGOROUS REACTIONS WITH WATER; ALKALINE SOLUTIONS; METALS, METAL POWDER; CARBIDES; CHLORATES; FUMINATES; NITRATES; PICRATES; STRONG OXIDIZING, REDUCING, OR COMBUSTIBLE ORGANIC MATERIALS. HAZARDOUS GASES ARE EVOLVED ON CONTACT WITH CHEMICALS SUCH AS CYANIDES, SULFIDES, AND CARBIDES.

DECOMPOSITION

RELEASES SULFUR DIOXIDE AT EXTREMELY HIGH TEMPERATURES.

POLYMERIZATION

POLYMERIZATION WILL NOT OCCUR.

11 TOXICOLOGICAL INFORMATION ANIMAL DATA

EYE:

ANIMAL TESTING INDICATES THIS MATERIAL IS CORROSIVE TO THE EYE, WHEN TESTED UNDILUTED. ANIMAL TESTING INDICATES THIS MATERIAL IS [210234] (425) 889-4100

03/08/00

08:44

A MODERATE EYE IRRITI WHEN TESTED AS 10 % SOLUT1 .

SKIN:

THE CONCENTRATED COMPOUND IS CORROSIVE. ANIMAL TESTING INDICATES THIS MATERIAL IS A SLIGHT SKIN IRRITANT, WHEN TESTED AS 10 % SOLUTION.

INGESTION:

LD50, RAT: 2,140 MG/KG.

INHALATION:

8 HOUR, LC50, GUINEA PIGS: 30 MG/M3. SINGLE AND REPEATED EXPOSURE CAUSED: IRRITATION OF THE RESPIRATORY TRACT. CORROSION OF THE RESPIRATORY TRACT. LUNG DAMAGE. LABORED BREATHING. ALTERED RESPIRATORY RATE. PULMONARY EDEMA. REPEATED EXPOSURE CAUSED: ALTERED RED BLOOD CELL COUNT.

CARCINOGENIC, DEVELOPMENTAL, REPRODUCTIVE, MUTAGENIC EFFECTS:

NO ADEOUATE ANIMAL DATA ARE AVAILABLE TO DEFINE THE CARCINOGENIC POTENTIAL OF THIS MATERIAL. LIMITED STUDIES DO NOT SUGGEST EFFECTS. IN ANIMAL TESTING THIS MATERIAL HAS NOT CAUSED DEVELOPMENTAL TOXICITY. NO ANIMAL DATA ARE AVAILABLE TO DEFINE THE FOLLOWING EFFECTS OF THIS MATERIAL: REPRODUCTIVE TOXICITY. THIS MATERIAL HAS NOT PRODUCED GENETIC DAMAGE IN BACTERIAL CULTURES. IT HAS NOT BEEN TESTED FOR GENETIC TOXICITY IN MAMMALIAN CELL CULTURES OR IN ANIMALS.

12 ECOLOGICAL INFORMATION ECOTOXICOLOGICAL INFORMATION

AQUATIC TOXICITY:

SLIGHTLY TO MODERATELY TOXIC.

96 HOUR LC50 - BLUEGILL SUNFISH: 10.5 PPM.

48 HOUR TLM - FLOUNDER: 100-300 PPM

13 DISPOSAL CONSIDERATIONS WASTE DISPOSAL

CLEANED-UP MATERIAL MAY BE AN RCRA HAZARDOUS WASTE ON DISPOSAL DUE TO THE CORROSIVITY CHARACTERISTIC. DO NOT FLUSH TO SURFACE WATER OR SANITARY SEWER SYSTEM. COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS. IF APPROVED, NEUTRALIZE AND TRANSFER TO WASTE TREATMENT SYSTEM.

14 TRANSPORTATION INFORMATION SHIPPING INFORMATION

DOT/IMO

PROPER SHIPPING NAME : SULFURIC ACID

HAZARD CLASS

: 8

UN NO.

: 1830

DOT/IMO LABEL

: CORROSIVE

PACKING GROUP

: II

REPORTABLE QUANTITY : 1000 LB (454 KG)

SHIPPING CONTAINERS

TANK CARS. TANK TRUCKS.

BARGE.

[210234] (425) 889-4100 03/08/00

08:44 8 of 9

SHIPPING INFORMATION - (\DA

PROPER SHIPPING NAME

SULPHURIC ACID

TDG CLASS

CLASS 8 (9.2)

TDG PACKING GROUP

15 REGULATORY INFORMATION U.S. FEDERAL REGULATIONS

TSCA INVENTORY STATUS : REPORTED/INCLUDED.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

ACUTE : YES CHRONIC : YES FIRE : NO REACTIVITY : YES PRESSURE : NO

HAZARDOUS CHEMICAL LISTS

SARA EXTREMELY HAZARDOUS SUBSTANCE: YES CERCLA HAZARDOUS SUBSTANCE : YES SARA TOXIC CHEMICAL : NO

16 OTHER INFORMATION NFPA, NPCA-HMIS

NFPA RATING

: 3 HEALTH FLAMMABILITY REACTIVITY

WATER REACTIVE.

NPCA-HMIS RATING

HEALTH : 3 FLAMMABILITY : 0 REACTIVITY

PERSONAL PROTECTION RATING TO BE SUPPLIED BY USER DEPENDING ON USE CONDITIONS.

ADDITIONAL INFORMATION

BECAUSE OF ITS CORROSIVE CHARACTERISTICS AND INHERENT HAZARDS, SULFURIC ACID SHOULD NOT BE USED IN SEWER OR DRAIN CLEANERS OR ANY SIMILAR APPLICATION; REGARDLESS OF WHETHER THEY ARE FORMULATED FOR RESIDENTIAL, COMMERCIAL OR INDUSTRIAL USE. VENDOR WILL NOT KNOWINGLY SELL SULFURIC ACID TO INDIVIDUALS OR COMPANIES WHO REPACKAGE THE PRODUCT FOR SALE AS SEWER OR DRAIN CLEANERS, OR ANY OTHER SIMILAR USE.

					~		NOTICE							
** V	AN WA	TERS	&	ROGER	S INC.	("VW&R")	EXPRES	SLY DI	SCLAIMS	ALL	EXPRES	ss o	R	
IMPL	IED W	IARRAN	VT I	ES OF	MERCH	ANTABILIT	Y AND F	ITNESS	FOR A	PART	ICULAR	PUR	POSE,	
WITH	REST	ध्याताम् ग	O	THE P	RODUCT	OR INFOR	MATION	PROVID	ED HERE	IN,	AND SHA	ALL	UNDER	

NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR-CONSEQUENTIAL DAMAGES. **

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE MANUFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMATION IS BELIEVED TO BE ACCURATE, VW&R MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR SUFFICIENCY. CONDITIONS OF USE ARE BEYOND VW&RS CONTROL AND THEREFORE USERS ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY ASSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICATION OR USE OF, OR RELIANCE UPON , INFORMATION CONTAINED HEREIN. THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER PROCESS.

END OF MSDS ***

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road. Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-138 Revised March 17, 1999

Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

REQUEST TORTH TO THE CELL TO	~
1. RCRA Exempt: Non-Exempt: X	4. Generator HAllibuston
Verbal Approval Received: Yes No	5. Originating Site MAIN YARD
2. Management Facility Destination KEY DISPOSAL	6. Transporter Key
3. Address of Facility Operator #345 CR 3500 Aztec NM	8. State NM
7. Location of Material (Street Address or ULSTR) FALMINGTON, NM 67402	
9. <u>Circle One</u> :	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. B) All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste class approved	cessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transporters	ort.
BRIEF DESCRIPTION OF MATERIAL:	
JUN 2001 RECEIVED OIL CON. DIV DIET. 3	THE BUILDING
*	rator at the end of the hau!cy
SIGNATURE Waste Management Facility Authorized Agent TITLE: MOR	DATE 6-1-01
TYPE OR PRINT NAME: MICHAEL TALOUICH TELE	PHONE NO. 50.5-334-6186
(This was a Control of the Control o	
(This space for State Use) APPROVED BY: TITLE: 600	5 is T DATE: 6/4/0/
APPROVED BY: Martine J. Why. TITLE: Environm	DATE: 6/4/0) until 6065L DATE: 6-8-01

3/15/00

Hobbs, NM 88240

<u>District II</u> - (505) 748-1283
811 S. First
Artesia, NM 88240 ;
<u>District III</u> - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410

<u>District IV</u> - (505) 827-7131
2040 S. Pacheco

1. Waste Generator Name and Address:

Santa Fe, NM 87505

Energy Minerals and Natural Resources Department Oil Conservation Division

2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131 Submit to OCD Permitted Surface Waste Management Facility

2.Permit Number (if waste generated at an OCD

GENERATOR CERTIFICATE OF WASTE STATUS

HALLIBURTON ENERLY SERVICES 4109 E. MAIN ST ENERLY CONTROL	permitted facility)
3. Description of Waste and Generating Process:	Logation of Waste (Street address &/or ULSTR):
Fear Renow Fivings	HAMBOETON ENERLY SERVICES 4109E. MAIN ST. FARMINGTON, NM 87402
5. Destination (Surface Waste Management Facility): KEY ENERAL SPACES 345 County Pd 3500 Farminator, Nm 87402 7. Estimated Volume 143 cy/bbls	6. Transporter: KY ENERGY SERVICES 5651 US Huy. 64 Farmington, NM 87402
For NON-EXEMPT waste only, the following documentation is a	uttached (check appropriate items):
MSDS Information	RCRA Hazardous Waste Analysis (With Chain of Custody).
Other (Description)	
Generator certifies that, according to the Resource Conservatio Agency's July 1988 regulatory determination, the above describ	
EXEMPT oilfield waste.	NON-EXEMPT oilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation)
In addition, Generator certifies that nothing has been added to waste does not contain Naturally Occurring Radioactive Materia Subpart 1403.	
Generator Signature: All Corle	Date: 5-18-01
Print Name: ALLEN J. Rodrigue	
Title: Shared Services Facilitie	



SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:	

Halliburton Energy Services

92132-001

Sample ID:

Junk Water Tank

Lab ID#:

19788

05-02-01

Sample Matrix:

Date Sampled: 04-25-01 04-25-01

Preservative:

Water Cool

Date Received:

Condition:

Cool and Intact

Date Analyzed: Chain of Custody:

Date Reported:

Project #:

04-30-01 8625

Parameter

Result

IGNITABILITY:

Negative

CORROSIVITY:

Negative

pH = 2.26

REACTIVITY:

Negative

RCRA Hazardous Waste Criteria

Parameter

Hazardous Waste Criterion

IGNITABILITY:

Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21.

(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

CORROSIVITY:

Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22.

(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)

REACTIVITY:

Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. (i.e. Violent reaction with water, strong base, strong acid, or the generation

of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference:

40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments:

4109 E. Main St., Farmington, New Mexico.

Analyst



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Junk Water Tank	Date Reported:	05-03-01
Laboratory Number:	19788	Date Sampled:	04-25-01
Chain of Custody:	8625	Date Received:	04-25-01
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	05-02-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

	Concentration	Detection Limit	Regulatory Limits
Parameter	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	0.749	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	0.0015	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery	
	Fluorobenzene	100%	
	1,4-difluorobenzene	100%	
	4-bromochlorobenzene	100%	

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

4109 E. Main St.

Allen C. Celin

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EPA METHOD 8040 PHENOLS

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Junk Water Tank	Date Reported:	05-03-01
Laboratory Number:	19788	Date Sampled:	04-25-01
Chain of Custody:	8625	Date Received:	04-25-01
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	05-02 - 01
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)	
o-Cresol	0.296	0.020	200	
p,m-Cresol	0.720	0.040	200	
2,4,6-Trichlorophenol	0.073	0.020	2.0	
2,4,5-Trichlorophenol	0.098	0.020	400	
Pentachlorophenol	0.278	0.020	100 ⁻	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	urrogate Recoveries: Parameter	
	2-Fluorophenol	98%
	2,4,6-Tribromophenol	99%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

4109 E. Main St.

Analyst

Ahuster m Wasters
Review



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Junk Water Tank	Date Reported:	05-03-01
Laboratory Number:	19788	Date Sampled:	04-25-01
Chain of Custody:	8625	Date Received:	04-25-01
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	05-02-01
Condition:	Cool and Intact	Analysis Requested:	TCLP

		Det.	Regulatory
•	Concentration	Limit	Limit
Parameter	(mg/L)	(mg/L)	(mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	0.077	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	0.088	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
	2-fluorobiphenyl	101%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992. Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

4109 E. Main St.

Der C. Celer

Christia m Walles
Review



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS

Client: Sample ID: Laboratory Number: Chain of Custody: Sample Matrix:	Halliburton Energy Services Junk Water Tank 19788 8625 Water	Project #: Date Reported: Date Sampled: Date Received: Date Analyzed:	92132-001 05-02-01 04-25-01 04-25-01 05-02-01
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Analysis Needed:	TCLP metals
Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.006	0.001	5.0
Barium	0.035	0.001	100
Cadmium	0.005 0.331	0.001 0.001	1.0 5.0
Chromium Lead	0.339	0.001	5.0 5.0
Mercury	ND	0.001	0.2
Selenium	0.001	0.001	1.0
Silver	ND	0.001	5.0

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA,

December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission

SW-846, USEPA. December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C

section 261.24, August 24, 1998.

Comments:

4109 E. Main St.

Analyst

Providence Martine Marten



QUALITY ASSURANCE / QUALITY CONTROL DOCUMENTATION



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	05-03-01
Laboratory Number:	05-02-TCV	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	05-02-01
Condition:	N/A	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limits (mg/L)
November Obstantials	AID	0.0004	0.0
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	ND	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	100%
	1,4-difluorobenzene	100%
	4-bromochlorobenzene	100%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 19788.

Analyst Celur

(hristin m Walters
Review



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	05-03-01
Laboratory Number:	19788	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP	Date Analyzed:	05-02-01
Condition:	N/A	Date Extracted:	N/A

a a vertical de la companya de la co	A ALAM	Duplicate		. !
	Sample	Sample	Detection	•
	Result	Result	Limits	Percent
Parameter	(mg/L)	(mg/L)	(mg/L)	Difference
Vinyl Chloride	ND	ND	0.0001	0.0%
1,1-Dichloroethene	ND	ND	0.0001	0.0%
2-Butanone (MEK)	0.749	0.750	0.0001	0.2%
Chloroform	ND	ND	0.0001	0.0%
Carbon Tetrachloride	ND	ND	0.0001	0.0%
Benzene	0.0015	0.0015	0.0001	0.0%
1,2-Dichloroethane	ND	ND	0.0001	0.0%
Trichloroethene	ND	ND	0.0003	0.0%
Tetrachloroethene	ND -	ND	0.0005	0.0%
Chlorobenzene	ND	ND	0.0003	0.0%
1,4-Dichlorobenzene	ND	ND	0.0002	0.0%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for sample 19788.

Analyst C

Musteri my Walters Review



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Spike	Date Reported:	05-03-01
Laboratory Number:	19788	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP	Date Analyzed:	05-02-01
Condition:	N/A	Date Extracted:	N/A

	- LANGUAGO - ANGELON Y		Spiked			SW-846
	Sample	Spike	Sample	Det.		% Rec.
	Result	Added	Result	Limit	Percent	Accept.
Parameter	(mg/L)	(mg/L)	(mg/L)	(mg/L)	Recovery	Range
Vinyl Chloride	ND	0.050	0.0495	0.0001	99%	28-163
1,1-Dichloroethene	ND	0.050	0.0494	0.0001	99%	43-143
2-Butanone (MEK)	0.749	0.050	0.798	0.0001	100%	47-132
Chloroform	ND	0.050	0.0500	0.0001	100%	49-133
Carbon Tetrachloride	ND	0.050	0.0490	0.0001	98%	43-143
Benzene	0.0015	0.050	0.0510	0.0001	99%	39-150
1,2-Dichloroethane	ND	0.050	0.0490	0.0001	98%	51-147
Trichloroethene	ND	0.050	0.0495	0.0003	99%	35-146
Tetrachloroethene	ND	0.050	0.0495	0.0005	99%	26-162
Chlorobenzene	ND	0.050	0.0495	0.0003	99%	38-150
1,4-Dichlorobenzene	ND	0.050	0.0495	0.0002	99%	42-143

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for sample 19788.

Alew E. affice

/ hristine M Walters
Review



EPA METHOD 8040 PHENOLS Iality Assurance Repo

Quality Assurance Report Laboratory Blank

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	05-03-01
Laboratory Number:	05-02-TCA	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	05-02-01
Condition:	N/A	Analysis Requested:	TCLP

Analytical Results		Detection	Regulatory
Parameter	Concentration (mg/L)	Limit (mg/L)	Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-fluorophenol	98 %
	2,4,6-tribromophenol	99 %

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 19788.

Analyst L. Colem

C'hrister m Walters Review



EPA METHOD 8040 PHENOLS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	05-03-01
Laboratory Number:	19788	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Date Analyzed:	05-02-01
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Detection Limit (mg/L)	Percent Difference
o-Cresol	0.296	0.293	0.020	1.0%
p,m-Cresol	0.720	0.705	0.040	2.0%
2,4,6-Trichlorophenol	0.073	0.072	0.020	1.0%
2,4,5-Trichlorophenol	0.098	0.097	0.020	1.1%
Pentachlorophenol	0.278	0.276	0.020	0.8%

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:

	- Marrier 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	8040 Compounds	30.0%
References:	Method 1311, Toxicity Characteristic Leaching Procedure Test Methods Waste, SW-846, USEPA, July 1992.	for Evaluating Solid
	Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods Waste, SW-846, USEPA, July 1992.	for Evaluating Solid
	Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-84	16, USEPA, Sept. 1986.
Note:	Regulatory Limits based on 40 CFR part 261 subpart C section 261.24,	July 1, 1992.

Parameter

Comments: QA/QC for sample 19788.

Analyst Certure

(Review Muchaeters

Maximum Difference



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	05-03-01
Laboratory Number:	05-02-TBN	Date Sampled:	N/A
Sample Matrix:	Hexane	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	05-02-01
		Analysis Requested:	TCLP

	Concentration	Det. Limit	Regulatory Limit
Parameter	(mg/L)	(mg/L)	(mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
	2-fluorobiphenyl	96%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

 ${\sf Method\ 3510,\ Separatory\ Funnel\ Liquid\ Extraction,\ SW-846,\ USEPA,\ July\ 1992.}$

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for sample 19788.

Analyst Column

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EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics QA/QC Matrix Duplicate Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	05-03-01
Laboratory Number:	19788	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	05-02-01
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Percent Difference	Det. Limit (mg/L)
	(1119/2)	(1119/14/	Difficience	(1119/2)
Pyridine	ND	ND	0.0%	0.020
Hexachloroethane	ND	ND	0.0%	0.020
Nitrobenzene	0.077	0.076	0.9%	0.020
Hexachlorobutadiene	ND	ND	0.0%	0.020
2,4-Dinitrotoluene	0.088	0.088	0.0%	0.020
HexachloroBenzene	ND	ND	0.0%	0.020

ND - Parameter not detected at the stated detection limit.

QA/QC Accept	tance Criteria	Parameter	Maximum Difference
		8090 Compounds	30%
References:	•	Characteristic Leaching Procedure, SW- ry Funnel Liquid-Liquid Extraction, SW-	•

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992 Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for sample 19788.

Analyst C. Caleren

Phrister m Walters



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS Quality Assurance Report

Client:	QA/QC			Project #: N/A .				
Sample ID:		05-02-TCM	QA/QC	Date Reporte	ed:	05-02-01		
Laboratory Number:		19788		Date Sample	ed:		N/A	
Sample Matrix:		Water		Date Receive	ed:	N/A		
Analysis Requested:		TCLP Metals	3	Date Analyze	ed:		05-02-01	
Condition:		N/A		Date Extract	ed:		N/A	
Blank & Duplicate Conc. (mg/L)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	% 0.105	Acceptance 0.107	
Arsenic	ND	ND	0.001	0.006	0.006	0.0%	0% - 30%	
Barium	ND	ND	0.001	0.035	0.035	0.0%	0% - 30%	
Cadmium	ND	ND	0.001	0.005	0.005	0.0%	0% - 30%	
Chromium	ND	ND	0.001	0.331	0.328	0.9%	0% - 30%	
Lead	ND	ND	0.001	0.339	0.333	1.8%	0% - 30%	
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%	
Selenium	ND	ND	0.001	0.001	0.001	0.0%	0% - 30%	
Silver	ND	ND	0.001	ND	ND	0.0%	0% - 30%	
Spike		Spike	Sample	Spiked	Percent		Acceptance	
Conc. (mg/L)		Added	And the second	Sample	Recovery		Range	
Arsenic		0.500	0.006	0.505	99.8%		80% - 120%	
Barium		0.500	0.035	0.533	99.6%		80% - 120%	
Cadmium		0.500	0.005	0.506	100.2%		80% - 120%	
Chromium		0.500	0.331	0.829	99.8%		80% - 120%	
Lead		0.500	0.339	0.834	99.4%		80% - 120%	
Mercury		0.050	ND	0.049	98.0%		80% - 120%	
Selenium		0.500	0.001	0.500	99.8%		80% - 120%	
Silver		0.500	ND	0.499	99.8%		80% - 120%	

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, Dec. 1996

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals,

SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission,

SW-846, USEPA, December 1996.

Comments:

QA/QC for sample 19788.

Analyst

CHAIN OF CUSTODY RECORD

ANALYSIS / PARAMETERS	Remarks							07/7/ 10.56-4			Sample Receipt	Y N/A	Received Intact	Cool - Ice/Blue Ice
St.		Cor	Waler S				Date Time Received by: (Signature)	4.25.0(14.40 / Mis the 120.8 (2))	Received by: (Signature)	INVIDOTECH INC.		5796 U.S. Highway 64	Farmington, New Mexico 87401 (505) 632-0615
Client / Project Location	0	Sample No./ Sample Sample Lab Number Identification Date Time	Junkwater 4.250 (3:45 19788				Relinquished by: (Signature)	المالا	Helinquished by: (Signature)	Relinquished by: (Signature)				

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

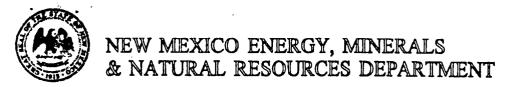
State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-138 Revised March 17, 1999

> Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

SOLID WASTE
4. Generator Federated ENUICONNICATAL Savice 5. Originating Site INFA to VARD
6. Transporter Ley
8. State WM
a certification of waste from the Generator: cessary chemical analysis to PROVE the ssified hazardous by listing or testing will be
ort.
u,
op Floor Sump, ded Antifeeeze
erator at the end of the haulcy
DATE! <u>3-27-01</u>
PHONE NO. <u>505-334-6186</u>
art 7/27/01
915 DATE: 3/27/01 wash Godosst DATE: \$3-01



OIL CONSERVATION DIVISION . AZTEC DISTRICT OFFICE 1000 RID BRAZOS ROAD AZTEC, NEW MEXICO 87410 (505) 334-6178 Fax (505) 334-6170

GARY E. JOHNSON GOVERNOR

JENNIFER A. SALISBURY CABINET SECRETARY

CERTIFICATE OF WASTE STATUS

1. Generator Name and Address: 2. Destination Name: FEBERATED FAUITONIN out all Survices Key Every Services - Disposal Facility BED Ford Square, 1314 Bedford have #345 County Rd 3500
Beltimore, alertand 21208 AZTEC, NM. 87410
3. Originating Site (name): Location of the Waste (Street address &/or ULSTR):
5928 US Har 64
FARMI Agton, AM 87401 Attach list of originating sites as appropriate
4. Source and Description of Waste
Water From Hydrostetic TEST TANKS, Code SHOP Floor Sump, Main shop Floor sump, and drums Labeled ANTI. Freeze.
Main stop Floor sump, and drums Labeled ANTI. Freese.
1, HARLAD M. Brown representative for: (Print Name)
do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and Environmental Protection Agency's July 1988, regulatory determination, the above described waste is: (Check appropriate classification)
EXEMPT oilfield waste NON-EXEMPT oilfield waste which is non-hazardous by characteristic analysis or by product identification
and that nothing has been added to the exempt or non-exempt non-hazardous waste defined above.
For NON-EXEMPT waste the following documentation is attached (check appropriate items): MSDS Information Other (description):
— MSDS Information — Other (description): → RCRA Hazardous Waste Analysis (75 to be seemed s)
This waste is in compliance with Regulated Levels of Naturally Occurring Radioactive Material (NORM) pursuant to 20 NMAC 3.1 subpart 1403.C and D.
Name (Original Signature): Harlanden Brown Title: GEOLDGIST - Project MANAGER
Title: GEOLDGIST - Project MANHER
Date: 3.26.01



TRACE METAL ANALYSIS

Client:	Federation Environmental	Project #:	01007-001
Sample ID:	Anti-Freeze Drums	Date Reported:	03-01-01
Laboratory Number:	19310	Date Sampled:	02-27-01
Chain of Custody:	8529	Date Received:	02-27-01
Sample Matrix:	Liquid	Date Analyzed:	03-01-01
Preservative:	Cool	Date Digested:	03-01-01
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.030	0.001	5.0
Barium	0.139	0.001	100
Cadmium	0.038	0.001	1.0
Chromium	0.017	0.001	5.0
Lead	0.266	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	0.012	0.001	1.0
Silver	0.031	0.001	5.0 .

ND - Parameter not detected at the stated detection limit.

References:

Method 3050B, Acid Digestion of Sediments, Sludges and Soils.

SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision

Spectorscopy, SW-846, USEPA, December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C

section 261.24, August 24, 1998.

Comments:

INFAB.

Analyst

Mistrim Worls
Review



TRACE METAL ANALYSIS

Client:	Federation Environmental	Project #:	01007-001
Sample ID:	Code Shop Sump	Date Reported:	03-01-01
Laboratory Number:	19311	Date Sampled:	02-27-01
Chain of Custody:	8529	Date Received:	02-27-01
Sample Matrix:	Liquid	Date Analyzed:	03-01-01
Preservative:	Cool	Date Digested:	03-01-01
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

	Concentration	Det. Limit	Regulatory Level
Parameter	(mg/L)	(mg/L)	(mg/L)
Arsenic	ND	0.001	5.0
Barium	0.012	0.001	100
Cadmium	ND	0.001	1.0
Chromium	ND	0.001	5.0
Lead	ND	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	ND	0.001	1.0
Silver	ND	0.001	5.0

ND - Parameter not detected at the stated detection limit.

References:

Method 3050B, Acid Digestion of Sediments, Sludges and Soils.

SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision

Spectorscopy, SW-846, USEPA, December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C

section 261.24, August 24, 1998.

Comments:

INFAB.

Analyst

Anstria M Lacke



TRACE METAL ANALYSIS

Client:	Federation Environmental	Project #:	01007-001
Sample ID:	Main Shop Sump	Date Reported:	03-01-01
Laboratory Number:	19312	Date Sampled:	02-27-01
Chain of Custody:	8529	Date Received:	02-27-01
Sample Matrix:	Liquid	Date Analyzed:	03-01-01
Preservative:	Cool	Date Digested:	03-01-01
Condition:	Cool & Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.003	0.001	5.0
Barium	0.003	0.001	100
Cadmium	ND	0.001	1.0
Chromium	ND	0.001	5.0
Lead	ND	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	ND	0.001	1.0
Silver	ND	0.001	5.0

ND - Parameter not detected at the stated detection limit.

References:

Method 3050B, Acid Digestion of Sediments, Sludges and Soils.

SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision

Spectorscopy, SW-846, USEPA, December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C

section 261.24, August 24, 1998.

Comments:

INFAB.

Alexan I. Ofen

Mustur m Was

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TRACE METAL ANALYSIS Quality Control / **Quality Assurance Report**

Client:	QA/QC	Project #:	N/A
Sample ID:	03-01-TM QA/QC	Date Reported:	03-01-01
Laboratory Number:	19310	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	Total RCRA Metals	Date Analyzed:	03-01-01
Condition:	N/A	Date Digested:	03-01-01

Blank & Duplicate Conc. (mg/L)	Instrument Blank (mg/L)	Method Blank	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Arsenic	ND	ND	0.001	0.030	0.030	0.0%	0% - 30%
Barium	ND	ND	0.001	0.139	0.137	1.4%	0% - 30%
Cadmium	ND	ND	0.001	0.038	0.039	2.6%	0% - 30%
Chromium	ND	ND	0.001	0.017	0.017	0.0%	0% - 30%
Lead	ND	ND	0.001	0.266	0.264	0.8%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	0.012	0.012	0.0%	0% - 30%
Silver	ND	ND	0.001	0.031	0.030	3.2%	0% - 30%

Spike	Spike		F	Percent	Acceptance
Conc. (mg/L)	Added		Sample	Recovery	Range
Arsenic	0.500	0.030	0.529	99.8%	80% - 120%
Barium	0.500	0.139	0.637	99.7%	80% - 120%
Cadmium	0.500	0.038	0.538	100.0%	80% - 120%
Chromium	0.500	0.017	0.516	99.8%	80% - 120%
Lead	0.500	0.266	0.763	99.6%	80% - 120%
Mercury	0.050	ND	0.049	98.0%	80% - 120%
Selenium	0.500	0.012	0.511	99.8%	80% - 120%
Silver	0.500	0.031	0.530	99.8%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References:

Method 3050B, Acid Digestion of Sediments, Sludges and Soils.

SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision

Spectorscopy, SW-846, USEPA, December 1996.

Comments:

QA/QC for samples 19310 - 19315.

leur C. Celeer Christin Malten Review

CHAIN OF CUSTODY RECORD

Client / Project Name	ENDIONMENTED	200	Project Location			ANALYSIS / PARAMETERS	AMETERS	
1 1	3 0		Client No. 010	100-20010	n. of ainers RA AA AA LI			Remarks
Sample No./ Identification	Sample Date	Sample	Lab Number	Sample Matrix	Cont			
AUTI. FREEEE	2.27.0(4:55	19310	6,000,0	\ \ \			
۵_	2.27	00:07		Lianio				
MAIN SHOP Sump	72.27	50:01	19312	Lieuib	7			
Upper browtherea	2.27	(0:25	1 9313	Soil	7			
Lower Paint Area	122	(10:30	h18b1	5006	7			
Hill top Status	2.27	क्तः 01	19315	Soil	7			
Relinquished by: (Signature)	(e)			Date Time Rece 2.27.0 0:53	Received by: (Signature)	Tolorca		Date Time 7.5.5
Relinquished by: (Signature)	(e)				Received by: (Signature)	<u></u>		
Relinquished by: (Signature)	re)			Весе	Received by: (Signature)			
				FOVIROTECH INC	OH IOC		Sample	Sample Receipt
								N >
				5796 U.S. Highway 64 Earmington New Mexico 87401	hway 64 Jexico 87401		Received Intact	7.
				(505) 632-0615	0615		Cool - Ice/Blue Ice	9
							i	

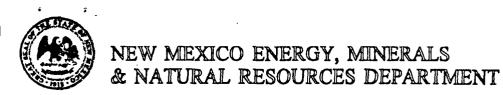
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1811 South First, Artesia. NM 88210
District III
1000 Rio Brazos Road. Aztec, NM 87410
District IV
2040 South Pacheco. Santa Fe. NM 87505

State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Form C-138 Revised March 17, 1999

Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPTS	SOLID WASTE
1. RCRA Exempt: Non-Exempt: 💢	4. Generator federated Environmental Services
Verbal Approval Received: Yes No	5. Originating Site The Supplemental States
2. Management Facility Destination KEY DISPOSAL	6. Transporter Wey
3. Address of Facility Operator #345 CR3500 Aztec NM	8. State Nm
7. Location of Material (Street Address or ULSTR) 5978 05 Hwy 64 FARMINGTON, NM 87401	
9. Circle One:	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste cla approved	cessary chemical analysis to PROVE the ssified hazardous by listing or testing will be
All transporters must certify the wastes delivered are only those consigned for transp	ort.
BRIEF DESCRIPTION OF MATERIAL:	
Water From Hydro shop BABAR MAR	2001
Estimated Volume \(\text{20bb/s} \) cy Known Volume (to be entered by the ope	erator at the end of the hau!cy
SIGNATURE Maste Management Facility Authorized Agent TITLE: MGE	DATE! <u>3-27-0/</u>
TYPE OR PRINT NAME: MICHAEL TALOVICY TELE	PHONE NO. <u>505-334-6186</u>
APPROVED BY: Deny Term TITLE: Geola	913 DATE: 3/27/01
APPROVED BY: Manhyn 926. TITLE: Engrowmen	hal Goodonfor DATE: 7-3-01



OIL CONSERVATION DIVISION AZTEC DISTRICT OFFICE 1000 RIO BRAZOS ROAD AZTEC, NEW MEXICO 87410 (505) 334-6178 Fax (505)334-6170

GARY E. JOHNSON GOVERNOR

JENNIFER A. SALISBURY CABINET SECRETARY

CERTIFICATE OF WASTE STATUS

1. Generator Name and Address:	2. Destination Name:			
FEDERATED Environmental Services	Key Evergy Sarvices, Desposar Facility			
Bedford Square, 1314 Beoford Ave.	#345 Comby Road 3500 AZTER, DM 87410			
Baltimore, Uldrycand 21208	42TER, DM 87410			
3. Originating Site (name):	Location of the Waste (Street address &/or ULSTR):			
INFAB				
5928 US Hwy 64				
FARMingtow, DM 87410 Attach list of originating sites as appropriate				
4. Source and Description of Waste	·			
Water from Hydro 840	p 5 cmp			
7				
·	< 20 66/s			
. hlass 2 11 8 2000				
(Print Name)	representative for: do hereby certify that,			
Federated Edvironmental Servi	ces / JAFAB do hereby certify that,			
according to the Resource Conservation and Recove	ry Act (RCRA) and Environmental Protection Agency's July,			
1988, regulatory determination, the above described	waste is: (Check appropriate classification)			
EXEMPT oilfield waste NON-EXEMPT oilfield waste which is non-hazardous by characteristic				
analysis or by product identification				
•				
and that nothing has been added to the exempt or no	n-exempt non-hazardous waste defined above.			
For NON-EXEMPT waste the following documenta	ation is attached (check appropriate items):			
MSDS Information	Other (description):			
RCRA Hazardous Waste Analysis				
Chain of Custody	, , , , , ,			

This waste is in compliance with Regulated Lavels of	Naturally Occurring Radioactive Material (NORM) pursuant			
to 20 NMAC 3.1 subpart 1403.C and D.	reaction of the state of the st			
to 20 mm to our daspare models and on				
11 0 0 1				
Name (Original Signature):	brown			
Title: GEOLOGIST / Project W	the teat			
Date: 3 · 26 · 01				



SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:

Sample ID:

Lab ID#: Sample Matrix:

Preservative: Condition:

Federated Environmental

Hydro Shop Sump

19317 Liquid

Cool Cool and Intact Project #:

Date Reported:

Date Sampled: Date Received:

Date Analyzed: Chain of Custody: 01007-001

03-01-01

02-27-01

02-27-01

02-28-01 8530

Parameter

Result

IGNITABILITY:

Negative

CORROSIVITY:

Negative

pH = 6.69

REACTIVITY:

Negative

RCRA Hazardous Waste Criteria

Parameter

Hazardous Waste Criterion

IGNITABILITY:

Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21. (i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

CORROSIVITY:

Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22. (i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)

REACTIVITY:

Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. (i.e. Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference:

40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments:

INFAB.



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS

Client:	Federated Environmental	Project #:	01007-001
Sample ID:	Hydro Shop Sump	Date Reported:	03-02-01
Laboratory Number:	19317	Date Sampled:	02-27-01
Chain of Custody:	8530	Date Received:	02-27-01
Sample Matrix:	Liquid	Date Extracted:	NA
Preservative:	Cool	Date Analyzed:	03-02-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

	Concentration	Detection Limit	Regulatory Limits
Parameter	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	0.212	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	0.0216	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	0.0030	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

Parameter	Percent Recovery
Trifluorotoluene	98%
Bromofluorobenzene	99%
	Trifluorotoluene

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organics, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

INFAB.

Analyst C. Ofure

Misting Walters
Review



EPA METHOD 8040 PHENOLS

Client:	Federated Environmental	Project #:	01007-001
Sample ID:	Hydro Shop Sump	Date Reported:	03-12-01
Laboratory Number:	19317	Date Sampled:	02-27-01
Chain of Custody:	8530	Date Received:	02-27-01
Sample Matrix:	Liquid .	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	03-12-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	98%
	2,4,6-Tribromophenol	99%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

INFAB.

Analyst L. Oylenn

Phristine m Walters

(Review



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics

Client:	Federated Environmental	Project #:	01007-00 1
Sample ID:	Hydro Shop Sump	Date Reported:	03-12-01
Laboratory Number:	19317	Date Sampled:	02-27-01
Chain of Custody:	8530	Date Received:	02-27-01
Sample Matrix:	Liquid	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	03-12-01
Condition:	Cool and Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	1.22	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	0.040	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

OAIOC Assentance Cuitania	Davamatan	Davaget Daggeren
QA/QC Acceptance Criteria	Parameter	Percent Recovery

2-fluorobiphenyl

100%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

INFAB.

Decen P. Ofenan Analyst

Mister M Walters
(Review



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS

•		•	
Client:	Federated Environmental	Project #:	01007-001
Sample ID:	Hydro Shop Sump	Date Reported:	03-01-01
Laboratory Number:	19317	Date Sampled:	02-27-01
Chain of Custody:	8530	Date Received:	02-27-01
Sample Matrix:	Liquid	Date Analyzed:	03-01-01
Preservative:	Cool	Date Extracted:	NA
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.019	0.001	5.0
Barium	0.431	0.001	100
Cadmium	0.018	0.001	1.0
Chromium	0.008	0.001	5.0
Lead	0.446	0.001	5.0
Mercury	0.009	0.001	0.2
Selenium	0.004	0.001	1.0
Silver	ND	0.001	5.0

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA,

December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission

SW-846, USEPA. December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C

section 261.24, August 24, 1998.

Comments:

INFAB.

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Review

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QUALITY ASSURANCE / QUALITY CONTROL DOCUMENTATION



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	03-02-01
Laboratory Number:	03-02-TCV	Date Sampled:	. N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-02-01
Condition:	N/A	Analysis Requested:	TCLP

		Detection	Regulatory
	Concentration	Limit	Limits
Parameter	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	ND	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
·	Trifluorotoluene	100%
	Bromofluorobenzene	100%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 19316 - 19318.

