City of Lexington
Odor Control Services

December 1, 2015

Invitation to Bid
 # 177-2015

By

NRPGroup, Inc.
9131 E. 37th St. North
Wichita, Kansas 67226

Telephone 316-303-0505
Fax 316-303-0515
www.nrpgroupinc.com

Lexington-Fayette Urban County Government

Lexington, Kentucky
Horse Capital of the World

Division of Central Purchasing | Date of Issue: November 16, 2015

INVITATION TO BID #177-2015
Odor and Corrosion Control Chemicals

Bid Opening Date: **December 1, 2015** **Bid Opening Time: 2:00 PM**
Address: 200 East Main Street, 3rd Floor, Room 338, Lexington, Kentucky 40507

Type of Bid: Price Contract

Pre Bid Meeting: N/A Pre Bid Time: N/A
Address: N/A

Sealed bids will be received in the office of the Division of Central Purchasing, 200 East Main Street, Lexington, Kentucky, until **2:00 PM**, prevailing local time on **12/01/2015**. Bids must be received by the above-mentioned date and time. Mailed bids should be sent to:

Division of Central Purchasing
200 East Main Street, Room 338
Lexington, KY 40507, (859) 258-3320

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not addressed and delivered as Indic ated above. **Bids that are not delivered to the Division of Central Purchasing by the stated time and date will be rejected.** All bids must be signed and have the company name and address, bid invitation number, and the name of the bid on the outside of the envelope.

Bids are to include all shipping costs to the point of delivery located at: VARIOUS LOCATIONS, Lexington, KY

Bid Security Required: ___Yes _X_No *Cashier Check, Certified Check, Bid Bond (Personal checks and company checks will not be acceptable).*

Performance Bond Required: ___Yes _X_No

Check One:	**Proposed Delivery:**
X Bid Specifications Met _____Exceptions to Bid Specifications. *Exceptions shall be itemized and attached to bid proposal submitted.*	10 days after acceptance of bid.
Procurement Card Usage—The Lexington-Fayette Urban County Government may be using Procurement Cards to purchase goods and services and also to make payments. Will you accept Procurement Cards? X Yes _____ No	

Submitted by: NRPGroup, Inc
Firm Name

9131 E 37th St. North
Address

Wichita, KS 67226
City, State & Zip

Bid must be signed: PRESIDENT
(original signature) ***Signature of Authorized Company Representative – Title***

Gary R Morgan
Representative's Name (Typed or printed)

316-303-0505
Area Code - Phone – Extension *Fax #*

gmorgan@nrpgroupinc.com
E-Mail Address

The Affidavit in this bid must be completed before your firm can be considered for award of this contract.

AFFIDAVIT

Comes the Affiant, _____, and after being first duly sworn under penalty of perjury as follows:

1. His/her name is _____ and he/she is the individual submitting the bid or is the authorized representative of _____, the entity submitting the bid (hereinafter referred to as "Bidder")
2. Bidder will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the bid is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.
3. Bidder will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.
4. Bidder has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.
5. Bidder has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of a contract to the Bidder will not violate any provision of the campaign finance laws of the Commonwealth.
6. Bidder has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as "Ethics Act."
7. Bidder acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Further, Affiant sayeth naught. _____

STATE OF _____

COUNTY OF _____

The foregoing instrument was subscribed, sworn to and acknowledged before me by _____ on this the _____ day of _____, 2015.

My Commission expires: _____

_____
NOTARY PUBLIC, STATE AT LARGE

Please refer to Section II. Bid Conditions, Item "U" prior to completing this form.

I. GREEN PROCUREMENT

A. ENERGY

The Lexington-Fayette Urban County Government is committed to protecting our environment and being fiscally responsible to our citizens.

The Lexington-Fayette Urban County Government mandates the use of Energy Star compliant products if they are available in the marketplace (go to **www.Energystar.gov**). If these products are available, but not submitted in your pricing, your bid will be rejected as non-compliant.

ENERGY STAR is a government program that offers businesses and consumers energy-efficient solutions, making it easy to save money while protecting the environment for future generations.

Key Benefits

These products use 25 to 50% less energy
Reduced energy costs without compromising quality or performance
Reduced air pollution because fewer fossil fuels are burned
Significant return on investment
Extended product life and decreased maintenance

B. GREEN SEAL CERTIFIED PRODUCTS

The Lexington-Fayette Urban County Government is also committed to using other environmentally friendly products that do not negatively impact our environment. Green Seal is a non-profit organization devoted to environmental standard setting, product certification, and public education.

Go to **www.Greenseal.org** to find available certified products. These products will have a reduced impact on the environment and on human health. The products to be used must be pre-approved by the LFUCG prior to commencement of any work in any LFUCG facility. If a Green Seal product is not available, the LFUCG must provide a signed waiver to use an alternate product. Please provide information on the Green Seal products being used with your bid response.

C. GREEN COMMUNITY

The Lexington-Fayette Urban County Government (LFUCG) serves as a principal, along with the University of Kentucky and Fayette County Public Schools, in the Bluegrass Partnership for a Green Community. The Purchasing Team component of the Partnership collaborates on economy of scale purchasing that promotes and enhances environmental initiatives. Specifically, when applicable, each principal is interested in obtaining best value products and/or services which promote environment initiatives via solicitations and awards from the other principals.

If your company is the successful bidder on this Invitation For Bid, do you agree to extend the same product/service pricing to the other principals of the Bluegrass Partnership for a Green Community (i.e. University of Kentucky and Fayette County Schools) if requested?

Yes X **No**_____

II. Bid Conditions

A. No bid may be withdrawn for a period of sixty (60) days after the date and time set for opening.

B. No bid may be altered after the date and time set for opening. In the case of obvious errors, the Division of Central Purchasing may permit the withdrawal of a bid. The decision as to whether a bid may be withdrawn shall be that of the Division of Central Purchasing.

C. Acceptance of this proposal shall be enactment of an Ordinance by the Urban County Council.

D. The bidder agrees that the Urban County Government reserves the right to reject any and all bids for either fiscal or technical reasons, and to award each part of the bid separately or all parts to one vendor.

E. Minor exceptions may not eliminate the bidder. The decision as to whether any exception is minor shall be entirely that of the head of the requisitioning Department or Division and the Director of the Division of Central Purchasing. The Urban County Government may waive technicalities and informalities where such waiver would best serve the interests of the Urban County Government.

F. Manufacturer's catalogue numbers, trade names, etc., where shown herein are for descriptive purposes and are to guide the bidder in interpreting the standard of quality, design, and performance desired, and shall not be construed to exclude proposals based on furnishing other types of materials and/or services. However, any substitution or departure proposed by the bidder must be clearly noted and described; otherwise, it will be assumed that the bidder intends to supply items specifically mentioned in this Invitation for Bids.

G. The Urban County Government may require demonstrations of the materials proposed herein prior to acceptance of this proposal.

H. Bids must be submitted on this form and must be signed by the bidder or his authorized representative. Unsigned bids will not be considered.

I. Bids must be submitted prior to the date and time indicated for opening. Bids submitted after this time will not be considered.

J. All bids mailed must be marked on the face of the envelope:

"Bid on #177-2015 Odor and Corrosion Control Chemicals"

and addressed to: Division of Central Purchasing
200 East Main Street, Room 338
Lexington, Kentucky 40507

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not addressed and delivered as indicated above. Bids that are not delivered to the Division of Central Purchasing by the stated time and date will be rejected.

K. Bidder is requested to show both unit prices and lot prices. In the event of error, the unit price shall prevail.

L. A certified check or Bid Bond in the amount of **XX** percent of the bid price must be attached hereto. This check must be made payable to the Lexington-Fayette Urban County Government, and will be returned when the material and/or services specified herein have been delivered in accordance with specifications. In the event of failure to perform within the time period set forth in this bid, it is agreed the certified check may be cashed and the funds retained by the Lexington-Fayette Urban County Government as liquidated damages. Checks of unsuccessful bidders will be returned when the bid has been awarded.

M. The delivery dates specified by bidder may be a factor in the determination of the successful bidder.

N. Tabulations of bids received may be mailed to bidders. Bidders requesting tabulations must enclose a stamped, self-addressed envelope with the bid.

O. The Lexington-Fayette Urban County Government is exempt from Kentucky Sales Tax and Federal Excise Tax on materials purchased from this bid invitation. Materials purchased by the bidder for construction projects are not tax exempt and are the sole responsibility of the bidder.

P. All material furnished hereunder must be in full compliance with OSHA regulations.

Q. If more than one bid is offered by one party, or by any person or persons representing a party, all such bids shall be rejected.

R. Signature on the face of this bid by the Bidder or his authorized representative shall be construed as acceptance of and compliance with all terms and conditions contained herein.

S. The Entity (regardless of whether construction contractor, non-construction contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, creed, national origin, sex or age, and to promote equal employment through a positive, continuing program from itself and each of its sub-contracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.

T. The Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any county, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin;

(2) The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age or national origin;

(3) The contractor will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the non-discrimination clauses required by this section; and

(4) The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising the labor union or workers' representative of the contractor's commitments under the nondiscrimination clauses.

The Act further provides:

KRS 45.610. Hiring minorities - Information required

(1) For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetable.

(2) Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.

KRS 45.620. Action against contractor - Hiring of minority contractor or subcontractor

(1) If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.

(2) If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 to 45.640.

(3) *The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.*

KRS 45.630 Termination of existing employee not required, when

Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that that employee was employed prior to the date of the contract.

KRS 45.640 Minimum skills

Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job.

It is recommended that all of the provisions above quoted to be included as special conditions in each contract. In the case of a contract exceeding $250,000, the contractor is required to furnish evidence that his work-force in Kentucky is representative of the available work-force in the area from which he draws employees, or to supply an Affirmative Action plan which will achieve such representation during the life of the contract.

U. Any party, firm or individual submitting a proposal pursuant to this invitation must be in compliance with the requirements of the Lexington-Fayette Urban County Government regarding taxes and fees before they can be considered for award of this invitation and must maintain a "current" status with regard to those taxes and fees throughout the term of the contract. The contractor must be in compliance with Chapter 13 from the Code of Ordinances of the Lexington-Fayette Urban County Government. The contractor must be in compliance with Ordinance 35-2000 pursuant to contractor registration with the Division of Building Inspection. If applicable, said business must have a Fayette County business license.

Pursuant to KRS 45A.343 and KRS 45A.345, the contractor shall

(1) *Reveal any final determination of a violation by the contractor within the previous five year period pursuant to KRS Chapters 136 (corporation and utility taxes), 139 (sales and use taxes), 141 (income taxes), 337 (wages and hours), 338 (occupational safety and health of employees), 341 (unemployment and compensation) and 342 (labor and human rights) that apply to the contractor; and*

(2) *Be in continuous compliance with the above-mentioned KRS provisions that apply to the contractor for the duration of the contract.*

A contractor's failure to reveal the above or to comply with such provisions for the duration of the contract shall be grounds for cancellation of the contract and disqualification of the contractor from eligibility for future contracts for a period of two (2) years.

V. Vendors who respond to this invitation have the right to file a notice of contention associated with the bid process or to file a notice of appeal of the recommendation made by the Director of Central Purchasing resulting from this invitation.

Notice of contention with the bid process must be filed within 3 business days of the bid/proposal opening by (1) sending a written notice, including sufficient documentation to support contention, to the Director of the Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his/her contention with the bid process. After consulting with the Commissioner of Finance the Chief Administrative Officer and reviewing the documentation and/or hearing the vendor, the Director of Central Purchasing shall promptly respond in writing findings as to the compliance with bid processes. If, based on this review, a bid process irregularity is deemed to have occurred the Director of Central Purchasing will consult with the Commissioner of Finance, the Chief Administrative Officer and the Department of Law as to the appropriate remedy.

Notice of appeal of a bid recommendation must be filed within 3 business days of the bid recommendation by (1) sending a written notice, including sufficient documentation to support appeal, to the Director, Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his appeal. After reviewing the documentation and/or hearing the vendor and consulting with the Commissioner of Finance and the Chief Administrative Officer, the Director of Central Purchasing shall in writing, affirm or withdraw the recommendation.

III. Procurement Contract Bid Conditions

A. The terms of this agreement shall be for **3** year(s) from the date of acceptance of this contract by the Lexington-Fayette Urban County Government. This agreement may be automatically extended for an additional **3-1** year(s) renewal. This contract may be canceled by either party thirty (30) days after delivery by canceling party of written notice of intent to cancel to the other contracting party.

