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October 2, 2008

Kimberly D. Bose
 Secretary
 Federal Energy Regulatory Commission
 888 First Street, N.E.
 Room 1A
 Washington, DC 20426

RE: Docket No. CP07-208-000
 Rockies Express Pipeline LLC, REX-East Project
**Request to Proceed for Construction in Exclusion Zones – Spread A-1, Missouri and
 Spreads D, E, and F, Indiana**

Ms. Bose:

Rockies Express hereby files with the Commission a request for a Notice to Proceed (“NTP”) for previously identified Exclusion Zones surrounding sensitive resources in Spreads A-1, D, E, and F of the REX-East Project.¹ The Federal Energy Regulatory Commission (“FERC” or “Commission”) granted the NTP for Spread A-1 on July 22, 2008, Spread D on August 1, 2008, Spread E on September 11, 2008, and Spread F on September 26, 2008, identifying exclusion zones in all areas.

For the NTP requests submitted by this filing, Rockies Express has obtained landowner easements, completed the outstanding cultural surveys, and has received State Historic Preservation Office (“SHPO”) clearance. Revised alignment drawings for the NTP requests for Spreads A-1 and Spread D are provided in attachment A. These alignment sheets will replace those previously submitted. To facilitate review of the revised alignment sheets, “bubble” lining has been drawn around the area where a modification is proposed.

Copies of the approval letters from the state-specific SHPO cultural survey documentation to support each NTP request are provided in Attachment B. Copies of the easement agreements for two NTP requests in Spread A-1 and F are found in Attachment C. Rockies Express includes as Attachment D a table listing all the clearance areas for this request, as well as previously submitted requests that are outstanding for the REX East Project. Due to

¹ The REX-East project was granted a certificate of public convenience and necessity pursuant to Section 7(c) of the Natural Gas Act by the Federal Energy Regulatory Commission on May 30, 2008 in this docket. Rockies Express Pipeline LLC, 123 FERC ¶ 61,234 (2008). On June 2, 2008, Rockies Express, pursuant to Section 157.20(a) of the Commission’s Regulations, 18 C.F.R. § 157.20(a), notified the Commission that it accepted the Commission’s Order.

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the information provided in the table, Attachment D is privileged and confidential. Attachment E provides drawings depicting the requested clearance areas. Attachment F provides a supplemental noise analysis for the Illinois River and the 200th Avenue horizontal directional drills ("HDDs").

Spread A-1

In Spread A-1, the Commission identified an exclusion zone between MPs 38.4 to 40.2 that was established to protect sensitive resources requiring avoidance and/or mitigation (See Commission July 22, 2008, NTP Order for Spread A-1).

a. Start Construction Between MPs 38.4 and 40.2

Between MPs 38.4 to 40.2, Rockies Express proposes a line change that avoids three sensitive resource sites as shown in the Missouri Treatment Plan No. 2 (REX-EAST-MO-14). For this proposed line change, no additional environmental surveys are required as the line modification is within the previously surveyed corridor. Additionally, landowner easements have been obtained and are appended in Attachment C. The Missouri State Historic Preservation Office (SHPO) concurrence is appended in Attachment B. The proposed route is shown on alignment sheet No. 1280-D-105-015 [REV 2, revised 9/26/08], submitted as part of Attachment A and further described in the table provided in attachment D.

Rockies Express has completed the mitigation efforts at two other sensitive resource sites within MPs 38.4 to 40.2. The Missouri SHPO has concurred with all mitigation work at these two sites (See Attachment B).

b. Use Travel Lane at MP 39.6

The only sensitive resource site that remains between MPs 38.4 to 40.2 is site SRMO006. To avoid this site, Rockies Express requests the use of a travel lane on tract MO-PI-087.000 as shown in the Missouri Treatment Plan No. 2 (REX-EAST-MO-14). An alignment sheet, sheet no. 1280-D-105-015 [REV 2, revised 9/26/08], and a site-specific drawing of the travel lane, Drawing No. 1280-A-SR-006, are appended in Attachment A.

Between MPs 38.4 to 40.2, Rockies Express requests authorization to commence construction for the entire exclusion area except for the area which is to be fenced and crossed using a travel lane (e.g., sensitive resource SRMO006) on tract MO-PI-087.000 as shown in the Missouri Treatment Plan No. 2 (REX-EAST-MO-14). Rockies Express agrees to implement Environmental Condition 130 during construction between MPs 38.4 to 40.2.

c. Supplemental Information on the Illinois and 200th Avenue HDD

As discussed in the September 24, 2008 request for Notice to Proceed, Rockies Express completed an acoustical assessment of the Illinois River HDD. Since the issuance of the Final Environmental Impact Statement, Rockies Express modified the Illinois River HDD crossing by reducing the length of the Illinois River HDD and adding the 200th Avenue HDD. The Illinois River HDD and the 200th Avenue HDDs share a common drill entry workspace.

