ANNUAL MONITORING REPORT



ANNUAL MONITORING REPORT

RED BYRD # 2

NW ¼ of the SW ¼ of SECTION 31, TOWNSHIP 19 SOUTH, RANGE 37 EAST LEA COUNTY, NEW MEXICO LINK ENERGY LEAK NUMBER: 2000-10477 ETGI PROJECT NUMBER: LI2051

PREPARED FOR:

LINK ENERGY 5805 EAST HIGHWAY 80 MIDLAND, TEXAS 79701

PREPARED BY:

ENVIRONMENTAL TECHNOLOGY GROUP, INC. 2540 WEST MARLAND HOBBS, NEW MEXICO 88240

April 2004

polds 00 Camille Reynolds

Project Manager

Mar TOD SHOAN

Todd Choban Regional Manager

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INTRODUCTION

Environmental Technology Group, Inc. (ETGI), on behalf of Link Energy (Link), has prepared this Annual Monitoring Report in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an Annual Monitoring Report by April 1 of each year. This report is intended to be viewed as a complete document with figures, attachments, tables and text. The report presents the results of water sampling conducted on groundwater that had seeped into the excavated area following pipeline excavation activities. No field activities were conducted during calendar year 2003, due to site access restrictions imposed by the landowner. For reference, a Site Location Map and Site Map are provided as Figures 1 and 2, respectively.

There are no groundwater monitor wells currently installed on-site.

FIELD ACTIVITIES

No field activities were conducted during the calendar year 2003, due to site access restrictions imposed by the landowner. As discussed in the *Supplemental Work Plan for Link-Red Byrd #2*, *Crude Oil Release Site*, (August 2000), soil borings were installed on-site and advanced to a depth of approximately 55 feet below the ground surface. At that point, a dense red clay in the upper portion of the Dockum Formation was encountered and the borings were terminated and backfilled according to NMOCD guidelines. No groundwater was encountered during soil boring activities.

A passive phase separated hydrocarbon (PSH) recovery system was installed during excavation backfilling activities in December 2001. A product recovery manifold consisting of two eight foot horizontal 8-inch diameter 0.020 slotted schedule 40 PVC pipes joined in the middle with an 8-inch PVC tee fitting were mounted to a 5 foot vertically positioned section of 8-inch 0.020 slotted PVC piping and placed into the excavation. The vertical section of the recovery manifold extends a distance of 5 feet above the capillary fringe. The recovery manifold was then attached to an 8-inch PVC coupling adjoining to a 55-foot 8-inch PVC riser pipe, which extends approximately 4 feet above the ground surface (Figure 4). The well is equipped with a 10' X 6" absorbent boom placed in the well on a nylon recovery cord for retrieval. During the 2002 reporting period the amount of PSH observed in the passive recovery system varied from droplets to a heavy sheen. On November 18, 2002 the absorbent boom was removed due to no detectable water or PSH in the passive recovery system and placed into a 55-gallon drum with locking rings on-site.

GROUNDWATER GRADIENT

No groundwater monitor wells have been installed on-site therefore, no site-specific ground water gradient data is available for this site. Regionally, the groundwater gradient varies from southeast to south.

LABORATORY RESULTS

Groundwater samples were collected from the excavation on October 29, 2001 and delivered to AnalySys, Inc., Austin, Texas for analysis of Benzene, Toluene, Ethylbenzene, and Xylene (BTEX), Total Petroleum Hydrocarbons (TPH), Total Dissolved Solids (TDS) and RCRA metals constituent concentrations using the methods described below.

- BTEX analysis in accordance with EPA Method SW846-8260b,
- TPH analysis in accordance with EPA Method SW846-8015M GRO/DRO,
- TDS analysis in accordance with EPA Method SW846-160.1, and
- RCRA Metals analysis in accordance with EPA Method SW846-6010.

Review of laboratory analytical results from the October 29, 2001 sampling event indicate that the benzene concentration in the perched groundwater was above the NMOCD regulatory standard. Review of the results of the TDS analysis indicate that this perched groundwater does not meet the New Mexico Water Quality Control Committee definition of present or foreseeable "beneficial use". Results of the laboratory analysis conducted on the groundwater samples are summarized in Tables 2 and 3 and a copy of the laboratory report is provided as Appendix A.

SUMMARY

This report presents the results of groundwater sampling activities conducted on-site during the annual monitoring period of 2002. Groundwater sampling activities were not conducted during the year 2003 due to site restrictions imposed by the landowner. The PSH detected in the passive recovery system varied from droplets to a heavy sheen during the annual reporting period. No measurable amount of PSH was recovered on-site during this reporting period. On November 18, 2002 no detectable water or PSH was observed in the passive recovery system and the absorbent boom was removed from the system and placed into a 55-gallon drum with a locking ring on-site.

No groundwater monitor wells have been installed on-site therefore, no site-specific ground water gradient data is available for this site.

Review of laboratory analytical results from the October 29, 2001 sampling event indicate that the benzene concentration in the perched groundwater was above the NMOCD regulatory standard. Review of the results of the TDS analysis indicate that this perched groundwater does not meet the New Mexico Water Quality Control Committee definition of present or foreseeable "beneficial use". Link Energy anticipates obtaining access to this site in 2004 and the recovery system will be monitored at that time. Link Energy will provide a written update to the NMOCD at that time.

DISTRIBUTION

| Copy 1 & 2: | William C. Olson and Ed Martin New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505 |
|-------------|--|
| Copy 3: | Chris Williams New Mexico Oil Conservation Division (District 1) 1625 French Drive Hobbs, New Mexico 88240 |
| Copy 4: | Jeff Dann Link Energy, LLC 2000 West Sam Houston Parkway Suite 400 Houston, Texas 77042 |
| Copy 5: | Jimmy Bryant Link Energy, LLC 5805 Hwy 80 East Midland, Texas 79701 |
| Сору б: | Environmental Technology Group, Inc. 4600 West Wall Midland, Texas 79703 |
| Copy 7: | Environmental Technology Group, Inc. 2540 West Marland Hobbs, New Mexico 88240 |

Copy Number: _____

Quality Control Review:

FIGURES

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TABLES

TABLE 1

GROUNDWATER ELEVATION

RED BYRD II LINK ENERGY LEA COUNTY, NEW MEXICO ETGI PROJECT # LI 2051

| WELL NUMBER | DATE MEASURED | CASING WELL ELEVATION | DEPTH TO PRODUCT | DEPTH TO WATER | PSH THICKNESS | CORRECTED GROUNDWATER ELEVATION |
|----------------|------------------|-----------------------------|---------------------|-------------------|------------------|---------------------------------------|
| PRW -1 | 02/25/02 | | 48.36 | 48.36 | 0.00 | |
| | 08/16/02 | | 48.83 | 48.83 | Sheen | |
| Boom MW | 10/29/02 | | 45.97 | 45.97 | 0.00 | |





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TABLE 2

GROUNDWATER CHEMISTRY

LINK ENERGY RED BYRD II LEA COUNTY, NEW MEXICO ETGI PROJECT #LI 2051

All concentrations are reported in mg/L

| SAMPLE | | | Met | bod: SW 846-820 | 50b | | Met | aad: 8015, 16 | 0.1 |
|------------|----------------|---------|---------|-------------------|-------------------|---------------|------|---------------|-------|
| LOCATION | SAMPLE DATE | BENZENE | TOLUENE | ETHYL- BENZENE | m, p - XYLENES | 0 - XYLENE | GRO | DRO | TDS |
| Excavation | 10/29/01 | 0.246 | 0.452 | 0.147 | 0.312 | 0.119 | 19.4 | 62.9 | 15900 |