B. Price Changes **(Space Checked Applies)**

(xx) 1. Prices quoted in response to the Invitation shall be firm prices for the first 90 days of the Procurement Contract. After 90 days, prices may be subject to revision and such changes shall be based on general industry changes. Revision may be either increases or decreases and may be requested by either party. There will be no more than one (1) price adjustment per quarter. Requests for price changes shall be received in writing at least twenty (20) days prior to the effective date and are subject to written acceptance before becoming effective. Proof of the validity of a request for revision shall be responsibility of the requesting party. The Lexington-Fayette Urban County Government shall receive the benefit of any decline that the seller shall offer his other accounts.

( )2. No provision for price change is made herein. Prices are to be firm for the term of this contract.

() 3. Procurement Level Contract

C. If any contract item is not available from the vendor, the Lexington-Fayette Urban County Government, at its option, may permit the item to be back-ordered or may procure the item on the open market.

D. All invoices must bear reference to the Lexington-Fayette Urban County Government Purchasing document numbers which are being billed.

E. This contract may be canceled by the Lexington-Fayette Urban County Government if it is determined that the Bidder has failed to perform under the terms of this agreement, such cancellation to be effective upon receipt of written notice of cancellation by the Bidder.

F. No substitutions for articles specified herein may be made without prior approval of the Division of Central Purchasing.

EQUAL OPPORTUNITY AGREEMENT

The Law

- Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.

- Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and sub-contractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.

- Section 503 of the Rehabilitation Act of 1973 states:

  The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.

- Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal contracts.

- Section 206(A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:

  The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractors may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped and aged persons.

Signature

NRPGroup, Inc

Name of Business

GENERAL PROVISIONS OF BID CONTRACT

By signing the below, bidder acknowledges that it understands and agrees with the following provisions related to its bid response and the provision of any goods or services to LFUCG upon selection by LFUCG pursuant to the bid request:

1. Bidder shall comply with all Federal, State & Local regulations concerning this type of service or good.

2. Failure to submit ALL forms and information required by LFUCG may be grounds for disqualification.

3. Addenda: All addenda, if any, must be considered by the bidder in making its response, and such addenda shall be made a part of the requirements of the bid contract. Before submitting a bid response, it is incumbent upon bidder to be informed as to whether any addenda have been issued, and the failure of the bidder to cover any such addenda may result in disqualification of that response.

4. Bid Reservations: LFUCG reserves the right to reject any or all bid responses, to award in whole or part, and to waive minor immaterial defects in proposals. LFUCG may consider any alternative proposal that meets its basic needs.

5. Liability: LFUCG is not responsible for any cost incurred by bidder in the preparation of its response.

6. Changes/Alterations: Bidder may change or withdraw a proposal at any time prior to the opening; however, no oral modifications will be allowed. Only letters, or other formal written requests for modifications or corrections of a previously submitted proposal which is addressed in the same manner as the bid response, and received by LFUCG prior to the scheduled closing time for receipt of bids, will be accepted. The bid response when opened, will then be corrected in accordance with such written request(s), provided that the written request is contained in a sealed envelope which is plainly marked "modifications of bid response".

7. Clarification of Submittal: LFUCG reserves the right to obtain clarification of any point in a bid or to obtain additional information from any bidder.

8. Bribery Clause: By his/her signature on its response, bidder certifies that no employee of his/hers, any affiliate or subcontractor, has bribed or attempted to bribe an officer or employee of the LFUCG.

9. Additional Information: While not necessary, the bidder may include any product brochures, software documentation, sample reports, or other documentation that may assist LFUCG in better understanding and evaluating the bid response. Additional documentation shall not serve as a substitute for other documentation which is required by the LFUCG to be submitted with the bid response.

10. Ambiguity, Conflict or other Errors: If a bidder discovers any ambiguity, conflict, discrepancy, omission or other error in the bid request of LFUCG, it shall immediately notify LFUCG of such error in writing and request modification or clarification of the document if allowable by the LFUCG.

11. Agreement to Bid Terms: In submitting its bid response, the bidder agrees that it has carefully examined the specifications and all provisions relating to LFUCG's bid request, including but not limited to the bid contract. By submission of its bid response, bidder states that it understands the meaning, intent and requirements of LFUCG's bid request and agrees to the same. The successful bidder shall warrant that it is familiar with and understands all provisions herein and shall warrant that it can comply with them. No additional compensation to bidder shall be authorized for services, expenses, or goods reasonably covered under these provisions that the bidder omits from its bid response.

12. Cancellation: LFUCG may unilaterally terminate the bid contract with the selected bidder(s) at any time, with or without cause, by providing at least thirty (30) days advance written notice unless a different advance written notice period is negotiated prior to contract approval. Payment for services or goods received prior to termination shall be made by the LFUCG provided these goods or services were provided in a manner acceptable to the

LFUCG. Payment for those goods and services shall not be unreasonably withheld.

13. Assignment of Contract: The selected bidder(s) shall not assign or subcontract any portion of the bid contract with LFUCG without the express written consent of LFUCG. Any purported assignment or subcontract in violation hereof shall be void. It is expressly acknowledged that LFUCG shall never be required or obligated to consent to any request for assignment or subcontract; and further that such refusal to consent can be for any or no reason, fully within the sole discretion of LFUCG.

14. No Waiver: No failure or delay by LFUCG in exercising any right, remedy, power or privilege hereunder, nor any single or partial exercise thereof, nor the exercise of any other right, remedy, power or privilege shall operate as a waiver hereof or thereof. No failure or delay by LFUCG in exercising any right, remedy, power or privilege under or in respect of this bid proposal or bid contract shall affect the rights, remedies, powers or privileges of LFUCG hereunder or shall operate as a waiver thereof.

15. Authority to do Business: Each bidder must be authorized to do business under the laws of the Commonwealth of Kentucky and must be in good standing and have full legal capacity to provide the goods or services specified in the bid proposal. Each bidder must have all necessary right and lawful authority to submit the bid response and enter into the bid contract for the full term hereof including any necessary corporate or other action authorizing the bidder to submit the bid response and enter into this bid contract. If requested, the bidder will provide LFUCG with a copy of a corporate resolution authorizing this action and/or a letter from an attorney confirming that the proposer is authorized to do business in the Commonwealth of Kentucky. All bid responses must be signed by a duly authorized officer, agent or employee of the bidder.

16. Governing Law: This bid request and bid contract shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky. In the event of any proceedings regarding this matter, the bidder agrees that the venue shall be the Fayette County Circuit Court or the U.S. District Court for the Eastern District of Kentucky, Lexington Division and that the bidder expressly consents to personal jurisdiction and venue in such Court for the limited and sole purpose of proceedings relating to these matters or any rights or obligations arising thereunder.

17. Ability to Meet Obligations: Bidder affirmatively states that there are no actions, suits or proceedings of any kind pending against bidder or, to the knowledge of the bidder, threatened against the bidder before or by any court, governmental body or agency or other tribunal or authority which would, if adversely determined, have a materially adverse effect on the authority or ability of bidder to perform its obligations under this bid response or bid contract, or which question the legality, validity or enforceability hereof or thereof.

18. Bidder understands and agrees that its employees, agents, or subcontractors are not employees of LFUCG for any purpose whatsoever. Bidder is an independent contractor at all times related to the bid response or bid contract.

19. If any term or provision of this bid contract shall be found to be illegal or unenforceable, the remainder of the contract shall remain in full force and such term or provision shall be deemed stricken.

Signature

11/29/15
Date

WORKFORCE ANALYSIS FORM

Name of Organization: NRPGroup, Inc.

Date: 11 / 20 / 2015

Categories	Total	White		Latino		Black		Other		Total	
		M	F	M	F	M	F	M	F	M	F
Administrators		2	1								
Professionals		2									
Superintendents											
Supervisors											
Foremen											
Technicians											
Protective Service											
Para-Professionals											
Office/Clerical											
Skilled Craft											
Service/Maintenance		4									
Total:		8	1							8	1

Prepared by: Sara Erickson, Accounting Manager

Name & Title

LFUCG STATEMENT OF GOOD FAITH EFFORTS
Bid/RFP/Quote # 177-2015

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE business enterprises on the project and can supply the appropriate documentation.

_____ Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms to participate.

_____ Included documentation of advertising in the above publications with the bidders good faith efforts package

_____ Attended LFUCG Central Purchasing Economic Inclusion Outreach event

_____ Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs of subcontracting opportunities

_____ Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms

_____ Requested a list of MWDBE subcontractors or suppliers from LFUCG Economic Engine and showed evidence of contacting the companies on the list(s).

_____ Contacted organizations that work with MWDBE companies for assistance in finding certified MWBDE firms to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

_____ Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less that seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

_____ Followed up initial solicitations by contacting MWDBEs to determine their level of interest.

_____ Provided the interested MWBDE firm with adequate and timely information about the plans, specifications, and requirements of the contract.

_____ Selected portions of the work to be performed by MWDBE firms in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE participation, even when the prime contractor may otherwise perform these work items with its own workforce

_____ Negotiated in good faith with interested MWDBE firms not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

_____ Included documentation of quotations received from interested MWDBE firms which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

_____ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE goals.

_____ Made an effort to offer assistance to or refer interested MWDBE firms to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

_____ Made efforts to expand the search for MWDBE firms beyond the usual geographic boundaries.

_____ Other - any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE participation.

Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement. Documentation of Good Faith Efforts are to be submitted with the Bid, if the participation Goal is not met.

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

NRP Group Inc. — **Company**

Gary Morgan — **Company Representative**

11/30/15 — **Date**

President — **Title**

Section 1

INTRODUCTORY

Introductory:

NRPGroup, Inc., a Wichita, Kansas based company is an environmental company established in 1998, 17 years ago, that focuses on the water and wastewater industries. NRPGroup, Inc. corporate offices and their manufacturing facility are located at 9131 E 37th Street North, Wichita, Kansas. NRP's products are for corrosion and odor control, fats, oil and grease control, ammonia, anti-foaming and WWTP operations improvement. One of the key elements in NRP Products is the anti-corrosion additive that is blended into all products where the application is for the sewer lines or plants.

For the past 30 to 40 years most municipalities paid little attention to corrosion of their infrastructure caused by hydrogen sulfide gases being released in the collection system. Now throughout the United States municipalities are going to spend billions of dollars replacing corroded beyond repair infrastructure.

Municipalities have been more concerned in budgeting for odor control using caustic chemicals in the trunk lines of their collection system thinking that no odor, no corrosion, keeping their yearly cost to a minimum. Until the past five years replacing the infrastructure was not a serious threat and the baby boomer era would not be faced with the enormous cost of replacement. So the attitude was, don't put corrosion control in the budget just odor control, and let capital improvements handle the cost replacement in the years to come.