Attached is Rockies Express' acoustical assessment of the Illinois River HDD and 200th Avenue HDDs (Attachment F). Based on the results of the analysis, the noise attributable to the drilling operations could exceed the sound criteria for HDD operations at the HDD entry workspace for the two drills if noise mitigation measures are not employed. Rockies Express intends to implement the appropriate noise mitigation measures at the drill entry site. The nearest NSA to the 200th Avenue HDD drill exit side is an unoccupied residence approximately 250 feet southwest. If this residence is occupied during HDD operations, Rockies Express will install additional noise mitigation measures or provide temporary housing during drilling operations.

Spread D

In Spread D, the Commission identified one exclusion zone between the east side of the Wabash River (MP 242.9 + 4.0) and the west edge of the workspace for the horizontal directional drill of the Wabash River (MP 242.9 + 4.0) (See Commission August 1, 2008, NTP Order for Spread D). Rockies Express proposes to move the additional temporary workspace (ATWS) for the Wabash River horizontal directional drill (HDD) water intake to the north side of the centerline. For this proposed ATWS change, no additional environmental surveys are required as the modification is within the previously surveyed corridor. Rockies Express will comply with Environmental Condition 74. This adjustment to the ATWS is shown on revised alignment sheet no. 1280-D-105-091 [REV 2, revised 9/25/08] and HDD site-specific drawing no. 1280-D-SX-SK-011 [REV 4, revised 9/30/08]. The revised alignment sheet and site specific drawing is appended in Attachment A.

Spread E

In Spread E, the Commission identified an exclusion zone between MPs 355.6 to 355.9 requiring additional cultural resources survey (See Commission September 11, 2008, NTP Order for Spread E). Cultural resources surveys have been completed and are appended in Attachment B. The Indiana SHPO has concurred with all proposed work in this exclusion zone (Attachment B).

Spread F

In Spread F, the Commission identified three exclusion zones requiring additional cultural resources surveys, landowner easements, or agency clearances (See Commission's September 26, 2008, NTP Order for Spread F).

a. Between MPs 386.9 to 387.5

Rockies Express identified an exclusion zone between MPs 386.9 to 387.5 requiring additional cultural resources survey for line change 2035. Cultural resources surveys have been completed for line change 2035 and are appended in Attachment B. The Indiana SHPO has concurred with all proposed work in this exclusion zone (Attachment B).

b. Between MPs 392.2 to 393.6, including the Whitewater River HDD

The NTP identified an exclusion zone between MPs 392.2 to 394.5, which includes the Whitewater River HDD due to cultural resource concerns. A portion of the original exclusion zone, between MPs 392.2 and 393.6, were pending agency concurrences on report REX-EAST-IN-48 and Indiana Treatment Plan No. 2 (REX-EAST-IN-44). The Indiana SHPO has concurred with all work in this area; supporting documentation is included in Attachment B.

c. Between MPs 401.8 to 402.1

In accordance with Certificate Condition No. 33, Rockies Express is providing additional documentation of consultation with Mr. and Mrs. Stirn, landowners of tract IN-FR-181.S02, crossed by the project between mileposts (MPs) 401.8 and 402.1. As indicated in the attached notes and easement agreement, filed as Privileged and Confidential in attachment C, Mr. and Mrs. Stirn expressly have been offered the FERC route presented in the Final Environmental Impact Statement. Mr. and Mrs. Stirn are reluctant to provide signed documentation indicating their preferred route. Rockies Express subsequently has reached easement agreement with the landowner for the route as shown on the alignment sheet (1280-D-105-148) [REV 0, revised 5/29/08] provided to the FERC as part of Rockies Express' Notice to Proceed request with Spread F.

Based on this additional documentation and clarification for FERC staff, Rockies Express is requesting Notice to Proceed with construction authorization between mileposts (MPs) 401.8 and 402.1 (western boundary of tract IN-FR-068.00 at Johnson Fork Road and the western boundary of tract IN-FR-182.000).

Conclusion

Based on the explanation provided above, and the data appended hereto, Rockies Express requests notice to proceed with construction across the following areas:

Spread A-1

1. between the western boundary of tract MO-PI-083.000 (MP 38.4) and the eastern boundary of tract MO-PI-089.000 (MP 40.2), as set forth on Alignment Sheet 1280-D-105-015 [REV 2, revised 9/26/08], excluding the area to be fenced and crossed using a travel lane at MP 39.6; and
2. the use of a travel lane from MPs 39.6 to 39.6 across sensitive resource SRMO006 on tract MO-PI-087.000, as set forth in site-specific drawing 1280-A-SR-006 and alignment sheet 1280-D-105-015 [REV 2, revised 9/26/08].