TABLE 3

CONCENTRATIONS OF METALS IN GROUNDWATER

LJNK ENERGY RED BYRD II LEA COUNTY, NEW MEXICO ETGI Project #LI 2051

All concentrations are reported in mg/L EPA SW846-6010B, 7470

| - | l c | 4 | - | Ē | 1 |
|--------------------|--------|-------------------|----------|---|---|
| Strontium | 01 | | | | |
| Вогоп | Ē | ť | | | |
| əniS | 0000 | 6770.0 | | | |
| тифвивУ | 5010 V | 0.04.0 | | | |
| niT | 20.02 | ~0.02 | | | |
| muibo2 | ļ | NA | | | |
| Silver | 000 07 | 20,002 | | | |
| muinələ2 | 10.00 | < <u>u.u</u> > | | | |
| muissesto | | ٩Z | | | |
| Nickel | | 20.02 | | | |
| mnnəbdyloM | ; | 0.02 | | | |
| Mercury | | <0.0002 0.0002 | | | |
| ssan sgas M | 1 | 0.689 | Ì | | |
| muisəngsM | ļ | Ν | ſ | | - |
| Беэ.І | | Q.02 | | | |
| Iron | | 0.731 | Ī | | |
| Copper | | <0.02 | Ī | | |
| 118doD | | 0.02 | | | |
| Chromium | T | 00 | | | |
| muista O | | Ž | | | - |
| muimbsO | | <0.005 | | | |
| Beryllium | | <0.01 | | | - |
| Barium | | 0 176 | | | - |
| Атяепіс | | 0.05 | | i | - |
| munimulA | | 1 0.2 | | | - |
| SAMPLE DATE | | 10/06/01 | 10.22.01 | | - |
| SAMPLE | | 181.7 | 1111 | | - |

Appendix A

Laboratory Reports

| Charty S | | | | | | 4221 F 2209 N (512) 4 | Freidrich Lane, N. Padre Island 444-5896 • | Suite 19(Dr., Cor FAX | Suite 190, Austin, TX Dr., Corpus Christi, TX FAX (512) 447-4766 | 2 | 78744 & 78408 |
|---|--|--|---------------------|--|---|--|--|--|---|--|---|
| Client: Environmental Tech Group Attn: Ken Dutton Address: 2540 W Marland | | | | | | Report#/Lab ID#: 121653 Re Project ID: Red Byrd II EOT 2051C Sample Name: GW |)#: 121653 l Byrd II EOT : GW | Rер оі 2051С | Report Date: 1 1/14/01 1C | 11/14/01 | |
| | Nm 88240 | | | | | Sample Matrix: water Data Bassived: 10/30/2001 | water | Time: 10-48 | 10-48 | | |
| Phone: 505 397-4882 FAX: 505 397-4701 | 97-4701 | | | | | Date Sampled: | 10/29/2001 | Time: | 10:30 10:30 | | |
| REPORT OF ANALYSIS | | | | | | | QUALITY | ASSURANCE | | DATA ¹ | |
| Parameter | Result | Units | RQL ⁵ | Blank | Date | Method ⁶ | Data Qual ⁷ | Prec. ² | Recov3 | CCV ⁴ | LCS^4 |
| Metals DigHg | ¥ 1 | 1 | 1 | 1 | 11/02/01 | 7470&245.1 | | | ; | | 4 |
| Metals DigHNO3 | | | ¦ • | 1 - | 10/31/01 | 3015 | 1 | 1 | 1 | 1 | |
| TPH hv GC (as direcel) | | mg/L mg/l | 1 05 | -0 2 | 10/06/01 | 100.1 8015 mod | ; ; | 6.4 19.4 | -NA- 77 5 | -NA- | -NA- |
| TPH by GC (as diesel-ext) | | 1 2 2 1 2 1 | 31 | | 10/10/11 | TX 1005 | 1 | 5 | 2 1 | | |
| TPH by GC (as gasoline) | 19.4 | mg/L | 0.5 | <0.5 | 11/0/90/11 | 8015 mod. | s | 11.2 | 73.7 | 102.3 | 97.8 |
| Aluminum/ICP | 1.03 | mg/L. | 0.2 | <0.2 | 11/13/01 | 6010 & 200.7 | | 2.34 | 96.79 | 107.81 | 85.87 |
| Arsenic/ICP | <0.05 | mg/L | 0.05 | <0.05 | 11/13/01 | 6010 & 200.7 | | 1.41 | 116,44 | 108.5 | 90.86 |
| Barium/ICP | 0.176 | mg/L | 0.01 | <0.01 | 11/13/01 | 6010 & 200.7 | 1 | 1.87 | 87.26 | 97.5 | 82.21 |
| Beryllium/ICP | <0.004 | mg/L | 0.004 | <0.004 | 11/13/01 | 6010 & 200.7 | **** | 1.85 | 95.85 | 102.5 | |
| Boron/ICP | .4.71 | mg/L | 0.02 | <0.02 | 11/13/01 | 6010 & 200.7 | * * * | 0.49 | 97.08 | 100.25 | |
| Chammy/CP | <0.005 | mg/L | 0.005 | <0.05 10.05 | 11/13/01 | 6010 & 200.7 6010 & 200.7 | | 1.1 | 90.27 | 108.25 | |
| Cubal/ACP | <0.02 | mg/L mg/L | 0.02 | <0.02 | 10/01/11 | 6010 & 200.7 | -, | 28.1 46 I | 16.68 | 108.03 | 85.47 |
| Copper/ICP | <0.02 | mg/L | 0.02 | <0.02 | 11/13/01 | 6010 & 200.7 | | 1.9 | 96.2 | 101.6 | |
| Iron/ICP | 0.731 | mg/L | 0.05 | <0.05 | 10/E1/11 | 6010 & 200.7 | 1 | 0.75 | 92.05 | 97.35 | |
| Lead/ICP | <0.02 | ng/L | 0.02 | <0.02 | 11/13/01 | 6010 & 200.7 | ļ | 1.53 | 87.77 | 105.25 | |
| Manganese/ICF Merrum/CVAA | 0.000 | mg/L me/L | 0.00 | <0.000 | 10/21/11 | 6010 & 200.7 245 1&7470 | 1 | 1.22 | 92.45 | 80 58 | 88.29 |
| Molybdenum/ICP | <0.02 | J/am | 0.02 | <0.02 | 11/13/01 | 6010 & 200.7 | ļ | £6.1 | 101.03 | 105.88 | |
| Nickel/ICP | <0.02 | mg/L | 0.02 | <0.02 | 11/13/01 | 6010 & 200.7 | ſ | 2.06 | 87.54 | 107.63 | |
| This analytical report is respectfully submitted by AnalySys. Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys. Inc.'s Quality Assurance/Quality Control Program. © Copyright 2000, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc. Respectfully Submitted, | AnalySys, Inc. The enclosed ay knowledge, the analytical res arance/Quality Control Program II rights reserved. No part of the any form or by any means with Respectfully Submitted | e enclosed results natytical results rol Program. O do part of this means without the iubrnitted, | | Quality assurance data is for the of the relative percent (%) difference of the relative percent (%) the recovered from a spiked sample. Expressed as the percent (%) recover (RQL). typically at or above the typically denote USEPA procedual dilutions. 7. Data Qualifiers are associated method blank(s). SI = | 7. Solution π is for the set π of difference π sample. It (%) recovery above the Pra- above the Pra- abiliters are $J = \pi$ k(s). S1 = MS | 1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analytic recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (1.CS) results are recreased as the percent (%) recovery of analytication (CCV) and Laboratory Control Sample (1.CS) results are (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<) values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are $J = analyte potentially present between the PQL and the MDL. B = Analyte detected in associated method blank(s). S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PUDS)$ | ted this sample. rements. 3. Recu n (CCV) and Lab n standard or matu (PQL) of the ana flect nominal qua nt between the PC ceed advisory lin | 2. Precision overy (Reco oratory Cov ix. 5. Rep lytical meth ntitation lirr AL and the) vits. S2 =Pe | mple. 2. Precision (PREC) is the absolute value 3. Recovery (Recov.) is the percent (7%) of analyte and Laboratory Control Sample (1.CS) results are or matrix. 5. Reporting Quantitation Limits the analytical method. 6. Method numbers anal quantitation limits adjusted for any required of the PQL and the MDL. B = Analyte detected in sory limits. S2 =Post digestion spike (PDS) | EC) is the absolute v in percent (%) of ar iample (LCS) results g Quantitation Limits 6. Method numbers ljusted for any requir B = Analyte detector gestion spike (PDS) | te value of anatyte iults are nuits oers oers oered in oS) |
| | Ľ. | | recover than ad- | recovery exceeds advisory limit. S3 =MS an than advisory limit. M =Matrix interference. | ory limit. S3 : =Matrix inter | recovery exceeds advisory limit. $S3 = MS$ and/or MSD and PDS recoveries exceed advisory limits. P = Precision higher than advisory limit. M = Matrix interference. |)S recoveries exce | ed advisory | / limits. P≓ | Precision | ngher |
| | | |] | | | | | | | | |