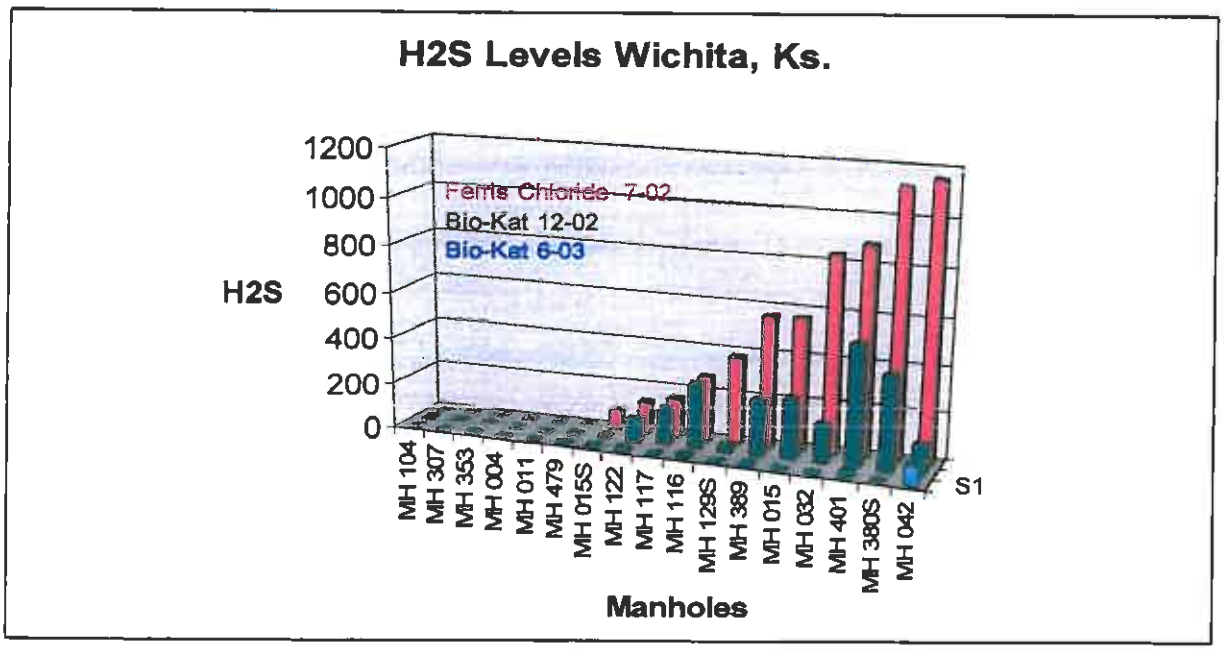
Caustic and corrosive chemicals such as ferrous chloride (iron salt) Bioxide (nitrate) and Hydrogen Peroxide (disinfectant) only mask the hydrogen sulfide from generating atmospheric sulfide gases by keeping the sulfide donors from connecting to the hydrogen in the water column and preventing it from becoming hydrogen sulfide. Because of the quantity needed of chemical product for treatment , chemicals can only be placed at the beginning of the trunk lines and large space is required for the containment and tanks. These area's also are possible hazards should any spillage occur. Chemicals have no effect on removing the slime layers that are on the walls of the sewer line. The importance of removing the slime layer is to prevent corrosion. This has proven to be the major issue for corrosion in sewer lines and needs to be addressed in all lateral and trunk lines. All lines are affected by H_2S but only a few are being treated using chemical trunk line treatment. Using the chemical trunk line treatment system the lines flowing into the trunk lines are not being treated, and that is where most of the sulfides are generated.

NRP products are a bio-catalyst nutrient and are all natural ,**All GREEN**, containing no toxic and corrosive chemicals. NRP's products are of a small footprint, and dispensed in lines where the

sulfides start prior to the trunk lines. Treating these lines as well as treating the trunk line, gives the entire system corrosion and odor protection.

On this page is a graph showing levels of atmospheric hydrogen sulfide when using ferrous chloride trunk line system vs NRP products. This graph was originated in 2002 with the combined data from Wichita Sewer and Water and NRPGroup, Inc.

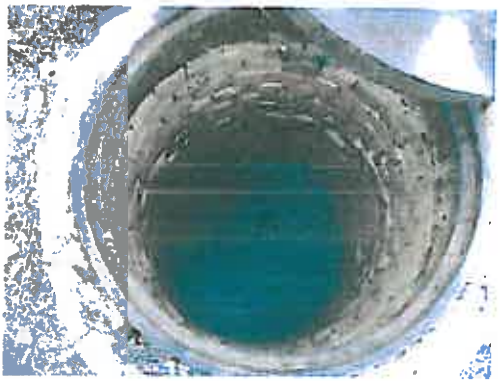
This graph is the west canal line which runs from 23rdStreet North down to Plant #1. At the top of the Trunk line the City was treating ferrous chloride from a bulk tank. And NRP was dispensing it's product from 10 manhole locations down the line. The Graph indicates that using ferrous chloride (**Red**) was working effectively for the first one third of the line and then made a large climb in levels of atmospheric hydrogen sulfide from that point until reaching the Plant. NRP products (**Dark Blue**) on the other hand, being able to place their product in numerous locations along the line made a significant improvement in the atmospheric hydrogen sulfide levels. Then after NRP had treated for 6 months (**Light Blue**) the sewer line hydrogen sulfide level decreased by 95% from the levels using ferrous chloride.



This graph is a visual to show the importance of treating throughout the system rather than treating only at the top of the trunk lines.

The following pictures were taken at a manhole two blocks south of Douglas on the West Canal Route showing the sulfur buildup while using ferrous chloride and the second picture shows almost no sign of sulfur while being treated by NRP products. This again is a significant illustration of why it is equally or more important to be treating for corrosion as well as odor throughout the City's system.

Manhole while using Ferrous Chloride **(These are the same Manhole)** **Manhole using NRP Products**



Municipalities are using the NRP products for prevention of corrosion in new line as well as treating lines that are already in severe condition to increase the life of those lines, giving the municipality's additional time before they have to make the capital improvements.

A six year study by Tulane University and Florida Atlantic University was performed for the City of New Orleans, LA., studying the benefits of using NRP products to extend the life of the sewer lines. This study was for one portion of the collection system being treated by NRP with a total of 11.8 MGD. When both pre- and post- NRP Products treatment data sulfide levels were compared using the Pomeroy corrosion equations, **the life span of the pipe system was increased by a factor of ten and the savings due to hydrogen sulfide reduction were estimated to be at least $1.39 Million annually.**

(New Orleans condensed abstract)

New Orleans' Experience in Usage of Bio-stimulant in their Wastewater Collection System to reduce BOD_5 and Control Odor/Corrosion

By

Dr.Robert S. Reimers, Tulane University, Jill Fox, James Harvey, Normans K. Murray and Fred Bloetscher Sewerage and Water Board of New Orleans, New Orleans, Louisiana· Florida Atlantic University, Boca Raton, Florida

Abstract

The City of New Orleans has been using NRP Products, a patented cellular bio-activation liquid additive, to control hydrogen sulfide odor in their West Bank Water Treatment Plant since July 7, 2006. Prior to the introduction of NRP products, the City was using hydrogen peroxide to control the hydrogen sulfide odor. Although odor is the dominant public concern, sulfide reducing bacteria and hydrogen sulfide also play a leading role in the corrosion of both cement and iron pipes and force mains. The NRP Product reduces hydrogen sulfide production by increasing the metabolic activity of aerobic microorganisms in the wastewater keeping the ORP greater than 100 mv while above the -250 mv to initiate anaerobic activity diminishing corrosion in pipes and force mains.

The New Orleans West Bank wastewater treatment plant receives an average flow of 11.8 MGD, and receives 11 gallons NRP liquid product per day on a time release drip system. Hydrogen sulfide concentrations have been monitored since May 18, 2006 (two months prior to the NRP Product introduction) at the West Bank Water Treatment Plant. The data shows a significant decrease in hydrogen sulfide levels after the two month NRP Product acclimatization period (June 28, 2006-August 31, 2006) as well as a continual decline in hydrogen sulfide levels with long term NRP Product use. Additionally, lower influent BOD by 25 percent, reduced TSS, degradation of collection system fats, oil and grease and decreased sludge production has been observed with the use of the NRP Product in the Hollywood Florida and New Orleans West Bank wastewater treatment plants and appear to contribute to the improved plant operations. A significant benefit has been realized in the effluent quality of the trickling filter plant since the NRP Product does not adversely affect the biofilm layer (NOSWB).

It is evident there is a cost saving by using the NRP product, and in order to further evaluate the total effectiveness of the use of NRP Products, both New Orleans West Bank and Hollywood, FL should provide a cost-benefit analysis of NRP Product use that includes savings in daily maintenance, emergency maintenance and cost savings due to lower equipment failure and replacement. **When both pre- and post- NRP Products treatment data sulfide levels are compared using the Pomeroy corrosion equations, the life span of the pipe system is increased by a factor of ten and the savings due to hydrogen sulfide reduction were estimated to be at least $1.39 Million annually.** (See Attachment F-1 for full abstract by third party)

During 2004 NRPGroup and The City of Wichita, using WWTP data, performed a study on cost savings for the City in sludge hauling using NRP products vs Ferrous Chloride in the collection system and Plant #2. The improvements over a 3 month period was a 11.75% reduction in sludge, which represented 34.81 ton sludge reduction and a savings in hauling of $6,637.68.

Summary Data-Wichita WWTP -DEC 03,JAN 04,FEB 04

Bio-Kat vs Previous Years

MONTH	Treated	Treated	Treated	Treated	Filtrate	Filtrate	Filtrate	Disch	Discharge	Discharge	Biosolids Volume
DEC 02 - 03	(gal/day)	(%)	(NDP)	(NDT)	(gal/day)	(%)	(NDP)	(%)	(NDP)	(NDT)	(CU.YDS.)
Average Dif 03 from 02	-38628.5		-11744.8	-5.87478	-30837.4		-215.955		-11528.8	-5.764413	-28.666401
% dif 03 vs 02	-20.118475		-27.9207	-27.9352	-19.4668		-17.002		-28.2607	-28.26067	-24.4802741
% dif 03 vs 02 adj to gal/d			-6.49545	-6.50763	0.542513		2.594474		-6.77847	-6.778466	-3.63124767
JAN 03 - 04											
Average Dif 03 from 02	-485112		-325829	-162.914	-342053		-24470.4		-301358	-150.6792	-708.214946
% dif 03 vs 02	-19.296103		-43.3499	-43.3499	-17.0848		-79.7987		-41.9504	-41.95043	-35.0268681
% dif 03 vs 02 adj to gal/d			-20.1631	-20.1631	1.863779		-60.7163		-18.99	-18.99	-13.1863189
FEB 03 - 04											
Average Dif 04 from 03	1185741		351969.3	175.9847	974068.9		9341.891		342627.4	171.3137	948.8715421
% dif 04 vs 03	-1656%		-2729%	-2729%	-1531%		-1765%		-2764%	-2764%	-2510%
% dif 04 vs 03 adj to gal/d			-9.20803	-9.20803	1.071888		-0.93101		-9.50721	-9.507212	-7.32825638

Based on per million gallons flow	pounds	tons
Reduction In Hauling for Dec 02 vs 03	-69044	-34.52
Reduction In Hauling for Jan 03 vs 04	-239278	-119.64
Reduction In Hauling for Feb 03 vs 04	-69618	-34.81
De-watering/Hauling per ton ($36.12/Ton)		
cost savings are from City of Wichita Doc. FP300049		

	Discharged (NDT)
Dec 02-03	-6.78
Jan 03-04	-18.99
Feb 03-04	-9.51

Sludge Reduction Using Bio-Kat vs Ferrous Chloride

(all data on this page was provided by the City of Wichita)

NRPGroup, Inc. looks forward to assisting the City of Lexington on their corrosion and odor control program and enclosing our documentation for this Invitation to Bid # 177-2015

Section 2

SCOPE OF WORK

1. NRP Products
2. NRP Eqiupment

DESCRIPTION OF SERVICE

1. NRP's normal approach prior to installation
2. Ability to Complete Project
3. Completed Projects
4. Evidence of past performance
5. Cost of Service

Scope of Work

NRPGroup, Inc. has been providing products, equipment and services for the Wastewater industry since 1998. We currently have hubs in Delaware, New York, North Carolina, Florida, Louisiana, Texas and Kansas servicing cities throughout these areas.

NRPGroup has made a significant investment in the development of our technology from the actual additives to hardware for the dispensing of our products to the Sensilog, an instrument for the continued atmospheric measurements of H_2S.

NRP Products to be used:

NRPGroup manufactures products with proprietary (patent pending) wastewater additives for odor control and corrosion control. These products are as follows; odor control for H_2S (NRP10-1000), Ammonia (NRP10-1050) and Fats Oils and Grease (NRP10-1040) for the sewer collections and wastewater treatment plant. NRPGroup's Corrosion additive (NRP10-1060) has the capability to be blended with the odor control products. It is the only known corrosion additive available for Hydrogen Sulfide products in the USA that will put a corrosive protectant on the sewer lines, wet wells, pump stations and electrical/mechanical pumps in the system and prevent slime buildup at the same time.

NRPGroup's H_2S product NRP10-1000 is an **ALL GREEN** product that breaks down the sulfide chain and prevents the release of atmospheric hydrogen sulfide gas. When NRP10-1060 is blended with NRP10-1000 the lines that are being treated will have a protectant that will help prevent future sulfide collection on the sewer lines, manholes and pump stations

NRPGroup Equipment to be used:

NRPGroup's product uses a very small footprint and is delivered by equipment designed and manufactured by NPRGroup. The two dispensing units, the NRP24DE units operate on DC power and NRP25DE are units operate on AC power. The NRP24DE units are programmable for the specific flow protocols required. These small units attach to a 3.5 gallon container are designed for usage in manhole installations. The NRP25DE attach to drums or totes for lift station/pump station applications.