Spread D

1. between the east side of the Wabash River (MP 242.9 +4.0) and the west edge of the workspace for the horizontal direction drill of the Wabash River (MP 242.9 +4.0), as

shown on alignment sheet No. 1280-D-105-091 [REV 2, revised 9/25/08] and HDD site-specific drawing No. 1280-D-SX-SK-011 [REV 4, revised 9/30/08].

Spread E

1. between the eastern side of County Road S. 500E (MP 355.6) to the western side of tract IN-SB-140.000 (MP 355.9) between the north side of County Road 400S (MP 295.5) and the south side of County Road 500S at MP 296.7, including MLV-15 (see attached drawings 1280-D-105-131 [REV 0 revised 5/29/08]; Letter Agreement with Indiana SHPO, received 7/2/08).

Spread F

1. between the western boundary of WB-IN-375-D on tract IN-FR-065.000 (MP 386.9) and the western boundary of tract IN-FR-068.000 (MP 387.5) the east side of US Highway 52 (MP 393.9) as shown on alignment sheet No. 1280-D-105- 142 [REV 0 revised 5/29/08] (Letter Agreement with Indiana SHPO, received 7/2/08);
2. Southern boundary of tract IN-FR-105.001 (MP 392.2) and the western boundary of tract IN-FR-115.001 (393.6) (see attached drawings 1280-D-105-144 and – 145 ; SHPO concurrence on reports REX-EAST-IN-44 and REX-EAST-IN-48, received 8/21/08 and 9/25/08, respectively); and
3. Western boundary of tract IN-FR-068.000 at Johnson Fork Road (MP 401.8) and the western boundary of tract IN-FR-182.000 (MP 402.1) as shown on drawing 1280-D-105-148 [REV 0 revised 5/29/08] (Landowner easement agreement appended to attachment C).

Rockies Express requests approval of these areas as soon as possible due to construction activities which would require a move around if timely approval is not granted. Please direct any questions with respect to this request for authorization to proceed to Ryan Childs at (307) 760-5635.

Respectfully submitted,

/s/ Shippen Howe

Shippen Howe

Van Ness Feldman, P.C.