Report Date: 11/14/01

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4221 Freidrich Lane, Suite 190, Austin, TX 78744 & 2209 N. Padre Island Dr., Corpus Christi, TX 78408

| | | | | | | (512) 4 | (512) 444-5896 | FAX | FAX (512) 447-4766 | 4766 | |
|------------------------------|--------|-------|-----------------|-----------------------------------|-------------|---------------------|---|--------------------|-------------------------|------------------|------------------|
| | | | Project ID | Project ID: Red Byrd II EOT 2051C | II EOT 2051 | U | | Report# | Report#/Lab ID#: 121653 | #: 121653 | |
| Attn: Ken Dutton | | | Sample Name: UW | ame: UW | | | | Sample | sample Matrix: water | water | |
| REPORT OF ANALYSIS-cont. | | | | | | | OUALITY ASSURANCE DATA | ASSURA | ANCE DA | <u>NTA</u> I | |
| Parameter | Result | Units | RQL 5 | Blank | Date | Method ⁶ | Data Qual ⁷ Prec. ² Recov ³ CCV ⁴ | Prec. ² | Recov3 | CCV ⁴ | LCS ⁴ |
| Selenium/ICP | <0.05 | mg/L | 0.05 | <0.05 | 10/£1/11 | 6010 & 200.7 | + 1 | 0.13 | 85.22 | 106.15 | 10.06 |
| Silver/GFAA | <0.002 | mg/L | 0.002 | <0.002 | 11/02/01 | 272.2&7761 | 1 | 2.84 | 90.83 | 82.5 | 82 |
| Strontium/ICP | 19.2 | mg/L | 0.05 | <0.05 | 11/13/01 | 6010 & 200.7 | 1 | 1.44 | 89.42 | 103.73 | 87.59 |
| Tin/ICP | <0.05 | mg/L | 0.05 | <0.05 | 11/13/01 | 6010 & 200.7 | | 4.71 | 98.19 | 104 | 101.22 |
| Vanadium/ICP | 0.0423 | mg/L | 0.02 | <0.02 | 11/13/01 | 6010 & 200.7 | 1 | 2.9 | 93.65 | 103.2 | 86.89 |
| Zinc/ICP | 0.0229 | mg/L | 0.01 | <0.01 | 11/13/01 | 6010 & 200.7 | 7 | 1.28 | 91.95 | 106 | 86.76 |
| Volatile organics-8260b/BTEX | | | | | 10/60/11 | 8260b | 1 | - | - | 1 | |
| Benzene | 246 | J/gµ | 10 | <10 | 10/60/11 | 8260b | | 9.5 | 98.5 | 6'86 | 102.4 |
| Ethylbenzene | 147 | µg/L | 10 | <10 | 10/60/11 | 8260b | 1 | 0.9 | 90.5 | 94.9 | 93.1 |
| nı,p-Xylenes | 312 | µg/L | 10 | <10 | 10/60/11 | 8260b | 1 | 0.7 | 94.9 | 98.2 | 97.2 |
| o-Xylene | 119 | μg/L, | 10 | <10 | 10/60/11 | 8260b | 1 | 0.6 | $\Gamma.70$ | 98.5 | 98.8 |
| Toluene | 452 | hg/L | 01 | <10 | 10/60/11 | 8260b | | 5.8 | 107.7 | 102.3 | 110.8 |
| | | | | | | | | | | | |

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4221 Freidrich Lane, Suite 190, Austin, TX 78744 & 2209 N. Padre Island Dr., Corpus Christi, TX 7840408 (512) 444-5896 • FAX (512) 447-4766

Report#/Lab ID#:121653 Sample Matrix: water

| Client: | Client: Environmental Tech Group | Project ID: Red Byrd II EOT 2051C |
|---------|----------------------------------|-----------------------------------|
| Attn: | Attn: Ken Dutton | Sample Name: GW |
| | | |
| LaVaJa | DEPORT AF SHDDACITE DEAAVEDV | |

REPORT OF SURROGATE RECOVERY

| Surrogate Compound | Method | Recovery | Recovery Limit Data Qualifiers | Data Qualifiers |
|-----------------------|-----------|----------|--------------------------------|-----------------|
| Nitrobenzene-d5 | 8015 mod. | 148 | 50-150 | } |
| p-Terphenyi | 8015 mod. | 114 | 50-150 | 1 |
| 1,2-Dichloroethane-d4 | 8260b | 104 | 80-120 | |
| Toluene-d8 | 8260b | 96.2 | 88-110 | 1 |

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

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Exceptions Report:

Attn: Ken Dutton Report #/Lab ID#: 121653 Matrix: water Project 1D: Red Byrd II EOT 2051C Client: Environmental Tech Group Sample Name: GW

Sample Temperature/Condition <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation

Cample received in appropriate container(s). State of sample preservation unknown.
Cample received in inappropriate container(s) and/or with unknown state of preservation. & Sample received in appropriate container(s) and appear to be appropriately preserved.