Description of Service

NRPGroup will install units throughout the collection line. The number of installation units will vary during the course of the contract. The initial amount of unites per million gallon a day flow (MGD) will be approximately 3 units.

The equipment to be used will be NRPGroup manufactured products. The NRP24DE is battery powered and totally self-contained, this water-tight unit is designed to fit in manholes and lift stations where space is limited. This unit, combined with our exclusive 3.5 gallon container and bracket assembly has become an industry first. The NRP25DE is a dispensing unit that operates on AC power. The unit is a peristaltic pump and is a programmable device for the specific flow protocols as required.

The product used for the control of H_2S and corrosion control will be a blend of NRP10-1000 and NRP10-1060. The amount of product required will be an average of 1PPM of product per 1M flow. The efficiency of placing units throughout the lines associated with in the main trunk line helps eliminate the hydrogen sulfide prior to entering the main line. **Using NRP Products will seriously reduce the replacement of manhole covers, manholes, sewer lines and pumps. NRP Product will remove the slime layer of FOG and sulfide on the inner liner of the sewer line, whereas, the standard chemicals used to reduce H_2S and corrosion will have no effect.** The inter wall slime layer is a large contributor of high levels of sulfide (sulfur) and corrosive acids that exists in the lines, manholes, lift stations and pumping stations of the collection system .

NRPGroup, Inc. normal approach prior to installation is the following;

NRP Group's Project Manager and Field Technicians will ask for a meeting with The City Lexington to go over all locations of odor and corrosion problems within the collection system. NRP will locate all locations that need extra attention and will place a Sensilog (NRP's H_2S monitoring equipment) in each location in manholes or pumping stations to get a baseline reading of H_2S. This will provide baseline conditions to support the performance of reduction in H_2S within the areas.

Dispensing of product will be totally different than the older method and most common means of dispensing large bulk toxic chemicals at the top of a trunk line or force main. NRPGroup's unique product and equipment that has a very small foot print is capable of going into sewer line arteries that flow into the main trunk lines. Having this capability allows the technicians to go where the **H_2S and corrosion problem starts** rather than treating the trunk line where the H_2S and corrosion problem already exists.

NRPGroup will install dispensing units which locations can vary, depending on the results of the Sensilog H_2S monitoring reports. These locations will change from time to time due to changes in the system throughout the contract. Each location will be serviced a minimum of once a week.

Ability to Complete Project

NRPGroup, Inc. is a full service company directed at servicing the wastewater industry. In the Mid South areas, NRPGroup, Inc. is currently contracted with Haysville, KS, New Orleans, LA, Charlotte NC., Westchester County. NY, New Castle County, DE. and Lumberton NC., all are turn key projects. All products, pumping equipment and H_2S monitoring equipment are products manufactured by NRPGroup. Every month or quarter, depending on the requirements of the municipality, NRPGroup

sends a comprehensive report showing products that were used, quantity used, locations where the product is dispensed, comparison graphs and backup raw data showing original baseline, past month, and current H_2S averages and number of spikes in graduated values. NRPGroup also submits a report showing the previous months servicing schedule that the technicians preformed.

Completed Projects

Projects: List of Three of NRPGroups Projects of equal size or greater than this Proposal.
(upon request NRP will submit additional if needed)

New Castle County
William J. Conner Building
1874 Old Churchman Rd.
New Castle, DE 19720
Contact: Regis Yurcich, Director of Special Services for Water and Wastewater
Project: Odor and Corrosion Control for complete sewer collection system
Size: Total wastewater flow of 53MGD

Westchester County
One Fernbrook St.
Yonkers, NY. 10705
Contact: Tom Lauro, Commissioner of Water and Wastewater
Project: Odor and Corrosion Control for Yonkers, NY, Mamaroneck, NY., New Rochelle, NY. and Tarrytown, NY.
Size: Total wastewater flow of 125MGD

City of New Orleans
2900 Peoples Avenue
New Orleans, LA 70122
Contact: Ricki Alexander
Project: Odor and Corrosion Control for sewer collection system and East/West Bank WWTP's
Size: Total wastewater flow of 62MGD

Evidence of past performance

NRPGroup has been on a steady growth since inception in 1998. A majority of the new business has come from municipalities/counties allowing trials using NRPGroup's products vs Chemical Products such as, Bioxide, Thiogard and Ferrous Chloride. Latest of the size of this proposal was New Castle County, DE.. They previously used Bioxide and needing an improvement in reducing corrosion through out the

collection system, not only in the force mains but in the lateral lines as well. New Castle changed to NRPGroup products to enhance the reduction of corrosion and odor through out the entire system. .

NRPGroup, has numerous third party case studies from engineering firms, universities, municipalities and WEFTEC research grants showing the performance of NRPGroup's products vs. other Toxic Chemical products. (upon request these will be provided for the City's review)

Cost of Service

This project is a Turn Key Project.
All equipment and monitors will remain the property of NRPGroup, Inc

Initial Installation Cost:	Included in turn key cost
Baseline H_2S Analyst Cost:	Included in turn key cost
Sensilog Monitoring Equipment	Included in turn key cost
All Equipment needed for Project	Included in turn key cost
All Servicing required for installation and servicing	Included in turn key cost

Section 3

Sole Source Document

9131 E 37th St No. • Wichita KS 67226 phone 316.303.0505 • fax 316.303.0515

NRPGroup, Inc.
Sole Source Document

NRPGroup,Inc. manufactures a proprietary (patent pending) wastewater additive to control Hydrogen Sulfide odors, Ammonia odors, and FOG problems in both the collection systems and WWTPs. The product(s) are all dispensed using the patent pending dispensing system designed to be self-contained, portable and user friendly. Equipment and Service is provided by NRP, Inc as part of the treatment program.

A. BIO-STIMULANT PRODUCT SPECIFICATIONS

Product specifications: The product is totally non-chemical stabilized 100% organic solution. The product is derived from a seaweed extract. The product stimulates/enhances the metabolic rate of micro-organisms located in the process. The product reduce fats, oils and greases as well as odor (H_2S concentrations). The bio-stimulant (NRP10-1000).
Additional specifications as listed below:

- An all natural product
- Environmentally safe
- Certified as a food (eatable) product by the State of Florida Dept of Agriculture
- Does not contain any microorganisms
- No hazardous restrictions on transportation
- No special requirements for handling or personnel

The product meet the Florida EPA Statutes under subsection 381.00 and subsection 10D-6.050 (4A) of the Florida Administrative Code.

MSDS:

- The Ingredients: consist of seaweed extract, surfactants and vitamins.

- Physical Properties: Appearance (Brown Liquid) Odor (Marine) 100% Soluble
- Specific Gravity: (H2O=1): 1.01
- Freezing Point: 29 Degrees
- PH: 6.5-7.5
- Hazardous Ingredients: None
- Emergency and First Aid Procedures: None
- Control Measures Required: None

Equipment specifications:

The dispensing unit is self-contained battery operated, non AC powered. The dispensing is microprocessor based with the ability to program dosing rates. The dispensing unit has an electronic dosing control valve. The dimensions for the dispensing unit does not exceed 4 ½" diameter x 8" High. The dispensing unit attaches to a three (3) gallon product container with a quick disconnect filling attachment. A cross bar hanging unit is available with safety line to hold the dispensing unit and container in manholes. The equipment design is for use in manholes, lift stations, wet wells and other confined areas. The unit is Non-Hazardous and requires no external electricity, nor above ground installations or storage tanks. The dispensing unit is model NRP24DE.

Service:

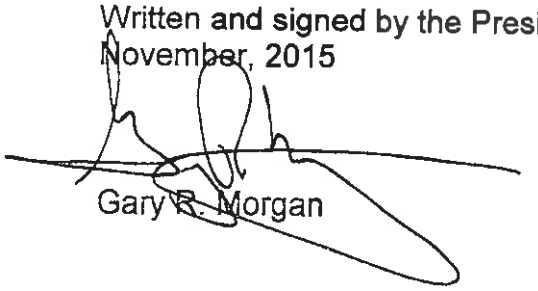
- Service is furnished and integral with and part of the product use
- Service by NRP trained personnel
- Cost of service is included in contract price
- No additional costs for installation, maintenance or service
- Equipment is the property of NRP
- No extra insurance or liability for equipment
- NRP maintains all required insurance for both the product and its employees

Reference Notice of Requirement for affirmative action to ensure equal employment opportunities and DBE contract participation

All products and equipment are solely manufactured solely sold by NRPGroup, Inc. and all services are solely NRPGroup, Inc. employees.

NRPGroup, Inc does not use subcontractors at this time, however should they, NRP would in Good Faith follow the requirements set out in this bid for minority participation.

Written and signed by the President of NRPGroup, Inc. on the 18th day of November, 2015



Gary R. Morgan

Section 4

MSDS SHEETS

1. NRP10-1000 MSDS
2. NRP10-1060 MSDS
3. NRP10-1040 MSDS

NRP10-1000 MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
NRPGroup, Inc	**316-303-0505**
ADDRESS (Number, Street, City, State Zip Code) **9131 E 37th Street North** **Wichita Kansas 67226**	

PRODUCT IDENTIFICATION	DOT hazard class	DATE OF MOST RECENT REVISION
NRP10-1000	None	**1-Sep-09**

SECTION II HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

HAZARDOUS COMPONENTS

All materials in this product are considered non-hazardous, in accordance with Federal regulations 29 CFR 1910.1200

SECTION III PHYSICAL / CHEMICAL CHARACTERISTICS

BOILING POINT	**212 F/ 100 C**	SPECIFIC GRAVITY	**1.01**
SOLUBILITY IN WATER	**100%**	VAPOR DENSITY	**1.1**
FREEZING POINT	**29 Degrees**	pH	**7.0 - 7.5**
APPEARANCE	**BROWN LIQUID**	ODOR	**MARINE ODOR**

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	EXTINGUISHING	SPECIAL FIRE FIGHTING PROCEDURES
NON-FLAMMABLE	**USE H_2O**	**NONE**

SECTION V REACTIVITY DATA

STABILITY	INCOMPATABILITY	DECOMPOITION OF BY PRODUCT	CONDITIONS TO AVOID
STABLE	**NONE KNOWN**	**NONE KNOWN**	**NONE**

SECTION VI HEALTH HAZARD DATA

EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT	SKIN CONTACT	INHALATION	INGESTION
FLUSH EYE WITH H_2O	**NONE**	**NONE**	**NONE**

SECTION VII PRECAUTIONS FOR USE AND SAFE HANDLING

WASTE DISPOSAL METHOD

NRP10-1000 **IS COMPLETELY COMPATIBLE WITH WASTE WATER SYSTEMS**

HANDLING AND STORAGE **NO PRECAUTION NECESSARY**

SECTION VIII CONTROL MEASURES

RESPRATORY PROTECTION	VENTILATION	PROTECTIVE WEAR OR GLOVES
NOT REQUIRED	NOT REQUIRED	**NOT REQUIRED**

NRP10-1060 MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
NRPGroup	**316-303-0505**
ADDRESS (Number, Street, City, State Zip Code)	
9131 E 37th Street North **Wichita Kansas 67226**	

PRODUCT IDENTIFICATION	DOT hazard class	DATE OF MOST RECENT REVISION
NRP10-1060	**None**	**Sept 15,2009**

SECTION II HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

HAZARDOUS COMPONENTS

All materials in this product are considered non-hazardous, in accordance with Federal regulations 29 CFR 1910.1200

SECTION III PHYSICAL / CHEMICAL CHARACTERISTICS

BOILING POINT	**212 F/ 100 C**	SPECIFIC GRAVITY	**1.04**
SOLUBILITY IN WATER	**100%**	VAPOR DENSITY	**n/a**
FREEZING POINT	**29 Degrees**	pH	**7.0 - 7.5**
APPEARANCE	**clear liquid**	ODOR	**lite marine odor**

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	EXTINGUISHING	SPECIAL FIRE FIGHTING PROCEDURES
NON-FLAMMABLE	**USE H_2O**	**NONE**

SECTION V REACTIVITY DATA

STABILITY	INCOMPATABILITY	DECOMPOITION OF BY PRODUCT	CONDITIONS TO AVOID
STABLE	None Known	**NONE KNOWN**	None Known

SECTION VI HEALTH HAZARD DATA

EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT	SKIN CONTACT	INHALATION	INGESTION
FLUSH EYE WITH H_2O	None	None	None