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202-298-1800

Attorney for

Rockies Express Pipeline LLC

Attachments

cc: Laura Turner, FERC
John Peconom, FERC
Ellen Saint Onge, FERC
All Parties

Rockies Express Pipeline LLC

REX-East Project

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ATTACHMENT A

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ATTACHMENT B

CONTAINS PRIVILEGED INFORMATION –

DO NOT RELEASE

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ATTACHMENT C

CONTAINS PRIVILEGED INFORMATION –

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ATTACHMENT D

CONTAINS PRIVILEGED INFORMATION –

DO NOT RELEASE

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ATTACHMENT E

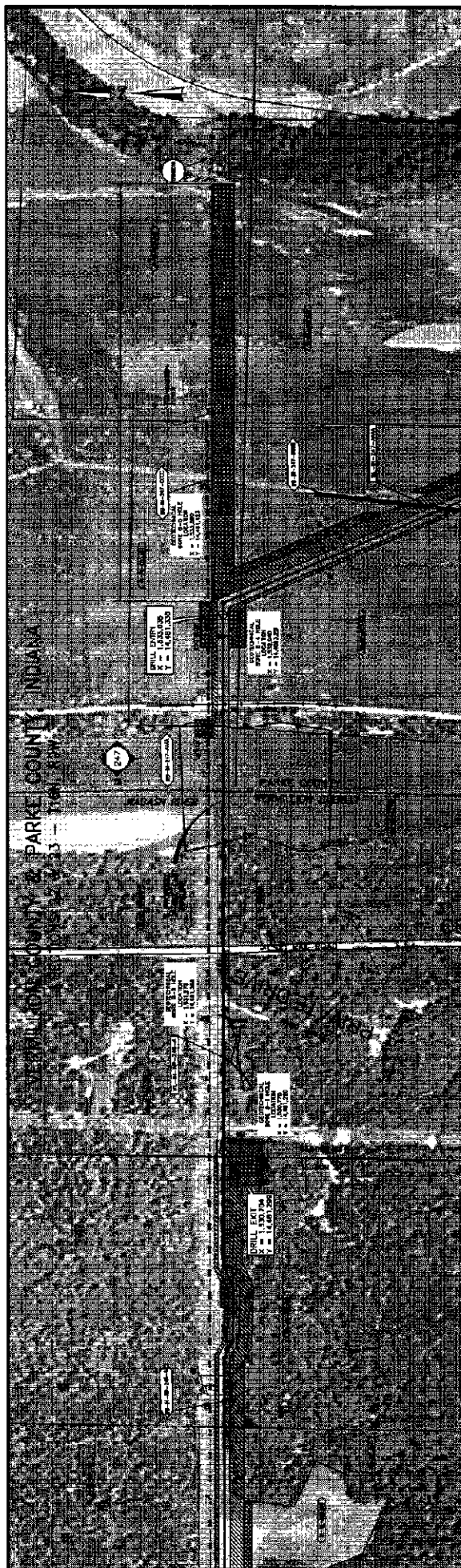
Rockies Express Pipeline LLC

REX-East Project

CP07-208

ATTACHMENT F

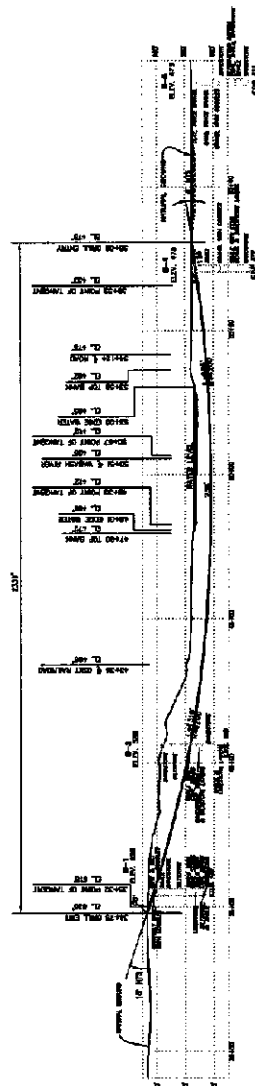
ROCKIES EXPRESS PIPELINE (REX) SYSTEM
 REX-EAST
 CONSTRUCTION ALIGNMENT SHEET
 MAP 38.45 TO MP 41.19



QUEST

NOTE
ALL COORDINATE VALUES ARE REFERENCED
TO UTM ZONE 18, NAD 83 DATUM IN FEET

IMPLEMENTATION	PLAN	ISSUE
1. The first step in the implementation of the program is to identify the needs of the community. This involves conducting a needs assessment and identifying the specific problems that the program is intended to address.	1. The first step in the implementation of the program is to identify the needs of the community. This involves conducting a needs assessment and identifying the specific problems that the program is intended to address.	1. The first step in the implementation of the program is to identify the needs of the community. This involves conducting a needs assessment and identifying the specific problems that the program is intended to address.
2. The second step is to develop a plan of action. This involves setting goals, objectives, and outcomes, and determining the resources and personnel needed to implement the program.	2. The second step is to develop a plan of action. This involves setting goals, objectives, and outcomes, and determining the resources and personnel needed to implement the program.	2. The second step is to develop a plan of action. This involves setting goals, objectives, and outcomes, and determining the resources and personnel needed to implement the program.
3. The third step is to implement the plan. This involves putting the plan into action and monitoring the progress of the program.	3. The third step is to implement the plan. This involves putting the plan into action and monitoring the progress of the program.	3. The third step is to implement the plan. This involves putting the plan into action and monitoring the progress of the program.
4. The fourth step is to evaluate the program. This involves assessing the effectiveness of the program and making adjustments as needed.	4. The fourth step is to evaluate the program. This involves assessing the effectiveness of the program and making adjustments as needed.	4. The fourth step is to evaluate the program. This involves assessing the effectiveness of the program and making adjustments as needed.



DESIGN DATA

DIRECTIONAL DRILL NOTES

NOTES

[illegible]

Reelz Channel

WFO 1200-D-SX-SK-011 SHY. NO. 1 of 1 REV. 4

[illegible]

ROCKWELL EXPRESS PIPELINE (RUE) SYSTEM		REX-EAST		INDIANA	
CONSTRUCTION ALIGNMENT SHEET		MP 384.99 TO MP 387.74			
UTM ZONE 18		FRANKLIN COUNTY			
GRAPHIC NO.	DATE	APP. BY	DATE	DESIGN. 1	DATE

2. **Содержание** - 2

[illegible]

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Date of Transmittal: 09/30/08