J flag Discussion

A J flag data qualifier indicates (as required under TNRCC-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data: ŀ

| Parameter | Qualif | Qualif Comment |
|--------------|--------|------------------------------|
| Chromium/ICP | J | See J-flag discussion above. |
| Cobait/ICP | J | |
| Niekel/ICP | 1 | |
| | | |

Notes:

| Coc: 169 | עומר א כ אכ | 4221 Freidrich Lane, Suite 190, Austin, TX 78744 Phynics 78121 444-5896 | Fax. (512) 447-4766 | | Analyses Requested (1) | | | | Comments | | | | | | (1) these specifically requested otherwise on this Chain-of-custody and/or attached documentation, all analyses will be conducted using ASI's method of choice and all due will be reported to ASI's normal reporting funds (AI/H / PQI). For GCMAS volatiles and extractables, unless specifica analytical parameter lists are specified on this chain-of-custody or attached to this chain-of-custody, ASI will default to Friority Pollutants or ASI's applied for all GC procedures. | eived By | Date Time | 10-30-01 1024 5 |
|----------|--------------------|--|---------------------|--------------|------------------------|---|--|----------|---|----------------|--|--|------|--|---|---------------------|-------------|-----------------|
| | | 422 | | _ Zip | | And I | A CONTRACTION | | 1 troop 1 | X X X X | | | | | us ASI's method of choice and a ody or attached to this chain-of- | Sample Received | Affiliation | 19-5 T |
| | | rent): 10 EoT | | State | ſ | rax | Buelo Canas | | Water Waste (Lab only) | 121653 | | | | | lyses will be conducted usi celfied on this chain-of-cust | | Nameo | M. Hen |
| | | Bill to (if different): Company Name | Address | City | ATTN: | Phone | 56/42 M | | | 7 7 | | | | | d documentation, all ana cal parameter lists are spe C procedures. | | Tíme - | 1230 |
| | | | \$ | 82240 | | (06h-t.59) | $\sqrt{100}$ mgr.): | | d Sampled Co | as al 10-67-01 | | | | | of-custody and/or attache a, unless specific analytic nust be supplied for all G | Juished By | Date | 10-62-01 |
| | CHAIN-OF-CUSTODY | Send Reports To: Company Name ETS I | 10 W MARLA | State Nm Zip | PuttoN | Phone 20 12 + 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 | Rush Slauts (must be confirmed with lab mgr.): Project Name/P(1#: Red Rgred I Sampler: Sc/pac Marcho Cancer | 607 2051 | | r 0/ | | | | | (1) Unless specifically requested otherwise on this Chain-of-custody and/or attached documentat (nois (MDI /PQI). For GCMS volatiles and extractables, unless specific analytical parameter ASI's HSL list at ASI's option. Specific compound lists must be supplied for all GC procedures. | Sample Relinquished | Affiliation | |
| | CHAIN-OF | Send Reports To: Company Name 2 | Address 25 | City He Bas | ATTN: KEN DUTTON | Fliouts and A | Rush Status (m Project Name/P | | Clicut Sample No. Description/Identification | 6W | | | | | (1)Unless specifically reque funds (MOU /PQU). For OC ASP's HISL list at ASP's opti | | Name | Marcela Canada |

[Tendering of above described samples to AnalySys, Inc. for analytical testing constitutes agreement by buyer/sampler to AnalySys, Inc.'s standard terms.]

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March 26, 2003

Mr. Bill Vondrehle EOTT Energy, LLC P.O. Box 4666 Houston, Texas 77210-4666

RE: Annual Monitoring Reports Various New Mexico Sites



MAR 2 7 2003

Mr. Vondrehle,

Please review the attached Annual Monitoring Reports for submittal to the New Mexico Oil Conservation Division (OCD). Mr. Randy Bayliss of the OCD requested a cover letter be attached to each submittal of reports or each report stating the report was prepared on behalf of EOTT Energy, LLC by Environmental Technology Group, Inc., before it can be reviewed. Upon your review, if no edits are made, please forward these reports to Mr. William C. Olson and Mr. Randy Bayliss at the address provided below. Please notify Britt Byerly or myself of your approval or if any edits need to be made. Upon notification the remaining copies of this report will be edited, if needed, and distributed according to the distribution list included in the report. If edits are required please send a cover letter stating the report was prepared on behalf of EOTT Energy, LLC by Environmental Technology Group, Inc. to be attached to both New Mexico Oil Conservation Division report copies for distribution upon completion of your edits. We regret any inconvenience this causes yourself or EOTT, but the system is imposed by the OCD. If you have any questions, or if additional information is needed, please call.

Respectfully,

Chance I. Johnson New Mexico Regional Manager Environmental Technology Group, Inc. (505) 397-4882

Address for Mr. William C. Olson and Mr. Randy Bayliss:

New Mexico Oil Conservation Division Environmental Bureau 1220 South St. Francis Drive Santa Fe, New Mexico 87505

cc: file





P.O. BOX 4666 HOUSTON, TEXAS 77210-4666

March 31, 2003

Mr. Randolph Bayliss, P.E. Hydrologist Oil Conservation Division State of New Mexico 1220 South St. Francis Drive Santa Fe NM 87505

Dear Mr. Bayliss;

EOTT Energy, LLC is an Operator of crude oil pipelines and terminal facilities located in the state of New Mexico. EOTT actively monitors certain historical release sites exhibiting groundwater impacts, consistent with assessments and workplans developed in consultation with the New Mexico Oil Conservation Division. Consistent with the rules and regulations of the New Mexico OCD, EOTT hereby submits its annual monitoring reports for the following titled sites:

Red Byrd No. 1Section 1, Township 20 South, Range 36 East, Lea County NMRed Byrd No. 2Section 1, Township 20 South, Range 36 East, Lea County NMTNM 98-SO1Section 20, Township 19 South, Range 37 East, Lea County NMTNM 97-23Section 14, Township 22 South, Range 37 East, Lea County NMMonument 18Section 7, Township 20 South, Range 37 East, Lea County NMTNM 98-05Section 26, Township 21 South, Range 37 East, Lea County NMLea Station to Monument 6"Section 5, Township 20 South, Range 37 East, Lea County NM

ETGI prepared these documents and has vouched for their accuracy and completeness, and on behalf of EOTT Energy, I have personally reviewed the documents and interviewed ETGI in order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that EOTT Energy submits these Annual Compliance Monitoring Reports for the above 7 facilities.

I look forward to scheduling a meeting with you in the second or third week of March as you schedule allows, which will allow for an opportunity to review and discuss the results of the monitoring. If you have questions in the interim, please contact me at (713) 993-5047.

Sincerely, Bill Non Dall

Bill Von Drehle Director Environmental EOTT ENERGY LLC

Cc: Frank Hernandez

Pec'd Marles 03

ANNUAL MONITORING REPORT

1R 36

() 5/08/03

RED BYRD NO. 2 SE ¼, NE ¼ OF SECTION 1, TOWNSHIP 20 SOUTH, RANGE 36 EAST LEA COUNTY, NEW MEXICO

EOTT ENERGY, LLC

PREPARED FOR:

EOTT ENERGY, LLC 5805 EAST HIGHWAY 80 MIDLAND, TEXAS 79701

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PREPARED BY:

ENVIRONMENTAL TECHNOLOGY GROUP, INC. 2540 WEST MARLAND HOBBS, NEW MEXICO 88240

April 2003

Camille Reynoldy Project Manager

Chance I. Johnson

New Mexico Regional Manager

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INTRODUCTION

Environmental Technology Group, Inc. (ETGI), on behalf of EOTT Energy, LLC (EOTT), prepared this Annual Monitoring Report in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an Annual Monitoring Report by April 1 of each year. This report is intended to be viewed as a complete document with figures, attachments, tables and text. The report presents the results of water sampling conducted on groundwater that had seeped into the excavated area following pipeline excavation activities. For reference, a Site Location Map and Site Map are provided as Figures 1 and 2, respectively.

There are no groundwater monitor wells currently installed on-site.

FIELD ACTIVITIES

As discussed in the Supplemental Work Plan for EOTT-Red Byrd #2, Crude Oil Release Site, (August 2000), soil borings were installed on-site and advanced to a depth of approximately 55 feet below the ground surface. At that point, a hard red clay in the upper contact of the Dockum Formation was encountered and the borings were terminated and backfilled according to NMOCD guidelines. No groundwater was encountered during soil boring activities.