SECTION VII PRECAUTIONS FOR USE AND SAFE HANDLING

WASTE DISPOSAL METHOD

dilute with water or absorb and dispose in accordance with state and local regulations

HANDLING AND STORAGE use protective clothing , gloves, respirator and eye protection

SECTION VIII CONTROL MEASURES

RESPRATORY PROTECTION	VENTILATION	PROTECTIVE WEAR OR GLOVES
N/A	**N/A**	**N/A**

NRP10-1040 MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
NRPGroup, Inc	**316-303-0505**
ADDRESS (Number, Street, City, State Zip Code)	
9131 E 37th Street North **Wichita Kansas 67226**	

PRODUCT IDENTIFICATION	DOT hazard class	DATE OF MOST RECENT REVISION
NRP10-1040 - FOG	**None**	**1-Sep-08**

SECTION II HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

HAZARDOUS COMPONENTS

All materials in this product are considered non-hazardous, in accordance with Federal regulations 29 CFR 1910.1200

SECTION III PHYSICAL / CHEMICAL CHARACTERISTICS

BOILING POINT	**212 F/ 100 C**	SPECIFIC GRAVITY	**1.01**
SOLUBILITY IN WATER	**100%**	VAPOR DENSITY	**1.1**
FREEZING POINT	**29 Degrees**	pH	**7.0 - 7.5**
APPEARANCE	**BROWN LIQUID**	ODOR	**MARINE ODOR**

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	EXTINGUISHING	SPECIAL FIRE FIGHTING PROCEDURES
NON-FLAMMABLE	**USE H_2O**	**NONE**

SECTION V REACTIVITY DATA

STABILITY	INCOMPATABILITY	DECOMPOITION OF BY PRODUCT	CONDITIONS TO AVOID
STABLE	**NONE KNOWN**	**NONE KNOWN**	**NONE**

SECTION VI HEALTH HAZARD DATA

EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT	SKIN CONTACT	INHALATION	INGESTION
FLUSH EYE WITH H_2O	**NONE**	**NONE**	**NONE**

SECTION VII PRECAUTIONS FOR USE AND SAFE HANDLING

WASTE DISPOSAL METHOD

NRP10-1040 FOG IS COMPLETELY COMPATIBLE WITH WASTE WATER SYSTEMS

HANDLING AND STORAGE **NO PRECAUTION NECESSARY**

SECTION VIII CONTROL MEASURES

RESPRATORY PROTECTION	VENTILATION	PROTECTIVE WEAR OR GLOVES
NOT REQUIRED	**NOT REQUIRED**	**NOT REQUIRED**

Section 5

Exhibits

A. Greater Cincinnati Odor and Corrosion Study
B. Lexington, KY Graph showing Odor Control improvement using NRP Products
C. Dallas, TX Odor and FOG Study
D. NRP Products vs Chemicals
E. Dr. Mark Schneegurt, Biological Science of WSU letter acknowledging Dissolved H_2S in water has no correlation with Atmospheric H_2S gases released.
F. The Sulfur Pathway
G. NRP Products and how they work.
H. Wichita KS dissolved Sulfides report

Exhibit A

Metropolitan Sewer District of Greater Cincinnati
Hydrogen Sulfide and Corrosion Control
Study
January 7, 2015

By: NRPGroup, Inc.

Project: Treating Pleasant Run and Mercy West.

Introduction:

In accordance with concerns of H_2S odor problems at the Pleasant Run Central pump station on Mill Rd. and Mercy West line, a 1.04 mile long force main

Pleasant Run Line has three pump stations, the main pump station, Pleasant Run Central and two tributary pump stations, Pleasant Run West and Pleasant Run East that flow into Pleasant Run Central. Pleasant Run Central is located on Mill Rd. in a residential area and the downstream Acreview collection system. Mercy West line flows from the Mercy Hospital and discharges at 3588 Reemelin Rd.

NRP proposed to demonstrate the effectiveness of their product NRP10-1000, an odor and corrosion product that is safe all natural (GREEN) product and in solving the problems and associated hazards with the storage, maintenance and use of previous treatment chemicals.

Scope of Work.

The project consisted of treating for H_2S and corrosion in the Pleasant Run pump stations and downstream in the Acreview residential development and treating the Mercy West force main discharging at 3588 Reemelin Rd. NRP provided technical/supervisory personnel to oversee the implementation of their product in the two systems stated above.

The work began on October 13, 2014 with the installations of NRP's Sensilog H_2S monitoring equipment located at Turfwood Dr. MH# 307,15002 to monitor the free gas "H_2S" throughout the three month project to compare with the data given to NRP by the MSD. Readings were taken every 15 minutes 24 hours a day. NRP installed its equipment for Pleasant Run in these

locations, West Pump Station, Forrester & Elkwood, 2498 Cranbrook Dr., 12412 Wiucantor, East Pump Station, Omniplex Dr. @ Comfort Suite, Main Pump Station on Mills Rd., and Mills & Waycross. Total treatment for Pleasant Run was the following, 1.2PPM per day at the West pump station, 2.0 PPM per day at the East pump station and .6PPM at the Central pump station. Attached to this report is the NRP Daily Log for Pleasant Run showing daily product usage.

For Mercy West the Sensilog Data equipment was installed at Reemelin Rd. MH# 236,15004. Treatment locations for Mercy West was located at Manhole outside of Mercy Hospital pump station. Attached is the NRP Daily Log for Mercy West showing daily product usage.

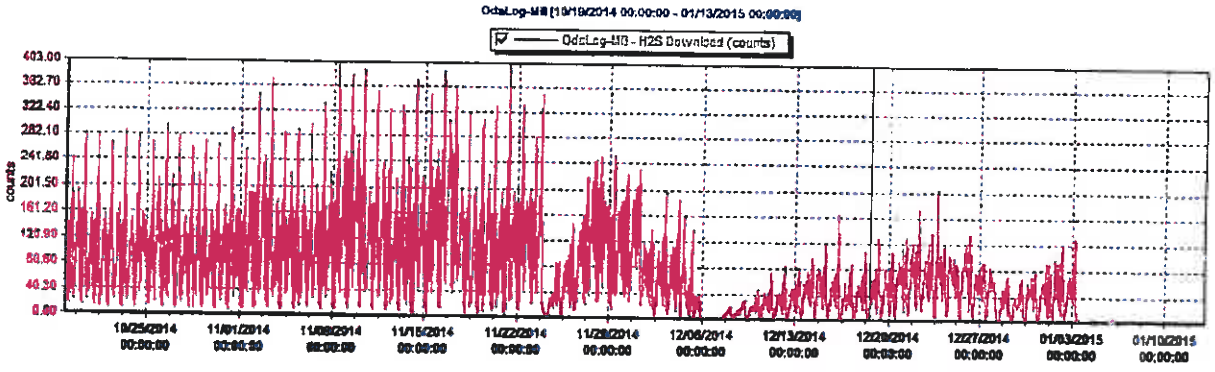
NRP personnel serviced the dosing locations every week, by replenishing product, checking batteries and retrieving H_2S data from the Sensilog monitor.

Results:

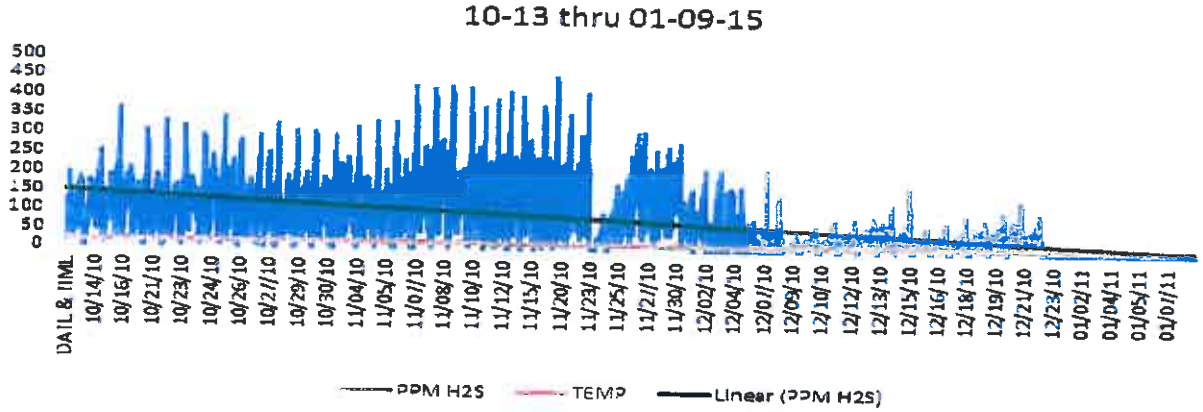
The H_2S pre-trial data for the two projects was supplied by MSD using an Odalog gas monitor, and the trial data was supplied by NRP using their Sensilog gas monitoring equipment. The graphs below show a large reduction from 10/13/14 to 1/9/15 in the Pleasant Run line. Averages H_2S at start of trial 111 PPM and in the middle of the trial the average was 67.4 PPM and the last two weeks average was .06 PPM

The following graphs showing the comparisons of the pre-trial data and the trial data.

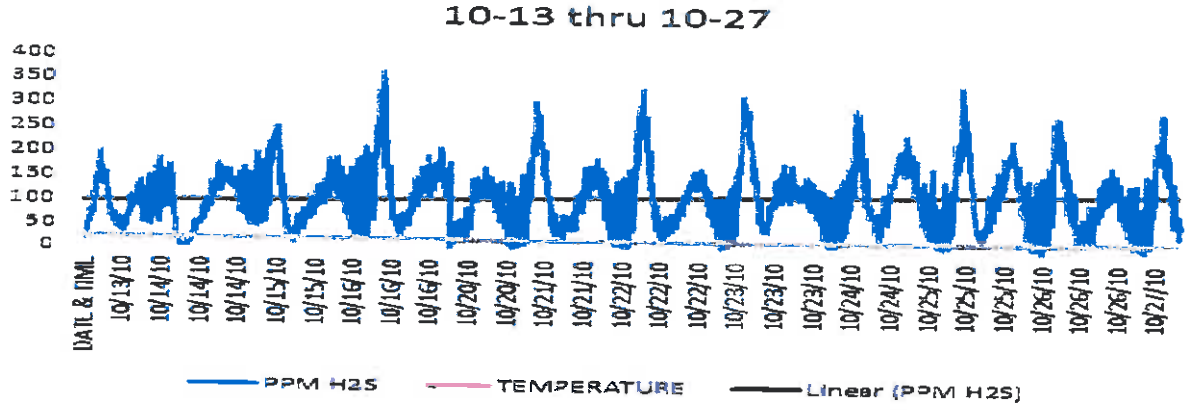
Odalog data provided by MSD for Pleasant Run