Weller Christise m Walles
Review



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client: Sample ID:	QA/QC Matrix Duplicate	Project #: Date Reported:	N/A 03-02-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP	Date Analyzed:	03-02-01
Condition:	N/A	Date Extracted:	N/A

Duplicate				
	Sample Sample		Detection	
	Result	Result	Limits	Percent
Parameter	(mg/L)	(mg/L)	(mg/L)	Difference
Vinyl Chloride	ND	ND	0.0001	0.0%
1,1-Dichloroethene	ND	ND	0.0001	0.0%
2-Butanone (MEK)	0.017	0.017	0.0001	0.0%
Chloroform	ND	ND	0.0001	0.0%
Carbon Tetrachloride	ND	ND	0.0001	0.0%
Benzene	0.036	0.036	0.0001	0.0%
1,2-Dichloroethane	ND	ND	0.0001	0.0%
Trichloroethene	ND	ND	0.0003	0.0%
Tetrachloroethene	ND	ND	0.0005	0.0%
Chlorobenzene	ND	ND	0.0003	0.0%
1,4-Dichlorobenzene	ND	ND	0.0002	0.0%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for samples 19316 - 19318.

Analyst C. Ogleenen

Mister of Walles



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client: QA/QC Project #: N/A Sample ID: Date Reported: 03-02-01 Matrix Spike 19316 Date Sampled: N/A Laboratory Number: Water Date Received: N/A Sample Matrix: **TCLP** Analysis Requested: Date Analyzed: 03-02-01 Date Extracted: Condition: N/A N/A

Parameter	Sample Result (mg/L)	Spike Added (mg/L)	Spiked Sample Result (mg/L)	Det. Limit (mg/L)	Percent Recovery	SW-846 % Rec. Accept.
r ai ailletei	(mg/L)	(mg/L)	(IIIg/L)	(IIIg/L)	Recovery	Range
Vinyl Chloride	ND	0.050	0.0495	0.0001	99%	28-163
1,1-Dichloroethene	ND	0.050	0.0494	0.0001	99%	43-143
2-Butanone (MEK)	0.0172	0.050	0.0662	0.0001	99%	47-132
Chloroform	ND	0.050	0.0500	0.0001	100%	49-133
Carbon Tetrachloride	ND	0.050	0.0490	0.0001	98%	43-143
Benzene	0.0361	0.050	0.0856	0.0001	99%	39-150
1,2-Dichloroethane	ND	0.050	0.0490	0.0001	98%	51-147
Trichloroethene	ND	0.050	0.0495	0.0003	99%	35-146
Tetrachloroethene	ND	0.050	0.0495	0.0005	99%	26-162
Chlorobenzene	ND	0.050	0.0495	0.0003	99%	38-150
1,4-Dichlorobenzene	ND	0.050	0.0495	0.0002	99%	42-143

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for samples 19316 - 19318.

Analyst C. Cyleur

Misting M Walters



EPA METHOD 8040 PHENOLS Quality Assurance Report

Laboratory Blank

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	03-12-01
Laboratory Number:	03-12-TCA	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-12-01
Condition:	N/A	Analysis Requested:	TCLP

Analytical Results		Detection	Regulatory
	Concentration	Limit	Limit
Parameter	(mg/L)	(mg/L)	(mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-fluorophenol	98 %
	2,4,6-tribromophenol	99 %

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Alexander L. Oxferen

Pristing Malters



EPA METHOD 8040 PHENOLS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	03-12-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Date Analyzed:	03-12-01
		Analysis Requested:	TCLP

	Sample Result	Duplicate Result	Detection Limit	Percent
Parameter	(mg/L)	(mg/L)	(mg/L)	Difference
o-Cresol	0.123	0.122	0.020	1.0%
p,m-Cresol	0.130	0.128	0.040	2.0%
2,4,6-Trichlorophenol	ND	ND	0.020	0.0%
2,4,5-Trichlorophenol	ND	ND	0.020	0.0%
Pentachlorophenol	ND	ND	0.020	0.0%

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Maximum Difference
	8040 Compounds	30.0%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Den C. Oglence

Mistare m Walter



EPA Method 8090 **Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics Quality Assurance Report**

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	03-12-01
Laboratory Number:	03-12-TBN	Date Sampled:	N/A
Sample Matrix:	Hexane	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	03-12-01
		Analysis Requested:	TOLD

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
1 di di iliotoi	(1119/2)	(111972)	(1119/12)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

OA/OC Assentance Criteria	Doromotor	Devent Deservent
QA/QC Acceptance Criteria	Parameter	Percent Recovery

2-fluorobiphenyl

101%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics QA/QC Matrix Duplicate Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	03-12-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	03-12-01
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Percent Difference	Det. Limit (mg/L)	
Pyridine	0.061	0.061	0.0%	0.020	
Hexachloroethane	0.051	0.050	1.0%	0.020	
Nitrobenzene	0.054	0.054	0.0%	0.020	
Hexachlorobutadiene	0.184	0.182	1.1%	0.020	
2,4-Dinitrotoluene	0.030	0.030	0.0%	0.020	
HexachloroBenzene	0.086	0.085	1.8%	0.020	

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Doromotor	Maximum Difference
QA/QC Acceptance Criteria	Parameter	waximum Dinerence

8090 Compounds

30%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Allen L. Ofence

Ahristine m Walles
Review



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	03-01-TCM QA/QC	Date Reported:	03-01-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP Metals	Date Analyzed:	03-01-01
Condition:	N/A	Date Extracted:	N/A

Blank & Duplicate Conc: (mg/L)	lnstrument Blank	Method Blank	Detection Limit	on Sample	e Duplicate	9 % 0.105	Acceptance 0:107
Arsenic	ND	ND	0.001	0.012	0.012	0.0%	0% - 30%
Barium	ND	ND	0.001	0.050	0.049	2.0%	0% - 30%
Cadmium	ND	ND	0.001	0.001	0.001	0.0%	0% - 30%
Chromium	ND	ND	0.001	0.003	0.003	0.0%	0% - 30%
Lead	ND	ND	0.001	0.013	0.013	0.0%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	0.002	0.002	0.0%	0% - 30%
Silver	ND	ND	0.001	0.006	0.006	0.0%	0% - 30%

Spike	Spike	Sample	Spiked	Percent	Acceptance
Conc. (mg/L)	Added		Sample	Recovery	Range
Arsenic	0.500	0.012	0.512	100.0%	80% - 120%
Barium	0.500	0.050	0.548	99.6%	80% - 120%
Cadmium	0.500	0.001	0.500	99.8%	80% - 120%
Chromium	0.500	0.003	0.503	100.0%	80% - 120%
Lead	0.500	0.013	0.512	99.8%	80% - 120%
Mercury	0.050	ND	0.049	98.0%	80% - 120%
Selenium	0.500	0.002	0.502	100.0%	80% - 120%
Silver	0.500	0.006	0.505	99.8%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, Dec. 1996

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals,

SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission,

SW-846, USEPA, December 1996.

Comments:

QA/QC for samples 19316 - 19318.

Analyst

Mister m Waller

CHAIN OF CUSTODY RECORD

Client / Project Name FRED ENUIVONMENTAL	ronmertal	1	Project Location				ANALYSIS / PARAMETERS		·
Sampler: HARLAN M. Brown	€ 3°	Client	Client No.) 00-		o. of ainers		Remarks	
Sample No./ Saldentification	Sample Sample Date Time	1	Lab Number		Sample Matrix	tnoO			
Hydros StopSurp 02.	50:21:01	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	19317	Lianip	ر نه	7			
Relinquished by: (Signature)			Ö	Date 02.27 (Time ////////////////////////////////////	Received By: (Signature)		Date 2/27/61	Time //: // /
Relinquished by: (Signature)					 	Received by: (Signature)			
Relinquished by: (Signature)						Received by: (Signature)			
			<u> U.</u>	FOVIE	S	NIROTECH INC.		Sample Receipt	
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TO part At No.			•	576 Formico	36 U.S. nton, N∈	5796 U.S. Highway 64 Earnicoton, New Mexico 87401	Received Intact	d Intact	
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THE REPRODUCTION OF THE FOLLOWING DOCUMENT (S) CANNOT BE IMPROVED DUE TO THE CONDITION OF

THE ORIGINAL

ch Dr., Hobbs, NM 88240 811 South First, Artesia, NM 88210 District III 2000 1000 Rio Brazos Road, Aztec, NM 87410

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division Santa Fe, NM 87505

Revised March 17, 1999 Submit Original Plus 1 Copy

to Appropriate

2040 South Pacheco, Santa Fe, NM 87505 REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE 4. Generator HAllibuRton Evergy Serv. 1. RCRA Exempt: Non-Exempt: 5. Originating Site Verbal Approval Received: MAIN YARD 6. Transporter Up #345 CR 3500 AZEC NM 2. Management Facility Destination 3. Address of Facility Operator LEY D150054 8. State 7. Location of Material (Street Address or ULSTR) 409 E.MAIN ST FAMILIEUTON, NM 8740) 9. Circle One: A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator: one certificate per job. All requests for approval to accept non-exempt wastes must be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be All transporters must certify the wastes delivered are only those consigned for transport. BRIEF DESCRIPTION OF MATERIAL: UNHSED Gel WATER Estimated Volume 30066/Sev Known Volume (to be entered by the operator at the end of the haul DATE: 3-16-01 TITLE:- MGC SIGNATURE 4 TELEPHONE NO. (This space for State Use)

District I - (505) 393-6161 1625 N. French Dr Hobbs, NM 88240 District II - (505) 748-1283 811 S. First Artesia, NM 88240 District III - (505) 334-6178 1000 Rio Brazos Road Aztec, NM 87410

<u>District IV</u> - (505) 827-7131 2040 S. Pacheco

Santa Fe, NM 87505

New Mexico

Energy Minerals and Natural Resources Department Oil Conservation Division

2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131 Submit to OCD Permitted Surface Waste Management Facility

Form C-143 3/15/00

GENERATOR CERTIFICATE OF WASTE STATUS

Halliburton Energy Services 4109 E. Main St. Farmington, NM 87401	2.Permit Number (if waste generated at an OCD permitted facility)
Description of Waste and Generating Process:	4. Location of Waste (Street address &/or ULSTR):
waste water	4109 E. Main St. Farmington, NM 87401
5. Destination (Surface Waste Management Facility): 7 Estimated Volume 238 cy/bbls	6. Transporter: Key Energy
For NON-EXEMPT waste only, the following documentation is atta	ached (check appropriate items)
.	RCRA Hazardous Waste Analysis (With Chain of Custody).
Generator certifies that, according to the Resource Conservation a Agency's July 1988 regulatory determination, the above described	
EXEMPT oilfield waste.	NON-EXEMPT oilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation)
In addition, Generator certifies that nothing has been added to this waste does not contain Naturally Occurring Radioactive Material (Subpart 1403. Generator Signature ARIA Weaver	
Title:	



SUSPECTED HAZARDOUS **WASTE ANALYSIS**

Client: Sample ID: Halliburton Energy Services Field Liquids Tank

Project #: Date Reported: 92132-001 03-01-01

Lab ID#:

19318

Date Sampled: -

02-27-01

Sample Matrix: Preservative:

Liquid Cool

Date Received: Date Analyzed:

02-27-01 02-28-01

Condition:

Cool and Intact

Chain of Custody:

8532

Parameter

Result

IGNITABILITY:

Negative

CORROSIVITY:

Negative

pH = 8.24

REACTIVITY:

Negative

RCRA Hazardous Waste Criteria

Parameter

Hazardous Waste Criterion

IGNITABILITY:

Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21.

(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

CORROSIVITY:

Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22.

(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)

REACTIVITY:

Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. (i.e. Violent reaction with water, strong base, strong acid, or the generation

of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference:

40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments:

4109 E. Main St., Farmington.



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Field Liquids Tank	Date Reported:	03-01-01
Laboratory Number:	19318	Date Sampled:	02-27-01
Chain of Custody:	8532	Date Received:	02-27-01
Sample Matrix:	Liquid	Date Analyzed:	03-01-01
Preservative:	Cool	Date Extracted:	NA
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

,	Concentration	Det. Limit	Regulatory Level
Parameter	(mg/L)	(mg/L)	(mg/L)
Arsenic	ND	0.001	5.0
Barium	0.063	0.001	100
Cadmium	ND	0.001	1.0
Chromium	0.031	0.001	5.0
Lead	0.051	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	ND	0.001	1.0
Silver	ND	0.001	5.0

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA,

December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission

SW-846, USEPA. December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C

section 261.24, August 24, 1998.

Comments:

4109 E. Main St., Farmington.

Dec. L. Operece

(Review Malter



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Field Liquids Tank	Date Reported:	03-12-01
Laboratory Number:	19318	Date Sampled:	02-27-01
Chain of Custody:	8532	Date Received:	02-27-01
Sample Matrix:	Liquid	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	03-12-01
Condition:	Cool and Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

OAIOC Assembance Cuitoria	Doromotor	Percent Recovery
QA/QC Acceptance Criteria	Parameter	rercent Recovery

2-fluorobiphenyl

97%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992. Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

4109 E. Main St., Farmington

Analyst L. Offers

Printing Marters



EPA METHOD 8040 PHENOLS

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Field Liquids Tank	Date Reported:	03-12-01
Laboratory Number:	19318	Date Sampled:	02-27-01
Chain of Custody:	8532	Date Received:	02-27-01
Sample Matrix:	Liquid	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	03-12-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	0.283	0.020	200
p,m-Cresol	0.318	0.040	200 -
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenoi	· ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
· ·	2-Fluorophenol 2,4,6-Tribromophenol	98% 99%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

4109 E. Main St., Farmington.

Analyst Coffee



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS

Client:	Halliburton Energy Services	Project #:	92132-001
Sample ID:	Fleld Liquids Tank	Date Reported:	03-02-01
Laboratory Number:	19318	Date Sampled:	02-27-01
Chain of Custody:	8532	Date Received:	02-27-01
Sample Matrix:	Liquid	Date Extracted:	NA ·
Preservative:	Cool	Date Analyzed:	03-02-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

		Detection	Regulatory
	Concentration	Limit	Limits
Parameter	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	0.135	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	0.0315	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	0.0693	0.0005	0.7
Chiorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

98% zene 99%
,

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

4109 E. Main St., Farmington.

Analyst L. Office

Misting Walters



QUALITY ASSURANCE / QUALITY CONTROL DOCUMENTATION



EPA METHOD 8040 PHENOLS

Quality Assurance Report Laboratory Blank

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	03-12-01
Laboratory Number:	03-12-TCA	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-12-01
Condition:	N/A	Analysis Requested:	TCLP

Analytical Results		Detection	Regulatory
Parameter	Concentration (mg/L)	Limit (mg/L)	Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	- ND-	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogațe Recoveries:	Parameter	Percent Recovery		
	2-fluorophenol	98 %		
	2,4,6-tribromophenol	99 %		

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Analyst

Prainting Walters
Review



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Project #: Client: QA/QC N/A Date Reported: 03-02-01 Matrix Spike Sample ID: 19316 -Date Sampled: N/A Laboratory Number: Date Received: Water N/A Sample Matrix: TCLP 03-02-01 Bate Analyzed: Analysis Requested: N/A Date Extracted: N/A Condition:

Parameter	Sample Result (mg/L)	Spike Added (mg/L)	Spiked Sample Result (mg/L)	Det. Limit (mg/L)	Percent Recovery	SW-846 % Rec. Accept. Range
Vinyl Chloride	ND	0.050	0.0495	0.0001	99%	28-163
1,1-Dichloroethene	ND	0.050	0.0494	0.0001	99%	43-143
2-Butanone (MEK)	0.0172	0.050	0.0662	0.0001	99%	47-132
Chloroform	ND	0.050	0.0500	0.0001	100%	49-133
Carbon Tetrachloride	ND	0.050	0.0490	0.0001	98%	43-143
Benzene	0.0361	0.050	0.0856	0.0001	99%	39-150
1,2-Dichloroethane	ND	0.050	0.0490	0.0001	98%	51-147
Trichloroethene	ND	0.050	0.0495	0.0003	99%	35-146
Tetrachloroethene	ND	0.050	0.0495	0.0005	99%	26-162
Chlorobenzene	ND	0.050	0.0495	0.0003	99%	38-150
1,4-Dichlorobenzene	ND	0.050	0.0495	0.0002	99%	42-143

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for samples 19316 - 19318.

Able L. Cyles

Phristin my Warden



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	03-02-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP	Date Analyzed:	03-02-01
Condition:	N/A	Date Extracted:	N/A

		Duplicate		
	Sample	Sample	Detection	
·	Result	Result	Limits	Percent
Parameter	(mg/L)	(mg/L)	(mg/L)	Difference
Vinyl Chloride	ND.	ND	0.0001	0.0%
1,1-Dichloroethene	ND	ND	0.0001	0.0%
2-Butanone (MEK)	0.017	0.017	0.0001	0.0%
Chloroform	ND	ND	0.0001	0.0%
Carbon Tetrachloride	ND	ND	0.0001	0.0%
Benzene	0.036	0.036	0.0001	0.0%
1,2-Dichloroethane	ИD	ND	0.0001	0.0%
Trichlordethene	ND	ND	0.0003	0.0%
Tetrachloroethene	ND	ND	0.0005	0.0%
Chlorobenzene	ND	ND	0.0003	0.0%
1,4-Dichlorobenzene	ND	ND	0.0002	0.0%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for samples 19316 - 19318.

mee

Misteri m Walters



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	03-02-01
Laboratory Number:	03-02-TCV	Date Sampled:	N/A
Sample Matrix:	Water .	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-02-01
Condition:	N/A	Analysis Regrested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limits (mg/L)
,			
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachioride	ND	0.0001	0.5
Benzene	ND	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachioroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Per	cent Recovery	
	Trifluorotoluene	0	100%	
	Bromofluorobenz	ene	100%	

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Analyst L. aleur

Misterin Wasters Beview



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	03-01-TCM QA/QC	Date Reported:	03-01-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP Metals	Date Analyzed:	03-01-01
Condition:	N/A	Date Extracted:	N/A

Blank & Duplicate Conc (mg/L)		Method Blank	Taring the state of the state o	on Sample	Duplicate	% 0.105	Acceptance
Arsenic	ND	ND	0.001	0.012	0.012	0.0%	0% - 30%
Barium	ND	ND	0.001	0.050	0.049	2.0%	0% - 30%
Cadmium	ND	ND	0.001	0.001	0.001	0.0%	0% - 30%
Chromium	ND -	ND	0.001	0.003	0.003	0.0%	0% - 30%
Lead	ND	ND.	0.001	0.013	0.013	0.0%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	0.002	0.002	0.0%	0% - 30%
Silver	ND	ND	0.001	0.006	0.006	0.0%	0% - 30%

FF Sone (frish)	a president Spike	Sample	Sample	Percent / Recovery to	Asceptance It Range
Arsenic	0.500	0.012	0.512	100.0%	80% - 120%
Barium	0.500	0.050	0.548	99.6%	80% - 120%
Cadmium	0.500	0.001	0.500	99.8%	80% - 120%
Chromium	0.500	0.003	0.503	100.0%	80% - 120%
Lead	0.500	0.013	0.512	99.8%	80% - 120%
Mercury	0.050	ND	0.049	98.0%	80% - 120%
Selenium	0.500	0.002	0.502	100.0%	80% - 120%
Silver	0.500	0.006	0.505	99.8%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, Dec. 1996

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals,

SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission,

SW-846, USEPA, December 1996.

Comments:

QA/QC for samples 19316 - 19318.

Alexan C. Ogleson

Mister m Worden
Review



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics QA/QC Matrix Duplicate Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	03-12-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	03-12-01
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Percent Difference	Det. Limit (mg/L)
1 diameter	/11.81.5)	\mg/c/	D1110101100	(1119/12)
Pyridine	0.061	0.061	0.0%	0.020
Hexachloroethane	0.051	0.050	1.0%	0.020
Nitrobenzene	0.054	0.054	0.0%	0.020
Hexachlorobutadiene	0.184	0.182	1.1%	0.020
2,4-Dinitrotoluene	0.030	0.030	0.0%	0.020
HexachloroBenzene	0.086	0.085	1.8%	0.020

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Maximum Difference
	·	····

8090 Compounds

30%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992. Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Abayst P. Oglence

Mistering Walters



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	03-12-01
Laboratory Number:	03-12-TBN	Date Sampled:	N/A
Sample Matrix:	Hexane	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	03-12-01
		Analysis Requested:	TCLP

Parameter	Concentration _ (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
, raidilletei	> (mg/L)	(111g/L)	(mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
---------------------------	-----------	------------------

2-fluorobiphenyl

101%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Analyst P. Oglean

Christina m Walters



EPA METHOD 8040 PHENOLS Quality Assurance Report

	•		
Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	03-12-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Date Analyzed:	03-12-01
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Detection Limit (mg/L)	Percent Difference
o-Cresol	0.123	0.122	0.020	1.0%
p,m-Cresol	0.130	0.128	0.040	2.0%
2,4,6-Trichlorophenol	ND	ND	0.020	0.0%
2,4,5-Trichlorophenol	ND	ND	0.020	0.0%
Pentachlorophenol	ND	ND	0.020	0.0%

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	 	Parameter	Maximum Difference
		8040 Compounds	30.0%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Analyst L. Celecus

Review

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CHAIN OF CUSTODY RECORD

Client / Project Name HALL & BUETON Every & Sarvice	Deng YS	arvice	Project Location	in St. Freming	1		ANALYSIS / PARAMETERS	RAMETERS	·	14:
Sampler: Harlen H. Brown	3808,		Client No. 92 (32	2-00	to .c. siners	434			Remarks	
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	Cont	15 P				
Field (Buch	7.27.0(0):9]	19318	Liamin	5	7		-		
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				*				,50		
				18.				24.		
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Relinquished by: (Signature)	(e,			Reco	Received by: (Signature)	Signature)				T
			Ē	WIRC	3	<u>D</u> C.		Samp	Sample Receipt	
				5796 U	S Highway 6	7			2 >	Z X
				Formington, New Moxico 87401 (80%) 880-0815	Maxico (7401		Heceived intact	ع الم	
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THE REPRODUCTION OF

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CANNOT BE IMPROVED

DUE TO

THE CONDITION OF

THE ORIGINAL

District Law
1625 N: French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-138 Revised March 17, 1999

Submit Original
Plus 1 Copy
to Appropriate
District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

REQUEST TOKAT TROVAL TO ACCEL 1	JOHN WASIE
1. RCRA Exempt: Non-Exempt: X	4. Generator VEY ENCAGY Services
Verbal Approval Received: Yes No	5. Originating Site MAIN YARO
2. Management Facility Destination KEY DIS POSAL	6. Transporter Ley
3. Address of Facility Operator #345 CR3500 AZFCC NM	8. State NM
7. Location of Material (Street Address or ULSTR) 5651 US Hwy 64 FIRM NOTEN NM	
9. <u>Circle One</u> :	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste class approved	cessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transp	οπ.
BRIEF DESCRIPTION OF MATERIAL:	
wash water off oil field equipmen	<i>f</i>
	MAR 2001
Estimated Volume 800661s cy Known Volume (to be entered by the ope	rator at the end of the hau!cy
SIGNATURE Male Je L. TITLE: MGR. Waste Management Pacility Authorized Agent	DATE! 3-16-0/
The state of the s	PHONE NO. 505-334-6/86
TYPE OR PRINT NAME: MICHAEL TALOUICAL TELE	1110NL NO. 3-2. 7.7.01.0.0
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(This was 6 Core II a)	
APPROVED BY: 1 Serve Terry TITLE: (-PO)	and of the sound of
APPROVED BY: Temy TITLE: (-eo/c	09 15 DATE: 3/20/01
APPROVED BY: Wanton 925, TITLB: Environment	14 Goods DATE 3/21/01

District I* (505) 393-6161
1625:N. French Dr
Hobbs, NM 88240
District II - (505) 748-1283
811 S. First
Artesfa, NM 88240
District III - (505) 334-6178
1000 Rio Brazos Road
Aziec, NM 87410
District IV - (505) 827-7131
2040 S. Pacheco
Santa Fe, NM 87505

The state of the s

New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division

nd telepolitika (1966-1964) i eta komunia (1964-1964) kun komunia (1964-1964)

2040 South Pacheco Street

2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131 Submit to OCD Permitted Surface Waste Management

Form C-143

3/15/00

Facility

GENERATOR CERTIFICATE OF WASTE STATUS

Waste Generator Name and Address: KEY ENER 64 Services	Permit Number (if waste generated at an OCD permitted facility)
5651 US HWY 64	•
FARMINGTON, NM 8740 3. Description of Waste and Generating Process:	4. Location of Waste (Street address &/or ULSTR):
Wash Water	5651 US HWY 64 FREMING ton, NM
	FARMING ton, NM
5. Destination (Surface Waste Management Facility):	6. Transporter:
KEY DISPOSAL	Yey
7. Estimated Volume cy/bbls	· ~
For NON-EXEMPT waste only, the following documentation is MSDS Information Other (Description)	attached (check appropriate items):
	on and Recovery Act (RCRA) and the Environmental Protection bed waste is: (check appropriate classification)
EXEMPT oilfield waste.	NON-EXEMPT oilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation)
waste does not contain Naturally Occurring Radioactive Mater Subpart 1403.	3-15-01
Print Name:	Date:
Title: {quipment + Suvironmental ~	7 a 4 4 5 c



SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:

Key Energy

Project #:

98065-001

Sample ID:

Wash Water Tank

Date Reported:

03-01-01

Lab ID#:

19316

ate Reported:

03-01-01

Sample Matrix:

Water

Date Sampled: Date Received: 02-27-01 02-27-01

Preservative:

Cool

Date Analyzed:

12-28-01

Condition:

Cool and Intact

Chain of Custody:

02-28-01 8528

Parameter

Result

IGNITABILITY:

Negative

CORROSIVITY:

Negative

9H = 6.68

REACTIVITY:

Negative

RCRA Hazardous Waste Criteria

Parameter

Hazardous Waste Criterion

IGNITABILITY:

Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21.

(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

CORROSIVITY:

Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22.

(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)

REACTIVITY:

Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23.

(i.e. Violent reaction with water, strong base, strong acid, or the generation

of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference:

40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments:

5651 US Hwy 64.

Analyst

Reviev



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS

Client:	Key Energy	Project #:	98065-001
Sample ID:	Wash Water Tank	Date Reported:	03-02-01
Laboratory Number:	19316	Date Sampled:	02-27-01
Chain of Custody:	8528	Date Received:	02-27-01
Sample Matrix:	Water	Date Extracted:	NA
Preservative:	Cool	Date Analyzed:	03-02-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

		Detection	Regulatory
	Concentration	Limit	Limits
Parameter	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	0.0172	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	0.0361	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	. ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery	:
	Trifluorotoluene	98%	
	Bromofluorobenzene	99%	

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

5651 US Hwy 64.

Analyst Colinia

Mistrie m Walter



EPA METHOD 8040 PHENOLS

Client:	Key Energy	Project #:	98065-001
Sample ID:	Wash Water Tank	Date Reported:	03-12-01
Laboratory Number:	19316	Date Sampled:	02-27-01
Chain of Custody:	8528	Date Received:	02-27-01
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	03-12-01
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	0.123	0.020	200
p,m-Cresol	0.130	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery	
	2-Fluorophenol	98%	
	2,4,6-Tribromophenol	99%	

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

5651 US Hwy 64.

Analyst L. Cefeur

Review



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics

Client:	Key Energy	Project #:	98065-001
Sample ID:	Wash Water Tank	Date Reported:	03-12-01
Laboratory Number:	19316	Date Sampled:	02-27-01
Chain of Custody:	8528	Date Received:	02-27-01
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	03-12-01
Condition:	Cool and Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	0.061	0.020	5.0
Hexachloroethane	0.051	0.020	3.0
Nitrobenzene	0.054	0.020	2.0
Hexachlorobutadiene	0.184	0.020	0.5
2,4-Dinitrotoluene	0.030	0.020	0.13
HexachloroBenzene	0.086	0.020	0.13

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery

2-fluorobiphenyl

101%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

5651 US Hwy 64.

Dece C. Orferen

Mistrie m Walter
Review



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS

Client:	Key Energy	Project #:	98065-001
Sample ID:	Wash Water Tank	Date Reported:	03-01-01
Laboratory Number:	19316.	Date Sampled:	02-27-01
Chain of Custody:	8528	Date Received:	02-27-01
Sample Matrix:	Water	Date Analyzed:	03-01-01
Preservative:	` Cool	Date Extracted:	NA
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

	Concentration	Det. Limit	Regulatory Level
Parameter	(mg/L)	(mg/L)	(mg/L)
Arsenic	0.012	0.001	5.0
Barium	0.050	0.001	100
Cadmium	0.001	0.001	1.0
Chromium	0.003	0.001	5.0
Lead	0.013	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	0.002	0.001	1.0
Silver	0.006	0.001	5.0

ND - Parameter not detected at the stated detection limit,

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA,

December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission

SW-846, USEPA. December 1996.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C

section 261.24, August 24, 1998.

Comments:

5651 US Hwy 64.

Analyst

Review Malter



QUALITY ASSURANCE / QUALITY CONTROL DOCUMENTATION



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	03-02-01
Laboratory Number:	03-02-TCV	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-02-01
Condition:	N/A	Analysis Requested:	TCLP

		Detection	Regulatory
	Concentration	Limit	Limits
Parameter	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	ND	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	. ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Accep	otance Criteria	Parameter	Percent Recovery	
		Trifluorotoluene	100%	
		Bromofluorobenzene	100%	
References:	Method 1311, Toxicity C	Characteristic Leaching Procedure, SW	-846, USEPA, July 1992.	
	Method 5030, Purge-an	d-Trap, SW-846, USEPA, July 1992.		
	Method 8010, Halogena	ated Volatile Organic, SW-846, USEPA	, Sept. 1994 <i>.</i>	
	Method 8020, Aromatic	Volatile Organics, SW-846, USEPA, Se	ept. 1994.	
Note:	Regulatory Limits based	d on 40 CFR part 261 Subpart C section	n 261.24, July 1, 1992.	
Comments:	QA/QC for sample	s 19316 - 19318.		

Analyst P. aleven

Christing Walters
Review



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	03-02-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP	Date Analyzed:	03-02-01
Condition:	N/A	Date Extracted:	N/A

Duplicate				
	Sample	Sample	Detection	
	Result	Result	Limits	Percent
Parameter	(mg/L)	(mg/L)	(mg/L)	Difference
Vinyl Chloride	ND	ND	0.0001	0.0%
1,1-Dichloroethene	ND	ND	0.0001	0.0%
2-Butanone (MEK)	0.017	0.017	0.0001	0.0%
Chloroform	ND	ND	0.0001	0.0%
Carbon Tetrachloride	ND	ND	0.0001	0.0%
Benzene	0.036	0.036	0.0001	0.0%
1,2-Dichloroethane	ND	ND	0.0001	0.0%
Trichloroethene	ND	ND	0.0003	0.0%
Tetrachloroethene	ND	ND	0.0005	0.0%
Chlorobenzene	ND	ND	0.0003	0.0%
1,4-Dichlorobenzene	ND	ND	0.0002	0.0%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for samples 19316 - 19318.

Dlew L. afecus

Christin m Walter



EPA METHODS 8010/8020 AROMATIC / HALOGENATED VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client: QA/QC
Sample ID: Matrix Spike
Laboratory Number: 19316

Sample Matrix:

Condition:

Analysis Requested:

19316 Water TCLP

N/A

Project #:
Date Reported:
Date Sampled:

Date Extracted:

N/A 03-02-01

Date Sampled: N/A
Date Received: N/A
Date Analyzed: 03-0

03-02-01

N/A

			Spiked			SW-846
•	Sample	Spike	Sample	Det.		% Rec.
	Result	Added	Result	Limit	Percent	Accept.
Parameter	(mg/L)	(mg/L)	(mg/L)	(mg/L)	Recovery	Range
Vinyl Chloride	ND	0.050	0.0495	0.0001	99%	28-163
1,1-Dichloroethene	ND	0.050	0.0494	0.0001	99%	43-143
2-Butanone (MEK)	0.0172	0.050	0.0662	0.0001	99%	47-132
Chloroform	ND	0.050	0.0500	0.0001	100%	49-133
Carbon Tetrachloride	ND	0.050	0.0490	0.0001	98%	43-143
Benzene	0.0361	0.050	0.0856	0.0001	99%	39-150
1,2-Dichloroethane	ND	0.050	0.0490	0.0001	98%	51-147
Trichloroethene	ND	0.050	0.0495	0.0003	99%	35-146
Tetrachloroethene	ND	0.050	0.0495	0.0005	99%	26-162
Chlorobenzene	ND	0.050	0.0495	0.0003	99%	38-150
1,4-Dichlorobenzene	ND	0.050	0.0495	0.0002	99%	42-143

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.

Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994. Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments:

QA/QC for samples 19316 - 19318.

Melvet, (g

Review



EPA METHOD 8040 PHENOLS ality Assurance Reno

Quality Assurance Report Laboratory Blank

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	03-12-01
Laboratory Number:	03-12-TCA	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-12-01
Condition:	N/A	Analysis Requested:	TCLP

Analytical Results		Detection	Regulatory
Parameter	Concentration	Limit	Limit
Parameter	(mg/L)	(mg/L)	(mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND .	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-fluorophenol	98 %
	2,4,6-tribromophenol	99 %

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Analyst P. Ogleven

Christine m Walter



EPA METHOD 8040 PHENOLS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	03-12-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Date Analyzed:	03-12-01
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Detection Limit (mg/L)	Percent Difference
o-Cresol	0.123	0.122	0.020	1.0%
p,m-Cresol	0.130	0.128	0.040	2.0%
2,4,6-Trichlorophenol	ND	ND	0.020	0.0%
2,4,5-Trichlorophenol	ND	ND	0.020	0.0%
Pentachlorophenol	ND	ND	0.020	0.0%

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	 Parameter	Maximum Difference
	2040.0	22.22

8040 Compounds

30.0%

References:

Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Analyst Coleman

(Mister m Walter



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	03-12-01
Laboratory Number:	03-12-TBN	Date Sampled:	N/A
Sample Matrix:	Hexane	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	03-12-01
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery

2-fluorobiphenyl

101%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Den C. Ofenn Analyst

Ahristni m Walters
Review



EPA Method 8090 Nitroaromatics and Cyclic Ketones TCLP Base/Neutral Organics QA/QC Matrix Duplicate Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	03-12-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	03-12-01
•		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Percent Difference	Det. Limit (mg/L)	
Pyridine	0.061	0.061	0.0%	0.020	
Hexachloroethane	0.051	0.050	1.0%	0.020	
Nitrobenzene	0.054	0.054	0.0%	0.020	
Hexachlorobutadiene	0.184	0.182	1.1%	0.020	
2,4-Dinitrotoluene	0.030	0.030	0.0%	0.020	
HexachloroBenzene	0.086	0.085	1.8%	0.020	

ND - Parameter not detected at the stated detection limit.

	·	
QA/QC Acceptance Criteria	Parameter	Maximum Difference

8090 Compounds

30%

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.

Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note:

Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments:

QA/QC for samples 19316 - 19318.

Decen L. Oferin

Review Malten



EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	03-01-TCM QA/QC	Date Reported:	03-01-01
Laboratory Number:	19316	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Analysis Requested:	TCLP Metals	Date Analyzed:	03-01-01
Condition:	N/A	Date Extracted:	N/A

Blank & Duplicate	Instrument	Method	Detectio	n Sample	Duplicate	% ;	Acceptance
Conc. (mg/L)	Blank	Blank	Limit			0.105	0.107
Arsenic	ND	ND	0.001	0.012	0.012	0.0%	0% - 30%
Barium	ND	ND	0.001	0.050	0.049	2.0%	0% - 30%
Cadmium	ND	ND	0.001	0.001	0.001	0.0%	0% - 30%
Chromium	ND	ND	0.001	0.003	0.003	0.0%	0% - 30%
Lead	ND	ND	0.001	0.013	0.013	0.0%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	0.002	0.002	0.0%	0% - 30%
Silver	ND	ND	0.001	0.006	0.006	0.0%	0% - 30%

Spike	Spike:	Sample		Percent	Acceptance
Conc. (mg/L)	Added		Sample	Recovery .	Range
Arsenic	0.500	0.012	0.512	100.0%	80% - 120%
Barium	0.500	0.050	0.548	99.6%	80% - 120%
Cadmium	0.500	0.001	0.500	99.8%	80% - 120%
Chromium	0.500	0.003	0.503	100.0%	80% - 120%
Lead	0.500	0.013	0.512	99.8%	80% - 120%
Mercury	0.050	ND	0.049	98.0%	80% - 120%
Selenium	0.500	0.002	0.502	100.0%	80% - 120%
Silver	0.500	0.006	0.505	99.8%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References:

Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, Dec. 1996

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals,

SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission,

SW-846, USEPA, December 1996.

Comments:

QA/QC for samples 19316 - 19318.