A passive phase separated hydrocarbon (PSH) recovery system was installed during excavation backfilling activities in December 2001. A product recovery manifold consisting of two eight foot horizontal 8-inch diameter 0.020 slotted schedule 40 PVC pipes joined in the middle with an 8-inch PVC tee fitting were mounted to a 5 foot vertically positioned section of 8-inch 0.020 slotted PVC piping and placed into the excavation. The vertical section of the recovery manifold extends a distance of 5 feet above the capillary fringe. The recovery manifold was then attached to an 8-inch PVC coupling adjoining to a 55-foot 8-inch PVC riser pipe which extends approximately 4 feet above the ground surface (Figure 4). The well is equipped with a 10' X 6" absorbent boom placed in the well on a nylon recovery cord for retrieval. During this reporting period the amount of PSH observed in the passive recovery system varied from droplets to a heavy sheen. On November 18, 2002 the absorbent boom was removed due to no detectable water or PSH in the passive recovery system and placed into a 55-gallon drum with locking rings on-site.

GROUNDWATER GRADIENT

No groundwater monitor wells have been installed on-site therefore, no site-specific ground water gradient data is available for this site.

LABORATORY RESULTS

Groundwater samples were collected from the excavation on October 29, 2001 and shipped to AnalySys, Inc. in Austin, Texas for analyses of Benzene, Toluene, Ethylbenzene, and Xylene (BTEX), Total Petroleum Hydrocarbons (TPH), Total Dissolved Solids (TDS) and RCRA metals constituent concentrations using the methods described below.

- BTEX analysis in accordance with EPA Method SW846-8260b,
- TPH analysis in accordance with EPA Method SW846-8015M GRO/DRO,
- TDS analysis in accordance with EPA Method SW846-160.1, and
- RCRA Metals analysis in accordance with EPA Method SW846-6010.

Laboratory results from the October 29, 2001 sampling event indicate that the benzene concentration in the perched groundwater was above NMOCD regulatory standards. Review of the results of the TDS analysis indicate that this perched groundwater does not meet the New Mexico Water Quality Control Committee definition of present or foreseeable "beneficial use". Results of the laboratory analysis conducted on the groundwater samples are summarized in Table 1 and the laboratory report is provided as Appendix A.

SUMMARY

This report presents the results of groundwater sampling activities conducted on-site during the annual monitoring period of calendar year 2002. The PSH detected in the passive recovery system varied from droplets to a heavy sheen during the annual reporting period. No measurable amount of PSH was recovered on-site during this reporting period. On November 18, 2002 no detectable water or PSH was observed in the passive recovery system and the absorbent boom was removed from the system and placed into a 55-gallon drum with a locking ring on-site.

No groundwater monitor wells have been installed on-site therefore, no site-specific ground water gradient data is available for this site.

Laboratory results from the October 29, 2001 sampling event indicate that the benzene concentration in the perched groundwater was above NMOCD regulatory standards. Review of the results of the TDS analysis indicate that this perched groundwater does not meet the New Mexico Water Quality Control Committee definition of present or foreseeable "beneficial use".

DISTRIBUTION

| Copy 1 & 2: | William C. Olson/Randy Bayliss New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505 |
|--------------|--|
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| Сору 9: | Environmental Technology Group, Inc. 2540 West Marland Hobbs, New Mexico 88240 |
| Copy Numbe | |
| Quality Cont | rol Review |

FIGURES

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TABLES

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GROUNDWATER CHEMISTRY

EOTT ENERGY, LLC RED BYRD II LEA COUNTY, NEW MEXICO ETGI PROJECT # EO 2051

All concentrations are in mg/L

| | SAMPLE DATE | | SW 84 | Method: 8015, 160.1 | | | | |
|--------------------|----------------|-------------|---------|---------------------|------------------|------|------|-------|
| SAMPLE LOCATION | | BENZEN E | TOLUENE | ETHYL- BENZENE | TOTAL XYLENES | GRO | DRO | трн |
| Excavation | 10/29/01 | 0.246 | 0.452 | 0.147 | 0.431 | 19.4 | 62.9 | 15900 |

TABLE 1 (CONTINUED)

CONCENTRATIONS OF METALS IN SOIL AND GROUNDWATER

EOTT ENERGY, LLC RED BYRD II LEA COUNTY, NEW MEXICO ETGI Project # EO 2051

| - 1 | | n |
|------------|---------|---|
| | B, 7470 | I |
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| ĺ | 846-61 | ĺ |
| _ | A SW8 | |
| n mg/ | EP | |
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| entrations | | |
| oncentr | | |
| All co | | ł |
| - 1 | 1 | ľ |

| muitaotte | 19.2 | |
|--------------------|----------------|---|
| Boron | 4.71 | |
| əniZ | 0.0229 | |
| muibeneV | 0.042 | |
| niT | <0.05 | |
| mulbo2 | AN | |
| Silver | <0.002 | |
| muinala2 | <0.05 ▲0.05 | |
| muizzetoa | AN | |
| Nickel | <0.02 | Π |
| munebdyloM | <0.02 | |
| Мегсигу | <0.0002 | |
| əsəuebuew | 0.689 | |
| muisengeM | ¥ | |
| peəŋ | <0.02 | |
| Iron | 0.731 | |
| Copper | <0.02 | |
| fiedoO | <0.02 | |
| muimordO | 10 05 | |
| Calcium | ¥ | |
| muimbeo | <0.005 | |
| muill{198 | <0.004 | |
| aninsa | 0.176 | |
| sinsstA | <0.05 | |
| munimulA | 5 | |
| SAMPLE TYPE | WATER | |
| SAMPLE DATE | 10/29/2001 | |
| SAMPLE LOCATION | MO | |
Appendix A