H&K Job No. 3913

MEMORANDUM (Total of 6 Pages)**Subject: Acoustical Assessment of the Modified HDD Crossing at the IL River for the Gas Pipeline associated with the REX-East Project****Submitted to: Natural Resource Group, Inc. (NRG)**
Project Applicant: Rockies Express Pipeline, LLC (REX Pipeline)**Submitted by: Paul D. Kiteck, P.E., Hoover & Keith Inc. (H&K)****1.0 INTRODUCTION**

The following memo provides the results of an acoustical assessment of a recently-modified horizontal directional drilling (HDD) site for the natural gas pipeline associated with the **Rockies Express Pipeline-East (i.e., REX-East Pipeline) Project**. The purpose of the acoustical assessment is to estimate the sound contribution at nearby noise-sensitive areas (NSAs) resulting from drilling operations at the modified HDD site for NSAs within ½ mile and present noise mitigations measures to minimize the noise impact of HDD activities if the assessment indicates that the noise of HDD operations could exceed an equivalent day-night sound level (L_{dn}) of **55 dBA** and/or could cause an increase of **9 dB** or more above the ambient noise at the closest NSAs (i.e., defined as the sound criteria for project HDD operations).

2.0 BRIEF DESCRIPTION OF HDD SITES AND HDD EQUIPMENT

In summary, the IL River HDD crossing (Pike County, IL) will be modified as follows: (1) location of HDD entry point for IL River HDD crossing will be somewhat different, and (2) a new HDD crossing of 200th Ave. East will be required in which the entry point for the new 200th Ave. HDD crossing will be the same entry point as the revised IL River HDD entry point. The HDD sites for the modified IL River HDD crossing and the 200th Ave. HDD crossing have NSAs within ½ mile of the entry side or exit side of the HDD. For reference, **Figure 1** (p. 4) provides an area layout around the subject HDD sites showing the NSAs within ½ mile of the HDD entry or exit point.

The following **Table A** summarizes the modified HDD sites for the project in which there are NSAs within ½ mile of either the HDD entry side or HDD exit side. **Table A** also includes the observed nearby NSA to the HDD entry/exit point along with the distance/direction of the nearby NSAs and observed land contour/obstructions, such as foliage/trees, between the HDD site and the nearby NSAs. Verification of NSAs (i.e., distance/direction) and ambient sound levels around these new HDD sites were determined by H&K via ambient sound surveys on 5/5/08.

Subject HDD Construction Site	Entry or Exit Point	Approx. Milepost	Type of NSA	Distance & Direction of Closest NSA	Land Contour & Obstructions Between NSA & HDD Site
IL River or 200 th Ave. HDD	Entry	MP 71.0	Residence	600 feet (NNW)	Some foliage/trees
200 th Ave. HDD	Exit	MP 70.1	Residence	250 feet (SW)	Some foliage/trees

Table A: Summary of Modified IL River HDD Sites with NSAs within ½ Mile and Distance/Direction of NSAs

REX-East Project
Acoustical Assessment of Modified HDD Crossing at the IL River for the Project Pipeline

Hoover & Keith Inc.
H&K Job No. 3913
Date of Memo: 09/30/08

3.0 ACOUSTICAL ASSESSMENT AND NOISE MITIGATION

3.1 Sound Contribution due to the Modified IL River HDD Sites

The spreadsheet analyses (calculations) of the estimated A-wt. sound level contributed by HDD operations associated with the modified IL River HDD at the closest NSA are provided in **Tables 1 & 2** (p. 5). For the HDD sites (i.e., entry or exit location) in which the sound criteria could be exceeded, the acoustical assessment predicts the noise contribution of HDD operations if additional noise mitigation measures are employed to minimize the noise impact at the NSAs. For reference, a description of the acoustical analysis methodology and the source of sound data are provided at the end of the memo (p. 6).

The following sound sources (i.e., equipment) at the HDD entry side were considered significant:

- Drilling rig & associated engine-driven power unit;
- Engine-driven mud pump(s) and engine-driven generator sets;
- Mud mixing & mud cleaning equipment;
- Crane, sideboom & backhoe, frontloader, forklift and/or trucks;
- Engine-driven light plants (used for nighttime operation).

The following sound sources at the HDD exit side were considered significant, and the noise generated at the HDD exit side is significantly lower than the noise generated at the entry side:

- Backhoe, sideboom, and possibly one (1) engine-driven generator set;
- Engine-driven light plants (used for nighttime operation).

The following **Table B** summarizes the estimated L_{dn} (as calculated from estimated A-wt. sound level of drilling operations) at the closest NSA(s). For those sites in which the sound criterion could be exceeded, **Table B** denotes which sites that additional noise mitigation measures are required to meet the sound criteria and provides the predicted noise contribution of the HDD operations at the respective HDD sites if additional noise mitigation measures are employed.