Analyst

Mistering Whelen

CHAIN OF CUSTODY RECORD

ANALYSIS / PARAMETERS	Remarks						}	Date Time 2/27/6/ 10 4/2			Sample Receipt	N 7-	Received Intact	Cost - Bealthre for 1	THE CANADA THE PROPERTY OF THE
	o. of sainers	noO	\ \					Received by: (Signature)	Réceived by: (Signature)	Received by: (Signature)	VIDOTECH IOC		ghway 64		
Project Location SCSI US Hoop 64	98065-061	Lab Number Matrix	19316 water					Date Time Rece 2.27.01 10:48	Rece	Rece	FOVIDOTE		5796 U.S. Highway 64	1977 (1979) (1999)	
Project	Client No.	Sample	4:30					1							
Client / Project Name 大定ケ 近心を名子	Sampler: HARLAN W. Brown	Sample No./ Sample Identification Date	Wast water 2.27.0					Relinquished by: (Signature)	Relinquished by: (Signature)	Relinquished by: (Signature)					

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV

State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-138 Revised March 17, 1999

> Submit Original Plus 1 Copy to Appropriate District Office

2040 South Pacheco, Santa Fe, NM 87505	District Office
REQUEST FOR APPROVAL TO ACC	EPT SOLID WASTE
1. RCRA Exempt: Non-Exempt:	4. Generator WFS
Verbal Approval Received: Yes	5. Originating Site HENSE HERRCAMPON CDP
2. Management Facility Destination KEY DIS POSAC-	6. Transporter Key
3. Address of Facility Operator #345 C2 3500 AZ Fec NM	8. State
7. Location of Material (Street Address or ULSTR) RN69 W	~
9. <u>Circle One</u> :	
A. All requests for approval to accept oilfield exempt wastes will be accompanione certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied material is not-hazardous and the Generator's certification of origin. No we approved	ed by necessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for	r transport.
BRIEF DESCRIPTION OF MATERIAL:	÷ .
washwater + Run off water	MAR 2001
- ·	
Estimated Volume 1000 mov419 oy Known Volume (to be entered by	the operator at the end of the haulcy
SIGNATURE Management Facility Authorized Agent TITLE: M	GL DATE! 3-16-01
TYPE OR PRINT NAME: MICHAEL TALOVICK	TELEPHONE NO. 505-334-6186
(This space for State Use)	
APPROVED BY: Deny tend TITLE: GE	colog15T DATE: 3/20/0/
APPROVED BY: Marlyn J 2/ TITLE: Envir	mmm by Golast DATE: 3/21/01

District I - (505) 393-6161 1625 N. French Dr Hobbs, NM.88240 District II - (505) 748-1283 811 S. First Artesia, NM 88210 District III - (505) 334-6178 1000 Rio Brazos Road Aztec, NM 87410

District IV - (505) 827-7131 2040 S. Pacheco Santa Fe, NM 87505

New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division

2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131 Submit to OCD Permitted Surface Waste Management Facility

Form C-143

3/15/00

GENERATOR CERTIFICATE OF WASTE STATUS

2.Permit Number (if waste generated at an OCD permitted facility)
4. Location of Waste (Street address &/or ULSTR): HORSE CANYON COP UNIT A, SEC 27, TWN 30N, RNG 9W LONGITUDE: -107, 759933 LATITUDE: 36,787046 FROM AZTEC, NM EAST ON STATE HWY 173 APPROX. 14 MILES
6. Transporter: VARIOUS SJA SERVICE PROVIDERS
ched (check appropriate items):
nd Recovery Act (RCRA) and the Environmental Protection waste is: (check appropriate classification) NON-EXEMPT oilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation)
exempt or non-exempt non-hazardous waste and that this IORM) regulated pursuant to 20 NMAC 3.1 Date: 3-09-01

QWAL LABORATORIES, INC.

2911 ROTARY TERRACE, P.O. BOX 562/PITTSBURG, KS 66762/(316)232-1970

LABORATORY REPORT:

REFERENCE #: 0102592

DATE COLLECTED: 02/21/01

03/07/01

02/23/01

DATE REPORTED:

DATE RECEIVED:

SENT WILLIAMS GAS PIPELINE

TO: 187 COUNTY ROAD # 4980

BLOOMFIELD, NM 87413

JIM STRUHS (C)

PROJECT: WFS/WHLD HORSE CDP

Reference Fraction: 0102592-01A

Sample ID: WH-NE-WW-01 NON EXEMPT

Sample Date Collected: 02/21/0110:40:00

Sample Matrix: WATER

TEST	METHOD	RESULT	UNITS	PQL	ANALYZED	BY
PH	EPA 150.1	6.7	SU		02/23/01	SLR
REACTIVE CYANIDE	SW846 SEC7	.3 <0.001	MG/L	0.001	03/01/01	KKL
REACTIVE SULFIDE	SEC.7.3.4.	1 <0.05	MG/L	0.05	03/01/01	MS2
METAL PREPARATION	EPA 3010IL	010226A			02/26/01	JH
SILVER, TOTAL	SW 846 601	OB <0.05	MG/L	0.05	02/27/01	MX
ARSENIC, TOTAL	SW 846 601	OB 0.62	MG/L	0.05	02/27/01	MX
BARIUM, TOTAL	SW 846 601	OB 1.321	MG/L	0.025	02/27/01	MX
CADMIUM, TOTAL	SW 846 6010	OB <0.025	MG/L	0.025	02/27/01	MX
CHROMIUM, TOTAL	SW 846 601	OB 0.06	MG/L	0.05	02/27/01	MX
MERCURY, TOTAL	SW 846 747	0.0002	MG/L	0.0002	02/27/01	MX
LEAD, TOTAL	SW 846 601	OB 0.15	MG/L	0.05	02/27/01	MX
SELENIUM, TOTAL	SW 846 601	OB 1.24	MG/L	0.05	02/27/01	MX
TOTAL CHLORINE/HALOG	SW 846 9020	OM 535.1	MG/L	5.0	03/01/01	MS2
TPH GRO	8015G/OA1	64000	UG/L	5000	02/28/01	MB
BTEX	OA1/8021B			3.0		
BENZENE		2950	UG/L	100	02/28/01	MB
TOLUENE		8180	UG/L	100	02/28/01	MB
ETHYLBENZENE		330	UG/L	100	02/28/01	MB
TOTAL XYLENES		4680	UG/L	100	02/28/01	MB
BFB (SURROGATE)		89	125	75		
TPH	SW846-8015	AZ		0.3		
>C3 - C10		262	MG/L	10	03/03/01	BEM
>C10 - C22		869	MG/L	15	03/03/01	BEM
>C22 - C32		146	MG/L	25		
TOTAL C6 - C32		1277	MG/L	50	03/03/01	

ND=NONE DETECTED
PQL=PRACTICAL QUANTITAION LIMIT
SU=STANDARD UNITS
B=DETECTED IN METHOD BLANK

APPROVED BY:

PERRY KOESTER LABORATORY DIRECTOR <u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II 811 South First, Artesia, NM 88210 District III
1000 Rio Brazos Road, Aztec, NM 87410 District IV 2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Moutyne Kieling Form C-138 Revised March 17, 1999

Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT S	SOLID WASTE
1. RCRA Exempt: Non-Exempt: X Verbal Approval Received: Yes No X	4. Generator VINWATERS + Rogels 5. Originating Site
2. Management Facility Destination KEY D15 posA L	6. Transporter
3. Address of Facility Operator #345 C23500 AZHEC NM	8. State Wn
7. Location of Material (Street Address or ULSTR) #15 CR 5860 FARMINGTON, NM 87401	
9. Circle One: A. All requests for approval to accept oilfield exempt wastes will be accompanied by a one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by necessary material is not-hazardous and the Generator's certification of origin. No waste class approved	essary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transpo	rt.
BRIEF DESCRIPTION OF MATERIAL:	
	FEB 2001
Estimated Volume Sobbls cy Known Volume (to be entered by the operation)	ator at the end of the haul)cy
SIGNATURE Waste Management Facility Authorized Agent TITLE: M'6e	DATE: 2-14-0]
TYPE OR PRINT NAME: MICHAEL TACOVICY TELEP	HONE NO. <u>505-334-6/8/</u>
(This space for State Use)	
APPROVED BY: Morting May. TITLE: Em ronn	15/ DATE: 2/15/0/
APPROVED BY: Martin Mark. TITLE: Em ronn	II () A DATE O ()

District I - (505) 393-6161 1625 N. French Dr Hobbs, NM 88240 District 11 - (505) 748-1283 811 S. First Anesia, NM 88210 District III - (505) 334-6178 1000 Rio Brazos Road Aztec, NM 87410 District IV - (505) 827-7131

2040 S. Pacheco

Santa Fe, NM 87505

New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division

2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131

Submit to OCD

Form C-143

3/15/00

Permitted Surface Waste Management Facility

GENERATOR CERTIFICATE OF WASTE STATUS

1. Waste Generator Name and Address: VAN WATERS & ROGERS	Permit Number (if waste generated at an OCD permitted facility)
# 15 CR 5860	VANWALEIS & Rogers
FARMINSTON NM 87401	CAN WHILE ?
3. Description of Waste and Generating Process:	Location of Waste (Street address &/or ULSTR):
3000 GAI OF RAIN WATER	MANK FARM Pit
mixed with 100 GAI OF Ethylen	
GLYCO1	
	,
5. Destination (Surface Waste Management Facility):	6. Transporter:
WEY ELERGY DISPOSAL	Key
7. Estimated Volume Cy/bbls	
For NON-EXEMPT waste only, the following documentate	ion is attached (check appropriate items):
MSDS Information	RCRA Hazardous Waste Analysis (With Chain of Custody).
Other (Description)	
Generator certifies that, according to the Resource Cons Agency's July 1988 regulatory determination, the above of	servation and Recovery Act (RCRA) and the Environmental Protection described waste is: (check appropriate classification)
EXEMPT oilfield waste.	NON-EXEMPT oilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation)
waste does not contain Naturally Occurring Radioactive Subpart 1403.	
Generator Signature:	Date: 2-18-0/
Print Name: LAWTENCE LONG	
Generator Signature: Jawes Long Print Name: Lawrence Long Title: Lead man	

REPORT NUMBER: 971 VAN WATERS & ROGERS INC. MSDS NO: DZ30478 MATERIAL SAFETY DATA SHEET MAINFRAME UPLOAD DATE; 12/19/00

PRODUCT: ETHYLENE GLYCOL

DROER NO:

VERSION: 005 PAGE: 001

VAN WATERS & ROGERS INC. 6100 CARILLON POINT , A ROYAL VOPAK COMPANY , KIRKLAND (425)889-3400 , WA 98033

EMERGENCY ASSISTANCE

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC (800)424-9300

PRODUCT NAME: ETHYLENE GLYCOL

MSDS #: DZ30478

EFFECTIVE DATE: 4/17/00

1221ED BY: 008360

Synonyms: Van Glycol CP 2000

ŗ.) COMPOSITION/INFORMATION ON INGREDIENTS

ETHYLENE GLYCOL

CAS# 000107-21-1 >99%

HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS (SEE SECTION 11 FOR TOXICOLOGICAL DATA.)

M MAY CAUSE SLIGHT TRANSIENT (TEMPORARY) EYE IRRITATION

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PRODUCT: ETHYLENE GLYCOL

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CORNEAL INJURY IS UNLIKELY. VAPORS OR MISTS MAY CAUSE EY IRRITATION.

SKIN: ESSENTIALLY NONIRRITATING TO SKIN. REPEATED SKIN EXPOSURE TO LARGE QUANTITIES MAY RESULT IN ABSORPTION OF HARMFUL AMOUNTS. MASSIVE CONTACT WITH DAMAGED SKIN OR OF MATERIAL SUFFICIENTLY HOT TO BURN SKIN MAY RESULT IN ABSORPTION OF POTENTIALLY LETHAL AMOUNTS.

INGESTION: SINGLE DOSE ORAL TOXICITY IS CONSIDERED TO BE MODERATE. EXCESSIVE EXPOSURE MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, CARDIOPULMONARY EFFECTS (METABOLIC ACIDOSIS), AND KIDNEY FAILURE. SMALL AMOUNTS SWALLOWED INCIDENTAL TO NORMAL HANDLING OPERATIONS ARE NOT LIKELY TO CAUSE INJURY; HOWEVER, SWALLOWING AMOUNTS LARGER THAN THAT MAY CAUSE SERIOUS INJURY, EVEN DEATH,

INHALATION: AT ROOM TEMPERATURE, EXPOSURES TO VAPORS ARE MINIMAL DUE TO PHYSICAL PROFERTIES; HIGHER TEMPERATURES MAY GENERATE VAPOR LEVELS SUFFICIENT TO CAUSE ADVERSE EFFECTS.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: EXCESSIVE EXPOSURE MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT, OBSERVATIONS IN ANIMALS INCLUDE KIDNEY AND LIVER EFFECTS AND DEPOSITION OF CALCIUM SALTS IN VARIOUS TISSUES AFTER LONG-TERM DIETARY INTAKE OF ETHYLENE GLYCOL.

CANCER INFORMATION: ETHYLENE GLYCOL DID NOT CAUSE CANCER IN LONG-TERM ANIMAL STUDIES.

TERATOLOGY (BIRTH DEFECTS): BASED ON ANIMAL STUDIES, INGESTION OF VERY LARGE AMOUNTS OF ETHYLENE GLYCOL APPEARS TO BE THE MAJOR AND POSSIBLY ONLY ROUTE OF EXPOSURE TO PRODUCE BIRTH DEFECTS.

EXPOSURES BY INHALATION (TESTED NOSE-ONLY IN ANIMALS TO PREVENT INGESTION) OR SKIN CONTACT, THE PRIMARY ROUTES OF OCCUPATIONAL EXPOSURE, HAD MINIMAL OR ESSENTIALLY NO EFFECT ON THE FETUS.

REPRODUCTIVE EFFECTS: INGESTION OF LARGE AMOUNTS OF ETHYLENE GLYCOL HAS BEEN SHOWN TO INTERFERE WITH REPRODUCTION IN ANIMALS. SPECIFICALLY, GROWTH RETARDATION AND DECREASED LITTER SIZE IN RATS AND MICE AND MATING FREQUENCY IN MICE WERE ABOSERVED.

, FIRST AID

YE: FLUSH EYES WITH PLENTY OF WATER.

IN: WASH OFF IN FLOWING WATER.

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VAN WATERS & ROGERS INC.

PRODUCT: ETHYLENE GLYCOL

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INGESTION: IF SWALLOWED, INDUCE VOMITING IHMEDIATELY A DIRECTED BY MEDICAL PERSONNEL. NEVER GIVE ANYTHING B TO AN UNCONSCIOUS PERSON. CONSULT MEDICAL PERSONNEL. œΡ ΥΩ

INHALATION: REMOVE TO FRESH AIR IF EFFECTS OCCUR. CONSULT

NOTE TO PHYSICIAN: EARLY ADMINISTRATION OF ETHANOL MAY COUNTER THE TOXIC EFFECTS OF EHTYLENE GLYCOL -- METABOLIC ACIDOSIS AND RENAL DAMAGE. HEMODIALYSIS OR PERITONEAL DIALYSIS HAVE BEEN OF BENEFIT. NEW ENG. J. MED. 304:21 1981. SUPPORTIVE CARE. TREATMENT BASED ON JUDGEMENT OF THE PHYSICIAN IN RESPONSE TO REACTIONS OF THE PATIENT.

ួរ។ FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASH POINT: 247F, 119C
METHOD USED: SETAFLASH
AUTOIGNITION TEMPERATURE: /
GLYCOL IS 748F, 398C. AUTOIGNITION TEMPERATURE FOR ETHYLENE

FLAMMABILITY LIMITS LFL: 3.2% UFL: NOT DETERMINED.

HAZARDOUS COMBUSTION PRODUCTS: DURING A FIRE, SMOKE MAY CONTAIN THE ORIGINAL MATERIAL IN ADDITION TO UNIDENTIFIED TOXIC AND/OR IRRITATING COMPOUNDS, HAZARDOUS COMBUSTION PRODUCTS MAY INCLUDE AND ARE NOT LIMITED TO: CARBON MONOXIDE, CARBON DIOXIDE. HAZARDOUS COMBUSTION PRODUCTS MAY INCLUDE TRACE AMOUNTS OF: ALDEHYDES, ORGANIC ACIDS.

OTHER FLAMMABILITY INFORMATION: VIOLENT STEAM GENERATION OR ERUPTION MAY OCCUR UPON APPLICATION OF DIRECT WATER STREAM. FLAMMABLE CONCENTRATION OF VAPOR CAN ACCUMULATE AT TEMPERATURES ABOVE 247.0 DEG. F. SPILLS OF THESE ORGANIC LIQUIDS ON HOT FIBROUS INSULATIONS MAY LEAD TO LOWERING OF THE AUTOIGNITION TEMPERATURES POSSIBLY RESULTING IN SPONTANEOUS COMBUSTION.

EXTINGUISHING MEDIA: WATER FOG OR FINE SPRAY, CARBON DIGXIDE, DRY CHEMICAL, FOAM. ALCOHOL RESISTANT FOAMS (ATC TYPE) ARE ARE PREFERRED IF AVAILABLE. GENERAL PURPOSE SYNTHETIC FOAMS (INCLUDING AFFF) OR PROTEIN FOAMS MAY FUNCTION, BUT MUCH LESS EFFECTIVELY. DO NOT USE DIRECT WATER STREAM. WILL SPREAD FIRE.

WEDIA TO 22 AVOIDED: DO NOT USE DIRECT WATER STREAM.

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FIRE FIGHTING INSTRUCTIONS: KEEP PEOPLE AWAY. ISOLATE FIRE AND DENY UNNECESSARY ENTRY. BURNING LIQUIDS MAY BE MOVED BY FLUSHING WITH WATER TO PROTECT PERSONNEL AND MINIMIZE PROPERTY DAMAGE. BURNING LIQUIDS MAY BE EXTINGUISHED BY DILUTION WITH WATER. DO NOT USE DIRECT WATER STREAM. MAY SPREAD FIRE.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: WEAR POSITIVE-PRESSURE, SELF-CONTAINED BREATHING APPARATUS (SCBA) AND PROTECTIVE FIRE FIGHTING CLOTHING (INCLUDES FIRE-FIGHTING HELMET, COAT, PANTS, BOOTS AND GLOVES). IF PROTECTIVE EQUIPMENT IS NOT AVAILABLE OR NOT USED, FIGHT FIRE FROM A PROTECTED LOCATION OR SAFE DISTANCE.

<u>٥</u>-ACCIDENTAL RELEASE MEASURES (SEE SECTION 15 FOR REGULATORY

(NFORMATION)

PROTECT PEOPLE: CLEAR WON-EMERGENCY PERSONWEL FROM AREA

PROTECT THE ENVIRONMENT: CONTAIN MATERIAL TO PREVENT CONTAMI-NATION OF SOIL, SURFACE WATER OR GROUND WATER.

CLEANUP: SMALL SPILLS: ABSORB WITH MATERIALS SUCH AS: CAT LITTER, SAND, SAWDUST, VERMICLITE AND ZORB-ALL(R) OR HAZORB(R). LARGE SPILLS: DIKE AND PUMP INTO SUITABLE AND PROPERLY LABELED CONTAINERS.

HANDLING AND STORAGE

HANDLING: ACCUMULATION OF THIS PRODUCT ON SURFACES CAN CAUSE SLIPPERY CONDITIONS WHEN WET.

STORAGE: KEEP OUT OF REACH OF CHILDREN. PRODUCT MAY BECOME A SOLIO AT TEMPERATURES BELOW BF, -13C. DO NOT STORE NEAR FOOD, FOODSTUFFS, DRUGS OR POTABLE WATER SUPPLIES. FOR MORE STORAGE AND HANDLING INFORMATION REFER TO BULLENTIN TITLED 'A GUIDE TO GLYCOLS'.

00 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: PROVIDE GENERAL AND/OR LOCAL EXHAUST VENTILATION TO CONTROL AIRBORNE LEVELS BELOW THE EXPOSURE GUIDELINES. LOCAL EXHAUST VENTILATION MAY BE NECESSARY FOR

PERSONAL PROTECTIVE EQUIPMENT

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EYE PROTECTION: USE SAFETY GLASSES. IF VAPOR EXPOSURE CAUSES EYE DISCOMFORT, USE A FULL-FACE RESPIRATOR.

SKIN PROTECTION: WHEN PROLONGED OR FREQUENTLY REPEATED CONTACT COULD OCCUR, USE PROTECTIVE CLOTHING IMPERVIOUS TO THIS MATERIAL. SELECTION OF SPECIFIC ITEMS SUCH AS GLOVES, BOOTS, APRON OR FULL-BOOY SUIT WILL DEPEND ON OPERATION.

RESPIRATORY PROTECTION: ATMOSPHERIC LEVELS SHOULD BE MAINTAINED BELOW THE EXPOSURE GUIDELINE. FOR MOST CONDITIONS, NO RESPIRATORY PROTECTION SHOULD BE NEEDED; HOWEVER, IF MATERIAL IS HEATED OR SPRAYED, USE AN APPROVED AIR-PURIFYING RESPIRATOR.

EXPOSURE GUIDELINE(S): ETHYLENE GLYCOL: ACGIH TLV IS 100 MG/M3, CEILING, A4. OSHA PEL IS 50 PPM CEILING. PELS ARE IN ACCORD WITH THOSE RECOMMENDED BY OSHA, AS IN THE 1989 REVISION OF PELS.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: COLORLESS LIQUID.

ODOR: SLIGHT

VAPOR PRESSURE: 0.12 MMHG @ 25C

VAPOR DENSITY: 2.14

BOILING POINT: 387.1F 197C

SOLUBILITY IN WATER: COMPLETELY MISCIBLE.

SPECIFIC GRAVITY: 1.1155 @ 20/20C

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: STABLE UNDER RECOMMENDED STORAGE CONDITIONS. SEE STORAGE SECTION. THERMALLY STABLE AT TYPICAL USE TEMPERATURES.

CONDITIONS TO AVOID: AVOID TEMPERATURES BELOW 8F, ~13C. AVOID TEMPERATURES ABOVE 775F, 413C. PRODUCT CAN DECOMPOSE AT ELEVATED TEMPERATURES.

INCOMPATIBILITY WITH OTHER MATERIALS: AVOID CONTACT WITH OXIDIZING MATERIALS SUCH AS NITRIC ACID. AVOID CONTACT WITH ACIDS, BASES, STRONG ACIDS, STRONG BASES, STRONG OXIDIZERS.

HAZARDOUS DECOMPOSITION PRODUCTS: HAZARDOUS DECOMPOSITION PRODUCTS DEPEND UPON TEMPERATURE, AIR SUPPLY AND THE PRESENCE OF OTHER MATERIALS.

HAZARDOUS FOLYMERIZATION: WILL NOT OCCUR.

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TOXICOLOGICAL INFORMATION (SEE SECTION 3 FOR POTENTIAL HEALTH

EFFECTS. FOR DETAILED TOXICOLOGICAL DATA, WRITE OR CALL THE

OR NON-EMERGENCY NUMBER SHOWN IN SECTION 1)

THE DERMAL LOSO HAS NOT BEEN DETERMINED.

INGESTION: THE LETHAL 100ML. THE DRAL LD50 DOSE IN HUMANS IS ESTIMATED TO BE 30Z. FOR RATS IS BETWEEN 6000-13,000 MG/KG.

MUTAGENICITY (THE EFFECTS ON GENETIC MATERIAL): IN VITRO MUTAGENICITY STUDIES WERE NEGATIVE. ANIMAL MUTAGENICITY STUDIES WERE NEGATIVE.

ECOLOGICAL INFORMATION (FOR DETAILED ECOLOGICAL DATA, WRITE OR CALL

THE ADDRESS OR NOW-EMERGENCY NUMBER SHOWN IN SECTION 1)

ENVIRONMENTAL FATE

MOVEMENT & FARTITIONING: BIOCONCENTRATION POTENTIAL IS LOW (BCF LESS THAN 100 OR LOG KOW LESS THAN 3). LOG OCTANOL/WATER PARTITION COEFFICIENT (LOG KOW) IS -1,36. HENRY'S LAW CONSTANT (H) IS 6.0E-08 ATK-M3/MOL. BIOCONCENTRATION FACTER (BCF) IS 10 IN GOLDEN ORFE.

DEGRADATION & TRANSFORMATION: BIODEGRADATION UNDER AERGBIC STATIC LABORATORY CONDITIONS IS HIGH (BOD20 OR BOD28/THOD GREATER THAN 40%). S-DAY BIOCHEMICAL OXYGEN DEMAND (BOD5) IS 0.78 P/P. 10-DAY BIOCHEMICAL OXYGEN DEMAND (BOD20) IS 1.06 P/P. 20-DAY BIOCHEMICAL OXYGEN DEMAND (BOD20) IS 1.15 P/P. THEORETICAL OXYGEN DEMAND (BOD20) IS CALCULATED TO BE 1.29 P/P. BIODEGRADATION MAY OCCUR UNDER BOTH AEROBIC AND ANAEROBIC CONDITIONS (IN EITHER THE PRESENCE OR ABSENCE OF OXYGEN). INHIBITORY CONCENTRATION (ICSO) IN OECO "ACTIVATED SLUDGE, RESPIRATION INHIBITION TEST" (GUIDELINE # 209) IS (1000 MG/L. DEGRADATION IS EXPECTED IN THE ATMOSPHERIC ENVIRONMENT WITHIN DAYS TO WEEKS.

ECOTOXICOLOGY: MATERIAL IS PRACTICALLY NON-TOXIC TO AQUATIC ORGANISMS ON AN ACUTE BASIS (LC50 GREATER THAN 100 MG/L IN MOST SENSITIVE SPECIES). ACUTE LC50 FOR FATHEAD MINNOW (PIMEPHALES PROMELAS) IS 51000 MG/L. ACUTE LC50 FOR BLUEGILL (LEPOMIS MACROCHIRUS) IS 27549 MG/L. ACUTE LC50 FOR RAINBOW TROUT (ONCORHYNCHUS MYKISS) IS ABOUT 18000-46000 MG/L. ACUTE LC50 FOR FOR GUPPY (POECILIA RETICULATA) IS 49300 MG/L. ACUTE LC50 FOR

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WATER FLEA (DAPHNIA MAGNA) IS 46300-51100 MG/L. ACUTE LC50 FOR THE CLADOCERAN CERIODAPHNIA DUBIA IS 10000-25800 MG/L. ACUTE LC50 FOR CRAYFISH IS 91430 MG/L. ACUTE LC50 FOR BRINE SHRIMP (ARTEMIA SALINA) IS 20000 MG/L. ACUTE LC50 FOR GOLDEN ORFE (LEUCISCUS IDUS) IS GREATER THAN 10000 MG/L. ACUTE LC50 FOR GOLDEN ORFE GOLDFISH (CARASSIUS AURATUS) IS GREATER THAN 5000 MG/L. GROWTH INHIBITION EC50 FOR GREEN ALGA SELENASTRUM CAPRICORNUTUM IS 9500-13000 MG/L.

ū DISPOSAL CONSIDERATIONS (SEE SECTION 15 FOR REGULATORY INFORMATION)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND OR INTO ANY BODY OF WATER. ALL DISPOSAL METHODS MUST BE IN COMPLIANCE WITH ALL FEDERAL, STATE/PROVINCIAL AND LOCAL LAWS AND REGULATIONS. REGULATIONS MAY VARY IN DIFFERENT LOCATIONS. WASTE CHARACTERIZATIONS AND COMPLIANCE WITH APPLICABLE LAWS ARE THE RESPONSIBILITY SOLELY OF THE WASTE GENERATOR. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL, THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (COMPOSITION/INFORMATION ON INGREDIENTS). r.s

FOR UNUSED & UNCONTAMINATED PRODUCT, THE PREFERRED OPTIONS IN-CLUDE SENDING TO A LICENSED, PERMITTED: INCINERATOR OR OTHER THERMAL DESTRUCTION DEVICE,

AS A SERVICE TO ITS CUSTOMERS, DOW CAN PROVIDE NAMES OF INFORMATION RESOURCES TO HELP IDENTIFY WASTE MANAGEMENT COMPANIES AND OTHER FACILITIES WHICH RECYCLE, REPROCESS OR MANAGE CHEMICALS OR PLASTICS, AND THAT MANAGE USED DRUMS. TELEPHONE DOW'S CUSTOMER INFORMATION CENTER AT 800-258-2436 OR 517-832-1556 FOR FURTHER DETAILS.

TRANSPORT INFORMATION

CANADIAN TOG INFORMATION: FOR TDG REGULATORY INFORMATION, IF REQUIRED, CONSULT TRANSPORTATION RESULATIONS, PRODUCT SHIPPING PAPERS OR YOUR DOW REPRESENTATIVE.

FOR DOT REGULATORY INFORMATION, IF REQUIRED, CONSULT TRANSFORTATION REGULATIONS, PRODUCT SHIPPING PAPERS, OR YOUR DOW REPRESENTATIVE.

i_r REGULATORY INFORMATION (NOT MEANT TO BE ALL-INCLUSIVE--SELECTED

REGULATIONS REPRESENTED)

NOTICE: THE INFORMATION HEREIN IS PRESENTED IN GOOD FAITH AND

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RELIEVED TO BE ACCURATE AS OF THE EFFECTIVE DATE SHOWN ASSVE, WINDEPER, NO WARRANTY, EXPRESS OR IMPLIED IS GIVEN, REGULATORY RECUIREMENTS ARE SUBJECT TO CHANCE AND MAY DIFFER FROM ONE LOCATION TO ANOTHER; IT IS THE BUYER'S RESPONSIBILITY TO ENSURE THAT ITS ACTIVITIES COMPLY WITH FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS. THE FOLLOWING SPECIFIC INFORMATION IS MADE FOR THE PURPOSE OF COMPLYING WITH NUMEROUS FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS AND REGULATIONS, SEE OTHER SECTIONS FOR HEALTH AND SAFETY INFORMATION.

SARA 313 INFORMATION: THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372;

ETHYLENE GLYCOL CHEMICAL NAME 000107-21-1 CAS NUMBER Ö CONCENTRATION

><

SARA HAZARO CATEGORY: THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA "HAZARO CATEGORIES" PROMULGATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1984 (SARA TITLE III) AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:

PR I IMMEDIATE HEALTH HAZARD DELAYED HEALTH HAZARD

TOXIC SUBSTANCES CONTROL ACT (TSCA):

ALL INGREDIENTS ARE ON THE TSCA INVENTORY OR ARE NOT REQUIRED TO LISTED ON THE TSCA INVENTORY.

STATE RIGHT-TO-KNOW: THE FOLLOWING PRODUCT COMPONENTS ARE CITED ON CERTAIN STATE LISTS AS MENTIONED. NON-LISTED COMPONENTS MAY BE SHOWN IN THE COMPOSITION SECTION OF THE MSDS.

ETHYLENE GLYCOL CHEMICAL NAME 000107-21-1 CAS NUMBER 중조 PA1 PA3

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THAN OR EQUAL TO 1.0%).

NJ3=NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE (PRESENT AT GREATER THAN
OR EQUAL TO 1.0%).

PA1=PENNSYLVANIA HAZARDOUS SUBSTANCE (PRESENT AT GREATER THAN OR EQUAL
TO 1.0%).

PA3=PENNSYLVANIA ENVIRONMENTAL HAZARDOUS SUBSTANCE (PRESENT AT GREATER
THAN OR EQUAL TO 1.0%).

OSHA HAZARO COMMUNICATION STANDARD:

THIS PRODUCT IS A "HAZARDOUS CHEMICAL" AS COMMUNICATION STANDARD, 29 CFR 1910.1200. DEFINED BY THE DSHA HAZARD

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT

THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCE(S) LISTED SUBSTANCES" UNDER CERCLA WHICH MAY REQUIRE REPORTING OF CATEGORY:
CHEMICAL NAME
CAS#
RQ % AS "HAZARDOUS RELEASES:

Z PRODUCT

000107-21-1

5000 LBS

ETHYLENE GLYCOL

CANADIAN REGULATIONS

WHMIS INFORMATION: THE CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) CLASSIFICATION FOR THIS PRODUCT IS:

02A -MATERIAL IS TERATOGENIC, EMBRYOTOXIC, OR FETOTOXIC REFER ELSEWHERE IN THE MSDS FOR SPECIFIC WARNINGS AND SAFE HANDLING INFORMATION. REFER TO THE EMPLOYER'S WORKPLACE EDUCATION PROGRAM.

CPR STATEMENT: THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS (CPR) AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.

HAZARDOUS PRODUCTS ACT INFORMATION: THIS PRODUCT CONTAINS THE FOLLOWING

MATERIAL SAFETY DATA SHEET

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PRODUCT: ETHYLENE GLYCOL

PROD NO:

INGREDIENTS WHICH ARE CONTROLLED PRODUCTS AND/OR ON DISCLOSURE LIST (CANADIAN HPA SECTION 13 AND 14): COMPONENTS: THE INGREDIENT AMOUNT (XU/U)

16. OTHER INFORMATION

HAZARD RATING SYSTEM:

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

HEALTH FLAMMABILITY REACTIVITY

NOTE: NOT FOR USE IN THE MANUFACTURE OF FOOD OR PHARMACEUTICALS.

SHELF LIFE: THIS PRODUCT HAS A SHELF LIFE OF APPROXIMATELY 6 MONTHS IN AN UNLINED BULK STEEL TANK AT AMBIENT CONDITIONS. THE SHELF LIFE CAN BE UP TO 12 MONTHS IF THE BULK TANK OR DRUM IS LINED. HIGH COLOR AND A DROP IN PH ARE SIGNS THAT THE PRODUCT IS STARTING TO DETERIORATE. IF SIGNS OF DETERIORATION ARE STARTING TO DECUR, THE CUSTOMER NEEDS TO VERIFY THAT THE MATERIAL STILL MEETS SPECIFICATION PRIOR TO USE.

REPORT NUMBER: 971 VAN WATERS & ROGERS INC. PAGE: 011 MSDS NO: DZ30478 MATERIAL SAFETY DATA SHEET VERSION: 005 MAINFRAME UPLOAD DATE: 12/19/00 PRODUCT: ETHYLENE GLYCOL

PROD NO:

CONTACT: MSDS COORDINATOR VAN WATERS & ROBERS INC.
DURING BUSINESS HOURS, PACIFIC TIME (425)889-3400

FOR ADDITIONAL INFORMATION --

PRODUCT: CUST N

02/14/01 10:28

CUST NO:

DROER NO:

** VAN WATERS & ROGERS INC. ("VW&R"), A ROYAL VOPAK COMPANY, EXPRESSLY DISCLAIMS

ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED

HEREIN, AND SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR

CONSEQUENTIAL DAMGAGES. **

DO NOT USE INGREDIENT INFORMATION AND/OR PERCENTAGES IN THIS MSOS AS A PRODUCT SPECIFICATION, FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS, THESE CAN BE OBTAINED FROM YOUR LOCAL VU&R SALES OFFICE,

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE MANUFACTURER AND/OR RECOGNIZED TECHNICAL SQURCES. WHILE THE INFORMATION IS BELIEVED TO BE ACCURATE, VWAR MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR SUFFICIENCY. CONDITIONS OF USE ARE BEYOND VWARS CONTROL AND THEREFORE USERS ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY ASSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICATION OR USE OF, OR RELIANCE UPON, INFORMATION CONTAINED HEREIN, THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER PROCESS.

* * END OF MSDS * *

*

District I
1625 N. French Dr., Hobbs, NM 88240

District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-138 Revised March 17, 1999

> Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

REQUEST FOR ATTROVAL TO ACCELT	SOLID WASTE
1. RCRA Exempt: Non-Exempt:	4. Generator TRANSWESTEEN
Verbal Approval Received: Yes No	5. Originating Site N.M NOTEAU ADJUCTENT PIPE/INC
2. Management Facility Destination KEY D150054	6. Transporter
3. Address of Facility Operator #345 CL 3500 42 tec NM	8. State NM
7. Location of Material (Street Address or ULSTR) ON TEMSWESTERN RIGHTO	Ausy
9. Circle One:	
A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. (B.) All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste cla approved	ecessary chemical analysis to PROVE the
All transporters must certify the wastes delivered are only those consigned for transp	ort.
BRIEF DESCRIPTION OF MATERIAL:	
	TOOS NAL CONTROL OF THE CONTROL OF T
Estimated Volume 2000 bbls cy Known Volume (to be entered by the ope	rator at the end of the haul)cy
SIGNATURE Management Facility Authorized Agent TITLE: MCL	DATE: [-26-0]
TYPE OR PRINT NAME: MICHAEL TALONICL TELE	PHONE NO. <u>505-334-6186</u>
(This space for State Use)	
APPROVED BY: Deny Fount TITLE: Geolog	DATE: 1/29/01
	atal Geologet DATE 2-9-01
Verbal approval 1/26/01 as discussed with MK	,

01/25/2801 15: 39
1633 M. Reach Dr.
1643 M. Reach Dr.
1643 M. Reach Dr.
1643 M. Reach Dr.
1643 M. Reach Dr.
1644 M. Reach Dr.
1645 M. Reac

Age. NM 87410 District 15" - (505) #27-7131 2040 S. Pacheto Santa Fr. NM 87505 3345413

PIPEYARD New Mexico Energy Minerals and Natural Resources Department

> Oil Conservation Division 2040 South Pacheen Street Santa Fe, New Mexico 87505 (505) 827-7131

PAGE 02 Form C-143 3/15/(0)

Submit to OCD Permitted Surface Waste Management Facility

GENERATOR CERTIFICATE OF WASTE STATUS

1. Waste Generator Name and Address:	2.Permit Number (if waste generated at an OGD permitted facility)
ALBUQUERBUE NOM	GW-325
3. Description of Waste and Generating Process:	4. Location of Waste (Street address &/or ULSTR):
HYDRUSTATEC TEST	PRENIT N-MEX ON
WATER	TRANSWESTERN PIPELINE
	RICHTOFWAY
S. Destination (Surface Waste Management Facility):	6. Transporter; ICEY ENERGY
\$0,000 g el	KEY ENERGY
7. Estimated Volume cy/bbis	
For NON-EXEMPT waste only, the following documentation is	affached (check appropriate items):
MSDS Information	RCRA Hazardous Waste Analysis (With Chain of Custody).
Other (Description)	
Generator certifies that, according to the Resource Conservation Agency's July 1988 regulatory determination, the above descriptions of the second se	on and Recovery Act (RCRA) and the Environmental Protection bed waste is: (check appropriate classification)
EXEMPT oilfield waste.	NON-EXEMPT cilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation)
In addition, Generator certifies that nothing has been added to waste does not contain Naturally Occurring Radioactive Materia Subpart 1403.	al (NORM) regulated pursuant to 20 NMAC 3.1
Senerator Signature: James R. Russell	Date: 1-26-01
Print Name: SAMES R. DUSSE.	L.C.
Title: ENLANTERTH ST	FSI

FROM-ASSAIGAI LAB

T-076 P. 02/04 F-750

ASSAIGAI ANALYTICAL LABORATORIES, INC.

7300 Jefferson, NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

3332 Wedgewood Dr., Suite N • El Paso, Texas 79925 • (915) 593-6000. * EAX (915) 593-7820. 127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87644 • (505) 662-255 Explanation of codes

TRANSWESTERN PIPELINE CO. attn: EUGENE SOLIZ PO BOX 1019 THOREAU, NM 87323

	analyte detected in Method Biank
E	result is estimated
H	enalyzed out of noid time
N	tentatively identified compound
`\$	subcontracted
1-9	see footnote

Acceleration Analytical Laboratories, Inc.