NRP Sensilog Data from 10/13/04 thru 1/5/05

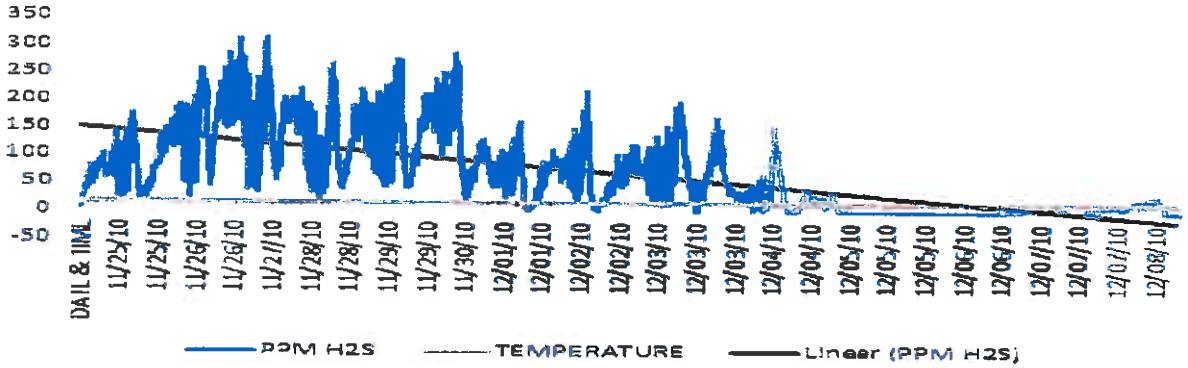


First Two Weeks of Trial



Middle Two Weeks of Trial

11-24 thru 12-08



Last Two Weeks of Trial

12-22 thru 01-09-15

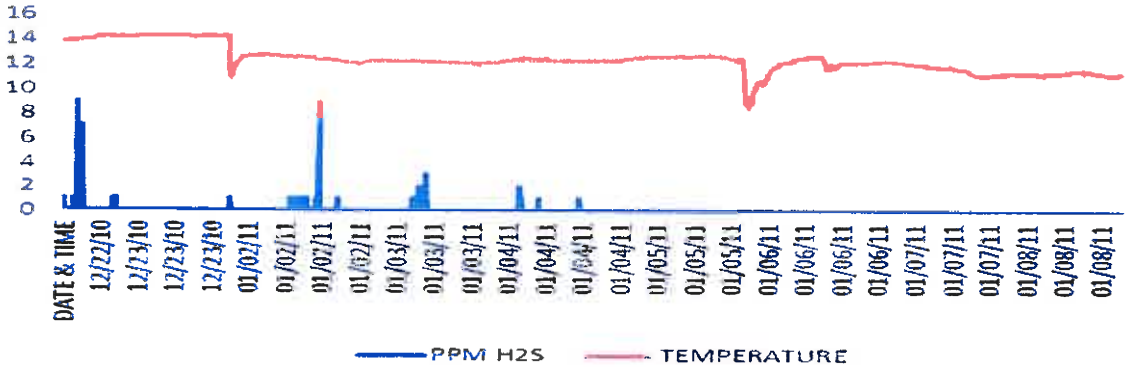
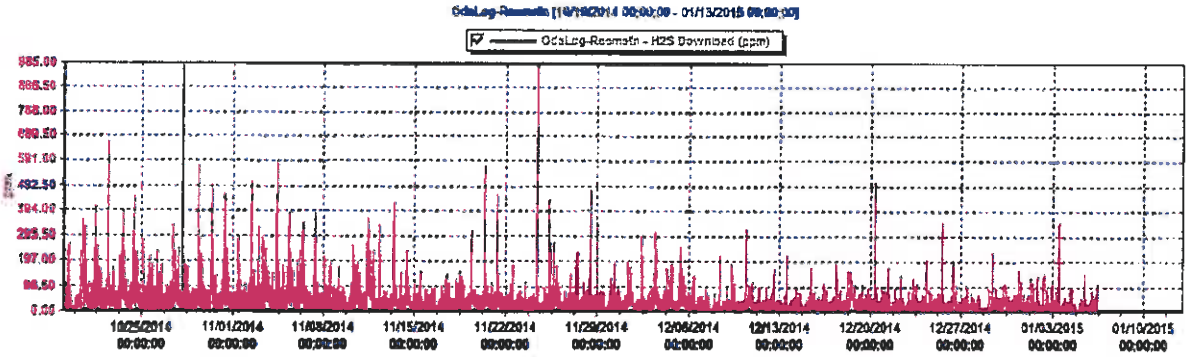


Chart Below supplied by MSD for the Mercy West Line.



On the following 2 pages are spike count showing reduction in spikes from October 13, 2014 thru January 9, 2014 for Pleasant Run and Mercy West. The chart show the first two weeks vs. middle two weeks of Pleasant Run and the first two weeks vs. last two weeks of Pleasant Run and Mercy West. The **red** show the percentage of change in reduction of spikes.

Conclusion:

The Pleasant Run line shows the most significant change in levels of Hydrogen sulfide. The average level per week went from 111 PPM to .06 PPM an overall reduction average of more than 95%. The Mercy West line flowing from the Mercy Hospital did not have as dramatic drop, which was expected. Mercy Hospital wastewater has a lower population of micro-organisms, most likely do to sterilization process at the hospital killing off the micro-organisms prior to entering the wastewater system. However when viewing the graph above there is a noticeable decrease in the number higher spikes in the Mercy West line. There could be a larger decrease in spikes if NRP would place more units along this line after the bug population has increase. In addition to the added population of micro-organisms it would be interesting to add additional bacteria as soon as the wastewater pH had adjusted down from the pump station. Overall, both lines that was in this trial have shown a good reduction in levels of hydrogen sulfide.

Exhibit B

Lexington, KY

Graphs showing H_2S Levels using NRP10-1000

3/31/2015 thru 4/2/2015 Baseline reading

Start Treatment of NRP10-1000 as of 4/3/2015

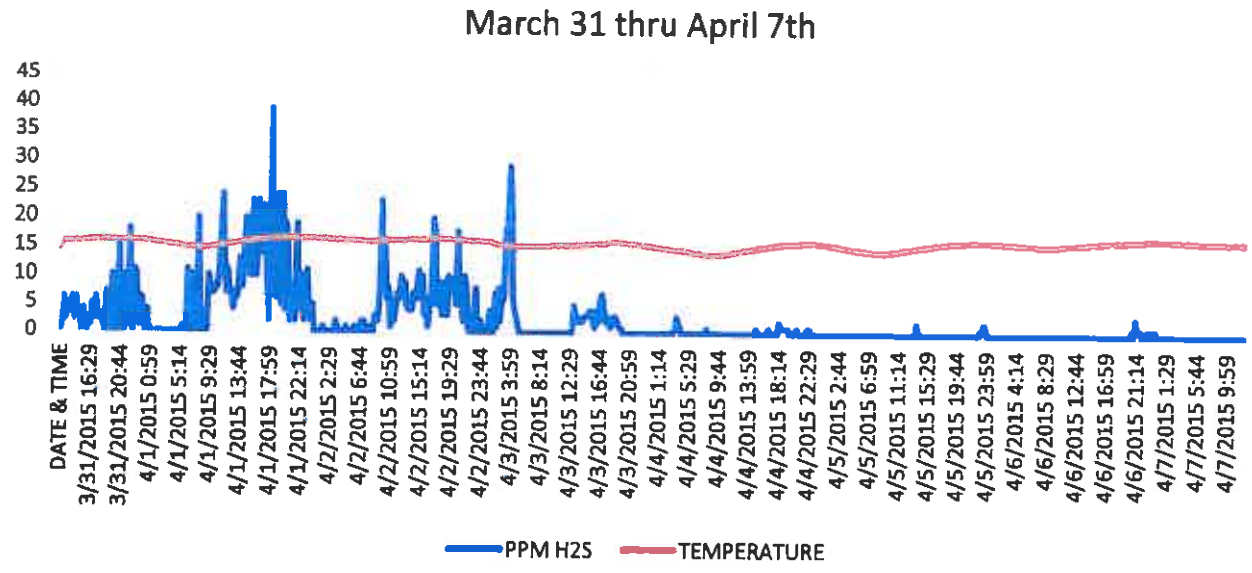


Exhibit C

January 26, 2015

Ref: Project Report for treating H_2S in the Fair Oaks sewer line using NRPGroup, Inc. all Natural Products.

City of Dallas
Dallas Water Utilities
Attn. Luis E. Bodington M.E., PE
8915 Adlora Lane
Dallas, Texas 75238

This report is for the date of October 21, 2014 through January 21, 2015

Purpose:

NRPGroup, Inc (NRP) has been contacted by the City of Dallas for a Pilot Study treating for hydrogen sulfide and corrosion prevention in the sewer lines of the Fair Oaks area. In this Pilot Study NRP Is to take baseline readings using NRP Sensilog monitoring equipment for H_2S prior to treatment and then treat the lines using NRP's product, NRP10-1000, an all-natural, chemical free product, used for odor and corrosion control for 90 days. After the 90 days of treatment NRP The goal in this pilot study is to show that an all-natural product can be used to replace the chemical product currently used in the Dallas collection system.

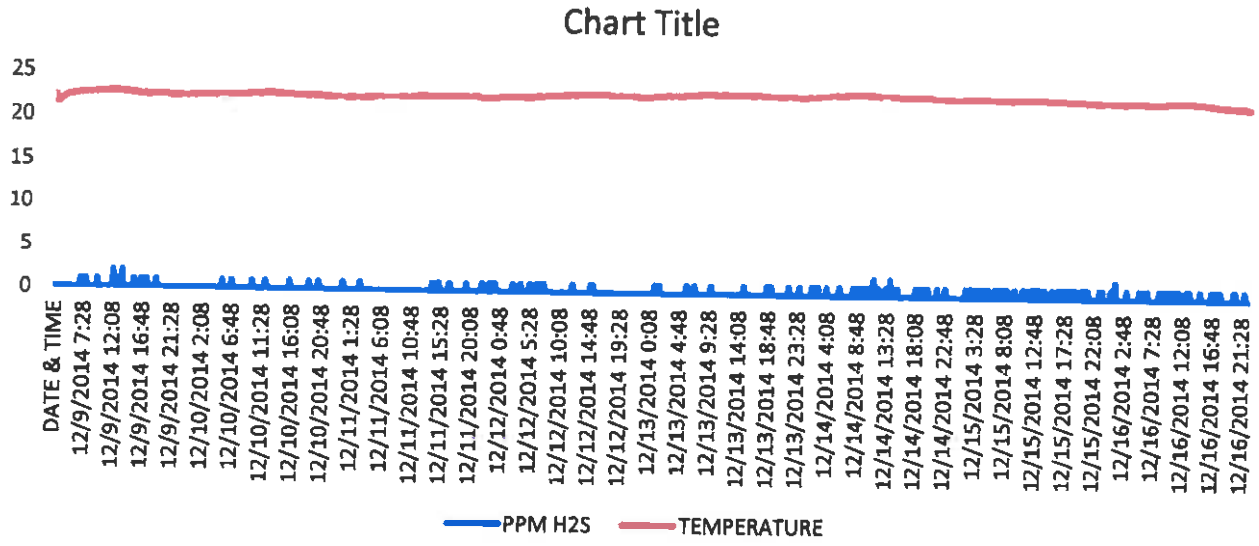
Pilot Study:

October 21, 2014 NRP placed a Sensilog at the junction of two lines prior to Fair Oaks ferrous sulfate injection point. Baseline readings were taken until November 4, 2014 using NRP Sensilog. The levels of H_2S during this baseline averaged 4.95PPM.

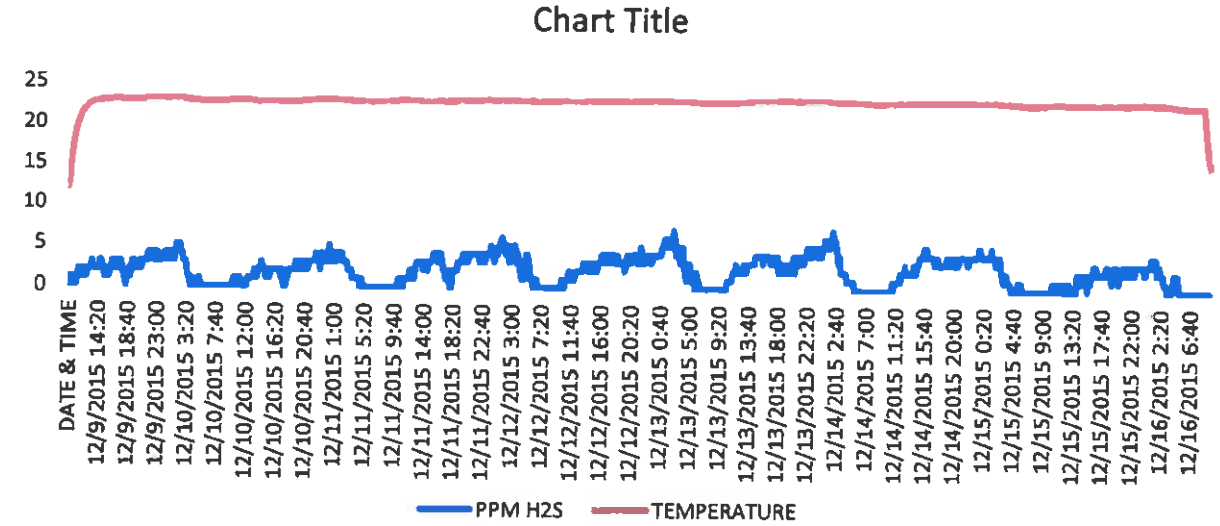
November 5, 2014 NRP installed 15 NRP-36 dispensing units in the two main lines flowing into the Fair Oaks flow meter locations (Locations of dispensing units are attached). These dispensing units are composed of a three and one half gallon container and a computer board controlled dispensing unit. Each unit was set to dispense .8 oz. every 10 minutes. Weekly, NRP serviced these units and retrieved the data from the Sensilog H_2S monitoring device.