Planned HDD Site	Entry or Exit Point	Distance & Direction of Closest NSA	Added Mitigation to meet Criteria	Calc'd L_{dn} due to HDD (via A-Wt.)	Ambient L_{dn}	L_{dn} of HDD plus Ambient	Increase Above Ambient
IL River HDD or 200 th Ave. HDD	Entry	600 feet (NNW)	Required	54.6 dBA	47.0 dBA	55.3 dBA	8.3 dB
200 th Ave. HDD	Exit	250 feet (SW)	Required	52.6 dBA	47.0 dBA	53.7 dBA	6.7 dB

Table B: Summary of Est'd Sound Level Contribution and Calc'd L_{dn} of the Planned HDD Sites and assumes Added NC Measures if the Benchmark Sound Criteria is Exceeded.

In summary, the assessment indicates that the noise generated by HDD operations at the HDD entry location for the modified IL River HDD crossing & new 200th Ave. HDD crossing and at the HDD exit location for the new 200th Ave. HDD crossing could exceed the sound criteria if no additional noise mitigation measures are employed.

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3.2 Summary of Noise Mitigation Measures

For the HDD operations at the modified IL River HDD sites in which 55 dBA (Ldn) could be exceeded if no additional noise mitigation measures are employed (i.e., HDD entry at the IL River HDD, which is same entry point as the new 200th Ave. HDD crossing, and the HDD exit site for the 200th Ave. HDD crossing), an adequate temporary noise barrier will have to be installed prior to commencement of drilling operations. Such a temporary noise barrier would be installed around 2 or 3 sides of the HDD equipment area, depending on the location of the nearby NSAs, which is constructed of ¾-in. thick plywood panels. Also, prior to installation and operation of HDD activities at these 2 new HDD sites, temporary housing or equivalent monetary compensation should be discussed and/or offered to the nearby land owner(s), since some potential noise mitigation measures may not be a cost-effective option.

4.0 FINAL COMMENT

The acoustical assessment indicates that if additional noise mitigation measures are not employed, the noise attributable to the drilling operations at the modified IL River HDD sites could be greater than the benchmark sound requirement (i.e., L_{dn} of 55 dBA and/or could cause an increase of 9 dBA or more above the ambient noise at the closest NSAs). As a result, feasible and cost-effective noise mitigation measures are discussed to reduce the noise associated with HDD operations to below the sound criteria for HDD operations. The results of the noise assessment indicates that if adequate additional noise mitigation measures are employed, the noise due to HDD drilling operations at these HDD entry site and/or HDD exit site should be below 55 dBA (L_{dn}) and/or should cause less than a 9 dB increase at the nearest NSAs.

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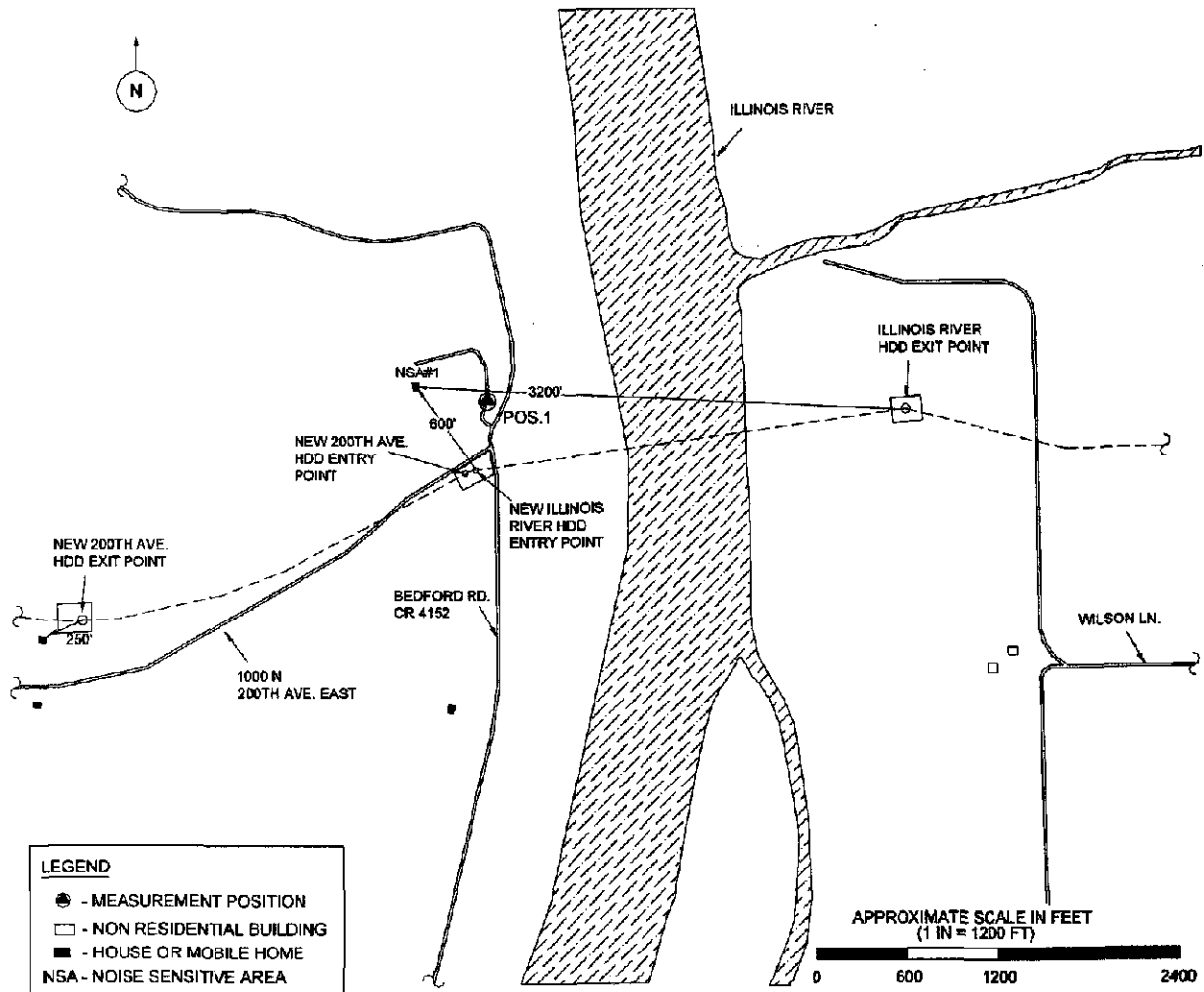