Certificate of Analysis

Cliant:

TRANSWESTERN PIPELINE CO.

Project: 0101086

PREWITT TRAIN DE-RAILMENT

S all We President of Assaying Analytical Lebenia

Client #1 HYDROWATER				Sample . W Marrix				Sample Colleged		
QC Group	Run Sequence	CAS#	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date	
0101086-01	В	SW846 1311/301	OAISO1DA ICP TCLP				_			
M0129	MW.2001.44-29	7440-86-2	Arsenic	ND	mg/L	1	0,1		וסגרוינום	
MQ128	MVV.2001.44-29	7440-39-3	Barlum	0.2	mg/L	1	0.1		01/11/01	
M0129	MW-2001,44-29	7440-43-9	Cadmium	ND	mg/L	1	0.02	1	01/11/01	
M0129	MVV.2001.44-29	7440-47-3	Chromium	ND	mg/L	1	0.03	1	01/11/01	
M0129	MVV.2001.53-36	7439-92-1	Lead	ND	mg/L	1	8.D6		01/16/01	
M0120	MW.2001 44-28	7782-48-2	Selenium	0,12	mg/L	1	0.05		01/11/01	
M0:29	MVV.2001.44-29	7440-22-4	Silver	ND	mg/L	1	0.04		D1/11/01	
0404086.24	E	SW846 1311/747	O CLAA TCLD							
0101069-01	MVV.2001.81-11	7439-97-6	Mercury	0.0003	mo/L	1 1	0.0002	, 	61/18/01	

Circut Santple ID	#2 HYDRON	ATER		Sample W Matrix				07/71/01 06:20:98	
QC Group	Run Sequence	CAS#	Analyte	Result	Units	Dilution Factor	Detection -Limit Code	Run Date	
0101966-0	28	5W846 1311	3610B/8270B SVOCe by GC/MS	TCLP				_	
X00483	XG. \$001,28-2	100-40-7	1,4-Dichlorobenzene	NO	mg/L	1	0.001	01/16/01	
KOOABS	XG.2001.58-2	95-95-4	2,4,5-Trichlaraphena!	ND	mg/L	1	0.01	01/16/01	
X30483	XG.2001.58-2	B8-06-2	2,4,6-Trichlorophenol	ND	mg/L	1	0.01	01/16/01	
X00483	XG.2001.58-2	121-14-2	2.4-Dinitrotoluene	NO	mg/L	1	0.01	01/16/01	
X00483	XG-2001,58-2	278-74-1	Hexachlorobenzene	ND	me/L	1	0.001	01/16/01	

Page 1 of 2

Client Reports

2.0

Report Date

1/22/2001 4:28:05 PM



FROM-ASSAIGAI LAB

7-076 P. 03/04 F-750

Asseigai Analytical Laboratories, Inc.

Certificate of Analysis

Client.	TRANSWES	TERN PIPELIN	ie co.					
Project:	0101086	PREWITT TR	AIN DE-RAILMENT				•	
X00483	XG.2001,58-2	97-86-3 T	Hexechlorobutadiene	NC NC	mg / L	1	0.001	\$1/16/0 1
X00483	XG.2001.58-2	67.72.1	Hexachioroethane	NO	mg/L	1	0.001	01/16/01
X00483	XG.2001.58-2	,	m-Creso! & p-Creso!	0.007	mg/L	* * * * * * * * * * * * * * * * * * * *	0.001	01/16/01
X00483	XG.2551.58-2	98-96-3	Nitrobenzene	NO	mg/L	" ·····	0.001	01/16/01
X00483	XG.2001.58-2	98-48-7	o-Cresol	0.005 .	mg/L	1	0.001	01/16/01
E8400X	XG.2001.\$8-2	17.66-6	Pentachiorophenoi	ND	mg/L	1	0.01	01 /18/01
X00483	XG.2001.58-2	110-86-1	Pyridine	ND.	mg/L	1	0.01	01/18/01
X00481	XG,2001.52-3	75-35-4	1,1 Dichloroethylene	ND	mg/L	10	0.001	21/11/0
0101086-	02B	GW848 1311/	8260A Purgeable VOCs by GC/I	as TCLP				
X00481	XG,2001.52-3	107-06-2	1,2 Dichloroethane	ND	mg/L	10	0,001	01/11/61
X00481	XG,2001,52-3	108-46-7	1.4 Dichlorobenzene	NO	mg/L	10	0.001	51/11/01
X30491	XG.2001.58-3	71-43-2	Banzene	0.26	mg/L	10	0.001	01711701
X00481	XG.2001,52-3	56-23-8	Carbon tetrachloride	ND	mg/L	10	0.001	01/11/01
X00481	XG.2001.52-3	108-90-7	Chlorobenzene	ND	mg/L	10	0.001	01/11/0
X0D4mf	XG.2001,82-3	67-86-8	Chloroform	NO	mg/L	10	0.001	047:1/0
X80481	X/3,2001.52-4	78-53-3	Methy! ethyl ketone	9.2	mg/L	100	0.005	01/11/0
X00481	XG,2001,62-3	127-18-4	Tetracnioroethylene	NO	mg/L	10	0.001	01/11/0
			Talah lasa akkulan a		mg / L	10	0.001	01/11/0
XQ0451	XG.2001.52-3	78-01-5	Trichloroethylene	NØ	1 111976	10	1 0.001	

^{***} Sample specific Detection Limit is determined by multiplying the sample Dubban Factor by the listed Asporting Detection Limit. *** ""NO « Nor detected; tass than the sample specific Detection Limit. Results relate only to the starts tested. ""

JAN 22 '01 17:00

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TO:	-15	058	162	78	26

F	ROM-	ASSA	IGAI	ĮΑ

ASSA	IGAI	LAB	

RANS	WES"	TERN

T-076 P. 04/04 F-750

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Signature

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Signature Signature Printed Teve - CZC-029

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Signature 1964

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Person.

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Special Instructions:

Shipment No.

Company

Signstan

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Company.

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Ch Disposed of (additional fee) Stored (30 chys max)

After analysis, samples are to be:

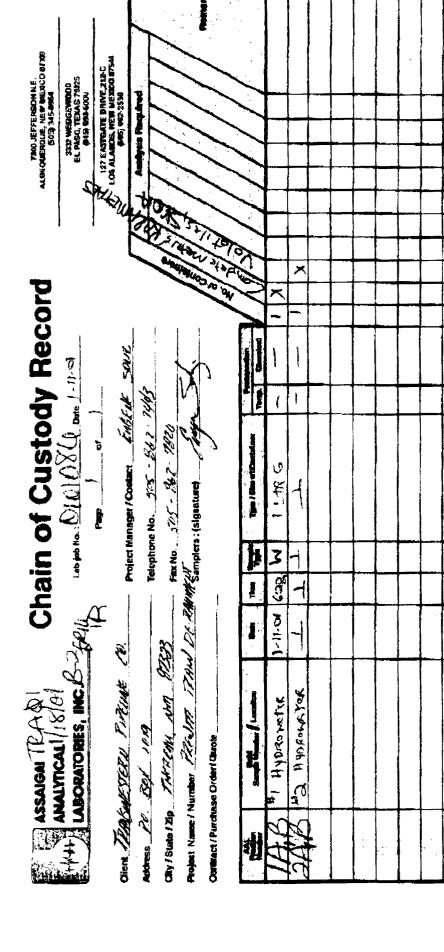
Reason

: 505-254-1437 ATM Reason

Comments: * TA+ 1-12,01 X

Butch Russell

ASSAKGAI PROJECT FILE



District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Form C-138 Revised March 17, 1999

Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

REQUESTION ATTROVAL TO ACCEPT	JOHN WADIL		
1. RCRA Exempt: Non-Exempt:	4. Generator Halli bueton		
Verbal Approval Received: Yes No	5. Originating Site		
2. Management Facility Destination VEY ENGREY D158054L	6. Transporter UEY		
3. Address of Facility Operator #345 CR3500 AZTEC NM	8. State NM		
7. Location of Material (Street Address or ULSTR) FARMINGTON, NM 87402			
9. <u>Circle One</u> :			
A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator; one certificate per job. All requests for approval to accept non-exempt wastes must be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved			
All transporters must certify the wastes delivered are only those consigned for transp	ort.		
BRIEF DESCRIPTION OF MATERIAL:			
They are looking for a knowledge of process be industing all them additives, Drops-10 bbls in yard collitank after jobs.	JAN 2001 60 00 000 000 000 000 000 000 000 000 0		
industing all theradditives, Drop 5-10 bbls in yard coll	ection Explicitly		
Estimated Volume 12066/s cy Known Volume (to be entered by the operator at the end of the haul) cy			
SIGNATURE Management Facility Authorized Agent TITLE: MCA. DATE: 1-17-01			
TYPE OR PRINT NAME: MICHAEL TALOUICH TELEPHONE NO. 505-334-6186			
िक्सिक सम्बद्धाः Taran and tarangan			
(This space for State Use)	1.7		
APPROVED BY: Deny tent TITLE: Good og	/S/ DATE: 1/19/01		
APPROVED BY: Marting July - TITLE: Encuronm	LI Godoust DATE 2 19/06		

District I - (505) 393-6161
1625 N. French Dr
Hobbs, NM 88240
District II - (505) 748-1283
811 S. First
Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410
District IV - (505) 827-7131
2040 S. Pacheco
Sanla Fe, NM 87505

New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division

2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131 Form C-143 3/15/00

Submit to OCD Permitted Surface Waste Management Facility

GENERATOR CERTIFICATE OF WASTE STATUS

Halliburton Energy Services 4109 East Main Street Farmington NM 87402	permitted facility)		
3. Description of Waste and Generating Process:	4. Location of Waste (Street address &/or ULSTR):		
Stimulation fluids returned from field.	4109 East Main Street Farmingon, NM 87402		
 Destination (Surface Waste Management Facility): Key Energy Disposal Facility Estimated Volume120bbls 	6. Transporter: KEY		
7. Estimated volume			
For NON-EXEMPT waste only, the following documentation is at	ttached (check appropriate items):		
X MSDS Information	_ RCRA Hazardous Waste Analysis (With Chain of Custody).		
Other (Description)			
Generator certifies that, according to the Resource Conservation Agency's July 1988 regulatory determination, the above describe			
EXEMPT oilfield waste.	x NON-EXEMPT oilfield waste that is non-hazardous pursuant to 40 CFR Part 261. (Attach appropriate documentation)		
In addition, Generator certifies that nothing has been added to the waste does not contain Naturally Occurring Radioactive Material Subpart 1403.			
Generator Signature:	Date: _/-3-200/		
Print Name: James (. Hane)			
Title: Supervisor Shored Ser	vic+s		

PAGE

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99

SOLUBILITY IN WATER AT
20 DEG C. GMS/100ML H20
BIODEGRADABILITY
PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1) H
VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT(760 MMHG)
POUR POINT CHEMICAL CODE: KCL POTASSIUM CHLORIDE PKG QTY: 50 LB BAG APPL SERVICE USED: FRACTURING EXTINGUISHING MEDIA:

USE MEDIA APPROPRIATE FOR SURROUNDING MATERIALS.

SPECIAL FIRE FIGHTING PROCEDURES:

NOT APPLICABLE.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NOT APPLICABLE. NFPA(704) RATING: FLAMMABILITY FREEZE POINT SCAWATER PARTITION COEF (OCTANOL IN WATER) POTASSIUM CHLORIDE SPECIFIC GRAVITY (H20=1)
BULK DENSITY APPEARANCE COMPONENT+ + + + + + + + + * * * * * * SECTION IV - FIRE AND EXPLOSION DATA * * * * SECTION ! - PRODUCT DESCRIPTION * * * * * * EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 SECTION III - PHYSICAL DATA * * * * * * WHITE TO GREY SOLID, CRYSTALS ODORLESS 0 PART NUMBER: 070153020 APPLICATION: INHIBIT CLAY SWELLING 25. N/A N/A N/A N/A N/A REACTIVITY O 34.7% NOT EVALUATED 72.80 LB/CU.FT. 9.2 FOR 1% SOL .990 -17 C PERCENT MEASUREMENT SPECIAL דרע NONE

CALIFORNIA PROPOSITION 65: PRODUCT OR PROPOSITION 65.