<u>On page 2 and 3 are graphs gives the levels of H_2S during trial at different times and locations.</u>

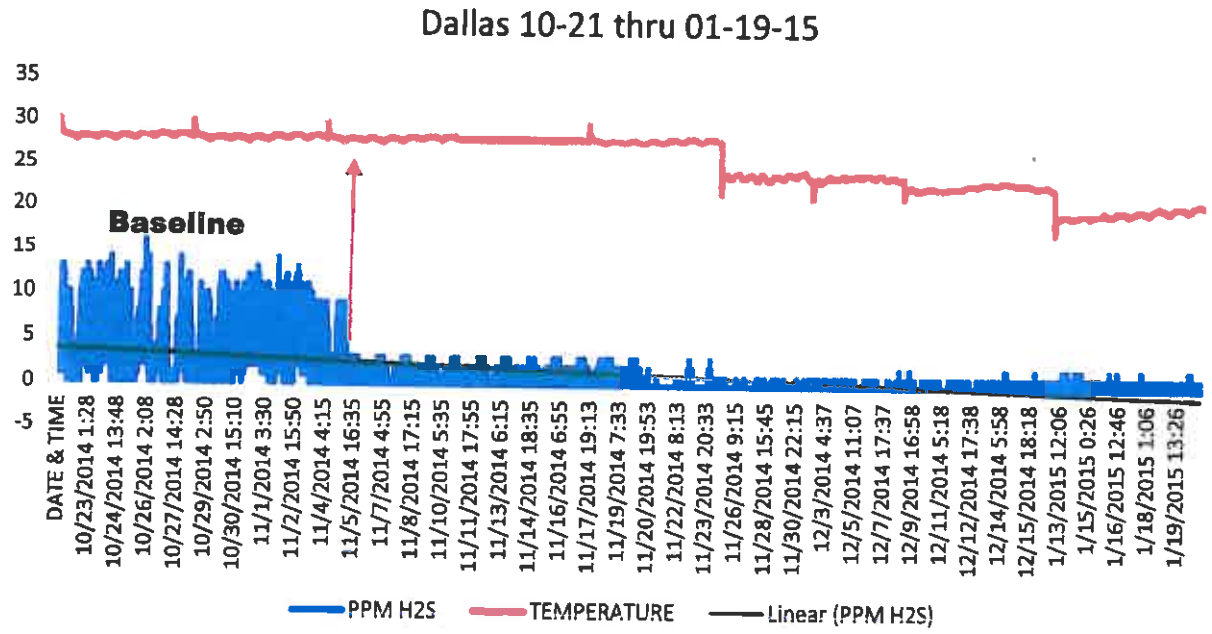
Below graph shows last 5 weeks of treatment Fair Oaks metering point by NRP



Below Graph shows Fair Oaks line being treated by Ferrous Sulfate12/9/14 thru 12/16/14



Graph showing H_2S levels from Start of Baseline until thru January 19, 2015

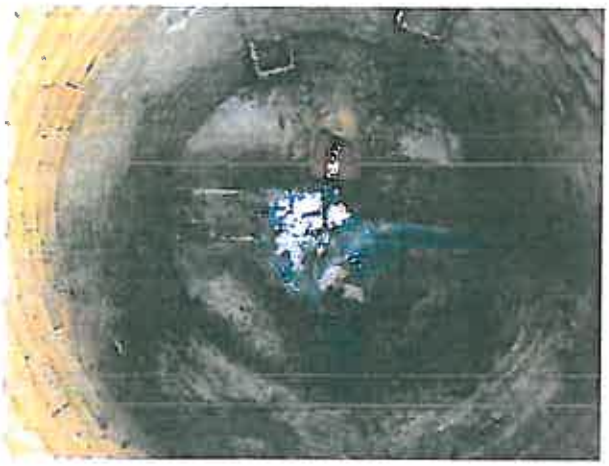


Average H_2S readings weekly

Dates	**H_2S PPM**
October 21, 2014 – October 27, 2014	5.2
October 28, 2014 – November 4, 2014	4.7
November 5, 2014 – November 11, 2014	1.1
November 12, 2014 – November 17, 2014	.38
November 18, 2014 – November 24, 2014	.21
November 25, 2014 - January 19, 2015	.18

Since treatment by NRP the average has been less than 1PPM of H_2S

In the last 30 days of this study NRP was given a line that had excess fats, oils and grease. NRP placed 3 dispensing units using NRP10-1040 FOG reduction product in manholes 2405300140M, 24029300009M and 24029300014M these dispensers were located above the manhole which was designated for FOG issues. Each unit dispensed .4oz every 10 minutes. The lines were not TVed before or after the 30 day treatment. NRP took the following photos in the designated manhole having FOG after NRP treatment.



***Attached with this report (1) NRP Daily Service Logs showing locations of dispensing units, amount of product used daily and the average H_2S weekly. (2) Raw Data**

Exhibit D

NRP Products vs Chemicals
for the purpose of Corrosion prevention

Over the past 30 years Municipalities and Industries have used Chemicals to control H_2S odors and to help reduce corrosion by lowering the atmospheric H_2S. Thirty years ago it was the best and only way for the reduction of corrosion, however, that does not hold true today.

NRPGroup, Inc. has developed a number of products that are chemical free (Green products) for the reduction of atmospheric H_2S and for corrosion, eliminating the need for harsh chemicals that are a hazard to the public as well as to the municipality employees who are in contact with it.

In the collection system treating for H_2S using NRP 10-1000, will perform equally as well or better in the reduction of atmospheric H_2S as chemicals such as, Bioxide (Calcium nitrate), Thiogard (Alkaline Slurry) and Ferrous Chloride (Iron Ash). The difficulty with these three chemicals are that they are only a masking agent, therefore, the sulfates that they are blocking tend to collect to the slime layer in the sewer system lines or the sulfates end up at the influent of the wastewater plants. Overall these chemicals create more corrosion to materials exposed to the water column and in the Bar Screen of the plant than if you used no products at all for the elimination of H_2S.

NRP10-1000 is the only product listed above that can treat the atmospheric H_2S and also eliminate the slime layer in the lines, a combination of NRP10-1000/NRP10-1060 reduces the sulfur that builds up over time on the interior walls of the sewer lines but if using chemicals it would have no effect on the slime layer. NPR's unique anti-corrosive product NRP10-1060 is a product when used in conjunction with NRP10-1000 will help prevent corrosion on any surface that is in direct contact with the wastewater, again helping to prevent corrosion in the wet wells, pumping stations, pumps, equipment and sewer lines.

Conclusion:

Using harsh chemicals to reduce corrosion in most cases does more harm than good for the prevention of corrosion while attempting to eliminate the levels of atmospheric H_2S a contributor for corrosion. NRP10-1060 when applied in conjunction with NRP10-1000 prevents the sulfides, sulfates and sulfur from collecting on the exposed surfaces of the metal, concrete, brick and etc. surfaces in the system. NRP10-1060 is designed to coat the metal, concrete and

brick surfaces preventing sulfides, sulfates and sulfur from attaching to the surfaces therefore reducing corrosion.

EXHIBIT C

WICHITA STATE UNIVERSITY

Department of Biological Sciences

March 15, 2004

To Whom It May Concern:

I have been invited by NRP Inc. to comment on the measurement of sulfides in water and air samples used to evaluate the activity of wastewater treatment facilities. NRP has provided some data from sampling performed at plants in Wichita and NRP is providing a small remuneration for the research and preparation of this document. In the past, I have acted as a third party, coordinating a KDHE evaluation of an NRP product applied to a swine waste facility. My position at Wichita State University is Assistant Professor of Biological Sciences working in applied and environmental microbiology. My current research does not directly address issues in wastewater treatment systems, but I have past experience in the microbiology of activated sludge and lagoon systems. This experience includes work specifically with sulfate-reducing bacteria, a primary source of sulfides in wastewaters.

Sulfides in wastewaters represent a complex group of compounds including organic disulfides and sulfhydryl compounds. Hydrogen sulfide is the main concern in that under certain conditions, the sulfide is released as a gas that has a strong odor and poses significant health hazards. The relationship between sulfide concentrations, the concentration of hydrogen sulfide in wastewaters, and the levels of hydrogen sulfide gas detected in the atmosphere is complex, and depends on many factors such as temperature and pH. Sulfide measurements in waters are often divided into those that measure total sulfides and those that measure soluble sulfides, the latter being more easily related to hydrogen sulfide release. True measures of hydrogen sulfide can only be obtained by stripping the gas from wastewaters and capturing the hydrogen sulfide before measurement. In any case, the accurate measurement of sulfides is dependent on the care with which oxygen is excluded during sampling, transport, and storage before assay. The compounds are easily oxidized and stabilization is recommended.

The City of Wichita uses a common wet chemistry method for the determination of sulfides in wastewater (Standard Method 4500-S2-D; EPA 376.2). This method relies on the reaction of sulfides with dimethyl-*p*-phenylenediamine hydrochloride in the presence of ferric ammonium sulfate. A positive reaction produces methylene blue, the

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mark.schneegurt@wichita.edu http://webs.wichita.edu/mschneegurt
Cyanosite: http://www-cyanosite.bio.purdue.edu/index.html

concentration of which can be assayed using a spectrophotometer or in some cases visual comparison to a color chart or wheel. The City uses visual comparison, which is typically less accurate, especially at low or high concentrations. The methylene blue assay has broad general applicability to disulfides and sulfhydryl compounds. The reagent will react with compounds such as cystine, cysteine, glutathione and thiocresol. To measure just the hydrogen sulfide, it is necessary to sparge the wastewater and then assay the solution. The City does not perform this separation. In addition, total sulfides are measured, which includes insoluble sulfides that are less likely to contribute to gaseous sulfide release. As a measurement of total sulfides, the methylene blue assay has an accuracy of about 10%, but the precision has not been determined. The reaction is commonly used for rough measurements of sulfides in wastewater.

Hydrogen sulfide concentrations in the air are generally measured using tubes filled with indicator chemicals or with instruments that contain substance-specific electrochemical sensors. These are fundamentally different techniques and differ from the methylene blue assays used for wastewaters. The electrochemical sensors use a heated semiconductor to measure specific gases. However, there is often interference from other gases. Hydrogen sulfide sensors can react with nitrogen dioxide, sulfur dioxide, chlorine gas, and carbon monoxide to varying degrees. Chemical indicators include cupric sulfate and lead acetate, with each being converted to the corresponding sulfide giving a color change with exposure to hydrogen sulfide. Again, interference in these reactions can come from sulfur dioxide, mercaptans, ozone, and nitrogen dioxide. The handheld meters used for atmospheric assays are suitable for rough measurement of hydrogen sulfide gas.

There is no clear theoretical basis for concluding that dissolved sulfide measurements should match atmospheric sulfide measurements. First, the assay systems used are fundamentally different and influenced by different factors. The simple methylene blue assay of total sulfides measures not only hydrogen sulfide, but other sulfides, including organic sulfides that may be rich in wastewater systems. Second, the measurement of total sulfides includes insoluble sulfides that may not contribute significantly to gaseous release, the balance being determined in part by subtle changes in pH. NRP supplied data from a week of testing in January 2004 of dissolved and atmospheric sulfides at Wichita wastewater plants. It is clear from the data that dissolved and atmospheric sulfide levels are not correlated. Not only do individual measurements disagree, the overall trends of the observed levels do not agree. This empirical evidence supports the theoretical conclusions developed here. The site data do not show correlations, but there is no compelling reason to believe that these should.

It seems that the best measurement of hydrogen sulfide release from wastewater systems would be atmospheric levels and not dissolved levels. The focus is on odor and hazard avoidance, so it seems reasonable to directly measure the levels of the offending compounds. Using dissolved sulfide levels as an indirect surrogate of gaseous release does not appear to be most relevant from a theoretical standpoint and this conclusion is supported by field measurements.