Figure 1: Modified IL River HDD Crossing for REX-East Project: Area Layout Showing the location of the Modified IL River HDD Crossing (Entry Side) and new 200th Ave. East HDD Crossing (Entry/Exit Sides) along with nearby NSAs around HDD Entry/Exit Sites.

Dist (Ft) or Calculation	Noise Source and Other Conditions/Factors associated with Acoustical Analysis	SPL or PWL in dB Per Octave-Band Center Freq. (Hz)										A-Wt. Level
		31.5	63	125	250	500	1000	2000	4000	8000		
	Peak PWL of HDD Operation/Equipment at Entry Point	118	115	112	114	112	109	108	106	98	115	Calcd Ldn
	Attenuation by Forest, Land Contour, Buildings	0	0	0	-1	-1	-2	-4	-5	-5		
600	Hemispherical Radiation	-53	-53	-53	-53	-53	-53	-53	-53	-53		
600	Atm. Absorption (70% R.H., 60 deg F)	0	0	0	0	0	-1	-2	-5	-8		
Est'd Total Sound Contribution with No Additional NC		65	62	59	59	57	53	48	43	31	58.4	64.8
Measured Ambient A-Wt. Sound Level (i.e., Ldn) in dBA												47.0
Sound Contribution of HDD Noise plus Ambient (dBA)												64.9
Potential Increase above the Ambient Level (dB)												17.9
Attenuation due to Added Temporary Noise Barrier		-2	-4	-6	-8	-10	-12	-14	-15	-15		
Est'd Sound Level of HDD + Added NC Measures		63	58	53	51	47	41	34	28	16	48.2	54.6
Measured Ambient Sound Level (i.e., Ldn) in dBA												47.0
Sound Contribution of HDD Noise plus Ambient Level (dBA)												55.3
Potential Increase above the Ambient Level (dB)												8.3

Table 1: REX-East Project (Entry Point for both Modified IL River HDD & new 200th Ave. HDD): Est'd Sound Contribution of Operations at the Closest NSA (i.e., Residence located 600 Ft. NNW of Entry Point), including Sound Level if Added Noise Mitigation Measures Employed (i.e., Temporary Noise Barrier).