* * * * * * * * * * SECTION V - HEALTH HAZARD DATA * *

```
STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):
INCOMPATIBILITY (MATERIALS TO AVOID):
HAZARDOUS DECOMPOSITION PRODUCTS:
NONE KNOWN.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:
NOT APPLICABLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IRRITATION OF THE MOUTH AND THROAT, ABDOMINAL PAIN, NAUSEA AND VOMITING,
DIARRHEA, AND COLLAPSE MAY RESULT FROM INGESTION.
CHRONIC EFFECTS:
NO DATA AVAILABLE
OTHER SYMPTOMS AFFECTED:
BECAUSE OF ITS IRRITATING PROPERTIES, THIS MATERIAL MAY AGGRAVATE AN
EXISTING DERMATITIS.
EXISTING DERMATITIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH".
                                                                               STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INGESTION:

DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE.

NEVER_GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ROUTES OF EXPOSURE:
EYE OR SKIN CONTACT, INHALATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRODUCT TLV: 10 MG/M3 (N)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRODUCT TOXICITY DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INGESTION:
WASTE DISPOSAL METHOD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INHALATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INHALATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REMOVE TO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. IF IRRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MAY BE IRRITATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DUST MAY CAUSE MODERATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DUST MAY CAUSE SEVERE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES.
                                                                                                                                                                * * * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             * * * * * * * *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ------ EFFECTS OF EXPOSURE --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOX
AQU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SECTION VI - REACTIVITY DATA * *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IRRITATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EYE-RBT 500 MG/24H MLD
ORL-RAT LD50:2430 MG/KG
TLM96: 100-330 PPM (BROWN SHRIMP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IRRITATION.
                                                                                   욹
                                                                                 INHALING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ij
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REUSE PRODUCT.

PN: 070153020 PAGE

GET APPROVAL FROM LANDFILL OPERATOR AND TRANSPORT TO SANITARY LANDFILL.

* * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION *

RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT): TOXIC DUST/MIST RESPIRATOR.

VENTILATION:

USE ONLY WITH ADEQUATE VENTILATION. PROTECTIVE GLOVES:

NORMAL WORK GLOVES.
EYE PROTECTION:
DUST PROOF GOGGLES.
OTHER PROTECTIVE EQUIPMENT:
NORMAL WORK COVERALLS.

* * * * * * * * * * * SECTION IX - SPECIAL PRECAUTIONS *

PRECAUTIONARY LABELING KCL POTASSIUM CHLORIDE

WARNING

MAY CAUSE SKIN AND RESPIRATORY IRRITATION.

MAY CAUSE SEVERE EYE IRRITATION.

MAY CAUSE SEVERE EYE IRRITATION.

FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.

OTHER HANDLING AND STORAGE CONDITIONS:

STORE IN DRY LOCATION TO PROTECT PRODUCT QUALITY. REQUIRES COVERED STORAGE.

AVOID CREATING OR INHALING DUST.

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

AVOID BREATHING VAPORS.

CONTAINER DISPOSITION:

EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES IN PLACE.

RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST OBTAINING

LANDFILL OPERATOR'S AUTHORIZATION.

* * * * * * * SECTION X - TRANSPORTATION INFORMATION * * *

*

DOT SHIPPING DESCRIPTION: NOT RESTRICTED

* * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * * *

EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: PURE

- EPA CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) N/A
- c. EPA - SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- 0. EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)
- m COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES
 TSCA YES CEPA NE EEC N/D ACOIN N/D NPR NE DRSM NE
- EPA RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES NOT MEET THE CRITERIA OF HAZARDOUS WASTE

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99

EMERGENCY TELEPHONE: 800/666-9260 OR EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 580/251-3359

EXTINGUISHING MEDIA:

USE MEDIA APPROPRIATE FOR SURROUNDING MATERIALS.

SPECIAL FIRE FIGHTING PROCEDURES:

SPECIAL FIRE FIGHTING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REGULRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

CHUSUAL FIRE AND EXPLOSION HAZARDS: CHEMICAL CODE: K-34
PKG GTY: 50 LB BAG
SERVICE USED: WATER SOLUBILITY IN WATER AT
20 DEG C. GMS/100ML H20
BIODEGRADABILITY
PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1) FREEZE POINT SCAWATER PARTITION COEF (OCTANOL IN WATER) SPECIFIC GRAVITY (H20=1)
BULK DENSITY SODIUM BICARBONATE FLASH POINT
AUTOIGNITION TEMPERATURE
FLAMMABLE LIMITS (OZ. PER CU. FT.) LOWER
HOWER ND
HOWER ND
HOWER ND VAPOR DENSITY VAPOR PRESSURE (MMHG) BOILING POINT(760 MMHG) POUR POINT APPEARANCE NFPA(704) RATING: HEALTH O FI * * * * * * * * * SECTION IV . * * * * * * * * * SECTION II - COMPONENT INFORMATION * * * COMPONENT+ + + + + + + + + PROPERTY LB BAG : WATER CONTROL *
* FLAMMABILITY SECTION I - PRODUCT DESCRIPTION * * * * * * * SECTION III - PHYSICAL DATA * * * * * * FREE FLOWING, WHITE SOLID, POWDER ODORLESS 0 FIRE AND EXPLOSION DATA * * APPLICATION: BUFFER SOLUBLE NOT EVALUATED REACTIVITY 0 2.159 60.00 LB/CU.FT. 8.3 FOR 1% SOLUTION PERCENT MEASUREMENT SPECIAL NONE S ٦LV UPPER PART NUMBER: 070151860 S 띮

CALIFORNIA PROPOSITION 65:

* SECTION V - HEALTH HAZARD DATA *

PN: 070151860 PAGE

PRODUCT OR PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF, PROPOSITION 65

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO:
"NTP, IARC, OSHA, OR, ACIGH".

PRODUCT TOXICITY DATA: IRR TOX SKN-HMN 30 MG/3D-1 MLD ORL-RAT LD50: 4220 MG/KG ORL-INF LDLO: 1260 MG/KG

PRODUCT TLV: 10 MG/M3 (N)

ROUTES OF EXPOSURE:
EYE OR SKIN CONTACT, INHALATION. EFFECTS 유 EXPOSURE

MAY CAUSE MILD IRRITATION.

SKIN:

MAY CAUSE MILD IRRITATION.
INHALATION:
MAY CAUSE MILD IRRITATION.
TREAT AS NUISANCE DUST.

INGESTION:

NO DATA AVAILABLE

CHRONIC EFFECTS:

NO DATA AVAILABLE

OTHER SYMPTOMS AFFECTED:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY CONDITIONS WORSENED A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY CONDITIONS WORSENED EXPOSURE TO THIS PRODUCT.

EXPOSURE TO THIS PRODUCT. ВΥ

MMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. RRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION.

PROMPTLY WASH SKIN WITH SOAP AND WATER. IF IRRITATION DEVELOPS, SEEK MEDICAL ATTENTION.
INHALATION:
REMOVE TO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION,

* * * * * * * * * * * SECTION VI - REACTIVITY DATA * *

STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG ACIDS.
HAZARDOUS DECOMPOSITION PRODUCTS:
RELEASES CARBON DIOXIDE ON DECOMPOSITION.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:
NOT APPLICABLE.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
USE PROTECTIVE EQUIPMENT. SWEEP UP AND REMOVE. AVOID CREATING OR INHALING * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES *

WASTE DISPOSAL METHOD: IF NOT CONTAMINATED, REUSE PRODUCT. GET APPROVAL FROM LANDFILL OPERATOR AND TRANSPORT TO SANITARY LANDFILL.

* SECTION VIII - SPECIAL PROTECTION INFORMATION * * * * * *

RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED NOT NORMALLY NECESSARY.

TOXIC DUST/MIST RESPIRATOR. VENTILATION: EQUIPMENT):

USE ONLY WITH ADEQUATE VENTILATION.
PROTECTIVE GLOVES:
NORMAL WORK GLOVES.
EYE PROTECTION:

GOGGLES AND/OR FACE SHIELD.
OTHER PROTECTIVE EQUIPMENT:
NORMAL WORK COVERALLS.

* * SECTION IX -SPECIAL PRECAUTIONS *

PRECAUTIONARY LABELING K-34

070.151860

REQUIRES COVERED STORAGE

WARNING!

MAY CAUSE MILD IRRITATION TO EYES, SKIN AND UPPER RESPIRATORY SYSTEM.

TREAT AS NUISANCE DUST.

OTHER HANDLING AND STORAGE CONDITIONS:

STORE IN DRY LOCATION TO PROTECT PRODUCT QUALITY. REQUIRES COVERED ST AVOID CREATING OR INHALING DUST.

CONTAINER DISPOSITION:

EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES IN RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST OBTAINING LANDFILL OPERATOR'S AUTHORIZATION. PLACE

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* * * * * * * SECTION X -TRANSPORTATION INFORMATION *

DOT SHIPPING DESCRIPTION:

* * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION *

EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: PURE INFORMATION

- EPA CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) N/A
- EPA SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- ? EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)
- COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES TSCA YES CEPA NE EEC N/D ACOIN N/D NPR ž DRSM NE
- EPA RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES NOT MEET HAZARDOUS WASTE THE CRITERIA OF

* * * * * * * * * * *

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE

DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY SERVICES.

EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

EMITS AMMONIA AND HYDROGEN CHLORIDE GAS WHEN HEATED. CHEMICAL CODE: CLAYFIX MATERIAL APPLICATION: INHIBIT CLAY SWELLING SERVICE USED: CHEMICAL SER., WATER&SAN VAPOR DENSITY
VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT(760 MMHG)
POUR POINT FREEZE POINT SEAWATER PARTITION COEF (OCTANOL IN WATER) AMMONIUM CHLORIDE NFPA(704) RATING: HEALTH 2 FLAMMABILITY SOLUBILITY IN WATER AT 20 DEG C. GMS/100ML H20 BIODEGRADABILITY SPECIFIC GRAVITY (H20=1) APPEARANCE FLASH POINT PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1) * * * * * * * * * * SECTION II - COMPONENT INFORMATION * * * * * * * * * * SECTION IV -COMPONENT+ + + PROPERTY * * SECTION I - PRODUCT DESCRIPTION * * * * * * WHITE TO YELLOW SOLID, CRYSTALS ODORLESS > 60 % 10 MG/M3 SECTION III - PHYSICAL DATA * * * * * 0 FIRE AND EXPLOSION DATA * N/D 2340 F / 171 C N/A NOT TO REACTIVITY 0 96.10 LB/CU.FT. 5.5 FOR 1% SOL EVALUATED PERCENT MEASUREMENT SPECIAL NONE ٦L٧ *G/M3 PEL

CALIFORNIA PROPOSITION 65:

* SECTION V - HEALTH HAZARD DATA *

PN: 070152060 PAGE

PRODUCT OR PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF. PROPOSITION 65

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH".

PRODUCT TOXICITY DATA: IRR
TOX
TOX EYE-RBT 500 MG/24H SEV ORL-RAT LD50:1650 MG/KG ORL-RAT LD50:1000 MG/KG

PRODUCT TLV: 10 MG/M3

EFFECTS 윾 EXPOSURE

ROUTES OF EYE OR

EXPOSURE: SKIN CONTACT, INHALATION.

VAPORS, MIST OR SPRAY MAY CAUSE IRRITATION

CONTACT MAY CAUSE SKIN IRRITATION.

INHALATION:
HIGH CONCENTRATIONS MAY CAUSE HEADACHE, COUGHING, SEVERE LUNG CONGESTION,
BREATHING DIFFICULTIES, CONVULSIONS AND SHOCK. HIGHER CONCENTRATIONS MAY
CAUSE LARYNGITIS, TRACHEITIS, PULMONARY EDEMA, CHEST PAINS AND PNEUMONITIS.

IRRITATION OF THE MOUTH AND THROAT, ABDOMINAL PAIN, NAUSEA AND VOMITING, DIARRHEA, AND COLLAPSE MAY RESULT FROM INGESTION.

CHRONIC EFFECTS:

NO DATA AVAILABLE
OTHER SYMPTOMS AFFECTED:
BECAUSE OF ITS IRRITATING PROPERTIES, THIS MATERIAL MAY AGGRAVATE AN EXISTING DERMATITIS. BREATHING OF VAPOR AND/OR MISTS MAY AGGRAVATE ASTH AND INFLAMMATORY OR FIBROTIC PULMONARY DISEASE. ASTHMA

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST IRRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION. 15 MINUTES.

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IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. IF IRRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE.

INHALATION:
REMOVE TO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION, INGESTION:
DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE.
NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL
ATTENTION.

* * * * * * SECTION VI ı REACTIVITY DATA * * *

STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):
ALKALIES AND THEIR CARBONATES, AND
HAZARDOUS DECOMPOSITION PRODUCTS: LEAD AND SILVER SALTS.

CARBON DIOXIDE AND/OR CARBON MONOXIDE, HAZARD POLYMERIZATION: WON"T OCCUR CONDITIONS TO AVOID: AMMONIA AND OXIDES OF NITROGEN.

AMMONIA.

SECTION VII -SPILL OR LEAK PROCEDURES

PN: 070152060 PAGE

VENTILATION:

USE ONLY WITH ADEQUATE VENTILATION. LO
USED IN DUSTY ENVIRONMENTS.

PROTECTIVE GLOVES:

IMPERVIOUS RUBBER GLOVES.

EYE PROTECTION:

GOGGLES OR SAFETY GLASSES.

OTHER PROTECTIVE EQUIPMENT: TRRITATING TO THE EYES, SKIN AND RESPIRATORY SYSTEM.

FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.

OTHER HANDLING AND STORAGE CONDITIONS:

STORE AWAY FROM ALKALIES.

STORE IN DRY LOCATION TO PROTECT PRODUCT QUALITY. REQUIRES COVERED STORAGE.

AVOID CREATING OR INHALING DUST.

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

CONTAINER DISPOSITION:

EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES IN PLACE.

RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST OBTAINING

LANDFILL OPERATOR'S AUTHORIZATION.

SPECIAL PRECAUTIONS:

PRODUCT HAS A SHELF LIFE OF 60 MONTHS. DUST. WASTE DISPOSAL METHOD: IF NOT CONTAMINATED, REUSE PRODUCT. GET APPROVAL FROM LANDFILL OPERATOR AND TRANSPORT TO SANITARY LANDFILL. STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
USE PROTECTIVE EQUIPMENT. SWEEP UP AND REMOVE. AVOID CREATING OR INHALING EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: PURE Ç RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
TOXIC DUST/MIST RESPIRATOR. PRECAUTIONARY LABELING CLAYFIX MATERIAL EPA - CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY)
5,000 LBS. - AMMONIUM CHLORIDE NORMAL WORK COVERALLS EPA - SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION * * * * * SHIPPING DESCRIPTION: RESTRICTED * * * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * * * * * * SECTION IX - SPECIAL PRECAUTIONS * * SECTION X - TRANSPORTATION INFORMATION * LOCAL EXHAUST VENTILATION SHOULD BE

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EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)

COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES

NPR NE

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EPA -

RCRA (HAZARDOUS WASTE), 40 CFR 261

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATCRIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT AITEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY

MATERIAL SAFETY DATA SHEET
HALLIBURTON ENERGY SERVICES REVISED DATE 04-07-99
DUNCAN, OKLAHOMA 73536

DUNCAN, OKLAHOMA 73536

EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359

EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359

SOLUBILITY IN WATER AT
20 DEG C. GMS/100ML H20
BIODEGRADABILITY
PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1)
VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT (760 MMHG)
POUR POINT EXTINGUISHING MEDIA:

USE MEDIA APPROPRIATE FOR SURROUNDING MATERIALS.

SPECIAL FIRE FIGHTING PROCEDURES:

NOT APPLICABLE.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NOT APPLICABLE. CHEMICAL CODE: FE-2A - BULK
PKG GTY: 330 GALLON TANK
SERVICE USED: FRACTURING, I.C., CHEM S CITRIC ACID SPECIFIC GRAVITY (H20=1)
BULK DENSITY FREEZE POINT SEAWATER PARTITION COEF (OCTANOL IN WATER) NFPA(704) RATING: HEALTH 1 FI APPEARANCE * * * * * * * * SECTION IV - FIRE AND EXPLOSION COMPONENT+ + + + + + + + + * * * SECTION II - COMPONENT INFORMATION * * * * * SECTION I - PRODUCT DESCRIPTION * FLAMMABILITY 1 31-60 % NE SECTION III - PHYSICAL DATA * * * LELLOW LIGHTD SLIGHT SUGARY 1.240 10.33 LB/GAL 2.2 FOR 0.1N SOL 11.16 2219 F / C103 -011 F / --17 MISCIBLE READILY 9.6 REACTIVITY 1 NOT EVALUATED PERCENT ററ MEASUREMENT DATA * * 71.V SPECIAL * * PART NUMBER: 516000290 NONE * * PEL

CALIFORNIA PROPOSITION 65: PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF. PROPOSITION 65.

* * SECTION V - HEALTH HAZARD DATA *

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PAGE

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STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS AND STRONG ALKALIES.
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE AND/OR CARBON DIOXIDE.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:
NOT APPLICABLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INGESTION:

NO DATA AVAILABLE

NO DATA AVAILABLE

CHRONIC EFFECTS:

NO CHRONIC EFFECTS EXPECTED.

OTHER SYMPTOMS AFFECTED:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY CONDITIONS WORSENED A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY CONDITIONS WORSENED A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY CONDITIONS WORSENED A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY CONDITIONS WORSENED.
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EYE
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PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO:
"NTP, IARC, OSHA, OR, ACIGH".
STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AND STOP LEAK WHERE SAFE.

AND ABSORB SPILL WITH AN INERT MATERIAL. SCOOP UP AND REMOVE.

WASTE DISPOSAL METHOD:

GET APPROVAL FROM LANDFILL OPERATOR AND TRANSPORT ABSORBED MATERIAL

SANITARY LANDFILL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REMOVE TO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION, INGESTION:

DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE.

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SKIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INHALATION:
MIST MAY CAUSE IRRITATION OF UPPER RESPIRATORY SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SKIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRODUCT TLV: 10 MG/M3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRODUCT TOXICITY DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. IF IRRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. PROMPT MEDICAL ATTENTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONTACT MAY CAUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MAY CAUSE SEVERE IRRITATION WHICH MAY INJURY TISSUE IF
                                                                                                                                                                                                                                * * * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                * * *
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SECTION VIII - SPECIAL PROTECTION INFORMATION *

CAUTION!
MAY CAUSE IRRITATION TO THE EYES, SKIN OR RESPIRATORY SYSTEM.
FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.
OTHER HANDLING AND STORAGE CONDITIONS:
KEEP CONTAINER CLOSED WHEN NOT IN USE.
AVOID CONTACT WITH SKIN, EYES AND CLOTHING.
AVOID BREATHING VAPORS.
CONTAINER DISPOSITION:
EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES IN PLACE. RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST OBTAINING LANDFILL OPERATOR'S AUTHORIZATION. VENTILATION:
USE ONLY WITH ADEQUATE VENTILATION.
NORMALLY NEEDED. EYE PROTECTION:
GOGGLES AND/OR FACE SHIELD.
OTHER PROTECTIVE EQUIPMENT:
NORMAL WORK COVERALLS. PROTECTIVE GLOVES: IMPERVIOUS RUBBER GLOVES. RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
NOT NORMALLY NECESSARY.
TOXIC DUST/MIST RESPIRATOR. o. Ξ 'n Ç ω. DOT SHIPPING DESCRIPTION: NOT RESTRICTED PRECAUTIONARY LABELING FE-2A -* * * * * * * * * EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261 COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES TSCA YES CEPA NE EEC N/D ACOIN N/D NPR EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS) EPA - SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS EPA - CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) $_{\rm N/A}$ A SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: MIX IF PRODUCT BECOMES A WASTE, IT DOES NOT MEET THE CRITERIA OF A HAZARDOUS WASTE * * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * * * * * SECTION IX -SECTION X -BULK TRANSPORTATION INFORMATION * * * * * * SPECIAL PRECAUTIONS * LOCAL EXHAUST VENTILATION IS Z DRSM Ř INFORMATION NOT *

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS

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GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY SERVICES.

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99

EMERGENCY TELEPHONE: 800/666-9260 OR EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 580/251-3359

CHEMICAL CODE:
PKG QTY: CARGO
SERVICE USED: ACETIC ANHYDRIDE
GLACIAL ACETIC ACID
* * * * * * * * * COMPONENT+ + + * * * * SECTION II - COMPONENT INFORMATION * * FE-1A ACIDIZING COMPOSITION - BULK PART NUMBER: 070154180 TANK APPLICATION: ACIDIZING MATERIAL CHEMICAL SERVICES * * SECTION ! - PRODUCT DESCRIPTION * * * * * * * * ++++ SECTION III - PHYSICAL DATA 31-60 % 31-60 % PERCENT TLV 10 PPM 5 PPM

MEASUREMENT

SOLUBILITY IN WATER AT
20 DEG C. GMS/100ML H20
BIODEGRADABILITY
PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1) FREEZE POINT SEAWATER PARTITION COEF (OCTANOL IN WATER) BOILING POINT (760 MMHG) SPECIFIC GRAVITY (H20=1)
BULK DENSITY APPEARANCE VAPOR DENSITY VAPOR PRESSURE (MMHG) CLEAR, COLORLESS LIQUID
PUNGENT ACRID
1.065
8.87 LB/GAI 11.40 /245 F / 118 C D015 F / -9 C N/D COMPLETE READILY NOT EVALUATED LB/GAL

* * * * * * * SECTION IV -FIRE AND EXPLOSION DATA * * * *

NFPA(704) RATING:
HEALTH 2 FLAMMABILITY 2 REACTIVITY SPECIAL 39 C F 332 C FLASH MIHD TCC

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

USE WATER SPRAY TO COOL FIRE-EXPOSED SURFACES.

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

AVOID SPRAYING WATER DIRECTLY INTO STORAGE CONTAINERS SINCE THE REACTION MAY RESULT IN VIOLENT RUPTURE OF THE CONTAINER.

MAY BE IGNITED BY HEAT, SPARKS, OR FLAMES. FIGHT FIRE FROM A SAFE DISTANCE

070154180

AND FROM A PROTECTED LOCATION. HEAT MAY BUILD PRESSURE AND RUPTURE CONTAINERS, SPREADING THE FIRE AND INCREASING THE RISK OF BURNS AND INJURIES.
CONTACT CAUSES BURNS TO EYES AND SKIN. CLOSED

* * * * * * * * * SECTION V -HEALTH HAZARD DATA *

CALIFORNIA PROPOSITION 65: PRODUCT OR PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF. PROPOSITION

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH".

PRODUCT TOXICITY DATA: AQU TLM96: 100-10 PPM

PRODUCT TLV: C 5 PPM

EFFECTS 유 EXPOSURE

ROUTES EYE OF EXPOSURE: OR SKIN CONTACT, INHALATION

MAY CAUSE SEVERE BURNS WITH POSSIBLE PERMANENT TISSUE DAMAGE DEPENDING THE LENGTH OF EXPOSURE AND THE FIRST AID ACTION GIVEN. 2

MAY CAUSE SEVERE BURNS WITH POSSIBLE PERMANENT TISSUE DAMAGE DEPENDING THE LENGTH OF EXPOSURE AND THE FIRST AID ACTION GIVEN.

INGESTION: VAPOR, MIST OR SPRAY CAUSE SEVERE IRRITATION OF UPPER RESPIRATORY SYSTEM

CORROSIVE TO MOUTH, ESOPHAGUS, AND STOMACH UPON INGESTION.

CHRONIC EFFECTS:

CONTINUED EXPOSURE CAN ERODE THE TEETH.

OTHER SYMPTOMS AFFECTED:

BECAUSE OF ITS IRRITATING PROPERTIES, THIS MATERIAL MAY AGGRAVATE AN

EXISTING DERMATITIS. BREATHING OF VAPOR AND/OR MISTS MAY AGGRAVATE ASTHMA
AND INFLAMMATORY OR FIBROTIC PULMONARY DISEASE.

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. FOR MEDICAL ATTENTION. CONTINUE FLUSHING UNTIL MEDICAL HELP ARRIVES. CALL

SKIN: IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. CALL FOR MEDICAL ATTENTION. FLUSH SKIN UNTIL MEDICAL HELP ARRIVES. WASH CLOTHING BEFORE REUSE.

INHALATION:
REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION,
PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
SEEK PROMPT MEDICAL ATTENTION.

INGESTION:

DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

ATTENTION. WATER T TO DILUTE.

* * * * * SECTION VI -REACTIVITY DATA *

STABILITY: STABLE
CONDITIONS TO AVOID:
HEAT, SPARKS AND OPEN FLAME.
INCOMPATIBILITY (MATERIALS TO AVOID):
REACTS VIOLENTLY WITH WATER LIBERATING
CONFINED CAN RUPTURE CONTAINER.
STRONG OXIDIZERS AND STRONG ALKALIES. LARGE VOLUMES OF GAS,

PN: 070154180 PAGE

FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII
OTHER HANDLING AND STORAGE CONDITIONS:
STORE AWAY FROM ALKALIES.
STORE AWAY FROM OXIDIZERS.
KEEP FROM HEAT, SPARKS, AND OPEN FLAME.
KEEP CONTAINER CLOSED WHEN NOT IN USE.
AVOID CONTACT WITH SKIN, EYES AND CLOTHING.
AVOID BREATHING VAPORS.
CONTAINER DISPOSITION:
NOTICE: THIS IS A RETURNABLE, REUSABLE CONTAINER. DO STORE CONTAINER WITH ALL CLOSURES IN PLACE. RETURN EMPREUSE AND/OR CREDIT. RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ORGANIC VAPOR/ACID GAS CARTRIDGE RESPIRATOR WITH A FULL FACEPIECE AND A
DUST-MIST FILTER.
VENTILATION:
USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION SHOULD BE
USED IN AREAS WITHOUT GOOD CROSS VENTILATION.
LOCAL EXHAUST VENTILATION MUST BE DESIGNED FOR EXPLOSIVE ATMOSPHERES (NEC
CLASS I EQUIPMENT).
PROTECTIVE GLOVES:
BUTYL GLOVES: STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AND STOP LEAK WHERE SAFE. CONTAIN

AND NEUTRALIZE TO A PH OF 6-8. SCOOP UP AND REMOVE.

WASTE DISPOSAL METHOD:

IF MATERIAL HAS BEEN COMPLETELY NEUTRALIZED, GET APPROVAL FROM A SANITARY
LANDFILL OPERATOR AND TRANSPORT TO A SANITARY LANDFILL. IF NOT GET APPROVAL
FROM HAZARDOUS WASTE DISPOSAL FACILITY, AUTHORIZED UNDER EPA/RCRA SUBTITLE C
OR STATE EQUIVALENT. SHIP ABSORBED MATERIAL TO SITE. HAZARDOUS DECOMPOSITION PRODUCTS:

CARBON MONOXIDE AND/OR CARBON DIOXIDE.

HAZARD POLYMERIZATION: WON"T OCCUR

CONDITIONS TO AVOID:

NOT APPLICABLE. WEAR GOGGLES AND/OR FACE SHIELD. PROVIDE EYEWASH AND QUOTHER PROTECTIVE EQUIPMENT:

RUBBER BOOTS WITHOUT LACE HOLES
WEAR FULL PROTECTIVE SUIT WHEN SKIN CONTACT IS POSSIBLE. DOT SHIPPING DESCRIPTION:
CORROSIVE LIQUID, FLAMMABLE, N.O.S.
(ACETIC ANHYDRIDE, ACETIC ACID) -PRECAUTIONARY LABELING DANGER! MAY CAUSE SEVERE IRRITATION TO EYES AND UPPER RESPIRATORY MAY CAUSE SEVERE EYE AND SKIN BURNS.
COMBUSTIBLE! * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION * * * * * * * * * * * * * * SECTION VII -SECTION X -* SECTION IX - SPECIAL FE-1A ACIDIZING COMPOSITION -TRANSPORTATION INFORMATION SPILL OR LEAK PROCEDURES * PROVIDE EYEWASH AND QUICK DRENCH SYSTEM. œ UN2920 SECTIONS IV-VIII PRECAUTIONS * BULK DO NOT * SYSTEM CONTAMINATE, * * *

SECTION XI -

ENVIRONMENTAL EVALUATION *

PAGE

- EPA SUPERFUND(SARA) TITLE III HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: Y PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: MIX
- С. EPA - CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) 930 GALS. - ACETIC ANHYDRIDE
- EPA SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- m D, COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES
 TSCA YES CEPA NE EEC N/D ACOIN N/D NPR NE EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)

DRSM NE

EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

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IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY US EPA BECAUSE OF:

CORROSIVITY IGNITABILITY

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WHITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY THE SITUATIONS IN WHICH THE LISTED PRODUCT OF THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION EXERGY

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 MSA-II INHIBITOR DATE: 01-02-01 REVISED DATE 04-07-99 PAGE

EMERGENCY TELEPHONE: 800/666-9260 OR EMERGENCY TELEPHONE: 800/666-9260 OR SECTION I - PRODUCT DESCRIPTION * * * * * * * 580/251-3359 580/251-3359

CHEMICAL CODE: MSA-II INHIBITOR PKG GTY: 55 GALLON DRUM SERVICES ROSIN AMINE DERIVATIVE ETHYLENE GLYCOL THIOUREA OXYETHYLATED FATTY AMINES OXYALKYLATED ALKYLPHENOL ACETONE + + + + + + + * * SECTION III - PHYSICAL DATA COMPONENT+ + * * * * * * * SECTION II - COMPONENT INFORMATION * + APPLICATION: ORGANIC ACID CORROSION INHIBITOR PERCENT 31-60 11-30 NOT EST C 50 PPM NOT EST NOT EST 750 PPM * * * * * זעע NOT EST C 50 PPM NOT EST NOT EST NOT EST NOT EST PEL

MEASUREMENT

SOLUBILITY IN WATER AT
20 DEG C. GMS/100ML H20
BIODEGRADABILITY
PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1)
VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT(760 MMHG)
POUR POINT FREEZE POINT SCAWATER PARTITION COEF (OCTANOL IN WATER) SPECIFIC GRAVITY (H20=1)
BULK DENSITY APPEARANCE ODOR DARK RED LIQUID DISPERSES
N/D
N/D
N/D
>1 1.090 9.08 LB/GAL NOT DETERMINED NOT EVALUATED N/D N/D -D05 F / --15 N/D PUNGENT റ

NFPA(704) RATING: HEALTH 2 FLAMMABILITY * * * * * * * SECTION IV -0 FIRE AND EXPLOSION DATA * * REACTIVITY 0 120 F / FLASH *

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

USE WATER SPRAY TO COOL FIRE-EXPOSED SURFACES.

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

N

PAGE

UNUSUAL FIRE AND EXPLOSION HAZARDS:
INCOMPLETE THERMAL DECOMPOSITION MAY PRODUCE CARBON DIOXIDE, CARBON MONOXIDE AND OXIDES OF NITROGEN AND SULFUR. * * * * * * * * * * SECTION V - HEALTH HAZARD DATA *

CALIFORNIA PROPOSITION 65: PRODUCT OMPONENTS ARE REGULATED UNDER CALIF. PROPOSITION

CARCINOGENIC DETERMINATION: PRODUCT OR COMPONENTS ARE LISTED ACCORDING TO: NTP, AND IARC

AS A POTENTIAL CARCINOGEN

PRODUCT TOXICITY DATA: NOT DETERMINED

PRODUCT TLV: NOT ESTABLISHED

EFFECTS OF EXPOSURE

ROUTES OF EXPOSURE:
OR SKIN CONTACT, INHALATION.

CAUSES MODERATE TO SEVERE IRRITATION AND MAY PRODUCE MODERATE BUT REVERSIBLE

INHALATION: INTERMITTENT, BRIEF CONTACT MAY CAUSE MILD IRRITATION. PROLONGED CONTACT MAY CAUSE MODERATE TO SEVERE IRRITATION RESULTING IN RASHES AND DERMATITIS.

PROLONGED OR EXCESSIVE EXPOSURE MAY RESULT IN IRRITATION, HEADACHE AND NAUSEA. IN EXTREME CASES, MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION LEADING TO DIZZINESS, DROWSINESS AND NARCOSIS.

INGESTION:

MAY CAUSE ADOMINAL DISCOMFORT AND PAIN, DIZZINESS, DRUNKENESS AND CENTRAL NERVOUS SYSTEM DEPRESSION. GROSS OVEREXPOSURES MAY CAUSE SEVERE HEART, KIDNEY AND BRAIN DISORDERS.

THIOUREA HAS BEEN OBSERVED TO PRODUCE ANEMIA THROUGH BONE MARROW DEPRESSION, AND MAY AFFECT THE THYROID. THUS CARE SHOULD BE TAKEN TO MINIMIZE CONTACT WITH THIS MATERIAL.

CHRONIC EFFECTS:

THIOUREA IS A SUSPECTED CARCINOGEN OF THE LIVER AND THYROID. CHRONICALLY HIGH EXPOSURES CAUSE BONE MARROW DEPRESSION WITH ANEMIA, LEUKOPENIA AND THROMBOXYTOPENIA.

ETHYLENE GLYCOL HAS PRODUCED DOSE RELATED TERATOGENIC EFFECTS IN RATS AND MICE, WHEN GIVEN BY GAVAGE OR DRINKING WATER AT HIGH DOSES. TERATOGENIC EFFECTS WERE ALSO PRODUCED BY INHALATION IN VERY HIGH CONCENTRATIONS, BUT ONLY IN MICE. THE DATA SUGGESTS ETHYLENE GLYCOL MAY CAUSE BIRTH DEFECTS.

OTHER SYMPTOMS AFFECTED:

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE INCLUDE SKIN DISORDERS AND ALLERGIES, LIVER DISORDER, AND EYE DISEASE. CONTAINS ETHYLENE GLYCOL WHICH MAY CAUSE KIDNEY, LIVER, HEART, BLOOD & BRAIN DISORDERS. ETHYLENE GLYCOL HAS BEEN SHOWN TO CAUSE DEVELOPMENTAL AND REPRODUCTIVE EFFECTS IN LABORATORY ANIMALS. THESE FINDINGS ARE OF UNCERTAIN

EYE: SKIN: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. PROMPT MEDICAL ATTENTION. SEEK

IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. SEEK MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE.

INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

SEEK PROMPT MEDICAL ATTENTION.
INGESTION:
DO NOT INDUCE VOMITING! ASPIRATION INTO LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL. IF VOMITING OCCURS SPONTANEOUSLY, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION OF LIQUID INTO LUNGS. * * * * * * SECTION VI - REACTIVITY DATA * *

STABILITY: STABLE
CONDITIONS TO AVOID:

NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):

STRONG OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS:
OXIDES OF NITROGEN AND SULFUR, CARBON DIOXIDE AND/OR CARBON MONOXIDE.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:

* * * * * * SECTION VII - SPILL OR LEAK PROCEDURES

NOT APPLICABLE.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AND STOP LEAK WHERE SAFE. CONTA
AND ABSORB SPILL WITH AN INERT MATERIAL. SCOOP UP AND REMOVE.
WASTE DISPOSAL METHOD:
GET APPROVAL FROM HAZARDOUS WASTE DISPOSAL SITE AUTHORIZED UNDER EPA-RCRA
SUBTITLE C OR STATE EQUIVALENT. SHIP TO SITE. CONTAIN

* * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION * * * * *

RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ORGANIC VAPOR CARTRIDGE RESPIRATOR.
IN OXYGEN DEFICIENT AREAS OR CONFINED SPACES, POSITIVE PRESSURE SUPPLI AIR RESPIRATOR WITH 5-MINUTE AUXILIARY BOTTLE, OR PRESSURE-DEMAND OR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS.
VENTILATION:
USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION SHOULD USED IN AREAS WITHOUT GOOD CROSS VENTILATION.
PROTECTIVE GLOVES:
IMPERVIOUS RUBBER GLOVES. SUPPLIED-

BE

EYE PROTECTION:

EYE PROTECTION:

WEAR GOGGLES AND/OR FACE SHIELD. PROVIDE ETE

OTHER PROTECTIVE EQUIPMENT:

DIRRER APRON TO PREVENT DIRECT SKIN CONTACT. PROVIDE EYEWASH AND QUICK DRENCH SYSTEM.

* SECTION IX - SPECIAL PRECAUTIONS * * * * *

PRECAUTIONARY LABELING MSA-II INHIBITOR

516.005720

MAY CAUSE HEADACHE, DIZZINESS AND OTHER CENTRAL NERVOUS SYSTEM EFFECTS.

MAY CAUSE IRRITATION TO THE EYES, SKIN OR RESPIRATORY SYSTEM.

CONTAINS THIOUREA, A SUSPECTED CARCINOGEN.

CONTAINS ETHYLENE GLYCOL WHICH MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DAT FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.

OTHER HANDLING AND STORAGE CONDITIONS:

STORE HANDLING AND STORAGE CONDITIONS:

STORE AWAY FROM OXIDIZERS.

STORE AWAY FROM OXIDIZERS.

STORE AWAY FROM OXIDIZERS.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

AVOID BREATHING VAPORS.

CONTAINER DISPOSITION:

IF CONTAINER RETAINS PRODUCT RESIDUES, LABEL PRECAUTIONS MUST BE OBSERVED. WARNING! ANIMAL DATA

STORE CONTAINER WITH CLOSURES IN PLACE. OFFER EMPTY CONTAINER TO RECONDITIONOR OR RECYCLER FOR RECONDITIONING OR DISPOSAL. ENSURE RECONDITIONER OR RECYCLER IS AWARE OF THE PROPERTIES OF THE CONTENTS.

* * * * * * * SECTION X - TRANSPORTATION INFORMATION * *

DOT SHIPPING DESCRIPTION: FLAMMABLE LIQUID, N.O.S. - 3 - UN1993 - 111 (CONTAINS ACETONE) - RQ (THIOUREA - 10 LBS)

* * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * *

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EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): Y MIXTURE OR PURE MATERIAL: MIX

... EPA - CERCLA/SUPERFUND, 24 GAL, THIOUREA 40 CFR 302 (REPORTABLE SPILL QUANTITY)

.. EPA -EPA - SARA TITLE PRODUCT CONTAINS III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) NO EXTREMELY HAZARDOUS COMPONENTS

EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)
ETHYLENE GLYCOL 107-21-1 11-30 %
THIOUREA 62-56-6 1-10 %
ACETONE 67-64-1 1-10 %

COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES TSCA YES CEPA NE EEC N/D ACOIN N/D NPR ĸ DRSM NE

m

EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY US EPA BECAUSE OF:

IGNITABILITY

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HERRIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY OPERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES REVISED DATE 04-07-99 DUNCAN, OKLAHOMA 73536

EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359

| VITY (H2O=1) SWEET AROMATIC SWEET AROMATIC SWEET AROMATIC 935 1.935 NATER AT INSOLUBLE NOT DETERMINED NOT DETERMINED NOT DETERMINED NOT DETERMINED NOT EVALUATED NOT EVALUATED NOT EVALUATED FLAMMABILITY 3 REACTIVITY 0 SPECIAL TING: FLAMMABILITY 3 REACTIVITY 0 SPECIAL TEMPERATURE MITS (% BY VOLUME) HITS (% BY VOLUME) HITS (% BY VOLUME) SPRAY TO COOL FIRE EXPOSED SURFACES. ECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CO REQUIRED FOR FIRE FIGHTING PERSONNEL. AND EXPLOSION HAZARDS: NITED BY HEAT, SPARKS, OR FLAMES. FIGHT FIRE F | PROPERTY * * * * * * * * * * * * * * * * * * * | * * * * * * * * * * * * * * * * * * * | * * * * * * * * * * * * * * * * * * * | EMERGENCY TELEPHONE; 800/666-9260 OR 580/251-3359 |
|--|---|---------------------------------------|---------------------------------------|---|
|--|---|---------------------------------------|---------------------------------------|---|

INCOMPLETE THERMAL DECOMPOSITION MAY PRODUCE TOXIC GASES.

VAPORS ARE HEAVIER THAN AIR AND MAY ACCUMULATE IN LOW AREAS OR AREAS INADEQUATELY VENTILATED. VAPORS MAY ALSO TRAVEL ALONG THE GROUND TO BE IGNITED
AT LOCATIONS DISTANT FROM THE HANDLING SITE, AND FLASH BACK TO REIGNITE THE AND FROM A PROTECTED LOCATION. HEAT MAY BUILD PRESSURE AND RUPTURE CONTAINERS, SPREADING THE FIRE AND INCREASING THE RISK OF BURNS AND INJURIES. CLOSED

SOURCE. TO SEWER MAY CAUSE FIRE OR EXPLOSION HAZARD.

* * * * * * * * SECTION V -HEALTH HAZARD DATA *

CALIFORNIA PROPOSITION 65: PRODUCT COMPONENTS ARE REGULATED UNDER CALIF. PROPOSITION

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A ACCORDING TO:
"NTP, IARC, OSHA, OR, POTENTIAL ACIGH". CARCINOGEN

PRODUCT TOXICITY DATA: NOT DETERMINED

PRODUCT TLV: NOT DETERMINDED

EFFECTS OF EXPOSURE

ROUTES EYE EXPOSURE: SKIN CONTACT, INHALATION.

CAUSE MODERATE IRRITATION.

MAY BE ABSORBED THROUGH SKIN.
FREQUENT OR PROLONGED CONTACT WILL DRY AND DEFAT THE SKIN, POSSIBLY LEADING
TO IRRITATION AND DERMATITIS. REPEATED CONTACT MAY SENSITIZE THE SKIN.

HIGH CONCENTRATIONS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. THIS MAY BE EVIDENCED BY GIDDINESS, HEADACHES, DIZZINESS, NAUSEA, VOMITING OR POSSIBLY UNCONSCIOUSNESS.
VAPORS, MIST OR SPRAY MAY CAUSE IRRITATION.
INGESTION:

CONTAINS METHANOL, MAY CAUSE NAUSEA, VOMITING, HEADACHE, DIZZINESS, SHORTNESS OF BREATH, CONFUSION, VISUAL DISTURBANCES, DROWSINESS, COMA AND PHOSSIBLY DEATH. VISUAL EFFECTS INCLUDE BLURRED VISION, DIPLOPIA, CHANGES IN COLOR PERCEPTION, RESTRICTION IN VISUAL FIELDS AND BLINDNESS.

CHRONIC EFFECTS:

PROLONGED OR REPEATED EXPOSURE TO HIGH CONCENTRATIONS OF METHANOL MAY CAUSE VISUAL IMPAIRMENT OR BLINDNESS AND BLOOD, LUNG, LIVER, KIDNEY AND SPLEEN VISUAL IMPAIRMENT OR BLINDNESS AND BLOOD, LUNG, LIVER, KIDNEY AND SPLEEN Ë