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Laboratory Reports

| | | | | | | Denor+#/1 of 10#+131653 | D#. 171652 | Deno | - Date: | 111.4.011 | |
|--|--|----------------------------|--------------------|--|----------------------|--|---|------------------------------|--|--|----------------------|
| Attn: Ken Dutton Attn: Ken Dutton Addresse 75.00 Marland | | | | | | Project ID: Red Byid II EOT 2051C Samule Name: GW | ed Byid II EOT | 2051C | | 10/4-1711 | |
| Hobbs Error Hubbs | Nm 88240 | | | | | Sample Matrix: water | water 10/20/2001 | ÷ | 10.40 | | |
| Phone: 505 397-4882 FAX: 50 | FAX: 505 397-4701 | | | | | Date Sampled: 10/20/2001 | 10/30/2001 | Time: | Lime: 10:48 Time: 10:30 | | |
| REPORT OF ANALYSIS | | | | | | | QUALITY | ASSURANCE | | DATA ¹ | |
| Parameter | Result | Units | RQL ⁵ | Blank | Date | Method ⁶ | Data Qual ⁷ | Prec. ² | Recov. ³ | CCV | LCS ⁴ |
| Metals DigHg | | ţ | i | 1 | 11/02/01 | 7470&245.1 | | { | ; | 1 | ; |
| Metals DigHNO3 | 1 | { | ; | | 10/31/01 | 3015 | ; | { | ţ | { | j |
| Total dissolved solids | 15900 | mg/L | - | 7 | 10/06/01 | 160.1 | ; | 4.45 | -NA- | -NA- | -NN |
| (PPH by GC (as diesel) | 62.9 | mg/L | 0.5 | <0.5 | 11/06/01 | 8015 mod. | } | 19.4 | 2.77 | 107.1 | 110.6 |
| IPH by GC (as diesel-ext) | | Dove | 10 | 1 ¢ | 10/10/11 | 1X 1005 | r † 1 | 1 | | | ; 5 |
| ITH by Ot. (as gasoline) | 19.4 | шġг | C.9 | C.U> | 10/00/11 | nour crug | | 7.11 | 1.5.1 | £.201 | 97.0 |
| Aluminum/ICP | 1.03 | mg/L, | 0.2 | <0.2 | 10/13/01 | 6010 & 200.7 | • | 2.34 | 96.79 | 107.81 | 85.87 |
| Arsenic/ICP | <0.05 | ng/L | 0.05 | <0.05 | 11/13/01 | 6010 & 200.7 | 1 | 1.41 | 116.44 | 108.5 | 90.86 |
| Barium/ICP | 0.176 | T/âu | 0.01 | <0.01 | 11/13/01 | 6010 & 200.7 | 1 | 1.87 | 87.26 | 97.5 | 82.21 |
| Beryllium/ICP | <0.004 | mg/L | 0.004 | <0.004 | 11/13/01 | 6010 & 200.7 | ¥ ? | 1.85 | 95.85 | 102.5 | 87.53 |
| BorowICP | 4.71 | mg/L | 0.02 | <0.02 | 11/13/01 | 6010 & 200.7 | ; | 0.49 | 97.08 | 100.25 | 88.49 |
| Cadmium/ICP | <0.005 | ng/L | 0.005 | <0.005 | 11/13/01 | 6010 & 200.7 | ; ; | ; | 90.27 | 108.25 | 85.63 |
| Chronium/ICP | <0.01 | ng/L | 0.01 | <0.01 | 10/21/11 | 6010 & 200.7 | -, -, | 1.85 | 89.91 | 108,63 | 86.86 |
| Cobalt/ICP | <0.02 | | 0.02 | <0.02 | 10/61/11 | 6010 & 200.7 | -, | 1.24 | 89.22 | 106.13 | 85.42 |
| Copper/ICP | <0.02 | mg/L | 0.02 | <0.02 | 11/13/01 | 6010 & 200.7 | 1 | 6.1 | 96.2 | 9.101 | 85.95 |
| fron/fCP | 0.731 | mg/L | 0.05 | <0.05 | 11/13/01 | 6010 & 200.7 | 1 | 0.75 | 92.05 | 97.35 | 87.52 |
| Lead/ICP | <0.02 | | 0.02 | <0.02 | 11/13/01 | 6010 & 200.7 | 1 | 1.53 | 87.77 | 105.25 | 88.42 |
| Manganese/IC.P | 0.689 | | 0.01 | <0.01 | 10/21/11 | 6010 & 200.7 | | 1.22 | 92.43 | 108 | 88.29 |
| Mercury/CVAA | <0.0002 | mg/L | 0.0002 | <0.0002 | 10/20/11 | 245.1&7470 | 2 2 7 | 0.89 | 114.14 | 87 | 107.33 |
| Nolybdenun/R.P ve a. ne ei | <0.02 | ug/L | 0.02 | <0.02 | 10/51/11 | 6010 & 200.7 | 1 - | 1.93 | 50.101 51 20 | 105.88 | 92.04 |
| This particulation is recoveribility enhancing by Analysise Inc. The and reached results | AnalySue Inc. The | - But I - But | | ity accurate do | to is for the sa | 1 Churdive secondaria for the samela batch which included this counter | | Durcieise | enterior (CPRF) and a content of the second se | CO 101 | † 0 |
| have been carefully reviewed and, to the best of my knowledge, the analytical results | y knowledge, the anal | ytical results | | slative percent (" | %) difference (| of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte | urements. 3. Reco | usery (Reco | v.) is the per | oroshe oro Gent (² 7) o | re vanue Fanalyte |
| are convivent with AnalySys. Inc.'s Quality Assurance/Quality Control Program. © Cuppright 2000, AnalySys, Inc., Austin, TX. All rights reserved. No part of this | rance/Quality Control I rights reserved. No | Program. C part of this | recover express | recovered from a spiked sample. expressed as the percent (%) reco | d sample. | recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (I CS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Linuits. | on (CCV) and Lab. in standard or matr. | uratory Con ix. 5. Rep | tuol Sample otting Quan | (J CS) res thation Lit | ults are uits |
| publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys. Inc. | ny form or by any me | ans without the | | typically at or v denote USEP4 | above the Pract non- | (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers twically denote USEPA procedures. I ess than ""<") values reflect nominal anomination limits adjusted for non-remined | t (PQL) of the and effect nominal aust | lytical meth mitation lim | od. 6. Nfer its actinisted | 6. Method mumbers insted for my remin | ers mired |
| | A . I. J C | omitteu, | dilution | 7. Data Qui ed method blan | lifters are J = | dilutions. 7. Data Qualifiers are $J =$ analyte potentially present between the PQL and the MDL. B = Analyte detected in secondary method blankery S1 -MS andro MSD - environment activitient framine S2 - Boot disordimentiation. | ent between the PQ | OL and the N | IDL. B = A | nalyte dete | icted in |
| _ | | tadu. | recover | recovery exceeds advisory limit. S3 =MS and | ory limit. S3 = | the coveries exceed advisory limit. S $3 \approx MS$ and/or MSD and PDS recoveries exceed advisory limits. P = Precision higher the coveries exceed advisory limit. | DS recuveries exce | red advisory | limits. P = | Precision h | o) itglier |

Report Date: 11/14/01

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4221 Freidrich Laue, Suite 190, Austin, TX 78744 & 2209 N. Padre Island Dr., Corpus Christi, TX 78408 (512) 444-5896 • FAX (512) 447-4766

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| Client: Environmental Tech Group | | | Project II | : Red Byrd | Project ID: Red Byrd II EOT 2051C | C | | Report | Report#/Lab 1D#: 121653 | #: 12165. | |
|----------------------------------|--------|-------|------------------|------------|-----------------------------------|---------------------|---|--------------------|-------------------------|------------------|--------|
| Attn: Ken Dutton | | | Sample Name: GW | ame: GW | | | | Sample | Sample Matrix: water | valer | |
| REPORT OF ANALYSIS-cont. | | | | | | | QUALITY ASSURANCE DATA | ASSUR | ANCE DA | VTA ¹ | |
| Parameter | Result | Units | kQL ⁵ | Blank | Date | Method ⁶ | Data Qual ⁷ Prec. ² Recov. ³ CCV ⁴ LCS ⁴ | Prec. ² | Recova | CCV ⁴ | LCS |
| Selenium/ICP | <0.05 | mg/L | 0.05 | <0.05 | 10/61/11 | 6010 & 200.7 | | 0.13 | 85.22 | 106.15 | 10.99 |
| Silver/UFAA | <0.002 | mg/L | 0.002 | <0.002 | 11/05/01 | 272.2&7761 | (| 2.84 | 90.83 | 82.5 | 82 |
| Strontiun/ICP | 19.2 | mg/L | 0.05 | <0.05 | 11/13/01 | 6010 & 200.7 | 1 | 1.44 | 89.42 | 103,73 | 87.59 |
| Tin/ICP | <0.05 | mg/L | 0.05 | <0.05 | 11/13/01 | 6010 & 200.7 | ۲ | 4.71 | 98.19 | 104 | 101.22 |
| Vanachum/ICP | 0.0423 | mg/L | 0.02 | <0.02 | 11/13/01 | 6010 & 200.7 | ĺ | 2.9 | 93.65 | 103.2 | 86.89 |
| Ziac/KP | 0.0229 | mg/L | 0.01 | <0.01 | 11/13/01 | 6010 & 200.7 | 1 | 1.28 | 56.16 | 100 | 86.76 |
| Volatile organics-8260b/BTEX | 1 | | ł | | 10/60/11 | 8260b | | - | 4 | : | 1 |
| Benzene | 246 | hg/L | 10 | <10 | 10/60/11 | 8260b | | 9.5 | 98.5 | 98.9 | 102.4 |
| Ethylbenzeue | 147 | µg/L | 10 | <10 | 10/60/11 | 8260b | ! | 0.9 | 90.5 | 94.9 | 93.1 |
| ru, p. Xylenes | 312 | µg/L | 10 | <10 | 10/60/11 | 8260b | 1 | 0,7 | 94.9 | 98.2 | 97.2 |
| o-Xylene | 119 | J/Bil | 10 | <10 | 10/60/11 | 8260b | | 0.6 | 7.79 | 98.5 | 98.8 |
| Toluene | 452 | µg/L | 10 | <10 | 10/60/11 | 8260b | - | 5.8 | 107.7 | 102.3 | 110.8 |