Sincerely,

Dr. Mark A. Schneegurt
Assistant Professor of Biological Sciences

Exhibit F

Sulfur Pathway

The Question :
Where do the sulfur compounds (sulfates, sulfides) go after treatment with the NRP bio-stimulant?
Answer:
Some are precipitated out and bound to metallic ions present in the water, most are consumed by the bacteria that have been stimulated by the product and incorporated into the biomass of the bacteria or converted to other chemical forms. The reduction in odor is due to the change in the electron donor source for the bacteria to process the sulfur compounds. The bacteria still use the compounds in their metabolism but the metabolic pathway for the utilization is shifted and thus the byproduct of the metabolism is no longer H_2S gas. The net effect is observed in a lower sulfates, sulfides and H_2S levels in the waste stream.

Below are excerpts from relevant articles and publications that elucidate this process more fully and chemically.

Volatile Sulfur-Containing Compounds
Odorous compounds in this group include sulfides (reduced form of sulfur) and methyl- and ethyl-mercaptans. These compounds are produced by bacterial activity involving sulfate reduction and metabolism of sulfur-containing amino acids (Zhu and Jacobson, 1999). Odors like decayed cabbage, putrid garlic, and rotten eggs are characteristic of this group.

Nearly all odorous compounds result from biological degradation of organic matter (primarily proteins) (Zhu and Jacobson, 1999). Hence, it is helpful to have a fundamental understanding of this connection to biological activity. The following section provides an overview of this *biological link* that plays such a critical role in odor generation.
Organic matter decomposes through two basic biological mechanisms. In aerobic decomposition, microorganisms that require an oxygen rich environment perform the breakdown of proteins and carbohydrates to smaller molecular forms needed for metabolism. The primary gaseous end-product is carbon dioxide. In anaerobic decomposition, a different set of microorganisms uses compounds other than oxygen for metabolism. Under these conditions, the end products of decomposition can include highly odorous compounds such as hydrogen sulfide (rotten egg odor).

Under strictly anaerobic conditions, soluble carbon compounds of wastes and

wastewater are degraded stepwise to methane, CO2, NH3, and H2S via a syntrophic interaction of fermentative and acetogenic bacteria with methanogens or sulfate reducers.
The complete methanogenic degradation of biopolymers or monomers via hydrolysis/fermentation, acetogenesis, and methanogenesis can proceed only at a low H2 partial pressure, which is maintained mainly by interspecies hydrogen transfer. Interspecies hydrogen transfer is facilitated when acetogens and hydrogenolytic methanogenic bacteria are arranged in proximity in flocs or in a biofilm within short diffusion distances. The reducing equivalents for carbon dioxide reduction to methane or sulfate reduction to sulfide are derived from the fermentative metabolism, e.g., of clostridia or *Eubacterium* sp., from â oxidation of fatty acids, or the oxidation of alcohols. Methane and CO2 are the main products in anaerobic environments where sulfate is absent, but sulfide and CO2 are the main products if sulfate is present.

In comparison to methanogens, which have a rather restricted substrate spectrum (Table 1.3), sulfate reducers are metabolically more versatile. Sulfate reducers can utilize polymers such as starch, monomers such as sugars, fatty acids, formate, aliphatic and aromatic compounds, as well as molecular hydrogen (Widdel, 1988) to generate reducing equivalents for sulfate reduction (Eq. 10):

8 (H) + 2 H+ + SO4
2– →□H2S + 4 H2O

Sulfate-reducing bacteria are biotechnologically relevant to sulfate removal or heavy metal precipitation in wastewater or waste and to the elimination of SO2 during offgas purification. An overview of applications of sulfate-reducing microorganisms in environmental biotechnology is given by Lens et al. (2002). Sulfate is the terminal electron acceptor and is reduced to sulfide, with reducing equivalents derived from the degradation of lactic acid or many other organic compounds (Widdel, 1988). Alternatively,
some sulfate reducers can also use molecular hydrogen. Sulfate reducers gain energy in an anaerobic electron transport chain (Hansen, 1994), leading to sulfide, a weak dibasic acid, which dissociates according to Eq. 35.

H2S ↔*K*1 H+ + HS–↔*K*2 2 H+ + S2–
*K*1 = 1.02 □□10–7, *K*2 = 1.3 □□10–13 (25 °C) (35)
The total dissociation is described by Eq. 36:
K = = *K*1*K*2 = 1.3 □□10–20 (36)
For precipitation of heavy metal ions, sulfide ions are necessary (Eq. 37):
Me2+ + S2–↔MeS (or) 2 Me+ + S2–↔Me2S (37)
The concentration of sulfide is pH-dependent. At acid pH only those metal sulfides of very low solubility can be precipitated. Thus, at acid pH, HgS, As2S3, CdS, CuS, and PbS form precipitates, whereas at a more alkaline pH, ZnS, FeS, NiS, and MnS form precipitates. Al2S3 and Cr2S3 are water soluble and cannot be removed by precipitation or sedimentation. Zinc removal from zinc-contaminated groundwater by microbial sulfate reduction and zinc sulfide precipitation in a 9-m3 sludge blanket

reactor was demonstrated and has been transferred to a full scale reactor of 1800 m3 (White and Gadd, 1996).

The following is how the NRP products work and how can it be so effective in such a small amount please consider the following:

1. "Small Amount" issue- The use of NRP10 product in a 1-2 ppm amount is not "small" . Consider that chlorine used to purify water is used at about 0.5ppm and is very effective. Look at a bottle of multi-vitamins and you will see the amount of B12, for example, is about 10 micrograms per tablet. This is about 1 part per 9 billion if you consider the average weight of an adult male. This is one time where size doesn't matter.

2. Biologically NRP10 products work as a cell activator. It increases the rate of metabolism of most microorganisms and by doing so is responsible for a reduction in nutrient levels per unit time within a wastewater and/or sludge environment.

3. NRP10 products are manufactured from all natural plant extracts with the addition of other proprietary natural growth stimulation products and surfactants. The product meets all USEPA requirements for discharge into class I water (drinking water) based on independent laboratory (EPA Certified) tests.

4. NRP10 products, by increasing the metabolic rate of microorganisms, directly causes them to utilize more food (nutrients) in any given time period. This translates into three important facts:

    1. Production of carbon dioxide gas

    2. Production of cellular energy (heat)

    3. Production of microorganism mass (growth)

As you can see, two of the three result in reduced or dissipated total nutrient load in the water column through the respiratory process (also known as digestion). The result of this is the reduction in overall organic load, a lessening of the total solids and a reduction in the BOD. A concurrent reduction in sludge volume is also a result of a greater utilization of the nutrients per unit time.

Additionally, The stimulation of the resident bacteria further aids in the reduction of the fats, grease, and oil problem that occurs in the collection system and lift stations.

By increasing the respiration of the bacteria (primarily the aerobic bacteria) the BioKat also has shown to be effective in reducing the hydrogen sulfide odor problem in the anaerobic slime layer and in the septic sludge area.

Current Levels of Dissolved Sulfides in Plant # 2 Wichita, KS.
Only Tyler Force Main being treated by NRP

Dissolved Sulfides:

	Locations		
Dates	**1.**	**2.**	**3.**
11/1/12	*0.1*	*0.2*	*0.1*
11/8/12	*0.1*	*.01*	*0.0*
11/16/12	*0.1*	*.01*	*0.1*
11/21/12	.02	.015	0.0

Section 6

REFERENCE SHEET

Reference Sheet

#1 Municipality

City of Dallas, TX
Contact: Luis E. Bodington PE
8915 Adlora Lane
Dallas, TX 75238
Tele: 214-670-8754

#2 Municipality

New Castle County, DE
Contact: Regis Yurich, Head of Collections
87 Reads Way
New Castle, DE 19720
Tele: 302-395-5704

#3 Municipality

Westchester County, NY
City of Yonkers
Contact: Jeff Bryant, Superintendent
One Fernbrook St.
Yonkers, NY 10705
Tele: 914-231-2847

9131 E 37th St No. • Wichita KS 67226 NRP phone 316.303.0505 • fax 316.303.0515

Below is a list of some of NRPGroup, Inc. customer base as requested.

City/County	Start	Finished	Odor	FOG
1. Yonkers, New York	2003	Current	Ammonia	
2. New Rachelle, NY	2004	Current	H2S	
3. Mamaroneck NY	2004	Current		FOG
4. Charlotte NC	2006	Current	H2S	FOG
5. Cincinnati	2014	Current	H2S	
6. New Castle County DE	2007	Current	H2S	FOG
7. Rockland NY	2008	Current	H2S	
8. Gwinnett Co GA	2013	Current	H2S	FOG
9. Wichita KS	2013	2015	H2S	
10. Fort Worth TX	2014	Current		

Section 7

Umbrella Insurance Coverage

NRPGR-1 OP ID: BC

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/19/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Chapple Insurance Group
A Div of Commercial Ins Gr Inc
9435 E Central, Suite 100
Wichita, KS 67206
Brad Cartwright

CONTACT NAME: Stacy Anthony
PHONE (A/C, No, Ext): 316-440-3525 FAX (A/C, No): 316-683-7818
E-MAIL ADDRESS: santhony@cigcorp.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: The Ohio Casualty Insurance Co	24074
INSURER B: American Fire and Casualty Co	24066
INSURER C: West American Insurance Co	44393
INSURER D:	
INSURER E:	
INSURER F:	

INSURED
NRP Group, Inc.
9131 E. 37th St North
Wichita, KS 67226

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
B	GENERAL LIABILITY [X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC	X	X	BKA55261423	10/20/2015	10/20/2016	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ $ $ $ $ $	1,000,000 1,000,000 15,000 1,000,000 2,000,000 2,000,000
A	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS [ ] HIRED AUTOS [ ] NON-OWNED AUTOS	X	X	BAO55261423	10/20/2015	10/20/2016	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (PER ACCIDENT)	$ $ $ $	1,000,000
A	[X] UMBRELLA LIAB [X] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [X] RETENTION $ 10000			US055261423	10/20/2015	10/20/2016	EACH OCCURRENCE AGGREGATE	$ $	2,000,000 2,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N [ ] N/A If yes, describe under DESCRIPTION OF OPERATIONS below		X	XWW55261423	10/20/2015	10/20/2016	[X] WC STATU-TORY LIMITS [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $	500,000 500,000 500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Amec Foster Wheeler Environment & Infrastructure Inc and "Client" are included as a Primary & Non-Contributory Additional Insured as respects the General Liability and a Primary Additional Insured as respects the Auto Liability per signed contract. Waiver of Subrogation is provided as respects the Auto Liability, General Liability and Workers Compensation per signed

CERTIFICATE HOLDER

AMEFO-2

Amec Foster Wheeler
Environment & Infrastructure
Inc; Fax: 404-601-0790
1105 Lakewood Pkwy, Ste 300
Alpharetta, GA 30009

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Brad Cartwright

Section 8

Cost and Pricing sheet

For Bid # 177-2015

City of Lexington

REMOVAL OF HYDROGEN SULFIDE AND OTHER COMMON ODORS IN WASTEWATER COLLECTION AND TREATMENT PLANTS BY BIOLOGICAL AND/OR CHEMICAL PROCESS

PRICING

We propose to furnish the product known as "NRP10-1000" (Trade Name) as a means to eliminate the odor, corrosion and safety problems associated with hydrogen sulfide in sewage.

Brand Name & Number	Required Application Rate	Unit Price FOB Lexington
DILUTED NRP-10-1000	3 Gallons/Pound H_2S	$1.75 $/Gallon

Field test results from at least three (3) reference systems showing application rates and measured dissolved hydrogen sulfide levels in ppm before and after treatments included with Bid: X

Three (3) reference contacts and names of individuals using the proposed chemical and proposed dosing equipment included with Bid: X

ALTERNATE PRICING

The Lexington-Fayette Urban County Government will accept Alternate Pricing to be submitted for additional products that may meet a wide variety of odor control needs the LFUCG may need in future odor and corrosion needs, or alternatively to optimize existing odor control applications.

Alternate #1- We propose to furnish the product known as "NRP10-1000" (Trade Name) as a means to eliminate the odor, corrosion and safety problems associated with hydrogen sulfide in sewage.

Brand Name & Number	Required Application Rate	Unit Price FOB Lexington
CONCENTRATED NRP10-1000	.0001 Gallons/Pound H_2S	35.00 $/Gallon

Field test results from at least three (3) reference systems showing application rates and measured dissolved hydrogen sulfide levels in ppm before and after treatments included with Bid: X

Three (3) reference contacts and names of individuals using the proposed chemical and proposed dosing equipment included with Bid: X