PROLONGED EXPOSURE TO EXCESSIVE AMOUNTS OF METHANOL CAN CAUSE LUNG SWELLING, FATTY TISSUE INFILTRATION IN THE LIVER, FATTY DEGENERATION OF THE HEART TISSUE AND DEGENERATIVE CHANGES IN THE CENTRAL NERVOUS SYSTEM AND EYE. ISOPROPYL ALCOHOL HAS CAUSED UNEXPECTED ACUTE TOXICITY WHEN ADMINISTED TO PREGNANT RABBITS BY GAVAGE AND RELATIVELY MILD DEVELOPMENTAL EFFECTS IN RATS AT MATERNALLY TOXIC LEVELS. THE EFFECT LEVEL FOR RABBITS AND RATS WERE AT SEVERAL TIMES THE MAXIMUM EXPOSURE THAT WOULD OCCUR AT THE TLY. PROPARGYL ALCOHOL IS HIGHLY TOXIC WHEN INGESTED, DAMAGING TO THE EYES, AND ABSORBED THROUGH THE SKIN. IRRITATING TO THE MUCOUS MEMBRANES, PRODUCES STRONG TEARING, AND AFFECTS THE CENTRAL NERVOUS SYSTEM.

BECAUSE OF ITS IRRITATING PROPERTIES, THIS MATERIAL MAY AGGRAVATE AN EXISTING DERMATITIS. BREATHING OF VAPOR AND/OR MISTS MAY AGGRAVATE ASTHMA AND INFLAMMATORY OR FIBROTIC PULMONARY DISEASE.

EYE: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST ŝ MINUTES.

HEAT SPARKS AND OPEN FLAME.
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE AND/OR CARBON DIOXIDE.
NITROGEN OXIDES.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID: STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AREA AND STOP LEAK WHERE SAFE.

REMOVE IGNITION SOURCES. CONTAIN AND ABSORB SPILL WITH SAND OR OTHER INERT

MATERIAL. SCOOP OR SWEEP UP USING NON-SPARKING TOOLS. IN ENCLOSED AREAS,

WEAR SELF-CONTAINED BREATHING APPARATUS.

WASTE DISPOSAL METHOD:

GET APPROVAL FROM HAZARDOUS WASTE DISPOSAL SITE AUTHORIZED UNDER EPA-RCRA
SUBTITLE C OR STATE EQUIVALENT. SHIP TO SITE. EYE PROTECTION:

WEAR GOGGLES AND/OR FACE SHIELD. PROVIDE EYEWASH AND QUICK DOTHER PROTECTIVE EQUIPMENT:

BUTYL COATED CLOTHING FOR REPEATED OR PROLONGED SKIN CONTACT. VENTILATION:

USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION SHOULD USED IN AREAS WITHOUT GOOD CROSS VENTILATION.

PROTECTIVE GLOVES: RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
NOT NORMALLY NEEDED. BUT IF SIGNIFICANT EXPOSURES ARE TO
THE FOLLOWING TYPE OF RESPIRATOR IS RECOMMENDED:
ORGANIC VAPOR CARTRIDGE RESPIRATOR.
WHEN MATERIAL IS HEATED, SUPPLIED-AIR OR SELF-CONTAINED E INGESTION:
GIVE DILUTED MILK OF MAGNESIA, WATER OR MILK.
PROMPT MEDICAL ATTENTION. STABILITY: STABLE CONDITIONS TO AVOID: INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. IMPERVIOUS RUBBER GLOVES. NOT APPLICABLE. SEEK PROMPT MEDICAL ATTENTION. PROMPTLY WASH SKIN WITH SOAP AND WATER. WASH CLOTHING IF IRRITAION DEVELOPS, SEEK PROMPT MEDICAL ATTENTION. PROMPT MEDICAL ATTENTION. * * * * * * * * * * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION * * * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES * * * * * * * * SECTION IX - SPECIAL PRECAUTIONS * * * * * SECTION VI -SUPPLIED-AIR OR SELF-CONTAINED BREATHING APPARATUS REACTIVITY PROVIDE EYEWASH AND QUICK DRENCH DATA INDUCE VOMITING. * BEFORE 38 ENCOUNTERED REUSE * * SYSTEM BE

PRECAUTIONARY LABELING HAI-81M - HAL-TANK

516.009380

DANGER!
MAY CAUSE HEADACHE, DIZZINESS AND OTHER CENTRAL NERVOUS SYSTEM EFFECTS.
CONTAINS METHANOL, MAY CAUSE BLINDNESS, CENTRAL NERVOUS SYSTEM DEPRESSION
OR EVEN DEATH, IF SWALLOWED.
MAY BE ABSORBED THROUGH THE SKIN.

MAY CAUSE IRRITATION TO THE EYES, FLAMMABLE! SKIN OR RESPIRATORY SYSTEM.

OTHER HANDLING AND STORAGE CONDITIONS:

STORE AWAY FROM OXIDIZERS.

KEEP FROM HEAT, SPARKS, AND OPEN FLAME.

STORE IN A COOL WELL VENTILATED LOCATION.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

AVOID BREATHING VAPORS.

CONTAINER DISPOSITION:

CONTAINER DISPOSITION:

IF EMPTY CONTAINER RETAINS PRODUCT RESIDUES, ALL LABEL PRECAUTIONS MUST BE OBSERVED. STORE AWAY FROM IGNITION SOURCES WITH ALL DRUM CLOSURES IN PLACE. OFFER CONTAINER TO RECONDITIONER OR RECYCLER. ENSURE RECONDITIONER OR RECYCLER IS AWARE OF THE PROPERTIES OF THE CONTENTS.

SPECIAL PRECAUTIONS:

PRODUCT HAS A SHELF LIFE OF 24 MONTHS.

* * * * * * * SECTION X -TRANSPORTATION INFORMATION * *

DOT SHIPPING DESCRIPTION: FLAMMABLE LIQUID, N.O.S. - 3 - UN1993 - II (CONTAINS METHANOL, KEROSENE)

* * * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * * *

EΡA A SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED FIRE: Y PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): Y MIXTURE OR PURE MATERIAL: MIX

œ EPA - CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) 22,936 POUNDS OR 2967 GALLONS

c. EPA - SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS SUBSTANCES)

. . EPA - SARA TITLE III, METHANO PROPARGYL ALCOHOL 40 CFR 372 (LIST OF 67-56-1 107-19-7 TOXIC CHEMICALS)
11-30 %
1-10 %

.m TSCA YES CEPA YES FOLLOWING CHEMICAL INVENTORIES
EEC NO ACOIN NO NPR Z DRSM NE

<u>.</u> EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY US EPA BECAUSE OF:

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OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. ITIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY SERVICES.

MATERIAL SAFETY DATA SHEET
HALLIBURTON ENERGY SERVICES
DUNCAN, OKLAHOMA 73536

DUNCAN, OKLAHOMA 73536

EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359

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EYE
STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS AND STRONG ALKALIES.
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE AND/OR CARBON DIOXIDE.
CARBON MONOXIDE CAN FORM IN STORAGE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORROSIVE TO MOUTH, ESOPHAGUS, AND STOMACH UPON INGESTION.
CHRONIC EFFECTS:
CHRONIC OVEREXPOSURE MAY LEAD TO EROSION OF THE TEETH.
OTHER SYMPTOMS AFFECTED:
BECAUSE OF ITS IRRITATING PROPERTIES, THIS MATERIAL MAY AGGRAVATE
EXISTING DERMATITIS.
EXISTING DERMATITIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CALIFORNIA PROPOSITION 65:
PRODUCT OR PRODUCT COMPONENTS ARE NOT REGULATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. SEEK MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INHALATION:
VAPOR, MIST OR SPRAY CAUSE SEVERE IRRITATION OF UPPER RESPIRATORY SYSTEM
INHALATION OF VAPOR MAY CAUSE NAUSEA AND VOMITING.
INGESTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRODUCT TLV:
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                                                                                                                                                                                                                                                                                                                    INGESTION:

DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE.

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SKIN:
                                                                                                                                                                                                                                                                                                                                                                                              REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK PROMPT MEDICAL ATTENTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST PROMPT MEDICAL ATTENTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MAY CAUSE SEVERE BURNS WITH POSSIBLE PERMANENT TISSUE DAMAGE THE LENGTH OF EXPOSURE AND THE FIRST AID ACTION GIVEN.
                                                                                                                                                                                                                                                                                              ATTENTION.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OF EXPOSURE: OR SKIN CONTACT, INHALATION.
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TOX
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EYE-RBT 122 MG SEV
ORL-RAT LD50:1100 MG/KG
IHL-RAT LC50:15000/M3/15M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EFFECTS
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                                                                                                                                                                                                                                           REACTIVITY DATA *
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HAZARD POLYMERIZATION: WON'T OCCUR CONDITIONS TO AVOID: HEAT, SPARKS AND OPEN FLAME.

* * * * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AND STOP LEAK WHERE
AND NEUTRALIZE TO A PH OF 6-8. SCOOP UP AND REMOVE. CONTAIN

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*

WASTE DISPOSAL METHOD:

IF MATERIAL HAS BEEN COMPLETELY NEUTRALIZED, GET APPROVAL FROM A SANITARY
LANDFILL OPERATOR AND TRANSPORT TO A SANITARY LANDFILL. IF NOT GET APPROVAL
FROM HAZARDOUS WASTE DISPOSAL FACILITY, AUTHORIZED UNDER EPA/RCRA SUBTITLE C
OR STATE EQUIVALENT. SHIP ABSORBED MATERIAL TO SITE.

* * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION *

RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ACID GAS CHEMICAL CARTRIDGE RESPIRATOR.
VENTILATION:
USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION SHOULD USED IN AREAS WITHOUT GOOD CROSS VENTILATION.
PROTECTIVE GLOVES:
INDERVIOUS RUBBER GLOVES.
EYE PROTECTION:
WEAR GOOGGLES AND/OR FACE SHIELD. PROVIDE EYEWASH AND QUICK DRENCH SYS WEAR FULL PROTECTIVE SUIT WHEN SKIN CONTACT IS POSSIBLE.

SYSTEM

* * * * * * SECTION IX - SPECIAL PRECAUTIONS * *

PRECAUTIONARY LABELING FORMIC ACID - 90% - BULK

DANGER!
MAY CAUSE SEVERE EYE AND SKIN BURNS.
COMBUSTIBLE!

TOTHER HANDLING AND STORAGE CONDITIONS:

STORE AWAY FROM ALKALIES.

STORE AWAY FROM OXIDIZERS.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

AVOID BREATHING VAPORS.

CONTAINER DISPOSITION:

EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES IN PLACE. RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST OBTAINING LANDFILL OPERATOR'S AUTHORIZATION.

* * * * * * * SECTION X -TRANSPORTATION INFORMATION * * *

DOT SHIPPING DESCRIPTION:
FORMIC ACID - 8 - UN1779 - II
RQ (FORMIC ACID - 5000 LBS)

* * * *

EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): Y MIXTURE OR PURE MATERIAL: MIX INFORMATION

* * SECTION XI - ENVIRONMENTAL EVALUATION * *

ω. EPA - CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY)
550 GALS. - FORMIC ACID, U123

D. EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)

E. COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES
TSCA YES CEPA NE EEC N/D ACOIN N/D NPR NE DRSM NE

H. EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY US EPA BECAUSE OF:

CORROSIVITY IGNITABILITY

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MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99

EMERGENCY TELEPHONE: 800/666-9260 OR EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 580/251-3359

* * * SECTION I - PRODUCT DESCRIPTION * * * * * * *

CHEMICAL CODE: HYDROCHLORIC ACID - NEAT - 35.21% - BULK PART NUMBER: 070155300 PKG QTY: CARGO TANK APPLICATION: SOLVENT SERVICE USED: CHEMICAL SERVICES, I. C.

COMPONENT+ + * * * * * * * SECTION II - COMPONENT INFORMATION * PERCENT ٦LV * PEL *

* * * * * * * * * * * SECTION III - PHYSICAL DATA * * * * * *

MEASUREMENT

CLEAR, COLORLESS LIQUID PUNGENT, ACRID

9.66

6 LB/GAL FOR 1% SOL

60

SPECIFIC GRAVITY (H20=1)
BULK DENSITY

APPEARANCE ODOR

SOLUBILITY IN WATER AT 20 DEG C. GMS/100ML H20 BIODEGRADABILITY PERCENT VOLATILES EVAPORATION RATE(BUTYL ACETATE=1) VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT(760 MMHG)
POUR POINT S MISCIBLE 26.00 /230 F / 110 C .27

/D-50 F / -45 C TOTALLY MISCIBLE NOT EVALUATED N/D

FREEZE POINT SOLUBILITY IN SEAWATER PARTITION COEF (OCTANOL IN WATER)

* * * * * * * * * SECTION IV -FIRE AND EXPLOSION DATA * * * *

NFPA(704) RATING: HEALTH 3 F FLASH POINT FLAMMABILITY 0 REACTIVITY 1 N/A F / LOWER SPECIAL CORROSIVE

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

MAY FORM EXPLOSIVE MIXTURE WITH STRONG ALKALIS.

REACTION WITH STEEL, AND CERTAIN OTHER METALS GENERATES FLAMMABLE AND POTENTIALLY EXPLOSIVE HYDROGEN GAS. CONSIDERABLE HEAT IS EVOLVED WHEN CONTACTED WITH MANY SUBSTANCES.

DO NOT ALLOW RUNOFF TO ENTER WATERWAYS.

CONTACT CAUSES BURNS TO EYES AND SKIN.

* * * * * * * SECTION V -HEALTH HAZARD DATA * * * *

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CALIFORNIA PROPOSITION 65: PRODUCT OR PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF. PROPOSITION

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH".

PRODUCT TOXICITY DATA:

A T T O IHL-HMN LCLO:1300 MG/30M ORL-RBT LD50:900 MG/KG IHL-RAT LC50:3124 PPM/1H TLM96: 282 PPM

PRODUCT TLV: σ PPM HCL

EFFECTS

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EXPOSURE

ROUTES EYE EYE: OF EXPOSURE: OR SKIN CONTACT, INHALATION.

CAUSE SEVERE BURNS WITH POSSIBLE PERMANENT TISSUE DAMAGE LENGTH OF EXPOSURE AND THE FIRST AID ACTION GIVEN. DEPENDING 2

MAY CAUSE SEVERE BURNS WITH POSSIBLE PERMANENT TISSUE DAMAGE THE LENGTH OF EXPOSURE AND THE FIRST AID ACTION GIVEN. DEPENDING

MIST OR SPRAY CAUSE SEVERE IRRITATION OF UPPER RESPIRATORY SYSTEM.

INGESTION:

VAPOR,

CORROSIVE TO MOUTH, ESOPHAGUS, AND STOMACH UPON INGESTION.
CHRONIC EFFECTS:
CONTINUED EXPOSURE CAN ERODE THE TEETH.
OTHER SYMPTOMS AFFECTED:
BECAUSE OF ITS IRRITATING PROPERTIES, THIS MATERIAL MAY AGGRAVATE EXISTING DERMATITIS.

A

SEEK

EMERGENCY AND FIRST AID PROCEDURES

EYE: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST PROMPT MEDICAL ATTENTION. 5 MINUTES.

SKIN: IMMEDIATELY FLUSH SKIN WITH PLENTY REMOVING CONTAMINATED CLOTHING AND CLOTHING BEFORE REUSE. OF WATER FOR AT LEAST 15 MINUTES WHILE SHOES. SEEK MEDICAL ATTENTION. WASH

INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK PROMPT MEDICAL ATTENTION.

DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL ATTENTION.

* * * * * * * SECTION VI - REACTIVITY DATA * *

STABILITY: STABLE
CONDITIONS TO AVOID:

NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):

ALKALIES (EG. AMMONIA AND ITS SOLUTIONS, CARBONATES, SODIUM HYDROXIDE (CAUSTIC), POTASSIUM HYDROXIDE, CALCIUM HYDROXIDE, CYANIDES, SULFIDES, HYPOCHLORITES, CHLORITES) WHICH CAN GENERATE HEAT WITH SPLATTERING OR BOILING AND THE RELEASE OF TOXIC FUMES.

PN: 070155300 PAGE

MAY CAUSE SEVERE IRRITATION TO EYES AND UPPER RESPIRATORY SYSTEM.
MAY CAUSE SEVERE EYE AND SKIN BURNS.
FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.
OTHER HANDLING AND STORAGE CONDITIONS:
STORE AWAY FROM ALKALIES.
STORE IN A COOL WELL VENTILATED LOCATION.
KEEP CONTAINER CLOSED WHEN NOT IN USE.
AVOID CONTACT WITH SKIN, EYES AND CLOTHING.
AVOID BREATHING VAPORS.
CONTAINER DISPOSITION:
EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES I
PLACE. RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST
OBTAINING LANDFILL OPERATOR'S AUTHORIZATION. RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):

ACID GAS CHEMICAL CARTRIDGE RESPIRATOR.

VENTICATION:

USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION SHOULD USED IN AREAS WITHOUT GOOD CROSS VENTILATION.

PROTECTIVE GLOVES:

BUTYL GLOVES:

BUTYL GLOVES.

EYE PROTECTION:

WEAR GOGGLES AND/OR FACE SHIELD. PROVIDE EYEWASH AND QUICK DRENCH SYS OTHER PROTECTIVE EQUIPMENT:

RUBBER BOOTS WITHOUT LACE HOLES

WEAR FULL PROTECTIVE SUIT WHEN SKIN CONTACT IS POSSIBLE. HYDROCHLORIC ACID MAY GENERATE AND RELEASE FLAMMABLE HYDROGEN AND TOXIC CHLORINE GAS IN THE PRESENCE OF IRON. IN THE PRESENCE OF IRON SULFIDE, HYDROCHLORIC ACID MAY PRODUCE HIGHLY TOXIC HYDROGEN SULFIDE.

HAZARDOUS DECOMPOSITION PRODUCTS:
MAY RELEASE HYDROGEN AND CHLORINE GAS IN THE PRESENCE OF IRON, AND HYDRO SULFIDE IN THE PRESENCE OF IRON SULFIDE.

HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:
NOT APPLICABLE. SUPPLIES.

WASTE DISPOSAL METHOD:

IF MATERIAL HAS BEEN COMPLETELY NEUTRALIZED, GET APPROVAL FROM A SANITARY
LANDFILL OPERATOR AND TRANSPORT TO A SANITARY LANDFILL. IF NOT GET APPROVAL
FROM HAZARDOUS WASTE DISPOSAL FACILITY, AUTHORIZED UNDER EPA/RCRA SUBTITLE C
OR STATE EQUIVALENT. SHIP ABSORBED MATERIAL TO SITE. STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AND STOP LEAK WHERE
AND NEUTRALIZE TO A PH OF 6-8. SCOOP UP AND REMOVE.

PREVENT RUNOFF FROM ENTERING SEWERS, LAKES, RIVERS, STREAMS OF THE PROPERTY OF THE PRO PRECAUTIONARY LABELING HYDROCHLORIC * * * * * * * * * * * * * * SECTION VIII -* * * * * * SECTION VII - SPILL OR LEAK PROCEDURES SECTION X -SECTION IX -TRANSPORTATION INFORMATION * SPECIAL PROTECTION INFORMATION * ACID SPECIAL PRECAUTIONS NEAT -35.21% -* BULK OR PUBLIC WATER 070.155300 SAFE. * AND HYDROGEN * CONTAIN

DOT SHIPPING DESCRIPTION:
HYDROCHLORIC ACID SOLUTION RQ (HYDROCHLORIC ACID - 5000

8 - 1 LBS)

UN1789 -

PN: 070155300 * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * * * *

EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: MIX

- Β. EPA - CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY)
 1,640 GALS. - HYDROCHLORIC ACID,
- . EPA - SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- . EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)
 HYDROCHLORIC ACID 7647-01-0 31-60 %
- m COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES TSCA YES CEPA NE EEC N/D ACOIN N/D NPR ĸ DRSM Z
- <u>.</u> EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY US EPA BECAUSE OF:

CORROSIVITY

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 BE-6 MICROBIOCIDE DATE: 01-02-01 REVISED DATE 04-07-99

EMERGENCY TELEPHONE: 800/666-9260 OR EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 580/251-3359

CHEMICAL CODE: BE-6 MICROBIOCIDE PKG QTY: 48 LB FIBER DRUM SERVICE USED: FRACTURING * * * * * * * * SECTION II - COMPONENT INFORMATION * * * * SECTION I -PART NUMBER: 516007710 APPLICATION: MICROBIOCIDE PRODUCT DESCRIPTION * * * * * * PERCENT ٧JT * PEL

APPEARANCE WHITE SOLID POWDER MEASUREMENT

SPECIFIC GRAVITY (H20=1)
BULK DENSITY

N/D
N/D
LB/CU.FT.
FOR 20% SOLUTION

FREEZE POINT SOLUBILITY IN SEAWATER PARTITION COEF (OCTANOL IN WATER) SOLUBILITY IN WATER AT 20 DEG C. GMS/100ML H20 BIODEGRADABILITY VAPOR DENSITY VAPOR PRESSURE (MMHG) BOILING POINT(760 MMHG) POUR POINT EVAPORATION RATE (BUTYL ACETATE=1) PERCENT VOLATILES N/A NIL N/D NOT EVALUATED ZZZ DOD

* * * * * * * SECTION IV - FIRE AND EXPLOSION DATA *

NFPA(704) RATING:
HEALTH 2 FLAMMABILITY 0 REACTIVITY 0
> 200 F /
ND F / NONE FLASH

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

FULL PROTECTIVE CLOTHING AND IOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

IF PRODUCT IS HEATED ABOVE 140' C, THE SOLID DECOMPOSES LIBERATING HEAT,

TOXIC HYDROGEN BROMIDE FUMES, AND OXIDES OF NITROGEN. THE PRODUCT SWELLS

INTO A TARRY MASS WHICH BURNS READILY.

SECTION V -**HEALTH HAZARD DATA ***

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STABILITY: STABLE
CONDITIONS TO AVOID:
STABLE AT NORMAL AMBIENT TEMPERATURES. AVOID STORAGE AT HIGH TEMPERATURES.
STABLE AT NORMAL AMBIENT TEMPERATURES.
DECOMPOSITION OCCURS AT MELTING POINT OF 130' C. ALKALINE PH WILL LIBERATE FORMALDEHYDE.
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS AND STRONG ALKALIES.
HAZARDOUS DECOMPOSITION PRODUCTS:
OXIDES OF NITROGEN, BROMINE AND FORMALDEHYDE.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:
NOT APPLICABLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LARGE DOSES CAUSES ABDOMINAL PAIN, NAUSEA, VOMITING AND DIARRHEA.

CHRONIC EFFECTS:

NO SPECIFIC INFORMATION IS AVAILABLE ON THE CHRONIC EFFECTS OF EXPOSURE.

OTHER SYMPTOMS AFFECTED:

BECAUSE OF ITS IRRITATING PROPERTIES, THIS MATERIAL MAY AGGRAVATE AN

EXISTING DERMATITIS.

EXISTING DERMATITIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REMOVE TO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION, INGESTION:

DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE.

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL

ATTENTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ROUTES OF EXPOSURE:
EYE OR SKIN CONTACT, INHALATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRODUCT TOXICITY DATA: TOX TOX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REMOVED.
INHALATION:
THIS PRODUCT IS EXPECTED TO BE A LOW INHALATION HAZARD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CALIFORNIA PROPOSITION 65:
PRODUCT OR PRODUCT COMPONENTS ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOTE TO PHYSICIAN:
PROBABLE MUCOSAL DAMAGE MAY CONTRAINDICATE THE USE OF GASTRIC LAVAGE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRODUCT TLV: NOT ESTABLISHED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. IF IRRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. PROMPT MEDICAL ATTENTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONTACT WILL PRODUCE SEVERE IRRITATION OR BURNS AND, REMOVED, MAY LEAD TO PERMANENT EYE DAMAGE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROLONGED OR REPEATED CONTACT MAY CAUSE SEVERE IRRITATION
                                                                                                                                                                                                                                                                                                                                                                                                                         * * * * * * * * *
                                                                                                                                                                                                                                                                                                                                                                                                                    * SECTION VI - REACTIVITY DATA *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORL-RAT LD50: 180-400 MG/KG
IHL-RAT LC50: 5 MG/L
SKN-RBT LD50: > 1600 MG/KG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EFFECTS
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PAGE

MAY CAUSE SEVERE EYE AND SKIN IRRITATION.
FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.
EPA REGISTRATION NUMBER 10707-53-40153
EPA EST. NUMBER 10707-TX-008
OTHER HANDLING AND STORAGE CONDITIONS:
STORE IN DRY LOCATION TO PROTECT PRODUCT QUALITY. REQUIR AVOID CREATING OR INHALING DUST.
AVOID CREATING OR INHALING DUST.
SPECIAL PRECAUTIONS:
PRODUCT HAS A SHELF LIFE OF 24 MONTHS. c. EPA NECESSARY.

WASTE DISPOSAL METHOD:

SECURE CONTAINER AND TAKE TO AN APPROVED WASTE DISPOSAL SITE.

ACCORDANCE WITH APPLICABLE WASTE MANAGEMENT REGULATIONS. DOT SHIPPING DESCRIPTION: 2-BROMO-2-NITROPROPANE-1,3-DIOL -EYE PROTECTION:

GOGGLES AND/OR FACE SHIELD.

OTHER PROTECTIVE EQUIPMENT:

NORMAL WORK COVERALLS. USE ONLY WITH ADEQUATE VENTILATION. PROTECTIVE GLOVES: IMPERVIOUS RUBBER GLOVES. RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
NOT NORMALLY NECESSARY.
TOXIC DUST/MIST RESPIRATOR. STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
SWEEP UP MATERIAL AND PLACE IN APPROPRIATE DISPOSAL CONTAINER. USE SWEEPING
COMPOUND OR OTHER CLEANING AIDS TO PICK-UP RESIDUES. WASH DOWN AREA
THOROUGHLY WITH WATER. USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT AS VENTILATION: PRECAUTIONARY LABELING BE-6 MICROBIOCIDE * * * * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * * EPA - CERCLA/SUPERFUND, NOT EVALUATED EPA -N SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: MIX * * * * * * * * * * SECTION IX - SPECIAL PRECAUTIONS * * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION * * * * * * * SECTION SARA TITLE III, * * * * * SECTION VII -CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) 40 CFR 302 (REPORTABLE SPILL QUANTITY) × ı TRANSPORTATION INFORMATION 4.1 - UN3241 - III SPILL OR LEAK PROCEDURES * REQUIRES COVERED STORAGE * * NOT DISPOSE OF INFORMATION * * Z

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COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES TSCA YES CEPA NE EEC N/D ACOIN N/D NPR

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EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)

H. EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES NOT MEET THE CRITERIA OF HAZARDOUS WASTE

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THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY

MATERIAL SAFETY DATA SHEET DATE: 01-02-01
HALLIBURTON ENERGY SERVICES REVISED DATE 04-07-99
DUNCAN, OKLAHOMA 73536

EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

AVOID CREATING DUST CLOUDS WITH EXTINGUISHERS.

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

MAY IGNITE COMBUSTIBLES. REACTION WITH FUELS MAY BE VIOLENT. A POWERFUL OXIDIZER. REACTS VIGOROUSLY WITH REDUCING MATERIALS.

DECOMPOSES WHEN HEATED LIBERATING OXYGEN WHICH MAY INTENSIFY A FIRE. CHEMICAL CODE: SP BREAKER - SODIUM PERSULPHATE - 10 LBS PART NUMBER: PKG QTY: 10 LBS / BOX APPLICATION: BREAKER, CATALYST SERVICE USED: FRACTURING, WATER&SAND NFPA(704) RATING: 1 FLAMMABILITY SOLUBILITY IN SEAWATER
PARTITION COEF (OCTANOL IN WATER) VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT(760 MMHG)
POUR POINT SOLUBILITY IN WATER AT 20 DEG C. GMS/100ML H20 BIODEGRADABILITY PERCENT VOLATILES SPECIFIC GRAVITY (H2O=1) SODIUM PERSULFATE EVAPORATION RATE(BUTYL ACETATE=1) APPEARANCE * * * * * COMPONENT+ + PROPERTY * * * SECTION IV -* * SECTION I - PRODUCT DESCRIPTION * * * * * * SECTION II -WHITE SOLID, CRYSTALS 0 FIRE AND EXPLOSION DATA * 35 READILY N/A N/A N/A N/A COMPONENT INFORMATION * * REACTIVITY 1 NOT EVALUATED 2.470 81.90 LB/CU.FT. 6.0 FOR 1% SOL N/A PERCENT MEASUREMENT SPECIAL NONE ٦L٧ * 516000420

516000420 PAGE

* * * * * * * SECTION V -**HEALTH HAZARD DATA *** * * * * * ¥

CALIFORNIA PROPOSITION 65: PRODUCT OR PRODUCT COMPONENTS ARE

REGULATED UNDER CALIF. PROPOSITION

65.

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO:
"NTP, IARC, OSHA, OR, ACIGH".

PRODUCT TOXICITY DATA: 77770 88888 IPR-MUS LD50:226 MG/KG
IVN-RBT LDL0:178 MG/KG
ORL-RAT LD50: 895 MG/KG
SKN-RBT LD50: >10000 MG/KG
IHL-RAT LD50: >21 MG/L

PRODUCT TLV: Ν MG (S208)/M3

EFFECTS

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EXPOSURE

ROUTES OF EYE OR EXPOSURE: SKIN CONTACT, INHALATION.

SSENTIALLY NON-IRRITATING.

SKIN

ESSENTIALLY NON-IRRITATING.
MAY CAUSE SKIN SENSITIZATION, AN ALLERGIC REACTION WHICH BECOMES EVIDENT ON REPEATED EXPOSURES TO THIS PRODUCT.

INDIVIDUALS.
ALLERGIC PERSONS.

INHALATION:
MAY CAUSE ALLERGIC RESPIRATORY REACTION IN SUSCEPTIBLE
DUST AT HIGH LEVELS MAY PRODUCE SHORTNESS OF BREATH IN

SKIN: MMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST RRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION.

INHALATION: PROMPTLY WASH SKIN WITH SOAP AND WATER. IF IRRITATION DEVELOPS, ATTENTION. SEEK MEDICAL

REMOVE TO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION, INGESTION:

DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE.

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL

* * * * * * * SECTION VI -REACTIVITY DATA * * * * * *

SOLVENTS, 유 WITH MONOMERS

STABILITY: STABLE
CONDITIONS TO AVOID:
AVOID CONTACT WITH COMBUSTIBLE MATERIALS SUCH AS
SUCH AS ACRYLAMIDE.
SUCH AS ACRYLAMIDE.
INCOMPATIBILITY (MATERIALS TO AVOID):
ACIDS, ALKALIS, HALIDES (FLUORIDES, CHLORIDES, BR
MATERIALS, HEAVY METALS, OXIDIZABLE MATERIALS.
HAZARDOUS DECOMPOSITION PRODUCTS: BROMIDES), COMBUSTIBLE

PN: 516000420 PAGE

SULFUR AND NITROGEN.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:
CONTAMINATION WITH READILY OXIDIZABLE MATERIALS AND POLYMERIZATION FUMES OF SULFURIC ACID MIST, OXYGEN WHICH SUPPORTS COMBUSTION AND OXIDES 유

* * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
USE PROTECTIVE EQUIPMENT. SWEEP UP AND REMOVE. AVOID CREATING OR INHALING

WASTE DISPOSAL METHOD:

IF NOT CONTAMINATED, REUSE PRODUCT.

GET APPROVAL FROM HAZARDOUS WASTE DISPOSAL SITE AUTHORIZED UNDER EPA-RCRA
SUBTITLE C OR STATE EQUIVALENT. SHIP TO SITE.

RESPIRATORY PROTECTION (USE NIOSH/MSHA TOXIC DUST/MIST RESPIRATOR. APPROVED EQUIPMENT):

* * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION

LOCAL EXHAUST VENTILATION SHOULD

BΕ

EYE PROTECTION:

GOGGLES AND/OR FACE SHIELD.

OTHER PROTECTIVE EQUIPMENT:

RUBBER APRON TO PREVENT DIRECT SKIN CONTACT. VENTILATION:

USE ONLY WITH ADEQUATE VENTILATION.

USED IN DUSTY ENVIRONMENTS.

PROTECTIVE GLOVES:

BUTYL GLOVES.

* * * * * * * * * * SECTION IX - SPECIAL PRECAUTIONS *

PRECAUTIONARY LABELING SP BREAKER - SODIUM PERSULPHATE -10 LBS 516.000420

CAUSES ALLERGIC RESPIRATORY AND SKIN REACTION IN SENSITIVE INDIVIDUALS.
IRRITATING TO THE EYES, SKIN AND RESPIRATORY SYSTEM.
STRONG DXIDIZER! CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.
FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.
OTHER HANDLING AND STORAGE CONDITIONS:
STORE IN DRY LOCATION TO PROTECT PRODUCT QUALITY. REQUIRES COVERED STORAGE.
AVOID CREATING OR INHALING DUST.
AVOID CREATING OR INHALING DUST.
AVOID CONTACT WITH SKIN, EYES AND CLOTHING.
CONTAINER DISPOSITION:
THIS BAG MAY CONTAIN RESIDUE OF A HAZARDOUS MATERIAL. SOME STATES REGULATE SUCH CONTAINERS AS HAZARDOUS WASTE. WHERE SUCH CONTAINERS ARE REGULATED, PRIOR AUTHORIZATION SHOULD BE OBTAINED FROM A HAZARDOUS WASTE DISPOSAL SITE OPERATED UNDER RCRA SUBTITLE C REGULATIONS OR STATE EQUIVALENT.

* * * * * * * SECTION X -TRANSPORTATION INFORMATION * * * *

DOT SHIPPING DESCRIPTION:
SODIUM PERSULFATE - 5.1 - UN1505 - III

* * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION *

EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: Y PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: PURE

EPA -CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY)

- C. EPA SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- D. EPA SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)
- E. COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES
 TSCA YES CEPA NE EEC N/D ACOIN N/D NPR NE DRSM NE
- . EPA RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY US EPA BECAUSE OF:

IGNITABILITY

* * * * *

* * *

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MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99

EMERGENCY TELEPHONE: 800/666-9260 OR EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 580/251-3359

CHEMICAL CODE: SANDWEDGE - HAL-TANK
PKG QTY: 300 GALLON HALTANK API
SERVICE USED: FRACTURING HEAVY AROMATIC NAPHTHA SOPROPANOL ***** COMPONENT+ + + PROPERT *
* * * * SECTION I - PRODUCT DESCRIPTION * * * * * * * + + SECTION II - COMPONENT INFORMATION * * * 31-60 % 1-10 % SECTION III - PHYSICAL DATA * + + + + NK PART NUMBER: 516011670 APPLICATION: CONDUCTIVITY ENHANCER PERCENT * 300 PPM * * * * ٦LV * 400 PPM 400 PPM * * * PEL * ¥

MEASUREMENT

SOLUBILITY IN WATER AT
20 DEG C. GMS/100ML H20
BIODEGRADABILITY
PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1) VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT(760 MMHG) FREEZE POINT SEAWATER PARTITION COEF (OCTANOL IN WATER) SPECIFIC GRAVITY (H2O=1)
BULK DENSITY APPEARANCE DARK BROWN LIQUID
BLAND
.903
1) 7.52 LB/GAL
7.8 TO 9.8 /0 F / -17 C >/A-20 F / >-28 (>/A-20 F / >-28 (>/A-20 F / >-28 (NOT EVALUATED NOT EVALUATED INSOLUBLE NOT DETERMINED 35 2 2 8 6 6 6 ററ

* * * * * * * * SECTION IV -FIRE AND EXPLOSION DATA * * *

NFPA(704) RATING:
HEALTH 2 FLAMMABILITY
FLASH POINT AUTOIGNITION TEMPERATURE FLAMMABLE LIMITS (% BY VOLUME) W REACTIVITY 0

86 F /
ND F / LOWER SPECIAL 18 C S UPPER FLASH MTHD PMCC 12.7

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

USE WATER SPRAY TO COOL FIRE-EXPOSED SURFACES.

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

MAY BE IGNITED BY HEAT, SPARKS, OR FLAMES. FIGHT FIRE FROM A SAFE DISTANCE AND FROM A PROTECTED LOCATION. HEAT MAY BUILD PRESSURE AND RUPTURE CLOSED CONTAINERS, SPREADING THE FIRE AND INCREASING THE RISK OF BURNS AND

INJURIES.
INCOMPLETE THERMAL DECOMPOSITION MAY PRODUCE CARBON DIOXIDE AND CARBON MONOXIDE.
DO NOT ALLOW RUNOFF TO ENTER WATERWAYS.

* * * * * * * * * * SECTION V -HEALTH HAZARD DATA *

CALIFORNIA PROPOSITION 65: PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF. PROPOSITION

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH".

PRODUCT TOXICITY DATA: NOT DETERMINED

PRODUCT TLV: NOT DETERMINED

ROUTES EYE OF EXPOSURE: OR SKIN CONTACT, INHALATION.

----- EFFECTS

OF EXPOSURE

MAY CAUSE SEVERE IRRITATION WITH POSSIBLE CORNEAL BURNS

SKIN:

MAY BE ABSORBED THROUGH SKIN.
PROLONGED OR REPEATED CONTACT MAY CAUSE DERMATITIS.
INHALATION:

HIGH CONCENTRATIONS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION.
BE EVIDENCED BY GIDDINESS, HEADACHES, DIZZINESS, NAUSEA, VOMITING POSSIBLY UNCONSCIOUSNESS.
HIGH CONCENTRATIONS CAUSES NARCOSIS.
VAPORS, MIST OR SPRAY MAY CAUSE IRRITATION.
INGESTION:
LARGE DOSES CAUSES ABDOMINAL PAIN, NAUSEA, VOMITING AND DIARRHEA.
CHRONIC EFFECTS:
CHRONIC OVEREXPOSURE MAY CAUSE LIVER AND KIDNEY DISORDERS. THIS MAY

В

OTHER SYMPTOMS AFFECTED:
A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY CONDITIONS WORSENED EXPOSURE TO THIS PRODUCT. --- EMERGENCY AND FIRST AID PROCEDURES ---

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. PROMPT MEDICAL ATTENTION. SEEK

INHALATION: PROMPTLY WASH SKIN WITH SOAP AND WATER. WASH CLOTHING BEFORE REUSE. DISCARD CONTAMINATED LEATHER ARTICLES. SEEK PROMPT MEDICAL ATTENTION

INGESTION:
DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE.
HEAD BELOW HIPS TO PREVENT ASPIRATION. SEEK PROMPT MEDICAL ATTENTION. REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK PROMPT MEDICAL ATTENTION.

* * * * * * * * SECTION VI - REACTIVITY DATA * * *

STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE AND/OR CARBON DIOXIDE.

PAGE

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FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.

OTHER HANDLING AND STORAGE CONDITIONS:

STORE AWAY FROM OXIDIZERS.

KEEP FROM HEAT, SPARKS, AND OPEN FLAME.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

AVOID BREATHING VAPORS.

CONTAINER DISPOSITION:

IF EMPTY CONTAINER RETAINS PRODUCT RESIDUES, ALL LABEL PRECAUTIONS MUST BE OBSERVED. STORE AWAY FROM IGNITION SOURCES WITH ALL DRUM CLOSURES IN PLACE. OFFER CONTAINER TO RECONDITIONER OR RECYCLER. ENSURE RECONDITIONER OR RECYCLER IS AWARE OF THE PROPERTIES OF THE CONTENTS.

SPECIAL PRECAUTIONS:

PRODUCT HAS A SHELF LIFE OF 24 MONTHS. RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ORGANIC VAPOR CARTRIDGE RESPIRATOR.
VENTILATION:
USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION
USED IN AREAS WITHOUT GOOD CROSS VENTILATION.
PROTECTIVE GLOVES:
IMPERVIOUES:
IMP STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AREA AND STOP LEAK WHERE SAFE,
REMOVE IGNITION SOURCES. CONTAIN AND ABSORB SPILL WITH SAND OR OTHER INERT
MATERIAL. SCOOP OR SWEEP UP USING NON-SPARKING TOOLS. IN ENCLOSED AREAS,
WEAR SELF-CONTAINED BREATHING APPARATUS.

WASTE DISPOSAL METHOD:
GET APPROVAL FROM HAZARDOUS WASTE DISPOSAL SITE AUTHORIZED UNDER EPA-RCRA
SUBTITLE C OR STATE EQUIVALENT. SHIP TO SITE. EYE PROTECTION:

WEAR GOGGLES AND/OR FACE SHIELD. PROVIDE EY
OTHER PROTECTIVE EQUIPMENT:
RUBBER APRON TO PREVENT DIRECT SKIN CONTACT. EPA DOT SHIPPING DESCRIPTION: FLAMMABLE LIQUID, N.O.S. - 3 - UN1993 - II (CONTAINS ISOPROPANOL, HEAVY AROMATIC NAPHTHA) HAZARD POLYMERIZATION: CONDITIONS TO AVOID: NOT APPLICABLE. PRECAUTIONARY LABELING SANDWEDGE - HAL-TANK MAY CAUSE HEADACHE, DIZZINESS AND OTHER CENTRAL NERVOUS SYSTEM MAY CAUSE IRRITATION TO THE EYES, SKIN OR RESPIRATORY SYSTEM. SUPERFUND(SARA) TITLE FIRE: Y PRESSURE: N CHRONIC (DELAYED): N FLAMMABLE! WARN I NG! * * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION * * * * * * * * SECTION X -* * * * * * * * * * SECTION IX - SPECIAL PRECAUTIONS * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES * * * SECTION XI - ENVIRONMENTAL EVALUATION WON"T OCCUR III - HAZARD CLASSIFICATION & ASSOCIATED REACTIVE: N ACUTE (IMMEDIATE): Y MIXTURE OR PURE MATERIAL: MIX TRANSPORTATION PROVIDE EYEWASH AND QUICK DRENCH INFORMATION * * * * * * 516.011670 EFFECTS SHOULD * SYSTEM 踞

FIRE: Y

- B. EPA CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) 12,500 LBS OR 1673 GALLONS
- C. EPA SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- D. EPA SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)
 ISOPROPANOL
 67-63-0
 31-60 %
- E. COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES
 TSCA YES CEPA YES EEC N/D ACOIN N/D NPR NE DRSM NE
- . EPA RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY US EPA BECAUSE OF:

IGNITABILITY

* * * * *

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF FACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99 PAGE

EMERGENCY TELEPHONE: 800/666-9260 OR EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 580/251-3359

CHEMICAL CODE: OPTIFLO-HTE PKG QTY: 50 LB FIBER DRUM SERVICE USED: FRACTURING * * * * * * * * * * * * SEC * * * * * * * * * SECTION II -COMPONENT+ + + + * * SECTION I - PRODUCT DESCRIPTION * * + + + + + + 11-30 % 0.1 MG/M3 SECTION III - PHYSICAL DATA * * * * * * APPLICATION: BREAKER COMPONENT INFORMATION * PERCENT ٦٢٧ PART NUMBER: 516009080 * * * * * * * * 0.1 MG/M3 PEL

MEASUREMENT

DARK RED SOLID POWDER
TYPICAL FERMENTATION ODOR
1.500

N/D LB/CU.FT.

SPECIFIC GRAVITY (H2O=1)
BULK DENSITY

APPEARANCE

VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT(760 MMHG)
POUR POINT PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1) SOLUBILITY IN WATER AT 20 DEG C. GMS/100ML H20 BIODEGRADABILITY READILY N/D

FREEZE POINT SOLUBILITY IN SEAWATER PARTITION COEF (OCTANOL IN WATER) NOT EVALUATED

* * * * * * SECTION IV -FIRE AND EXPLOSION DATA

NFPA(704) RATING: TLAMMABILITY REACTIVITY 0 SPECIAL NONE

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

INCOMPLETE THERMAL DECOMPOSITION MAY PRODUCE CARBON DIOXIDE AND CARBON

MONOXIDE.

MONOXIDE.

ORGANIC DUST IN THE PRESENCE OF A SOURCE OF IGNITION CARRIES A POTENTIAL EXPLOSION HAZARD IF THE CONCENTRATION IN THE AIR IS TOO HIGH. GOOD HOUSEKEEPING PROCEDURES ARE REQUIRED TO MINIMIZE THIS POTENTIAL HAZARD.

SECTION V -HEALTH HAZARD DATA

REGULATED

UNDER CALIF.

PROPOSITION

65

CALIFORNIA PROPOSITION 65: PRODUCT OR PRODUCT COMPONENTS ARE

AS A POTENTIAL CARCINOGEN

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE LISTED
ACCORDING TO: NTP, AND IARC

PRODUCT TOXICITY DATA: NOT DETERMINED

PRODUCT TLV: NOT DETERMINED