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4221 Freidrich Lane, Suite 190, Austin, TX 78744 & 2209 N. Padre Island Dr., Corpus Christi, TX 7840408 (512) 444-5896 • FAX (512) 447-4766

| Client: Environmental Tech Group | | |
|----------------------------------|------------|--|
| Environmental Tech Group | Ken Dutton | |
| Client: | Atta: | |

Project ID: Red Byrd II EOT 2051C Sample Name: GW

Report#/Lab 110#: 121653 Sample Matrix: water

REPORT OF SURROGATE RECOVERY

| I Recovery I 148 I 114 104 96.2 | | | | A 1111 Mar 111 Mar 1111 | |
|---|----------------------|-----------|----------|--------------------------------|-----------------|
| 8015 mod. 148 8015 mod. 114 8260b 104 8260b 96.2 | Surrogate Compound | Method | Recovery | Recovery Limit Data Qualifiers | Data Qualifiers |
| 8015 mod. 114 8260b 104 8260b 96.2 | Ninobenzene-d5 | 8015 mod. | 148 | 50-150 | ; |
| 4 8260b 104 8260b 96.2 | p-Terphenyl | 8015 mod. | 114 | 50-150 | 1 |
| 96.2 | 1,2-Dichlomethane-d4 | 8260b | 104 | 80-120 | |
| | Toluene-d8 | 8260b | 96.2 | 88-110 | } |

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

| Report #/Lab ID#:121653 Matrix: water Client: Environmental Tech Group Project ID: Real Byrd II EOT 2051C Sample Name: GW Sample Temperature/Condition <=6°C The typical sample temperature criteria (except for laboratory within such a short time after sampling samples (see sample collection and sample receipt temperature measurement without impacting sample sample received in appropriate container(s) and G sample received in appropriate container(s) and G sample received in inappropriate container(s) and G sample received in inappropriate container(s) and G sample received in inappropriate container(s). Sample received in inappropriate container(s) and G sample received in inappropriate container(s) and G sample received in inappropriate container(s). Sample sample received in inappropriate container(s) and G sample received in appropriate container(s) and G sample received in inappropriate container(s). Sample received in appropriate container(s) and G sample received in appropriate container(s) and G sample received in inappropriate container(s) and G sample received in appropriate container(s) and G sample received in appropriate container(s) and G sample received in inappropriate container(s) and C have, ground levels/blanks and other potential sources of sample received in the received in the sample received in th | Matrix: water itioup 2051C 2051C 2051C attion <=6°C short time after s short time after s contain no propriate contain ppropriate contain ppropria | Report #Lab (DB: 12163) Matrix: water Client: Environmental Fractionup Project D: Red Byal 1E07 2951. Sumple: Name: GW Simple: Simple: Simple: Simple: | tions include samples submitted to thieve desired temperatures in the dission in a manner precluding ample (uncorrected for ample (uncorrected for thave been to background ion-fragment noise) |
|---|---|---|---|
| | | | |
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Exceptions Report:

Report #/Lab ID#:121653 Report Date: 11/14/20 Page#: 4

| Grad Lane, Suite 190, Ansim, TX 78744 Phone: (512) 447-47666 | Analyses Requested (1) Please attuch explanationy information 23 required | Comments | | | | | (1) below specifically equested other other other other other and/or attached documentation, all unalyses with be conducted using ASI's method of choice and all data will be reported to ASI's normal reported to ASI's normal reported to this chain-of-custody and the reported to this manual reported to this chain-of-custody and the reported to this normal reported to this chain-of-custody and extractables, unless specific analytical parameter fists are specified on this chain-of-custody or this chain-of-custody. ASI will default to Proving Pollutants or ASI's option. Specific compound lists must be supplied for all GC procedures. | | |
|--|--|---|---|--|--|--|---|-------------|--|
| 7 3i | | A CO | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX | | | | using ASI's method of choic ustraly ur attached to this ch | Affiliation | |
| lerent): me <u>Ee Fr</u> State | ATTN: ATTN: 7-470/ Phone Fax lab mgr.): Lestinpler: Sampler Sampler | Water Waste (Lab I.D.# | 121653 | | | | ialyses will be conducted ! pecified on this chain-of-c | Name | |
| Bill to (If different) Company Name Address | ATTN: ATTN: Phone SC/MC | Soil | | | | | ocumentation, ali un parameter fists are sp rocedures | Tine | |
| | | Z 8 | 30 7 | | | | y and/or attached documentat specific analytical parameter ipplied for all GC procedures. | | |
| CHAIN-OF-CUSTODY Send Reports To: Company Name ZTST Address 25 Yo & MALAW | NTN: A.E. Dutt on the A.E. D. Phone (a) NE- StB 2 Fax (500) 892-470/ Rush Status (must be confirmed with lab mgr.): Project Name POII: Red Rurd IL Sample | aphe No. Date 7 Lentification Sampled Sa | 0 E 0/ 14-42-01 | | | | (14) developentically requested other a tas on this Chain of custody at having (14) (14) (14) (1) (10) (10) (10) (10) (10) (10) (10) | Affiliation | |
| CHAIN-OF-CUSTC Send Reports To: Company Name <u>ETTS T</u> Address <u>25 Yo W M</u> | ATTN: <u>4.52</u> Phone (Each R. Rush Status (1 Project Name?) | Clicat Sample No. Description/Identification | 6 W | and a second | | | Unders spicationity (eq) dis (MOL/PQL) – For C \$5 USL list at AST's op | Name | |

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ADDENDUM TO THE SUPPLEMENTAL WORK PLAN EOTT - RED BYRD #2 CRUDE OIL RELEASE SITE LEA COUNTY, NEW MEXICO

RECEIVED

NOV 06 2001

ENVIRONMENTAL BUREAU OIL CONSERVATION DIVISION

Prepared for:

EOTT ENERGY PIPELINE LIMITED PARTNERSHIP Midland, Texas

Prepared by:

ETGI 2540 West Marland Hobbs, New Mexico 88240

Project No. EOT2051C

November 2001

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|-----|---|---|
| 2.0 | Background | 1 |
| 3.0 | Initial Inspection/Investigation | 2 |
| 4.0 | Purpose | 2 |
| 5.0 | PSH Recovery System Installation/Construction/Operation | 3 |

ADDENDUM TO THE SUPPLEMENTAL WORK PLAN EOTT Crude Oil Pipeline Release Site

Red Byrd Ranch (Red Byrd #2 Site) Lea County, New Mexico

November 5, 2001

Prepared By: ETGI

1.0 Introduction

EOTT Energy Pipeline Limited Partnership (EOTT) is submitting this Addendum to the Supplemental Work Plan pertaining to activities to be performed at the Red Byrd Ranch (Red Byrd #2 Site) in Lea County, New Mexico in the SE ¼ of Section 31, Township 19 South, Range 37 East. These activities are designed to recover the limited volume of crude oil documented at the site during our subsurface investigation in June 2000. These activities will be completed after work plan approval is granted by New Mexico Oil Conservation Division (NMOCD).