Dist (Ft) or Calculation	Noise Source and Other Conditions/Factors associated with Acoustical Analysis	SPL or PWL in dB Per Octave-Band Center Freq. (Hz)										A-WL Level
		31.5	63	125	250	500	1000	2000	4000	8000		
	Peak PWL of HDD Operation/Equipment at Exit Point	110	108	105	102	100	98	95	92	88	103	Calcd Ldn
	Attenuation by Forest, Land Contour, Buildings	0	0	0	0	0	0	-1	-2	-3		
250	Hemispherical Radiation	-48	-46	-46	-46	-46	-46	-46	-46	-46		
250	Atm. Absorption (70% R.H., 60 deg F)	0	0	0	0	0	-1	-1	-2	-4		
Est'd Total Sound Contribution with No Additional NC		64	62	59	56	54	52	47	42	36	56.6	63.0
Measured Ambient A-WL Sound Level (i.e., Ldn) in dBA												47.0
Sound Contribution of HDD Noise plus Ambient (dBA)												63.1
Potential Increase above the Ambient Level (dB)												16.1
Attenuation due to Added Temporary Noise Barrier		-2	-4	-6	-8	-10	-12	-14	-15	-15		
Est'd Sound Level of HDD + Added NC Measures		62	58	53	48	44	40	33	27	21	46.2	52.6
Measured Ambient Sound Level (i.e., Ldn) in dBA												47.0
Sound Contribution of HDD Noise plus Ambient Level (dBA)												53.7
Potential Increase above the Ambient Level (dB)												6.7

Table 2: REX-East Project (new 200th Ave. HDD Exit Point): Est'd Sound Contribution of HDD Operations at the Closest NSA (i.e., Residence located 250 Ft. SW of Exit Point), including Sound Level if Added Noise Mitigation Measures Employed (i.e., Temporary Noise Barrier).

Notes: Est'd sound power levels (PWLs) of HDD operation based on field tests by H&K on similar type of HDD rigs anticipated for this Pipeline Project. Est'd PWL at HDD exit point should be typically 12 to 14 dB lower than PWL at HDD entry point, noting that there should not be any stationary equipment, such as generators, at the exit point.

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Acoustical Assessment of Modified HDD Crossing at the IL River for the Project Pipeline

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Description of Acoustical Assessment Methodology and Source of Sound Data

In general, the predicted sound level contributed by drilling operations at a HDD site was calculated as a function of frequency from estimated unweighted octave-band (O.B.) sound power levels (PWLs) and A-wt. PWL of the respective equipment operations at either the HDD entry site or HDD exit site. The following summarizes the acoustical analysis procedure:

- Initially, unweighted O.B. PWLs of the HDD operations were determined from actual sound level measurements by H&K on similar type of HDD operations/equipment expected for this project. Estimated PWL values of the HDD operations were calculated from sound measurements at different distances/directions from HDD operations (e.g., sound measurements at 100 feet, 200 feet and 400 feet from HDD equipment during operation).
- Then, expected attenuation in dB per O.B. frequency due to hemispherical sound propagation (discussed in more detail below*), atmospheric sound absorption (discussed in more detail below**) and other factors (e.g., attenuation due to foliage and land contour**) were subtracted from the unweighted O.B. PWLs to obtain unweighted O.B. sound pressure levels (SPLs) of HDD operations.
- Finally, the resulting estimated total unweighted O.B. SPLs for the HDD operations, including sound attenuation effects, were logarithmically summed and corrected for A-weighting to provide the estimated overall A-wt. sound level contributed by the drilling operations at the specified distance(s).

*Attenuation due to hemispherical sound propagation: Sound propagates outwards in all directions (i.e., length, width, height) from a point source, and the sound energy of a noise source decreases with increasing distance from the source. In the case of hemispherical sound propagation, the source is located on a flat continuous plane/surface (e.g., ground), and the sound radiates hemispherically (i.e., outward, over and above the surface) from the source. The following equation is the theoretical decrease of sound energy when determining the resulting O.B. SPLs of a noise source at a specific distance ("r") of a receiver from a source O.B. PWL values:

Decrease in SPL ("hemispherical propagation") from a noise source = $20 \log(r) - 2.3 \text{ dB}$
where "r" is distance of the receiver from the noise source.

**Attenuation due to air absorption, foliage & land contour: Air absorbs sound energy, and the amount of absorption ("attenuation") is dependent on the temperature and relative humidity (R.H.) of air and frequency of sound. For example, the attenuation due to air absorption for 1000 Hz O.B. SPL is approximately 1.5 dB per 1,000 feet for standard day conditions. Potential attenuation of foliage, based on our experience and an ISO Standard¹, the "medium-frequency" attenuation (i.e., 1000 Hz) due to forest/trees greater than 500 feet thick is approximately 10 dB. Also, forested areas with plantings more than 100 feet deep can provide some attenuation of ground level noise sources.

End of Memo

¹ ISO Standard 9613-1: 1993 (E), entitled "Acoustics – Attenuation of sound during propagation outdoors – Part 1: Calculation of the absorption of sound by the atmosphere, and Part 2: General method of calculation"

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