ROUTES EYE OF EXPOSURE: OR SKIN CONTACT, INHALATION.

EFFECTS

OF EXPOSURE

ESSENTIALLY NON-IRRITATING

SKIN

ESSENTIALLY NON-IRRITATING.

INHALATION:
MAY CAUSE ALLERGIC RESPIRATORY REACTION IN SUSCEPTIBLE INDIVIDUALS.
CONTAINS A SMALL AMOUNT OF CRYSTALLINE SILICA, REPEAT OR PROLONG EXPOSURES
MAY CAUSE A DELAYED RESPIRATORY SYSTEM ILLNESS, SILICOSIS. SYMPTOMS INCLUDE
SHORTNESS OF BREATH, COUGH, FEVER, WEIGHT LOSS, CHEST PAIN, REDUCTION OF
LUNG FUNCTION AND HEART IMPAIRMENT. ONSET OF SYMPTOMS MAY BE DELAYED.

CHRONIC EFFECTS:

MAY CAUSE ALLERGIC RESPIRATORY REACTION IN SUSCEPTIBLE INDIVIDUALS.

MAY CAUSE ALLERGIC RESPIRATORY REACTION IN SUSCEPTIBLE INDIVIDUALS.

CONTAINS TRACE AMOUNTS OF ARSENIC AND LEAD WHICH ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE EFFECTS. EXPSOURES TO THESE TRACE ELEMENTS SHOULD NOT EXCEED FEDERAL OSHA PELS UNLESS USED IN A MANNER THAT PRODUCES EXTREMELY HEAVY AIRBORNE CONCENTRATIONS WELL ABOVE THE TLV.

OTHER SYMPTOMS AFFECTED:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY CONDITIONS WORSENED BY EXPOSURE TO THIS PRODUCT.

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST RRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION. 5 MINUTES. 묶

SKIN: PROMPTLY WASH SKIN WITH SOAP AND WATER. WASH CLOTHING IF IRRITAION DEVELOPS, SEEK PROMPT MEDICAL ATTENTION. INHALATION: REMOVE TO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION, BEFORE REUSE

DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL

NGESTION:

* * * *

SECTION VI -

REACTIVITY DATA

STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE AND/OR CARBON DIOXIDE.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:

PAGE

NOT APPLICABLE

* * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES *

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
USE PROTECTIVE EQUIPMENT. SWEEP UP AND REMOVE. AVOID CREATING OR INHALING

WASTE DISPOSAL METHOD:
IF NOT CONTAMINATED, REUSE PRODUCT.
GET APPROVAL FROM LANDFILL OPERATOR AND TRANSPORT TO SANITARY LANDFILL.

* * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION *

RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
NOT NORMALLY NECESSARY.
TOXIC DUST/MIST RESPIRATOR.

USE ONLY WITH ADEQUATE VENTILATION.
PROTECTIVE GLOVES:
IMPERVIOUS...RUBBER GLOVES.

EYE PROTECTION:

GOGGLES AND/OR FACE SHIELD.

OTHER PROTECTIVE EQUIPMENT:

NORMAL WORK COVERALLS.

* * * * * SECTION IX - SPECIAL PRECAUTIONS *

PRECAUTIONARY LABELING OPTIFLO-HTE

MAY CAUSE ALLERGIC RESPIRATORY REACTION IN SUSCEPTIBLE INDIVIDUALS.
AIRBORNE DUST MAY BE EXPLOSIVE!
FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.
OTHER HANDLING AND STORAGE CONDITIONS:
STORE IN DRY LOCATION TO PROTECT PRODUCT QUALITY. REQUIRES COVERED ST AVOID CREATING OR INHALING DUST.
AVOID CREATING OR INHALING DUST.
AVOID CONTACT WITH SKIN, EYES AND CLOTHING.
CONTAINER DISPOSITION:
EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES IN RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST OBTAINING LANDFILL OPERATOR'S AUTHORIZATION. REQUIRES COVERED STORAGE.

PLACE.

SPECIAL PRECAUTIONS:

PRODUCT HAS A SHELF LIFE OF 24 MONTHS.

SECTION X - TRANSPORTATION INFORMATION

DOT SHIPPING DESCRIPTION: NOT RESTRICTED * * * * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * * *

EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: PURE

EPA - CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) N/A

EPA - SARA TITLE PRODUCT CONTAINS III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES)

. EPA -SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)

Z

COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES
TSCA YES CEPA NO EEC NO ACOIN NO NPR NE DRSM

<u>.</u> EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES NOT MEET THE CRITERIA OF HAZARDOUS WASTE

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MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99

EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359

CHEMICAL CODE: LOSURF-300 | PKG QTY: 330 GALLON TANK SERVICE USED: STIMULATION * * * * * * * * * SECTION II -COMPONENT+ + CODE: LOSURF-300 NONIONIC SURFACTANT - HAL-TANK PART 330 GALLON TANK APPLICATION: NONEMULSIFIER * * SECTION I - PRODUCT DESCRIPTION * * * * * + + * + + + SECTION III -COMPONENT INFORMATION * * * PHYSICAL DATA PERCENT 31-60 % 11-30 % TRACE % 1-10 % MEASUREMENT 400 PPM 100 PPM 10 PPM * * * * 717 NUMBER: 516001790 * 400 PPM 100 PPM 20 PPM 10 PPM * * * * PEL *

SOLUBILITY IN WATER AT
20 DEG C. GMS/100ML H20
BIODEGRADABILITY
PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1) A
VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT(760 MMHG)
NOUR POINT FREEZE POINT
SOLUBILITY IN SEAWATER
PARTITION COEF (OCTANOL IN WATER) SPECIFIC GRAVITY (H20=1)
BULK DENSITY APPEARANCE AMBER LIQUID
SOLVENT
.910 33.00 N/D N/D 46-50 DISPERSES 7.59 LB/GAL NOT DETERMINED EVALUATED

NFPA(704) RATING:
HEALTH 1 FLAMMABILITY * * * * * * * * SECTION IV -FIRE AND EXPLOSION DATA *

FLASH POINT 4 REACTIVITY 63 ND F / SPECIAL 17 C NONE FLASH MTHD PMCC

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

USE WATER SPRAY TO COOL FIRE FIRE-EXPOSED SURFACES.

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

UNUSUAL FIRE AND EXPLOSION HAZARDS: BREATHING

SAFE DISTANCE

AND FROM A PROTECTED LOCATION. HEAT MAY BUILD PRESSURE AND RUPTURE CONTAINERS, SPREADING THE FIRE AND INCREASING THE RISK OF BURNS AND INJURIES.
INCOMPLETE THERMAL DECOMPOSITION MAY PRODUCE CARBON DIOXIDE, CARBON MONOXIDE AND NITROGEN OXIDES. CLOSED

* * * * * * * * SECTION V -HEALTH HAZARD DATA *

CALIFORNIA PROPOSITION 65: PRODUCT OR PRODUCT COMPONENTS ARE REGULATED UNDER CALIF. PROPOSITION

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH".

PRODUCT TOXICITY DATA: AQU TLM96: 3.3-10 PPM(BROWN SHRIMP)

PRODUCT TLV: NOT ESTABLISHED

EFFECTS 유 EXPOSURE

ROUTES OF EXPOSURE:
EYE OR SKIN CONTACT, INHALATION

MAY CAUSE EYE IRRITATION.

SKIN:

FREQUENT OR PROLONGED CONTACT WILL DRY AND DEFAT THE SKIN, POSSIBLY LEADING TO IRRITATION AND DERMATITIS. REPEATED CONTACT MAY SENSITIZE THE SKIN. INHALATION:

HIGH CONCENTRATIONS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION.
BE EVIDENCED BY GIDDINESS, HEADACHES, DIZZINESS, NAUSEA, VOMITING POSSIBLY UNCONSCIOUSNESS.
VAPORS, MIST OR SPRAY MAY CAUSE IRRITATION. OR THIS

ASPIRATION INTO LUNGS BY INGESTION OR VOMITING, MAY CAUSE CHEMICAL PNEUMONITIS RESULTING IN EDEMA AND HEMORRAGE AND MAY BE FATAL. SYMPTOMS INCLUDE INCREASED RESPIRATORY RATE AND BLUISH DISCOLORATION OF SKIN. COUGHING AND GAGGING ARE OFTEN NOTED AT THE TIME OF ASPIRATION.

CHRONIC EFFECTS:

CHRONIC OVEREXPOSURE MAY CAUSE LIVER AND KIDNEY DISORDERS.

OTHER SYMPTOMS AFFECTED:

BECAUSE OF ITS ITRITATING PROPERTIES, THIS MATERIAL MAY AGGRAVATE AN EXISTING DERMATITIS. BREATHING OF VAPOR AND/OR MISTS MAY AGGRAVATE ASTHMAND INFLAMMATORY OR FIBROTIC PULMONARY DISEASE.

ASTHMA

EYE: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. PROMPT MEDICAL ATTENTION. OF WATER FOR AT LEAST 15 MINUTES WHILE SHOES. SEEK MEDICAL ATTENTION. WASH

IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES I REMOVING CONTAMINATED CLOTHING AND SHOES. SEEK MEDICAL ATTENTION. WAS INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK PROMPT MEDICAL ATTENTION.

INGESTION:

DO NOT INDUCE VOMITING! ASPIRATION INTO LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL. IF VOMITING OCCURS SPONTANEOUSLY, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION OF LIQUID INTO LUNGS.

* SECTION ٧١ -REACTIVITY DATA * * *

PN: 516001790

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TOTHER HANDLING AND STORAGE CONDITIONS:
STORE AWAY FROM OXIDIZERS.
STORE AWAY FROM OXIDIZERS.
KEEP FROM HEAT, SPARKS, AND OPEN FLAME.
KEEP CONTAINER CLOSED WHEN NOT IN USE.
AVOID CONTACT WITH SKIN, EYES AND CLOTHING.
AVOID BREATHING VAPORS.
CONTAINER DISPOSITION:
EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES PLACE. RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST OBTAINING LANDFILL OPERATOR'S AUTHORIZATION. EYE PROTECTION:
GOGGLES AND/OR FACE SHIELD.
OTHER PROTECTIVE EQUIPMENT:
RUBBER APRON TO PREVENT DIRECT SKIN CONTACT. VENTILATION:

USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION SHOULD BE USED IN AREAS WITHOUT GOOD CROSS VENTILATION.

LOCAL EXHAUST VENTILATION MUST BE DESIGNED FOR EXPLOSIVE ATMOSPHERES (NEC CLASS I EQUIPMENT).

PROTECTIVE GLOVES: STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AREA AND STOP LEAK WHERE SAFE.

REMOVE IGNITION SOURCES. CONTAIN AND ABSORB SPILL WITH SAND OR OTHER INERT

MATERIAL. SCOOP OR SWEEP UP USING NON-SPARKING TOOLS. IN ENCLOSED AREAS,

WEAR SELF-CONTAINED BREATHING APPARATUS.

WASTE DISPOSAL METHOD:

GET APPROVAL FROM HAZARDOUS WASTE DISPOSAL SITE AUTHORIZED UNDER EPA-RCRA

SUBTITLE C OR STATE EQUIVALENT. SHIP TO SITE. HEAT, SPARKS AND OPEN FLAME.
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE AND/OR CARBON DIOXIDE.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:
NOT APPLICABLE. PRECAUTIONARY LABELING LOSURF-300 NONIONIC SURFACTANT -RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ORGANIC VAPOR CARTRIDGE RESPIRATOR WITH A FULL FACEPIECE. CONDITIONS TO AVOID: * * * * * * * * * * MAY CAUSE HEADACHE, DIZZINESS AND OTHER CENTRAL NERVOUS SYSTEM EFFECTS. MAY CAUSE EYE IRRITATION. MAY CAUSE DEFATTING OF SKIN WHICH MAY LEAD TO IRRITATION OR DERMATITIS. FLAMMABL WARNING! * * * * * IMPERVIOUS RUBBER GLOVES. * * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION * * * * * * * SECTION VII -* * SECTION SECTION × ' - XI TRANSPORTATION INFORMATION * SPILL OR LEAK PROCEDURES * * SPECIAL PRECAUTIONS HAL-TANK516.001790 * * *

DOT SHIPPING DESCRIPTION: FLAMMABLE LIQUID, N.O.S. - (CONTAINS ISOPROPANOL)

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EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: Y PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: MIX

- B. EPA CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) N/A
- C. EPA SARA TITLE 111, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES)
 PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- EPA SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)
 ISOPROPANOL 67-63-0 31-60 %
 PROPYLENE OXIDE 75-56-9 TRACE %
 NAPHTHALENE 91-20-3 1-10 %

0.

- E. COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES
 TSCA YES CEPA YES EEC N/D ACOIN N/D NPR NE DRSM NE
- EPA RCRA (HAZARDOUS WASTE), 40 CFR 261

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IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY US EPA BECAUSE OF:

IGNITABILITY

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GUARNTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THE INFORMATION IS EXPRESSLY AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THE SOLE THAT INFORMATION IS EXPRESSLY AND PROPERTY. ANY OTHER USE OF THE SOLE CANDADATE. PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT,

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MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99

* * SECTION I - PRODUCT DESCRIPTION * * * * * * EMERGENCY TELEPHONE: 800/666-9260 OR EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 580/251-3359 PART NUMBER: 516005670

GUAR GUM ETHOXYLATED NONYLPHENOL DIESEL * * * * * * * * * * * CHEMICAL CODE: LGC-VIII CONCENTRATE - BULK
PKG QTY: CARGO TANK
APPLICATION: CONCENTRATE
SERVICE USED: STIMULATION * * * * * COMPONENT+ + + + + + + SECTION II -COMPONENT INFORMATION * * PERCENT 31-60 % 1-10 % 31-60 % NOT EST ٦LV 10 MG/M3 * 15 MG/M3 NOT EST NOT EST * * * * * PEL *

SECTION III - PHYSICAL DATA MEASUREMENT

SPECIFIC GRAVITY (H20=1)
BULK DENSITY

YELLOWISH LIQUID, (
DIESEL
) 1.035
) 8.62

GEL

8.62 LB/GAL NOT DETERMINED

PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1)
VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT(760 MMHG)
POUR POINT SOLUBILITY IN WATER AT 20 DEG C. GMS/100ML H20 BIODEGRADABILITY NIL SLOWLY 5-6 N/D 1300 F / 148

FREEZE POINT SEAWATER PARTITION COEF (OCTANOL IN WATER) NOT EVALUATED

* * * * * * * SECTION IV -FIRE AND EXPLOSION DATA *

NFPA(704) RATING: HEALTH 1 FLAMMABILITY N REACTIVITY 0 128 F ND F SPECIAL 53 C ND C NONE FLASH MTHD TCC

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

USE WATER SPRAY TO COOL FIRE-EXPOSED SURFACES.

USE WATER SPRAY TO COOL FIRE-EXPOSED SURFACES.

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED.

APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NAY BE IGNITED BY HEAT, SPARKS, OR FLAMES. FIGHT FIRE FROM A SAFE DISTANCE OF THE PROPERTY OF THE PR

OR FLAMES. FIGHT FIRE FROM A SAFE DISTANCE HEAT MAY BUILD PRESSURE AND RUPTURE CLOSED

AND INCREASING THE RISK OF BURNS AND

CONTAINERS, SPREADING THE FIRE AN INJURIES.
INCOMPLETE THERMAL DECOMPOSITION MONOXIDE AND NITROGEN OXIDES. MAY PRODUCE CARBON DIOXIDE,

* * * * * * * * * SECTION V -**HEALTH HAZARD DATA ***

CALIFORNIA PROPOSITION 65:
PRODUCT OR PRODUCT COMPONENTS ARE REGULATED UNDER CALIF. PROPOSITION

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: NTP, IARC, AND OSHA

PRODUCT TOXICITY DATA: NOT DETERMINED

PRODUCT TLV: NOT ESTABLISHED

ROUTES EYE OF EXPOSURE: OR SKIN CONTACT, INHALATION. EFFECTS

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EXPOSURE

MAY CAUSE EYE IRRITATION

FREQUENT OR PROLONGED CONTACT WILL DRY AND DEFAT THE SKIN, POSSIBLY LEADING TO IRRITATION AND DERMATITIS. REPEATED CONTACT MAY SENSITIZE THE SKIN.

HIGH CONCENTRATIONS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. THIS MAY BE EVIDENCED BY GIDDINESS, HEADACHES, DIZZINESS, NAUSEA, VOMITING OR POSSIBLY UNCONSCIOUSNESS.

VAPORS, MIST OR SPRAY MAY CAUSE IRRITATION.

INGESTION:
INGESTION:
IRRITATION OF THE MOUTH AND THROAT, ABDOMINAL PAIN, NAUSEA AND VOMITING, DIARRHEA, AND COLLAPSE MAY RESULT FROM INGESTION.
ASPIRATION INTO LUNGS BY INGESTION OR VOMITING, MAY CAUSE CHEMICAL PNEUMONITIS RESULTING INGESTION OR VOMITING, MAY BE FATAL. SYMPTOMS INCLUDE INCREASED RESPIRATORY RATE AND BLUISH DISCOLORATION OF SKIN.
CCUGHING AND GAGGING ARE OFTEN NOTED AT THE TIME OF ASPIRATION.
CHRONIC EFFECTS:
PROLONGED OR REPEATED APPLICATION OF A SIMILAR PRODUCT TO THE SKIN OF LAB LABORATORY MICE WITHOUT WASHING BETWEEN APPLICATIONS RESULTED IN INCREASED INCIDENCE OF SKIN TUMORS. IT IS SUSPECTED THAT TUMORS MAY BE DUE IN PART TO SEVERELY IRRITATED CONDITIONS FROM CONTINOUS CONTACT WITH THE PRODUCT.
BECAUSE OF ITS IRRITATING PROPERTIES, THIS MATERIAL MAY AGGRAVATE AN EXISTING DERMAITIS.

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 IRRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION. EMERGENCY AND FIRST AID PROCEDURES MINUTES.

SKIN: PROMPTLY WASH SKIN WITH SOAP AND WATER. IF IRRITATION DEVELOPS, SEEK MEDICAL

ATTENTION.
INHALATION:
REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION,
PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
SEEK PROMPT MEDICAL ATTENTION.

INGESTION:

DO NOT INDUCE VOMITING! ASPIRATION INTO LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL. IF VOMITING OCCURS SPONTANEOUSLY, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION OF LIQUID INTO LUNGS.

SECTION REACTIVITY DATA * * * *

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TORRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.
OTHER HANDLING AND STORAGE CONDITIONS:
STORE AWAY FROM OXIDIZERS.
KEEP FROM HEAT, SPARKS, AND OPEN FLAME.
KEEP CONTAINER CLOSED WHEN NOT IN USE.
AVOID CONTACT WITH SKIN, EYES AND CLOTHING.
AVOID BREATHING VAPORS.
CONTAINER DISPOSITION:
EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLEMPTY CONTAINER COMPLETELY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STABILITY: STABLE
CONDITIONS TO AVOID:
CONDITIONS TO AVOID:
INCOMPATIBILITY (MATERIALS TO AVOID):
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS:
HAZARDOUS DECOMPOSITION PRODUCTS:
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:
NOT APPLICABLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EYE PROTECTION:

WEAR GOGGLES AND/OR FACE SHIELD. PROVIDE EYE
OTHER PROTECTIVE EQUIPMENT:

RUBBER APRON TO PREVENT DIRECT SKIN CONTACT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VENTILATION:

USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION SHOULD BE USED IN AREAS WITHOUT GOOD CROSS VENTILATION.

LOCAL EXHAUST VENTILATION MUST BE DESIGNED FOR COMBUSTIBLE ATMOSPHERES (NEC CLASS II EQUIPMENT).

PROTECTIVE GLOVES:

IMPERVIOUS RUBBER GLOVES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AREA AND STOP LEAK WHERE SAFE.

REMOVE IGNITION SOURCES. CONTAIN AND ABSORB SPILL WITH SAND OR OTHER INERT

MATERIAL. SCOOP OR SWEEP UP USING NON-SPARKING TOOLS. IN ENCLOSED AREAS,

WEAR SELF-CONTAINED BREATHING APPARATUS.

WASTE DISPOSAL METHOD:

GET APPROVAL FROM HAZARDOUS WASTE DISPOSAL SITE AUTHORIZED UNDER EPA-RCRA
SUBTITLE C OR STATE EQUIVALENT. SHIP TO SITE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ORGANIC VAPOR CARTRIDGE RESPIRATOR WITH A DUST MIST FILTER.
IN OXYGEN DEFICIENT AREAS OR CONFINED SPACES, POSITIVE PRESSURE SUPPLIED-
AIR RESPIRATOR WITH 5-MINUTE AUXILIARY BOTTLE, OR PRESSURE-DEMAND OR
POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRECAUTIONARY LABELING
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      MAY CAUSE HEADACHE, DIZZINESS AND OTHER CENTRAL NERVOUS SYSTEM MAY CAUSE IRRITATION TO THE EYES, SKIN OR RESPIRATORY SYSTEM.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AND QUICK DRENCH SYSTEM.
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SECTION X -

TRANSPORTATION INFORMATION

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DOT SHIPPING DESCRIPTION:
DIESEL FUEL SOLUTION - 3 - NA1993 - III

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EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: Y PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): Y MIXTURE OR PURE MATERIAL: MIX

- 8 EPA - CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY)
 N/A
- . EPA - SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS

<u>.</u>

m COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES TSCA YES CEPA NE EEC N/D ACOIN N/D NPR EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS) ETHOXYLATED NONYLPHENOL 9016-45-9 1-10 %

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DRSM NE

EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

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IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY US EPA BECAUSE OF:

* *

IGNITABILITY

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GLARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DINCAN OKI AHOMA 73536

PN: 070155110

PAGE

INGESTION:

EXPECTED TO CAUSE SOME IRRITATION OF THE MOUTH, ESOPHAGUS AND STOMACH CHRONIC EFFECTS:

CHRONIC OVEREXPOSURE MAY CAUSE LIVER AND KIDNEY DISORDERS.

OTHER SYMPTOMS AFFECTED:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY CONDITIONS WORSENED EXPOSURE TO THIS PRODUCT.

EXPOSURE TO THIS PRODUCT. ROUTES EYE INGESTION:

DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE.

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL
ATTENTION. INHALATION:
INHALATION:
HIGH CONCENTRATIONS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION.
BE EVIDENCED BY GIDDINESS, HEADACHES, DIZZINESS, NAUSEA, VOMITING
POSSIBLY UNCONSCIOUSNESS.
HIGH CONCENTRATIONS CAUSES NARCOSIS.
VAPORS, MIST OR SPRAY MAY CAUSE IRRITATION. CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH". CALIFORNIA PROPOSITION 65: PRODUCT OR PRODUCT CAMPONENTS ARE NOT REGULATED UNDER CALIF. IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. SEEK MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE.

INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

SEEK PROMPT MEDICAL ATTENTION. PRODUCT TLV: PRODUCT TOXICITY DATA: * * * * * * * * * * SECTION V -IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. PROMPT MEDICAL ATTENTION. INCOMPLETE THERMAL DECOMPOSITION MAY PRODUCE CARBON DIOXIDE MONOXIDE. MAY CAUSE EYE IRRITATION. OF EXPOSURE: OR SKIN CONTACT, INHALATION. 400 PPM TOX AQU EYE-HMN 20 PPM
ORL-MAN LDLO:8600 MG/KG
IHL-HMN TCLO:400 PPM
ORL-RAT LD50:5840 MG/KG
TLM96:1000-100 PPM EFFECTS HEALTH HAZARD DATA * OF EXPOSURE PROPOSITION AND STOMACH. CARBON OR THIS ВΥ SEEK

STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS

TO AVOID):

* * * * *

*

SECTION VI -

REACTIVITY DATA

*

PN: 070155110

OTHER HANDLING AND STORAGE CONDITIONS:
STORE AWAY FROM OXIDIZERS.
KEEP FROM HEAT, SPARKS, AND OPEN FLAME.
KEEP CONTAINER CLOSED WHEN NOT IN USE.
AVOID CONTAINER CLOSED WHEN NOT IN USE.
AVOID BREATHING VAPORS.
CONTAINER DISPOSITION:
IF EMPTY CONTAINER RETAINS PRODUCT RESIDUES, ALL LABEL PRECAUTIONS MUST BE OBSERVED. STORE AWAY FROM IGNITION SOURCES WITH ALL DRUM CLOSURES IN PLACE. OFFER CONTAINER TO RECONDITIONER OR RECYCLER. ENSURE RECONDITIONER OR RECYCLER IS AWARE OF THE PROPERTIES OF THE CONTENTS. STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AREA AND STOP LEAK WHERE SAFE.

REMOVE IGNITION SOURCES. CONTAIN AND ABSORB SPILL WITH SAND OR OTHER INERT

MATERIAL. SCOOP OR SWEEP UP USING NON-SPARKING TOOLS. IN ENCLOSED AREAS,

WEAR SELF-CONTAINED BREATHING APPARATUS.

WASTE DISPOSAL METHOD:

GET APPROVAL FROM HAZARDOUS WASTE DISPOSAL SITE AUTHORIZED UNDER EPA-RCRA

SUBTITLE C OR STATE EQUIVALENT. SHIP TO SITE. EYE PROTECTION:

WEAR GOGGLES AND/OR FACE SHIELD. PROVIDE EYI
OTHER PROTECTIVE EQUIPMENT:
RUBBER APRON TO PREVENT DIRECT SKIN CONTACT. VENTILATION:
USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION
USED IN AREAS WITHOUT GOOD CROSS VENTILATION.
PROTECTIVE GLOVES: STRONG OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE AND/OR CARBON DIOXIDE.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID: DOT SHIPPING DESCRIPTION: ISOPROPANOL - 3 - UN1219 -PRECAUTIONARY LABELING ISOPROPYL ALCOHOL -RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ORGANIC VAPOR CARTRIDGE RESPIRATOR. * * * * * * * * * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION MAY CAUSE HEADACHE, DIZZINESS AND OTHER CENTRAL NERVOUS SYSTEM EFFECTS MAY CAUSE IRRITATION TO THE EYES, SKIN OR RESPIRATORY SYSTEM. IMPERVIOUS RUBBER GLOVES. SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED FIRE: Y PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: MIX FLAMMABLE! * * * * * * * * * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES * * SECTION X -SECTION XI -* * SECTION TRANSPORTATION INFORMATION * IX - SPECIAL PRECAUTIONS ENVIRONMENTAL EVALUATION * PROVIDE EYEWASH AND QUICK DRENCH SYSTEM. 55 GALLONS * * * * * * * 070.155110 * * * SHOULD *

- B. EPA CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) N/A
- C. EPA SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- D. EPA SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS) ISOPROPANOL 67-63-0 > 60 %
- E. COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES
 TSCA YES CEPA NE EEC N/D ACOIN N/D NPR NE DRSM NE
- H. EPA RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY US EPA BECAUSE OF:

IGNITABILITY

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY

MATERIAL SAFETY DATA SHEET
HALLIBURTON ENERGY SERVICES REVISED DATE 04-07-99
DUNCAN, OKLAHOMA 73536

EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359

| CHEMICAL CODE: GBM-30 BREAKER PRODUCT DESCRIPTION * * * * * * * * * * * * * * * * * * * |
|---|
|---|

P N 516001460

N

STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS
STRONG OXIDIZERS. PROMPTLY WASH SKIN WITH SOAP AND WATER. WASH CLOTHING BEFORE REUSE.
IF IRRITAION DEVELOPS, SEEK PROMPT MEDICAL ATTENTION.
INHALATION:
REMOVE TO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION,
INGESTION:
DO NOT INDUCE VOMITING! IN GENERAL, NO TREATMENT IS NECESSARY UNLESS LARGE
QUANTITIES ARE INGESTED. HOWEVER, MEDICAL ADVICE SHOULD BE OBTAINED. ROUTES OF EXPOSURE:
EYE OR SKIN CONTACT, INHALATION. CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH". INHALATION:
MAY CAUSE ALLERGIC RESPIRATORY REACTION IN SUSCEPTIBLE INDIVIDUALS.
MAY BE IRRITATING.
INGESTION: PRODUCT TLV: 10 MG/M3 (T); 5 MG/M3 (R) PRODUCT TOXICITY DATA: CALIFORNIA PROPOSITION 65: PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF. PROPOSITION 65. EXPLOSION HAZARD IF THE CONCENTRATION IN THE AIR IS TOO HIGH. GOOD HOUSEKEEPING PROCEDURES ARE REQUIRED TO MINIMIZE THIS POTENTIAL HAZARD. DO NOT SPREAD WITH WATER. MATERIAL IS VERY SLIPPERY. ESSENTIALLY NON-IRRITATING MAY CAUSE MILD IRRITATION. IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. IRRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION. * * * * * * * * * * * * * * * * * * SECTION V - HEALTH HAZARD DATA * * * AGU TLM96: >3300 PPM (BROWN SHRIMP)
ECOTOXICITY:
THIS PRODUCT WAS EVALUATED FOR VARIOUS
PCB'S AND FOUND TO HAVE A CONTENT
OF LESS THAN 100 PPB.
THIS PRODUCT WAS EVALUATED FOR VARIOUS
CHLOROPHENOLS AND FOUND TO HAVE A
CONTENT OF LESS THAN 100 PPB.
PRODUCT EVALUATION OF: CYANIDE < 10 PPM
AND ORGANO-PHOSPHOROUS < 0.1 PPM. SECTION VI - REACTIVITY DATA * EFFECTS OF EXPOSURE --

TO AVOID):

PN: 516001460 PAGE

MAY CAUSE ALLERGIC RESPIRATORY REACTION IN SUSCEPTIBLE INDIVIDUALS.
IRRITATING TO THE EYES, SKIN AND RESPIRATORY SYSTEM.
AIRBORNE DUST MAY BE EXPLOSIVE!
PRODUCT IS VERY SLIPPERY WHEN WET! DO NOT SPREAD WITH WATER.
FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.
OTHER HANDLING AND STORAGE CONDITIONS:
STORE ANAY FROM OXIDIZERS.
STORE AWAY FROM OXIDIZERS.
STORE IN DRY LOCATION TO PROTECT PRODUCT QUALITY. REQUIRES COVERED ST KEEP FROM HEAT, SPARKS, AND OPEN FLAME.
AVOID CREATING OR INHALING DUST.
CONTAINER DISPOSITION:
EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES IN RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST OBTAINING LANDFILL OPERATOR'S AUTHORIZATION. VENTILATION:

USE ONLY WITH ADEQUATE VENTILATION.

USE ONLY WITH ADEQUATE VENTILATION.

USED IN DUSTY ENVIRONMENTS.

PROTECTIVE GLOVES:

NORMAL WORK GLOVES. DOT NOT EYE PROTECTION:
GOGGLES OR SAFETY GLASSES.
OTHER PROTECTIVE EGUIPMENT: DUST. WASTE DISPOSAL METHOD: IF NOT CONTAMINATED, REUSE PRODUCT. GET APPROVAL FROM LANDFILL OPERATOR AND TRANSPORT TO SANITARY LANDFILL. HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE AND/OR CARBON DIOXIDE.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID: PRECAUTIONARY LABELING GBW-30 BREAKER RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
TOXIC DUST/MIST RESPIRATOR. STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
USE PROTECTIVE EQUIPMENT. SWEEP UP AND REMOVE. AVOID CREATING OR INHALING * * * * * * * * * * * SECTION IX - SPECIAL PRECAUTIONS * * * * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION * * * * * * NORMAL WORK COVERALLS. NOT APPLICABLE. SHIPPING DESCRIPTION: RESTRICTED * * * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES * * * * * * * * * SECTION X - TRANSPORTATION INFORMATION * LOCAL EXHAUST VENTILATION SHOULD REQUIRES COVERED STORAGE * 516.001460 踞 PLACE

EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: MIX

CERCLA/SUPERFUND, '

40 CFR 302 (REPORTABLE SPILL QUANTITY)

* * * * * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * *

- C. EPA SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- D. EPA SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS)
- E. COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES
 TSCA YES CEPA YES EEC N/D ACOIN N/D NPR NE DRSM NE
- . EPA RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES NOT MEET THE CRITERIA OF A HAZARDOUS WASTE

* * * * * * * *

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PAGE

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99

* * * SECTION I - PRODUCT DESCRIPTION * * * * * * EMERGENCY TELEPHONE: 800/666-9260 OR EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 580/251-3359

ETHYLENE GLYCOL
MONOETHANOLAMINE
* * * * * * * * * * CHEMICAL CODE: BC-140 - HAL-TANK PKG QTY: 330 GALLON TANK SERVICE USED: STIMULATION * * * * * * * * * * SECTION II - COMPONENT INFORMATION * * * COMPONENT+ + + ++++++ 11-30 % 1-10 % SECTION III - PHYSICAL DATA * PART NUMBER: 516010890 PERCENT * 50 PPM * * * 717 50 PPM * ÞΕL

MEASUREMENT

PROPERTY

SOLUBILITY IN WATER AT
20 DEG C. GMS/100ML H20
BIODEGRADABILITY
PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1) I
VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT (760 MMHG)
POUR POINT FREEZE POINT SCAWATER PARTITION COEF (OCTANOL IN WATER) SPECIFIC GRAVITY (H20=1)
BULK DENSITY **APPEARANCE** DARK LIQUID GLYCOL 1.221 10.17 7.28 NOT EVALUATED DETERMINED LB/GAL

* * * * * * * SECTION IV -FIRE AND EXPLOSION DATA *

NFPA(704) RATING:
HEALTH 1 FLAMMABILITY 0 REACTIVITY 0 SPECIAL NONE
FLASH POINT
AUTOIGNITION TEMPERATURE
FLAMMABLE LIMITS (% BY VOLUME)
LOWER
FLAMMABLE LIMITS (% BY VOLUME)
FLAMMABLE LIMITS (%

EXTINGUISHING MEDIA:

FOAM, DRY CHEMICAL OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

UNUSUAL FIRE AND EXPLOSION HAZARDS: BREATHING

SECTION V -HEALTH HAZARD DATA * * *

516010890 PAGE

CALIFORNIA PROPOSITION 65: PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF. PROPOSITION 65

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH".

PRODUCT TOXICITY DATA: NOT DETERMINED

PRODUCT TLV: NOT DETERMINED

ROUTES OF EXPOSURE:
EYE OR SKIN CONTACT, INHALATION. ---- EFFECTS OF EXPOSURE

MAY CAUSE MODERATE TO SEVERE IRRITATION, AND IN EXTREME CASES SEVERE TRANSIENT EYE INJURY. BUT

CONTACT MAY CAUSE SKIN IRRITATION.

INHALATION:
MIST OR HEATED VAPORS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION RESULTING
IN GIDDINESS, HEADACHES, DIZZINESS, NAUSEA, VOMITING OR POSSIBLY
UNCONSCIOUSNESS.

CONTAINS ETHYLENE GLYCOL, MAY CAUSE HEART, KIDNEY AND BRAIN DISORDERS.
CHRONIC EFFECTS:
REPEATED AND/OR PROLONGED EXPOSURE AT LOW LEVELS MAY RESULT IN KIDNEY
DISORDERS, REPRODUCTIVE DISORDERS, AND ADVERSE EYE EFFECTS.
CONTAINS ETHYLENE GLYCOL HAICH MAY CAUSE KIDNEY, LIVER, HEART, BLOOD & BRAIN
DISORDERS. ETHYLENE GLYCOL HAS BEEN SHOWN TO CAUSE DEVELOPMENTAL AND
REPRODUCTIVE EFFECTS IN LABORATORY ANIMALS. THESE FINDINGS ARE OF UNCERTAIN
TO HUMANS.

ETHYLENE GLYCOL HAS PRODUCED DOSE RELATED TERATOGENIC EFFECTS IN RATS AND MICE, WHEN GIVEN BY GAVAGE OR DRINKING WATER AT HIGH DOSES. TERATOGENIC EFFECTS WERE ALSO PRODUCED BY INHALATION IN VERY HIGH CONCENTRATIONS, BUT ONLY IN MICE. THE DATA SUGGESTS ETHYLENE GLYCOL MAY CAUSE BIRTH DEFECTS.

OTHER SYMPTOMS AFFECTED:

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE INCLUDE SKIN DISORDERS AND ALLERGIES, LIVER DISORDER, AND EYE DISEASE.

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST $15\,$ prompt medical attention.

MINUTES.

SEEK

NHALATION: IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. SEEK MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE.

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK PROMPT MEDICAL ATTENTION.

SIEK PROMPT MEDICAL ATTENTION.

INGESTION:

GIVE UP TO TWO (2) QUARTS OF WATER AND INDUCE VOMITING. NEVER GIVE BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL ATTENTION.

NEVER GIVE ANYTHING

* * * * * *

SECTION VI -

REACTIVITY DATA *

INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS AND DEHYDRATING AGENTS.
HAZARDOUS DECOMPOSITION PRODUCTS: STABILITY: STABLE CONDITIONS TO AVOID:

516010890

CARBON DIOXIDE AND/OR CARBON MONOXIDE AND UNIDENTIFIED HYDROCARBON HAZARD POLYMERIZATION: WON"T OCCUR CONDITIONS TO AVOID: NOT APPLICABLE. VAPORS.

* * * * * * SECTION VII - SPILL OR LEAK PROCEDURES *

STEPS TO USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AND STOP LEAK WHERE SAFE. CONTAIN AND ABSORB SPILL WITH AN INERT MATERIAL. SCOOP UP AND REMOVE.

PREVENT RUNOFF FROM ENTERING SEWERS, LAKES, RIVERS, STREAMS OR PUBLIC WATER CONTAINS.

WASTE DISPOSAL METHOD:
DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. CONT.
HALLIBURTON HEALTH, SAFETY, AND ENVIRONMENT DEPARTMENTS IN DUNCAN, OK FOR
THE APPROPRIATE DISPOSAL METHOD. CONTACT

* * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION * *

RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ORGANIC VAPOR CHEMICAL CARTRIDGE RESPIRATOR WITH A DUST-MIST FILTER.
VENTILATION:
USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION SHOULD USED IN AREAS WITHOUT GOOD CROSS VENTILATION.
PROTECTIVE GLOVES:
IMPERVIOUE GLOVES.

EYE PROTECTION:

WEAR GOGGLES AND/OR FACE SHIELD. PROVIDE E'
OTHER PROTECTIVE EQUIPMENT:

RUBBER APRON TO PREVENT DIRECT SKIN CONTACT PROVIDE EYEWASH AND QUICK DRENCH SYSTEM

* * * * * SECTION IX -SPECIAL PRECAUTIONS * *

PRECAUTIONARY LABELING BC-140 - HAL-TANK

516.010890

WARNING ON ANIMAL DATA.

MAY CAUSE HEADACHE, DIZZINESS AND OTHER CENTRAL NERVOUS SYSTEM EFFECTS.

MAY CAUSE IRRITATION TO THE EYES, SKIN OR RESPIRATORY SYSTEM.

CONTAINS ETHYLENE GLYCOL WHICH MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DATA.

FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.

OTHER HANDLING AND STORAGE CONDITIONS:

STORE AWAY FROM OXIDIZERS.

STORE IN A COOL WELL VENTILATED LOCATION.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

AVOID BUST ACCUMULATIONS.

AVOID BUST ACCUMULATIONS.

AVOID BREATHING VAPORS.

CONTAINER DISPOSITION:

IF CONTAINER RETAINS PRODUCT RESIDUES, LABEL PRECAUTIONS MUST BE OBSERVED.

STORE CONTAINER WITH CLOSURES IN PLACE. OFFER EMPTY CONTAINER TO RECONDITIONER

OR RECYCLER FOR RECONDITIONING OR DISPOSAL. ENSURE RECONDITIONER

OR RECYCLER FOR RECONDITIONING OR DISPOSAL. ENSURE RECONDITIONER

SPECIAL PRECAUTIONS:

PRODUCT HAS A SHELF LIFE OF 36 MONTHS.

* * * * SECTION × , TRANSPORTATION INFORMATION * * * * *

SHIPPING DESCRIPTION: RESTRICTED

DOT NOT SECTION ×1 -ENVIRONMENTAL **EVALUATION**

EPA FIRE: N PRESSURE: N REACTIVE: CLASSIFICATION & ASSOCIATED INFORMATION N ACUTE (IMMEDIATE): Y

CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: MIX

- B. EPA CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) NOT EVALUATED
- C. EPA SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- ETHYLENE GLYCOL 111, 40 CFR 372 (LIST OF TOXIC CHEMICALS)

COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES TSCA YES CEPA YES EEC N/D ACOIN N/D NPR

Z M

DRSM NE

i. EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES NOT MEET THE CRITERIA OF HAZARDOUS WASTE

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY SERVICES.

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99

| SPECIFIC GRAVITY (H2O=1) SPECIFIC GRAVITY (H2O=1) BLAND SPECIFIC GRAVITY (H2O=1) 1.038 BULK DENSITY A.55 BULK DENSITY B.65 BLAND B.65 B.65 B.65 B.65 B.65 B.65 B.65 B.65 | COMPONENT++++++++++ PERCENT TLV PEL ETHYLENE GLYCOL MONOBUTYL ETHER 11-30 % 25 PPM S 25 PPM S ********************************* | * * * * * * * * * SECTION II - COMPONENT INFORMATI | CHEMICAL CODE: AQF-2 FOAMING AGENT - HAL-TANK PKG QTY: 330 GALLON TANK APPLICATION: FOAMING AGENT SERVICE USED: STIMULATION | * * * * * * * * * * * * * * * * * * * | MERGENCY TELEPHONE: 800/666-0260 OR 580/251-335 |
|---|---|---|---|--|---|
| | | COMPONENT++++++++++ PERCENT TLV PEL THYLENE GLYCOL MONOBUTYL ETHER 11-30 % 25 PPM S 25 PPM S ********************************** | ************************************** | HEMICAL CODE: AGF-2 FOAMING AGENT - HAL-TANK KG GTY: 330 GALLON TANK APPLICATION: FOAMING AGENT * * * * * * * * * * * * * * * * * * * | *** * * * * * * * * * * * * * * * * * |

******** SECTION V - HEALTH HAZARD DATA ********

PN: 516005190 PAGE

STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS:
SULFUR DIOXIDE, CARBON DIOXIDE AND CARBON MONOXIDE.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:
NOT APPLICABLE. HIGH CONCENTRATIONS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. THIS MAY BE EVIDENCED BY GIDDINESS, HEADACHES, DIZZINESS, NAUSEA, VOMITING OR POSSIBLY UNCONSCIOUSNESS.

CHRONIC EFFECTS:

CONTAINS ETHYLENE GLYCOL MONOBUTYL ETHER. ANIMAL STUDIES INDICATE FETAL AND TESTICULAR TOXICITY WITH RELATED GLYCOL ETHERS.

OTHER SYMPTOMS AFFECTED:

BECAUSE OF ITS IRRITATING PROPERTIES, THIS MATERIAL MAY AGGRAVATE AN EXISTING DERMATITIS. BREATHING OF VAPOR AND/OR MISTS MAY AGGRAVATE ASTHMA AND INFLAMMATORY OR FIBROTIC PULMONARY DISEASE. MAY BE ABSORBED THROUGH SKIN.
CONTACT MAY CAUSE SKIN IRRITATION.
INHALATION: ROUTES OF EXPOSURE:
EYE OR SKIN CONTACT, INHALATION CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH". CALIFORNIA PROPOSITION 65: PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF. PROPOSITION 65 PRODUCT TLV: PRODUCT TOXICITY DATA: NOT DETERMINED INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION,
PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
SEEK PROMPT MEDICAL ATTENTION. ATTENTION. DO NOT INDUCE VOMITING! GIVE UP TO TWO (2) QUARTS OF WATER TO DILUTE NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. PROMPT MEDICAL ATTENTION. PROMPTLY WASH SKIN WITH SOAP AND WATER. IF IRRITATION DEVELOPS, SEEK MEDICAL MAY CAUSE MODERATE IRRITATION. * * * * * * * NOT ESTABLISHED ----- EFFECTS OF EXPOSURE SECTION VI -REACTIVITY DATA * SEEK

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AND STOP

LEAK WHERE

SAFE.

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SECTION VII - SPILL OR LEAK PROCEDURES

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AND ABSORB SPILL WITH AN INERT MATERIAL. SCOOP UP AND REMOVE. WASTE DISPOSAL METHOD:
GET APPROVAL FROM LANDFILL OPERATOR AND TRANSPORT ABSORBED MATERIAL SANITARY LANDFILL. 0

* * * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION *

RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ORGANIC VAPOR CARTRIDGE RESPIRATOR.

VENTILATION:

USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION SHOULD USED IN AREAS WITHOUT GOOD CROSS VENTILATION.
PROTECTIVE GLOVES:
IMPERVIOUS RUBBER GLOVES, 먪

EYE PROTECTION:

GOGGLES AND/OR FACE SHIELD.

OTHER PROTECTIVE EQUIPMENT:
RUBBER APRON TO PREVENT DIRECT SKIN CONTACT.

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PRECAUTIONARY LABELING AGF-2 FOAMING AGENT - HAL-TANK

MAY CAUSE HEADACHE, DIZZINESS AND OTHER CENTRAL NERVOUS SYSTEM EFFECTS.

MAY CAUSE EYE AND SKIN IRRITATION.

COMBUSTIBLE!

FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.

OTHER HANDLING AND STORAGE CONDITIONS:

STORE AWAY FROM OXIDIZERS.

STORE IN A COOL WELL VENTILATED LOCATION.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

AVOID BREATHING VAPORS.

CONTAINER DISPOSITION:

EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES IN PLACE. RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST OBTAINING LANDFILL OPERATOR'S AUTHORIZATION.

* * * * * * * * * SECTION X - TRANSPORTATION INFORMATION * * * *

DOT SHIPPING DESCRIPTION:
COMBUSTIBLE LIQUID, N.O.S. - COMBUSTIBLE LIQUID - NA1993 (CONTAINS ETHYLENE GLYCOL MONOBUTYL ETHER)

EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: Y PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: MIX * * * * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * * * *

- EPA CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) N/A
- EPA SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS
- m Р. COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES TSCA YES CEPA NE EEC N/D ACOIN N/D NPR EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS) ETHYLENE GLYCOL MONOBUTYL111-76-2

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H. EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES NOT MEET THE CRITERIA OF A HAZARDOUS WASTE

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCURATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROBLEMENT, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY

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MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 DATE: 01-02-01 REVISED DATE 04-07-99

EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359

MEASUREMENT

VAPOR DENSITY

VAPOR PRESSURE (MMHG)

BOILING POINT(760 MMHG)

POUR POINT

FREEZE POINT

SOLUBILITY IN SEAWATER

PARTITION COEF (OCTANOL IN WATER) SOLUBILITY IN WATER AT
20 DEG C. GMS/100ML H20
BIODEGRADABILITY
PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1) APPEARANCE (DOOR SPECIFIC GRAVITY (H20=1) CLEAR LIQUID MISCIBLE
NOT EVALUATED SOLUBLE SWEET .986 8.21 7.7 2 Z Z N/D NOT DETERMINED LB/GAL (5% SOLUTION)

* * * * * * * SECTION IV -FIRE AND EXPLOSION DATA * * *

NFPA(704) RATING: HEALTH 1 F FLAMMABILITY 3 REACTIVITY 93 SPECIAL 33 C ND C FLASH MTHD PMCC

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

USE WATER SPRAY TO COOL FIRE-EXPOSED SURFACES.

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

MAY BE IGNITED BY HEAT, SPARKS, OR FLAMES. FIGHT FIRE FROM A SAFE DISTANCE AND FROM A PROTECTED LOCATION. HEAT MAY BUILD PRESSURE AND RUPTURE CLOSED

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CONTAINERS, INJURIES. SPREADING THE FIRE AND INCREASING THE RISK OF BURNS AND

* * * * NCOMPLETE THERMAL DECOMPOSITION MAY PRODUCE CARBON DIOXIDE AND CARBON SECTION V -HEALTH HAZARD DATA *

CALIFORNIA PROPOSITION 65: PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF. PROPOSITION

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A ACCORDING TO: "NTP, IARC, OSHA, OR, A POTENTIAL CARCINOGEN R, ACIGH".

PRODUCT TOXICITY DATA: NOT DETERMINED.

PRODUCT TLV: NOT ESTABLISHED

EFFECTS OF EXPOSURE

ROUTES EYE 유유

EXPOSURE: SKIN CONTACT, INHALATION.

VAPORS WILL SEVERELY IRRITATE THE EYES. DAMAGE THE EYES, CAUSING CORNEAL INJURY. LIQUID AND MISTS MILL IRRITATE

AND

SKIN: MAY BE ABSORBED THROUGH SKIN TO PRODUCE ANEMIA AND KIDNEY DAMAGE EVIDENCED BY PALENESS AND POSSIBLY RED COLORATION OF THE URINE.
SIGNS AND SYMPTOMS AFTER SKIN ABSORPTION ARE SIMILAR TO THOSE OF INGESTION.

INHALATION:

HIGH CONCENTRATIONS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. THIS MA
BE EVIDENCED BY GIDDINESS, HEADACHES, DIZZINESS, NAUSEA, VOMITING OR
POSSIBLY UNCONSCIOUSNESS.

VAPOR, MIST OR SPRAY CAUSE SEVERE IRRITATION OF UPPER RESPIRATORY SYSTEM. THIS MAY

INGESTION:

MAY BE HARMFUL IF SWALLOWED!

CONTAINS METHANOL, MAY CAUSE NAUSEA, VOMITING, HEADACHE, DIZZINESS,
SHORTNESS OF BREATH, CONFUSION, VISUAL DISTURBANCES, DROWSINESS, COMA AND
POSSIBLY DEATH. VISUAL EFFECTS INCLUDE BLURRED VISION, DIPLOPIA, CHANGES
COLOR PERCEPTION, RESTRICTION IN VISUAL FIELDS AND BLINDNESS. Z

CHRONIC EFFECTS:
PROLONGED OR REPEATED EXPOSURE TO HIGH CONCENTRATIONS OF METHANOL MAY CAUSE
VISUAL IMPAIRMENT OR BLINDNESS AND BLOOD, LUNG, LIVER, KIDNEY AND SPLEEN

EYE:

IMMEDIATELY FLUSH EYES WITH PROMPT MEDICAL ATTENTION. PLENTY OF WATER FOR AT LEAST

5

MINUTES.

MMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 5 MINUTES

PN: 516009250

INHALATION: REMOVING CONTAMINATED CLOTHING AND SHOES. IF IRRITATION PERSISTS, PROMPT MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE. SEEK

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK PROMPT MEDICAL ATTENTION.

INGESTION: DO NOT INDUCE VOMITING! ATTENTION. KEEP VICTIM WARM AND QUIET. SEEK PROMPT MEDICAL

******* SECTION **∠**1 -REACTIVITY DATA * *

STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE AND/OR CARBON DIOXIDE.
HAZARD POLYMERIZATION: WON"T OCCUR
CONDITIONS TO AVOID:
NOT APPLICABLE.

* * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES * * *

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

PREVENT LIQUID FROM ENTERING SEWERS, WATERCOURSES, OR LOW AREAS. CONTAIN SPILLED LIQUID WITH SAND OR EARTH. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST.

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AREA AND STOP LEAK WHERE SAFE. REMOVE IGNITION SOURCES. CONTAIN AND ABSORB SPILL WITH SAND OR OTHER INERT MATERIAL. SCOOP OR SWEEP UP USING NON-SPARKING TOOLS. IN ENCLOSED AREAS, WEAR SELF-CONTAINED BREATHING APPARATUS.

WASTE DISPOSAL METHOD:

CONSULT AN EXPERT ON DISPOSAL OF RECOVERED MATERIAL.

GET APPROVAL FROM HAZARDOUS WASTE DISPOSAL SITE AUTHORIZED UNDER EPA-RCRA SUBTITLE C OR STATE EQUIVALENT. SHIP TO SITE.

* * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION *

RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ORGANIC VAPOR CARTRIDGE RESPIRATOR.
IF METHANOL IS RELEASED, POSITIVE PRESSURE SUPPLIED-AIR RESPIRATOR WITH A
5-MINUTE AUXILIARY BOTTLE, OR PRESSURE-DEMAND OR POSITIVE PRESSURE SELFCONTAINED BREATHING APPARATUS.

VENTILATION:

USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION

USED IN AREAS WITHOUT GOOD CROSS VENTILATION.

PROTECTIVE GLOVES: SHOULD

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IMPERVIOUS RUBBER GLOVES.

EYE PROTECTION:

WEAR GOGGLES AND/OR FACE SHIELD.

OTHER PROTECTIVE EQUIPMENT:

NEOPRENE APRON TO PREVENT DIRECT PROVIDE EYEWASH AND QUICK DRENCH SYSTEM

SKIN CONTACT.

* * * * * * * * * * * SECTION IX - SPECIAL PRECAUTIONS

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PRECAUTIONARY LABELING SSO-21M WINTERIZED - BULK

DANGER! MAY CAUSE HEADACHE, DIZZINESS AND OTHER CENTRAL NERVOUS CONTAINS METHANOL, MAY CAUSE BLINDNESS, CENTRAL NERVOUS OR EVEN DEATH, IF SWALLOWED. SYSTEM EFFECTS.
SYSTEM DEPRESSION

PAGE

MAY CAUSE SEVERE EYE IRRITATION. MAY CAUSE SEVERE SKIN IRRITATION FLAMMABLE!

TOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.

OTHER HANDLING AND STORAGE CONDITIONS:

STORE AWAY FROM OXIDIZERS.

KEEP FROM HEAT, SPARKS, AND OPEN FLAME.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

AVOID BREATHING VAPORS.

CONTAINER DISPOSITION:

IF EMPTY CONTAINER RETAINS PRODUCT RESIDUES, ALL LABEL PRECAUTIONS MUST BE
OBSERVED. STORE AWAY FROM IGNITION SOURCES WITH ALL DRUM CLOSURES IN
PLACE. OFFER CONTAINER TO RECONDITIONER OR RECYCLER. ENSURE RECONDITIONER
OR RECYCLER IS AWARE OF THE PROPERTIES OF THE CONTENTS.

SPECIAL PRECAUTIONS:

STORE BETWEEN 40 F AND 90 F
KEEP AWAY FROM FOOD.

PRODUCT HAS A SHELF LIFE OF 24 MONTHS.

* * * * * * * * SECTION X - TRANSPORTATION INFORMATION *

DOT SHIPPING DESCRIPTION:
FLAMMABLE LIQUID, N.O.S. - 3 - UN1993 - III
(CONTAINS METHANOL, BUTYL CELLOSOLVE)

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EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED INFORMATION FIRE: Y PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): Y MIXTURE OR PURE MATERIAL: MIX

- EPA CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY)
 3,605 GALS. METHANOL, U154
- .. EPA - SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS SUBSTANCES)
- 0 EPA - SARA TITLE III, COMPONENT NAME METHANOL 67-56-1 ETHYLENE GLYCOL MONOBUTYL111-76-2 40 CFR 372 (LIST OF TOXIC CHEMICALS)
 CAS-REG-NO PCT 11-30 % 11-30 %
- m COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES TSCA YES CEPA NE EEC NO ACOIN NO NPR Z M DRSM
- EPA RCRA (HAZARDOUS WASTE), 40 CFR 261

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IF PRODUCT BECOMES A WASTE, IT DOES MEET THE CRITERIA WASTE AS DEFINED BY US EPA BECAUSE OF: 유 × HAZARDOUS

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IGNITABILITY

THE INFORMATION WHICH IS CONTAINED IN THIS DOCUMENT IS BASED UPON AVAILABLE DATA AND BELIEVED TO BE CORRECT. HOWEVER, AS SUCH AS IT HAS BEEN OBTAINED FROM VARIOUS SOURCES, INCLUDING THE MANUFACTURER AND INDEPENDENT LABORATORIES, IT IS GIVEN WITHOUT WARRANTY OR REPRESENTATION THAT IT IS COMPLETE, ACCUMATE AND CAN BE RELIED UPON. HALLIBURTON HAS NOT ATTEMPTED TO CONCEAL IN ANY WAY THE DELETERIOUS ASPECTS OF THE PRODUCT LISTED HEREIN, BUT MAKES NO WARRANTY AS TO SUCH. FURTHER, AS HALLIBURTON CANNOT ANTICIPATE NOR CONTROL THE MANY

SITUATIONS IN WHICH THE LISTED PRODUCT OR THIS INFORMATION MAY BE USED BY OUR CUSTOMER, THERE IS NO GUARANTEE THAT THE HEALTH AND SAFETY PRECAUTIONS SUGGESTED WILL BE PROPER UNDER ALL CONDITIONS. IT IS THE SOLE RESPONSIBILITY OF EACH USER OF THE LISTED PRODUCT TO DETERMINE AND COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS AND REGULATIONS REGARDING ITS USE OR DISPOSAL. THIS INFORMATION IS GIVEN SOLELY FOR THE PURPOSES OF HEALTH AND SAFETY TO PERSONS AND PROPERTY. ANY OTHER USE OF THIS INFORMATION IS EXPRESSLY PROHIBITED. HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT, HALLIBURTON ENERGY SERVICES.

MATERIAL SAFETY DATA SHEET HALLIBURTON ENERGY SERVICES DUNCAN, OKLAHOMA 73536 REVISED DATE 04-07-99 DATE: 01-02-01

EMERGENCY TELEPHONE: 800/666-9260 OR EMERGENCY TELEPHONE: 800/666-9260 OR 580/251-3359 580/251-3359

CHEMICAL CODE: FR-26LC - BULK PKG QTY: 330 GALLON TANK SERVICE USED: STIMULATION PARAFFINIC/NAPHTHENIC SOLVENT * * * * * * * * * * SECTION II - COMPONENT INFORMATION * COMPONENT+ + + + + + + + * * SECTION I - PRODUCT DESCRIPTION * * * * * * * APPLICATION: FRACTURING PERCENT MEASUREMENT 100 PPM * * * * ٦LV PART NUMBER: 516004810 100 PPM NOT EST PEL

SOLUBILITY IN WATER AT
20 DEG C. GMS/100ML H20
BIODEGRADABILITY
PERCENT VOLATILES
EVAPORATION RATE(BUTYL ACETATE=1) FREEZE POINT SEAWATER PARTITION COEF (OCTANOL IN WATER) VAPOR DENSITY
VAPOR PRESSURE (MMHG)
BOILING POINT(760 MMHG) SPECIFIC GRAVITY (H20=1)
BULK DENSITY HAZY CREAM COLORED LIQUID
SWEET HYDROCARBON
1.090
9.08
8.7 N N SOLUBLE SLOWLY 1.3 NOT EVALUATED N/D N D <-20 F / <-28 c

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FIRE AND EXPLOSION DATA *

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FLASH POINT AUTOIGNITION TEMPERATURE FLAMMABLE LIMITS (% BY VOLUME) NFPA(704) RATING:
HEALTH 1 FLAMMABILITY REACTIVITY > 200 LOWER ND F SPECIAL > 93 C ND C UPPER FLASH

EXTINGUISHING MEDIA:

USE WATER SPRAY, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES:

USE WATER SPRAY TO COOL FIRE-EXPOSED SURFACES.

FULL PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS REQUIRED FOR FIRE FIGHTING PERSONNEL.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

THIS PRODUCT IN NOT EXPECTED TO BURN UNLESS ALL THE WATER IS BOILED AWAY.

THE REMAINING ORGANICS MAYBE IGNITABLE.

INCOMPLETE THERMAL DECOMPOSITION MAY PRODUCE CARBON DIOXIDE, CARBON

MONOXIDE AND NITROGEN OXIDES

* * * * * * * * SECTION V -HEALTH HAZARD DATA * * * *

CALIFORNIA PROPOSITION 65: PRODUCT COMPONENTS ARE NOT REGULATED UNDER CALIF. PROPOSITION

CARCINOGENIC DETERMINATION:
PRODUCT OR COMPONENTS ARE NOT LISTED AS A POTENTIAL CARCINOGEN
ACCORDING TO: "NTP, IARC, OSHA, OR, ACIGH".

PRODUCT TOXICITY DATA: AQU TLM96:SHRIMP: 2600 PPM SQLUTION AQU PPM TLM96:BLUEGILL SUNFISH: >100<1000 FOR A 2%

PRODUCT TLV: NOT ESTABLISHED

ROUTES OF EXPOSURE:
OR SKIN CONTACT, INHALATION EFFECTS

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EXPOSURE

SKIN: MAY CAUSE MODERATE IRRITATION.

MAY CAUSE MODERATE IRRITATION WITH REDDENING AND SWELLING.

INHALATION:

MIST OR HEATED VAPORS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION RESULTING IN GIDDINESS, HEADACHES, DIZZINESS, NAUSEA, VOMITING OR POSSIBLY UNCONSCIOUSNESS.

ASPIRATION INTO LUNGS BY INGESTION OR VOMITING, MAY CAUSE CHEMICAL ASPIRATION INTO LUNGS BY INGESTION OR VOMITING, MAY CAUSE CHEMICAL SYMPTOMS PNEUMONITIS RESULTING IN EDEMA AND HEMORRAGE AND MAY BE FATAL. SYMPTOMS INCLUDE INCREASED RESPIRATORY RATE AND BLUISH DISCOLORATION OF SKIN. COUGHING AND GAGGING ARE OFTEN NOTED AT THE TIME OF ASPIRATION. CHRONIC EFFECTS:

NO SPECIFIC INFORMATION IS AVAILABLE ON THE CHRONIC EFFECTS OF EXPOSURE. OTHER SYMPTOMS AFFECTED:

A REVIEW OF AVAILABLE DATA DOES NOT IDENTIFY ANY CONDITIONS WORSENED BY EXPOSURE TO THIS PRODUCT.

MMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST RRITATION PERSISTS, SEEK PROMPT MEDICAL ATTENTION. 5 MINUTES.

PROMPTLY WASH SKIN WITH SOAP AND WATER. IF IRRITATION DEVELOPS, SEEK MEDICAL

ATTENTION.

INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL

PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, G

SEEK PROMPT MEDICAL ATTENTION. GIVE OXYGEN.

INGESTION:

DO NOT INDUCE VOMITING! ASPIRATION INTO LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL. IF VOMITING OCCURS SPONTANEOUSLY, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION OF LIQUID INTO LUNGS.

SECTION VI - REACTIVITY DATA *

STABILITY: STABLE
CONDITIONS TO AVOID:
NOT APPLICABLE.
INCOMPATIBILITY (MATERIALS TO AVOID):
STRONG OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS:

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NITROGEN OXIDES, CARBON DIOXIDE AND/OR CARBON MONOXIDE. HAZARD POLYMERIZATION: WON"T OCCUR CONDITIONS TO AVOID: NOT APPLICABLE.

* * * * * * * * SECTION VII - SPILL OR LEAK PROCEDURES * * *

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

USE PROTECTIVE EQUIPMENT. ISOLATE SPILL AND STOP LEAK WHERE SAFE.

AND ABSORB SPILL WITH AN INERT MATERIAL. SCOOP UP AND REMOVE.

WASTE DISPOSAL METHOD:

GET APPROVAL FROM LANDFILL OPERATOR AND TRANSPORT ABSORBED MATERIAL

SANITARY LANDFILL. 0

* * * * * * SECTION VIII - SPECIAL PROTECTION INFORMATION *

RESPIRATORY PROTECTION (USE NIOSH/MSHA APPROVED EQUIPMENT):
ORGANIC VAPOR CARTRIDGE RESPIRATOR.

VENTILATION:
USE ONLY WITH ADEQUATE VENTILATION. LOCAL EXHAUST VENTILATION SHOULD USED IN AREAS WITHOUT GOOD CROSS VENTILATION.
PROTECTIVE GLOVES:
IMPERVIOUS RUBBER GLOVES.

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EYE PROTECTION:

WEAR GOGGLES AND/OR FACE SHIELD. PROVIDE EY
OTHER PROTECTIVE EQUIPMENT:
RUBBER APRON TO PREVENT DIRECT SKIN CONTACT. PROVIDE EYEWASH AND QUICK DRENCH SYSTEM.

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PRECAUTIONARY LABELING FR-26LC - BULK

516.004810

CAUTION!

MAY CAUSE HEADACHE, DIZZINESS AND OTHER CENTRAL NERVOUS SYSTEM EFFECT

MAY CAUSE IRRITATION TO THE EYES, SKIN OR RESPIRATORY SYSTEM.

FOR PRECAUTIONARY STATEMENTS, REFER TO SECTIONS IV-VIII.

OTHER HANDLING AND STORAGE CONDITIONS:

STORE AWAY FROM OXIDIZERS.

STORE IN A COOL WELL VENTILATED LOCATION.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

AVOID BREATHING VAPORS.

CONTAINER DISPOSITION:

EMPTY CONTAINER COMPLETELY. TRANSPORT CONTAINER WITH ALL CLOSURES IN PLACE. RETURN FOR REUSE OR DISPOSE IN A SANITARY LANDFILL BY FIRST OBTAINING LANDFILL OPERATOR'S AUTHORIZATION.

* * * * * * * SECTION X -TRANSPORTATION INFORMATION * * * * * *

DOT SHIPPING DESCRIPTION: NOT RESTRICTED

* * * * * * * * SECTION XI - ENVIRONMENTAL EVALUATION * *

EPA SUPERFUND(SARA) TITLE III - HAZARD CLASSIFICATION & ASSOCIATED FIRE: N PRESSURE: N REACTIVE: N ACUTE (IMMEDIATE): Y CHRONIC (DELAYED): N MIXTURE OR PURE MATERIAL: MIX INFORMATION

EPA -CERCLA/SUPERFUND, 40 CFR 302 (REPORTABLE SPILL QUANTITY) N/A

<u>.</u> EPA - SARA TITLE III, CFR 355 (EXTREMELY HAZARDOUS SUBSTANCES) PRODUCT CONTAINS NO EXTREMELY HAZARDOUS COMPONENTS

- D. EPA - SARA TITLE III, 40 CFR 372 (LIST OF TOXIC CHEMICALS) CHEMICAL CONTAINS NO TOXIC INGREDIENTS
- m. COMPONENTS LISTED ON FOLLOWING CHEMICAL INVENTORIES TSCA YES CEPA NE EEC N/D ACOIN N/D NPR

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Ξ. EPA - RCRA (HAZARDOUS WASTE), 40 CFR 261

IF PRODUCT BECOMES A WASTE, IT DOES NOT MEET THE CRITERIA OF HAZARDOUS WASTE

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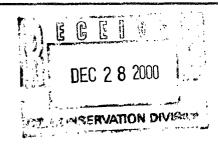
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BURLINGTON RESOURCES

SAN JUAN DIVISION

December 27, 2000

Oil Conservation Division Attn: Martyne Keiling 2040 South Pacheco Street Santa Fe, New Mexico 87505



Re: Characterization of Drained Water from Used Oil Tank

Dear Ms. Keeling:

Attached is a Certificate of Waste Status form and a wastewater analysis for water generated from draining the used oil tank at the compressor stations. The main purpose for analyzing these waste streams was to comply with 40 CFR 262.11 waste determination requirements contained in the Resource Conservation and Recovery Act (RCRA). Upon evaluating the analysis for this waste stream it appears the water does <u>not</u> exhibit the characteristics of a hazardous waste.

Due to the fact that this waste stream has been analyzed in two consecutive years and each time showing the waste is non-hazardous, Burlington Resources requests that the non-hazardous determination be accepted for a period of two years from the date of sample collection and analysis. If processes or products change that may impact this waste stream, a new analysis will be completed.

Should you have any questions concerning the content or need additional information, please feel free to contact me at 326-9537. Thank you for your time and consideration.

Sincerely.

Gregg Wurtz

Environmental Representative

Gragg Winty

Enc. Certificate of Waste Status

Sample Project CC-59463

CC:

Bruce Gantner Greg Kardos Ken Johnson Correspondence Compressor Files

Mike Talovichl

District I
1625 N. French Dr., Hobbs, NM 88240
District II.
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Form C-138 Revised March 17, 1999

> Submit Original Plus 1 Copy to Appropriate District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

| REQUEST FOR ATTROVAL TO ACCELT | JOLID WASIL |
|---|--|
| 1. RCRA Exempt: Non-Exempt: | 4. Generator Eurling ton |
| Verbal Approval Received: Yes No | 5. Originating Site List |
| 2. Management Facility Destination KEY DISPOSAL | 6. Transporter KEY |
| 3. Address of Facility Operator #345 CL3500 AZICC, NM | 8. State NM |
| 7. Location of Material (Street Address or ULSTR) See List | |
| 9. Circle One: A. All requests for approval to accept oilfield exempt wastes will be accompanied by one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by ne material is not-hazardous and the Generator's certification of origin. No waste class approved All transporters must certify the wastes delivered are only those consigned for transporters. | cessary chemical analysis to PROVE the ssified hazardous by listing or testing will be |
| BRIEF DESCRIPTION OF MATERIAL: | |
| Analytical Sample Analysis is Good For 2 years From Sample Date 11/23/99 Must Re Sample of Characterized 12/1/2001 Matyn 265 | JAN 2001 RECEIVED ON DIST. STANDING |
| Estimated Volume \(\lambda \) 1000 bb/kg Known Volume (to be entered by the ope | |
| SIGNATURE Maste Management Facility Authorized Agent TITLE: Management | DATE: 12-29-780 |
| TYPE OR PRINT NAME: MICRIAEL TOLOUIGN TELE | PHONE NO. 305 - 334 - 6186 |
| (This anges for State Use) | |
| APPROVED BY: Deny Feet TITLE: Geolog | 15T DATE: 1/2/00 |
| APPROVED BY: They glif. TITLE: Environme | nhl Coroley of DATE: 1/11/01 |

BURLINGTON RESOURCES

SAN JUAN DIVISION

December 27, 2000

Oil Conservation Division Attn: Martyne Keiling 2040 South Pacheco Street Santa Fe, New Mexico 87505

Re: Characterization of Drained Water from Used Oil Tank

Dear Ms. Keeling:

Attached is a Certificate of Waste Status form and a wastewater analysis for water generated from draining the used oil tank at the compressor stations. The main purpose for analyzing these waste streams was to comply with 40 CFR 262.11 waste determination requirements contained in the Resource Conservation and Recovery Act (RCRA). Upon evaluating the analysis for this waste stream it appears the water does <u>not</u> exhibit the characteristics of a hazardous waste.

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Should you have any questions concerning the content or need additional information, please feel free to contact me at 326-9537. Thank you for your time and consideration.

Sincerely,

Gregg Wurtz

Environmental Representative

Gragg Winty

Enc. Certificate of Waste Status

Sample Project CC-59463

CC:

Bruce Gantner Greg Kardos Ken Johnson Correspondence Compressor Files

Mike Talovichl

CERTIFICATE OF WASTE STATUS

| 1. Generator Name and Address: | 2. Destination N | ame: | |
|---|------------------------|--------------------|------------------|
| Burlington Resources 3535 East 30 th Street Farmington NM 87401 | Key Ener | | |
| 3. Originating Site (name): | | Waste (Street add | ress /or |
| | ULSTR): | | |
| All Compressor Stations | See Attached. | | |
| Unit: | Section: | Township: | Range: |
| 4. Source and Description of Waste: | | | |
| Drained water from oil tank. | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| I, Gregg Wurtz | | represe | entative for: |
| Burlington Resources | | do here | by certify that, |
| according to the Resource Conservation and Recovery Act (RC | CRA) and Environmen | | • |
| 1988, regulatory determination, the above described waste is: | | _ | , |
| 1700, regulatory determination, the above described waste is: | | · | |
| ☐ EXEMPT oilfield waste ☐ NON-EXEMPT oilfield waste ☐ analysis or by proc | | n-hazardous by cha | aracteristic |
| and that nothing has been added to the exempt or non-exempt no | on-hazardous waste de | fined above. | |
| For NON-EXEMPT waste only the following documentation is a | attached (chech approp | oriate items): | |
| MSDS Information | Other (description): | | |
| RCRA Hazardous Waste Analysis Chain of Custody | | | |
| Name (Original Signature): Title: Env. Representative | | | |

Date: Wednesday, December 27, 2000

Burlington Resources Oil & Gas Company Compressor Stations

| | | QTR | SEC | TWP | RNG |
|-----|--------------|-----|-----|-----|-----|
| 1. | Frances Mesa | SW | 27 | 30N | 7W |
| 2. | Cedar Hill | SW | 29 | 32N | 10W |
| 3. | Gobernador · | NW | 31 | 30N | 7W |
| 4. | Manzanares | SE | 4 | 29N | 8W |
| 5. | Pump Canyon | NE | 24 | 30N | 9W |
| 6. | Hart Canyon | SE | 20 | 31N | 10W |
| 7. | Buena Vista | NE | 13 | 30N | 9W |
| 8. | Sandstone | SE | 32 | 31N | 8W |
| 9. | Quinn | SW | 16 | 31N | 8W |
| 10. | Arch Rock | SW | 14 | 31N | 10W |
| 11. | Pump Mesa | SW | 14 | 31N | 8W |
| 12. | Middle Mesa | SW | 10 | 31N | 7W |
| 13. | Simms Mesa | NE | 22 | 30N | 7W |
| 14. | Rudy | SE | 35 | 29N | 11W |
| 15. | Zachry | SW | 34 | 29N | 10W |
| 16. | Albright | NW | 22 | 29N | 10W |
| 17. | Rattlesnake | SW | 10 | 31N | 7W |
| 18. | Cox | SW | 20 | 32N | 10W |
| 19. | Lateral 311 | NE | 17 | 29N | 10W |
| 20. | Lateral 355 | SE | 25 | 30N | 11W |
| 21. | Ute | SW | 14 | 32N | 11W |
| 22. | State | NW | 16 | 28N | 9W |



Prione (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 87401

Ed Hasely Burlington Resources P.O. Box 4289 Farmington, NM 87499-4289 Dec. 13, 1999

Mr. Hasely:

Please find enclosed the reports for the samples submitted to our laboratory for analysis on November 23, 1999. I apologize for the delay in receiving your results.

If you should have any questions regarding the results of these analyses, please do not hestitate to call me at your convenience.

Sincerety,

Sharon Williams

Organics Lab Supervisor

Enclosures

xc: file



one (505) 326-4737 Fax (505) 325-4182

BURLINGTON RESOURCES

Case Narrative

On November 23, 1999, samples were submitted to Inter-Mountain Laboratories for analysis. The samples were analyzed for the parameters listed on the accompanying chain of custody document.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analyses of the samples reported herein are found in Test Methods For Evaluation of Solid Waste, SW-846, USEPA, and Methods For Chemical Analysis of Water and Wastes, EPA-600/4-79-020, USEPA, 1994.

Quality control reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call me at your conveneince.

Sharop Williams

Organic Analyst/Farmington



ne (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 87401

Client:

Burlington Resources

Project:

Compressor Stations

Sample ID:

Water From Used Oil Tank

Lab ID:

0399W05762

Matrix:

Liquid

Condition:

Cool/Intact

toos most main en oot, raintangion, min of the

Date Reported: 12/13/99

Date Sampled: 11/23/99

Date Received: 11/23/99

Date Analyzed: 12/03/99

| Parameter | Analytical
Result | PQL | MCL | Units |
|-------------------------------|----------------------|-------|-----|-------|
| TCLP Metals - EPA Method 1311 | | | | |
| Arsenic | <0.1 | 0.1 | 5.0 | mg/L |
| Barium | 、<0.5 | 0.5 | 100 | mg/L |
| Cadmium | <0.01 | 0.01 | 1.0 | mg/L |
| Chromium | 0.05 | 0.02 | 5.0 | mg/L |
| Lead | <0.1 | 0.1 | 5.0 | mg/L |
| Mercury | <0.001 | 0.001 | 0.2 | mg/L |
| Selenium | 0.23 | 0.1 | 1.0 | mg/L |
| Silver | <0.05 | 0.05 | 5.0 | mg/L |

Reference: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", United States Environmental Protection Agency, Final Update 1, July 1992.

Reviewed By:

William Lipps

none (505) 326-4737 Fax (505) 325-4182

Flash Point

2506 West Main Street, Farmington, NM 87401

Client:

Burlington Resources

Project:

Compressor Stations

Sample ID:

Water From Used Oil Tank

Laboratory ID:

0399W05762

Sample Matrix:

Condition:

Liquid Intact

Date Reported:

Date Sampled:

12/13/99

Date Received:

11/23/99 11/23/99

Date Analyzed:

12/07/99

Analyte Result Units Flash Point >140 °F

References:

Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical / Chemical Methods" United States Environmental Protection Agency 3rd Edition, Final Update II, September, 1994.

Annual Book of ASTM Standards, Method D56.



Phone (505) 326-4737 Fax (505) 325-4182 COXICITY CHARACTERISTIC LEACHING PROCEDURE 2506 West Main Street, Farmington, NM 87401 **EPA METHOD 8260B VOLATILE ORGANIC COMPOUNDS BY GC/MS**

Client:

Burlington Resources

Project ID:

Compressor Stations

Sample ID: Laboratory ID: Water from used oil tanks 0399W05762

Sample Matrix:

Water

Date Reported:

12/08/99

Date Sampled:

11/23/99

Date Received:

11/24/99

Date Extracted:

NA

Date Analyzed:

12/01/99

| arameter | Analytical
Result | Detection
Limit | Regulatory
Level | Units |
|--------------------------------|----------------------|--------------------|---------------------|-------|
| enzene | ND | 0.05 | 0.5 | mg/L |
| arbon Tetrachloride | ND | 0.05 | 0.5 | mg/L |
| nlorobenzene | ND | 0.05 | 100 | mg/L |
| nloroform | ND | 0.05 | 6.0 | mg/L |
| -Dichloroethane | ND | 0.05 | 0.5 | mg/L |
| Dichloroethylene | ND | 0.05 | 0.7 | mg/L |
| thyl Ethyl Ketone (2-Butanone) | ND | 1.25 | 200 | mg/L |
| rachloroethylene | ND | 0.05 | 0.7 | mg/L |
| chloroethylene | ND | 0.05 | 0.5 | mg/L |
| yl Chloride | ND | 0.05 | 0.2 | mg/L |

ND - Compound not detected at stated Detection Limit.

| Surrogate Recovery | | % | Limits |
|----------------------|---|----|----------|
| Dibromofluoromethane | | 97 | 86 - 118 |
| ichloroethane-d4 | : | 91 | 80 - 120 |
| oluene-d8 | | 90 | 88 - 110 |
| 4-Bromofluorobenzene | | 92 | 86 - 116 |

Reference: Test Methods for Evaluating Water, Wastewater and Solid Waste, SW-846, U.S.E.P.A., Volume IB. Revision 2, December 1996.

Reviewed





hone (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 87401

QUALITY CONTROL / QUALITY ASSURANCE

Phone (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 87401

Quality Control / Quality Assurance

Spike Analysis / Blank Analysis TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client:

Burlington Resources

Project:

Compressor Stations

Sample Matrix:

Liquid

Date Reported:

12/13/99

Date Analyzed:

12/03/99

Date Received:

11/23/99

Spike Analysis

| Parameter | Spike
Result
(mg/L) | Sample
Result
(mg/L) | Spike
Added
(mg/L) | Percent
Recovery |
|--------------|---------------------------|----------------------------|--------------------------|---------------------|
| Arsenic | 0.97 | <0.1 | 1.00 | 97% |
| Barium 0.98 | | <0.5 | 1.00 | 98% |
| Cadmium 0.79 | | <0.01 | 1.00 | 79%* |
| Chromium | 0.88 | <0.01 | 1.00 | 88% |
| Lead | 0.68 | <0.1 | 1,00 | 68%* |
| Mercury | 0.005 | <0.001 | 0.005 | 102% |
| Selenium | 1.20 | <0.1 | 1.00 | 120%* |
| Silver | 0.74 | <0.05 | 1.00 | 74%* |

Method Blank Analysis

| Parameter | Result | Detection
Limit | Heis |
|-----------|---------|--------------------|-------|
| | (\C3U\) | ERRITE | Units |
| Arsenic | ND | 0.1 | mg/L |
| Barium | ND | 0.5 | mg/L |
| Cadmium | ND | 0.01 | mg/L |
| Chromium | ND | 0.02 | mg/L |
| Lead | ND | 0.1 | mg/L |
| Mercury | ND | 0.001 | mg/L |
| Selenium | ND | 0.1 | mg/L |
| Silver | ND | 0.05 | mg/L |

References:

, Method 1311: Toxicity Characteristic Leaching Procedure,

SW-846, Rev. 0, July 1992.

Method 3010A: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, Rev. 1, July 1992.

Comments:

*Spike recovery failed to meet established QC limits due to matrix interferences.

Reported by

Reviewed by_



hone (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 87401

Quality Control / Quality Assurance

Known Analysis TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client:

Burlington Resources

Date Reported:

12/13/99

Project:

Compressor Stations

Date Analyzed:

12/03/99

Sample Matrix:

Liquid

Date Received:

11/23/99

Known Analysis

| Parameter | Found
Result | Known
Result | Percent
Recovery | Units |
|-----------|-----------------|-----------------|---------------------|-------|
| | | | | |
| Arsenic | 1.01 | 1.00 | 101% | mg/L |
| Barium | 0.51 | 0.50 | 102% | mg/L |
| Cadmium | 1.03 | 1.00 | 92% | mg/L |
| Chromium | 1.06 | 1.00 | 106% | mg/L |
| Lead | 1.04 | 1.00 | 104% | mg/L |
| Mercury | 0.004 | 0.004 | 100% | mg/L |
| Selenium | 0.53 | 0.50 | 106% | mg/L |
| Silver | 1.05 | 1.00 | 105% | mg/L |

References:

Method 1311: Toxicity Characteristic Leaching Procedure,

SW-846, Rev. 0, July 1992.

Method 3010A: Acid Digestion of Aqueous Samples and Extracts for Total

Metals, SW-846, Rev. 1, July 1992.

Comments:

Reported by

Reviewed by



ne (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 87401 **EPA METHOD 8260B VOLATILE ORGANIC COMPOUNDS BY GC/MS**

Method Blank Analysis

Sample ID:

Method Blank

Laboratory ID: V3MB99-335

Sample Matrix: Water

Date Reported:

12/08/99

Date Extracted:

NA

Date Analyzed:

12/01/99

| Parameter | Analytical
Result | Detection
Limit | Regulatory
Level | Units |
|----------------------------------|----------------------|--------------------|---------------------|-------|
| Benzene | ND | 0.01 | 0.5 | mg/L |
| Carbon Tetrachloride | ND | 0.01 | 0.5 | mg/L |
| Chlorobenzene | ND | 0.01 | 100 | mg/L |
| Chloroform | ND | 0.01 | 6.0 | mg/L |
| 1,2-Dichloroethane | ND | 0.01 | 0.5 | mg/L |
| 1,1-Dichloroethylene | ND | 0.01 | 0.7 | mg/L |
| Methyl Ethyl Ketone (2-Butanone) | ND | 0.25 | 200 | mg/L |
| Tetrachloroethylene | ND | 0.01 | 0.7 | mg/L |
| Trichloroethylene | ND | 0.01 | 0.5 | mg/L |
| Vinyl Chloride | ND | 0.01 | 0.2 | mg/L |

ND - Compound not detected at stated Detection Limit.

| Surrogate Recovery | % | Limits |
|----------------------|----|----------|
| Dibromofluoromethane | 94 | 86 - 118 |
| Dichloroethane-d4 | 93 | 80 - 120 |
| Toluene-d8 | 89 | 88 - 110 |
| 4-Bromofluorobenzene | 92 | 86 - 116 |

Reference: Test Methods for Evaluating Water, Wastewater and Solid Waste, SW-846,U.S.E.P.A., Volume IB, Revision 2, December 1996.



one (505) 326-4737 Fax (505) 325-4182 TOXICITY CHARACTERISTIC LEACHING PROCEDURE EPA METHOD 8260B

VOLATILE ORGANIC COMPOUNDS BY GC/MS
Blank Spike/Duplicate Analysis

Sample ID:

Blank Spike Duplicate

Laboratory ID:

BSD99-336

Sample Matrix:

Water

Date Reported:

12/08/99

Date Extracted:

NA

Date Analyzed:

12/02/99

| Parameter | Analytical
Result
mg/L | Spike
Added
mg/L | Spike
Results
mg/L | Spike
Recovery
% | Duplicate
Results
mg/L | Duplicate
Recovery
% | Relative
Difference
%RSD |
|----------------------------------|------------------------------|------------------------|--------------------------|------------------------|------------------------------|----------------------------|--------------------------------|
| Benzene | ND | 0.050 | 0.050 | 99 | 0.053 | 106 | 7 |
| Carbon Tetrachloride | ND | 0.050 | 0.054 | 109 | 0.057 | 113 | 4 |
| Chlorobenzene | ND | 0.050 | 0.050 | 99 | 0.053 | 106 | 7 |
| Chloroform | ND | 0.050 | 0.056 | 112 | 0.060 | 121 | 7 |
| 1,2-Dichloroethane | ND | 0.050 | 0.049 | 98 | 0.057 | 113 | 15 |
| 1,1-Dichloroethylene | ND | 0.050 | 0.046 | 91 | 0.047 | 94 | 3 |
| Methyl Ethyl Ketone (2-Butanone) | ND | 0.100 | 0.102 | 102 | 0.115 | 115 | 12 |
| Tetrachloroethylene | ND | 0.050 | 0.055 | 110 | 0.058 | 115 | 4 |
| Trichloroethylene | ND | 0.050 | 0.052 | 103 | 0.055 | 111 | 7 |
| Vinyl Chloride | ND | 0.050 | 0.052 | 105 | 0.052 | 104 | 0 |

ND - Compound not detected at stated Detection Limit.

| | Spike | Duplicate | | | | |
|----------------------|-------|-----------|----------|--|--|--|
| Surrogate Recoveries | % | % | Limits | | | |
| Dibromofluoromethane | 96 | 102 | 86 - 118 | | | |
| Dichloroethane-d4 | 90 | 101 | 80 - 120 | | | |
| Toluene-d8 | 92 | 92 | 88 - 110 | | | |
| 4-Bromofluorobenzene | 95 | 94 | 86 - 116 | | | |

Reference: Test Methods for Evaluating Water, Wastewater and Solid Waste. SW-846,U.S.E.P.A., Volume IB, Revision 2, December 1996.

Analysy Sw

Reviewed



Phone (505) 326-4737 Fax (505) 325-4182 COXICITY CHARACTERISTIC LEACHING PROCEDURE TOXICITY CHARACTERISTIC LEACHING PROCEDURE **EPA METHOD 8260B VOLATILE ORGANIC COMPOUNDS BY GC/MS**

Matrix Spike Analysis

Sample ID:

Matrix Spike

Laboratory ID: 0199W19088MS

Sample Matrix: Water

Date Reported:

12/08/99

Date Extracted:

NA

Date Analyzed:

12/02/99

| Parameter | Analytical
Result
mg/L | Spike
Added
mg/L | Spike
Results
mg/L | Spike
Recovery
% | |
|----------------------------------|------------------------------|------------------------|--------------------------|------------------------|--|
| Benzene | ND | 0.050 | 0.054 | 108 | |
| Carbon Tetrachloride | ND | 0.050 | 0.059 | 119 | |
| Chlorobenzene | ND | 0.050 | 0.054 | 109 | |
| Chloroform | ND | 0.050 | 0.061 | 121 | |
| 1,2-Dichloroethane | ND | 0.050 | 0.054 | 108 | |
| 1,1-Dichloroethylene | ND | 0.050 | 0.050 | 100 | |
| Methyl Ethyl Ketone (2-Butanone) | ND | 0.100 | 0.084 | 84 | |
| Tetrachloroethylene | ND | 0.050 | 0.059 | 118 | |
| Trichloroethylene | DN | 0.050 | 0.057 | 113 | |
| Vinyl Chloride | ND | 0.050 | 0.054 | 108 | |

ND - Compound not detected at stated Detection Limit.

| Surrogate Recovery | % | Limits | | | | |
|----------------------|----|----------|--|--|--|--|
| Dibromofluoromethane | 98 | 86 - 118 | | | | |
| Dichloroethane-d4 | 96 | 80 - 120 | | | | |
| Toluene-d8 | 92 | 88 - 110 | | | | |
| 4-Bromofluorobenzene | 95 | 86 - 116 | | | | |

Reference: Test Methods for Evaluating Water, Wastewater and Solid Waste, SW-846.U.S.E.P.A., Volume IB, Revision 2, December 1996.



ne (505) 326-4737 Fax (505) 325-4182

Inter-Mountain Laboratories, Inc.

2506 West Main Street, Farmington, NM 87401

Quality Control / Quality Assurance

Known Analysis FLASH POINT

Client:

Burlington Resources

Project:

Compressor Stations

Sample Matrix:

Liquid

Date Reported:

12/13/99

Date Analyzed:

12/07/99

Date Received:

11/23/99

| Parameter | Found
Result | Known
Result | | | |
|-----------|-----------------|-----------------|--|--|--|
| p-Xylene | 76°F | 77°F | | | |

Reference:

Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical / Chemical Methods" United States Environmental Protection Agency 3rd Edition, Final Update II, September, 1994.

Annual Book of ASTM Standards, Method D93-80.

Comments:



| | | | | | | |
 | | | | | | | | | | | | | | |
|---|----------------------------------|-----------------------------|---|--------------|------------------------------|---|------|--------|---------------|--------|-----------|-----|--|-------|----|--------|---------------------------|-------------------------------|---------------------------|-----------------------|---------------------------------------|
| Sheridan, Wyoming 82801 Telephone (307) 672-8945 | | Relinquished by (Signature) | Reinquisned by: (Signature) | W Hassely | Relinguished by: (Signature) | | | | 70,7 | and do | ي دو د مر | · · | | | t, | 11 | Water Pres Used OI Trak 1 | Sample No./
Identification | ure) | Client/Project Name | Inter- Mountain
Laboratories, Inc. |
| Gillette, Wyoming 82718 Telephone (307) 682-8945 | | | Jaros | | | | | | | | | | | - | ,, | t | 11/23 | Date Ti | | ices/0,1 Ta. | |
| yoming 8
(307) 68 | in: | | 1 | | | | | | | | | | | | | | 1 | Time | | Tank Weder | |
| 2718
2-8945 | ter-M | | | | | | | | \Rightarrow | 5 | | | | | | | 13057 | Lab Number | | • | Ω |
| Farmi | ounta | | | | | | | | | | | | | | | | 762 | mber | in of Cu | Proje | AIN |
| Farmington, NM 87401 Telephone (505) 326-4737 | Inter-Mountain Laboratories, Inc | Cate | 165/99 | 11/23/99 | Date | | | | | | | | | | | | 1.9 | | Chain of Custody Tape No. | Project Location | CHAIN OF CUSTODY RECORD |
| 7 87401
326-47 | lborat | | - | |
= | | | | | | | | | | l) | 11 | المساء | Ma | pe No. | 1 | CUS |
| | tories | lime | <u> ~ </u> |) k | Time | | | | | | | | | | | , | | Matrix | | Stations | 100 |
| Bozeman, Montana 59718
Telephone (406) 586-8450 | S, Inc. | neceived | | | Received | | | | | ļ | | | , | | | | | | | и [~] | Y RE |
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