2.0 Background

Crude oil leaking from an EOTT pipeline was initially discovered on the Red Byrd Ranch in November 1999. The release site was designated Red Byrd #2 Site by EOTT, and is shown in Figure 1. The release resulted in a relatively small surface stain measuring approximately 20 feet in length by 5 feet in width. As required by the NMOCD's *Guidelines for Remediation of Leaks, Spills and Releases,* dated August 1993 (NMOCD, 1993), EOTT conducted initial response actions and site assessment activities as discussed in Section 3.0 of this Addendum.

As NMOCD is aware, EOTT is addressing a number of crude oil release sites along its pipeline system in southeast New Mexico. In order to ensure protection of human health and the environment and compliance with NMOCD regulations, EOTT prepared a risk-based General Remediation Work Plan for Remediation of EOTT Pipeline Spills, Leaks and Releases in New Mexico, document dated July 2000. Such a plan was developed to ensure consistency of response and closure at all of the release sites. The details of the general remediation work plan were discussed with NMOCD officials in Santa Fe on July 18, 2000. Based on NMOCD's verbal approval of the plan concepts, copies of the plan document were submitted for NMOCD's official approval. EOTT is currently awaiting official NMOCD's written approval of the general remediation work plan.

Based on NMOCD's verbal approval, EOTT is submitting this site-specific Addendum to the Supplemental Work Plan to cover item 6 of the Work Plan Supplement submitted by Entrix, Inc. on behalf of EOTT in July 2000, for design, installation and operation of a passive product recovery system. The overall closure strategy for this release site will be consistent with that discussed in the July 2000 general remediation work plan currently under review by NMOCD.



3.0 Initial Inspection/Investigation

Upon discovery of the release and completion of initial response actions that included repair of the leaking pipeline in early 2000, an attempt was made to excavate the area of the surface stain with a backhoe to determine the lateral and vertical extent of contamination. A trench, approximately 40 feet long, was extended along and below the area of the pipeline release. One additional trench, approximately 20 feet long, was placed perpendicular to the release. The depth of the excavation beneath the release point was approximately 10 feet. Following this work, it was determined that contamination extended beyond the depth of the excavations and that a subsurface investigation would be needed. The trenches were then backfilled with the excavated soil.

A Geoprobe [®] unit was mobilized to the site in April 2000, to advance 14 soil borings in the area adjacent to and surrounding the release area to a maximum depth of approximately 22 feet, which was the point of refusal. Intervals of each boring were screened with a photoionization detector (PID) and samples were collected for laboratory analysis for benzene, toluene, ethylbenzene, and total xylenes (BTEX) as well as total petroleum hydrocarbons – gasoline range organics/diesel range organics (TPH-GRO/DRO) by EPA SW 846 Methods 8021B and 8015B respectively. Based on these activities, it was determined that visible contamination still existed at a depth of 22 feet in the area beneath the release point, although volatile organic concentrations appeared to be decreasing with depth based on PID readings. Volume of impacted soil was estimated to be 800 cubic yards.

Based on landowner requests, excavation of the area commenced in May 2000 to a depth of approximately 55 feet where visible contamination was still present. A decision was then made in June 2000 to extend deep borings around the excavated pit to determine if groundwater was impacted and if contamination extended beyond the perimeter. The outer dimensions of the excavation that is currently present at the site are approximately 70 feet by 40 feet.

A deep rotary drill rig was then mobilized by ETGI (EOTT's contractor) to place six borings adjacent to and around the leak on a perimeter beyond that of the original Geoprobe ® investigation. Soil samples were screened with a PID and samples were also analyzed for BTEX and TPH GRO/DRO by EPA SW 846 Methods 8021B and 8015B respectively. While an attempt was made to extend each boring to groundwater, the borings were stopped once "red bed" clay was encountered, so as not to penetrate this natural barrier. This occurred at a depth of approximately 55 feet.

4.0 Purpose

The purpose of the proposed passive product recovery system installation is to capture and remove the limited volume of crude oil existing on the site. Groundwater that has entered the excavation does not appear to possess the characteristics to yield beneficial quantities of water that would be necessary to be utilized for human or agricultural consumption. Based on the fact that groundwater was not encountered in any of the deep soil borings located on the perimeter of the excavation, the source of this groundwater is estimated to be of a limited nature. A pilot test will be conducted to determine if a well completed in this source would yield sufficient quantities of water from this perched aquifer to be considered of beneficial usage.

The site action levels will be used in conjunction with risk assessment/exposure assessment techniques to demonstrate to NMOCD that human health and the environment are adequately protected at the site. Regulatory closure will be sought based on such a demonstration.

5.0 PSH Recovery System Installation

The proposed passive product recovery system will be installed on-site utilizing the following methodology:

- 1. Excavated areas, which were not affected by PSH, will be backfilled with on-site soils. A product recovery system (discussed in step 2) will be placed into the excavation during backfilling activities.
- 2. The proposed PSH recovery system will consist of a 1/8" 3/8" pea-gravel pack, overlain by a 2- foot thick clay cap, surrounding slotted PVC piping. A product recovery manifold consisting of two horizontal 8-inch 0.020 slotted PVC pipes joined in the middle with an 8-inch PVC tee fitting mounted to a 5 foot vertical section of 8-inch 0.020 slotted PVC piping will be placed into the excavation. The vertical section of the recovery manifold will extend a distance of 5 feet above the capillary fringe. The recovery manifold will then be attached with an 8-inch PVC coupling adjoining to a total of 55 feet of 8-inch PVC riser piping which will extend a pproximately 4 feet above the ground surface (Figure 2). The upper limit of the gravel pack will extend to an elevation five feet above the highest level of observed fluid. The PVC riser pipe will be cemented in place at the surface. An 8-inch slip-type end cap will be affixed to the top of the riser piping.
- 3. The PSH recovery system will be covered with on-site soil to the current grade surface utilizing 12-inch lifts. Installation of a 4 inch thick, 36" X 36", concrete slab surrounding the recovery system 8-inch riser pipe will complete construction activity associated with system installation.
- 4. The well will be equipped with a 10' X 6" absorbent boom, placed in the well on a nylon recovery cord for retrieval. An ETGI field technician will visit the site on a bi-weekly basis to remove the boom, gauge the well, and record product thickness and water elevation. Following gauging a new absorbent boom will be placed in the well to insure continued product recovery. The used booms and related product collected will be transferred to 55-gallon drums and temporarily stored on-site. The drums will be appropriately labeled as to their contents and the dates of gauging events. Due to the fact that the extent and amount of PSH on-site is minimal, waste disposal will occur on an as-needed basis to be determined by the ETGI project manager.

In addition, the PVC riser pipe and slip-cap assemblage will accommodate periodic usage of a 2inch Grunfos pump to expedite PSH recovery activities, if required. The remaining excavation will be backfilled to grade with previously discussed on-site soil. Schematics and details of installation of the system and results of the pilot testing will be provided in the subsurface investigation report.

ETGI will provide project oversight and management during all system installation, backfilling, and disposal activities described above. Sampling and analysis of ground water will be conducted quarterly and an annual ground water monitoring report submitted as per NMOCD requirements.

DISTRIBUTION

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